BOSNIA AND HERZEGOVINA

The Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction

REQUEST

For an extension of the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5, paragraph 1

June 2008.

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TABLE OF CONTENTS-

I. Executive summary

War conflict in Bosnia and Herzegovina brought the mine problem which caused severe consequences for the country's population and its socio-economic development. Efforts to release mine contaminated areas and release mine impact in Bosnia and Herzegovina started after the end of the conflict. In 1996, Mine Action Centre was established by United Nations (UNMAC) in order to build a local management structure and operational mine action capacity.

The first estimation of the size of mine problem in Bosnia and Herzegovina indicated 4.200 km^2 of the land as mine contaminated or 8,2% of the total country territory. Number of available minefield records was 19.057, which is considered to be app. 50-60% of the real number.

Minefields in Bosnia and Herzegovina were placed by war parties (BiH Army, Army of Republic of Srpska and Croatian Army in BiH) primarily between confrontation lines in order to prevent or slow down movements of army units into the areas of other war parties. Minefields were also placed in front of strategic facilities under the control of war parties, such as military barracks.

Minefields were placed throughout country, from Herzegovina carts on the south and southwest of the country, through high mountainous and ravine area of central Bosnia to plain areas on the north of Bosnia and Herzegovina. It is obvious that minefields were present on all types of vegetation prevailing in the country (rocks, bushes, high grass, and forest).

The socio economic impact and the impact of mines on development in Bosnia and Herzegovina have been significant. From 1992-1996, there was a total of 3.355 mine casualties in Bosnia and Herzegovina. Apart from mine clearance and removal of abandoned mines, one of the main goals of mine action is to reduce number of mine victims.

The initial method used to identify minefields in Bosnia and Herzegovina has been from minefield records and information gathered from combatants. However, this data, though useful has proven to be unreliable.

In the mid 1998, local structure was established, comprising of the Entity Centers and one central Mine Action Centre (BHMAC). In the first phase, number of humanitarian demining organizations was increased, first national mine action standards were issued, and financial resources were improved, as well as professional training.

The adoption of the Law on Demining in 2002, established a central structure, BHMAC at the state level, immediately under the Ministry of Civil Affairs. In the same year the first Mine Action Strategy was made for

the period 2002-2009, which significantly improved the functionality of the structure, along with quality assurance, cost-efficiency and effectiveness of the overall process. However, the process continues to be followed by the lack of funding for mine action, especially for humanitarian demining operations.

Humanitarian demining as one of mine action components includes activities for mine/ERW threat release in Bosnia and Herzegovina. These activities include systematic and general survey and preparation of project documentation, done by BHMAC, while technical survey operations, clearance of land and houses and underwater clearance operations and removal of explosive remnants of war is done by accredited demining organizations.

In the period 2003-2004. Landmine Impact Survey (LIS) was carried out in accordance with international standards, revealing the size of the mine problem in Bosnia and Herzegovina. From the beginning of mine action in Bosnia and Herzegovina in 1996 till presence, accredited demining companies demined 85,5 km^2 of the land. In this period, 46.487 AP mines were found and destroyed as well as 7.077 AT mines and 39.919 ERW. In addition, 751 houses were cleared of mines in period 1996-2007.

The main priority during humanitarian demining operations was return of population and establishment of safe socio-economic environment, proven by the fact that 78% of the released land is I category risk area.

Besides clearance of risk areas, big efforts have been invested in order to prevent entrance to suspect or risk areas. Only in period 2003-2007, total number of people educated through mine risk education program was 247.380.

Urgent marking as mine risk education preventive measure, is conducted through marking of mine suspected areas borders using temporal duration material (app. 1 year). It is usually integrated part of mine risk education activities in impacted communities and it is very effective risk release measure. Total number of placed urgent marking signs in period *1998-2007* is 35.000. Permanent marking: mine risk education prevention measure conducted through marking of the borders of mine risk area. Placement of resistant material signs is done on third priority category locations, where clearance or technical survey is planned to be conducted in next few years and it has proven to be very efficient risk release measure. In period 2000-2007, total of 50km^2 has been marked with this method.

Method used to control and assure quality is technical supervision over demining tasks in Bosnia and Herzegovina. This technical supervision is done by Bosnia and Herzegovina Mine Action Centre. Sampling for determination of quality control is done as a part of technical supervision as well as issuance of Quality control Certificate. Demined areas and facilities are handed over to their owners for further use. In the period 1998-

2007 BHMAC inspection teams conducted 31498 technical supervisions on 2770 demining tasks, the average number of inspections per task being 11,37.

The fact that 1/3 of the available minefield records cannot be applied on the field, contributes the size of the problem. Furthermore, climate circumstances shortened the duration of demining season which reflected on intensity of land release and unfulfillment of the plan.

Twelve years after the end of the conflict in Bosnia and Herzegovina the country still faces the problem of a high level of mine contamination. New assessment in 2007, determined the presence of 220.000 abandoned mines and ERW and identified 1.631 mine impacted communities. It is estimated that mines and ERW directly impact app. 921.513 people, out of which 154.538 people live in the communities with high impact, 342.550 people in medium impacted communities and 424.425 people in low impacted communities.

During last 10 years, suspect area in Bosnia and Herzegovina has been released for 2445 km^2 through systematic, general and technical survey and mine clearance. At the end of 2007 size of suspect area in Bosnia and Herzegovina amounts to 1755 km^2 or 3,42% in relation to total country territory. In period 1998-2007 suspect area was released for 2.139 km^2 through systematic survey operations. Systematic survey represents analytical research procedure used to estimate mine suspected area in Bosnia and Herzegovina where war activities used to occur in order to estimate mine threat, size and characteristics of suspected area based on gathered information. In period 1998-2007 suspect area was released for 220,3 km^2 through general survey operations. General survey represents a set of mutually connected and adjusted activities used to collect data and process information on position, pattern and basic characteristics of areas suspected to be mine contaminated. Humanitarian demining operations in Bosnia and Herzegovina released suspect area for 85,5 km^2. Clearance operations released suspect area for app. 61,3 km^2 while technical survey operations released suspect area for 24,2 km^2.

From the beginning of demining process in Bosnia and Herzegovina, mined areas have been directly connected with return of population and reconstruction of infrastructure, considering as high priorities. According to the information by Bosnia and Herzegovina Ministry of human rights and refugees, during the conflict there were total of 2.2 million refugees and displaced persons. Until 2007, 1 million of people returned to their homes and mine action significantly contributed to the return. It is also important to mention that all urban centers in Bosnia and Herzegovina and settled rural areas have been released from mine impact, majority of the remaining suspect area being forest area and less accessible locations.

Regarding the funding of mine action in Bosnia and Herzegovina in previous 10 years, majority of the funds were allocated by international donors and smaller portion by local budgets and legal entities.

The main reason for unfulfilling the obligations in previous 10 years is mainly in the size of the mine problem in Bosnia and Herzegovina and the lack of funding required for humanitarian demining operations on risk areas and overall mine removal.

Bosnia and Herzegovina Mine Action Strategy (2009-2019) predicts Bosnia and Herzegovina as mine free country by 2019. Funds necessary for the realization of this goal in following 10 year period amounts to790 million KM. Adoption of new Mine Action Law in Bosnia and Herzegovina will create conditions for stable and continuous funding from the budgets of local institution with the stimulus to maintain and increase international donors support.

Adoption of new Mine Action Law in Bosnia and Herzegovina, which is now in parliamentary procedure, will create conditions for stable and continuous funding of mine action from local government budgets, stimulating maintenance and improvement of donor support. Regarding the new sources, it is important to emphasize that Bosnia and Herzegovina Ministry of Finance and Treasury will ensure shortfall of funds (new sources) from local budgets.

Release of mine risk for population, and socio-economic development of Bosnia and Herzegovina will be solved through integral approach to mine action in high impacted communities and through individual activities in other impacted communities, aimed to release risk and to create conditions to use particular resources, enable reconstruction and sustainable return.

In accordance with Article 5, Paragraph 1, Bosnia and Herzegovina requests extension of time for implementation of the Convention for period of 10 years, due to fact that after 12 years since beginning of mine action activities, country still faces problem of high mine contamination. Besides effort and significant progress in problem solutions, mines still present one of the main obstacles for safety of population and socio-economic development of the country.

II Request for an extension

1. Origins of the Article 5 implementation challenge

Origins of the Article 5 implementation challenge in Bosnia and Herzegovina date from the beginning of war operations in 1992. In the period of the conflict 1992-1995, war parties placed a big number of minefields throughout Bosnia and Herzegovina.
Minefields in Bosnia and Herzegovina were placed by war parties (BiH Army, Army of Republic of Srpska and Croatian Army in BiH) primarily between confrontation lines in order to prevent or slow down movements of army units into the areas of other war parties. Minefields were also placed in front of strategic facilities under the control of war parties such as military barracks.

Minefields were placed throughout Bosnia and Herzegovina from Herzegovina carts on the south and southwest of the country, through high mountainous and ravine area of central Bosnia to plain areas on the north of Bosnia and Herzegovina. It is obvious that minefields were present on all types of vegetation prevailing in the country (rocks, bushes, high grass, and forest).

Based on these available records in Bosnia and Herzegovina, there are AT minefields mines, AP minefields and combined minefields. Anti personnel minefields are mostly contaminated with following mine types:

- PROM 1 antipersonnel bouncing fragmentation mine, usually buried into the ground surface with the fuse above the surface. During the activation, the steel body is broken and its fragments have killing radius in 50 m diameter, while its danger radius is 100 m. Due to its characteristics, the mine represents the biggest long term threat for the population living in vicinity of contaminated areas;

- PMA-2 antipersonnel antimagnetic pressure mine. Mine is usually placed on surface of the ground into the vegetation. During the explosion, the explosive wave damages the lower part of the leg, while both the wave and the products of explosion can damage other leg as well.

- PMR-2A antipersonnel fragmentation nine activated by a trip wire. When placed, mine is masked within vegetation, while the trip wire is green and hard to spot in the vegetation. Its fragments have a killing radius of 40 meters while the danger radius is up to 100 meters.

2. Nature and extent of the original Article 5 challenge: quantitative aspects

Efforts to release contaminated areas in Bosnia and Herzegovina started after the end of the conflict. In 1996, Mine Action Centre was established by United Nations (UNMAC) in order to build a local management structure and operational mine action capacity. Information received from the conflicting parties estimated the suspect area to be 4.200 km^2 or 8, 2% of Bosnia and Herzegovina territory and the number of available minefields were 19 057. The following table contains the information that was initially available in minefield records.

No.	Administrative area	No of minefield records per Canton	No of minefield records per Entity/District	No of minefield records per State
I	Federation of BH		14057	
1.	Central Bosnia Canton	2229		
2.	Herzegovina-Neretva Canton	1437		
3.	Posavina Canton	446		
4.	Sarajevo Canton	1 894		
5.	Canton no.10	787		
6.	Tuzla Canton	3036		
7.	Una-Sana Canton	1703		
8.	Zenica-Doboj Canton	2199		
9.	Bosnian Podrinje Canton	327		
II	Republic of Srpska		4996	
TOTAL	Bosnia and Herzegovina			19 057

Table. 1: Review of available minefield records in Bosnia and Herzegovina

3. Nature and extent of the original Article 5 challenge: qualitative aspects

The socio economic impact and the impact of mines on development in Bosnia and Herzegovina have been significant. From 1992-1996, there was a total of 3.355 mine casualties in Bosnia and Herzegovina. Apart from mine clearance and removal of abandoned mines, one of the main goals of mine action is to reduce number of mine victims.

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Civilians injured	522	202	89	57	65	55	46	31	27	9	17	22
Civilians killed	110	88	60	38	35	32	26	23	16	10	18	8
Total	632	290	149	95	100	87	72	54	43	19	35	30

Table 2: Review of mine victims statistics in period 1996-2007

The main priority of humanitarian demining operations was return of population and establishment of safe socio economic environment. Risk area processed in humanitarian demining operations is defined by priority categories:

I priority category: areas with recognizable need for movement of local population and occasional users and locations with resources for economic development;

II priority category: occasionally used locations or areas bordering first priority category locations;

III priority category: suspected areas without known minefields and lowest impact level, but with possible existence of war remnants, considering they are placed along former confrontation lines. Rural areas without traditional or other recognizable needs of the local population or occasional users to access or to move in. There are no recourses for economic development of local community in these areas.

After the conflict in Bosnia and Herzegovina there was no comprehensive study of mine problem in Bosnia and Herzegovina and therefore it is not possible to provide information on number of affected communities and people living in these communities at the beginning of mine action process in Bosnia and Herzegovina.
Locations where mines were placed mostly follow the confrontation lines between conflicting parties. Thus minefields were placed in the city centers which are characteristic for cities Sarajevo, Mostar and Gornji Vakuf, in suburban parts near housing facilities, in villages as well as in distant rural and unsettled areas.

4. Methods used to identify areas containing AP mines and reasons for suspecting the presence of AP mines in the other areas

The initial method used to identify minefields in Bosnia and Herzegovina has been from minefield records and information gathered from combatants. However, this data, though useful has proven to be unreliable. Thus one

of the primary ways areas have been identified has been through the reports on number of mine victims in post war period. Landmine Impact Survey (LIS) was carried out in 2002 and 2003 in accordance with international standards. Following LIS, a new general assessment of mine situation in Bosnia and Herzegovina, done by BH Mine Action Centre in 2007 including update of LIS and systematic survey results, gave clearer picture of the size of the problem in Bosnia and Herzegovina.

Apart from above mentioned, the following methods have been used for identification of areas with AP mines in Bosnia and Herzegovina:

- Systematic survey: analytic survey procedure used to estimate mine suspect land in the areas of former confrontation lines. Systematic survey represents part of general assessment of mine problem in Bosnia and Herzegovina from micro location level to the level of the country as a whole.

- General survey: process of collection, processing and assessment of data without application of demining method or entrance to mine suspect area. General survey is method for land release proclaiming areas without identified risk.

Technical survey: activities using operational soil treatment method to search the land on certain area in order to identify and mark borders of mined area and determine parameters for planning the consequent humanitarian demining operation.

5. National demining structures

Mine action in Bosnia and Herzegovina began in 1996, with the establishment of United Nations Mine Action Centre –UNMAC. The Centre was formed in order to build a local management structure and operational mine action capacity. Entity Mine Action Centers RSMAC and FMAC and Coordination Centre (BHMAC) were formed in 1998. Issuance of Law on Demining in Bosnia and Herzegovina in 2002 transformed the previous system of mine action. Central body for demining affairs is Demining Commission, consisting of three members and reporting to the Bosnia and Herzegovina Ministry of Civil Affairs. Technical body in Bosnia and Herzegovina is Bosnia and Herzegovina Mine Action Centre (BHMAC), established by the Decree of Bosnia and Herzegovina Council of Ministers in 2002.

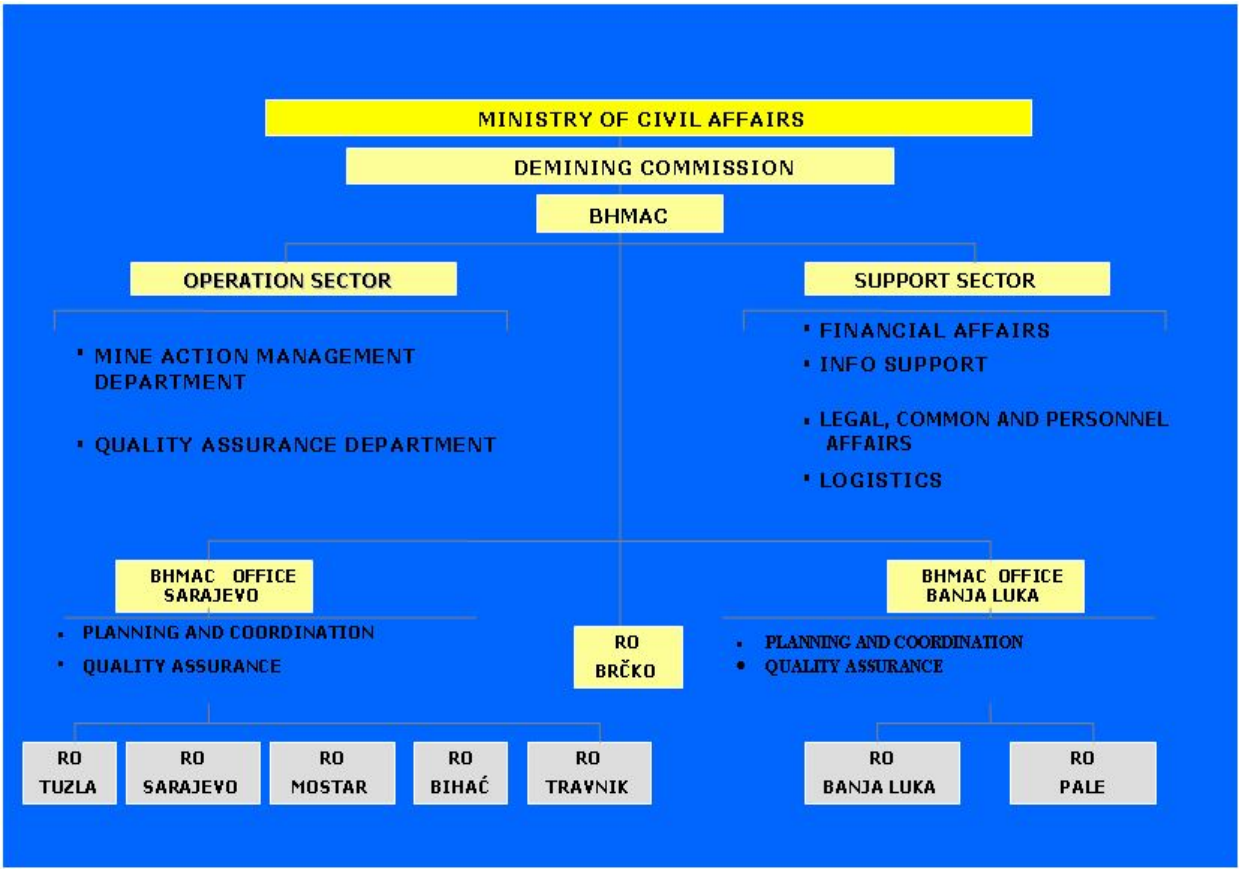


Chart 1: Bosnia and Herzegovina Mine Action Structure

The following table lists all organizations accredited for humanitarian demining in Bosnia and Herzegovina at the beginning of 2008:

No	Organization
1.	" ASB " e.v. Deutschland Sarajevo
2.	" Minemon " d.o.o. Pale
3.	" Trotil " d.o.o. Sarajevo
4.	Žaba d.o.o. Vitez
5.	AMPHIBIA
6.	BH DEMINING
7.	CIVIL PROTECTION FBIH
8.	CIVIL PROTECTION RS
9.	CIVIL PROTECTION BRCKO DISTRICT BiH
10.	DETEKTOR
11.	EKSPLORING
12.	HANDICAP INTERNATIONAL
13.	INTERSOS
14.	M.D.D.C.
15.	ME. DE. COM.
16.	MECHEM COUNTERMINING
17.	MINOEKSPLOZIV DEMINIRANJE
18.	Mustella B&H d.o.o. Cazin
19.	N&N IVSA
20.	NGO C.I.D.C.
21.	NGO PRO VITA

22.	NGO STOP MINES
23.	NHO " Prom 1 " Istocno Novo Sarajevo
24.	NORWEGIAN PEOPLES AID (NPA)
25.	Armed Forces of Bosnia and Herzegovina
26.	REASEURO WORLDWIDE
27.	ROEHLL UMWELT KONCERN
28.	TEHNOELEKTRO PODRUŽNICA 001
29.	UDRUŽENJE ZA ELIMINACIJU MINA UEM
30.	UG DEMIRA
31.	UG EKO DEM
32.	UXB-BALKANS
33.	Udruženje građana MINE ACTION GROUP
34.	Udruženje za zaštitu od mina "ZOM" Bihać
35.	Udruga " Pazi mine " Vitez
36.	VILAKOL

Table 3: List of currently accredited demining organizatons

6. Nature and extent of progress made: quantitative aspects

Suspect area in Bosnia and Herzegovina from 1996-2007 was released from 4, 200 km2 to 1,755 km2, which means that released area amounts 2,445 km2 or 4,77% of the total country area.

Land release methods results are given in the following table:

Period	Land release methods	Released area (km^2)
1998-2007	Systematic survey	2.139
1998-2007	General survey	220,3
1996-2007	Humanitarian demining	85,5
Total		2.445

Table 4: Suspect area release in period 1996-2007

In period 1998-2007 suspect area was released for 2.139 km^2 through systematic survey operations. Systematic survey represents analytical research procedure used to estimate mine suspected area in Bosnia and Herzegovina, where war activities used to occur in order to estimate mine threat, size and characteristics of suspected area based on gathered information. Systematic survey is regular activity of Bosnia and Herzegovina Mine Action Centre consisted of gathering, assessment, analysis and update of information on suspect areas and their characteristics. Regional offices of BHMAC continuously carry out assessment and analysis of suspect areas in their zones of responsibility and update the database. During the assessment, regional offices cooperate with authorized municipality, canton and entity bodies and other relevant institutions and organizations. For more detailed explanation of systematic survey see attached Annex 1 BHMAC SOP, Chapter 10.

In period 1998-2007 suspect area was released for 220,3 km^2 through general survey operations. General survey represents a set of mutually connected and adjusted activities used to collect data and process information on position, pattern and basic characteristics of areas suspected to be mine contaminated. The goal of general survey is to identify the risk or need for technical survey, marking, clearance or other mine action. General survey also contains reduction of suspect area through release of land identified as area without risk. For more detailed explanation of general survey see attached Annex 1 BHMAC SOP, Chapter 1.

Humanitarian demining operations in Bosnia and Herzegovina released suspect area for 85,5 km^2. Clearance operations released suspect area for app. 61,3 km^2 while technical survey operations released suspect area for 24,2 km2. Technical survey represents treatment of risk area identified through general survey involving detailed search and determination of mine presence, soil characteristics, determination and marking of risk area borders and parameters for consequent demining operations. For more detailed explanation of general survey see attached Annex 1 BHMAC SOP, Chapter 6.

From the beginning of mine action in Bosnia and Herzegovina in 1996 until the end of 2007, accredited demining companies demined (through clearance and technical survey operations) 85,5 km^2. In this period,

46.487 AP mines were found and destroyed as well as 7.077 AT mines and 39.919 ERW. In addition, 751 houses were cleared of mines in period 1996-2007.

Year	Demined (m^2)	AP	AT	ERW	House
1996	8.500.000	32.975	5.927	31.774	0
1997					
1998	6.579.390				
1999	6.553.480				
2000	7.111.680				
2001	5.856.460				
2002	6.588.290	1.532	251	1.575	300
2003	6.510.950	1.495	156	1.066	181
2004	6.612.720	3.016	210	1.523	100
2005	10.607.600	2.120	183	1.475	65
2006	10.266.090	3.506	164	1.499	70
2007	10.327.650	1.843	186	1.007	35
TOTAL:	85.514.310	46.487	7.077	39.919	751

Table. 5: Results of humanitarian demining in period 1996-2007

7. Nature and extend of progress made: qualitative aspects

Following table show qualitative aspect results of humanitarian demining in Bosnia and Herzegovina in period 1996-2007:

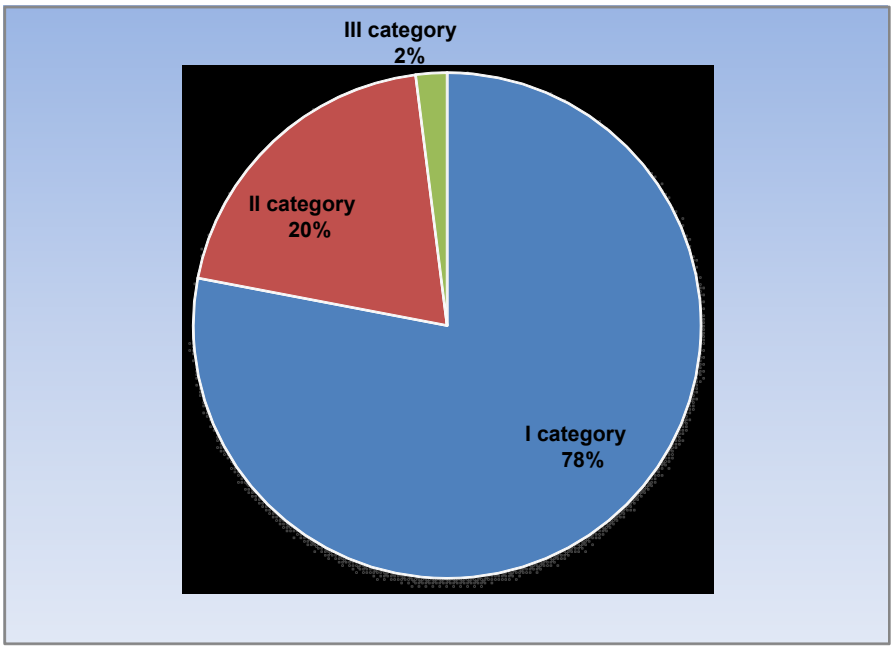
Priority category	Area (m^2)
I	66.701.162
II	17.102.862
III	1.710.286
Total:	**85.514.310**

Table br. 6: Humanitarian demining per priority category

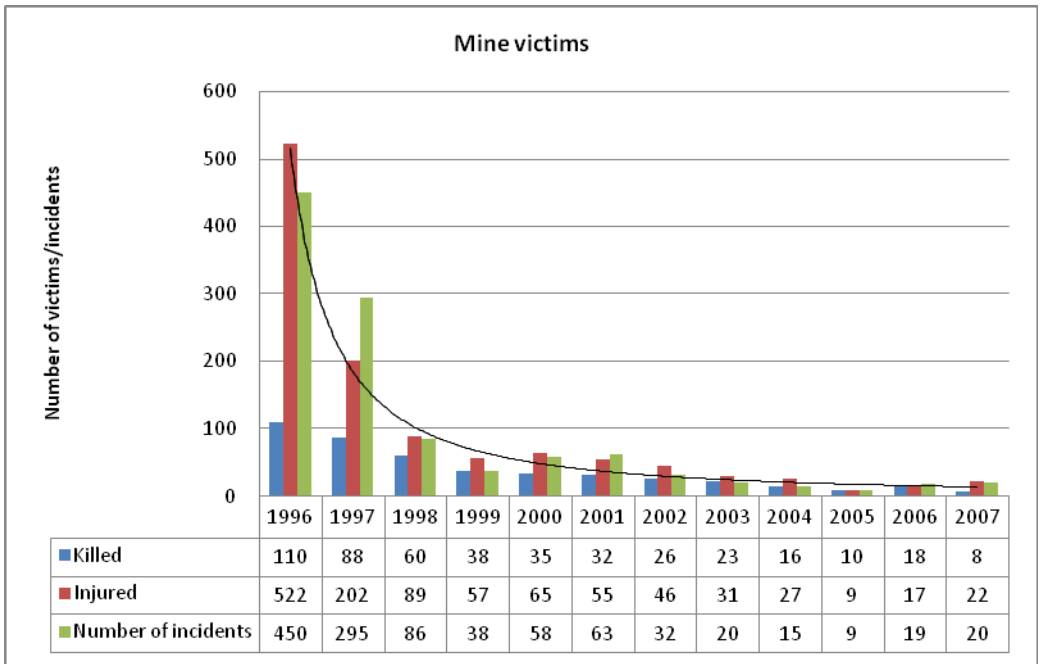
I priority category: Repatriation (demining of households for the return of population, reconstruction of settlements, educational and health facilities, rehabilitation of agricultural land, energy and water facilities);

II priority category: Other agricultural land at distant locations, industrial complexes, forest properties;

III priority category: Environment, tourism, forestry and other locations distant from settled areas with low level of mine risk and impact.



Graph 1: Qualitative aspect of humanitarian demining



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Killed	110	88	60	38	35	32	26	23	16	10	18	8
Injured	522	202	89	57	65	55	46	31	27	9	17	22
Number of incidents	450	295	86	38	58	63	32	20	15	9	19	20

Chart 2: Mine victims statistics

In the period 1992-2007 there were a total of 4967 mine casualties in Bosnia and Herzegovina. In the period 1996-2007 there were a total of 1628 mine casualties, out of which 468 killed persons. As visible from the above chart, number of mine victims is constantly decrease since the beginning of mine action process.

Several levels of authorities in Bosnia and Herzegovina have certain statistics regarding the number of returnees. However, there is no accurate statistics on number of direct returnees to demined areas in Bosnia and Herzegovina. From the beginning of demining process in Bosnia and Herzegovina, mined areas have been directly connected with return of population and reconstruction of infrastructure and were considered as high priorities. From previous experience and based on evaluation of Mine action Strategy in Bosnia and Herzegovina 2005-2009, demining was not an obstacle to the return. According to information by Bosnia and Herzegovina Ministry of human rights and refugees, during the conflict there were total of 2.2 million refugees and displaced persons. Until 2007, 1 million of people returned to their homes, mine action significantly contributed to the return. Of note is also that Bosnia and Herzegovina Ministry of human rights and refugees has available fund for urgent funding of demining tasks for repatriation.

It is also important to mention that all urban centers in Bosnia and Herzegovina and settled rural areas have been released from mine impact. Precise data on number of released impacted communities is not available due to the fact that there was no comprehensive study on mine problem in Bosnia and Herzegovina that included impacted communities at the beginning of demining process.

8. Methods and standards used to release areas known or suspected to contain antipersonnel mines

Humanitarian demining as one of mine action components includes activities used to release mine/ERW threat in Bosnia and Herzegovina. These activities include systematic and general survey and preparation of project documentation, done by BHMAC, while technical survey operations, clearance of land and houses and underwater clearance operations and removal of explosive remnants of war is done by accredited demining organizations.

Methods used for release of suspect area in Bosnia and Herzegovina are prescribed by following national standards, adjusted with International Mine Action Standards:

-Bosnia and Herzegovina Mine Action Standards

- Standards for removal of mines and ERW

-Standing Operational procedures for humanitarian demining (Annex I)

-Mine Risk Education Standards

- Mine Risk Education Standing Operational procedures

Systematic survey is analytical survey procedure aimed to map and estimate levels of threat and priority of suspect area in areas of former confrontation lines. BHMAC survey teams use systematic survey to release the suspect area.

General survey includes a number of activities aimed to collect data at the field, determine the borders of risk area and prepare elements for mine action projects on certain locations without entering risk area. General survey operations are also used to determine areas without identified risk which are then released for further use. Area can be declared as area without identified risk only if it is being intensively used (minimum for 2 years) without mine accidents or incidents and where the soil has been disturbed in minimum depth of 10 cm.

Humanitarian demining includes survey, mine clearance, marking, quality assurance and entry into database in order to release mine/ERW threat.

Technical survey: activities using operational soil treatment method to search the land on certain area in order to identify and mark borders of mined area and determine parameters for planning of consequent humanitarian demining operation. Methods used during technical survey operations are:

- Manual(detector and prodder);
- Mine Detection Dog Teams search;
- Mechanical preparation of the land for demining.

Mine clearance: physical removal of mines and ERW from risk area and their destruction. Methods used in clearance operations are identical to those used in technical survey operations:

- Manual(detector and prodder);
- Mine Detection Dog Teams search;
- Mechanical preparation of the land for demining.

9. Methods and standards of controlling and assuring quality

Method used to control and assure quality is through technical supervision over demining tasks in Bosnia and Herzegovina. This technical supervision is done by Bosnia and Herzegovina Mine Action Centre. Sampling for determination of quality control is done as a part of technical supervision as well as issuance of Quality control Certificate. Demined areas and facilities are handed over their owners for further use.

The aim of technical supervision over demining activities is to ensure required quality of demined land, safety of personnel involved in humanitarian demining operations and beneficiaries of demined land, as prescribed by Standard for humanitarian demining in Bosnia and Herzegovina and overall trust in humanitarian demining process.

Bosnia and Herzegovina Mine Action Centre controls and assures the quality over humanitarian demining operations in following manner:

- Technical supervision through inspection teams on demining sites;

- Sampling according to BHMAC Standing Operational Procedures, adjusted with IMAS 09.20

- In order to assure the quality, regular and additional testing of machines, MDD teams and metal detectors is done as well as monthly control of internal MDD testing in demining organizations.

In the period 1998-2007 BHMAC inspection teams conducted 31498 technical supervisions in 2770 demining tasks, the average number of inspections per task being 11,37.

Quality control certificate is issued by BHMAC confirming that certain location is cleared according to the Article 36 of the Law on Demining in Bosnia and Herzegovina (Official Gazette No 5/02) and Item 4, Chapter VIII of national SOP for humanitarian demining stating that demined location is 99,65% mine safe.

10. Efforts undertaken to ensure the effective exclusion of civilians from mined areas

From the beginning of mine action in Bosnia and Herzegovina, there have been constant efforts to prevent entrance of civilians in risk areas.

Mine risk education is consisting part of mine action in Bosnia and Herzegovina, carried out by accredited demining companies under technical supervision of BHMAC, with the aim to inform population in mine impacted communities and reduce mine casualties.

The exact number of people covered by mine risk education program in period 1996-2003 is not known. This number in period 2003-2007 is 247.380 people. Mine risk education is included in regular school curriculum in elementary schools in Bosnia and Herzegovina.

Impacted groups	Population
Children	168964
Farmers	16563
Returnees	10284
Hunters and Fishermen	10005
Representatives of government institutions	5779
Members of Armed Forces	97
Other	37372
Medical staff	131
Total	249195

Table 7: Impacted groups covered by MRE program

Administrative region	Population
Bosansko-podrinjski	2236
Kanton 10	520
Hercegovačko-neretvanski	4794
Posavski	3053
Sarajevo	14681
Srednje-bosanski	30645
Tuzlanski	8765
Unsko-sanski	32471
Zapadno-hercegovački	557
Zeničko-dobojski	32985
Federation BiH	130707
Republic of Srpska	113521
Brčko District	4967
Total	249195

Table 8: Number of people covered by MRE program per administrative regions

All above mentioned methods largely contributed to prevent the entrance of population in risk areas, reduce number of mine victims. The following table, lists all the organizations accredited for MRE activities in Bosnia and Herzegovina:

No	Organization
1	BH DEMINING
2	Civil Protection FBIH
3	Civil Protection RS
4	Genessis Project
5	BiH Red Cross Society
6	Intersos
7	NGO C.I.D.C.
8	Pro Vita
9	Stop Mines
10	NO Posavina bez mina Brčko Distrikt BiH
11	NPA
12	BiH Armed Forces
13	Tehnoelektro podružnica 001
14	UXB-Balkans
15	Udruženje AMI Brčko Distrikt BiH

Table 9: Organizations accredited for MRE activities in Bosnia and Herzegovina

Urgent marking is mine risk education preventive measure, conducted through marking of mine suspected areas borders using temporal duration material (app. 1 year). It is usually integrated part of mine risk education activities in impacted communities and it is very effective risk reduction measure. Total number of placed urgent marking signs in period 1998-2007 is 35.000. For more detailed information about urgent marking see Annex I SOP for humanitarian demining, Chapter I.

Permanent marking: mine risk education prevention measure conducted through marking of the borders of mine risk area. Placement of signs is done using more resistant material on third priority category locations where clearance or technical survey is planned to be conducted in next few years and it has proven to be very efficient risk reduction measure. In period 2000-2007, total of 50km^2 has been marked with this method.

Year	Number of projects realized	Marked area (km^2)
2000	2	0,3
2001	6	0,6
2002	5	0,6
2003	20	5,8
2004	58	7,9
2005	130	18,3
2006	45	4,9
2007	97	12,5
Total	363	50,9

Table 10: Results of permanent marking in Bosnia and Herzegovina

11. Resources made available to support progress made to date

In previous period, mine action in Bosnia and Herzegovina has been mainly funded by international donor funds and in smaller scale by local government budgets and legal entities. The reason why local entities have not been more involved in mine action funding in Bosnia and Herzegovina is the fact that mine action is a very expensive process. Considering poor economic environment in the country, such an expansive process could not be adequately supported. Review of allocated funds for mine action in Bosnia and Herzegovina since 2002, the year when the Law on Demining was adopted and central body on the state level was formed, is given in Table 11:

Year	2002	2003	2004	2005	2006	2007	2008
Financial resources made available by the State Party	10.4	12.9	15.4	17.7	20.1	19.4	20.1
Financial resources made available by actors other than the State Party	17.5	15.3	16.7	30.6	30.4	28.8	30.4
Totals:	27.9	28.2	32.1	48.3	50.5	48.2	50.5

Table br. 11: Allocated funds for mine action in Bosnia and Herzegovina

Remark: Chart shows only projection of mine action funding for 2008

Precise data on allocated funds for mine action in Bosnia and Herzegovina for the period up to 2001 are in possession of World Bank.

12. Circumstances that impede compliance in a 10 year period

Main reason that Bosnia and Herzegovina did not fulfill obligations in last ten (10) years is extent of mine problem present in Bosnia and Herzegovina and lack of financial resources necessary for humanitarian demining operations on risk areas and clearance of AP mines. Huge problem in last period lays in no-functionality of app. 25 % available minefield records that reflected intensity of the land release. Besides extent of mine problem, lack of financial resources and non functionality of 1/3 minefield records, reason that obligations were not fulfilled lays also in climate conditions of Bosnia and Herzegovina, which are directly connected to length of demining season. Demining season in Bosnia and Herzegovina in most of the country is between March and November. Besides the fact that Bosnia and Herzegovina failed to fulfill its obligations in last ten (10) years, in domain of land release was done a lot.

Data on number of mines and minefields are neither reliable nor precise. Bosnia and Herzegovina Mine Action Centre database has 19.057 registered minefields records, which is considered to be app. 50-60% of their real number. The experience of Bosnia and Herzegovina Mine Action Centre in general survey operations show that 25% of available records are not accurate, which further reduces available information of minefields.

Minefields in Bosnia and Herzegovina have relatively small number of mines. Those are usually groups of mine as or individual mines placed in randomly. The problem lies in quality of minefield records, which are frequently not accurate enough to identify exact location of the minefield, shape and pattern of mines on the field. In addition, numerous minefield records were not submitted; they were either destroyed or hidden by some individuals or the persons who write the records died or left the country or some other unknown reasons.

Minefields were placed throughout Bosnia and Herzegovina from Herzegovina carst on the south and southwest of the country, through high mountainous and ravine area of central Bosnia to plain areas on the north of Bosnia and Herzegovina. It is obvious that minefields were present on all types of vegetation prevailing in the country (rocks, bushes, high grass, and forest).

13. Humanitarian, economic, social and environmental implications

During 2007 Mine Action Center of Bosnia and Herzegovina made new general assessment of the mine situation in Bosnia and Herzegovina. Study included LIS updates and updates of systematic survey, which where lately integrated in new model of general assessment of mine risk. Study on general assessment of mine problem in Bosnia and Herzegovina identified in total 1.631 mine/UXO impacted communities. It was estimated that locations contaminated with mines and/or UXO, directly affect safety of 921.513 persons, out of which 154.538 persons in high impacted communities, 342.550 persons in medium impacted communities, and 424.425 persons in low impacted communities.

Out of total number of impacted communities, 122 or 7,48% was categorized as highly impacted communities, 625 or 38,32 % as medium impacted communities, and 884 or 54,19% as low impacted communities. World average for high impacted communities is 10% and 30% for medium impacted communities. Taking into consideration number of mine impacted communities and level of impact Bosnia and Herzegovina belongs to most impacted countries in the world.

Most of impacted communities are rural communities. Estimation shows that 'inhabitants of main city complexes have relatively safe economic and social life in comparison to rural population that economically depends on access to mine contaminated land.' People have returned to two thirds (2/3) of impacted communities, mostly in village communities.

New model of general assessment has significantly uncovered extent and nature of problem, used to analyze solutions for the problem as well as financial requests.

Administrative region	Level of impact		
	LOW	MEDIUM	HIGH
Unsko-Sanski kanton	43	52	25
Tuzlanski kanton	52	42	10
Posavski kanton	3	8	16
Zeničko-Dobojski kanton	81	55	6
Bosansko-Podrinjski kanton	41	14	4
Srednje-Bosanski kanton	116	90	11
Hercegovačko-Neretvanski kanton	90	48	4
Zapadno-Hercegovački kanton	1	0	0
Kanton Sarajevo	50	29	2
Herceg-Bosanski kanton	68	36	1
Federation BiH	545	374	79
District Brčko	11	6	20
Republic of Srpska	328	245	23
Bosnia and Herzegovina	884	625	122

Table. 12: Review of impacted communities in Bosnia and Herzegovina per administrative region

14. Nature and extent of the remaining Article 5 challenge: quantitative aspects

Speaking of the extent of remaining challenge, is not hard to conclude that big works still awaits Bosnia and Herzegovina. At the end of 2007, total size of suspected area in Bosnia and Herzegovina was 1755 km^2 or 3,42% of total size of Bosnia and Herzegovina.

Bosnia and Herzegovina Mine Action Strategy (2009-2019) presents national strategic document in domain of country mine actions and was adopted on 68 Meeting of Council of Ministers at 22 April 2008. In accordance to new general assessment of mine situation presenting base for th development of new Strategic document, total suspected area at the beginning of 2009 will be 1573 km^2 or 3,07% of Bosnia and Herzegovina's territory.

Suspected area is defined as area in confrontation zone and for which exist data or possibility of contamination by mines or UXO. As opposed to suspected area that is wide area, risk area is significantly smaller area where after conduct of general survey, presence of minefield or serious indication was identified, or where coordinates

of suspected area are defined in detail and collected data enough for humanitarian demining operation conduction. .

Inside the suspected area, at the beginning of 2009, estimated size of risk area is 592 km^2 and it will be subject of humanitarian demining operation in the following period. New general assessment on extent of mine problem in Bosnia and Herzegovina estimated number of remains mines and UXO on 220.000.

Name of administrative region	Total suspected area (km^2)	Suspected area per category (km^2)			HIGH IMPACTED AREA	MEDIUM IMPACTED AREA	LOW IMPACTED AREA
		I category	II category	III category			
Una-Sana Canton	147,21	22,74	85,13	39,34	45,14	70,06	32,02
Posavina Canton	45,63	5,82	25,14	14,67	33,67	10,2	1,76
Tuzla Canton	88,81	12,03	34,93	41,84	14,12	42,72	31,97
Zenica-Doboj Canton	142,69	16,43	20,24	106,01	9,1	75,17	58,42
Bosnian Podrinje Canton	72,47	1,78	15,15	55,53	4,78	39,75	27,94
Central Bosnia Canton	206,02	24,97	46,26	134,79	16,44	100,65	88,93
Herzegovina-Neretva Canton	236,64	15,18	51,57	169,89	5,54	130,69	100,41
West Herzegovina canton	2,12	0	0	2,12	0	0	2,12
Sarajevo Canton	99,97	7,8	13,44	78,73	2,08	49,15	48,74
Herzeg-Bosnian Canton	171,93	20,93	42,83	108,17	2,74	97,52	71,67
Federation of BiH	1213,49	127,69	334,7	751,11	133,62	615,9	463,99
Republic of Srpska	501,37	81,67	162,97	256,73	63,63	235,31	202,43
Brcko District	40,26	11,5	12,88	15,87	34,45	2,06	3,74
Bosnia and Herzegovina	1.755,12	220,86	510,56	1.023,71	231,7	853,28	670,16

Table 13: Size of the suspected area in Bosnia and Herzegovina at the end of 2007.

15. Nature and extent of the remaining Article 5 challenge: qualitative aspects

Release of mine risk for population and socio-economic development of Bosnia and Herzegovina will be solved through integral access to mine action in high impacted communities and through individual activities in other impacted communities with aim to release risk or to create condition to use particular resources, enable reconstruction and sustainable return.

Timetable of locations for humanitarian demining operations will be made per administrative units in Bosnia and Herzegovina and size of suspected area inside administrative unit. Timetable of areas for clearance and technical survey per entities, cantons and Brcko District will be harmonized with size of suspected area, plans of demining organizations and annual plan of mine actions.

Name of administrative unit	Category of impacted community			Total
	High	Medium	Low	
Una-Sana Canton	10,80%	12,58%	23,85%	15,94%
Posavina Canton	17,60%	3,16%	0,00%	5,67%
Tuzla Canton	30,32%	9,05%	2,45%	12,09%
Zenica – Doboj Canton	18,29%	15,80%	10,95%	14,78%
Bosnian Podrinje Canton	0,64%	8,84%	6,50%	6,02%
Central Bosnia Canton	7,17%	16,94%	7,67%	11,39%
Herzegovina Neretva Canton	11,89%	21,24%	10,11%	15,16%
West Herzegovina Canton	0,00%	0,00%	0,00%	0,00%
Sarajevo Canton	1,85%	10,53%	7,81%	7,46%
Herzeg – Bosnian Canton	1,42%	1,87%	30,67%	11,48%
Federation of Bosnia and Herzegovina	52%	62%	64%	60%
Republic of Srpska	36%	27%	36%	32%
Brcko District	11%	11%	0%	8%
Bosnia and Herzegovina	28%	40%	31%	100%

Table.14: Percentage overview of priorities per administrative units on the end of 2007.

All locations envisaged for humanitarian demining organization are or will be defined through general survey projects, with detailed information on locations, suggested methods of humanitarian demining, as well as the time lines defined by dynamic plan.

Permanent marking of suspected area as part of humanitarian demining operation will be conducted as following operation of clearance and technical survey or as independent activities for risk reduction on suspected area of second and third category of priority.

Suspected area of third category will be released also through survey activities and demining operations.

The following table gives the amount of suspect area per soil type and purpose of its use after clearance:

Purpose of land	Area (km2)
Return	68
Housing	33,7
Infrastructure	37
Education and culture	1,7
Roads	25,8
Military locations	1,2
Industry	3,5
Tourism	3,5
Agriculture	645
Non-arable land	16,9
Marshland	1,6
Forest	898
Other	20,8
Total	1755

Table 15: Amount of remaining suspect land for different purposes of use

16. Amount of time requested and a rationale for this amount of time

In accordance with Article 5, Paragraph 1, Bosnia and Herzegovina requests extension of time for implementation of the Convention for period of 10 years due to fact that after 12 years since beginning of mine action activities in Bosnia and Herzegovina still faces problem of high mine contamination. Besides effort and significant progress in problem solutions, mines still present one of main obstacles for safety of population and socio-economic development of the country. A lot of effort was made to identify and clear mine contaminated areas, but unfortunately mines can still be found across all country. Location of mines is very complicated

because minefield records are not complete or very badly done, or have been lost or never made. Specificity of problem that impede solving of same lays in unknown order of mines at the field, single mines or groups of mines on wide area.

Bosnia and Herzegovina Mine Action Strategy (2009-2019) represents national strategic plan according to which Bosnia and Herzegovina from 2019 will be country without mine impact, with established safe environment for normal and prosperous life of all citizen in Bosnia and Herzegovina, with mine survivors completely integrated in social community. For land release in following ten (10) years, according to strategic plan, it will be necessary to ensure 790 millions of BAM. Annual operative plans since 2009 will ensure stable and continuous engagement of financial resources for mine action from all available sources in accordance to Strategic plan. Mine Action strategy in Bosnia and Herzegovina (2009-2019) is component of Poverty Reduction Strategy. Dayton Peace Agreement, Annex 1A prescribes removal, disarmament and destruction of all explosive ordnances and explosive remnants of war and; marking all known minefields and places of ERW; prohibition of use, production and stockpiling of AP mines. Currently available resources for humanitarian demining in Bosnia and Herzegovina can be characterized as sufficient for realization of annual plan, i.e. annual land release.

17. Detailed work plan for the period of the requested extension

In period 2009-2019., Bosnia and Herzegovina shall fulfill undertaken obligations in accordance to Ottawa Convention demands. Suspected area shall be released as it follows:

- I and II category of priority shall be released through the operations of general and technical survey and clearance with continuous conduct of prevention measures through prohibition measures, urgent and permanent marking and mine risk education;
- III category of priority risk shall be released through survey method that will be developed and defined till First Revision of Strategic plan in 2012. These locations will be contionously treated by prohibition measures, urgent and permanent marking and mine risk education.

Strategic plan shall be supported with stable and continuous funding, along with technology, planning and quality control improvement.

Land release	2009	2020	2011	2012	2013	2014	2015	2016	2017	2018
Survey of the III priority category	5	16	32,75	32,75	32,75	32,75	32,75	32,75	32,75	32,75
Released by clearance	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27
Released by technical survey	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63
General survey	115,75	115,75	115,75	115,75	115,75	115,75	115,75	115,75	55	0
TOTAL	151,65	162,65	179,4	179,4	179,4	179,4	179,4	179,4	118,65	63,65

Table 16: Operational plan for period 2009-2019

Mine risk and its socio economic impact shall be released through integrated mine action activities implemented within high impacted communities and supported with other activities required in order to release the risk and to create conditions for the using of resources, enable reconstruction and sustainable return. List of locations for humanitarian demining is in process and shall be distributed by administrative units in Bosnia and Herzegovina and suspect area size. Locations for technical survey and clearance shall be distributed by entities, cantons/counties and Brčko District and it will be done in accordance to suspect area size, demining organizations plans and mine action annual plans.

Regarding priorities, it has to be emphasized that humanitarian demining in Bosnia and Herzegovina is implemented in accordance to Priority Lists adopted annually by entity governments. Apart from ordinary requests for risk release (sustainable return and infrastructure), agriculture land belonging to the 2nd category of priority is expected to be processed significantly by technical survey.

- In Bosnia and Herzegovina, humanitarian demining shall be implemented in accordance to Standing Operational Procedures and Standards for Mine and UXO Removal (documents adopted on 1 June 2003).

Following methods shall be used in technical survey and clearance:

- Manuel method (detector and prodder);
- MDD teams;
- Mechanical ground preparation.

In order to fulfill Convention demands and Strategic plan, 790 millions of KM is required. Following table contain detail overview of expanses required for land release:

Land release activities	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
General survey	4,9	4,9	4,9	4,9	4,9	4,9	4,9	4,9	4,9	2,68
Quality assurance	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	1,72
Mine clearance	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45
Technical survey	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45
Survey of III priority category	0,3	0,96	1,965	1,965	1,965	1,965	1,965	1,965	1,965	1,965
Mine risk education	1,79	1,77	1,76	1,74	1,73	1,57	0,96	0,93	0,92	0,7
Landmine victim assistance	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24
Research and development	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,05	0,05	0,05
MA advocacy	0,02	0,2	0,02	0,2	0,02	0,02	0,2	0,02	0,2	0,02

Table 17: detailed review of annual costs for risk release in million KM

Adoption of new Mine Action Law in Bosnia and Herzegovina, which is now in parliamentary procedure, will create conditions for stable and continuous funding of mine action from local government budgets stimulating maintenance and improvement of donor support. As for the new sources, it is important to emphasize that Bosnia and Herzegovina Ministry of Finance and Treasury will ensure shortfall of funds (new sources) from local budgets.

Type of source	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
New sources (local governments)	32,83	33,57	39,39	39,55	44,36	44,2	48,77	48,51	53,68	50,28
Donors	25	25	20	20	15	15	10	10	5	5
BiH	20,6	20,6	20,6	20,6	20,6	20,6	20,6	20,6	20,6	20

Table. 18: Funding per sources

Basis for the assumption that annual demining productivity shall remain constant is related to the fact that clearance and technical survey are completely defined and confirmed methods in demining process. Increase of productivity is possible only in case of significant improvement of the demining equipment efficiency. Mine Action Strategy (2009-2019) plans additional revision in case of significant technological improvements.

Bosnia and Herzegovina is planning to accomplish strategic plan with stable and continuous funding of local authorities and support of donors, based on available technical demining capacities.

18. Institutional, human, resource and material capacity available

Available resources by 2008:

36 accredited organizations for Mine Risk Education (MRE) and for humanitarian demining. Organizations are governmental (Army, 3 Civil Protections), Mine Detection Dog Center and Red Cross Society, nongovernmental (local and foreign) and commercial (local and foreign).

There are 38 accredited machines (for vegetation removal, for soil disturbance (flails, tillers and combined machines) and for waste removal. In average, 21 out of this number are used for technical survey operations. There are 1280 metal detectors accredited in accordance to Bosnia and Herzegovina Mine and UXO Removal Standards. There are 107 accredited mine detection dogs. Bosnia and Herzegovina Mine Action Center issued 2890 demining licenses, while in 2007; there were 1387 requests for licenses. Out of this number, 1170 are demining licenses, while 217 are licenses for management and supervision (team leaders, site manager, operational and quality control officers and dog handlers).

No	Organization	Number of machines	Number of dogs	Number of detectors
1.	" ASB " e.v. Deutschland Sarajevo	0	0	10
2.	" Minemon " d.o.o. Pale	0	0	2
3.	" Trotil " d.o.o. Sarajevo	0	0	5
4.	@aba d.o.o. Vitez	0	0	8
5.	AMPHIBIA	0	0	24
6.	BH DEMINING	1	10	59
7.	CIVIL Protection FBIH	5	7	95
8.	CIVIL PTOTECTION RS	5	4	92
9.	CIVIL PTOTECTION Brcko District BiH	0	0	6
10.	DETEKTOR	1	0	13
11.	EKSPLORING	0	0	5
12.	HANDICAP INTERNATIONAL	0	0	27

13.	INTERSOS	0	0	29
14.	M.D.D.C.	0	8	0
15.	ME. DE. COM.	2	2	5
16.	MECHEM COUNTERMINING	1	0	38
17.	MINOEKSPLOZIV DEMINIRANJE	0	0	31
18.	Mustella B&H d.o.o. Cazin	0	0	10
19.	N&N IVSA	2	5	46
20.	NGO C.I.D.C.	1	10	30
21.	NGO PRO VITA	0	7	35
22.	NGO STOP MINES	1	7	58
23.	NHO " Prom 1 " Istocno Novo Sarajevo	0	0	8
24.	NORWEGIAN PEOPLES AID (NPA)	4	7	74
25.	Bosnia and Herzegovina Armed Forces	8	17	271
26.	REASEURO WORLDWIDE	0	4	21
27.	ROEHLL UMWELT KONCERN	0	0	25
28.	TEHNOELEKTRO PODRU@NICA 001	1	0	32
29.	UDRU@ENJE ZA ELIMINACIJU MINA UEM	2	0	34
30.	UG DEMIRA	1	9	31
31.	UG EKO DEM	0	3	8
32.	UXB-BALKANS	2	6	107
33.	Udruzenje gradjana MINE ACTION GROUP	0	0	0
34.	Udru`enje za za{titu od mina "ZOM" Biha}	1	0	14
35.	Udruga " Pazi mine " Vitez	0	0	9
36.	VILAKOL	0	1	18
TOTAL:		38	107	1280

Table 19: Review of accredited organizations with its material and technical resources for 2008

BHMAC dispose with 54 surveyors distributed within 27 survey teams working in regional offices. Survey teams conduct systematic and general survey, releasing suspect area and preparing technical survey and clearance projects. Quality Control Management in Bosnia and Herzegovina involves following elements:

- Indirect quality control through supervision conducted by BHMAC with 8 senior inspectors and 28 quality control officers distributed within regional offices;

- Quality control conducted by two main offices in Sarajevo and Banja Luka and quality control management department officers (Sector for operations).

- Internal quality control conducted by accredited organizations with one quality control officer at minimum (currently there are 36 internal quality control officers).

- Supervision in accordance to contractor request is conducted by three authorized monitoring agencies (19 monitors in total).

80% of employed stuff in BHMAC is directly or indirectly engaged in general survey (project drafting and mine action supervision). Mine Action Strategy 2009-2019 plan includes capacity development of survey teams as well as inspection teams aimed to advance quality control in general. Also operational plans of Army and Civil Protection will be implemented as a crucial part of Mine Action Strategy 2009-2019.

ANNEXES:

1. Glossary of Terms

1. ***Mines****-explosive devices placed at or beneath the surface in order to be detonated due to presence, direct or indirect contact with person or vehicle in order to cause fatal casualties or material damage.*

2. ***ERW****– explosive remnants of war– explosive devices launched or left over intentionally, but were not activated due to malfunction, production error or some other reason and represent potential danger*
3. ***Mine Action—*** *set of activities aimed to release risk and to solve impact of mines and other explosive remnants of war (humanitarian demining, mine risk education, mine victim assistance and mine action advocacy).*

4. ***Humanitarian demining -*** *survey, mine clearance, marking, quality assurance and recording aimed to release impact caused by mines and explosive remnants of war.*
5. ***Suspected area–*** *areas identified through systematic survey as former confrontation zones in which mine contamination is possible.*
6. ***Risk area –*** *Identified risk locations as a result of general survey (determined borders, impact and priority levels).*
7. ***1st category of priority*** *– areas with recognizable need for movement of local population and occasional users and locations with resources for economic development*

8. ***2nd category of priority -*** *occasionally used locations or areas bordering first priority category locations .*

9. ***3rd category of priority*** *- suspected areas without known minefields and lowest impact level, but with possible existence of war remnants, considering they are placed along former confrontation lines. Rural areas without traditional or other recognizable needs of the local population or occasional users to access or to move in. There are no recourses for economic development of local community in these areas.*

10. ***Systematic survey*** *- analytical research aimed to map and estimate impact level according to available information*

11. ***LIS -*** *Landmine Impact Survey is independent report on local community impact level (undertaken in period 2002-2003 by Survey Action Center, James Madison and Cranfield University, Handicap International and BHMAC with the support of USA and Canada through ITF) and continuously updated by MAC survey activities.*
12. ***General survey*** *- mine action aimed to gather information in the field, determine risk area borders and prepare required elements for MA projects referring to certain suspected area location, without entering risk area.*

13. ***Urgent marking–*** *mine risk education preventive measure, conducted through marking of mine suspected areas borders. Usually employed as part of general survey.*

14. ***Permanent marking*** *- mine risk education prevention measure conducted through marking of the borders of mine risk area. Placement of signs is done by qualified organizations using more resistant material with 5 year duration.*
15. ***Technical survey*** *- operational soil treatment methods used to search certain area with a goal to identify and mark mined area borders and determine parameters for the planning of subsequent operations.*

16. ***Mine clearance*** *- removal of mines and unexploded ordnances from risk area and their destruction.*

17. ***Mine Victim Assistance*** *- a comprehensive process including medical, social and economic component aimed support and integrate mine victims in society .*
18. ***Mine Risk Education*** *- aimed to raise mine awareness, reduce possibility of new casualties and indicate long term aspect of the impact through education involving medias or direct contact with risk targeted groups*

19. ***Prohibited areas -*** *referes to temporary system of measures posed to divert entrance to the 3rd category of priority .These locations will be released by survey activities .*

Bibliography

Bosnia and Herzegovina Demining Law (Off. Gazette BiH, No. 05/02)

Bosnia and Herzegovina Mine Action Strategy 2002-2010

Bosnia and Herzegovina Mine Action Strategy 2005-2009

Annex 7 Dayton Peace Agreement implementation strategic plans

Bosnia and Herzegovina Poverty Reduction Strategic Plan

Evaluation of Mine Action Strategy 2005-2009

General assessment of mine situation 2007

BHMAC Standing Operational Procedures

Bosnia and Herzegovina Prioritization regulations

Bosnia and Herzegovina Mine Action Strategy (2009-2019)

Standing Operational Procedures for humanitarian demining in Bosnia and Herzegovina

Bosnia and Herzegovina mine and UXO removal Standards

Annual mine action reports

Annual report in accordance to Article 7

3. TABLES AND CHARTS

No.	Administrative area	No of minefield records per Canton	No of minefield records per Entity/District	No of minefield records per State
I	Federation of BH		14057	
1.	Central Bosnia Canton	2229		
2.	Herzegovina-Neretva Canton	1437		
3.	Posavina Canton	446		
4.	Sarajevo Canton	1 894		
5.	Canton no.10	787		
6.	Tuzla Canton	3036		
7.	Una-Sana Canton	1703		
8.	Zenica-Doboj Canton	2199		
9.	Bosnian Podrinje Canton	327		
II	Republic of Srpska		4996	
TOTAL	Bosnia and Herzegovina			19 057

Table. 1: Review of available minefield records in Bosnia and Herzegovina

Remarks:

-only 60% of existing minefield records collected

-65% of collected minefields records are imprecise, inaccurate

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Civilians injured	522	202	89	57	65	55	46	31	27	9	17	22
Civilians killed	110	88	60	38	35	32	26	23	16	10	18	8
Total	632	290	149	95	100	87	72	54	43	19	35	30

Table 2: Review of mine victims statistics in period 1996-2007

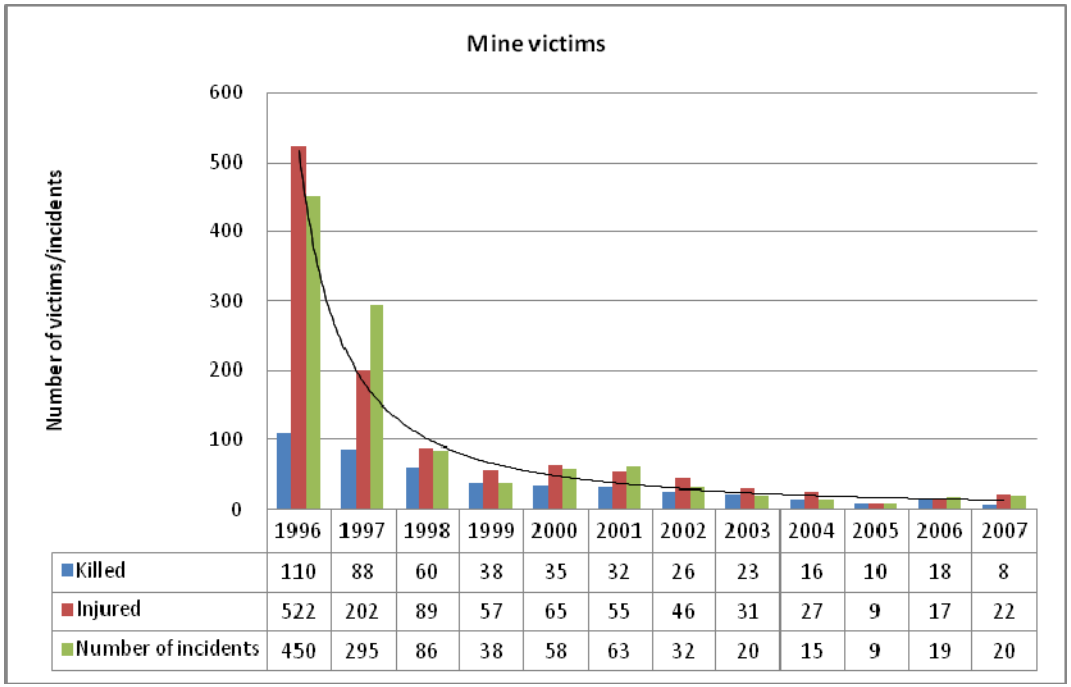


Chart 2: Mine victims statistics

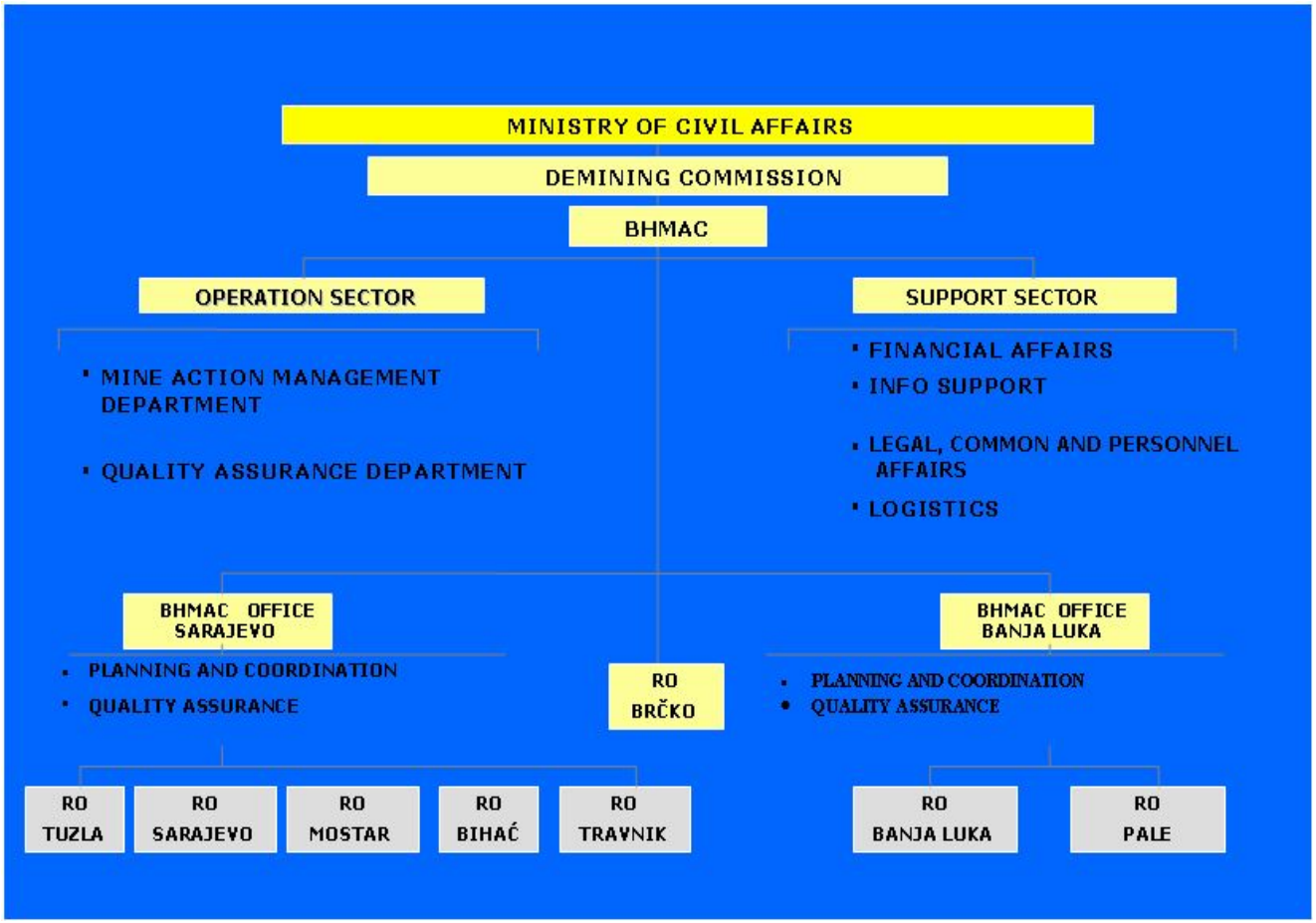


Chart 1: Bosnia and Herzegovina Mine Action Structure

Period	Land release method	Released area (km^2)
1998-2007	Systematic survey	2.139
1998-2007	General survey	220,3
1996-2007	Humanitarian demining	85,5
Total		2.445

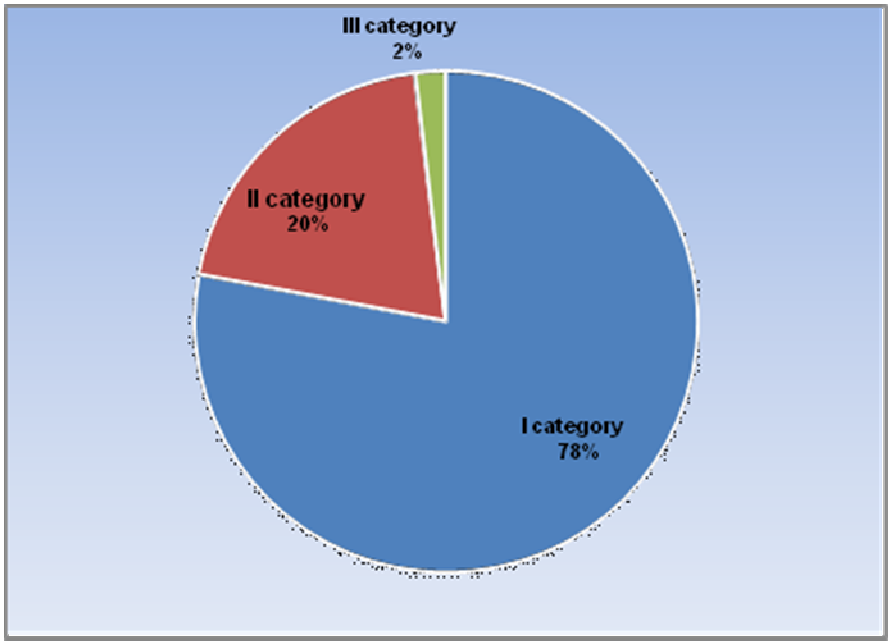
Table 4: Suspect area release in period 1996-2007

Year	Demined (m^2)	AP	AT	ERW	House
1996	8.500.000	32.975	5.927	31.774	0
1997					
1998	6.579.390				
1999	6.553.480				
2000	7.111.680				
2001	5.856.460				
2002	6.588.290	1.532	251	1.575	300
2003	6.510.950	1.495	156	1.066	181
2004	6.612.720	3.016	210	1.523	100
2005	10.607.600	2.120	183	1.475	65
2006	10.266.090	3.506	164	1.499	70
2007	10.327.650	1.843	186	1.007	35
TOTAL:	85.514.310	46.487	7.077	39.919	751

Table. 5: Results of humanitarian demining in period 1996-2007

Priority category	Area (m^2)
I	66.701.162
II	17.102.862
III	1.710.286
Total:	**85.514.310**

Table br. 6: Humanitarian demining per priority category



Graph 1: Qualitative aspect of humanitarian demining

Impacted groups	Population
Children	168964
Farmers	16563
Returnees	10284
Hunters and Fishermen	10005
Representatives of government institutions	5779
Members of Armed Forces	97
Other	37372
Medical staff	131
Total	249195

Table 7: Impacted groups covered by MRE program

Administrative region	Population
Bosansko-podrinjski	2236
Kanton 10	520
Hercegovačko-neretvanski	4794
Posavski	3053
Sarajevo	14681
Srednje-bosanski	30645
Tuzlanski	8765
Unsko-sanski	32471
Zapadno-hercegovački	557
Zeničko-dobojski	32985
Federation BiH	130707
Republic of Srpska	113521
Brčko District	4967
Total	249195

Table 8: Number of people covered by MRE program per administrative regions

No	Organization
1	BH DEMINING
2	Civil Protection FBIH
3	Civil Protection RS
4	Genessis Project
5	BiH Red Cross Society
6	Intersos
7	NGO C.I.D.C.
8	Pro Vita
9	Stop Mines
10	NO Posavina bez mina Brčko Distrikt BiH
11	NPA
12	BiH Armed Forces
13	Tehnoelektro podružnica 001
14	UXB-Balkans
15	Udruženje AMI Brčko Distrikt BiH

Table 9: Organizations accredited for MRE activities in Bosnia and Herzegovina

Year	Number of projects realized	Marked area (km^2)
2000	2	0,3
2001	6	0,6
2002	5	0,6
2003	20	5,8
2004	58	7,9
2005	130	18,3
2006	45	4,9
2007	97	12,5
Total	363	50,9

Table 10: Results of permanent marking in Bosnia and Herzegovina

Year	2002	2003	2004	2005	2006	2007	2008
Financial resources made available by the State Party	10.4	12.9	15.4	17.7	20.1	19.4	20.1
Financial resources made available by actors other than the State Party	17.5	15.3	16.7	30.6	30.4	28.8	30.4
Totals:	27.9	28.2	32.1	48.3	50.5	48.2	50.5

Table br. 11: Allocated funds for mine action in Bosnia and Herzegovina

Administrative region	Level of impact		
	LOW	MEDIUM	HIGH
Unsko-Sanski kanton	43	52	25
Tuzlanski kanton	52	42	10
Posavski kanton	3	8	16
Zeničko-Dobojski kanton	81	55	6
Bosansko-Podrinjski kanton	41	14	4
Srednje-Bosanski kanton	116	90	11
Hercegovačko-Neretvanski kanton	90	48	4
Zapadno-Hercegovački kanton	1	0	0
Kanton Sarajevo	50	29	2
Herceg-Bosanski kanton	68	36	1
Federation BiH	545	374	79
District Brčko	11	6	20
Republic of Srpska	328	245	23
Bosnia and Herzegovina	884	625	122

Table. 12: Review of impacted communities in Bosnia and Herzegovina per administrative region

Name of administrative region	Total suspected area (km^2)	Suspected area per category (km^2)			HIGH IMPACTED AREA	MEDIUM IMPACTED AREA	LOW IMPACTED AREA
		I category	II category	III category			
Una-Sana Canton	147,21	22,74	85,13	39,34	45,14	70,06	32,02
Posavina Canton	45,63	5,82	25,14	14,67	33,67	10,2	1,76
Tuzla Canton	88,81	12,03	34,93	41,84	14,12	42,72	31,97
Zenica-Doboj Canton	142,69	16,43	20,24	106,01	9,1	75,17	58,42
Bosnian Podrinje Canton	72,47	1,78	15,15	55,53	4,78	39,75	27,94
Central Bosnia Canton	206,02	24,97	46,26	134,79	16,44	100,65	88,93
Herzegovina-Neretva Canton	236,64	15,18	51,57	169,89	5,54	130,69	100,41
West Herzegovina canton	2,12	0	0	2,12	0	0	2,12
Sarajevo Canton	99,97	7,8	13,44	78,73	2,08	49,15	48,74
Herzeg-Bosnian Canton	171,93	20,93	42,83	108,17	2,74	97,52	71,67
Federation of BiH	1213,49	127,69	334,7	751,11	133,62	615,9	463,99
Republic of Srpska	501,37	81,67	162,97	256,73	63,63	235,31	202,43
Brcko District	40,26	11,5	12,88	15,87	34,45	2,06	3,74
Bosnia and Herzegovina	1.755,12	220,86	510,56	1.023,71	231,7	853,28	670,16

Table 13: Size of the suspected area in Bosnia and Herzegovina on the end of 2007.

Name of administrative unit	Category of impacted community			Total
	High	Medium	Low	
Una-Sana Canton	10,80%	12,58%	23,85%	15,94%
Posavina Canton	17,60%	3,16%	0,00%	5,67%
Tuzla Canton	30,32%	9,05%	2,45%	12,09%
Zenica – Doboj Canton	18,29%	15,80%	10,95%	14,78%
Bosnian Podrinje Canton	0,64%	8,84%	6,50%	6,02%
Central Bosnia Canton	7,17%	16,94%	7,67%	11,39%
Herzegovina Neretva Canton	11,89%	21,24%	10,11%	15,16%
West Herzegovina Canton	0,00%	0,00%	0,00%	0,00%
Sarajevo Canton	1,85%	10,53%	7,81%	7,46%
Herzeg – Bosnian Canton	1,42%	1,87%	30,67%	11,48%
Federation of Bosnia and Herzegovina	52%	62%	64%	60%
Republic of Srpska	36%	27%	36%	32%
Brcko District	11%	11%	0%	8%
Bosnia and Herzegovina	28%	40%	31%	100%

Table.14: Percentage overview of priorities per administrative units on the end of 2007.

Purpose of land	Area (km2)
Return	68
Housing	33,7
Infrastructure	37
Education and culture	1,7
Roads	25,8
Military locations	1,2
Industry	3,5
Tourism	3,5
Agriculture	645
Non-arable land	16,9
Marshland	1,6
Forest	898
Other	20,8
Total	1755

Table 15: Amount of remaining suspect land for different purposes of use

Risk release	2009	2020	2011	2012	2013	2014	2015	2016	2017	2018
General and technical survey of the III priority category	5	16	32,75	32,75	32,75	32,75	32,75	32,75	32,75	32,75
Released by clearance	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27
Released by technical survey	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63
General survey of the I and II priority category	115,75	115,75	115,75	115,75	115,75	115,75	115,75	115,75	55	0
TOTAL	151,65	162,65	179,4	179,4	179,4	179,4	179,4	179,4	118,65	63,65

Table 16: Operational plan for period 2009-2019

Risk release activities	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
General survey	4,9	4,9	4,9	4,9	4,9	4,9	4,9	4,9	4,9	2,68
Quality assurance	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	1,72
Mine clearance	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45
Technical survey	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45
Survey of III priority category	0,3	0,96	1,965	1,965	1,965	1,965	1,965	1,965	1,965	1,965
Mine risk education	1,79	1,77	1,76	1,74	1,73	1,57	0,96	0,93	0,92	0,7
Landmine victim assistance	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24
Research and development	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,05	0,05	0,05
MA advocacy	0,02	0,2	0,02	0,2	0,02	0,02	0,2	0,02	0,2	0,02

Table 17: detailed review of annual costs for risk release in million KM

Type of source	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
New sources (local governments)	32,83	33,57	39,39	39,55	44,36	44,2	48,77	48,51	53,68	50,28
Donors	25	25	20	20	15	15	10	10	5	5
BiH	20,6	20,6	20,6	20,6	20,6	20,6	20,6	20,6	20,6	20

Table. 18: Funding per sources

Principal demining action according to task category and LIS impact

Community	Category 1	Category 2	Category 3
High impact	**- Clearance** **- Technical survey** **- Urgent marking**	**- Technical survey** **- Clearance** **- Permanent marking**	**- Land release by survey** **-Prohibited areas**
Medium impact	**- Clearance** **- Technical survey** **- Urgent marking**	**- Technical survey** **- Clearance** **- Permanent marking**	**- Land release by survey** **-Prohibited areas**
Low impact	**- Clearance** **- Technical survey** **- Urgent marking**	**- Technical survey** **- Clearance** **- Permanent marking**	**- Land release by survey** **-Prohibited areas**

„Principal demining action according to Task Category and LIS Impact“

PRIORITETIZATION MODEL

LEVEL DETERMINATION CRITERIA

No.	Class	Criteria	Threat level *(MA type)*
1.	**PROM mines**	There are indications of PROM mines on the location. Indications mean that are for the location available data on mine incidents or accidents, minefield records or reliable witnesses.	**H - High** *(Clearance)*
2.	**Almost cetrian presence of minefield**	**Area was between confrontation lines; area is disused, there are minefields records and/or participant or reliable witness of mine placement and visible traces of possible mine risk.**	**H - High** *(Clearance)*
3.	**Probable presence of minefield**	**Area was between confrontation lines; area is disused, there are no minefields records there are indication and particular certain traces that indicate possible mine risk.**	**M - Medium** *(Technical survey)*
4.	**Not probable presence of minefield**	**Area was between confrontation lines; area is disused or partly used, there are no minefields records or traces that indicate possible mine risk.**	**L - Low** *(General survey)*

CRITERIA FOR FIRST PRIORITY OF HUMANITARIAN NATURE

PRIORITY MARK	PRIORITY CLASSIFICATION	DESCRIPTION
H.1.1.	HOUSING	Demining for the reason of reconstruction of housing and accompanying facilities, access roads and minimum area of surrounding land within the borders of logical geographic unit
H.1.2.	INFRASTRUCTURE	Demining for the reason of reconstruction of infrastructural facilities as road alignments, electricity network, water supply lines, gas and telephone installations with accompanying facilities and prescribed safety zone, as well as rehabilitation of graveyards and other sacral facilities.
H.1.3.	PUBLIC INSTITUTION	Demining for reason of rehabilitation, reconstruction and safe use of all public and accompanying facilities, access roads and minimum area of surrounding land within the borders of logical geographic unit
H.1.4.	ECONOMIC RESOURCES	Demining of agricultural land, parts of forests with firewood and other natural resources necessary for livelihood of local population in impacted communities
H.1.5.	PREVENTIVE DEMINING	Demining with the purpose to place permanent mine-warning signs, as well as clearance (mine-lifting) of visible mines and UXOs regardless to purpose of land use

CRITERIA FOR FIRST PRIORITY CATEGORY

R.1.1.	HOUSING	Demining for the reconstruction of housing and accompanying facilities, access roads and minimum area of surrounding land within the borders of logical geographic unit
R.1.2.	PUBLIC FACILITIES	Demining for the construction of public facilities with accompanying contents, access roads and minimum safety area within the borders of logical geographic unit
R.1.3.	ECONOMY	Demining for the construction of economic capacities significant for development of economy and employment
R.1.4.	COMMUNICATION	Demining for construction of roads, railway, water and air communications as well as facilities and telecommunication lines within prescribed minimum safety zone
R.1.5.	ENERGY	Demining for the construction of electricity network, water supply line, heat line, gas line, energy facilities with accompanying contents and prescribed minimum safety zone.
R.1.6.	WATER SUPPLY	Demining for the reconstruction, construction and maintenance of water supply facilities, regulation of rivers and lakes, dams and channels and water protection
R.1.7.	AGRICULTURE	Demining of high productive arable land, orchards and pastures with accompanying facilities in order to provide economy development and employment.
R.1.8.	ENVIRONMENT	Demining for the protection of environment, especially in order to remove garbage depots and conduct the measures in impacted and protected areas (national parks, nature parks, nature monuments and protected landscapes).

R.1.9.	TOURISM	Demining of the areas that used to be or can be tourist destinations.
R.1.10.	FORESTRY	Demining for the exploitation, maintenance and protection of forests

CRITERIA FOR THE SECOND PRIORITY CATEGORY:

The second priority category contains locations that are in occasional use or in contact zone with location of first priority category. These areas represent minimum safety zone of already treated first category locations. They are defined within borders of logical geographic unit and not traditionally important, in sense of populations' motivation to move toward peripheral area, treated as the third demining priority category.

CRITERIA FOR THE THIRD PRIORITY CATEGORY:

Suspected area without known mine threat, with lowest possible mine risk and impact, but with eventually possible remanence of conflict considering that are on former confrontation lines. Those are rural area without traditional or other recognizable motives to local population and occasional users to access or to move into area. They do not contain natural resources of strategic importance.

MATRIX FOR DETERMINATION OF RISK LOCATION'S PRIORITY LEVEL

THREAT LEVEL

BENEFIT LEVEL	HIGH	MEDIUM	LOW
1.HUMANITARIAN CHARACTER CATEGOY **1.DEVELOPMENT CHARACTER CATEGORY**	**1**	**2**	**4**
2. CATEGORY	**3**	**5**	**7**
3. CATEGORY	**6**	**8**	**9**

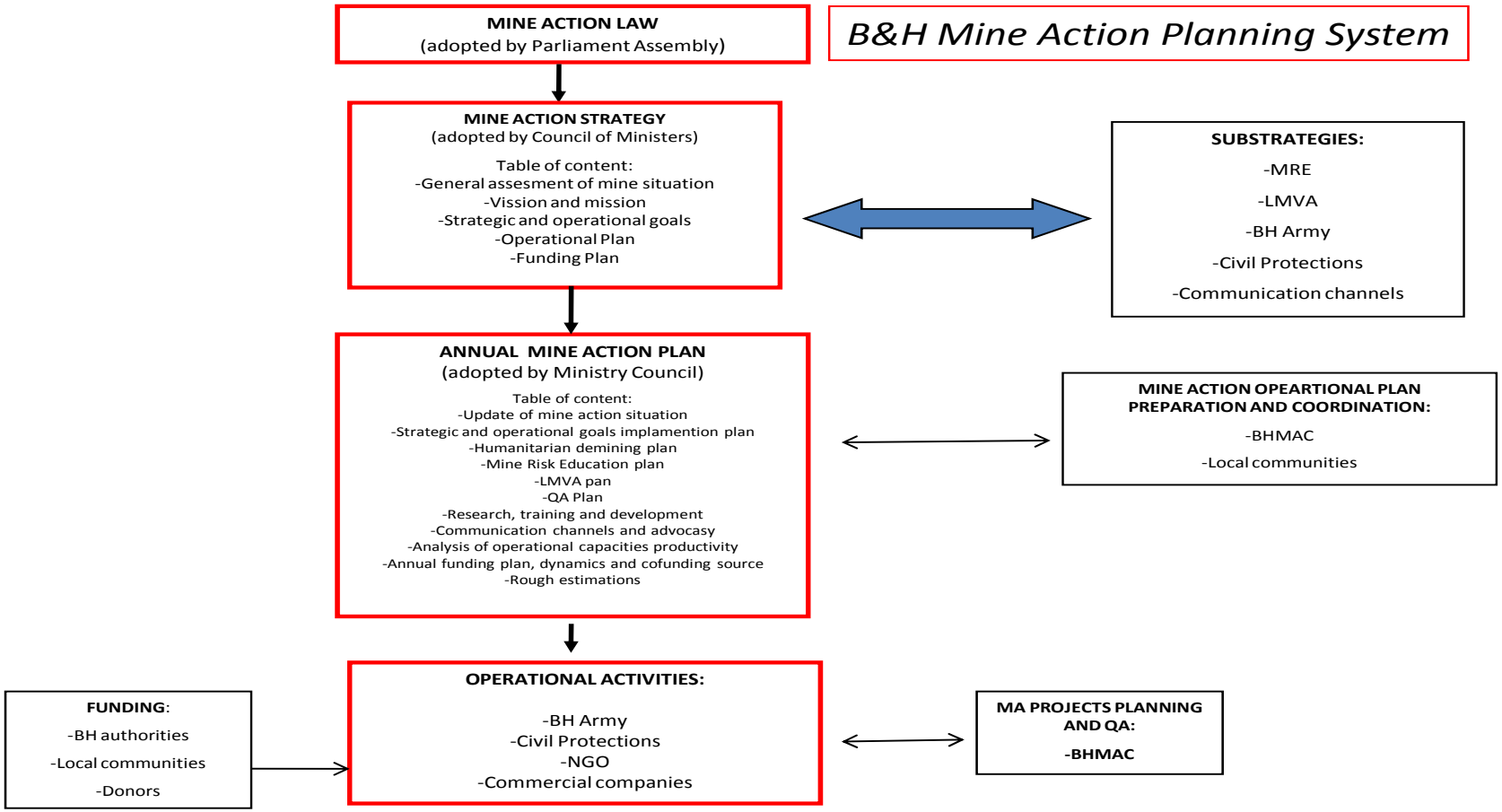
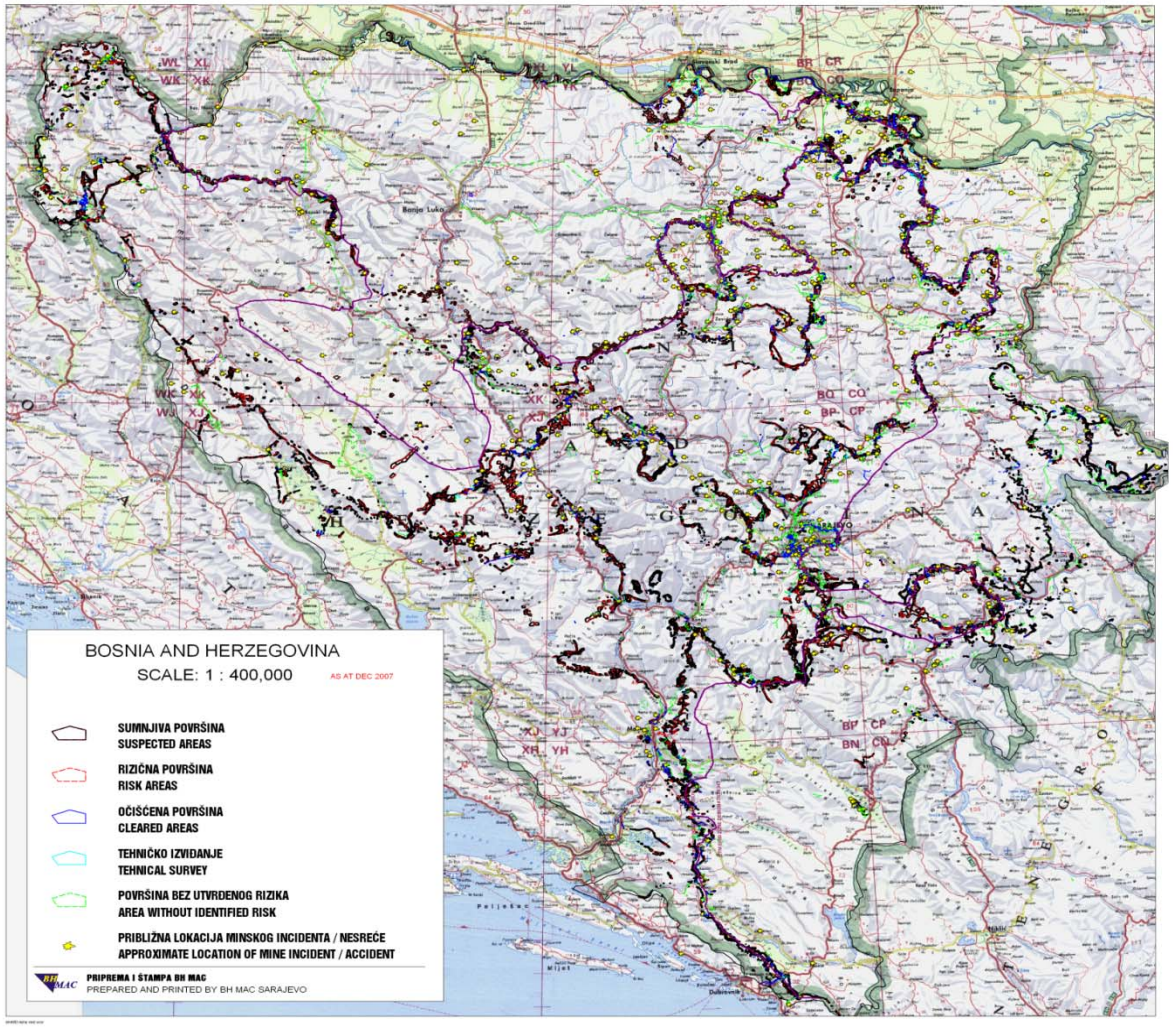
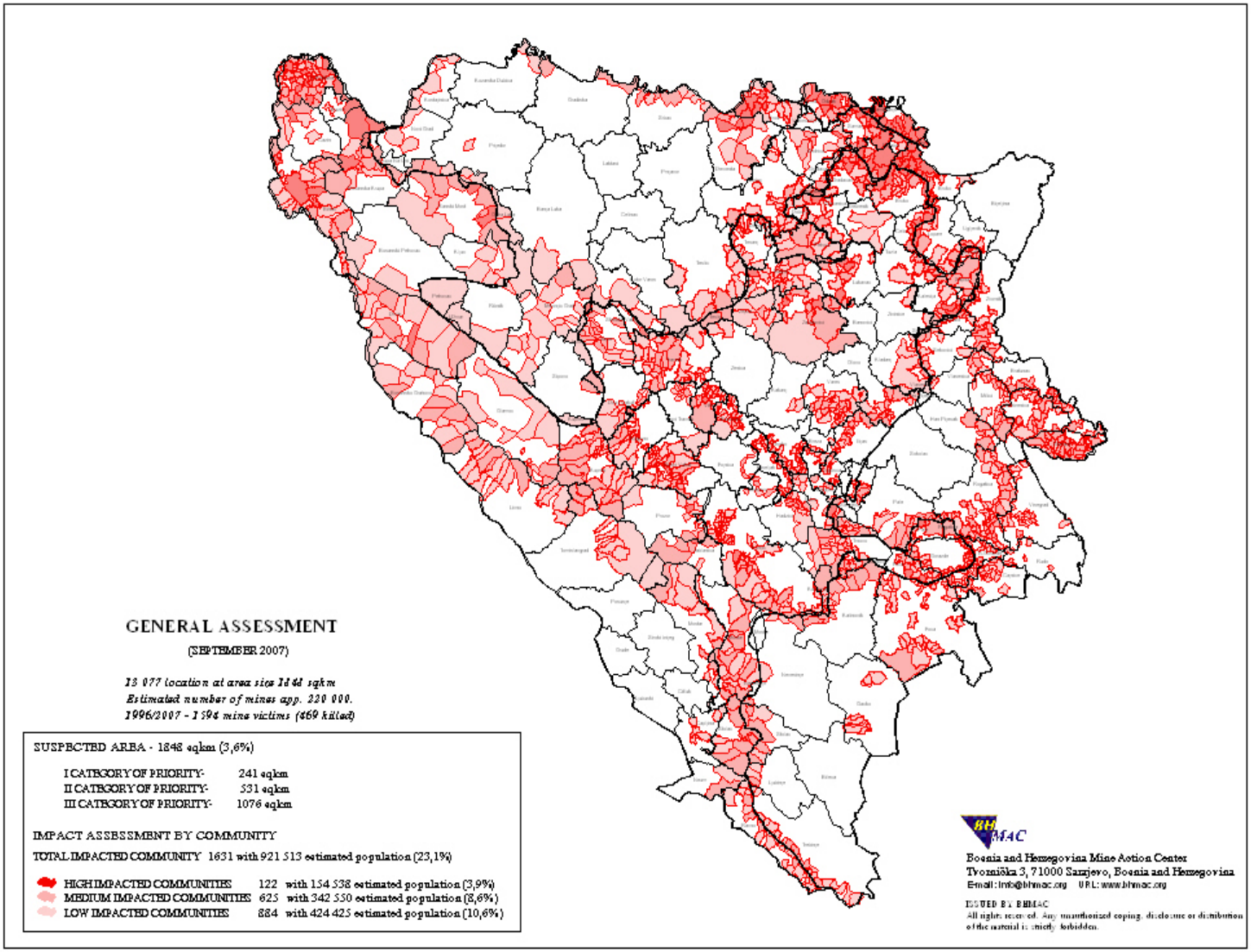


Chart 3: Bosnia and Herzegovina mine action planning system

4. MAPS



Picture 1: Bosnia and Herzegovina mine situation (by 2007)


GENERAL ASSESSMENT
(SEPTEMBER 2007)
13 077 location at area size 1d 4d sqkm
Estimated number of mines app. 220 000.
1996/2007 - 1 594 mine victims (469 killed)
SUSPECTED AREA - 1848 sqkm (3,6%)
I CATEGORY OF PRIORITY- 241 sqkm
II CATEGORY OF PRIORITY- 531 sqkm
III CATEGORY OF PRIORITY- 1076 sqkm
IMPACT ASSESSMENT BY COMMUNITY
TOTAL IMPACTED COMMUNITY 1631 with 921 513 estimated population (23,1%)
HIGH IMPACTED COMMUNITIES 122 with 154 538 estimated population (3,9%)
MEDIUM IMPACTED COMMUNITIES 625 with 342 550 estimated population (8,6%)
LOW IMPACTED COMMUNITIES 884 with 424 425 estimated population (10,6%)
BHMAC
Bosnia and Herzegovina Mine Action Center
Tvornička 3, 71000 Sarajevo, Bosnia and Herzegovina
E-mail: bmb@bhmac.org URL: www.bhmac.org
ISSUED BY BHMAC
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Picture. 2: Mine impact per communities

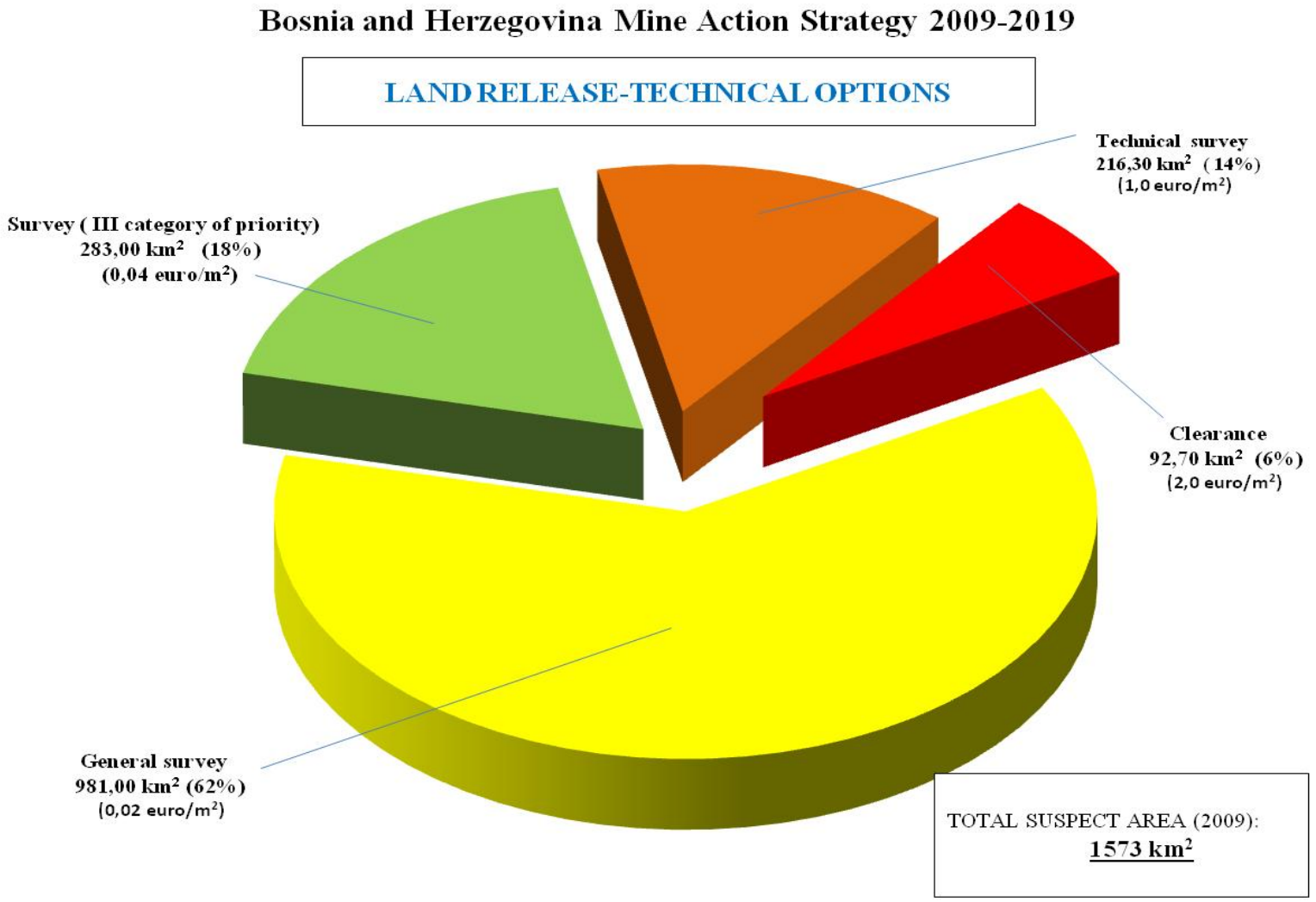


Chart 4: Land release-Tehnical options

Summary Mine fields per municipality in Bosnia and Herzegovina

Municipality	No. Minefield
Banja Luka	68
Banovići	96
Berkovići	47
Bihać	450
Bijeljina	6
Bosanska Kostajnica	32
Bosanska Krupa	532
Bosanski Brod	54
Bosanski Petrovac	7
Bosansko Grahovo	60
Bratunac	19
Brčko	741
Breza	29
Bugojno	108
Busovača	122
Bužim	43
Čajniče	17
Čapljina	8
Cazin	48
Čelić	282
Čelinac	2
Derventa	49
Doboj	477
Doboj - Istok	115
Doboj - Jug	60
Dobretići	9
Donji Vakuf	322
Donji Žabar	66
Drvar	66
Foča	97

Fojnica	57
Gacko	9
Glamoč	132
Goražde	71
Gornji Vakuf	248
Gračanica	208
Gradačac	457
Gradiška	42
Hadžići	142
Han Pijesak	2
Ilidža	441
Ilijaš	356
Istočni Drvar	3
Istočni Stari Grad	14
Jablanica	48
Jajce	56
Jezero	2
Kakanj	8
Kalesija	249
Kalinovik	117
Kasindo	57
Kiseljak	161
Kladanj	182
Ključ	32
Kneževo	126
Konjic	239
Kotor Varoš	276
Kozarska Dubica	12
Kreševo	135
Krupa na Uni	137
Kupres	313
Kupres RS	2
Livno	165
Ljubinje	25

Lopare	136
Lukavac	217
Lukavica	37
Maglaj	474
Milići	2
Modriča	3
Mostar-Istok	340
Mostar-Zapad	175
Mrkonjić Grad	146
Neum	4
Nevesinje	6
Novi Grad	4
Novi Travnik	51
Odžak	16
Olovo	345
Orašje	348
Osmaci	30
Oštra Luka	114
Pale	153
Pelagićevo	274
Petrovac	3
Petrovo	201
Prijedor	3
Prozor-Rama	81
Ravno	309
Ribnik	48
Rogatica	49
Rudo	10
Šamac	266
Sanski Most	396
Sapna	318
Sarajevo-Centar	65
Sarajevo-Novi Grad	396
Sarajevo-Stari Grad	115

Šekovići	98
Šipovo	43
Sokolac	3
Srbac	46
Srebrenica	59
Srebrenik	1
Stolac	183
Teočak	83
Tešanj	198
Teslić	580
Tomislavgrad	57
Travnik	556
Trebinje	176
Trnovo	164
Trnovo RS	102
Tuzla	192
Ugljevik	99
Ustiprača	55
Vareš	29
Velika Kladuša	149
Visoko	207
Vitez	344
Vlasenica	16
Vogošća	93
Zavidovići	607
Zenica	21
Zvornik	221
Žepče	136
Živinice	51
Unknown	52
Total	18322

BOSNIA AND HERZEGOVINA
MINE ACTION STRATEGY
(2009-2019)

Document is adopted by the State Ministry Council during its 45 session, held on 24 April 2008 in Sarajevo.

CONTENTS

INTRODUCTION

Twelve years after the end of the conflict in Bosnia and Herzegovina the country still faces the problem of a high level of mine contamination. Despite the efforts made and significant improvements in mine action management, mines still represent one of the main obstacles for the safety of citizens and economic and social development of BiH. Although a great deal of work has been invested in the process of identification and clearance of mine contaminated areas, they still can be found almost all over the country. Identifying locations of mines is very complicated, since most of them are not correctly documented or the records are lost . An additional specificity of the problem in BiH which makes its resolution even more difficult is the fact that minefields most often have unknown patterns, with individually placed mines or mine groups in low density concentrations and broader areas.

Beside the abovementioned impediment, mine action is generally additionally complicated by insufficiently developed technology for field operations, which makes the whole process slow and expensive. This is particularly so in the survey process, which is itself the greatest need in BiH.

Mine action in Bosnia and Herzegovina began in 1996, with the establishment of United Nations Mine Action Centre –UNMAC. The Centre was formed in order to build a local management structure and operational mine action capacity. All available minefield records were gathered through SFOR (18 600) and a central database was established as a basic tool for further planning and reporting. Demining operational activities in the field were intensively conducted through UN and World Bank programs, and with the engagement of certain foreign NGOs and commercial organizations.

The highest number of victims was registered in 1996, averaging almost 50 a month. Mine action was described as a precondition for the reconstruction and development of natural and economic capacities and return of refugees and displaced persons.

In July 1998, national structures took over the responsibility for demining activities, but with continued financial, expertise and technical assistance from international community. Entity Mine Action Centres were established—RSMAC and FMAC and a Coordination Centre (BHMAC). Humanitarian demining continued to be implemented mainly by foreign agencies, but there was also building of local capacities. The main responsibility and authority was with the Council of Ministers and Entity Governments, which through their bodies—Demining Commission and Mine Action Centre – ensured planning, coordination, recording and improvement of mine action quality assurance.

The adoption of the Law on Demining in 2002, established a central structure, BHMAC at the state level, immediately under the Ministry of Civil Affairs. In the same year the first Mine Action Strategy was made for the period 2002-2009, which significantly improved the functionality of the structure, along with quality assurance, cost-efficiency and effectiveness of the overall process.

At the end of 2004, an evaluation of the program concluded that the Vision of the first Strategy was too optimistic and unrealistic and that the size and complexity of the problem greatly exceeded available funding, technology and general support to program implementation.

The adoption of a revised Mine Action Strategy for period 2005-2009 introduced a more realistic approach with a vision of ''a country free of mine impact by 2009”. The

operational strategy sought the removal of mines from entire first category of priority and permanent marking of the second and third category locations.

The Revised Strategy in BiH, based on systematic survey results and Landmine Impact Survey (LIS) directed activities more efficiently and enabled better exploitation of limited funding and greater efforts were made in mine risk education and mine victim assistance. According to the statistics, the incident rate dropped to less then 3 victims per month in period 2003 - 2006.

Notable also is a significant increase of local authority participation in demining funding and a gradual reduction of donor funds.

The International community initiated a gradual transition for responsibility of resource mobilization to local authorities and sources. This is an ongoing and continually increasing process, although funding of mine action in BiH still greatly depends on support of traditional friendly Governments of donor countries and NGOs that support and implement mine action in BiH.

Previous experience indicates a big discrepancy between realistic needs for mine action in BiH and possibilities of the country and its supporters. The current opportunity for Bosnia and Herzegovina is to overcome the mine threat by implementation of initiatives and solutions contained in Strategy for 2009-2019. Key to this opportunity is the support of local authorities and key partners from governmental and NGO sectors of donor countries, as well as a relevant expert international institutions and organizations.

On December 3rd 1997, Bosnia and Herzegovina signed the Convention banning the production, use, stockpiling and transport of AP mines. The Convention also contains obligation to clear all known mined areas by March 2009. Accordingly, the Council of Ministers on 28 November 2006 made a decision to start the evaluation process of the existing Mine Action Strategy for the period 2005-2009, as well as the preparation of new strategic document for the period 2009-2019. This second document would provide the basis for an extension of the Convention deadline for total removal of mines.

In accordance with the evaluation of current strategic and operational goals, financial, operational and resources plans, as well as analysis of mine victim assistance and general assessment of the mine problem, it can be concluded that general mine impact has been significantly reduced. However, there is still a lot of work and time ahead in order to successfully complete the process. The first urgent demining phase was implemented, despite adverse circumstances and obstacles, especially in the lack of funding. A need was recognized to plan mine action according to priorities and country's needs, as well as available knowledge and techniques in the following period of ten years (2009-2019), contained in the proposal of Strategic plan for the period 2009-2019.

Evaluation of exiting Mine Action Strategy (2005-2009) and predictions for the period September 2007-December 2008

According to the results of evaluation of existing Mine Action Strategy over the period 2005 – 2007 and assessment for 2008, it can be concluded that there has been significant progress in the elimination of the general mine threat.

Demining of urban areas has been finalized, as well as of locations considered as priorities for the return of refugees and displaced persons, and for reconstruction of basic infrastructure.

National mine action structure has been developed and operational capacities for mine action have been built; standards were prepared for the organization, field implementation, recording and quality control of operational activities.

It should be pointed out that funds planned were not allocated for any of the years and available operational capacities were significantly unemployed. Due to unrealized funding predictions, Strategic plan, although revised, was not properly and fully implemented.

The main trends identified during realization of Strategic plan 2005-2009, are likely to continue over the next period.

A recognizable trend is that donor participation will remain moderate, while the increase of participation of local communities in funding of mine action is visible, but insufficient.

Operational capacities are fully developed with a tendency of further improvement. This is essential and with adequate financial support, it should realize goals set in the Strategic plan.

Assumptions for the Plan:

Suspected area at the beginning of 2009. = 1573 km2 ;

Total number of locations = 13.077

Risk area at the beginning of 2009 :

I category 88 km^2 number of locations= 3214
II category 221 km^2 number of locations= 4201

Revised suspected area of III category : 283 km^2 number of locations = 5662

Estimated number of mines and ERW = 220 000

CONCEPT OF THE PLAN

- **FULFILLMENT OF OBLIGATIONS POSED BY THE CONVENTION**

- **REALISTIC BASIS FOR THE CONTINUITY AND STRATEGIC PROGRESS OF MINE ACTION IN FOLLOWING PERIOD.**

- **BY 2019, GRADUALLY ELIMINATE SUSPECTED AREA:**

- IN FIRST AND SECOND CATEGORY OF PRIORITY , THROUGH ITS REDUCTION BY GENERAL AND TECHNICAL SURVEY AND MINE CLEARANCE, AND CONTINOUS PREVENTION ACTIVITIES USING URGENT AND PERMANENT MARKING AND MINE RISK EDUCATION.

- IN THIRD PRIORITY CATEGORY THROUGH SURVEY ACTIVITIES .

The final elimination on these locations will be done by survey in period 2013- 2018.

Standard operational procedures for survey of these locations as well as an operational plan will be gradually developed during the first revision of Strategy in 2012 .

Proposed solution will represent additional challenge for further development of humanitarian demining profession, as well as an opportunity for support from relevant expert institutions, local authorities and donors.

The concept of the plan is sound, and with stable and continuous funding it can be realized with existing operational capacities, as well as further modernization of equipment and constant improvements in planning and quality control. It is realistic to expect more favourable initial position for realization of the 2008 plan. A special practical contribution to the Strategy will be strategy documents of state institutions including BiH Armed Forces and Civil Protections.

Sub strategies are also planned for the special areas of mine risk education and mine victim assistance.

The Strategic plan together with its annexes is based on realistic approach to problem solving, consideration of achieved results and needs, and complete fulfilment of responsibilities toward the Ottawa Convention.

With adequate support by 2019, realization of this Strategy will see BiH as a country free of mines, with no mine incidents and with mine victims integrated into society.

2. PRECONDITIONS IN 2008

(strategic shift)

During this year, Bosnia and Herzegovina Mine Action Centre made a Study on the general assessment of the mine problem. The study included updating of LIS and systematic survey, which was then integrated in a new model of overall general assessment. The new model of general assessment significantly improved the understanding of the scope and nature of the problem. It was then used to analyze the situation and develop operational and financial options.

Results of evaluation of existing Strategy and the realization of financial, operational and resources plans, indicated a need to make a strategic shift in 2008 in order to create the environment and conditions for realization of the plan from 2009.

Strategic shifts in 2008 would ensure an initial basis for mine action planning for the period of next 10 years, with stable indicators and clear goals and results which will be measurable and visible each year. This advancement should be reflected in the expansion of the mine management structure to local communities, as well as in the stabilization of funding.

Issuance of annexes and amendments of Mine Action Law will secure additional and continuous funding through national budgets, which hopefully will represent an additional stimulus to the interest and confidence of donors.

The annexed Law will state responsibilities for mine action at all levels of authority . Responsibilities on all authority levels will be carried out through co funding of the Strategic plan, planning, prioritization, conduct of mine risk education activities and measures of prohibition of movement on the locations of the third priority category within local communities.

Co funding preparations for annual operational plans will be implemented by BHMAC in cooperation with relevant authority representatives at all levels, and in accordance with priorities and available resources for following year. Shortfalls should be covered from the budget of BiH institutions, possible by loan and new donor sources.

In this way, financial and operational mine action plans would be timely adjusted and operationally prepared for the beginning of each new demining season. Annual operational plans will contain clear projections of planned operational activities, priorities and funding, which will be presented by BiH institutions, local authorities, wider public and donor community.

According to Strategic plan 2009.-2019, national budgets should ensure progressive increased financial participation commencing in 2009.

The initiative of BiH authorities in increase of mine action funding is seen as an incentive for increased donor participation.

Preconditions in 2008:

Adoption of annexes and amendments of BiH Mine Action Law creates conditions for the following:

- Establishment of stable and continuous funding of mine action from the budgets of local authorities with stimulus for continuation and improvement of donor support.
- Establishment of a wider structure for action at the local community level and especially in the areas of planning and prioritization, co funding, reviewing and reporting, as well as participation in mine risk education activities and movement prohibition measures .
- Improvement of the quality assurance system.
- Criminalization of the destruction or removal of mine warning signs.
- Improvement of status for the employees in humanitarian demining operations.

Mine Risk Reduction

- *By the end of 2008, establish standard operational procedures for the prohibition of movement into or in locations of the third category of priority .*
- By the end of 2008, in cooperation with local authorities, adjust and define locations of the third category of priority , which will be treated with movement prohibition measures and later with survey activities.
- By the end of 2008, increase, train and equip BHMAC survey and inspection capacities in scope of 10%, according to the Strategic plan requirements.
- By the end of 2008, develop a Study on condition and functionality of found mines and quality of available minefield records.
- From 2009 establish local structures for mine action cooperation with BHMAC in entities, all municipalities in BiH and Cantons in the Federation and Brčko District.
- By the end of 2008 develop strategies and operational plans of the Armed Forces and Civil Protection teams in accordance with the state Strategic plan.
- By the end of 2008 ensure funds and start implementation of an improved Informational system networking project within BHMAC and its organizational units .

Funding

- Annual operational plans, as of budget year 2009, should create conditions for stable and continuous allocation of funds for mine action from all available sources, in accordance with strategic plan .

- By the end of 2008, establish national capacities for the process of organization, procedure and evaluation for mine action tenders procedures.
- By the end of 2008, establish capacities for adequate donor relations.

Mine risk education

- Until the end of 2008, undertake full integration of mine risk education in school curriculum and start with its continuous implementation in educational process.
- Until the end of 2008, develop sub strategy and action plans in accordance with Strategic plan.

Mine Victim Assistance

- By the end of 2008, establish system for proper exchange of information, forming of working groups, and periodical organization of workshops and seminars in order to improve efficiency of all responsible organizations involved in mine victim assistance activities.
- By the end of 2008, establish information system, available to all stakeholders engaged in the field of mine victim assistance .
- By the end of 2008, develop Mine Victim Assistance Sub strategy and Action Plan in accordance with Strategic Plan.

VISION

BOSNIA AND HERZEGOVINA FREE OF MINES BY 2019.

MISSION

Ensure conditions for a continuous and efficient mine action program aimed to establish a safe environment for normal and prosperous living for all citizens in BiH, and with mine victims fully integrated into society.

STRATEGIC AND OPERATIONAL GOALS:

Mine risk elimination

STRATEGIC GOAL 1. - Ensure the conditions for continuous and efficient mine action operations, in accordance with country's needs, required material, financial and human resources and high level of quality assurance.

Operational goal 1.1 By the end of 2018, completely eliminate suspected area of the first and second category of priority, reducing it through general and technical survey and mine clearance.

Operational goal 1.2 In the process of the first Strategy revision in 2012, develop standard operational procedures for survey activities of the third category of priority, as well as Operational Plan for the period 2013-2019.

Operational goal 1.3 By the end of 2018, completely eliminate third category of priority suspected area using prohibition measures and survey activities.

Operational goal 1.4 By the end of 2012 and in order to prepare the first revision of Mine Action Strategy, BHMAC will finalize general survey activities, in accordance with priorities set in general assessment report made in 2007.

Operational goal 1.5 Organize and continously stimulate engagement of external associates (informers) in the general survey process.

Operational goal 1.6 Based on experience, continuously improve Standards for mines and ERW disposal and Standard operational procedures in accordance with international mine action standards (IMAS).

Operational goal 1.7 Permanently train the staff and adjust internal procedures in order to meet ISO standards.

Operational goal 1.8 By the end of 2009, implement the Informational System Networking Project for BHMAC organizational units.

Operational goal 1.9 By the end of 2009, develop a new generation information system that will implement GIS and data access through Web application.

Operational goal 1.10 Implementation of strategy and operational plans of Armed Forces demining capacities and Civil Protections as part of the state Strategic Plan.

Operational goal 1.11 By the end of 2009, renew BHMAC survey and quality control capacities in order to enable the conduct of BHMAC operational activities during the period of Strategic Plan.

Funding

STRATEGIC GOAL 2.- Ensure conditions for stable and continuous funding of the Strategy

Operational goal 2.1 Through preparation and issuance of Annual Operational Plans, enable stable and continuous resource mobilization for mine action at all government levels .

Operational goal 2.2 Ensure conditions and promote regular and timely publishing of tenders before the beginning of demining season .

Operational goal 2.3 Develop and support capacities for establishment of efficient relations with the donors.

Mine Risk Education

STRATEGIC GOAL 3 - Significantly reduce mine threat level for the population by mine risk education.

Operational goal 3.1 Ensure mine risk education as a part of integrated mine action projects in accordance with Strategic plan.

Operational goal 3.2 Ensure the conduct of mine risk education as well as Urgent and Permanent marking activities in all impacted communities and municipalities, through general survey as well as separate projects for organizations dealing with this activity.

Operational goal 3.3 Implement Sub strategy with operational plan for mine risk education.

Operational goal 3.4 Support the efficient engagement of the education system structure in whole country in order to provide school children with a mine risk education program .

Operational goal 3.5 Continuously improve and support efficiency of the activities of all organizations responsible for mine risk education program, through system of planning, coordination, quality control and reporting.

Mine Victim Assistance

STRATEGIC GOAL 4.- Create conditions for full inclusion of mine victims into society through a comprehensive assistance program providing integrated social, medical and other professional services.

Operational goal 4.1 Provide support and improve efficiency of the coordination system for all activities of responsible organizations involved in mine victim assistance through an information exchange system, establishment of working bodies and periodical organization of workshops and seminars.

Operational goal 4.2 Ensure conditions for maintenance of a stable informational system for mine victims, available to all stakeholders in the field of mine victim assistance.

Operational goal 4.3 Realization of operational plan and Mine victim assistance sub strategy, which is a fundamental element of this Strategic plan.

Operational goal 4.4 Support and realization of Sub strategy and operational plans for mine victim assistance presenting a fundamental part of this Strategy.

Operational goal 4.5 Harmonization and improvement of existing law and regulations referring to mine victim assistance.

Technical development and research

STRATEGIC GOAL 5.- Continuously develop partner cooperation on multilateral and bilateral levels with all relevant subjects in order to create conditions for development of new technologies and more efficient mine action.

Operational goal 5.1 Establish technical cooperation with relevant national and foreign institutions in order to improve mine action.

Operational goal 5.2 Continuously organize professional training for the staff according to the development of mine action in Bosnia and Herzegovina and new technological achievements in the world.

Operational goal 5.3 Encourage cooperation between BHMAC, Armed Forces and Civil Protections with other organizations and countries with mine problem, in order to promote knowledge and experience from BiH**.**

Operational goal 5.4 Actively engage local and foreign experts for the realization of projects on research and development of mine action in BiH.

Mine Action Advocacy and Communication

STRATEGIC GOAL 6. Support and continuously improve communication with the public on mine action and advocate principles of Convention.

Operational goal 6.1 Bosnia and Herzegovina shall occasionally organize expert symposiums referring to improvement and promotion of mine action.

Operational goal 6.2 By March 2009, develop a Public Communication sub strategy and Action Plan in accordance with Strategic plan.

Revision of BiH Mine action Strategy 2009-2019

STRATEGIC GOAL 7.- Periodically revise BiH Mine Action Strategy to provide an update of general assessments, operational plans, resource mobilization along with strategic and operational goals aimed to improve overall efficiency.

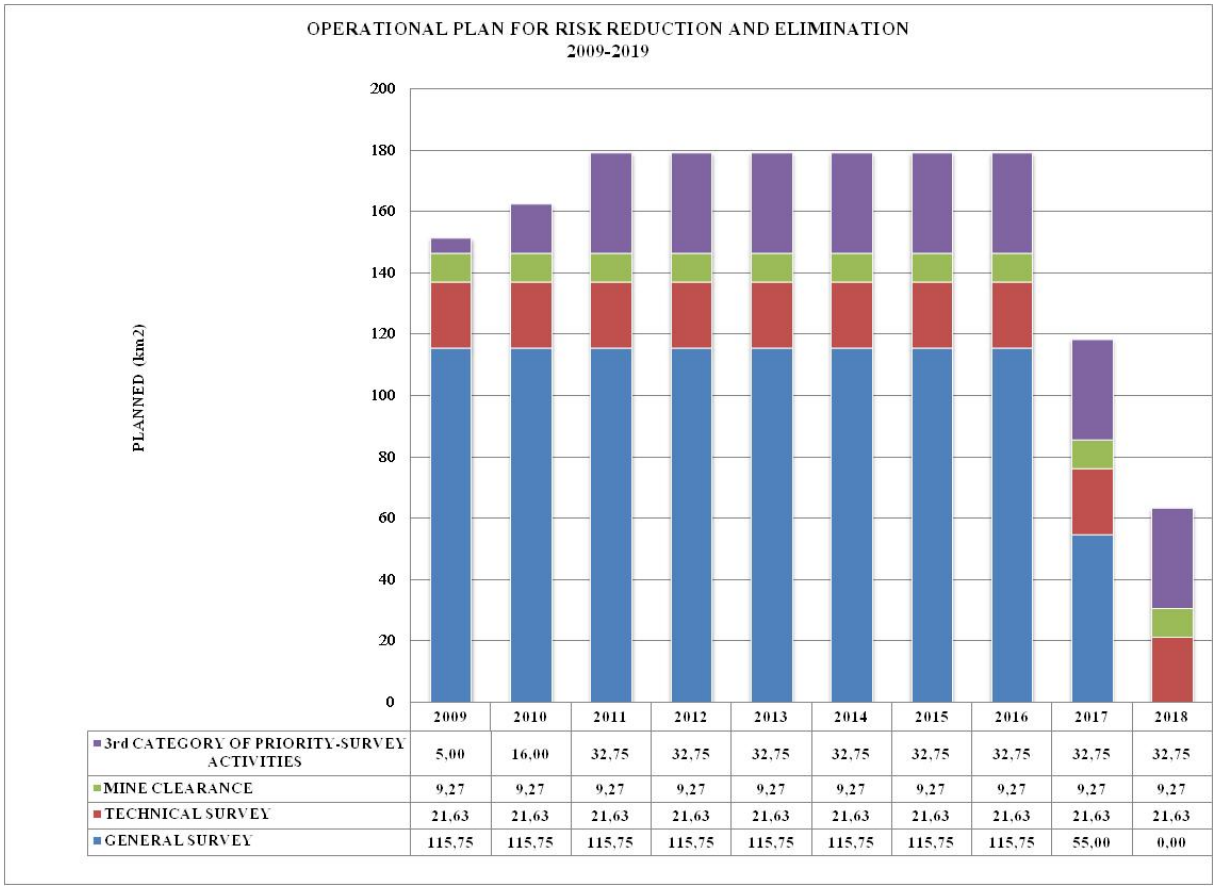
Operational goal 7.1 First Strategy revision by the end of 2012**.**

Operational goal 7.2 Second Strategy revision by the end of *2015.*

Operational goal 7.3 Third Strategy revision by the end of *2017.*

(BHMAC Exit Strategy)

Operational goal 7.4 Additional revision in case of technological improvements which would significantly contribute to efficiency and cost-effectiveness of operational technology in mine action.

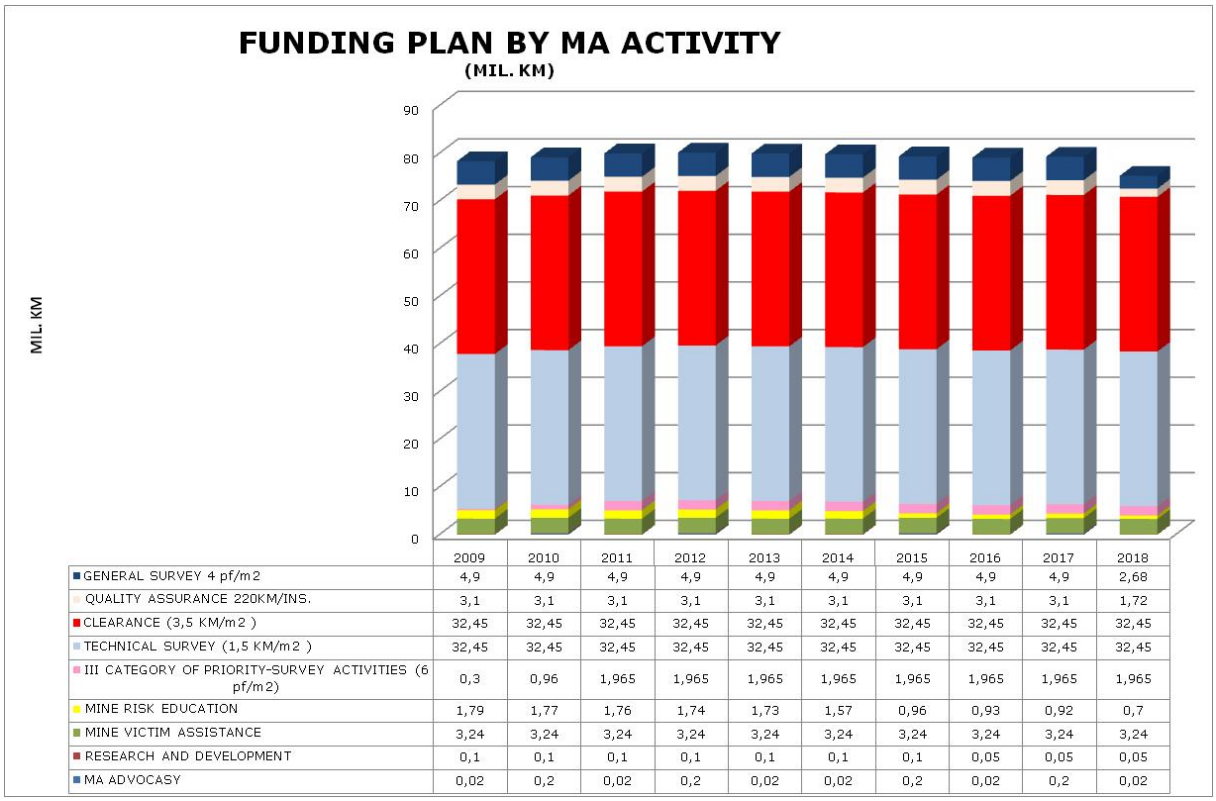


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
3rd CATEGORY OF PRIORITY-SURVEY ACTIVITIES	5,00	16,00	32,75	32,75	32,75	32,75	32,75	32,75	32,75	32,75
MINE CLEARANCE	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27
TECHNICAL SURVEY	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63
GENERAL SURVEY	115,75	115,75	115,75	115,75	115,75	115,75	115,75	115,75	55,00	0,00

OPERATIONAL PLAN

LAND RELEASE		Year/ (km^2)									
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SUSPECTED AREA		195,15	195,15	195,15	195,15	195,15	195,15	195,15	136,95	70	0
LAND RELEASE THROUGH GENERAL SURVEY		115,75	115,75	115,75	115,75	115,75	115,75	115,75	115,75	55	0
REMAINING RISK AREA		79,4	79,4	79,4	79,4	79,4	79,4	79,4	21,2	15	0
RELEASED THROUGH TECHNICAL SURVEY	FIRST PRIORITY CATEGORY	15,4	12,32	9,24	6,16	4,93	4,93	4,312	4,312	0	0
	SECOND PRIORITY CATEGORY	6,23	9,31	12,39	15,47	16,70	16,70	17,32	17,32	21,63	21,63
	TOTAL	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63	21,63
RELEASED THROUGH MINE CLEARANCE	FIRST PRIORITY CATEGORY	9,27	9,27	1,85	1,85	1,58	1,52	1,06	0	0	0
	SECOND PRIORITY CATEGORY	0	0	7,42	7,42	7,69	7,75	8,21	9,27	9,27	9,27
	TOTAL	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27	9,27
III CATEGORY OF PRIORITY-SURVEY		5	16	32,75	32,75	32,75	32,75	32,75	32,75	32,75	32,75
MARKING (number of signs)	URGENT MARKING	20000	18000	16000	14000	12000	10000	8000	4000	2000	0
	PERMANENT MARKING	5000	5000	5000	5000	5000	5000	0	0	0	0
QUALITY ASSURANCE	NUMBER OF INSPECTIONS	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000

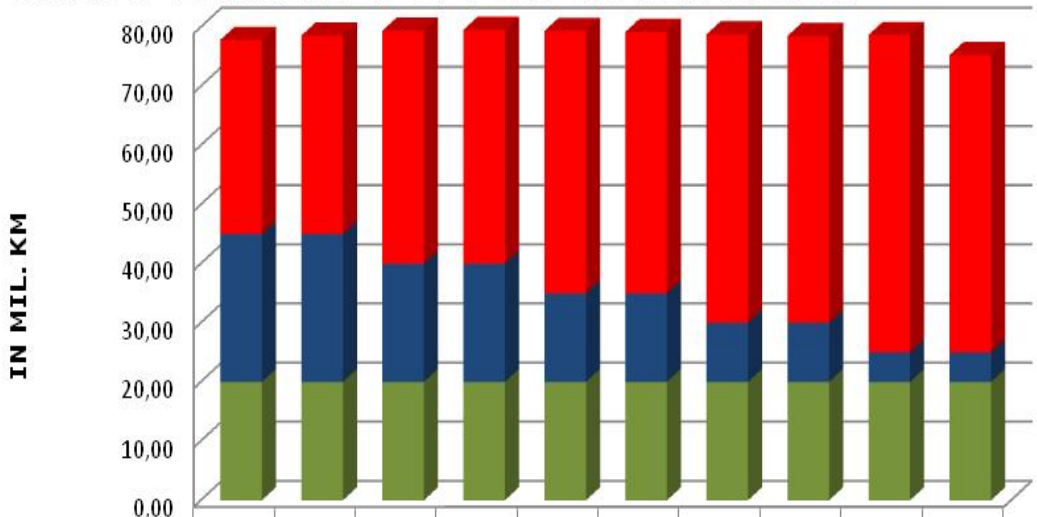
FUNDING PLAN (MIL. KM)											
IN MIL. KM		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
MINE ACTION CENTER	GENERAL SURVEY 4 pf/m^2	4,90	4,90	4,90	4,90	4,90	4,90	4,90	4,90	4,90	2,68
	QUALITY ASSURANCE 220KM/INS.	3,10	3,10	3,10	3,10	3,10	3,10	3,10	3,10	3,10	1,72
	TOTAL	8,00	8,00	8,00	8,00	8,00	8,00	8,00	8,00	8,00	4,40
HUMANITARIAN DEMINING	MINE CLEARANCE (3,5KM/m^2)	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45
	TECHNICAL SURVEY (1,5 KM/m^2)	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45
	III CATEGORY OF PRIORITY-SURVEY ACTIVITIES (6 pf/m^2)	0,30	0,96	1,97	1,97	1,97	1,97	1,97	1,97	1,97	1,97
	TOTAL	65,20	65,86	66,87	66,87	66,87	66,87	66,87	66,87	66,87	66,87
MINE RISK EDUCATION	PERMANENT MARKING	0,50	0,50	0,50	0,50	0,50	0,50	0,00	0,00	0,00	0,00
	URGENT MARKING	0,16	0,14	0,13	0,11	0,10	0,10	0,06	0,03	0,02	0,00
	MRE PROJECTS IMPLEMENTATION	1,13	1,13	1,13	1,13	1,13	0,97	0,90	0,90	0,90	0,70
	TOTAL	1,79	1,77	1,76	1,74	1,73	1,57	0,96	0,93	0,92	0,70
MINE VICTIM ASSISTANCE		3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24
RESEARCH		0,10	0,10	0,10	0,10	0,10	0,10	0,10	0,05	0,05	0,05
MA ADVOCASY		0,10	0,20	0,02	0,20	0,02	0,02	0,20	0,02	0,20	0,02
TOTAL		3,44	3,54	3,36	3,54	3,36	3,36	3,54	3,31	3,49	3,31
GRAND TOTAL		78.43	79,17	79,99	80,15	79,96	79,80	79,37	79,11	79,28	75,28



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
GENERAL SURVEY 4 pf/m2	4,9	4,9	4,9	4,9	4,9	4,9	4,9	4,9	4,9	2,68
QUALITY ASSURANCE 220KM/INS.	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	1,72
CLEARANCE (3,5 KM/m2)	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45
TECHNICAL SURVEY (1,5 KM/m2)	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45	32,45
III CATEGORY OF PRIORITY-SURVEY ACTIVITIES (6 pf/m2)	0,3	0,96	1,965	1,965	1,965	1,965	1,965	1,965	1,965	1,965
MINE RISK EDUCATION	1,79	1,77	1,76	1,74	1,73	1,57	0,96	0,93	0,92	0,7
MINE VICTIM ASSISTANCE	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24	3,24
RESEARCH AND DEVELOPMENT	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,05	0,05	0,05
MA ADVOCASY	0,02	0,2	0,02	0,2	0,02	0,02	0,2	0,02	0,2	0,02

TOTAL	78,43	79,17	79.99	80,15	79,96	79,80	79,37	79,11	79,28	75,88

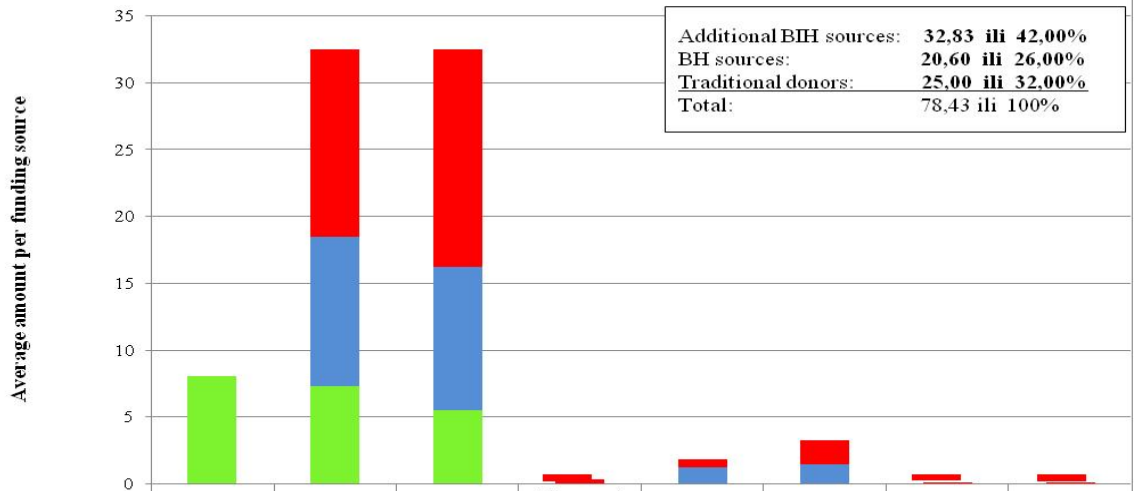
ANEX 1- ESTIMATION OF FUNDING PER SOURCE



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ADDITIONAL BIH SOURCES	32,83	33,57	39,39	39,55	44,36	44,20	48,77	48,51	53,68	50,28
TRADITIONAL DONORS	25,00	25,00	20,00	20,00	15,00	15,00	10,00	10,00	5,00	5,00
BIH	20,00	20,00	20,00	20,00	20,00	20,00	20,00	20,00	20,00	20,00

Funding structure by source

(estimation for 2009)



Additional BIH sources: **32,83 ili 42,00%**
BH sources: **20,60 ili 26,00%**
Traditional donors: **25,00 ili 32,00%**
Total: 78,43 ili 100%

	GI/QA	Clearance	Technical survey	Movement prohibition measures	MRE	LWA	Research	Advocasy
Additional BiH sources	0	14	16,25	0,3	0,57	1,84	0,1	0,1
Traditional donors	0	11,2	10,7	0	1,22	1,4	0	0
BH sources	8	7,25	5,5	0	*	*	0	0

Note: Estimation of average funding according to funding reports f or 2005 and 2006.

Type of activity

* Chart does not include state budget funding :
- MRE - educational system
- LMVA - social and medical assistance

Glossary:

1. ***Mines****-explosive devices placed at or beneath the surface in order to be detonated due to presence, direct or indirect contact with person or vehicle in order to cause fatal casualties or material damage.*
2. ***ERW****– explosive remnants of war– explosive devices launched or left over intentionally, but were not activated due to malfunction, production error or some other reason and represent potential danger*
3. ***Mine Action—*** *set of activities aimed to reduce risk and to solve impact of mines and other explosive remnants of war (humanitarian demining, mine risk education, mine victim assistance and mine action advocacy).*
4. ***Humanitarian demining -*** *survey, mine clearance, marking, quality assurance and recording aimed to release impact caused by mines and explosive remnants of war.*
5. ***Suspected area–*** *areas identified through systematic survey as former confrontation zones in which mine contamination is possible.*
6. ***Risk area –*** *Identified risk locations as a result of general survey (determined borders, impact and priority levels).*
7. ***1st category of priority*** *– areas with recognizable need for movement of local population and occasional users and locations with resources for economic development*
8. ***2nd category of priority -*** *occasionally used locations or areas bordering first priority category locations .*
9. ***3rd category of priority*** *- suspected areas without known minefields and lowest impact level, but with possible existence of war remnants, considering they are placed along former confrontation lines. Rural areas without traditional or other recognizable needs of the local population or occasional users to access or to move in. There are no recourses for economic development of local community in these areas.*
10. ***Systematic survey*** *- analytical research aimed to map and estimate impact level according to available information*
11. ***LIS -*** *Landmine Impact Survey is independent report on local community impact level (undertaken in period 2002-2003 by Survey Action Center, James Madison and Cranfield University, Handicap international and BHMAC with the support of USA and Canada through ITF) and continuously updated by MAC survey activities.*
12. ***General survey*** *- mine action aimed to gather information in the field, determine risk area borders and prepare required elements for MA projects referring to certain suspected area location, without entering risk area.*
13. ***Urgent marking–*** *mine risk education preventive measure, conducted through marking of mine suspected areas borders. Usually employed as part of general survey.*
14. ***Permanent marking*** *- mine risk education prevention measure conducted through marking of the borders of mine risk area. Placement of signs is done by qualified organizations using more resistant material with 5 year duration.*
15. ***Technical survey*** *- operational soil treatment methods used to search certain area with a goal to identify and mark mined area borders and determine parameters for the planning of subsequent operations.*
16. ***Mine clearance*** *- removal of mines and unexploded ordnances from risk area and their destruction.*
17. ***Mine Victim Assistance*** *- a comprehensive process including medical, social and economic component aimed support and integrate mine victims in society .*
18. ***Mine Risk Education*** *- aimed to raise mine awareness, reduce possibility of new casualties and indicate long term aspect of the impact through education involving medias or direct contact with risk targeted groups*
19. ***Prohibited areas -*** *referes to temporary system of measures posed to divert entrance to the 3rd category of priority .These locations will be treated and released by survey activities .*

BH MAC STANDING OPERATIONAL PROCEDURES FOR HUMANITARIAN DEMINING

(SOP)

01.06.2003.

Notification

Pursuant to article 6. line d) of the Demining Law in Bosnia and Herzegovina, (BH Official Gazette No 5/02), as proposed by Mine Action Centre Bosnia and Herzegovina, (hereinafter BHMAC), the Demining Commission approves the Standing Operational Procedures for humanitarian demining in BH (SOP), as with the date stated on the front page. SOP is subject to recheck and revision, according to revision procedures stated down in the document. The users of this document may check its status at BH MAC project web page (http://www.bhmac.org)

Notificatiton on copyrrights

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INTRODUCTION

1. BH MAC Standing Operational Procedures for humanitarian demining (hereinafter BH MAC SOP), present a BH MAC document for activities which are immediately conducted by BH MAC in the process of humanitarian demining.

2. The basis for the creation of BH MAC SOP is the Standard for Mine Clearance and EOD Operations in Bosnia and Herzegovina (hereinafter BH Standard) as well as experiences achieved so far during the demining operations in Bosnia and Herzegovina.

3. Within BH MAC SOP, requirements from the Demining Law in Bosnia and Herzegovina are involved (OG BH, No 5/02) as well as those from BH Standard. It also contains much more of the technical and safety measures gained through experience, which are to be applied, for the sake of people conducting demining operations as well as for the quality assurance of the area cleared for the users – citizens of BH.

4. BH MAC SOP enables the BH MAC structure personnel to conduct tasks, meet their responsibilities as well as their authorisations in the demining activities process.

5. Demining and other organisations are obliged to confirm to the requirements set in BH MAC SOP, while they can use it for making their own SOP's as well.

A M E N D M E N T S

1. Amendments to BH MAC SOP may be conducted, printed and incorporated in the table.

2. Discussion on the Amendments will be conducted within BH MAC Structure. Amendment will be approved by BH Demining Commission.

3. Immediate BH MAC executives will accept the amendment on the day of its approval and act accordingly.

4. Remarks and suggestions as well as propositions for changes or amendments of this SOP will be delivered to the BH MAC Operations Department.

AMENDMENTS INFORMATION

Amendment No	Amendment Date	Part of SOP	Short contents of amendment	Amendment made by (name and surname)
01/1-1-25 /04	March 18th 2004	I, VI, VII	Annex 1: Revision of General and Technical survey, and Technical Inspection of demining activities	BH Demining Commission
01/1-1-70 /04	June 30th 2004	X	Annex 2: Systematic Survey	BH Demining Commission
01/1-1-64 /06	July 13th 2006	VII	Annex 3: Technical Inspection of demining activities (modified version)	BH Demining Commission
01/1-1-73 /06	August 16th 2006	XI	Annex 4: Community Integrated mine action planning	BH Demining Commission

C O N T E N T S

I PART

GENERAL SURVEY

CONTENTS

DEFINITION AND AIM OF GENERAL SURVEY

1. General survey presents a group of activities, which are related and accorded in order to gather data and process information about mine danger without the use of demining methods. During this survey, information about whereabouts, looks and main characteristics of areas suspected to be mined are stated.
2. The aim of general survey is to identify risk and need for technical survey - by permanent marking, demining operations and other mine actions. This process consists of:

(1) Gathering and processing information about suspect areas,

(2) Estimation of mine danger and establishing level of risk, as well as setting demining priority,

(3) Suspect area reduction using defining areas without obvious risk

(4) Additional information the database,

(5) Planning of demining operations according to time, dynamics, as well as more precise short-time and long-term planning

(6) Preparation of project documentation for technical survey, demining and permanent marking.

SAFETY MEASURES

3. Survey team, during their survey on the ground do not leave the safe area, all in accordance with BH Standard, or the area without obvious risk according to criteria of this Instruction for General Survey.
4. Survey is conducted only by personnel from the survey team who are technically able and materially prepared for survey.
5. Technical consultant for operations in Regional office BH MAC shall not allow the survey team's visit to the ground if he estimates the team is not ready enough for the conduct of the specific task.

GENERAL SURVEY ORGANISATION

6. General survey is conducted by BH MAC survey teams. Each survey team consists of at least two surveyors, one of them to be team leader.
7. All personnel within survey teams must have passed survey course as well as capability for the conduct of the work of surveying.
8. The equipment of a survey team is to ensure the team optimum conditions for quality conduct of the task. Equipment for work consists of:

a) Equipment for measuring on the ground
   1. Compass
   2. Map range finder
   3. Laser range finder or measuring tape
   4. electronical devices for setting position
b) Equipment for survey
   1. Binoculars
c) Equipment for communication
   1. Radio stations of mobile phone
d) Equipment and tools for recording
   1. Writing and drawing tools
   2. Digital camera
e) Working clothes

f) Terrain vehicle
g) First aid kit

9. Technical consultant in Regional office is directly managing the work of the survey team. Technical consultant for operations is responsible for immediate preparation of the survey team for their work. He follows and controls the team's work around the clock. He makes analyses along with the team and gives the final estimation of the mine threat.

10. Chief of the Regional office is the most responsible for the conduct of general survey tasks. He supervises the activities of general survey and by his signature confirms the General Survey Report.

11. BH MAC office is planning tasks for general survey based on the priority list, they coordinate the work of regional offices, control the quality of final reports as well as process the results of general survey in order to make projects for demining, technical survey and permanent marking, as well as issuing of Technical opinion.

12. Technical opinion that a certain area is without obvious risk is given by the chief of the office of BH MAC at the recommendation of BH MAC RU chief.

GENERAL SURVEY SOURCES OF DATA

13. Sources of data for general survey are as follows:

a) Central database and data from BH MAC archives,
b) Entity Ministries of Defence as well as Entity Ministries of Defence and Entity Armies)
c) Entity Civilian Protection organisations
d) Other bodies or representatives of the authority
e) Entity Ministries and Ministries of Internal Affairs of the CANTONS, Police Departments and Polices Stations.
f) Local population
g) Original documents (minefield records, questionnaires, photographs etc.)
h) International military and police forces in BH
i) UNICEF and UNHCR databases
j) ICRC, Federal, Cantonal and Municipality Red Cross
k) Organisations accredited for removal of mines and UXO in Bosnia and Herzegovina
l) Mine Awareness Programme and war victims care organisations
m) Mine victims[1]

GENERAL SURVEY PROCEDURE

PREPARATIONS FOR CONDUCT

14. Preparation for survey is the procedure conducted by a technical consultant for operations in the Regional office for survey teams for each task individually. The preparation commences when the task is issued and lasts until the moment the survey team is already on the ground.

15. **Preparation of task conduct**

a) Acceptation of general survey task. BH MAC Regional office will get the survey task from BH MAC, while the general survey tasks are opened based on priority and contains following information:

1. No of document for survey
2. Location to be surveyed, municipality, canton / region
3. Upon which request the survey is conducted
4. Date when the request is submitted
5. Dynamics of conduct (as planned by RO of as by priority)
6. Sketch with location's borders for survey which are on cadastral plan or topographic map

[1] Resources from points 13.a) until 13.g) are to be processed as obligatory. Technical advisor in the RO will decide about points 13.h) until 13.m), which shall depend on possibilities to contact resources, existence of the resources given on the ground and their reliability to use about the collecting data on given location.

b) Studying the task by RO the technical advisor for operations and planning of the task for the survey team.

c) Gathering of available information for which there is no need to go out on the ground. Review of data to be collected in the preparation for survey

d) The preparation of topographic maps and cadastral plans will encompass
   1. Pursuing necessary topographic maps and municipality cadastral plans
   2. Copying the maps with mine situation from the database
   3. Drawing all gathered information onto the map

e) Analyses and estimation of gathered information

f) Planning the survey and preparation of survey team

g) Preparation for conduct of informative interviews with contacts persons
   1. Studying information on contact persons
   2. Preparation of questions for conduct of informative interview for each and every contact person
   3. Preparation of general (internal) questionnaire for location
   4. Preparation of the interview plan

h) Issuing the written task to the survey team for work on the ground which will contain the following information
   1. Survey task from operations sector
   2. All gathered information

16. **Review of data gathered in survey preparation period**

(1) General survey
   a) Upon whose request the survey is conducted
   b) Purpose and meaning of demining for population and infrastructure
   c) Deadline until which the survey should be finished
   d) Information about accidents/incidents in wider area that will be surveyed
   e) If the area (or its part) is used by the local population in any way

(2) Information on survey locations
   a) Geographic layout of the suspect area (location, municipality, canton or region)
   b) Characteristics of location where survey is conducted
      1. Configuration of the ground
      2. Characteristics of the soil
      3. Waters
      4. Inhabited / not inhabited / randomly inhabited
   c) Location of the confrontation lines (drawn on topographic map 1: 25 000),[2]
   d) Position of the location for survey on a cadastral plan of 1: 5 000 scale or larger
   e) Drawn planned projects for reconstruction and rebuilding at a location, if available
   f) Defining and drawing safe roads

(3) Information on mine danger on a location for survey received from the central database, BH MAC archives and other organisations databases
   a) Minefield records
   b) Documentation on mine lifting from the central database
   c) Documentation on humanitarian demining
   d) Documentation on mine accidents and incidents
   e) Information on on-going tasks

(4) Information about resources
   a) Which are the authority bodies as a source of information to which the survey team may rely during survey on the ground and names of contact persons.

[2] Drawing data on topographic maps is entering data in database MapInfo as well

b) Are there military units in the wider area that might get information during survey on the ground?
c) Are there demobilised soldiers who participated in war operation on survey location, who are inhabited in wider area?
d) Are there participants of humanitarian or other organisations in wider area of location mentioned that might be used as sources of information
e) Are there any survived mine victims and are they suitable for interview
f) Who to contact within local population and how to get information about contact person
g) Personal data about all persons to be contacted
1. Name and surname
2. Age
3. Nationality
4. Education and vocation
5. Local function
6. Duties in war and movement during war

GATHERING AND CHECKUP OF DATA ON THE GROUND

17. Gathering and check-up of information on the ground the survey team will do by themselves, with the aim to confirm or give additional data gathered in survey preparation and get new information necessary for quality estimation of mine threat.

18. **Gathering and check-up of data on the given ground**

(1) Visiting the area where the survey location is.
(2) Contacting stated contact persons from local authority bodies and according the way of work on the ground
(3) Preparation of a guide-contact person with other sources of information related to work on the ground, interviewing
(4) Gathering information on the ground by following methods:
a) Informative interview
b) Questionnaire
c) Measuring on topographic maps (cadastral plans) and on the ground
d) Observing
e) Setting risk areas and areas without obvious risk; drawing it on the map.

19. **Methods of gathering information on the ground – informative interview.** Informative interview is the method for gathering original information through verbal contacts with persons for whom there are data that they can provide reliable and useful information about the existence of mine threat. This is one of the most common and most important methods of survey teamwork, during which they confirm the existing information as well as gather new ones. Interview steps are as follows:

(1) Planning informative interview
a) Defining the interview aim
1. Choosing persons to be interviewed as well as the person who will conduct interview
2. Setting up interview and gathering data about persons to be interviewed
3. List of questions for interview
4. Preparations for the interview conduct
b) Conducting interview
c) Analyses of interview results
(2) List of questions for informative interview is done in the phase of planning; it will be produced for every contact person individually and it will in principle contain following group of questions:
a) Group of questions with which we state reliability and quality of information source

b) Group of questions with which earlier gathered data will be checked
c) Group of questions with which we gather new data
d) Group of questions about other possible sources of data and their reliability.

(3) Upon each interview conducted, a record is made that will contain:
a) Information on interviewed person
b) Questions and answers
c) Interviewer grade about reliability of the source of data
d) Opinion about data gathered
e) List of interviewers

20. **Methods of gathering information on the ground – Measuring on topographic map (cadastral plan) and the ground.** Method of measuring will state the reliability of data gathered earlier and drawn on the map. It will make positioning of data on the map, which are gathered during survey.

21. **Methods of gathering information on the ground – Observing.** Observing is the method with which we immediately get the status of location that is surveyed. The purpose of observation is to accurately identify and photograph objects and ground and gather visual data on surveyed location. Types of observation are as follows:

(1) Observation by technical tools that leave trace
a) Photography
b) Video trace
c) Audio trace
d) Sketch making

(2) Visual observation (with or without binoculars)

22. **Review of data gathered on the ground**

(1) General data
a) Confirming data from item 15. (1)
b) Defining distance of the closest medical facility, police and fire department

(2) Data on surveyed location itself
a) Confirming data from item 15. (2)
b) Defining safe way to access the surveyed location
c) Confirming reliability of map review in relation to real status of the surveyed location
d) Data on basic topographic characteristics of the ground and soil
1. Type of soil
2. Density, type and height of vegetation
3. Existence of physical obstacles (natural and artificial)
4. Contamination of area with debris
e) Information on specific weather conditions
f) Photographs of the area
1. Photographs of ground and configuration
2. Photographs of natural and artificial objects
3. Photograph of inhabited area
4. Photographs of mine signs found

(3) Information on spotted signs of existence of mine threat
a) Perceiving the visible signs of mine contamination
1. Traces of explosive devices packages (ammo cases etc)
2. Traces of explosions
3. Killed animals remains
4. Perceived hand-made, semi permanent or permanent mine signs
b) Defining real usage of the surveyed ground by the population

(4) Data gathered from the information sources

a) Records on interviews done with the sources of information
b) Questionnaires on location for survey

ANALYSES OF INFORMATION DEFINED AND THE ESTIMATION OF RISK

23. After confirmation of existing as well as gathering of all available information it is necessary, based on the Criteria for classification of surveyed area in GI procedure, to suggest within the General Survey Report, the borders of area *without visible risk* or *risk area* for further mine action (technical survey or demining).
24. Technical advisor for operations in the regional office will analyse stated information and estimation of risk together with the team leader who conducted general survey. Analyses is a process with its aim to review all gathered information and their reliability as well as to confirm the work of the survey team on the ground. The result of these analyses is the estimation that is a part of the General Survey Report.
25. Based on the estimation, the conclusion is made about the risk area, along with the estimation of demining operations and possible methods of work, as well as about areas without obvious risk. The Chief of the Regional Office will confirm the completed Survey Report, with his proposal for the issuing of Technical opinion for the area without obvious risk – coordinates provided for the defined area. A clear and non-ambiguous estimation will be given in the Report about which area is of risk, and which area is area without obvious risk. In this process and for the General Survey Report, BH MAC Criteria for Classification of Surveyed Areas will be used.
26. If the intended task for general survey of a kind that does not encompass the entire risk area, it is necessary to state the way of marking borders of mined and risk areas within the project for technical survey or demining. Conductors of such tasks must, within the plans for this operation, prepare plans of activities for Mine Risk Education as well, for possible users of demined or technically surveyed area.
27. A part of this estimation is the cadastral plan with drawn information from the estimation.

URGENT MARKING OF RISK AREAS DURING GENERAL SURVEY

28. Urgent marking of risk areas as a warning about mines existence is done by the survey team during their survey, provided they gathered enough information that surveyed area is a mine contaminated area. Urgent marking of risk areas does not mean marking borders of risk areas but placing mine signs at access points to risk area as a warning about mine threat. Mine sign presents the warning about mine threat.
29. Urgent marking of risk areas is done by previously defined mine signs. Marking is done from the safe area. Signs will be places at visible spots so that a mine sign can be easily seen and recognize from the distance of at least 50 meters.
30. Mine sign is set on a height of 120-140 cm, on a wooden picket. The sign is a square profile 5cm x 5 cm, length of 150cm. Provided all other conditions are fulfilled, mine sign can be placed on a house, fence, tree or any other firm object.
31. Mine signs are placed on a safe area or area without obvious risk, facing safe area or area without obvious risk.
32. Number of mine signs that will be placed on one location depends on results of a survey. In principle, where there is surveyed location containing risk areas, at least one visible mine sign will be places for a separate risk area.
33. The spot where mine sign is set will be photographed, drawn on the sketch of the risk area and defined by coordinates on the cadastral plan. Mine sign legend on the sketch is small red square with white diagonal.
34. Regional office keeps records of mine signs placed. These records contain following information: name of the location, project code, coordinates of the spot where the sign is placed, photograph, date of placing, date of removing and other remarks.

35. Regional office will conduct control of the status according to their records of mine signs placed, plan tours to check status and renewal with full cooperation of the municipalities and owners of the ground. Control and probable renewal of placed mine signs shall be conducted at least once a year by BH MAC RO. It shall be recorder in a special record. In case there are information by municipalities, owners of the ground etc. that mine signs are removed, destroyed or malfunctioning, their renewal is done by BH MAC survey teams.

GENERAL SURVEY REPORT

36. General Survey Report consists of a collection of documents and is a foundation for the project documentation in BH MAC office. The technical advisor for operations in Regional Office makes General Survey Report, while it is approved and signed by the chief of the BH MAC Regional Office.

37. The Report will contain following documents:

(1) General Survey Report - fulfilled

(2) Records on interviews conducted with contact persons.

(3) 2 photographs

(4) Sketch on a cadastral map with risk areas and AWORs, with the review of coordinates of the turning points of the risk areas and areas without obvious risk, as well as coordinates of mine signs set as urgent marking. In principle, the sketch is done in one copy only, while where the projects that are more complex, the sketch for the risk area is done separately from the sketch for the area without obvious risk.

(5) Copies of the minefield records gained through the survey, and which do not exist in the database.

(6) Official records and other notifications

(7) General survey task and the request upon which the task is issued.

PRIORITARISATION PROCEDURE

38. Claiming priority is done on a standardized form with location map, which is provided as an annex to this document.

39. Proposal of priority category is given by a proposing body (municipality, canton or region), while it is checked and approved by BH MAC Chief of the Regional Office, based on the general survey results.

40. Categories of the priorities:

(1) I category:

a) Locations in daily civilian use.

b) Locations for repatriation of refugees and displaced persons

c) Locations for renewal and reconstruction of economy (aimed locations that directly condition the stated aims)

(2) II category:

a) Locations in occasional use or contacting with the location from I category.

b) Economy resources

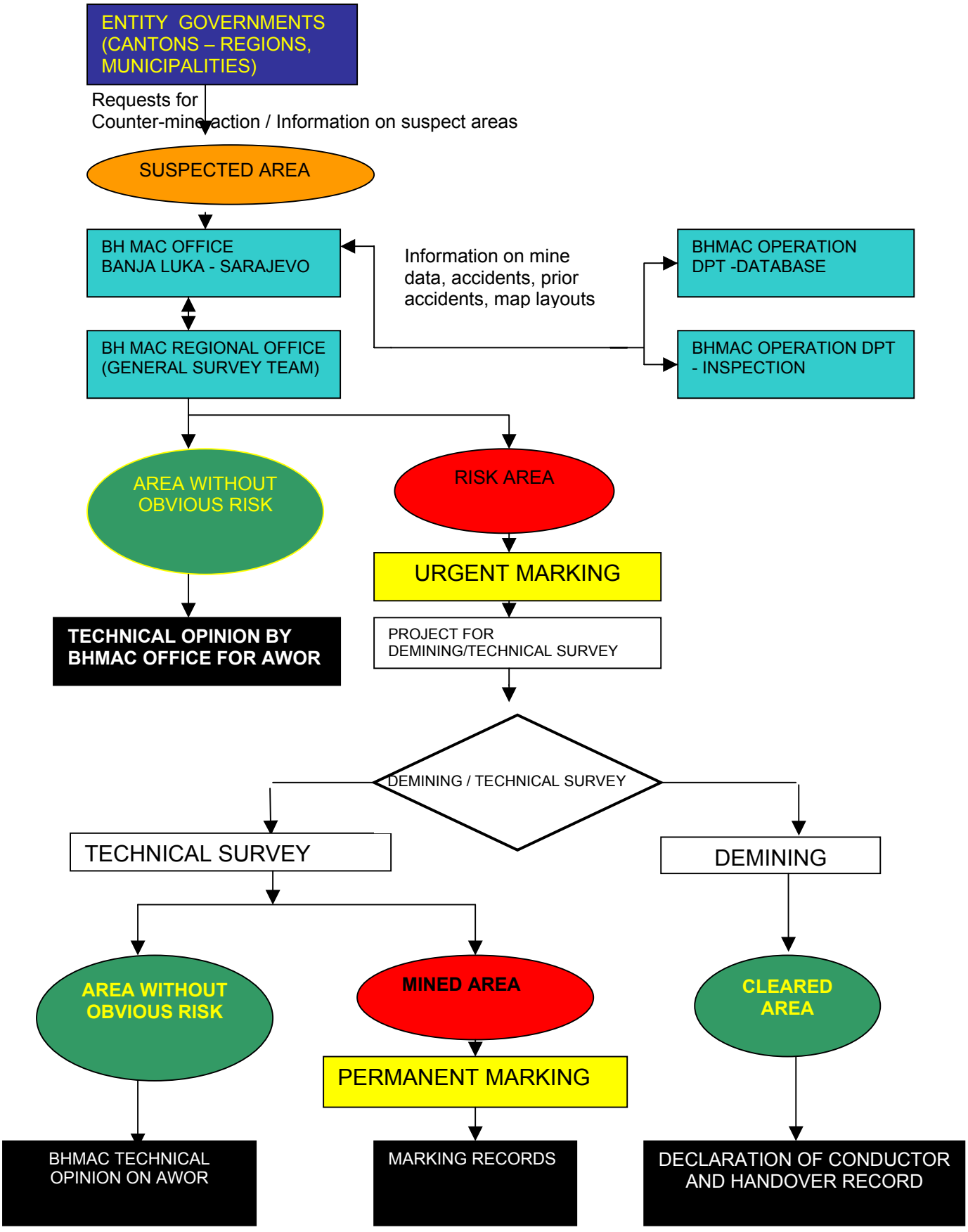
(3) III category:

a) Locations that were not and will not be used in near future

Annexes:

A. Diagram of activities flow of the humanitarian demining operations in Bosnia and Herzegovina
B. Legend for making the sketch for general survey
C. Criteria for classification of surveyed area within General Survey Report
D. Sign for urgent marking of the risk area
E. ‘’General Survey Report’’ form
F. Technical opinion for the area which is stated as AWOR during the general survey
G. Record on data gathered during general survey by the use of interviews.

ANNEX A: DIAGRAM OF ACTIVITIES FLOW OF HUMANITARIAN DEMINING OPERATIONS IN BH



ANNEX B: LEGEND FOR SKETCH MAKING IN GENERAL SURVEY

2.3. CRITERIA ANNEX C

For classification of surveyed area in General Survey Report

No of criteria	CONTENTS OF CRITERIAQ		PROOF AND SOURCE OF INFORMATION	CLASSIFICATION OF THE AREA		
				NO OBVIOUS RISK	SUSPECT – RISK	
					For TS	For clearance
1.	There is a minefield record	Yes	BH MAC database or other source			YES
		No		YES		
2.	There is a participant of a reliable witness of mining	Yes	Written statement of a person or an interview			YES
		No		YES		
3.	There is a mine victim	Yes	Written statement of a person or an interview		YES	YES*
		No		YES		
4.	Mine accidents and incidents recorded	Yes	BH MAC database, police, medical facility, statements of people, etc.		YES	YES*
		No		YES		
5.	Area was burnt after the war with/without explosions	Yes	Written statement of a reliable witness or an interview.		YES	YES*
		No		YES		
6.	There are signs of mining or other evidence (close to the lines of confrontation or ammo cases found in the vicinity)	Yes	Visible and recorded by photo		YES	
		No		YES		

7.	One-year period use of the ground with disturbance to minimum depth of 10 cm by inhabitants or users (ploughed or alike), without accidents and incidents, while the area is within the confrontation line (movement of lines) or immediate vicinity		Visible and recorded as photo	YES		
8.	Hard-surface area (concrete, asphalt, stone…) where the structure is not visibly damaged.		Visible and recorded as photo	YES		
9.	The use of area by inhabitants or owners for minimum of two years for sawing and pasturing, without incidents or accidents		Visible and recorded as photo	YES		
10.	Area between confrontation lines (withdrawal, leaving lines etc.) which is not used and presents a priority for the return for refugees (reconstruction of damaged objects, need for the use of roads for sustainable return, water sources, power lines etc.)		Visible and recorded as photo		YES	
11.	There is a record about mine lifting according to minefield record, according to which all mine are/are not removed.	Yes	Record on mining and demining from BH MAC database – to be confirmed.	YES		
		No			YES	

Remark:

1. Provided conditions are met and defined from in items 7 and 8 during the survey, regardless of information on history of mine threat of the surveyed location, area can be declared as area without obvious risk.

2. If the survey teams through their processes of general survey achieve new information which are not encompassed within the contents of criteria, these information must be placed into report and make an estimation on the level of BH MAC RO. Assessment of risk is to be done based on all information.

3. Assessment of risk will be issued based on the analyses of data gathered through all criteria, which are not exclusive (except 7 and 8).

4. * Areas up to 5.000m2 where some signs of risk have been noticed (criteria item No 3, 4 and 5) would be suggested for clearance.

ANNEX D: SIGN FOR URGENT MARKING OF THE MINED AREA

Appearance and characteristics of a mine sign

Mine sign appearance and scales of letters and symbols must be identical as it is on picture 1. Backside of the mine sign is of white colour.

Mine sign dimensions are 40x40 cm.

Material for production of the mine sign must be of no use for local population. It is necessary that material and paint can endure atmosphere conditions in Bosnia and Herzegovina for a minimum period of 5 years. Material suggested is 2 mm thick plastics, as well as metal, if cost competing with plastics, provided it meets the stated conditions.

It is necessary to drill holes in sign in order to efficiently pin it onto the picket or other adequate place.

If metal sign is accepted, it is necessary to make it of no other use.

Wooden picket of 5x5 cm dimension and 150 cm high.

Annex E

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БОСНИ И ХЕРЦЕГОВИНИ
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

Date…….20__.

Number of Survey Afterwards assigned for survey and creation of project	

GENERAL SURVEY REPORT

1) GENERAL INFORMATION ON TASK AND LOCATION

RO BHMAC which conducts the task			Date of start – completion	
Survey team-surveyors: (Name and surname of person)			Mark or Number of assigned task	
Name of location				
Municipality				
Total size of location for survey		..... m^2	Reference point G/K	Y X
			Is referent pint defined by GPS	☐ (write in –YES or NO)
Declared areas:	AWOR	.....m^2	RISK AREA	For technical survey .....m^2 For demining .....m^2
Priority Category		☐ Write in (I, II or III)	Intentional use of ground	
Requested depth for removal of explosive devices	☐ Standard (squares to be filled with black colour) ☐ Up to…….cm *(in proposition for demining operations)*			
Is the risk area marked (status found)		☐ (write in YES or NO)	Number of mine warning signs set	
Mines laid by / year			Data on type and numbers of mines	

2) GENERAL DATA ON LOCATION

Type of environment	Rural ☐	Urban ☐	Industrial ☐			
Vegetation	No vegetation ☐	Grass ☐	Bushes ☐	Scattered trees ☐	Forest ☐	Mixed ☐
Type of soil	Sand ☐	Clay ☐	Porous ☐	Chalk ☐	Rocky ☐	
Hardness of ground	Swampy ☐	Soft ☐	Medium hard ☐	Hard ☐		
Contamination	Metal debris	Rubble	Garbage	Stumps		
Slope	Flat ☐	Mild slope ☐	Steep slope ☐	☐		
Drainage features	Lakes ☐	River ☐	Spring ☐	water supply channel ☐	Drainage ditch ☐	Other ☐
Possibility to burn	Yes ☐	No ☐				
Data on access area (from RO to location	Common track ……..km	Macadam / Gravel ……..km	Asphalt tarmac …….km			
Closest medical facilities	First Aid Facility in ……., ……km distant			Hospital in……., …….km distant		
Closest SFOR base	SFOR base in ……., ….km distant					
Closest police station	Police station in ……., …..km distant					

(squares to be filled with black colour)

PLACE OF LOCATION IN RELATION TO THE WIDER AREA

Position of location in the municipality and in relation to the closest inhabited place

DESCRIPTION OF LOCATION

Description of risk area borders is provided in written format, providing topographic objects on the ground, as well as the position of the location in relation to entire surveyed area in the sense of risk

Description of the referent point, position of location in relation to the reference point

SAFE ACCESS ROADS

Safe Access Roads are provided descriptively, providing topographic characteristics of the ground and inhabited area. Within description of the safe access road the point of its start and end is defined, then point of crossroads and direction of movement.

Description of the road contains: the type of road, the width of road, height and maximum weight

DESCRIPTION OF PHOTOGRAPHS

Photo 1:

Photo 2:

3) INFORMATION ON MINING

a) DESCRIPTION OF THE CONFRONTATION LINES AND INFORMATION ON THE HISTORY OF WAR EVENTS

b) MINEFIELD RECORDS FOR THE SURVEYED AREA (provide data about minefield records (in the scope of 800m

around surveyed area), which were gathered in preparation and through collecting data on the ground). Provide analyses of the record

c) INFORMATION ABOUT MINE INCIDENTS AND MINE ACCIDENTS ON LOCATION AND SURROUNDING AREA (Provide data about mine accidents and incidents gathered in preparation and through the method of collecting data on the ground: Name and surname of the victim, location, approximate accident date, consequences, information on explosive device. Number of animals/cattle killed, location, approximate date, information on device activated)

c.1.) NUMBER OF VICTIMS ON LOCATION: KILLED, INJURED

d) INFORMATION ON MINE CONTAMINATION WITH MINES AND UXO GATHERED FROM THE COLLECTING ON THE GROUND (summary of information gathered through interviews, conclusion on their validity, summary of information gathered by the observing method in the sense of indication of mine existence and use of land)

e) RECORDS ON DEMINED LOCATIONS IN SURROUNDINGS (Provide information about demined locations gathered from the central data base: No of task, location, organisation, when the clearance was conducted, type and quantity of mines/UXO destroyed)

f) INFORMATION ABOUT MINELIFTING (Provide data about mine lifting gathered from the central data base)

g) INDICATION OF PROM MINE EXISTENCE (YES/NO)

4) SOCIO ECONOMIC IMPACT

Purpose and meaning of demining for population and economy In what way the area was used by the local population Which projects for building and reconstruction	
NUMBER OF IMMEDIATELY ENDAGERED PERSONS AND USERS	
NUMBER OF USERS OF LOCATION AFTER DEMINING	

5) PROPOSAL FOR DEMINING / TECHNICAL SURVEY OPERATIONS AND POSSIBLE METHODS OF WORK

Provide proposal for MRE that will be conducted at the location demining or technical survey. Take into consideration topographic characteristics and vegetation, propose possible methods of work that can be applied (manual, ED teams, mechanical preparation) on a defined task or assessed parts of the task. Provide recommendation if on certain part of the task more than standard depth of demining is needed (describe part of location and elaborate).

EXISTENCE OF PHYSICAL OBSTACLES AND OTHER HARDENING CIRCUMSTANCES

Write down obstacles and circumstances, which might influence operations of demining or technical survey, as well as provide possible proposals.

6) PROPOSAL FOR PERMANENT MARKING AFTER CLEARANCE

Is it necessary to conduct permanent marking after clearance, if yes, on which part?

7) PROPOSAL FOR ADDITIONAL EDUCATION OF POPULATION ABOUT MRE

Is it possible to conduct additional MRE educational activities for the population

8) DECLARED AREAS WITHOUT OBVIOUS RISK DEFINED ON THE SKETCH WITH COORDINATES

1. History of war operations (was the location in question within the confrontation lines?)
)

2. Information on mining, notifications on mines found (Central data base, police, Civilian protection, Entity armies, other sources of information)

3. Information on mine accidents and incidents (Central data base, police, Civilian protection, other sources of information)

4. Statements of the local population (interviews)

5. Status on the ground (usage of location, signs of mine existence)

9) RISK ASSESSMENT

Based on the conducted procedure of General Survey (which is a containing part of the BH MAC SOP) as well as expert processing of all available information, in accordance with criteria for classification of the surveyed area, it is stated that a part (or the entire area covered with report:

-risk area defined for demining (defined with coordinates on the sketch)

- **Risk area defined for technical survey (defined with coordinates on the sketch)**
- **Area without obvious risk (defined on sketch with coordinates)**

Containing part of the Survey Report form is a sketch of declared areas of the surveyed location.

Annex:

-Record on information gathered during general survey by the use of interviews

-Official notes and other notifications

-2 photographs

- Copies of minefield records gained through survey, which are not in the database

- General survey request and request upon which the same is issued

GENERAL SURVEY TEAM:

1.)……

(Team leader signature)

2.)……

(Surveyor signature)

TECHNICAL CONSULTANT FOR OPERATIONS CHIEF OF THE REGIONAL OFFICE

……

Annex F

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БОСНИ И ХЕРЦЕГОВИНИ
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No:……

Date,.....year of.…….

Pursuant to item 16. Chapter V of the Standard for Mine Clearance and EOD Operations in Bosnia and Herzegovina, BHMAC issue,

FOR:…….
(Request submitter)

SUBJECT: Technical opinion

Re: Your request no: dated.

Location: ..... *Municipality*.....
(Name of location)

Expert team of BH MAC surveyors has, according to the Standard operational procedures, (BH MAC SOP, PART I) on the day / in the period …… year, conducted the general survey of the stated location.

Based on technical processing of all available information during the time of survey, and in accordance with the criteria for classification of area without obvious risk, we issue:

Technical Opinion

Stated location is declared as area without obvious risk for existence of mines

The containing part of the Technical opinion is the map with graphic review of the stated location.

While conducting General Survey, it is not possible to estimate the existence of unexploded devices (UXO). We draw the attention of the users to move carefully through the location. If they spot a UXO, they must not take any measures but immediately notify Civilian protection team for removal of UXO.

Chief of the BH MAC office

Annex G

RECORD
ON INFORMATION GATHERED DURING GENERAL SURVEY
BY CONDUCTING INVERVIEWS

INTERVIEW WITH:	(name and surname)
AGE:	(if possible by number or descriptively)
NATIONALITY:	
PLACE OF RESIDENCE:	(write down as accurate as possible)
LEVEL OF EDUCATION AND OCCUPATION:	
LOCAL FUNCTION:	
DUTIES IN WAR AND MOVEMENTS DURING WAR:	(which army, unit, rank, how many days spent at the surveyed location, was he a participant of engineer units or other army structures that were in possession of information about minefield)

REMARKS: Personal information about persons for contact to be gathered by bodies that propose contacts with stated person in the preparation of survey. In most cases, this body (Civilian protection, coordinators etc.) direct to persons they know. Information on interviewed persons are to be taken from themselves only, in cases when the interview was not prepared, but occurred as an unplanned opportunity on the ground. In that case, gather as many information as possible, where the obligatory data are name and surname, place of residence, while state in the remark that the interview was not planned.

INTRVIEW CONDUCT:	(During the interview record the questions asked as well as answers to those. Process only group
ESTIMATION ON RELIABILITY OF INTERVIEWED PERSON:	(Interviewer provides his own estimation about the reliability of interviewed person, gathered On information gathered from bodies or person who led us to contact person, based on Questions set by interviewer. In this manner the interviewer can indirectly estimate how reliable and qualified the source is)
OPINION ON INFORMATION GAINED:	The opinion on information gained is the result of analyses of the interview, which is done by The interviewer, comparing with information gathered previously. The interviewer will in this Place confirm which information are checked by other sources, i.e. what are the new Information he gathered and how does /does not plan to check)

DATE OF INTERVIEW:	INTERVIEWER:
	(Name, surname and signature)

REMARK: This record is the document, which is processed by the interviewer, based on all his records after the interview is Over. The interviewer will make the record in the office.
The record is the original document of the interviewer.
It is forbidden to make any kind of records on the ground. It is forbidden to ask that interviewed person or any local authority sign the interview.

II PART

OPNENING AND TRACKING THE WORKING TASKS

C O N T E N T S

BASIC REGULATIONS

1. This is the regulation which, within the Mine Action Centre of Bosnia and Herzegovina (hereinafter BH MAC), regulates the opening and tracking the working tasks.

This regulation does not relate to procedures of quality control in demining, permanent marking and technical survey.

AUTHORISATION FOR OPENING WORKING TASKS AND CERTIFICATION ON QUALITY CONTROL / TECHNICAL OPINION

2. Working task for demining, permanent marking and technical survey is opened in BH MAC Sarajevo and Banja Luka office, according to request for opening a working task, which is given by the BH MAC Operations Sector.
3. The Director of BH MAC or his depute (if director is absent) will approve the opening of working task.
4. BH MAC upon the completion of the task will issue the quality control certificate, which will be signed by the director or his depute, with the previous accordance (signature) of the BH MAC office Chief.
5. BH MAC, upon the technical survey completion, will issue Technical opinion about the area without obvious risk, which will be signed by the Director or his depute, with previous accordance (signature) of BH MAC office Chief.

TASKS FOR ORGANSIATIONAL UNITS

6. Tasks for BH MAC Operation Sector for opening a working task:

   A) Section for planning, analysis and reporting.

   1. Acceptance of request for the opening of a task by the investor or accredited organisation (example given in the attachment of this Instruction).
   2. Checking up the request in relation to demining plans and priority lists for demining.

3. Setting deadline for the opening of a working task, having in mind the plans of the investor and the organisation, as well as plans and regular activities of BH MAC.
4. Preparation of the request for the opening of working tasks.
5. Issuing documentation from the central database, which is necessary for the Red Folder according to requests of the BH MAC office.

B) Quality Control Section

1. Track within the database the inspection reports about visit to the working sites
2. Conducts internal quality control with the aim of maintenance and improvement of the level of quality requested by the Standard.
3. Conduct check up of documentation upon completion of the task and check up the level of quality assurance on the site.

7. The tasks for BHMAC offices in Sarajevo and Banja Luka in opening and tracking working tasks are as follows:

a. Check up of general survey and, if needed, request for re-survey issued for the regional offices, all in order to updated project documentation for demining, permanent marking or technical survey.
b. Assigning identification number for a working task – opening of the working task.
c. Every newly opened task will be entered into the database.
d. Preparation and creation of the set of documentation for the working task file that is needed for tracking all activities on a demining site. (hereinafter: «Blue folder»)
e. Preparation and creation of the set of documents for the organisation on a demining site (hereinafter: the «Red folder»).
f. Notifying accredited organisation, regional office and BH MAC Operations Sector about the date Red folder is created.
g. Issuing the Red folder to the accredited organisation.
h. Acceptance, agreement and approval of the Conduct plan for the demining operations on the particular task.
i. Agreement on the sampling plan.
j. Tracking existing activities on the ground.
k. Input of all documents related to the demining site into the Blue folder
l. Cooperation with the Quality Assurance Sector within Operations Sector about the conduct of quality assurance measures on the site.
m. All information about completed demining tasks, permanent marking tasks and technical survey tasks will be input into database.
n. Preparation, creation and giving accordance (signature) for the issuance of the Certificate on Quality Control / Technical opinion.

PROCEDURE OF OPENING AND TRACKING THE WORKING TASK

8. Upon receiving request for the opening of a new working task, the Chief of BH MAC office will forward the same to the chiefs of Sectors.

9. Chief of Sector for survey and projects creation (hereinafter: SSPC) will check the status of project documentation as well as the survey update. He will then inform the chief of the Sector for opening and tracking working tasks (hereinafter: OTWT) about the time needed for the delivery of the project documentation.

10. Chief of SSPC issues the request for re-survey to the regional offices and takes measures for the project documentation to be updated and completed as soon as possible in order to create the Red Folder. Re-survey is necessary if the last general survey report three or more months old, or even of sooner date, but there are new information about the changes of situation on a surveyed area.

11. The Chief of OTWT will organise the opening of the working task (updating in database, assignment of the identification number, creation and completion of documents

needed for creation of Blue and Red folder, given in attachment, as well as criteria for the choice of information from the central database and archives, that will be input into the Red folder.).

12. After all needed documents are finished, Red and Blue folder will be created. Chief of the OTWT will approve with his signature the contents of the Red Folder.

13. Chiefs of BHMAC Sarajevo and Banja Luka offices will sign the front side of the Red folder.

14. Demining organisation will take over the Red folder in BH MAC office. While taking over the Red folder, the authorised representative of the demining organisation will sign the front-page «Cover sheet». BH MAC office will deliver the copy of the front page «Cover sheet» to the Regional office and BH MAC Operations Sector. Provided the organisation has not started with their work within a month from the taking over the Red folder, the task will be cancelled, while the company is obliged to return the Red folder to BH MAC office.

15. Demining organisation must deliver to BH Regional office their Conduct plan of operations minimum 7 days prior to start of work. The Conduct plan, with the BH MAC Regional office remarks, will be provided to OTWT for approval.

16. Sampling plan will be coordinated with the organisation after the Conduct plan is accepted.

17. All information about activities, including start time, pause and completion of the task, will be documented in the Blue folder and will be forwarded within the MAC structure.

18. If the re-survey procedure concludes that it is necessary to change the borders of the working task, the Chief of OTWT will initiate the notification of the BH MAC Operations Sector. BH MAC will coordinate all the changes of the task's border with the requestor.

19. Chief of OTWT receives (by mail or from the authorized person) Record on handover of cleared area or Record on technically surveyed area (along with the statement, official declaration and annexes), after the control of completeness and regularity of task documentation has been conducted by the responsible RO BHMAC.

20. After documentation is accepted, chief of OTWT will notify the Quality Assurance Sector of the BH MAC Operations sector.

21. After Quality Assurance Sector of the BH MAC Operations Sector provide their opinion, the chief of OTWT will make 4 copies of the Certificate on Quality Control / Technical Opinion (for archives, for organisation, for municipality and to the user). Chief of BH MAC Entity office will approve and sign the copy for archives. All copies will be given to the BH MAC director for signature.

22. BH MAC will distribute the Certificate on Quality Control / Technical Opinion, while the BH MAC office will hand over the Blue folder into the BH MAC Sector for planning, analysis and reporting for its archiving.

Annexes:

- Request for opening new working tasks
- Form of the request for opening a working task
- Criteria for source of information form the archives and the central database
- Sample form of the Red folder

III PART

PERMANENT MARKING

C O N T E N T S

DEFINITION AND AIM OF PERMANENT MARKING

1. Permanent marking of risk areas is a mine action with which a physical obstacle is set (mine fence and an self-standing mine sign) on estimated areas where people could access from the cleared or AWOR towards the risk area.

2. Permanent marking of risk areas is conducted where people move frequently. The aim of permanent marking of the risk area is the need to warn people about the mine threat, prevent unintentional entrance into the risk area and decrease the number of mine or UXO victims. This is all to last for a longer period of time, with a minimum engagement on maintenance.

3. Permanent marking is conducted within the safe area (cleared or AWOR):

   a. Access points to risk areas, where movement of people is expected (roads, trails, borders with public facilities).
   b. As a clear demarcation border between risk and cleared / AWOR in the vicinity of inhabited places or frequent movement of people.

PROCEDURES FOR PERMANENT MARKING OF RISK AREAS

4. Municipalities, cantons, regions, entities, Brčko District and the owners of the ground conduct this activity of permanent marking. They are the ones who will conduct financing, planning, setting priorities of tasks, contracting and accepting (handing over) the marked area. Upon completion of permanent marking, the conductor of this activity organises and conducts maintenance of the mine fence and self-standing mine signs.

5. The authorised representatives of the conductor of this activity, in cooperation with the local coordinator for mine action as well as with the expert help of BH MAC Regional offices, will propose locations for permanent marking. They will make proposals based on mine threat assessments and priorities defined.

SCOPE

6. In order for an area to be permanently marked as a risk area presenting mine or UXO threat, it is necessary within general survey to technically define the border of the risk area with cleared or AWOR areas. This is the way to define the direction of setting the permanent mine fence and / or self-standing mine signs inside the cleared or AWOR. Based on General survey report, BH MAC office will create a project of permanent marking of the risk area and issuance of the Technical opinion for AWOR, if such is the result of the stated general survey.

7. Risk area can be marked with mine signs only if there is no access roads towards it. The distance between mine signs must ensure that from the place one sign is set, another one can be seen and recognised.

8. If safe marking of the risk area is impossible for conduct, it is necessary to create a demining project for marking. Only accredited organisations can conduct this activity.

9. Demining priority I category are projects where demining is necessary in order to provide safe areas for permanent marking.

10. There is no limitation for the registration of the permanent marking conductor regarding to BH MAC project, except in cases where demining is conducted for the sake of permanent marking.

11. Permanent marking cannot be conducted without BH MAC project documentation.

12. BH MAC will encourage the representatives of the authorities to finance and cover with local media the projects of marking. In case there are donations funds gained for the marking of risk areas in BH, BH MAC will set the priorities in accordance with operative plan of countermine activities in BH.

DEFINING PERMANENT MARKING

13. The conductor of activity sends a request to BH MAC Entity office for the general survey (G.S) in order to permanently mark the risk area. BH MAC regional office conducts general survey of locations where permanent marking will be conducted. Based on General survey reports, in BH MAC office a project will be created for the conduct of permanent marking on the required location.

14. After completion of permanent marking project of the risk area, BH MAC deliver the project to the municipality coordinator. The list of completed projects for permanent marking is transparent and available to all the donors.

15. Prior to start of the work, the surveyor (inspector) of the BH MAC RO, along with the authorised person for this activity and a qualified conductor for this task, identify the location and exact places, as well as grid references of the permanent mine fence and self-standing mine signs. After the identification of the areas, grid references of the mine fence, places for self-standing mine signs, borders between the risk and the cleared or AWOR areas as well as all information about the task, the group will make a record which will be confirmed by the representative of the conductor, along with the BH MAC RO surveyor (inspector).

16. Technical opinions for AWOR and Certificates on Quality Control of Cleared Area will be delivered to the organisation for areas to be permanently marked, but bordering with risk area that will be marked.

17. The organisation carrying out permanent marking will notify BH MAC Regional office minimum three (3) days prior to starting their work and is obliged to cooperate with the authorised persons from BH MAC (surveyor – inspector). Surveyor / inspector is the authorised person who conducts the quality control of the permanent marking on the site according to the requirements of the project, the Contract and the BH MAC SOP

18. On the last day of the permanent marking, the surveyor (inspector) will verify the marking done and confirm the works done according to project or changes within the projects, which were approved by both the investor and BH MAC.

19. The organisation will make a Record on Completion of work on permanent marking, which will be signed for confirmation by the authorised representative of the investor and the inspector of BH MAC RO.

20. Record on the Completion of work with the signed sketch as attachment is delivered to the investor and BH MAC Office. BH MAC will archive the Records about the permanent markings conducted and will issue periodical reports on permanent marking which has been done.

SAFETY MEASURES

21. Permanent mine fence and self-standing mine signs will be placed on cleared or AWOR areas, at a minimal distance from the risk area (the height of the picket in a minefield and self-standing mine sign). The stated width – secured area, will ensure that the picket in the fence and the mine sign upright holder will not fall into the risk area.

22. If the ground has a slope towards the risk area, self-standing mine sign or mine fence will be placed at the highest peak of cleared area or AWOR. If required safety distance between the mine fence and self-standing signs and the risk area cannot be ensured, it is imperative to make a demining project for permanent marking.

23. All movement of personnel and machines, leaving tools, equipment and material for marking and digging must be done on a cleared or AWOR area, outside the secured area only.

24. Operation of permanent marking requires precise locating and identification of where to place the mine fence and self-standing mine signs before the work start, in order to prevent personnel who is conducting marking from entering the risk area (because they are not familiar with the exact borders of the risk area.). BH MAC RO personnel and an authorised and expert person of the organisation that conducts permanent marking do identification of borders of the risk areas. They make THE RECORD about identification of the place for the mine fence, self-standing mine signs, cleared area and AWOR.

25. Organisation that conducts marking is obliged to ensure continuous presence of an expert person of geodetic vocation on the site, during the survey over works on permanent marking, in order to control and identify the project's requirements.

26. For safety of technical ability to conduct works, places for self-standing signs and mine fence may be moved from places defined in the project into the cleared area or AWOR, with accordance of BH MAC office. All changes must be verified through the re-survey procedure that will be conducted by BH MAC Regional office.

27. Final sketch, which is stamped by BH MAC office, will contain accurate grid references of self-standing mine signs as well as grid references that define the direction of stretching the mine fence. It is delivered as an annex to the Record on Completion of the Permanent Marking.

28. If a UXO is found on the site, all works will be halted. Place where the UXO was found will be marked and an expert UXO Civilian Protection team will be called.

PERMANENT MINE FENCE AND SELF-STANDING MINE SIGN

29. Mine fence is placed at estimated places of people's access towards the risk area from that which is either cleared or AWOR. In the project for permanent marking, as well as on the sketch of final works, and as a way of marking the risk area, the place and the direction of the mine fence and self-standing mine signs is always defined.

30. Apart from the mine fence, the places of self-standing mine signs are also defined on the sketch as a mine threat warning. Self-standing mine sign is represented as a mine sign of minimum dimension of 40x40cm, placed on a red painted concrete or metal stake, square or L profile if metal or 8x8 cm if concrete.) of minimum height of 150 cm above the ground, recognisable from at least 50 metres.

31. Metal or concrete stake in a mine fence or as a separate upright holder for the mine sign must be posted and anchored into the concrete base of dimensions 30x30cm and 40 cm into the ground if the ground permits so. In rocky areas it is necessary to anchor the stake in accordance with basic requirement of stability and lasting.

32. Stakes in the permanent mine fence will be either of metal (min. 4x4 cm, square or L profile) or concrete (min. (8x8 cm), 150 cm above the ground, painted in red and white from the top down. Between the placed stakes which are at the most 8 metres from each other, depending on the ground configuration, three rows of barbed wire will be set evenly, with the start maximum 30 cm from the top of the stake and maximum 30 cm from the ground level. It is necessary to drill holes in stakes in order to securely fix the wire.

33. Mine signs (minimum dimensions as given in Standard) on a permanent mine fence will be placed on the top wire and in the middle of the stakes.

34. Mine sign in BH must be red in colour, with writing MINE in white (roman and Cyrillic writing) containing scull with crossed bones in white colour as well.

IV PART

E D D TEAMS TESTING

C O N T E N T S

INTRODUCTION

1. BH MAC EDD teams tryout testing has defined a need for creation of an independent testing programme, that will ensure EDD teams are up to their operational standard, which will further ensure they will be reliable in tracing mines / UXO (explosives). BHMAC testing procedure is merely but to confirm their capability to do their work.

2. Mines in Bosnia and Herzegovina have been in the ground for some years now. Some of them are moved by conditions deeper into the ground. There are layers of grass and soil over them. Trees have grown on some of them or in their vicinity, while some of them moved from their original places due to the movements of the ground. That is why the test must suit as much as possible the conditions mentioned above.

3. It is the responsibility of the EDD organizations to fulfil the preconditions required and to apply for testing that will confirm the operational function of their EDD teams. For those EDD teams that do not pass the test, organizations must state reasons. They should, with their own additional training on their own testing area bring back the operational function for re-testing and getting the EDD team accreditation.

4. BH MAC Operations Sector will appoint personnel in charge for testing, all according to procedure stated in this SOP. As an Annex to this SOP, there is a plan of a testing area, which will be used for testing only, in order to define the groups of boxes and deployment of mines needed for defining the test results. Apart from BH MAC, representative from BH MAC Regional Office will be present at the testing, as well as an observer from an independent organization also having EDD teams. The testing manager, as well as stated members, do not have to be experts in order to conduct the testing function, since the aim of the testing is nothing but confirmation of the operational standard of the EDD team, which is conducted in a clear and unbiased manner, according to procedure stated in this SOP.

AIM

5. The aim of this SOP is to standardise procedures for EDD teams testing, so that all the organizations can be familiar with requirements stated in the Accreditation Guide for EDD teams and EDD organizations and thus adjust their own training programme.

DEFINITIONS

6. Definitions down bellow will be used in this SOP:

   a. **Box** is an area on the ground 10 x 10 m, marked with pickets for marking the working lane on every corner of the box, with or without the mine tape.

   b. **Group of boxes** contains of four boxes indented to testing one EDD team.

   c. **Indication** is a case when an EDD signalises the target in a previously stated manner within the organisation's SOP; and

   d. **False indication** is a case when an EDD falsely indicates the presence of a mine or UXO.

TESTING REQUIREMENTS

7. Each EDD must search a group of boxes, containing of four 10 x 10m boxes, which is total 400 m^2. Search time is limited to four (4) hours, breaks included.

8. Most common AP mines without fuses are placed in box areas, those that were used in Bosnia and Herzegovina. AT mines, for the quantity of the explosives they contain, which, if stolen, might be used for diversions, will not be placed into boxes, which goes the same for the UXO if the testing area is not secured. Mines placed will be from 0 to 10 cm in the ground, with the average value of 3-5 cm, measured from the ground level to the top of the mine. The list of mines deployed in groups of boxes will be shown to the EDD teams trainer.

9. Testing on testing areas will be conducted minimum two months after mines are placed, in order to allow the soil to come down and explosive vapours stabilize and come up through the ground towards the top. BHMAC will do their best to test EDDs on testing areas where the mines were placed at least six months ago. After the search of assigned boxes for one EDD team during one day, another EDD team will not be tested in the same group of boxes. Only exceptionally another EDD team will be allowed (the one that works together with previously tested), when a defined period of time pass for another EDD team's search. This will be so if stated in the demining organization SOP.

10. General testing conditions and criteria for fulfilling the test or failing.

PREPARATION OF THE TESTS

11. The area set for EDD teams testing should be convenient for long-term testing and it should as much as possible is similar to areas really contaminated with mines. For this reason and different climate and soil conditions in BH, BH MAC established and will use testing areas in the regions of Travnik, Mostar and Bihać. BH MAC Regional Offices where the testing areas area will supervise and report about any unwished activities on the test area, until the conditions are made for the testing areas to be properly secured.

12. The deployment of the test boxes depends on the ground we have in possession for this aim. The deployment of mines are different for different testing areas, while within one area the deployment of mines according to groups of boxes is different. There will be the same number of mines in the group of boxes for all EDD teams. Empty box (no mines deployed) will change place within a group of boxes. In this manner, all the EDD teams on one testing area have the same testing conditions. The plan of the testing area along with the deployment of groups of boxes and boxes within groups is shown on the sketch with the reference point, bearing and distances. In case of any destruction of the boxes borders, for their re-establishing, 20cm long nails will be put into ground by ending pickets of the boxes. This will make it easy to locate them with the metal detector.

13. The SOP contents are comprised of BH MAC testing areas plans, which can be provided to BH MAC testing manager only for the testing for a particular area, with sketches of deployment of mines, and in order to compare and define test results.

14. <u>It is of utmost importance</u> that the measuring while setting boxes and mines is accurate.

15. Deployment of mines without fuses as well as deployment of tripwire in the group of boxes is as follows:
    a. One box remains empty, without mines.
    b. One box contains three mines, one of them surface laid.
    c. Two boxes contain two mines each, where in one of them one mine will be surface laid.
    d. A piece of tripwire 0.5m long will be deployed into the empty box or one of the boxes that contains mines.

e. Instead of surface laid mine(s), a part of a mine with explosives or a piece of explosives (at least 15 g) can be laid, which is similar to what can be found on locations where mechanical preparation was done.

16. While deploying mines in boxes, we must record types and locations where they are laid, with X / Y grid references and recording on the sketch of the plan for the test area of each and every box. Surface laid mines (or their parts) will be placed prior to testing at places which are according to the sketch of the plan masked with vegetation or, if possible, possibility of deploying piece of mine without entering the box area. This will enable the fast comparison of the EDD indication and real location of the mine, where the place of the mine in the ground must not check with the prodder or digging, i.e. the ground structure must not be disturbed on places where mine is placed.

17. Mines containing no metal may be deployed with small pieces of metal (nails), in order to enable metal detector to locate the place of deployment of such mine, without unnecessary disturbance of the soil.

18. In the immediate vicinity of the test area, there will be three to five mines placed for the daily check of the EDD's concentration prior to its testing.

19. EDD teams testing on a test area for acquiring accreditation can be conducted with the presence of testing commission only. There will be penalties for organizations found with their EDD teams on testing areas at times when no testing is conducted. The penalty will be the change of time and testing area for the organisation's EDD teams.

20. Testing areas are planned for long-term use. For this reason, all the information about accurate deployment of mines must be available to minimum number of persons possible, in order to keep the credibility of results achieved.

21. Organisations that wish to accredit their EDD teams are obliged to apply for testing at least ten days prior to the date they wish (given in Annex B), providing all required data for EDD teams. According to the applications gathered, BHMAC create *the testing plan, which* will be delivered to organizations for its realization. In case an organization is prevented for some reason to attend the test, it is obliged to notify BHMAC (Operations Sector) at least two days prior to scheduled testing.

22. The plan will define an independent EDD organization that will appoint a member who will observe testing. This is for achieving trust into regularities and equal conditions for the testing of all EDD organisations.

23. In order to confirm the actual test results, the following rules must be applied during all the time of the testing:
    a. There must be no prodding or any other disturbance of the ground, and
    b. Neither the EDD team trainer nor the dog handler from the tested organization shall be notified about places where mines are located (neither before nor after the test is over).

REQUIREMENTS FOR PERSONNEL AND EQUIPMENT

24. Only two EDD teams can be testing in one group of boxes, if possible those that usually work as a pair, with a time distance stated in the SOP. Each EDD will be observed throughout the testing by the testing manager or one of his assistants (commission members).

25. A person appointed from BH MAC will conduct the testing, with responsibilities as follows:

    1) Set-up and maintenance of testing areas and keeping records on locations of mines deployed,
    2) Providing final decision on time and place of the testing, based on organisation's requirements and
    3) The conduct of testing in accordance with procedure stated in this SOP.

26. Testing assistant (member of the Commission) is a BH MAC Regional office inspector. His duties during the testing are as follows:

    1) To ensure that EDD teams work in intended boxes,
    2) To mark the start and finish time of work in every particular box,
    3) To follow the EDD team's work and to estimate if they satisfy the prescribed test criteria,
    4) To ensure that the manner and pattern of search are in accordance with organisation's SOP,
    5) To track the accuracy of setting indications markers by the dog handler in relation to his EDD,
    6) To propose to the test manager that the EDD test should be stopped, if he estimates that it does not meet the conditions of work during the test (this will be recorded as a reason in the remark within testing record) and
    7) To help in measuring indications and stating results.

27. The following documentation and equipment is needed for the conduct of the test:

    a. Record from the individual EDD team testing,
    b. Measuring tape,
    c. BH MAC or organisation's indication markers, if organization wishes to use its own markers,
    d. Test area plan with groups of boxes, the sketch of mine locations within boxes as well as the sketch of their deployment in boxes in order to state the test results,
    e. SOP of the tested organisation,
    f. A rope or a tape 45 metres long for fencing the boxes and precise measuring of the indications,
    g. Thermometer for measuring of the outside temperature (of soil and air),
    h. Metal detector,
    i. Prodder, spade etc.

CONDUCT OF THE TEST

28. If there are indications that mines are moved, e.g. if there are signs of digging inside the boxes, metal detector and the prodder are used to confirm if the mines are still at their original places. Additionally, if there are indications that mine locations are marked in some was, the test manager with his assistants (Commission) will review the problem, notify BH MAC Director and decide upon the further continuance of the test.

29. Upon arrival on the test area, trainer must be asked if conditions are suitable for the testing (weather, soil, vegetation). The only acceptable reasons for postponing the test are those stated in the SOP of the organization that is being tested and conditions given in Annex A. When conditions on the test area are accepted, the dog handlers will be given information about the testing procedure.

30. After this, the dog handlers will prepare EDDs for work. In the stated area where the training mines are deployed (daily motivation checkups – warming up) prior to entering the assigned test area – the dog handlers will check if the dogs are positively motivated in order to conduct the test. During the test, the dog handler can use the training area for as many times as he wishes in order to check the motivation of his EDD for work.

31. When the trainer confirms the EDD teams readiness, the test manager confirms what the EDD team consists of (information and marks of dog handler and the dog). Then each EDD team is assigned a group of boxes or combination of four boxes from different groups to search. This is done either based on lottery system (taking out numbers) or by schedule made by the test manager.

32. All test observers must be on the intended area, at the minimum distance of 50 metres from the testing area. During the test, the dog handler must wear personal protective equipment. Work during testing is conducted at minimum safety distances of 25 metres.

33. The dog handler with his EDD enters the testing area and starts individual search of the box from the directions he estimates most suitable. Test manager appoints assistants, provides them with EDD testing forms with information about EDD team, datum and place of testing. Assistants (Commission members) will follow the work of every EDD team, record the start and finish time for every box and will not interfere with their work provided procedures stated in the SOP are not violated, as well as the stated testing conditions. The dog handler, when working with long leash or without a leash, will mark the EDD indication in accordance with his SOP without entering the box area. With short leash method, the dog handler is with his EDD in the box and he marks the indications inside the box. If the procedure in the SOP is such that the indication is marked by another person (team leader or deminer), the dog handler will notify the assistant who follows the search about the indication. The assistant will then set the markers before the search goes on.

34. When the dog handler confirms that all the four boxes are successfully searched, test manager and assistant who followed his work will together measure the indications and put them on an empty sketch for each and every box, which is a regular form of every testing record. (Testing record shown in Annex C). When measuring indications by X and Y grid references, it is needed to firm the tape between the picket or a rope, in order to accurately measure the indications.

Remark: When recording X and Y grid references on the box sketch, it must be taken into account that the direction of North suits the one where the locations of mines are marked. This eliminates possibilities of mistakes when results are compared with the actual status on the ground.

35. When all EDD teams finish their search and when the measuring is over, testing manager will compare the test with the sketch in the plan where the mine locations are drawn. Final results of tests for each EDD team will be provided at the end of the fifth sheet, where the assistant of the manager will state his observations about conditions of testing, reasons for stopping and other he thinks relevant.

36. Test results are stated after test is finished and short analysis of the test is made along with the dog handlers and EDD teams trainers. For those EDD teams that successfully passed the test, BH MAC

will issue Accreditation Sheet within seven days for the demining organisation, while the validity of the accreditation is 6 months. Testing records remain in BHMAC archives.

37. Provided demining organisation does not meet conditions which state the operational use of dogs required by the Standard, BHMAC may ask that prior to 6 months valid accreditation such EDDs are additionally tested.

38. Any appeals on test results or the test itself must be provided to BHMAC in written form no longer than two days after testing.

CONCLUSION

39. BHMAC EDD accreditation test is not a scientific research of EDDs capabilities. It is merely confirmation of what they can perform and proof that EDDs on areas in Bosnia and Herzegovina achieve operational standard in continuous locating mines, both surface laid and those in the ground.

ANNEXES:

A- GENERAL TESTING CONDITIONS

B- APPLICATION FOR TESTING

C- EDD TEAM TESTING RECORD

D- EDD TEAM ACCREDITATION SHEET

Annex A

BASIC CRITERIA FOR GROUND ESTIMATION OF EDD TEAM FOR AQUIRING ACCREDITATION

1. BHMAC ground tests shall be used for estimation of **EDD teams** as a part of accreditation of an EDD organisation. Estimations are to confirm at least criteria listed bellow for each EDD team.
2. **ED teams** will be estimated individually. This means that every EDD team is tested in the same manner, up to the same standard.
3. General.
    a. EDD team is nominated by operational EDD organisation.
    b. Leash can but does not have to be used; it is up to the handler's choice.
    c. EDD must obey basic commands of the dog handler.
    d. EDD must intensively sniff and his attention must not easily be distracted.
    e. EDD must search entire areas of assigned boxes for the test.
    f. Test boxes must be searched in accordance with organisation's SOP.
    g. EDD's indication of what it has found must be in accordance with the SOP.
    a. Every indication of a target must be recorder and certified by the use of the form showing the sketch or a diagram of the testing area.

4. **Weather conditions and conditions on the ground**.
    a. Testing will not be conducted in cases listed bellow:
    (1) If the wind speed is over 25km/h (7 m/s).

(2) If the outside temperature exceeds $+30^0$C.

(3) If the temperature is bellow $+5^0$c.

(4) If case of rain or snow falling.

(5) *Prior to beginning of test* dog handler declares if the conditions are acceptable for his work or not.

b. Other limitations regarding dogs, which may be caused by weather or the ground, will be taken into consideration only if stated so in the organisation's SOP.

5. **Search Area**.

a. Test area for each EDD is 400m^2. It is divided into 4 boxes, each 10 x 10 m (total 400m^2), one being empty, without mines / UXO. One contains a piece of tripwire 0.5 metres long in order to find out if it is trained to indicate it.

b. Prior to testing, dog handlers may look around and see the testing area(s) from outside the marked borders.

c. There must be a separate area outside the boxes, which is prepared and has surface laid and shallow laid mines. This area is used for EDDs daily check prior to formal testing on the prepared areas, and is used as a training and control exercise for informal estimation of the dog during the test, when the dog handler estimates he should test his dogs.

6. **Search items**.

a. Area for search will contain items every dog will have to indicate. These are listed bellow:

(1) Anti-personal mines.

(2) Anti-tank mines (in secured test areas only).

(3) Tripwires.

Mines – targets must be of the kind most usually used in Bosnia and Herzegovina

b. Mines – targets to be found will be laid into ground at least two months before the testing.

c. Mines – targets to be found will be laid at maximum depth of 10 cm.

f. Surface laid mines (or their parts) will be placed immediately before the testing. A piece of mine or a piece of explosive may be used instead a surface laid mine, containing at least 15gr of explosives, which can usually be found at areas where mechanical preparation was conducted.

d. Tripwire (0.5m long) will be placed into one of the boxes (minimum one month prior to testing; it will be firmed into the ground with nails) in order to confirm if the dog is trained to locate it. This result does not affect the test, but this capability will be recorded at the Accreditation Sheet.

7. **Conduct of Search**.

a. **EDD team** will be allowed to search an area as many time as needed, until the dog handler confirms that the area is searched completely.

b. It is for the dog handler to use markers and show the observer when and where there was an indication. If the observer asks for additional explanations, dog handler will provide them according with indication of the place where EDD indicated. The indicators can immediately be recorded onto the sketch / diagram of the box or it can be done at the end of the test, when the

use of measuring tape helps recording places of indication based on intersection of X / Y grid references.

c. When we test more than one EDD team at the same time, during the testing period they must be distant from each other at least 25 metres.

d. All observers on testing location must be at least 50 metres distant from the area marked by tape, which will be used for testing EDDs.

PASS AND FALL CRITERIA

8. There is a set of conditions EDD must fulfil during test in order to finish it. These are listed bellow:
   a. That EDD positively indicated the location of mine on a training test area (fulfilled the daily check) before he searches the area assigned for testing.
   b. That EDD obeys the command of his dog handler.
   c. That EDD is intensively sniffing the assigned test area and his concentration cannot be easily distracted.
   d. That upon indication does not scratch the ground while sniffing for target.
   e. That EDD searched entire test areas.
   f. That dog handler marks indications according to X / Y , the places where the EDD indicated.
   g. That the time of search of the assigned area is not longer then 4 hours, including breaks.
9. If the assistant to the test manager, who follows the work of the EDD team, estimates that none of the stated conditions are fulfilled during the test or it is previously stated that a mine is missed in some of the boxes, he can propose to the test manager that the test should be stopped, which will be decided by the test manager.
10. Dog handler is also entitled to ask that the testing be stopped if he estimates that his EDD cannot successfully complete the test.
11. Stopping the test will be recorded as unsatisfying conditions as well as unsuccessful result of the test, and will be recorded with exact reason given in the testing record remark.(Annex B).
12. EDD team has passed the test if it fulfils all the set conditions for testing and if the EDD has indicated all the targets within the search area.
    a. Test will be finished when the dog handler declares to the commission (assistant or test manager) that EDD has finished searching separate boxes.
    b. Visible EDD's indication of the target should match with what is stated in organisation SOP.
    c. Indication is accepted as valid if it is of no longer distance from the target than 0.5m.
    d. If there is not more than 100% false indications comparing to the number of targets laid.
13. EDD team that has not passed the test can apply for a re-test after seven days. If it does not pass then, a month must pass before it applies for another testing.
14. Application for regular or additional testing for acquiring accreditation will be done after initial conditions are met (No 7. and form given in Annex B).

For: BHMAC-Quality Assurance Department -Fax 033 667 311 Annex B

APPLICATITON
For EDD testing for accreditation

Demining organisation:_____ Suggested test date_____200__ Test area_____

Contact person (EDD team trainer) :_____ Tel:_____ Fax:_____

EDD team No	**Name and Surname of the dog handler**	Personal No	Name of the EDD	Breed/Colour	Date of delivery and country of origin	Identification number

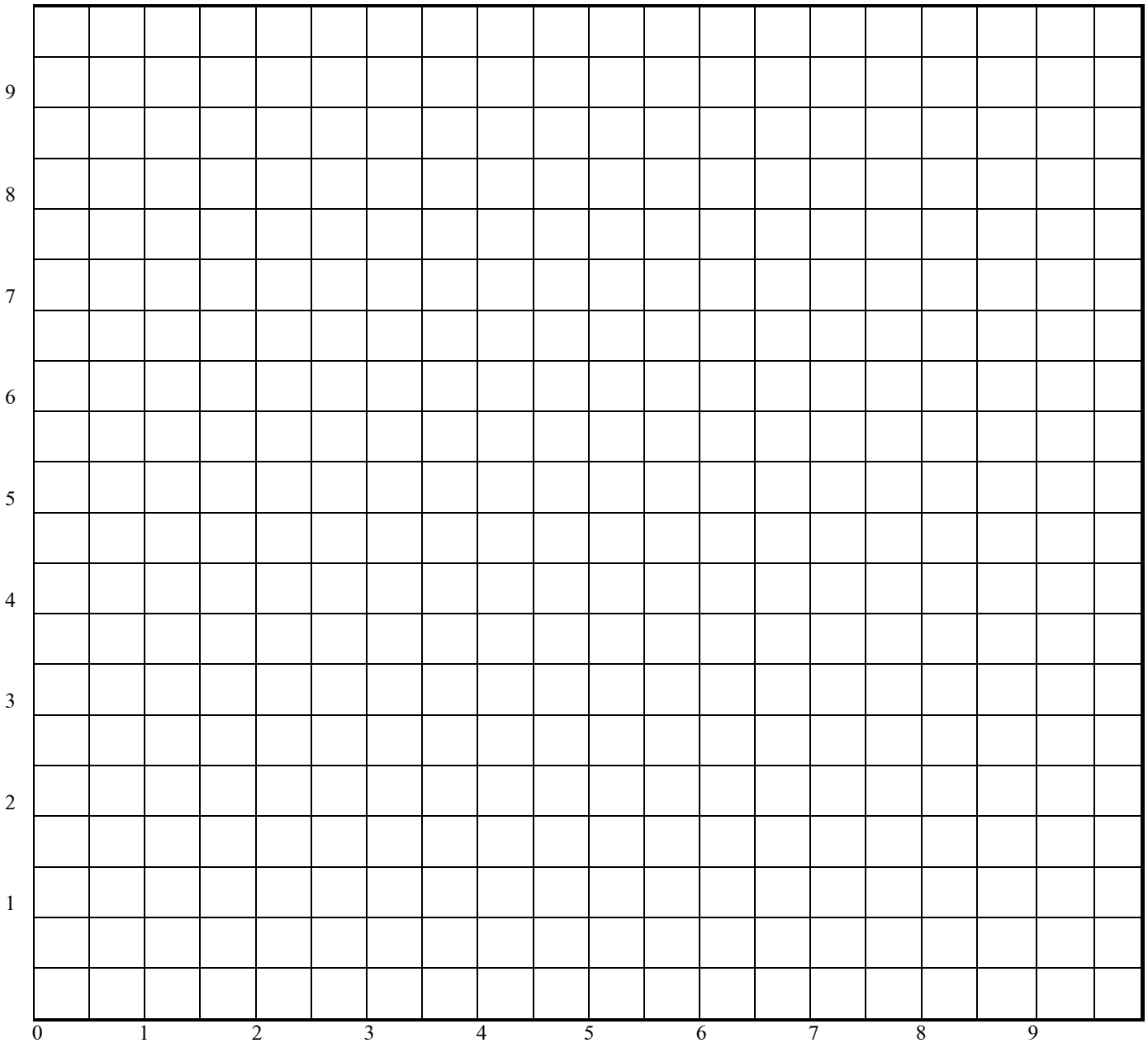
Annex C

EDD TEAM TEST RECORD

Organisation _____Date _____ Test manager_____
Dog handler_____ JMBG _____ Assistant_____
EDD _____ Breed_____Colour_____
Date of delivery_____ Number or a sign _____

Test area _____

Group NO ____ Box No ____ ✕= EDD indication ● = Mine location



Start time _____ No of indications _____ Found mine _____
Finish time _____ False indications_____ Missed mine _____

TEST RESULTS

A)Conditions set for the conduct of the test:

a. –that EDD successfully finished the daily test.
b. –That EDD obeys his dog handler's commands.
c. –That EDD intensively sniffs the ground and has needed concentration.
d. –That EDD during indications does not scratch the ground while sniffing for the target
e. – That during the test the entire area assigned is searched.
f. –That the dog handler properly mark the places of dog's indications
g. –That the search time of the assigned area does not exceed 4 hours, counting breaks

☐ **EDD team met the conditions of test**
☐ **EDD team did not meet the conditions of the test**

B) Final test results:

==========

- Mines laid _____ EDD team found_____ Missed _____
- Total test time _____minutes Total indications_____ False indications _____

☐ **EDD team passed the test**
☐ **EDD team failed the test**

-EDD indicated the tripwire: YES ☐ NO ☐

Remarks (explanation why the test was stopped):

_____

_____

_____

_____

Test manager signature

_____

Dog handler's signature

_____

Assistant signature

1._____

2._____

3._____

Annex D

EDD TEAM ACCREDITATION SHEET

1. Double-sided plastic cards, size 95x65mm.

EDD TEAM ACCREDITATION SHEET

DEMINING ORGANISATION_____

DOG HANDLER'S DATA

Name and surname	JMBG

EDD data

Name	Breed/Colour	Identification number

ACCREDITATITON DATA

EDD team accreditation sheet is valid for all conditions stated in the organisation's approved SOP

From	**Expires:**

REMARK: EDD indicates tripwire*

Assistant Director Operations

* This ability is stated only if the dog is trained and proved the same on the test area

V PART

TESTING OF MACHINES FOR MECHANICAL PREPARATION OF THE GROUND

C O N T E N T S

INTRODUCTION

1. Development and production of different types and sizes of machines in the humanitarian demining process requires a thorough review of the stated development, as well as testing procedures that are required through the Mine Clearance and UXO removal standard in Bosnia and Herzegovina (hereinafter the Standard). This is for the aspect of safety and quality of removing the mine threat for both demining personnel and future users of cleared areas.
2. As for development so far, these machines were not of the characteristics that would enable the produces guarantee the sufficient quality of clearance of the ground up to humanitarian standard of minimum 99,65%; BH Standard requirements were not set from the same basis, i.e. machines have no characteristics for clearance; their operational ability is set as mechanical preparation of the ground for demining.
3. During the clearance process, mechanical preparation of the ground – depending on type and characteristics of machines – removes vegetation to certain level, removes the trip wires, activates or breaks part of mines, which more or less remove a certain percent of mine threat. In order to locate and remove possible mines that are left (those not caught by a machine due to ground configuration, areas covered with disturbed soil or any other condition), as well as remove the remained explosive pieces, after the mined area is mechanically prepared, further engagement is needed using manual methods and EDD teams. This procedure integrates more demining methods, which certainly gives more safety and quality of work as required by BH Standard.
4. The basic BH Standard layout for a machine is as follows: machine with technical and other characteristics proved through testing, which is capable of removing vegetation and **disturbing the soil** to the minimum of **10cm** into the depth, breaking it to pieces not larger than 5cm in diameter**,** presents the adequate **standard** quality that is achieved by using the prodder (minimum 10 cm into the depth), or the detector, which is supposed to locate the minimum metal content mine to 10 cm into the depth (PMA-3). Provided these characteristics might be used at suspect areas for which there are no reliable data on mining, BH Standard in its Chapter XIV – Mechanical preparation of the ground) proposes these areas (entire or partially) to be declared as **areas without obvious risk,** provided there were no explosions or visible mines thrown out on the surface or their parts. Such areas would not be further treated, while the demining resources might be deployed at other mined areas.
5. In order to practically confirm the characteristics stated by the producer, as well as other characteristics important for further demining process, BH MAC will set up a commission that will check the operational characteristics of the machine on the ground, as well as its success in mechanical preparation for certain phases in demining process. The focus of the check will be the safety of the operator who manages the machines, quality in removal of vegetation, disturbance of soil and maximum diameter of broken pieces of soil. There will also be other indicators that will demonstrate the quality of work, reliability and possible productivity of the machine.

AIM

6. The aim of this SOP is to standardise the testing procedures for machines used for mechanical preparation of the ground, all in order for demining organisations and those who produce such machines to get more details about requests set in BH Standards. This would enable them introduce themselves with machines into demining process in Bosnia and Herzegovina.

DIVISION OF MACHINES

7. According to certain characteristics and needs for work, machines produced so far for the process of humanitarian demining can be divided as follows:

   a. According to intention:
      - -Machines for removal of vegetation
      - -Machines for disturbance of soil, and
      - -Machines for removal of debris (wreckage, garbage etc.)

   b. According to characteristics of working tools:
      - -Flail machines,
      - -Plough machines,
      - -Machines for crushing the taken parts of the soil,
      - -Tiller machines (feet, rollers, rollers with peaks) and
      - -Combined (more functions in one machine)
      - -Machines with clutches for catching and removal of trash, including vehicles for transportation of the debris.

   c. According to total weight:
      - -Light, up to 5t
      - -Middle, from 5-20t and
      - -Heavy, over 20t

   d. According to way machines are operated:
      - -Machines immediately operated and
      - -Machines remotely controlled (visually from armoured cabin and video surveillance from the armoured cabin, or from the safe distance)

TESTING REQUIREMENTS

8. Testing is to confirm the technical characteristics provided by the producer in relation with the BH Standard set of requests. The basic requirements given in the BH Standard are as follows:
   - -Safety of the machine operator in immediate and remotely operated machine,
   - -Possibility of removal of AP mines and consequences of possible encountering an AT mine.
   - -Quality of removing vegetation (type of vegetation, size of bushes, diameter of trees etc),
   - -The depth of soil disturbance in different categories and at different working speeds,
   - -The diameter of the crushed soil pieces,
   - -Drivability in relation to the conditions of the ground and the possible ground slopes,
   - -Productivity per hour at different categories of the ground with or without vegetation which is successfully removed by the machine,
   - -The scope of possible daily productivity in relation with the conditions of soil – category of ground within 5 effective working hours,
   - -The width of the working lane with and without 0.5 metres overlap,
   - -The length of the working lane,
   - -Reliability of the machine from the quality production aspect (basis that is used for superstructure, the protection of vital parts in case of explosions, possibilities of removing the damages made etc.),
   - -Protection of the machine in case of fire,
   - -Possibility for self-extrication or extrication in case it gets stuck,
   - -Possibility for placing demining tools for the operator and functioning of the operator's communications while immediately operates machine etc.

   Categories of the ground are attached in Annex H.

9. Based on these and other indicators it will be confirmed by commission testing, through I – III phases (contents stated in part 16.). After the machine is tested in phase II (safe area), BH MAC shall provide temporary accreditation for 1 – 3 months of validity for the III phase period, for those machine preparations machines are estimated to satisfy with its characteristics. In period III of the final testing phase, machine way of operations will be observed in mined areas (safety for the operator, consequences for the machine when a mine is activated, types of mine machine can deal with in a good manner, drivability and capability of overcoming different types of soil by quality and contents of vegetation, etc). After the final overview of the characteristics proved even in mined areas (III phase), BH MAC will issue the accreditation for stated operations of the mechanical preparation machine that will be valid for two years. (Example attached in Annex G). Provided BH Standard's requests are not changed regarding mechanical preparation, accreditations will be re-issued for a period of two years, i.e. until the changes to the BH Standard are made (changes that would require the change of characteristics of the machines and the testing procedures).
10. The commission according to the topics content attached in Annex F will conduct test.
11. Testing of one machine from each type and model shall be conducted within accreditation process of a demining organisation (or purchasing a machine by an already accredited organisation); it will also be conducted at the request of the producer in order to confirm or improve the safety and quality of work in the very process of the production of the machine. Provided machine of the same type and model has already been tested, BH MAC will decide if there is a need for further testing, i.e. BH MAC will use testing records to issue accreditation for a certain period of time.
12. Testing requested by a producer for practical confirmation of machine's characteristics and needs for improvement will be conducted by BH MAC following the same procedure used for any demining organisation; the difference will be that the evaluation and the approval of the SOP will be issued only for a certain period of testing. The testing phase in suspect and mined areas will be conducted by a producer at certain demining organisations' sites, those with whom the producer makes an arrangement or at areas set as task sites by BH MAC. Minimum working hours on such areas during the testing of a producer's machine in the III phase cannot last shorter than a month, i.e. 22 working days with effective 5 hours work.
13. The testing record with evaluations and stated characteristics of a machine is a document that relates to demining activities as stated in BH Standard, and they should be noticed and observed as such.
14. The original test record will be archived in BH MAC, while the copy may be obtained by the interested parties (demining organisations, producers).
15. Minimum three members from the MAC structure will make a testing commission and will be appointed by the BH MAC Director.

TESTING PROCEDURE

16. BH MAC will conduct machine's testing for mechanical preparation of the ground for demining upon written request – Testing Application Form (Annex A). This form will be delivered to BH MAC by the demining organisation or a producer who is interested in testing.
17. The testing plan encompasses three phases and those are as follows:

I phase: - Reviewing of the documentation provided (1-2 days) on the machine's characteristics and the evaluation of the standing operational procedures (SOP) for work in mechanical preparation of the ground for demining – testing. Minimum content of the SOP for mechanical preparation is attached in Annex C.

II phase: -Testing machines for 2 – 3 days outside suspect or mined areas with the confirmation of possible important characteristics in practice at different soil and vegetation, making remarks and data according to contents of questions given in the record; the conclusion of the commission and if necessary work on removal of faults that need to be done for the sake of safety of the operator, changes of the procedures in order for the SOP to be approved for the testing period of the III phase.

III phase: - Work in suspect or mines area (1-3 months) with occasional inspection of work that will be done by the commission, in order to note the consequences of mines – how does it affect the safety of deminer, damages to the machine, as well as reliability of operations and productivity, all in relation to quality of work stated in phase II; the conclusion of the commission in relation to the testing results and BH Standard requirements, stating possible quality operations in mechanical preparation for clearance procedures, technical survey and mechanical sampling in Quality Control of demining.

18. Regarding phase III, demining organisation or the producer have the obligation to provide the operational staff for mechanical preparation of the ground who will enter the dangerous areas, as requested by BH Standard (Chapter XIII, Annex D); they are also obliged to provide medical support if the operation is conducted without demining team support. Personnel entering the dangerous areas must have passed the basic humanitarian demining course, while the operators must have additional training for handling the machines and the procedures stated in the SOP for mechanical preparation of the ground for demining.
19. During phase III, the team leader will make a daily and summary report according to form provided as Annexes D and E; these reports will be given to the commission for their review and necessary analysis, in order to make a final conclusion about the machine testing.
20. If the testing is conducted without the present of the wider deminers' team, minimum composition of the team for mechanical preparation of the ground for demining with a machine in phase III would be as follows:
    -Team leader
    -Operator
    -Assistant operator
    -Deminer
    -Medic with vehicle and equipment
21. During the testing procedure, BH MAC has no responsibilities whatsoever regarding damages that might occur on the machine while activating mines or UXO. That risk is for the organisation that seeks accreditation or a producer who seeks a testing.
22. A copy of his SOP will be distributed to all the organisations that are interested, in order to get familiar with the testing procedures for the machines in BH.

Annex A

TESTING APPLICATION FORM

FOR MACHINES FOR MECHANICAL PREPARATION OF THE GROUND FOR DEMINING

Demining organisation or producer ……..……..…,
location and address…….....

Contact person...….....tel:/fax..…….....

Proposed start and location of the test
.....…….....

DATA ON MACHINE

Name, producer and type.....

Annex:

1. Documentation on the machine (description, handling and maintenance, technical specifications, protection attests)
2. Standing operational procedures for work in the humanitarian demining operations (SOP) or its part that relates to mechanical preparation of the ground, i.e. treatment.
3. Who the team for machine preparation consists of and copies of personnel certificates.

PERSON IN CHARGE

Annex B

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БОСНИ И ХЕРЦЕГОВИНИ
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No.....

Dated.....200_.

TESTING PLAN

For mechanical preparation of the ground with a machine

Demining organisation-producer	
Address	
Contact person and tel. number	
Name, producer and type of the machine	

Date	Phase	Contents	Location	Remarks
	I			
	II			
	III			

Additional remarks:

Testing according to stated the commission that will consist of the following shall conduct plan:

1. -....., chairman
2. -....., member
3. -....., member

D I R E C T O R

Annex C

REVIEW OF THE CONTENTS OF THE SOP FOR THE MACHINES FOR MECHANICAL PREPARATION OF THE GROUND

Ser.	Contents for review	Acceptable		Remarks
		Yes	No	
1.	Description and technical characteristics			May be an addition to SOP (a part of the SOP)
2.	The use of machine during humanitarian demining procedure			
3.	Safety measures - precautions			
4.	Limitations in use			
5.	The team content, diagram of the task site layout, the work of machine and procedures of mechanical preparation			
6.	Procedure in case of breakdown			
7.	Procedure in case of fire			
8.	Procedure in case of deminer's accident			
9.	Diary – Daily Report			

REMARKS:

1. This part of SOP relates only to the mechanical preparation of the ground with the machines and is closely related to other parts of a demining SOP connected to the following: necessary training of the team members; marking of the mined area and the task site; organisation of the task site and manual operation; mine survey; demolition of mines / UXO; quality assurance of work; communication system, documentation and reporting; marking of the Technically surveyed – cleared area; medical support and investigation of a demining accident.
2. Provided a demining organisation wishes to conduct mechanical preparation of the ground only, it has to, within their SOP, cover the above stated contents, all in order to be in compliance with BH Standard requests given by chapters.
3. When there is a case of testing the producer's machine, the producer has to review and cover the items given in the contents for the part of the SOP – mechanical preparation of the ground, as it is shown in the table; for other parts of the SOP a demining SOP of the organisation where mechanical preparation is conducted may be used. He can also use BH Standard if working on an area of a specific task chosen by BH MAC for the testing period. If this is the case, SOP for the mechanical preparation shall be approved for the testing period only.

Annex D

DAILY REPORT ON MECHANICAL PREPARATION OF THE GROUND

DATA ON THE MACHINE AND THE TASK

Name, producer and type of machine:	
Location:	ID No of the task:
Type of machine preparation: ☐ -for technical survey ☐ -for clearance	
Working hours or state of the counter: - start_____ hours /-completion_____hours Total effective machine work during day: _____hours	Datum:

DATA ON OPERATIONABILITY OF MACHINE

Daily operation ability check: a) before use: ☐ -operational ☐ –non-operational b) After use: ☐ -operational ☐ -non-operational
Explain the reasons for being non-operational and what measures have been taken:

WEATHER CONDITIONS, VEGETATION, CONDITIONS OF SOIL AND THE SLOPES

TEMPERATURE: -at 09.00 =…… ^{o}C -at 12.00=……^{o}C -at 15.00=……^{o}C

WEATHER**:** ☐-sunny ☐-cloudy ☐ -rainy ☐-snowy

VEGETATION: ☐-low up to 0,5m ☐ -medium from 0,5-1,5m ☐-high (over 1,5m)

SOLIDITY OF THE GROUND: ☐-soft ☐-medium hard ☐-hard

SOIL OCMPOSITION: ☐-clay ☐-sand ☐ -permeable ☐-other

SOIL CONTAMITNATION:☐ -metal debris ☐-stumps☐ -construction debris ☐- garbage

SLOPE: ☐-flat ☐-mild slope ☐ -steep slope

TYPE OF SOIL ACCORD. TO USE ☐ - farm ☐-pasture ☐-other

OTHER IMPORTANT REMARKS:…….
……..
…….
…….

DATA ON EFFECTIVITY

Sketch of daily productivity in relation to the safe lane, direction of North and approximate locations of activated and surface thrown explosive devices or their parts:

REMARK: Instead of the above, it is possible to make a larger scale sketch of the entire task with a daily progress marked (numbers, date, sub-colours etc), which should be documented here. Task sketch is attached as annex to daily report.

Approximate depth of ground disturbance: ……cm	Type of cleared vegetation:…….. Diameter of cleared vegetation: from……to…….cm

Estimated type and qty of activated or surface thrown explosive devices:	Prepared area: .....m^2

CASEVAC conducted_____200__.	Exercise of machine withdrawl_____200_.
Team leader and signature: ……	Senior supervisor and signature: ..... Member of the testing commission (inspector): .....

Annex E

JOINT REPORT OF THE III PHASE OF MACHINE TESTING

Location.....… ID No of the task.....

Type of machine preparation…….

Ser.	Date	Realised		Activated or noticed ED (estimated type and qty)	Remark (Breakdown, maintenance, machine stuck, bad weather etc.)
		Work hours	m^2 done		
TOTAL:					

Annex: -Daily Report

-Task sketch

Team leader:.....

Annex F

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БОСНИ И ХЕРЦЕГОВИНИ
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No.....

From .....200_.

RECORD ON MACHINE TESTING

Name, product and type:.....

Demining organisation - producer.....

Ser.	Name of the content-activity	Data on producer I phase	Acceptable or the test results				Remark
			II phases		III phase		
			Yes	No	Yes	No	
1.	Safety of the machine's operator						
2.	Capability of removing AP mines						
3.	Consequences of possible encountering an AT mine						
4.	Quality of removal of vegetation						
5.	Depth of the ground disturbance						
6.	Diameter of broken pieces						
7.	Productivity per 1 hour of effective work						
8.	Productivity per 5 hours of effective work						
9.	Scope of possible daily productivity (5 hours of effective work) at different ground categories						
10.	Width of the working lane						
11.	Length of the working lane						

12.	Working speed of machine						
13.	Working turns of the tools.... (^{O}/min)						
14.	Length of tools.....(chains, grinders, knives…)						
15.	Number of tools.....(chains, knives...)						
16.	Reliability of machine						
17.	Driveability						
18.	Conquering slopes and steep areas						
19.	Fire protection						
20.	Ability of self-extrication or extrication						
21.	Possibility of placement of deminer's equipment and that of the operator						
22.	I phase conclusion						
23.	II phase conclusion						
24.	III phase conclusion						
25.	Final conclusion on use of machine for mechanical preparation of the ground: Date..... 200_. Commission: 1. -..... 2. -..... 3. -.....						

Remark: Depending on the type of the tested machine, other elements are to be input into table that are of importance for safety, quality of work, productivity etc.

Annex G

MACHINE ACCREDITATITON SHEET

1. Double-sided plastic card, size 95x65mm

MACHINEACCREDITATION SHEET
FOR MECHANICAL PREPARATION OF THE GROUND

Demining organisation:.....

Name, producer and type of machine
.....
.....

INTENTION:
e.g: Mechanical preparation of mined areas with ground disturbance meant for clearance and suspect for TS

BASIC CHARACTERISTICS:
Control.....
Depth of ground disturbance.....up to cm
Diameter of broken pieces of ground.....up to cm
Width of working lane..... m
Productivity per hour in TS/clearance, up to / m^2

Valid from.....200_. to.....200_.year

Assistant Director for Operations

Annex H

Table: Categories of ground

Category and names	Contents of soil and characteristics	Soil density kg/m^3
I. Scattered soil	-Organic soil without roots	1200
	-Naturally wet sand, with up to 20% of pebbles and gravel, sandy or light clay soil	1600
	-Scattered coal remains	750
II. Ordinary soil	- Organic soil with roots	1200
	-Naturally wet organic soil, with some pebbles	1800
	- Pebble not decanted up to 40cm	1750
	- Solid clay soil	1700
	-Clay, greasy, soft of decanted, with addition of pebbles and gravel	1800
III. Solid soil	-Solid organic soil, not decanted	1800
	- Solid and watertight clay with addition of pebbles and gravel up to 10%	1950
	-Construction debris	1850
IV. Hard soil	-Solid and hard clay	2000
	-Soft chalk	1550
	-Soft permeable soil	1900
V. Soft rocks	-Conglomeration covered with clay	2200
	-Hard chalk	2600
	-Permeable stone medium solid	2300
	-Porous soft permeable stone	2200
		1700
VI. Medium solid rocks	-Solid permeable soil	2500
	-Porous permeable soft soil	2300
VII-VIII. Solid rocks	-Hard quartz, dolomite permeable	2700
	-Hard heavy quartz soil	2800
IX-XI. Very solid rocks	-Other stone materials of high solidity	2900-3300

VI PART

TECHNICAL SURVEY

CONTENTS

INTRODUCTION

1. In case where General survey cannot achieve acceptable level of trust for the users based on relevant facts, i.e. cannot eliminate suspicion in existence of mines, the confirmation or elimination of risk is to be conducted by entering the estimated risk area, all in accordance with humanitarian demining procedures. This procedure will reduce area to: area without obvious risk (AWOR) and mined area for further mine action.
2. In order to eliminate or confirm the suspected risk, there must be expertise and experience in personnel conducting the approved Criteria for Technical Survey.
3. Technical survey represents entry into the risk area, which is defined as such during the process of general survey (GS). It consists of detailed search and confirmation of existence of mines, stating the specific details of the ground, setting and marking borders of the mined area as well as setting perimeters for further demining operations.
4. For areas agreed as areas *without obvious risk* BH MAC would issue the technical opinion for AWOR as a proof, if stated so by the demining organization and with agreement of inspection bodies. Technical opinion would then be issued to the interested parties ‘’not as a guarantee of being free of contamination but that the area in question has been technically treated and shall not be treated again either by the state or a donor unless new facts were provided. An example of the task documentation would be stored and archived in the database and BH MAC archives.
5. More efficient work which would provide faster reduction of mine risk at greater number of places in BiH is the engagement of the demining resources for technical survey at about **20-35%** in comparison to clearance, all in order to eliminate mine suspect areas either at a part or on an entire risk area.

AIM

6. The aim of technical survey in entry into the risk area using technical methods in order to confirm or eliminate the mine suspicion (at a part on an entire area), and to mark the stated reduced mined area for further demining. Reduced area without signs of existence of mines would be *technically* declared as **area without obvious** risk both by BH MAC and by the conductor.

INSTRUCTIONS FOR WORK

7. According to contents of the General Survey Criteria, area where no signs of mine contamination were found will be declared for technical survey according to other items of General Survey (Part I), by which it is specified into the allocation of risk area.
8. When proposing methods of work in TS, teams for GS should, for the efficiency of their own work depending on conditions (category of priority, soil type, vegetation, slope, intersection of terrain with channels etc) propose the method which would be the most reliable for finding mines, that is according to priority, using the methods stated in the Review (item 1.4). EDD teams are to be included along with manual method whenever vegetation allows it and the area is urban, i.e. intended for the return of refugees and other needs of using land for agriculture and alike (1st and 2nd category of priority). The principle methods of TS with the percentage encompassed by clearance are attached as Annex A.
9. In dependence of the ground, contents of the soil and category of priority, it is possible within one task to plan a combination of TS methods, so that TS task could be accomplished as a whole.
10. During the conduct of the task (with the agreement of BH MAC inspection bodies), it is possible to append the proposed methods, especially where parts of the area request more reliability (around water springs, power stations, gravel or similar roads where it is hard to state whether the infrastructure has been damaged or not.)
11. If any of the methods should state facts of presence of mines, that part is then planned for further mine action ‘’clearance’’.
12. If the signs of mine presence are found within one part of the treated area, safe lane is cleared within the area which is to be declared as AWOR from all access directions, while mined area will be marked

by semi-permanent or permanent fence for further clearance, provided it will not be continued immediately.

13. Stated signs of the existence of mines by the conductors of TS, work including manual methods and manual combined with EDD teams work, must be properly marked. Working lane is to be closed and BH MAC inspection bodies that follow the task notified at once, in order to confirm the fact as well as to plan further activities. Demolition of mines or their parts found in this manner can be approved by BH MAC inspection body not sooner than the exact location of found item is confirmed.
14. In order to remove the suspicion that there is possibility of existence of mines at a technically surveyed area that is to be declared as area *without obvious risk,* BHMAC is entitled to ask that quality control is conducted by sampling at 5% of the area which has been done by mechanical preparation or manually with EDD teams work. Only where areas where done manually, parts of working lanes, parts of boxes or entire boxes would be randomly chosen for clearance. When choosing parts of boxes, working lane must be connected to the cleared lane around boxes. Such quality control would be conducted by engaging teams from demining organization or other formed teams under the technical supervision of BH MAC inspection bodies.
15. In order to state the quality of mechanical preparation and area reduced for clearance as well as that which is AWOR, demining organization that is conducting mechanical preparation will open working lanes from two directions on a part or at the entire area where there were no explosions, at the maximum distance of 25 meters. This procedure would provide boxes of maximum dimension of 25x25 that could be visually checked from the working lanes, which would give evidence if there were surface thrown mines or their parts. This control would more precisely define mined area left for clearance and area *without obvious risk.*
16. If the quality of mechanical preparation would not meet the BH Standard requirements (on a part or the whole TS area), BH MAC inspection body is entitled to ask for repetition of work, which should be conducted from one of the sides in relation to the previous machine work direction.
17. Technical declaration of the area treated by TS, and based on methods used, is conducted by TS conductor with the agreement of BH MAC inspection bodies, within the Record of the Handover of Technically Surveyed Area (including Statement, official declarations and annexes), followed by the sketch with accurate marks of declared areas.
18. Technical Declaration of AWOR within the Record of the Handover of the Technically Surveyed Area is conducted based on given criteria (item 1.4) according to which there were no signs of mining during technical survey. According to Chapter V of BH Standard, BH MAC will issue *The Technical Opinion* for AWORs stated as such during TS that have been approved as such by the BH MAC inspection bodies. This *Opinion* includes details that point to the conclusion (according to the set criteria).
19. Task site layout for TS would be conducted as for clearance or mechanical preparation of the ground for clearance, while the work would be in accordance with the approved SOP. Technically surveyed area declared as AWOR would be at completion permanently marked as well as cleared area, all in accordance with BH Standard (Chapter VIII).

R E V I E W

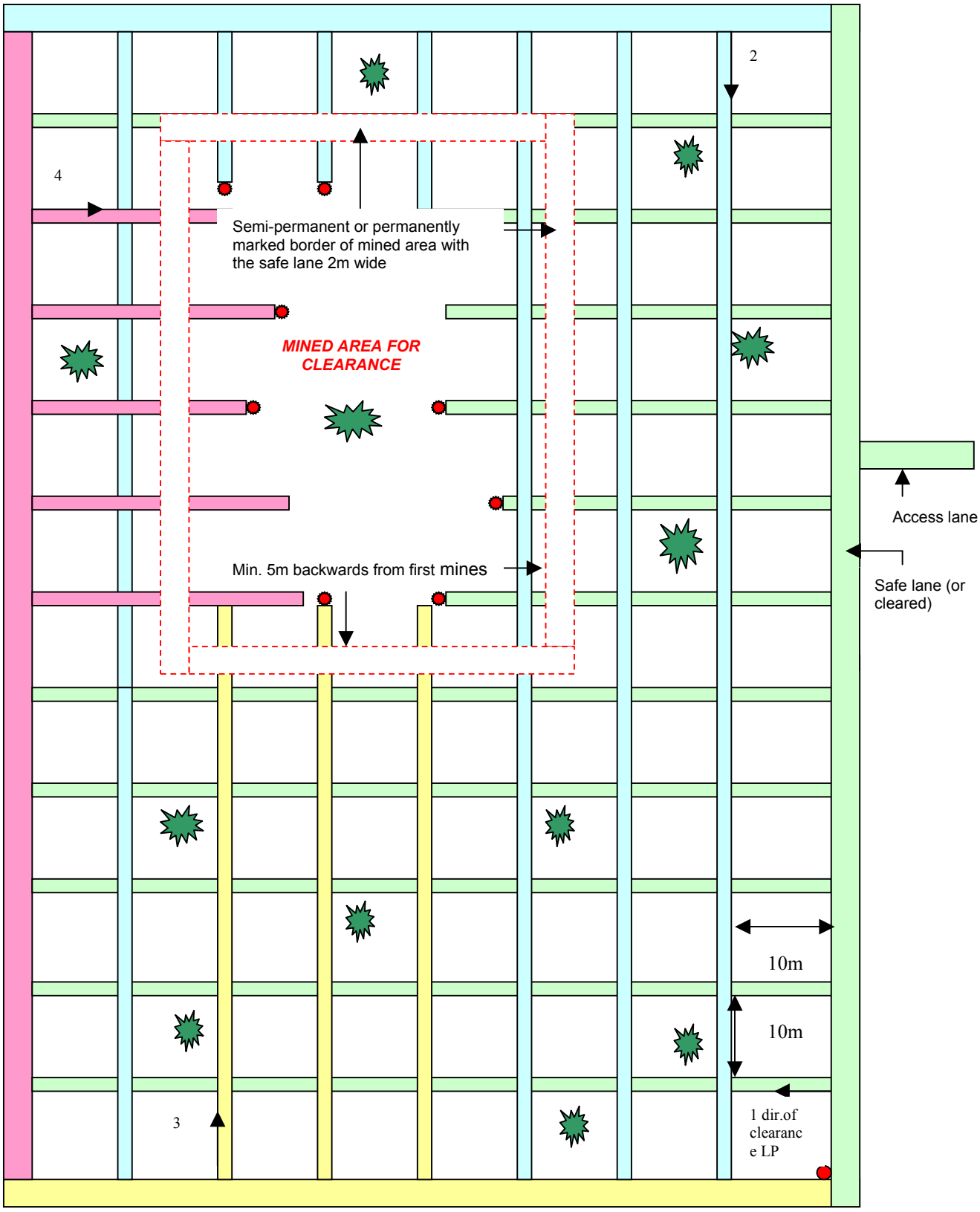
OF THE ACTIVITIES FLOW FOR AND DURING THE TECHNICAL SURVEY WITH CRITERIA FOR DECLARATION OF AREAS

CHARACTERISTICS OF THE AREA CLASIFFIED FOR TS DURING GS	***PROPOSED METHOD GIVEN BY GENERAL SURVEY***	***CONTENTS OF WORKING METHODS***	***CRITERIUM FOR TECHICAL DECLARATION OF AREA TRATED BY TECHNICAL SURVEY***
Flat area (entire or its part, 1st – 3rd category of priority), with or without slope and vegetation that allows the use of machines. Soil where machine will be used should not be intersected with channels, swampy, rocky and with objects on it.	***Mechanical preparation***	Treatment of the entire area proposed for mechanical preparation to the depth of minimum 10cm at pieces no bigger than 5cm in diameter. After mechanical treatment of an area where there were no explosions, the area is to be cut by 25m distant lanes from two directions in order to find any sign of mine contamination.	***-Area without obvious risk*, entire or partial where there were no explosions or surface thrown mines or their parts.** ***-For clearance*, area where there explosions occurred or where there were surface thrown mines or their parts, with drawing back for minimum 5 m backwards.**
Uneven ground surface in 1st and 2nd category of priority with higher slope and vegetation that allows the use of EDD teams.	***Manual and use of EDD teams***	Opening working lanes in the area and clearance using manual methods from minimum two sides, at maximum distance of 10m; boxes gained to be treated by two EDD teams until the first mines.	***-Area without obvious risk, entire or partial, until the mines are found from possible sides approach.*** ***-For clearance*, area where mines were found from side approach, moved backwards for minimum of 5 m backwards.**
Uneven ground (2nd and 3rd category of priority), with seep slopes and vegetation that does not allow use either EDDs or machines, swampy and channel intersected area with rocks, objects etc.	***Manually***	Cutting working lanes in the area and manual clearance from minimum two sides, at maximum distance of 10m, until the first traces of mines are encountered. ***REMARK:*** *This method is used on suspect area in specific conditions that do not allow the use of other two methods. This one is used only as an addition to methods stated above in order to fully complete the task.*	***-Area without obvious risk, entire or partial, until the mines are found from possible directions of search*** ***-For clearance, area where mines were found on the sides of search, moved backwards for the minimum of 5 m.***

Annex A

TECHNICAL SURVEY

a) TYPICAL PLAN EXAMPLE OF SUSPECT AREA REDUCTION USING MANUAL AND/OR MANUAL AND EDD METHODS



REMARK:

1. In example “a)”: if the work is done with manual method only (ground and vegetation do not allow other methods) 22% goes on clearance, while AWOR is considered to be the rest of the boxes on the sides until mines are found, moved backwards for at least 5m.

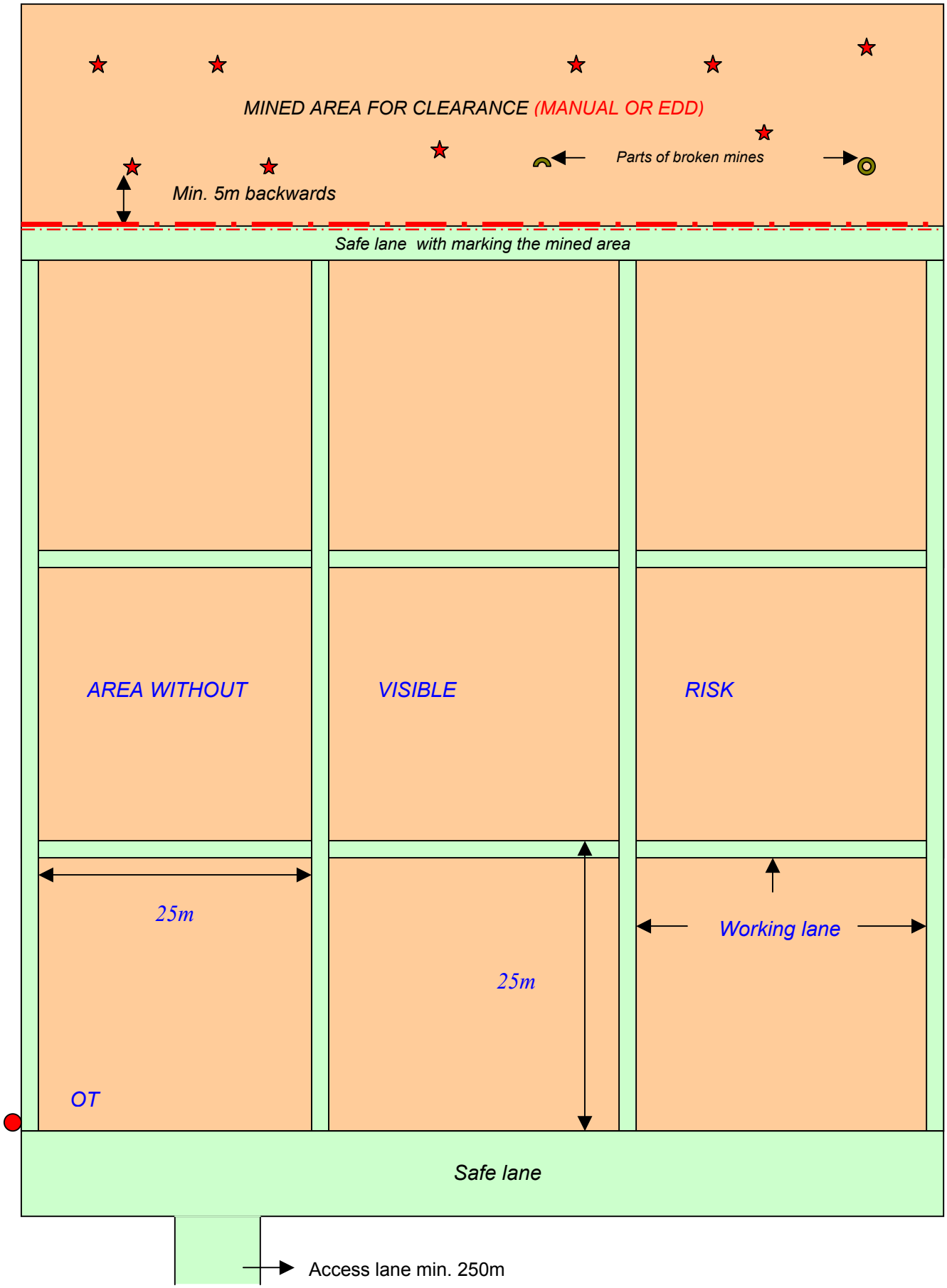
2. If the ground is of the 1st or 2nd category of priority (urban and agricultural) and vegetation allows the use of EDD teams, then EDDs should be planned within technical survey until first mines are found from the sides of search.

3. If there are no signs of presence of mines at an estimated risk area, then the area is approached from two sides (direction 1 and direction 2) until we reach the other side of the task.

4. If mechanical preparation of the ground is conducted (example ‘’b’’) machines will disturb the entire area to the depth of minimum 10cm and crush it into pieces no bigger than 5cm in diameter. The area until approaching first mines will be intersected with working lanes from two sides, at maximum distance of 25 meters. If no signs of mines were not found in such working lanes, and boxes achieved (25x25) do not show visible traces of surface thrown mines or their pieces, the area will be declared as AWOR. Areas where explosions occurred and surface thrown mines and their parts visible, will present mined areas where clearance is needed according to procedures, with the introduction of EDDs for search of the boxes.

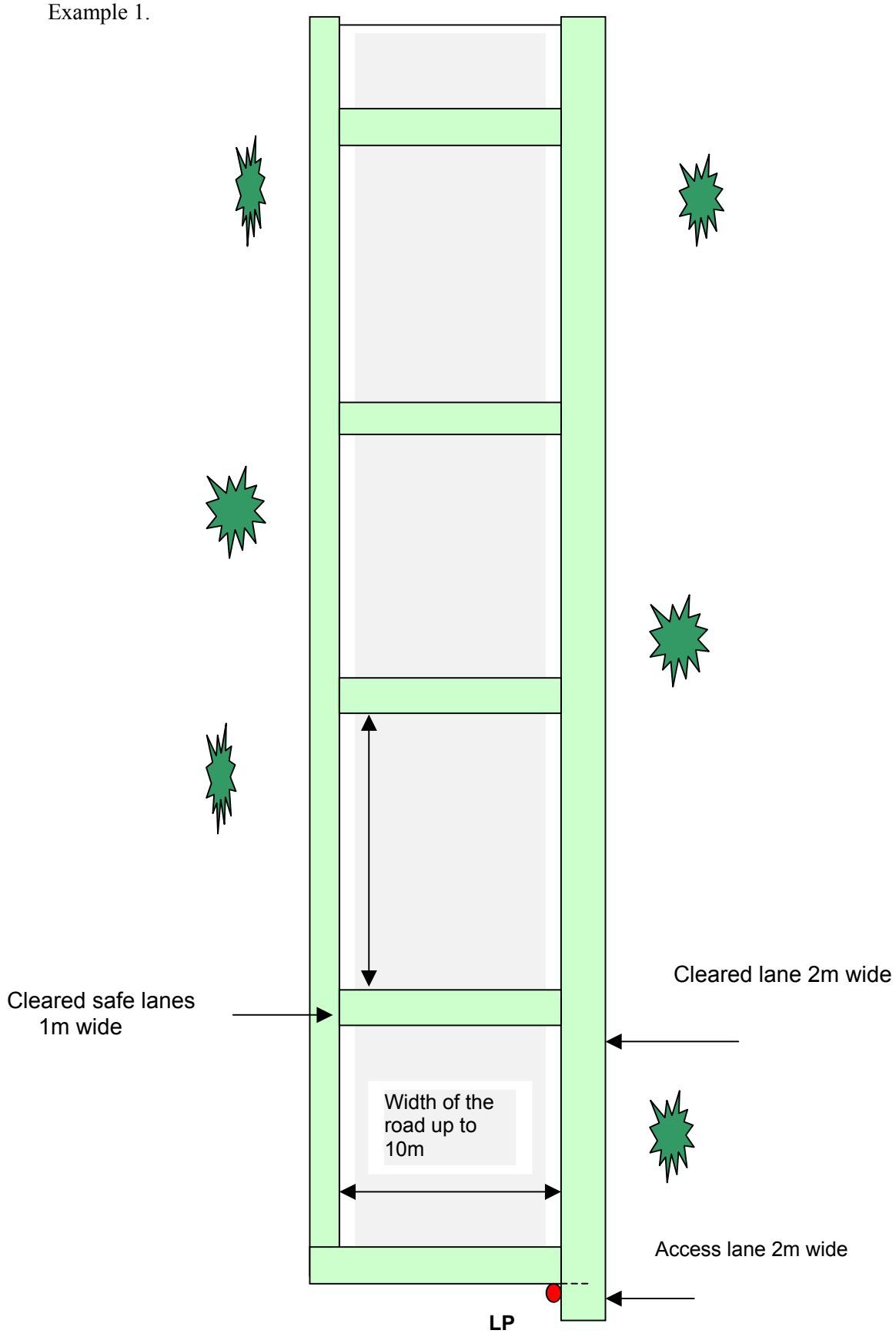
5. Starting from first mines or explosions, backwards for minimum 5m, a safe lane is cleared around mined area. Safe lane will be minimum 2 meters wide. The base line for clearance will be set on the front part of the lane. If clearance in not conducted immediately, then semi permanent or permanent minefield fence will be set on the base line, appropriate mine signs/warnings included.

b) TYPICAL PLAN EXAMPLE OF REDUCED AREA USING MECHANICAL PREPARATION


MINED AREA FOR CLEARANCE (MANUAL OR EDD)
Parts of broken mines
Min. 5m backwards
Safe lane with marking the mined area
AREA WITHOUT
VISIBLE
RISK
25m
25m
Working lane
OT
Safe lane
Access lane min. 250m

c) TYPICAL PLAN EXAMPLE OF TECHNICAL SURVEY ON ROADS

Example 1.



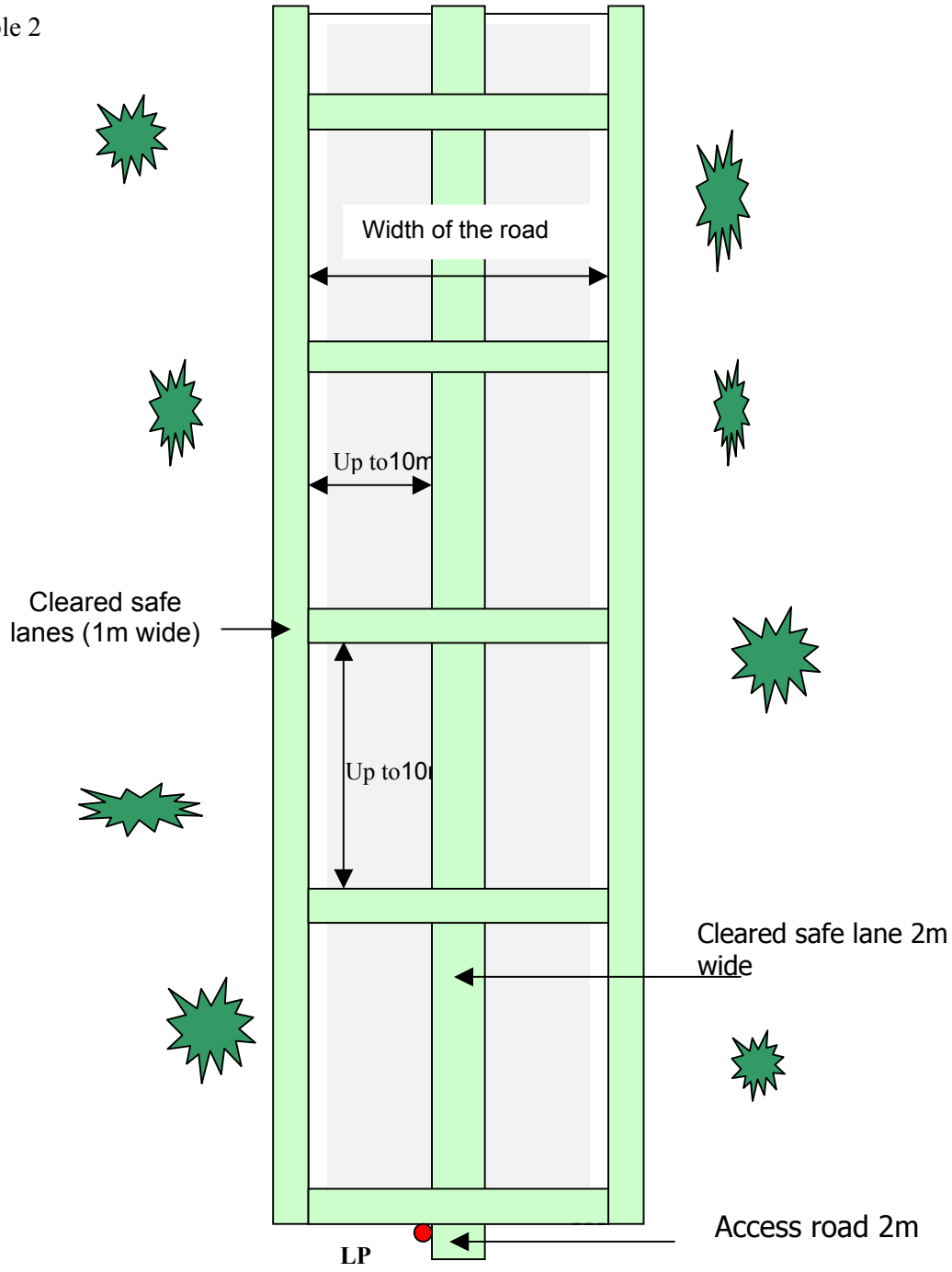
REMARK:

1. In this example (though AWOR boxes are 10x10) there are 32% left for clearance.

2. Technical survey of the roads is to encompass the width of the road as well as the width of the drainage channels with maintenance areas.

3. 2 meters wide cleared safe lane can be led through the middle of the road, based on the estimation and the width of the road, so that it includes parts of the wheel tracks, while on the sides (left and right) 1 meter wide cleared safe lanes may go. Example is shown at the graphic below.

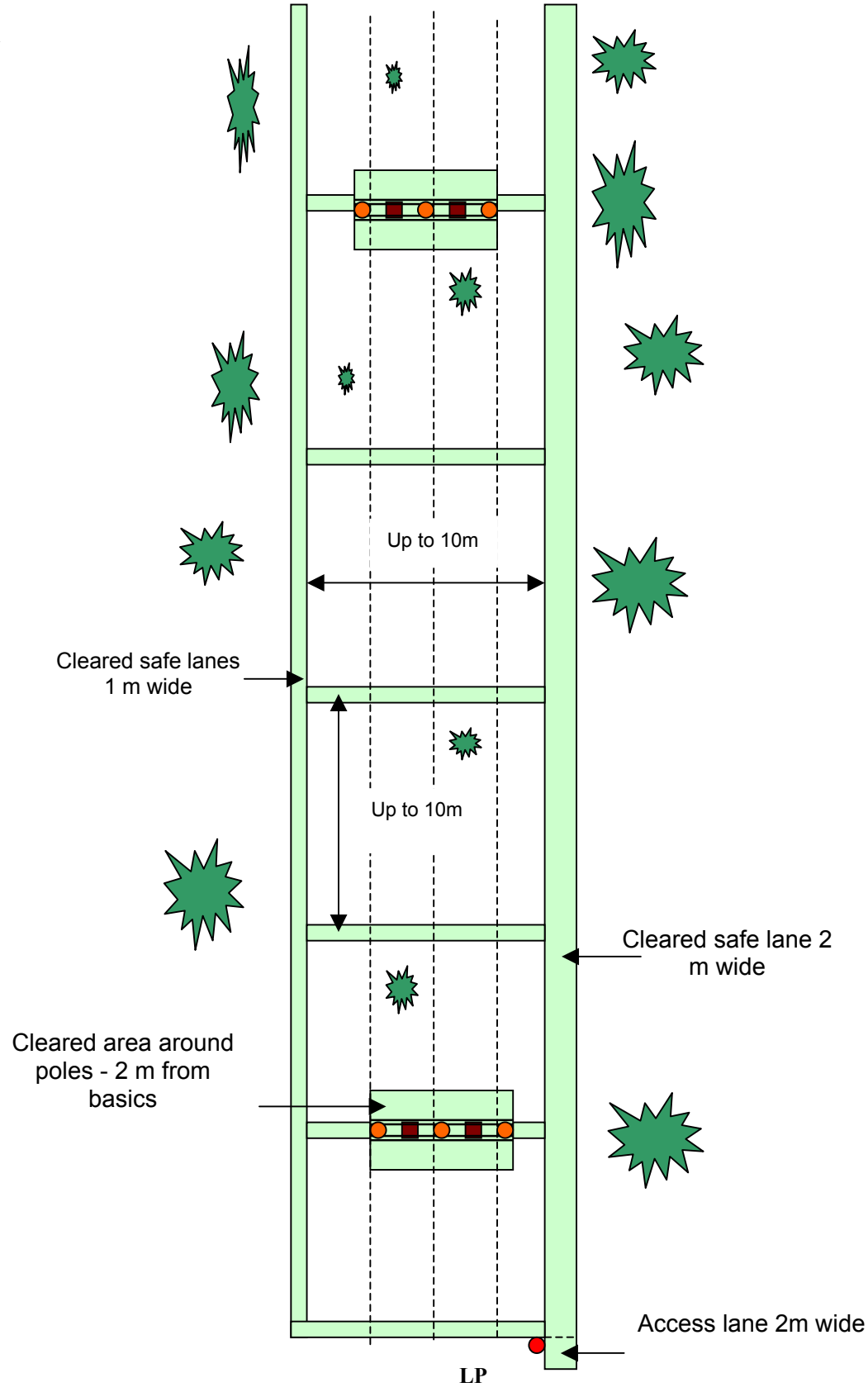
Example 2



REMARK:
1. In this case (if AWOR boxes are 10x10) there is about 26% left for clearance.
2. Boxes achieved on roads may be searched by EDD teams since there is no vegetation to disturb their work.

d) TYPICAL EXAMPLE OF TECHNICAL SURVEY FOR POWERLINES

Example 1

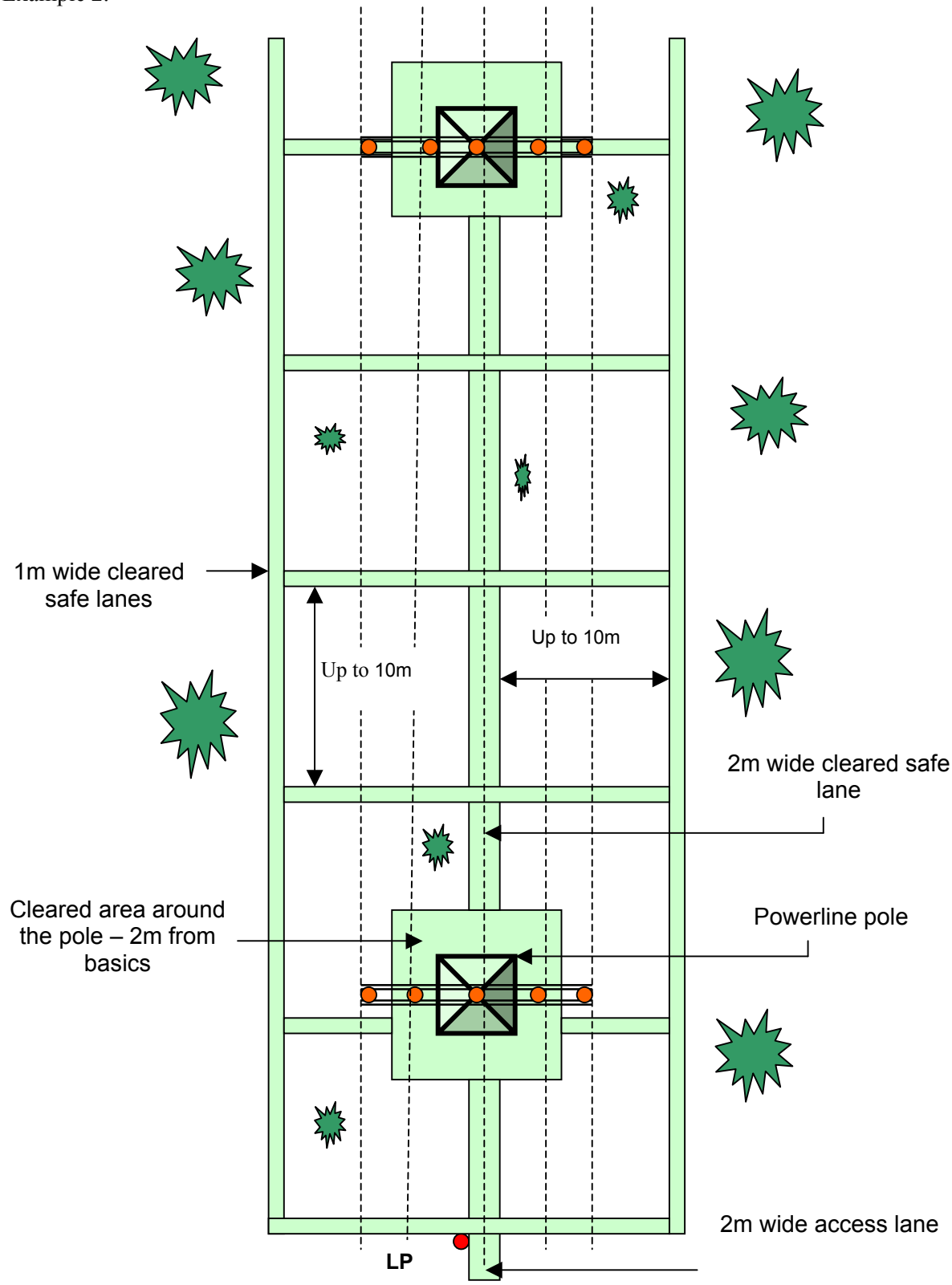


REMARK:

1. In this example (if AWOR boxes are 10x10) there is 35% left for clearance.

2. 2 m wide cleared safe lane may be led through the power lines poles if estimated by the width of the power lines themselves, while cleared lanes would go by sides (left and right) into the width of 1m. Minimum 2m width is to be cleared around poles basics.

Example 2.



REMARK:

1. In such cases (if AWOR boxes are 10x10) there is 32% left for clearance.

CONCLUSION

1. Each technical survey task, especially roads, railroads, power lines, water supply pipelines, gas pipelines etc. must be separately estimated and planned, since there is a needed safe procedure for both conductors and final users of these areas. When planning technical survey of such areas, the most responsible personnel must oversee the entire situation regarding general survey and all available information gathered after GS. They must also consider the requests of BH MAC and the employee organization.

2. These principle examples shown above may be of use for planning of technical survey of different risk areas, at the same time having in mind that clearance does not encompass more than 20-35% of the area, i.e. using EDD teams and mechanical preparations should not spend more than 35% of the resources planned for entire clearance, all in order to achieve the efficiency of technical survey.

3. Instruction is the foundation for elaboration of demining organizations SOPs that would conduct TS tasks, as well as the foundation for the technical supervision by the BH MAC inspecting bodies.

TECHNICAL INSPECTION OF DEMINING ACTIVITIES

C O N T E N T S

INTRODUCTION

This procedure within Mine Action Centre Bosnia and Herzegovina (hereinafter BHMAC), regulates technical inspection over demining activities, which are conducted by inspection bodies.

Tracking the process of technical inspection is conducted by inspection bodies within BH MAC structure, presented as: Senior Quality Control Consultant in BHMAC Regional Office (hereinafter SQCC), Senior Quality Control Consultant / Quality Control Inspector in BH MAC Regional Office (hereinafter QC Inspector), Senior Quality Control Consultant / Quality Control Inspector of offices Sarajevo and Banja Luka (hereinafter Office QC Inspector), BH MAC Senior Quality Control Consultant / Quality Assurance Inspector (hereinafter BH MAC QA Inspector) and Chief of Department for Managing Quality in Mine Action / BH MAC Chief Inspector (hereinafter BH MAC Chief Inspector).

All demining operations in Bosnia and Herzegovina shall be covered by BH MAC technical inspection bodies, acting as external quality control on behalf of State of Bosnia and Herzegovina.

Technical inspection over the conduct of demining operations has for its aim the following: ensuring that the quality of defined area is up to BH MAC Standard requirements, safety of personnel involved in demining operations and final users as well as gaining reliance into the whole of the humanitarian demining process.

AUTHORISATIONS WITHIN INSPECTION BODIES STRUCTURE

BH MAC inspection bodies, through BH MAC Chief Inspector, shall be responsible for their work to BH MAC Director or Assistant Director for Operations in the absence of Director.
Inspection bodies shall meet conditions prescribed for work in the conduct of technical inspection activities, as stipulated in Rules of BH MAC Internal Organisation as well as prescribed additional conditions for inspection bodies, prescribed by BH MAC Director (Article 32, No 4. of the Demining Law in Bosnia and Herzegovina.)
After prescribed conditions are met, BH MAC issues authorisation for the conduct of technical inspection activities.

RESPONSIBILITIES AND AUTHORISATIONS:

1. BH MAC Regional Office SQCC

a) In accordance to plan made by Chief of BH MAC Regional Office (hereinafter CRO), conducts technical inspection over demining operations at assigned demining site.

b) Technical inspection through planned and timely visits to sites shall be conducted according to the stated level of technical inspection, which is in accordance with QCI, as explained in Annex L (No 1.5), while there is the obligatory visit to be conducted on opening and upon completion of the task.

c) Prior to the conduct of technical inspection, SQCC is getting familiar with the demining organisation implementation plan, along with information from the blue folder. After familiarisation with demining task and with the accordance of CQ Inspector, critical non-conformities are agreed and sampling plan of the task is made (in accordance to International Standards - ISMA 09.20 and programme ISO 2859-0), which shall be, in the begging of works, agreed with the organisation. Explanation of how to create a sampling plan is provided in Annex L.

d) On the first day on a task (if necessary, with the surveyor who participated in general survey), he notifies the organisation with the task borders (possible borders from the safe areas) and reference points on the general survey sketch. Along with the authorised representative from the organisation, (operations officer or QA officer) he will agree the manner and methods of sampling, sizes of areas and critical non-conformities due to which the repetition of the area will be conducted if found during technical inspection (including sampling as well). All agreed will be

evidenced into the Record of the technical inspection on a demining site, with name and surname of the person from the demining organisation in charge for operations and quality assurance. Apart from the stated above, during the first day on the site, activities from contents in Annex B must be checked as well as copies of insurance policies for demining personnel with a stamped list, in accordance to Demining Law in BH and BH MAC Standard requirements.

e) Necessary equipment for technical survey on a demining site is listed in Annex A.

f) For each and every visit to the demining site, the QC consultant makes a Record of the conduct of the technical inspection on the demining site (hereinafter the Record). Copy of this Record is left with the task manager for insight and realisation. The site manager will sign acceptance of the copy. Copy of the Record is given in Annex C.

g) He cooperates with the task manager – team leader / section leader or senior supervisors (team leader / section leader), person responsible of internal QC and the operations office from the demining organisation.

h) He cooperates with other representatives of external QC monitors or supervisors) regarding their observations related to safety, quality in work and productivity done.

i) The basis in the visit to demining site must be the safety, quality of work and productivity of the teams engaged, as well as on the corrections of the non-conformities recorded during previous visit.

j) He analyses the record(s) made by QC officer from the demining organisation, in order to compare the status found and measures taken in relation with his observations.

k) He provides technical advice for correction of stated non-conformities only to task manager and senior managers of the demining organisation (if on site), without the presence of team members.

l) Non-conformities stated during the visit, which influence safety and quality of work, will be noted down in the Record with the non-conformity code, as well as immediate action taken by the task site manager, i.e. if the non-conformities were corrected during the visit (individually).

m) If it is stated that the non-conformities are of such nature that cannot be corrected during the inspection, but severely influence the safety and quality of work, i.e. those that represent the critical non-conformities (individually listed in Annex B, marked as «*» in the column activity – non-conformity code), QC consultant will provide a reasonable deadline for the correction of the stated non-conformities in the Record. On his repeated visit he will track the sequence and completion of correction of critical non-conformities.

n) If during the next visit (deadline included) the stated non-conformities are not corrected or new ones are stated, also of the kind that severely influence the safety and quality of work, they will once again be listed in the Record. In the part of the Record / Remarks on technical inspection, he will propose the QC inspector of the BH MAC office (Sarajevo – Banja Luka) that he issues Formal Decision on Suspending Further Activities (according the Article 34. No 2 of the Law). The example of the Decision is provided in Annex E.

o) For other non-conformities, which are not qualified as critical for the safety and quality of work (that allow the continuance of the task), he provides the reasonable deadline for the correction of those; if the non-conformities continuously repeat, i.e. the organisation is not correcting them, he will also propose the Decision on Suspending Further Works.

p) Technical inspection will be conducted according to items and contents of activities, according to deadlines provided in table in Annex B, where the unsatisfactory activity presents the code of the non-conformity as well.

q) QC consultant controls and manages the team, which is conducting the planned sampling of the areas of the task, according to sampling procedures that are provided in Annex L. If during the sampling a mine or UXO are encountered (including ammo 20mm and bigger), or any other

agreed critical non-conformity, it is noted down in the Record as well as documented / materialised (location on the sketch, photograph, method of work, stating witnesses etc.) In the part of the Record, the QC consultant states the reason why the sampled area cannot pass the control (sampling team report must be attached). He then gives a proposal to QC inspector for the repetition. This proposal he gives if he stated through his personal technical inspection that a mine or UXO is missed, or if he stated other unacceptable critical non-conformities, which were agreed prior to starting to work.

r) He proposes to the QC inspector (without deadlines form corrections, as stated under "m") that he should issue Formal Decision on the Repetition on the area from the previous visit, provided he stated that some of the metal detectors are not operable (traces UPMAH-3 to the depth less than 10 cm in the ground).

s) In cases where he states that activities are not conducted or QA officer's work is not satisfactory, which is unjustifiably affecting the quality of work, he will not provide a deadline (as stated under "m") but propose CQ Inspector that the Formal Decision on the Repetition on the area is conducted from his previous visit. If such non-conformity repeats, he will suggest to the QC Inspection that a procedure is conducted to revoke authorisation for the work of QA officer.

t) If it is stated during the technical inspection of the site that mines or their parts are not removed because the contract states standard depth of demining (in relation to zero level of the ground in the moment of demining) while mines according to information are deeper than before due to floods or other movements of the ground, he makes notes in the Record and notifies the QC inspector and CRO, in order to take further action needed, if the estimated intentional use of the land demands it.

u) Mines (as well as UXO) found by demining organisation on suspect areas where technical survey is being conducted (mechanical equipment work, manual methods and / or EDD teams work) will be documented into the Record remarks with the annexes needed, as well as actual size of mined area for clearance. The location of mine found (by manual demining or EDD team search) will be checked and documented (location on sketch, photograph etc.); after this is done, the team leader is approved to continue further mine action on removal. QC consultant will notify QC inspector and CRO about mines found or their parts during the technical survey (whether it was individually spotted and documented or through knowledge of an explosion that happened during the mechanical preparation of the ground), in order to further propose and track the demining activities on the suspect area for technical survey, i.e. what areas should be proposed for issuance of Technical Opinion for Area without Defined Risk (AWDR), that were declared for clearance

v) In order to remove suspicion of mine threat on a technically surveyed area, which has been declared as area without defined risk, he will conduct planned sampling upon completion of the task. Random sampling method is conducted by dividing tasks into shapes, according to method applied on the entire task or some of its parts. Due to safety needs and needs for use of marking materials for areas without defined risk, sampling will be conducted successively during the progress of the task, on the stated shapes in accordance to working methods (upon request and in cooperation with the organisation). Working method in sampling will basically be the same as the method applied during demining activities on the entire task or its parts. Sampling will be conducted according to sampling procedure (Annex L, No 4), by engaging demining organisation teams or other approved teams.

After the sampling of the treated area is conducted by manual method, which will additionally confirm that area is excluded from suspicion on risk, the demining organisation will be asked to remove (cut or maw) remaining vegetation in non-treated areas (boxes) in order to gain additional trust of the final user.

w) If during the technical survey process of the suspect area the mechanical preparation is conducted on the part or on an entire area, the technical inspection supervises if the machine

disturbs the ground to the required quality, in accordance to BH Standard, minimum 10 cm into the depth, breaking ground into pieces no bigger than 5 cm in diameter. Apart from ground disturbance, it has to be inspected if the overlap was done, were there explosions and on what part (on the sketch) as well as were there surface thrown mines or their parts. This control QC consultant is doing within working lanes of the boxes (maximum size 25x25nm) as well as visually from the working lanes the demining organisation opened within the area, which is according to stated facts should be declared as AWDR and confirmed by sampling. If necessary, he chooses a sampling area up to 5% for machine sampling. If it is stated that within working lanes there are areas where the machine has not disturbed the ground to the required quality, he will ask for repetition in order to acquire required quality.

x) He will plan entrance into the operational part of the task site with the notification and along with the team leader at all times. He will use minimum protective equipment for this and respect minimum safety distances when the works are in procedure. If he is to approach one deminer in order to see the quality of work and basic procedures in the working lane, he conducts this with the obligatory presence of the team leader, never staying too long. He observes the accuracy of other working methods from the minimum safety distances (EDD teams work, mechanical preparation).

y) In case that the organisation during demining task come up with a part of the area which was after general survey up to demining process was intensively used for agriculture, traffic, building, inhabiting or alike, he will immediately propose suspending of clearance procedures at that area and notify QC inspector and CRO, in order to take measures for re-survey and diminishing the task size, which is assigning the different size than the one from the start of works.

z) He controls the possession and validation of the working authorisations, as well as competence of the organisation's executive staff on the ground (according to Article 24, No 3 of the Law); regarding EDD teams and machines, he will check accreditation sheets and the date of expiry.

aa) He checks upon the updating of the evidence of immediate work in the working lanes for deminers, needed for daily report. In case the whole of the work is over 5 hours, or a deminer did not have continuous 12 hrs rest between two working days (according to Article 26. and 27. of the Law) it will be noted with proofs needed (as with «x") and in the Record remarks: «It is proposed that QC inspector of the office _____ issues «Decision on Infringement of Discipline»

bb) QC consultant, along with the task manager / team leader, will analyse the really possible daily productivity on the site in relation with local conditions (vegetation, contents of soil, slope, metal contamination, quality of mechanical preparation, if done, etc.), applicable methods of work and theoretically possible productivity as given in BH Standard. Estimation of real productivity shall be conducted only by measuring of one deminer's productivity in one shift (30 minutes of work). If necessary, this analysis will be conducted with other authorised personnel for QA and operations within the organisation. Based on productivity defined in this manner, he will estimate real daily productivity of the team from his previous visit. If productivity from the previous visit significantly varies from the stated real productivity, thus creating doubt into quality and safety in use, he will conduct a control regarding agreed critical non-conformities, which will result in repetition even in sampling. If such critical non-conformity is found, he will propose that QC Inspector issues a Formal Decision of repetition on the area from his previous inspection.

cc) He analyses mines found, as well as the traces of their activation in relation to records of mines placed in order to put the focus of control, amongst other, onto the finding of the mines. His analysis will be documented in the Record of technical inspection of completed demining task (Annex D), stating types and quantities of placed mines, ratio between those from the project documentation and the number of found mines, which will include traces of their activation. In final documentation control, he will check if this analysis has been done by the organisation during the conduct of the task (Annex G).

dd) He controls quality in permanent marking in accordance with project documentation of the task, as well as signs the sketch and Record of permanent marking.

ee) If the inspector occurred on the site in the moment of accident, he provides help to the team leader regarding first medical aid and CASEVAC, as well as further medical evacuation of the injured to the hospital (MEDEVAC). He provides help to the IB in correct procedure of finding the causes of the accident and the lesson learned for the accident not to happen again. He will write a statement on what happened and notes down locations of team members in the moment of accident. He has to pay special attention for the location of accident to remain undisturbed, i.e. to be left as it was after the first medical aid was provided and the injured was evacuated.

ff) Upon completion of the task he makes the Record on the conduct of the technical inspection on the demining site, which will be signed by the QC inspector. Example of the Record is given in Annex D.

gg) On the last day of clearance on a task site (if necessary with the surveyor who conducted general survey), he will check if organisation reached the border of the task assigned, if they conducted the final marking and if they notified the representatives of the authority (Civilian Protection) and / or final user with the borders of areas cleared. He signs the sketch and checks necessary attachments of the demining organisation upon receipt of *Declaration on Clearance*, as well as attaches his own annexes, along with the official declaration of *Handover of the Cleared Area*. This task is to be finished with the QC Inspector within 7 (seven) days and completed documentation (Final report) is to be provided to the Office QA inspector for the further procedure, in order to issue the Certificate of Quality Control of the Cleared Area. *Record* on the handover of the cleared area or object with organisation's declaration, official declarations and annexes are attached in annex H.

hh) On the last day on the technical survey task (if necessary with surveyor who conducted general survey), he will check if the organisation reached the borders of the task assigned, if they conducted final marking and if they notify the authorised staff (Civilian protection) and / or final user with the borders of the stated AWDR and stated (reduced) mined area. He signs the sketch of the tasks, while upon receipt of Declaration on technical survey with the official declaration of Record about handover of technically surveyed area, he checks all necessary attachments of the organisation as well as he adds his own attachments. This task is to be completed within 7 (seven) days with the QC Inspector and completed documentation (Final report) provided to Office QA inspector for further procedure – that is, issuing the Technical opinion for the stated AWDR. The *Record* of the handover of technically surveyed area with the declaration of demining organisation, official declarations and annexes is given in Annex J.

ii) He makes the sketch of progress according to visits to particular sites, which is then attached with his Final Report about the task.

jj) He participates in giving proposals in order to take other measures for the Standard required quality of technically surveyed areas without defined risk, cleared areas or buildings.

2. Senior Quality Control Consultant / Inspector in BH MAC Regional Office

a) Creates plans and reports for engagement of QCC for technical inspection of demining tasks, which are signed by CRO. Copies of plans and reports are delivered BH MAC office QA Inspector.

b) Analyses provided implementation plan of a demining task along with the QCC, who will follow up the task. If necessary, the plan will be agreed with the organisation. A copy of implementation plan will be delivered to BH MAC Office QA Inspector.

c) Defines the level of technical inspection for all the planned demining tasks, which will be agreed with BH MAC Office QA Inspector, according to assigned level of technical inspection. (No 1.5. Annex L).

d) Based on provided implementation plan, along with his QCC, consultant he defines critical non-conformities in methods used during work, which will result in failing the stated area pass the inspection control (sampling included).

e) Along with CRO and QCC, he makes the solid plan of sampling tasks, in accordance to set and planned completed areas and planned sampling capacities to be deployed.

f) He follows and checks upon the work of the QCC on the site both personally and through the Record.

g) Upon his estimation, either personally or with QCC consultant presence, conducts technical inspection upon which he also makes the Record. (Annex C)

h) In cooperation with the QCC or personally, he will cooperate with the supervisor of the monitoring organisation (if there is any engaged by the organisation) in regard of constant technical inspection of the task and sampling of the technical survey or a cleared area.

i) Upon notification or proposal of the QC consultant (in his Record remarks) for issuing the formal decision for suspending further activities, he provides the stated immediately (if deminers' safety is endangered or that of surrounding population, where demining organisation does not accept immediate correction of non-conformities) or personally checks the critical non-conformities in his visit to the site, after which (and in agreement with the BH MAC Office QA Inspector) issues the decision for suspension for period of three days. Written decision is delivered to the organisation, while the copy is issued to BH MAC Office QA and BH MAC Chief Inspector, along with the records where the critical non-conformities are noted, as a basis for issuing Decision for suspension. Example of Decision is provided in Annex E.

j) If QC consultant provides Records with remarks in which there is written, «It is proposed that the QC inspector of office _____ issues Decision on Infringement of Discipline», then the stated is issued according to the Articles 37 – 39 of the Law. An example of Decision is given in Annex F.

k) If within a planned sampling of the entire area a mine or UXO is found (including ammo of 20mm and bigger), or other critical non-conformities, agreed upon with the demining organisation at the beginning of work, noted down and documented in Report by the QCC based on sampling team Report, QC inspector will notify BH MAC QA Inspector and CRO, SQCC will issue Decision on repetition for the entire sampled area, using if possible other demining methods or other equipment, if available. Decision on repetition of the area is issued if QCC through his own technical inspection stated that a mine or UXO is missed, or other agreed critical non-conformities. Example of Decision for Repetition of Area Clearance is given in Annex G.

l) Upon completion of the task and receipt of the Declaration of handover of the area or objects from the organisation, and with QC consultant who was in charge for the task, SQCC will analyse the quality of task conducted, check if the documentation for the Final report to see if it is completed, adds his own documents (Decision on Suspending further activities and repetition, if issued, activity upon the BH MAC Director Decision after the appeal on the Decision, Records on his own technical inspection, as well as he signs the official part of Declaration of Handover of the area. Documentation thus completed (Final report) will be delivered to the BH MAC QA Inspector for signature and conveyance. Such task is to be completed with the QCC who followed up the task within 7 (seven) days, upon receiving documentation from the organisation.

m) Upon the completion of technical survey task and receipt of the *Declaration on technical survey* with the *Record on handover of the technically surveyed area* from the organisation, he analyses the quality of the task with QCC who followed it up. He will check if the documentation is complete for the Final report, especially declared and technically surveyed areas according to the sketch. He will add his own documents (Decision on Suspending of further activities, if issued, activity upon the BH MAC Director Decision after the appeal on the Decision, Records on his own technical inspection, as well as he signs the official part of Declaration of Handover of technically

surveyed area declared as AWDR. Documentation thus completed, (Final Report on Technical survey) will be delivered to the BH MAC QA Inspector for further procedure. This task is to be completed with QCC who followed up the task not longer than 7 (seven) days after documentation is provided by organisation.

n) Based on provided documentation about technical survey of an organisation, he will issue the necessary information for the task of clearance, for declared mined areas according to signed sketch provided by the QCC who tracked the task, provided the task will not be continued immediately. He will give information based on the *Record* on Handover of Technically Surveyed Area, with statement, official declaration, and sketch of declared areas as well as other annexes proving the stated.

o) He participates in work of Investigation Board in case of demining accident or investigation of mine remained on a completed demining task.

p) He participates in providing suggestions for improvement of QA of demining tasks and planned topics for training of BH MAC inspection bodies.

q) He takes other necessary measures for ensuring BH MAC required quality in demining activities because of the safe use of demining areas and buildings for citizens of Bosnia and Herzegovina. He participates in proposing changes and annexes to BH MAC Standard.

3. Senior quality assurance consultant / inspector of BH MAC office

a) Analyses plans of technical inspections from Regional Offices and reports on technical inspections conducted.

b) Cooperates with QC Inspectors from Regional Offices in setting the levels of technical inspection.

c) Tracks and controls the work of QC Inspectors and SQCC by tracking their Technical Inspection Reports.

d) Tracks the quality and timeliness of entering information into the database of Technical Inspection Report and other documents related to the implementation and completion of the demining tasks.

e) Upon estimation, personally or with the presence of SQCC or QC Inspector, conducts technical inspection to demining sites, about which he provides Technical Inspection Report of senior BH MAC inspection bodies. (Annex C 1.). He delivers his reports to the Chief of QA Office for insight and prescribing necessary measures.

f) He coordinates work of QC Inspectors in Regional Offices in standardisation of Quality Control criteria.

g) He proposes to the Chief of QA Office what measures should be taken for re-deploying SQCC, in necessary.

h) He coordinates work in sampling together with QC Inspectors and monitoring organisations.

i) He participates in control of demining sites and evaluation of completed demining tasks.

j) He conducts analyses of completed clearance and technical survey tasks.

k) With the QC Inspectors, he conducts analysis of reasons for issuing Formal Decision on suspending further activities as well as Formal Decision for repetition on the area. He approves or disapproves issuing these documents.

l) In case of justified absence of some of the QC Inspector from the office, he conducts tasks necessarily related to his work. If suggested by SQCC who follows up the task and with the agreement of Chief of Regional office, he issues Formal Decision for suspending further activities and Formal Decision for repetition on the area.

m) He provides agreement on the manner of repetition for a sampled area, based on organisation's explanation and that of the QC Inspector, with the agreement of Chief of QA Office.

n) He proposes procedures for infringement of discipline for non-conformities, which may result in doubting quality and safety in demining operations. He proposes the stated to the Chief inspector, with the agreement of the Chief of QA Office.

o) He receives signed documentation for completed demining task from QC Inspectors from regional offices. Along with the personnel in charge for quality assurance of the tasks, he analyses the quality of completed task, checks if Final report documentation is complete and signs the Record of handover of a demined area, which is then signed by the Chief of BHMAC office, in order to register and stamp it. He prepares the *Certificate* on Quality Control in demining (clearance or technical survey) and delivers it to BH MAC Director for signature. This task is to be completed not longer than 7 (seven) days after Regional Office provided documentation. *Certificate* on quality control in demining and TS is provided in Annexes I and K.

p) When the *Certificate* of Quality control in demining (clearance or TS) is signed by BH MAC director, a copy is delivered to the organisation and the municipality body for civilian protection (final user), with the Record of handover and the sketch of the task, while the third copy will be attached to complete documentation of the Final report, in order to make the input into database (MapInfo) and BH MAC archives.

q) He participates in the work of the Investigation Board when a demining accident happens as well as in the investigation if there is a mine missed on a completed demining task.

r) He participates in giving proposals for the improvement of QA of demining sites as well as topics planned for the BH MAC inspection bodies training.

s) He takes upon other necessary measures for ensuring the quality of demining activities in accordance with Standard requirements, in order to ensure safe use of demined areas and objects for the citizens of BH. He also participates in proposing changes and amendments to BH Standard.

4. Senior QA Consultant / BH MAC Inspector

a) He will implement cooperation and will provide technical help for BH MAC QA Inspector.

b) He leads the appeal procedure on Formal Decision of suspending further activities on demining sites and Decision on repetition of the area. In order for the Director to make the Decision in accordance to the organisation's appeal, he follows up the technical inspection, justified causes for the Decision and if necessary, he will personally get familiar with the status. He will ask QC inspectors and SQCC for their opinions on how to repair critical non-conformities. If necessary, he will ask opinions and suggestions for handling most responsible personnel in charge for QA in the organisation.

c) He proposes to Chief BH MAC inspector measures for quality assurance and safety, which were suggested in the proposition of measures by internal control bodies, Investigation Board and team for investigating mines missed on a completed demining task.

d) He follows up and analyses technical inspection of deeming sites, either personally or with the presence of his subordinate inspection bodies. Through technical inspection of the implementation of a demining task, he controls the quality of deminers' equipment, which is ensuring the safety of work for personnel and quality in work for the organisation. He then produces Report on technical inspection conducted by senior BH MAC Inspection Bodies (Annex C 1). Report is delivered to the Chief inspector for insight, where BH MAC QAC / Inspector will propose necessary measures to be taken.

e) He analyses and follows through the database the quality of technical inspection conducted by inspection bodies on demining sites in progress. Upon estimation, he proposes additional visits to the Chief Inspector in order to get insight and take necessary measures.

f) He analyses completed tasks of clearance and technical survey.

g) He participates in analyses of tasks of general survey controlled projects.

h) He proposes prevention measures for the QC personnel where irregularities in work are noticed and who do not use measures necessary for quality assurance.

i) He plans and prepares topics for technical working group meetings for demining community in Bosnia and Herzegovina.

j) He participates in the work of the Investigation Board for demining accidents and teams for investigating missed mines on competed demining tasks.

k) In order to standardise criteria and improve quality in work, he proposes organisation of sessions, training and additional training for personnel included in technical inspections of demining tasks.

l) He improves the implementation of technical inspection on clearance and technical survey operations.

m) He proposes and participates in the procedures of changes and amendments to BH Standard in order to provide required quality and safe use of demined areas and objects for the citizens of Bosnia and Herzegovina.

5. Chief of Department for Managing Quality in Mine Action / BH MAC Chief Inspector

a) He plans the work of the department for managing quality (DMQ) in mine action: internal regulations, accreditations, legislation, quality assurance, testing personnel and demining equipment (metal detectors, EDD teams and machines for mechanical preparation).

b) Coordinates the work of BH MAC inspection bodies and ensures that the technical inspection of demining sites is conducted objectively and on unbiased basis, all in accordance with the Demining Law and BH Standard.

c) Coordinates and agrees criteria in technical inspection between office, with those provided in BH MAC Standard and BH MAC SOP.

d) Contacts and cooperates with chiefs of offices in relation to ensuring quality in demining.

e) Initiates, proposes and participates in changes and amendments to BH Standard in relation to required quality in demining.

f) He participates in the work of technical working group of demining community in BH as well as in all other discussion, which are related to ensuring quality in demining.

g) He conducts necessary statistics through the database as well as analyse of clearance and technical survey tasks, all in order to improve or propose changes and amendments to BH Standard. He provides his necessary periodic reports.

h) He coordinates the level of technical inspections along with the QA inspectors in offices, which will be applied on sites by SQCC (i.e. if demining organisation conducted previous activities in another entity).

i) He suggests to BH MAC offices chiefs re-assignment of inspection personnel if necessary, all in order to ensure quality in tasks of technical inspections on sites in progress.

j) Upon receipt of an Appeal of a demining organisation on the issued *Decision* on Suspension of further activities or *Decision* of Repetition on the Area, which is procedure conducted by BHMAC QA Inspection, he proposes that the Director makes a Decision regarding the appeal.

k) If the inspection bodies state there are irregularities that influence QA, Chief of Inspectors takes measures for insurance of required quality control in demining, according to the Demining Law and the BH Standard.

l) If the irregularities were stated in the work of the inspection bodies, he proposes to the BH MAC director to take measures (preventive, disciplinary, additional training etc.), in accordance with the Law and BH Standard.

m) He proposes to the director personnel for the Investigation Board for investigating mine accident. He plans reviewing of lessons learned on TWG, as well as reviewing of all problems related to quality assurance.

n) Proposes to the director personnel for the investigating team, who will work on investigation and defining the origin of mines missed on a completed task.

o) Follows up changes in International Standards, based on which he will initiate discussions in order to change and amend BH Standard.

p) Creates plans and organises training and additional training, necessary for personnel included in technical inspections of demining sites.

Annex A

REVIEW OF NECESSARY EQUIPMENT FOR INSPECTION BODIES

Serial	*I T E M*	*Qty*	*Remark*
1.	*Terrain vehicle*	*1*	*Possible planned used of one vehicle for more inspectors*
2.	*Visor*	*1*	
3.	*Protective jacket (anti-piercing)*	*1*	
4.	*Working suite or overall*	*1*	
5.	*Boots or protective shoes*	*1*	*If possible blast-proof*
6.	*Metal detector*	*1*	
7.	*Prodder*	*1*	
8.	*Excavating spade*	*1*	
9.	*Compass and GPS*	*1*	*GPS: if necessary at the end of the task as well*
10.	*Binoculars*	*1*	
11.	*Laser range finder*	*1*	
12.	*Measuring tape 20-50m long*	*1*	
13.	*Camera or digital camera with memory*	*1*	
14.	*Demining equipment bag*	*1*	
15.	*Mobile phone*	*1*	
16.	*Thermometer for outside temperature*	*1*	
17.	*BH MAC Standard and SOP*	*1*	
15.	*Task Documentation*	*1*	*Necessary documentation for the inspection of particular task site.*
16.	*Documentation bag*	*1*	

Annex B

TABLE REVIEW OF ITEMS AND CONTENTS OF THE INSPECTION BODIES. CLASSIFICATOR OF NON-CONFORMITIES FOR THE RECORD OF

TECHNICAL INSPECTION ON DEMINING TASK SITE

Technical inspection of the demining tasks conduct on the site, in order to prove the compliance to the requirements for QA, is to be planned through inspection visits, taking into account particular items and activities according to deadlines. A part of inspection activities is to be done during every planned inspection to the site (depending on the planned level of inspection). Some inspections are planned to be conducted during the month, while some at the beginning and completion of the task. Basic review of items and activities to be encompassed with inspection visit is as follows:

ACTIVITY AND NON-CONFORM. CODE	*ITEM AND CONTENTS OF INSPECTIONS*	*ACTIVITY CONDUCT - DEADLINE*
1.1. *	*1. Communication* *Check if the radio communication between the control point and operation (regional) centre of the organisation and within the team is in function*	*E*
1.2.	*Are the radio communication checks conducted with the operational (regional) centre in regular stated intervals (maximum each hour)?*	*E*
2.1.	*2. Medical Support* *Has the team leader introduced the team members with MEDEVAC plan, closest roads and medical facilities – hospital*	*B*
2.2.	*Is the urgent medical aid exercise conducted (CASEVAC) and is it noted down*	*B/M*
2.3.	*Is the medical support on the task site in compliance with the SOP and does it meet the requirements?*	*B*
2.4. *	*Is the paramedic present on the site at all times and is he radio connected into the radio network on the site?*	*E*
2.5.	*Is the paramedic competent with adequate qualifications?*	*B*
2.6.	*Is the paramedic equipped with appropriate medical equipment?*	*B*
2.7.	*Can full operational foldable stretchers fit into the intentional ambulance vehicle?*	*B*
2.8. *	*Is there the intentional ambulance vehicle for that purpose only and is it ready for use?*	*E*
3.1.	*3. Personal Protective Equipment* *Are all the personnel equipped with personal protective equipment and is the equipment used correctly?*	*E*
3.2. *	*Does the visor meet the Standard requirements?*	*B*
3.3. *	*Does the protective jacket meet the Standard requirements?*	*B*
4.1.	*4. Tools and equipment for work* *Are the tools and equipment properly stored in an area meant for storage and is the metal free metal detector testing area nearby?*	*E*
4.2. *	*Does the organisation use approved and operational tools in unchecked part of the lane, i.e. in front of the base stick?*	*E*

4.3. *	*Does the prodder meet the requirements of the Standard (minimum length of the operational part 20 cm?*	*B/M*
4.4.	*Are BH MAC approved detectors used (locating UPMAH-3 at minimum depth of 10 cm)?*	*B*
4.5. *	*Is/are the detector/detectors that is/are controlled operational?*	*B*
4.6. *	*Is the metal detector test conducted regularly by the team leader prior to work start and after the batteries are replaced in a particular testing area?*	*E*
4.7.	*Is there a rope minimum length 50m with the hook for pulling mines / UXO?*	*B*
4.8.	*Is there equipment for demolitions within other equipment (cable min. length 150 m, initiator, crimpers for detonators…).*	*B*
5.1.	*5. Vehicles* *Are the other vehicles within the team operational and settled in the parking area, parked in the direction of exit?*	*E*
6.1.	*6. Task site* *Is the task site layout adequately set and are there requirements met regarding safety between operational and safe (administrative) part?*	*E*
6.2.	*Are the designated areas and reference points on the site accurately marked?*	*E*
6.3.	*Are the roads or lanes used by population in dangerous area closed during the clearance?*	*E*
7.1.	*7. Team Leader* *Has the team leader informed the team prior to work and has he issued clear tasks for their activities?*	*E*
7.2.	*Does the team leader control the operational part and take on-time actions set by SOP?*	*E*
8.1.	*8. Methods of work* *Does the organisation on a daily basis check the status of the site left from the previous day, especially access lanes (or a lane), safe lane and approached lines of the working lanes?*	*E*
8.2.	*Are the manual demining procedures correctly applied in relation to local conditions of the ground?*	*E*
8.3.	*Is the trip wire feeler (antenna) used in vegetation that allows it?*	*E*
8.4. *	*Is the vegetation cut to 5 cm or lower?*	*E*
8.5. *	*Is the vegetation cut put into the safe area (behind deminer or in a previously cleared lane)?*	*E*
8.6. *	*Is the overlap done in the working lane to the side of progress*	*E*
8.7. *	*Is the detector used sweep conducted for a minimum number of times and does the sweep speed go over 0, 1 m/sec?*	*E*
8.8.	*Is the sensitivity check (functionality) of the detector conducted every 10 minutes*	*E*

	of work?	
8.9. *	*When a detector beeps, is the prodder used or immediate digging, and are there traces of digging when the prodder finds an unknown item?*	*E*
8.10. *	*Is the prodder adequately used?*	*E*
8.11.	*Is the correct procedure conducted upon finding the trip wire?*	*E*
8.12.	*Is all the metal found in the working lane (on the surface or when searching with metal detector) left in the metal collecting pit or other checked and marked place for collecting metal debris?*	*E*
8.13. *	*Are the shifts and breaks of deminers conducted after maximum 30 minutes of wor*	*E*
8.14. *	*Do the deminers (effectively) work up to 5 hours daily in demining?*	*E*
8.15.	*Is the adequate follow up and support to deminer in working lane conducted (by the deminer No 2 or the team leader or his depute)?*	*E*
8.16.	*Is the correct procedure applied upon finding a mine or UXO?*	*E*
8.17. *	*Is a minimum five days time passed since the mechanical preparation of the ground or burning prior to deployment of EDD teams and manual demining?*	*E*
8.18. *	*Is a minimum five days time passed since the mechanical preparation of the ground or burning prior to deployment of EDD teams and manual demining?*	*B*
8.19. *	*Is the area of one box searched by minimum 2 EDD teams in order to be declared as clear?*	*E*
8.20. *	*Do deminers follow with manual methods if the area was searched with one EDD team only?*	*E*
8.21.	*When using his EDD, does the dog handler take into account the direction of wind?*	*E*
8.22. *	*Does the EDD obey the order from his handler and is he intensively sniffing the ground for search?*	*E*
8.23. *	*Does the EDD correctly search the entire area of the box, in compliance with procedures stated in SOP?*	*E*
8.24.	*While searching the assigned areas with EDD teams, is it taken into consideration that EDDs have certain limitations and are the safety measures complied with?*	*E*
8.25. *	*Is the proper marking and further procedure conducted after the EDD indication?*	*E*
8.26. *	*If there is no mine/UXO is found at the indication spot, does a deminer search a wider area of at least one metre to the left and right from the indication place?*	*E*
8.27.	*Does the EDD have appropriate equipment (transport cage etc.) and if the daily maintenance and care is taken?*	*B*
8.28. *	*If mechanical preparation is conducted, does the mechanical device meet the Standard requirements?*	*B/E*
8.29. *	*Does the machine disturb the ground to required quality for further use of EDDs?*	*B/E*

8.30.	*When mechanical preparation is conducted, is minimum overlap complied with regarding minim width of safety lane set by Standard?*	*E*
9.1.	*9. Marking* *Are all the pickets in the ground connected with the tape?*	*E*
9.2.	*Are the pickets in the working lane of a minimum 0.5 m height, red-tipped and connected with tape on the ground level at maximum distance of 2 m.*	*E*
9.3.	*Are higher pickets used (height 1.2-1.5 m) at the distance of 6m, red-tipped from the location (access lane) to the location where PPE is needed*	*E*
9.4.	*Are white-tipped higher pickets used in the safe areas (if surrounded by suspect areas, these should also be marked with red-dipped pickets).*	*E*
9.5.	*If pickets cannot be used, is the appropriate alternative to pickets used?*	*E*
9.6. *	*Are yellow-tipped small pickets used for marking locations of mines/UXO found?*	*E*
9.7. *	*Is the base stick used for work and is it appropriate?*	*E*
9.8.	*Are all the working lanes marked into 1 metre width?*	*E*
9.9.	*Are the lengths for the working lanes 25 metres, i.e. for mechanical preparation metres?*	*E*
9.10.	*Are the access lane and the safe lane of a minimum width of 2m?*	*E*
9.11.	*Did the organisation conducted minimum final marking of the landmark point and turning points with permanent markers, and at every 50 metres with semi permanent markers as stated in the Standard (Chapter VIII – Annex D)*	*C*
9.12.	*Is there mined area left after the clearance, which is bordering with the cleared one, and is it marked with semi permanent or permanent fence for minefield marking?*	*C*
9.13.	*Does the final sketch of the task match the cleared area and area assigned in the task?*	*C*
10.1. *	*10. Demolition* *Is the demolition of mines / UXO conducted at least on a weekly basis, in princip situ* *or at a designated demolition area?*	E
10.2. *	*Does the team leader take over the further activity upon location of a mine / UXO?*	*E*
10.3.	*Has the team leader correctly estimated the level of risk if demolition is conducted at the location of finding or other designated demolition area?*	*E*
10.4.	*Has a mine located during technical survey (manually or with EDD teams) marked and left for evidence of inspectors?*	*E*
10.5.	*If it is not possible to conduct demolition on the spot, does the team conducts pulling procedure, then safing and disarming, to moving and destructing on another designated demolition area?*	*E*

10.6.	*Are all the prescribed safety measures for distances and safe demolition of mine/UXO complied with, including protective works?*	*E*
10.7.	*Does the team leader himself manage the demolition and does the team demolish explosive devices for which they are authorised, i.e. for which there are competent personnel?*	*E*
11.1.	*<u>11. Explosives</u>* *Are all the precaution measures taken during daily transport of explosives for the team?*	*B/M*
11.2. *	*Is the daily quantity of explosives on the site or other designated safe area, properly stored?*	*E*
11.3.	*Does the team possess the explosive devices for making demolition charges?*	*B/M*
11.4.	*Is there update documentation about quantities of explosives and other initiating demolition means?*	*E*
12.1.	*<u>12. Documentation and reporting</u> - Are they made and is there necessary documentation and reports of the site:* *Approved SOP of demining organisation*	*B*
12.2.	*Red folder - Copy of the information about area for clearance and technical survey*	*B*
12.3. *	*Diary or daily report with the sketch of the progress*	*E*
12.4. *	*Daily report on EDD teams work*	*E*
12.5.	*Daily report on mechanical preparation of the ground*	*E*
12.6.	*Documentation of personal information*	*B*
12.7.	*Documentation on visitors*	*B*
12.8.	*Documentation on daily detector test*	*B*
12.9.	*Medical evacuation plan (MEDEVAC)*	*B*
12.10.	*Documentation on status of explosives*	*B*
12.11. *	*Authorisations for conducting demining / demining logbooks – accreditation*	*B*
12.12. *	*Accreditations for EDD teams and machines*	*B*
13.1. *	*<u>13. Quality Control of area cleared since the previous inspection visit(sampling included)</u>* *Do the used methods and the stated quality of work during inspections provide trust in quality and safety for use?*	*E*
13.2. *	*Was the person from demining organisation in charge for QA conducted QC in the past five days and did they left a written report about it?*	*E*
13.3. *	*Has the QA officer from demining organisation within his internal control conducted a check of the cleared area by sampling and documented it on the sketch of the task progress and at the site itself?*	*E*

13.4. *	*Are the observations and sampling of internal QC quality and were there measures proposed and conducted for QA?*	*E*
13.5. *	*Is the monitor satisfied with the quality of clearance and safety of demining staff (if there was one) and is there analysis of his observations for the past period since the last inspection?*	*E*
13.6. *	*Regarding the period from the previous QC, does the real productivity (in relation to local conditions and theoretically possible productivity) give the trust into safety and quality in clearance?*	*E*
13.7. *	*Are non-conformities noted on previous inspection completely corrected?*	*E*
13.8.1.* *	*Was a mine/UXO found during the technical inspection or QC sampling in the planned area of the task, or were there other unacceptable non-conformities?*	*E/S*
13.8.2.*	*Every part of a mine or UXO, (including ammunition of 20mm and higher), containing fuse with some explosives or fuse only*	*E/S*
13.8.3.*	*Every approved metal detector signal to the depth of 10 cm, which has not been excavated, where prodder tracing the signal and excavating finds item 3cm or more in diameter*	*E/S*
13.8.4.*	*Each quantity of broken explosives larger than 15g to the depth of 10 cm, found in areas searched by EDD teams*	*E/S*
13.8.5.*	*Every approved MD signal in the ground, which does not allow the use of the prodder, where excavating finds metal object in the depth of 10 cm (or deeper, depending on the contract).*	*E/S*
13.9.* *	*Are there non-conformities, which are not corrected from the previous control but are of such nature that raise doubt into the quality of work and safety of deminers, surrounding inhabitants and future users, and is it necessary to propose suspending further activities, i.e. issue the written Decision on Suspending Further Works?*	*E*

LEGEND FOR COLUMN "DEADLINE"

B= beginning

E =each planned visit (except the beginning and the end)
M=monthly
C=completion of the task
S =Sampling

BH MAC No: Annex C

R E C O R D
OF CONDUCT OF TECHNICAL INSPECTION ON DEMINING SITE

BH MAC Regional Office		Date	
Name and surname of inspection body		Time of inspection	
Location of the task (village, settlement, municipality)		Type of work and MAC ID task No	

Name of demining organisation, name and sign of the section (team, group)	Name of the task site manager (section manager, team, group manager or senior supervisor)

Non-conformities observed related to prescribed procedures (SOP and Standard)	Non-conformity code	Are the non-conformities corrected immediately?	
		YES	NO
1.			
2.			
3.			
4.			
5.			

DATA ON RESOURCES ENGAGED, PROGRESS AND METHODS OF WORK SINCE THE PREVIOUS INSPECTION

date	Deminers/m^2	Manually with or without mechanical preparation (D, P, C & M)	EDD team/m^2	Machine/m^2	Types and Qty of mines and UXO found (or estimated as activated in mechanical preparation)

TOTAL INFORMATION ABOUT TASK PROGRESS	Total type and qty of mines and UXO found until the day of the inspection on the task
-manually……m^2 –EDD teams……..m^2 -mech. preparation……m^2	

Inspection body remark about the technical inspection conducted with all attachments as well as with sampling result (if conducted, with report of sampling team, sketch etc.).

_____ _____ _____
(site manager signature) (Inspection body signature) (CRO or CQ Inspector signature)

Clarification on how to fill the form

Record on the technical inspection on the site is filled by inspection body (SQCC and QC Inspector) during every inspection visit. If due to bad weather conditions the activities are not conducted thus there is no team (or teams) on site, Record will be filled with that remark only, without entering the operational part of the site. Filling the Record is to be done according to columns, with following remarks:

- Method of work and MAC ID also must contain data if it is technical survey or clearance.
- It is possible to document in the Record five observed critical non-conformities, if there are more, another Record sheet is to be used.
- In the part "Information on resources engaged, progress and methods of work since the previous inspection'' document information from the previous inspection including that day as well. In column "Manually with or without mechanical preparation, letters mean: D=detector, P=prodder, C=combined and M=mechanical – work on a mechanically prepared area. If the visit is conducted during mechanical preparation only (technical survey or clearance), then only the progress column is filled (m^2) done by machine, and another column with estimated types and quantities of activated mines.
- Following is to be documented into remarks:

- Stated differences from the required manner of work stated with SOP, BH Standard and the Contract, that were not corrected during the inspection. Those were given a reasonable deadline for being corrected, i.e. it surely should be the period until the next inspection in order to state the quality of correction, if that not being a final deadline as well. If irregularities (critical non-conformities) are not corrected in an adequate manner or have not been corrected in the given deadline, inspection body shall document it and immediately or most within three days (According to article 34. of the Demining Law), issue *Declaration* on suspending further works on the site. Upon appeal of demining organisation, the BH MAC director shall within three days make a decision

- Result of the planned and conducted sampling at the completed part of the entire task, with sampling team report attached sketch of the site and size of sampled area, including critical non-conformities if any. If a critical non-conformity is found – mine or UXO missed, the sampled area shall not pass the inspection, which is to be stated, while the sketch will be attached along with location, photographs etc. Here will be stated other non-conformities, agreed at the beginning of the task, that might be considered as unacceptable critical non-conformities for which the sampled part of the entire area shall not pass the inspection.

- If Infringement of Discipline is to be issued for a certain documented critical non-conformity (according to Article 37-39 of the Demining Law), SQCC in this part will write the following: «It is suggested to the Inspector of QC of the office _____ to submit Decision of Infringement of Discipline. ».

-He will submit a copy of the record to the site manager, after he asks for his signature. If site manager does not want to sign, it has to be documented.

- During the first visit, when introducing the task regarding reference point and the datum point, according to planned working methods state the planned sampling of size of parts of the task and agree upon critical non-conformities for which the organisation shall not pass the inspection. Document name and surname of the person responsible for operations and quality assurance from the management of demining organisation.

A copy of the record is given to the site manager by SQCC or QC Inspector, while original and the second copy will be given to QC Inspector for validation and tracking the sequence of technical control and the quality of progress of the task. After signed by CRO, it is forwarded to QA inspector of the Office. If the record is made by CC Inspector, CRO will validate it. After signing (by CQ Inspector or CRO), the original Record will be attached to the Record of technical survey of demining site, which will then be attached to the Record of handover of the cleared or technically surveyed area. If all the necessary comments cannot fit the space provided, additional report is to be attached to the record.

Annex C1

R E C O R D OF TECHNICAL INSPECTION CONDUCTED BY SENIOR INSPECTION BODIES OF BH MAC			
Organisational Unit of BH MAC Inspection Body		Date	
Name and surname of Inspector		Time	
Location of inspection visit and ID of the task		Type of activities conducted on location	
Controlled organisational unit of BH MAC or PMA organisation		Aim of / basis for the control	
CONTROLLED ISSUES:			
STATUS FOUND:			
PROPOSITION OF MEASURES:			

C O N T R O L L E D BY:

_____
(Signature)

Clarification for filling the report

Report is filled by senior inspection bodies (apart form SQCC and QC Inspector) upon the columns results after completed inspections (PMA projects, work of subordinate inspection bodies, quality of work of the personnel responsible for QA in a PMA organisation, work of temporarily accredited organisations in the second phase of accreditation etc). This report is provided to the chief of organisational unit for further procedure

Annex D

R E C O R D
OF TECHNICAL INSPECTION OF A COMPLETED DEMINING TASK (Article 33. No 2. of the Law)

No		Name of demining organisation	
Date:		MAC ID No	
Regional office BHMAC		Location of the task (village, municipality)	
Name and surname of inspection body		Size of the task	

INFORMATION ON METHODS APPLIED DURING SAMPLING	
METHODS OF WORK APPLIED	METHODS OF SAMLIPNG APPLIED
a.-metal detector b.-prodder c.-combined d.-EDD t e.-machine	A.-metal detector b.-prodder c.-combined d.-EDD t. e.-machine

INFORMATION ON EFFECTIVENESS OF THE TASK		SAMPLING INFORMATION	Types and qty of mines / UXO on the task
Total cleared (clearance or techn.survey) or mechanically prepared	a)-manually ……..m^2 b)-EDD t. ……..m^2 TOTAL:……..…..m^2 c)-mech. preparation……..m^2	a)-manually……..m^2 b)-EDD t. ……..m^2 c)-machine……..m^2 TOTAL:……..m^2	

Remarks on critical non-conformities observed according to Records on technical inspection of the task and sampling results, agreeing and correcting the critical non-conformities, as well as their influence to the quality of work

Clarification for filling the report

The record on the technical inspection of the task on a demining site is filled by inspection body (SQCC) right after the task is completed, i.e. after positive sampling of an area within the task. The form will be filled according to column requirements, except for remarks that need to be documented:

- Included digressions from the first phase of management and operational procedures of demining organisation prior and during the demining process in relation to the required manner of work (set in SOP, BH Standard and the Contract) and the manner of resolving (immediately during inspection, in a reasonable deadline given, prolonging, issuing resolution on repetition or suspending activities, activities after appeal according to BH MAC Director decision etc);

- Total positive result of the planned sampling of the parts of the task with attached sketch of location, size of samples and how they were achieved, this all presents the second phase of technical inspection. Were there critical non-conformities, were and how they were corrected, how did the positive result occurred with the following technical inspection, i.e. quality of work on the cleared area or object on the task;

- Analysis of the found mines and traces of their activation in relation to the documentation on clearance tasks or found during technical survey. During clearance task, state types and quantities of mines placed) (according to records, statements of participants in mining or other reliable witnesses) within project documentation, in relation to the number of mines found (where traces of activation will be stated as well). During analysis of mines found during TS, where a clearance task is to be formed, state types and number of found mines for which approval was given for destruction, along with status of marked places of where they were found (yellow tipped pickets) in order to show mines in a clearance task etc.

First copy of the record, with individual records of technical inspections, will be submitted by SQCC to his QC Inspector for validation. After CRO had signed them, it is attached to the Record on the Handover and complete task documentation (Final report) and forwarded to the QA Inspector of the Office for further procedure.

BOSNA I HERCEGOVINA
MINISTARSTVO CIVILNIH POSLOVA
KOMISIJA ZA DEMINIRANJE U BiH
CENTAR ZA UKLANJANJE MINA U BiH

БОСНА И ХЕРЦЕГОВИНА
МИНИСТАРСТВО ЦИВИЛНИХ ПОСЛОВА
КОМИСИЈА ЗА ДЕМИНИРАЊЕ У БиХ
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БиХ

BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No:……
Date:……200_

Based on the Article 193, Para 1. of the Law on Managing Conduct, (Official Gazette BH, No 29/02) and Article 34. Para 2. of the Demining Law in Bosnia and Herzegovina, (Official Gazette BH, No 5/02), BH MAC Office inspector for Quality Control issues

Formal Decision

On suspending further activities for the demining organisation ……..
on a demining of task ID No ……., location……

C l a r i f i c a t i o n

Demining organisation ……,
(*State full name of the organisation with their seat*)
Which is conducting activities on demining task ID No ……., at location ……,
does not conduct fully follow their own standing operational procedures (SOP), which is not it compliance with BH Standard requirements and contract about the conduct of the stated demining task. During the technical inspection on the date …… 200_, critical non-conformities have been observed, which are documented into the Record on the technical inspection, No _____, a copy of which was given to the site manager …….. for insight and realisation. It has been required in the Report that the procedures of work are complied with. Since the non-conformities could not have been corrected immediately, a reasonable deadline was given for correction. On the following visit, _____200_, and making a Record No_____, it has been observed and stated that non-conformity/non-conformities were not corrected in the part of the task, which have been cleared and that the same non-conformity / non-conformities are repeating. Stated non-conformities were not accepted by demining organisation neither corrected, though they are critical non-conformities, which disable the achieving of required quality in work and endanger safety of deminers and future users of the cleared ground.

Based on all stated above, it has been resolved as it is in disposition of this Resolution

LEGAL REDRESS:
The Appeal on this Resolution may be submitted to the BH MAC Director within three days. Appeal will be handed over immediately in written or via post.
The appeal shall not postpone the action of this Decision.
Attachment: Copies of the Technical Inspections Records

REGIONAL OFFICE QC INSPECTOR
.....
……

Distribution:
- Organisation
- QA Inspector of the Office
- Chief Inspector
- Archives

MISDEMENEAOR COMPLAIN – example Annex F

BOSNA I HERCEGOVINA
MINISTARSTVO CIVILNIH POSLOVA
KOMISIJA ZA DEMINIRANJE U BiH
CENTAR ZA UKLANJANJE MINA U BiH

БОСНА И ХЕРЦЕГОВИНА
МИНИСТАРСТВО ЦИВИЛНИХ ПОСЛОВА
КОМИСИЈА ЗА ДЕМИНИРАЊЕ У БиХ
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БиХ

BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No:_____
Date:_____200_.
Location,_____

MISDEMENEAOR COURT
Municipality.....

Based on Article 77 of the Administrative Law ("Official Gazette BH, No 32/02) and Article 32. of the Demining Law in Bosnia and Herzegovina, ("Official Gazette, No 5/02), I submit

R E Q U E S T
For procedure of misdemeanour complaint

VERSUS: 1. Deminer (name, father's name and surname, ID number, address) as an individual.
2. – Full name of the demining organisation, location, account and tax number;
- Name and surname of responsible authorised person within organisation.

FOR: On the date of_____200_., BH MAC inspection body had stated that the deminer conducted demining activities without required authorisation.

THIS RESULTED IN:
Violation according to Articles 24-27. of the Demining Law ("Official Gazette", No 5/02), subject to misdemeanour complain according to Article 37. of the same Law
It is suggested that Misdemeanour Court conducts procedure and states adequate penalty.

C l a r i f i c a t i o n

On the day .....200_, during the immediate inspection of a QC consultant, it has been stated that during the demining activities on the site..... (Exact location name), ID No, deminer..... (Name and surname) had conducted demining activities without required authorisation.

As reported, QC Inspector of BH MAC office _____ has been notified as well as Chief BH MAC QA Inspector.

Since the stated persons acted not in compliance with Article 37 a of the Demining Law (Official Gazette BH, No 5/02), they have conducted a violation for which they are charged with, which results in proposal stated above.

(Upon individual consideration, broaden the factual status in clarification of this request, as well as proposal for the issuance of protective measure in suspending further conduct of activities).

We ask that you notify us about the result of this request by calling us.

Annex:
- Record dated_____200_.godine

Senior Quality Control Consultant
QC Inspector of the RO_____

Distribution:
1. as in title,
2. QA inspector of the Office,
3. Chief Inspector,
4. Archives

REMARK: Following the above example, make misdemeanour complaint for other cases stated in part VI, MISDEMENEAOR COMPLAINTS of BH Demining Law.

Annex G

BOSNA I HERCEGOVINA
MINISTARSTVO CIVILNIH POSLOVA
KOMISIJA ZA DEMINIRANJE
CENTAR ZA UKLANJANJE MINA U BIH

БОСНА И ХЕРЦЕГОВИНА
МИНИСТАРСТВО ЦИВИЛНИХ ПОСЛОВА
КОМИСИЈА ЗА ДЕМИНИРАЊЕ У БиХ
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БиХ

BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No:_____
Date:_____200_.

Based on Article 193 No 1 of the Administrative Law ("Official Gazette BH, No 29/02), Article 9 – g of the Demining Law in Bosnia and Herzegovina ("Official Gazette BH, No 5/02), and No 7 of Chapter VIII BH Standard, Quality Control Inspector of Regional office..... , issues

FORMAL DECISION

To the demining organisation_____ on repetition of the area _____.
(Clearance or technical survey)

Which failed sampling technical inspection on the demining site ID No _____, on the location of _____, municipality of _____

Repetition shall be conducted _____
(Using same method used in clearance or state other method).

Demining organisation is obliged to notify BH MAC in written and in a timely manner about repetition of the activities no longer than one day before repetition starts.

Clarification

Demining organisation _____,
(State full name of the organisation with its seat)

Conducting demining site ID No: _____, at the location _____, municipality of _____ has not conducted clearance in a quality manner regarding mines /UXO, since in the sampled cleared area the sampling team found a mine _____ state type and qty) _____(or UXO, or other unacceptable critical non-conformities, agreed upon beginning of the work on the task).

The stated critical non-conformity / critical non-conformities represents unsatisfying conditions for quality assurance of minimum 99,65% removal of explosion threat for future users, which is the contrary to the BH Standard for humanitarian demining and the Contract about the conduct of a demining task.

During the sampling of the planned part of the cleared or technically surveyed task, the sampling team _____, found a mine _____ (UXO, or stated other unacceptable critical critical non-conformities), which is documented in the Sampling Report No _____, dated _____200_. proved with photographs with a mine or UXO found or other unacceptable critical non-conformities). SQC consultant from the RO _____ is notified, who tracked the sequence of sampling and documented the result of sampling into the Technical Inspection Report No _____ dated _____ 200_. The representative of the demining organisation is also notified about it (the site manager), as well as he is told to destroy the item found, which is conducted with the SQC consultant's control.

Based on all stated above, it has been resolved as it is in disposition of this Decision.

LEGAL REDRESS: The Appeal on this Decision may be submitted to the BH MAC Director within three days. Appeal will be handed over immediately in written or via post.

The appeal shall not postpone the action of Decision.

Annex: -Copy of the Record on Technical Inspection
-Copy of the sampling team record with proofs

Regional Office QC INSPECTOR

_____

REMARK: Use the same example to issue a resolution on repetition if the inspection body during technical inspection found a mine or UXO in the cleared area, or stated another unacceptable critical non-conformity, agreed with demining organisation upon beginning of the work on the task

BOSNA I HERCEGOVINA
MINISTARSTVO CIVILNIH POSLOVA
KOMISIJA ZA DEMINIRANJE
CENTAR ZA UKLANJANJE MINA U BIH

БОСНА И ХЕРЦЕГОВИНА
МИНИСТАРСТВО ЦИВИЛНИХ ПОСЛОВА
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ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БиХ

BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

Based on Article 35. of the Demining Law in BH (Official Gazette BH, No 5/02), Mine Action Centre in Bosnia and Herzegovina and the organisation create

R E C O R D

of handover of cleared area or an object, with containing parts as follows:

I- Statement on Clearance

II- Official declarations on handing over cleared area or an object

III- Annexes

I - STATEMENT OF CLEARANCE BY DEMINING ORGANISATION	
1. Demining organisation	
2. Statement made by: (operational officer or manager)	
3. ID task No	
4. Location (village, municipality)	
5. Map (name-No of plan or map, scale and year of issuing)	
6. Grid reference system	☐ UTM ☐ Gauss Kruger
7. Reference Point	Y= X=
8. Datum point	Y= X=
9. Start date and completion date	
10. cleared area m2	
11. Depth of clearance	
12. Is area without metal now	☐ yes ☐ no
13. No of houses/buildings cleared	
14. houses/buildings cleared in m2	
15. Methods of work used	

16. Methods of internal control	
17. Internal control conducted by and size of internal sampling in m2	
18. Monitoring conducted by	☐ Yes …….. no ☐
19. Types and Qty of mines / UXO removed	

II- OFFICIAL DECLARATIONS OF HANDING OVER THE CLEARED AREA	
HANDOVER BY THE ORGANISATION	TAKEOVER BY THE MINE ACTION CENTRE
I hereby declare that clearance of area (building) described in this document (final report) is conducted by BH Standard for removal of mines and UXO to the required depth I declare that the area (building) cleared from mines and UXO to required quality for safe use and I hand it over as it is to BH MAC	I, ……, BH MAC RO QC inspector, based on my own observations and through the technical inspection of the task conducted by SQC consultant ……..., RO……., take over the stated cleared area (building) on behalf of BH MAC, since the technical inspection and sampling proved that clearance was conducted in accordance with BH MAC Standard requirements for removal of mines and UXO …… (signature of the inspector)
20. Name and position of responsible person in the demining organisation	21. Name of the Chief of BH MAC office
22. Signature and stamp	23. Signature and stamp
24. No of declaration…… Date of handover:……	25. No of Record:…… Date of takeover:……..

III- ANNEXES:

A) Demining organisation annexes:

a) - List of personnel of the section (team, section) or more of them, who conducted the task with function,
b)- Review of working days and working hours with effects achieved per engaged sections, teams and groups (information from the daily reports for deminers and EDD teams, special report for mechanical preparation if conducted),
c) - Daily report (for deminers teams, EDD teams, mechanical preparation of the ground and monitoring, if conducted),
d) - Review of equipment used in methods applied (name, type, quantity),
e) - Graphic drawing of the site – sketch in scale on geodetic layers or high-scale topographic map with grid references of turning points and locations of mines found along with the type. Additional sketch of EDD teams work (if conducted) with marked boxes and EDD teams that conducted search in particular boxes,
f) - Copies of internal QC reports (organisation's QA personnel),
g)-Description of the task sequence (problems in the conduct of the plan, non-conformities stated by internal quality control, monitoring if engaged, MAC inspections, how the non-conformities were corrected, comparison of mines found with known information about mining the area, description of activities showing reliability of the quality in clearance as required by Standard etc., significant photographs to prove stated above),

h) - Record on notifying the authorised personnel / final user with the borders of marked cleared area.

B) - Inspection bodies annexes:
a) - Records from technical inspections (daily inspections).
b) - Final Record on technical inspection (positive in relation to quality due to handover and issuing the QC Certificate).
c) - Decision on suspending further activities or repetition (if issued) along with other proofs stating competence and quality of demining task cleared
d) - Sketch of the task's progress

CLARIFICATION FOR FILLING THE *RECORD* OF HANDOVER OF CLEARED AREA OR OBJECT/BUILDING WITH OFFICIAL DECLARATIONS AND ANNEXES

General. *Record* on handover of the cleared area or object/building with official declarations and annexes is a set of documents about the completed task of mine / UXO clearance, which is at the same time a final record for the task (hereinafter the Record). The original of the Record will, upon the ending of verification process and issuing the QC certificate by BH MAC, end up in database and BH MAC archives, along with the Blue Folder of the task.

I – DEMINING ORGANISATION DECLARATION ON CLEARANCE

This is to be filled by demining organisation as follows:

1. Registered name of the demining organisation.
2. Name and surname of the operations officer or programme manager who created declaration.
3. Unique MAC ID for the task assigned for each particular site.
4. State names of villages, municipalities and locations where the tasks are.
5. State name, sign, scale and date of issuing of the map (map 1:25.000, as exception map 1:50.000)
6. Depending on grid reference system used, fill squares "X" if it is UTM or Gauss Kruger. It is forbidden to combine grid reference systems.
7. State full grid references (six numbers) for the reference point).
8. State full grid reference (six numbers) for the datum point.

9. State start and finish date.
10. State squaring of the cleared area of the task (projection of the area).
11. Depth of clearance in cm given for the task (standard or deeper, depending on information if mines were laid or got deeper into the ground, state intentional use of ground).
12. In square "X" mark if all metal that can be located with metal detector is moved up to stated depth of clearance (standard or agreed deeper).
13. State number of cleared houses/objects. Every separate object to be stated separately.
14. Squaring of houses/objects counted according to checked areas of separate rooms (floors, walls, ceilings).
15. State what methods are used on the task (manual: detector, prodder or combined; mechanical preparation if proceeded).
16. State what methods of internal quality control were conducted according to internal QC records, area in m2 where the sampling was conducted through internal QC.
17. State name and surname of the person in organisation responsible of QA in the demining organisation structure, who filled the QC reports and to whom that is the exclusive task.
18. Put an "X" for monitoring, if conducted, and state organisation that did it.

State exact type and quantities of all the found mines and UXOs; if necessary, attach a technical report on mines and UXO with photographs and description, as a proof they are non-identified or unusual (booby-traps).

II - OFFICIAL DECLARATIONS OF TAKING OVER THE AREA

This part is divided to the left which is filled by demining organisation and right one filled by BH MAC.

In the right side, for official declaration of takeover, names of inspectors who tracked and took over the task will be written and stamped by BH MAC.

19. and 21. State name and position of person responsible in demining organisation (director – programme manager responsible for the demining organisation registered in BH) and the name and position of responsible person on behalf of BH MAC.
22. and 23. Signature of stated persons will be stamped.
24. and 25. Numbers of evidencing in demining organisation and BH MAC with the date of handover and takeover of the cleared area or building.

III- ANNEXES

A) DEMINING ORGANISATION ANNEXES

Annex a) - List of person in a team or teams with functions, who conducted the task, is to be done by the following example:

L I S T

_____

(Name of the function of team, section, group)

Ser.	Name and surname	Function	Remarks (EDD name etc.)
1.		Team leader	
2.		Deminer (depute as well)	
3.		Deminer ……	
4.		Dog handler…..	
5.		Paramedic	
6.		Driver	

Annex b) – Review of working days and working hours with efficiency achieved per engaged sections, to be done as in following example:

R E V I E W

Of working days and efficiency achieved per deminer and EDD teams

Ser.	Day-date pf work	Effective working hours achieved	Deminers engaged/ m^2 done	EDD teams engaged / m^2 done	Types and quantity of mines / UXO found
1.	15.03.2002.	5	8/520		PMA-2=2 pieces
2.	16.03.2002.	5	7/560	4/2000	PROM-1=1 pieces
3.	17.03.2002.	5	8/520	2/800	Mine instant for MB 82mm= 1 piece
Total:	4	15	23/1600	6/2800	PMA-2=2 pieces PROM-1=1 pieces Mina 82mm=1 pieces

R E V I E W

Of work per day and effects achieved of the mechanical preparation with machine/s

……

(brand and type)

Ser.	Day-date of work	Effective hours achieved	Machines engaged/ m^2 done	Estimated type and qty of activated mines/UXO
1.	05.03.2002.	7	1/4200	PMA-3=3 pieces
2.	06.03.2002.	10	1/6000	PMA-3=5 pieces PROM-1=2 pieces
3.	07.03.2002.	8	1/4500	
Total:	3	25	3/14700	PMA-3=8 pieces PROM-1=2 pieces

Annex d) - Review of equipment used in methods applied to be done as follows in the example

R E V I E W

Of equipment used in methods applied

Ser.	Name, brand, type	Pieces	Remark
1.	Metal detector EBINGER EBEX 420Si	2	
2.	Metal detector VALLON ML 1620B	4	
3.	Prodder	8	
4.	Excavating spade	8	
5.	Set of tools for cutting vegetation	8	Scissors for grass, scissors for fruit, small handsaw etc.
6.	Secateurs for cutting wire	2	
7.	Motor saw HUSVARNA, sword length 300mm	1	Etc.

Annex e) –Graphic layout of the site - sketch

Sketch is to be made according to following requirements:

(1) For making a sketch, use the following methods for creating a site sketch:

- Measure bearings and longitudes (compass with minimum division of 1^0).
- Polar or orthogonal taking of the details
- Taking grid references for detail points from geodetic layers (scale of 1:10000 or greater)
- GPS system with accuracy of up to 1 m.
- Combining the stated methods.

(2) When creating a site this way and making a sketch for it, it is necessary to achieve minimum accuracy as follows:

- Setting reference and datum point with accuracy of 0,3 mm x M (M – scale name)

- Closure of the polygon is to be done with accuracy of 0, 3 mm x M.

(3) When counting squaring of cleared area (m^2) use following methods:

- Calculating squaring of cleared areas from turning points grid references.
- Calculating squaring of cleared areas from original measures from the ground.
- Calculating squaring of cleared areas using devices for calculating (plannimetres).
- Combination of methods stated above.

(4) For site sketch creation use geodetic layers of larger scale such as:

- All scale cadastral plans (1:500; 1:1000; 1:2000; 1:2500; 1:5000).
- BSM – Basic State Map (1:5000; 1:10000).
- Orto-photos and / or aerophotogrametric records
- Sketches of details records.

Exceptionally, if there is no geodetic layer of larger scale, use topographic maps of a scale of 1:25000 and 1:50000.

c) Site sketch as a minimum must contain the following:

(1) Direction of North / approximate scale.

(2) Stated landmark point and datum point (grid references included).

(3) All details of area cleared (turning points with grid references or bearings and distances), as well as grid references of locations where mines were found

(4) Location of safe lane (lane).

(5) Location of access lane (lane).

d) Along with the sketch there must be a table of grid references for turning points or bearings and longitudes. If bearings are used, it is necessary to count in the reparations for closing up the meridians and magnetic declination.

e) Examples for creating sketches are given in Annex A Chapter V of BH Standard

Annex I

BOSNA I HERCEGOVINA
MINISTARSTVO CIVILNIH POSLOVA
KOMISIJA ZA DEMINIRANJE
CENTAR ZA UKLANJANJE MINA U BIH

БОСНА И ХЕРЦЕГОВИНА
МИНИСТАРСТВО ЦИВИЛНИХ ПОСЛОВА
КОМИСИЈА ЗА ДЕМИНИРАЊЕ У БиХ
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БиХ

BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No……..
Date, ……200_.

Pursuant to Article 36. of the Demining Law in Bosnia and Herzegovina (Official Gazette BH, No 5/02) and Para 4. of Chapter VIII BH Standard, Mine Action Centre Bosnia and Herzegovina issues

CERTIFICATE
OF QUALITY CONTROL CONDUCTED OVER CLEARANCE

The Certificate relates to following location and attached documentation:

Location name		MAC ID of the task	
Municipality		*Grid references of the reference point*	Y X
Area in (m²)		*Demining organisation – task conductor*	

Mine Action Centre Bosnia and Herzegovina hereby state that Quality Control in order for making a demining task safe, conducted according to contents stated bellow:

Ser	Contents of activities and quality control
1.	After General Survey procedure is completed, BH MAC created and assigned the working task.
2.	Demining organisation complied with BH Standard requirements and conducted work according to approved Standing Operational Procedures (SOP).
3.	Internal quality control measures in demining organisation were conducted according to procedures in the approved SOP.
4.	During the conduct of the task, a technical inspection was done by BH MAC QC inspection bodies. Critical non-conformities stated were corrected upon the request of inspection.
5.	During the technical inspection, quality control was done by sampling according to ISO 2859-0, applying the method of random pattern. No mines or UXO were found during sampling down to contracted depth, which is stated in the final report on the technical inspection of the completed demining task.
6.	The Record has been made about the takeover of the cleared areas along with the Declaration of Clearance, official declarations and annexes that show the works were completed in a quality manner by the demining organisation.

DIRECTOR

BOSNA I HERCEGOVINA
MINISTARSTVO CIVILNIH POSLOVA
KOMISIJA ZA DEMINIRANJE
CENTAR ZA UKLANJANJE MINA U BIH

БОСНА И ХЕРЦЕГОВИНА
МИНИСТАРСТВО ЦИВИЛНИХ ПОСЛОВА
КОМИСИЈА ЗА ДЕМИНИРАЊЕ У БиХ
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БиХ

BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

Pursuant to Article 11 a) of the Demining Law in Bosnia and Herzegovina (Official Gazette BH, No 5/02), Mine Action Centre Bosnia and Herzegovina and the organisation create the

R E C O R D

of takeover of technically surveyed area, containing basically of:

I- Declaration on Technical Survey

II- Official declarations of takeover of technically surveyed area

III- Annexes

I – DECLARATION OF DEMINING ORGANISATION ABOUT TECHNICAL SURVEY	
1. Demining organisation	
2. Declaration created by: (operations officer or programme manager	
3. ID No of Task	
4. Location (village, municipality)	
5. Map (name- no of plan or map, scale and year of issuing)	
6. Grid system	☐ UTM ☐ Gauss Kruger
7. Reference Point	Y= X=
8. Datum point	Y= X=
9. Start date and completion date	
10. Methods of work applied	☐ Manually ☐ Mechanical p. ☐ EDD teams
11. Squaring of technically surveyed area with methods applied	Manual ……m^2 Mechanical ……m^2 EDD teams ……m^2
12. Depth of technically surveyed area	……mm
13. Is technically surveyed area now without metal	☐ Yes ☐ No
14. Number of cleared houses (buildings)	

15. Methods of internal control	
16. Internal control conducted by and what is the size of sampled internal area in m^2	
17. Monitoring conducted by whom	☐ Yes …….. No ☐
18. Types and quantities of found or activated mines /UXO	

II- OFFICIAL DECLARATIONS ON TAKEOVER OF THE TECHNICALLY SURVEYED AREA

HANDOVER BY THE DEMINING ORGANISATION	TAKEOVER BY THE MINE ACTION CENTRE BOSNIA AND HERZEGOVINA
I hereby declare that technical survey of the suspect (risk) area described in this document was conducted according to BH Standard for mine clearance and EOD operations in Bosnia and Herzegovina to the stated depth and the assigned treated area is declared as : ❑ Without defined risk _____m^2, ❑ Mined_____m^2 ❑ Cleared _____ m^2 Based on the method(s) applied, area without defined risk does not contain mine and is handed over to BH MAC as such. Area which is declared as mined, according to observations and knowledge, contains mines and has to be cleared.* Mine threat is removed from the area shown, i.e. there is mine risk on the entire task. Declaration of areas is shown on the sketch with grid references of turning points and with accordance of BH MAC inspection bodies.	I, ……., BH MAC RO QC inspector, based on my own observations of the technical survey process and through technical inspection by the QC consultant ……., RO……., take over the stated declared area on behalf of BH MAC, since technical inspection and sampling proved that technical survey and declaration of the area has been conducted in accordance to BH Standard Regarding the suspect area without defined risk (as well as for the cleared area *) in technical survey, Certificate of Quality Control can be issued. Area declared mined contains mines based on proven existence of mines. Task is to be formed for the area and it has to be cleared in accordance to procedure.* ……. (Signature of the inspector)
19. Name and function of the responsible person in demining organisation	20. Name of the BH MAC office chief
21. Signature and stamp	22. Signature and stamp
23. No of Declaration…… Date of handover:……	24. No of record:…… Date of takover:……

* Note down if there is stated and declared mined area

III- ANNEXES:

A) Annexes of demining organisation:

Annexes a), b), c), d) and f) according to same example as in example H.

e)-Graphical sketch of the task – sketch in the scale on geodetic layers or high scale topographic map with grid references of the turning points and marked stated areas: area without defined risk (AWDR) and mine threat reduced. For mines and UXO found state grid references. Sketch is to be done according to explanation and requests given with Annex H. Additional sketch of EDD teams work (if conducted) with markation of boxes and EDD teams that search particular boxes.

g)-Description of sequence of task (problems in conduct of pan, critical non-conformities stated in internal quality control and monitoring (if it was done) and by MAC inspections. If the critical non-conformities are corrected, state the way of managing them, as well as state the type and number of mines and how the border of AWDR is set, the mined area border for clearance if such is not continued immediately, photographs of mines found etc.)

h)-Record on notifying the authorities/final users of the ground with the border of AWDR and stated border of mined area.

B) Inspection Annexes:

Annexes a), c) and d) as same as exampled in annex H.

Annex b) Final Record on technical inspection (positive in the sense of quality of stating of declared areas in technical survey, in order for Technical Opinion for stated AWDR issuing, as well as for taking further activities on clearance for the stated reduced mined areas)

CLARIFICATION FOR FILLING THE *RECORD* ON TAKEOVER OF TECHNICALLY SURVEYED AREA WITH THE DECLARATION, OFFICIAL DECLARATIONS AND ANNEXES

General. *Record* on takeover of technically surveyed area with declaration, official declarations and annexes, is a set of documents which in fact represents the final *Report of* Technical Survey task. Original *Report,* after the verification process and issuing the *Technical Opinion for Area without defined risk* or / and stated as mined reduced, (issued by BH MAC) will end up in database and BH MAC archives, along with the Blue folder of the task. For the stated reduced area which is mined, project documentation for clearance is created and the task as such is given for realisation.

I – DEMINING ORGANISATION STATEMENT ON TECHNICAL SURVEY

This part is filled by the demining organisation as explained in Annex H, except for the following:

11. State the squaring of technically surveyed area (entire area treated by method applied)
12. Depth of the technically surveyed area with method applied
13. Mark the square with “X” if the part *immediately treated* by technical survey is now metal free to the depth treated.

II – OFFICIAL DECLARATIONS ON TAKOVER OF THE TECHNICALLY SURVEYED AREA

This part is divided to the left, which is filled and conveyed by the demining organisation, and the right one to be filled and conveyed by BH MAC. It is filled as requested and explained in Annex H.

Annex K

BOSNA I HERCEGOVINA
MINISTARSTVO CIVILNIH POSLOVA
KOMISIJA ZA DEMINIRANJE
CENTAR ZA UKLANJANJE MINA U BIH

БОСНА И ХЕРЦЕГОВИНА
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ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БиХ

BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No:_____

Date: _____ 200__

Pursuant to Article 9. of the Demining Law in Bosnia and Herzegovina (Official Gazette BH, No 5/02) and Para 29. of Chapter V BH Standard, Mine Action Centre Bosnia and Herzegovina issues

CERTIFICATE

OF QUALITY CONTROL CONDUCTED OVER TECHNICAL SURVEY

Certificate relates to the following location and attached documentation:

Location name		*MAC ID of the task*	
Municipality		*Datum point Grid References*	Y X
Area of the task (m²)		*Demining organisation (conductor)*	

Mine Centre Bosnia and Herzegovina confirms that quality control of the area without defined risk in technical survey conducted as follows:

Serial	Contents of activities and quality control
1.	Creating and issuing a working task has been performed by BH MAC after General Survey bodies defined risk.
2.	Demining organisation worked to the requests by BH MAC Standard and conducted activities in accordance to their approved standing operational procedures (SOP).
3.	Internal Quality Control measures in demining organisation were conducted as prescribed within the approved procedures of SOP.
4.	During implementation of the task, BH MAC inspection bodies conducted technical inspections in order to provide QA for BH MAC. Stated non-conformities were corrected during work upon inspection request.
5.	During technical inspection, quality control was conducted in accordance with ISO 2859-0, by applying random sampling procedure. No mines or UXO were found during sampling to the standard prescribed depth, which was documented in the record of technical inspection of a technical survey task.
6.	Record on handover of technically surveyed area has been made with the Declaration on technical survey, official declarations and attachments, which prove that area excluded by technical survey (marked on the sketch and by the grid references) provides acceptable level of trust that it contains no risk.

Annex: Sketch of the task

D I R E C T O R

SAMPLING

1. PLANNING OF SAMPLING

Cleared area is to provide a required level of trust for the use by the future users. For this aim and within the technical inspection, the area must be sampled, which means it will be subject to quality of work check. Size of the area to be sampled in accordance with ISO 2859-0 represents the objective possibility for achieving the required level of demining and based on IMAS 09.20 is used as such by BHMAC.

1.1. Glossary of terms

Technical inspection represents the process of tracking the conduct of the demining task, in accordance to BH Standard and Demining requirements, as well as the conduct of approved standing operational procedures (SOP).
Process of tracking the task encompasses visits of authorised inspection bodies to the site, checkups on compliance to set of safety measures, operational procedures and productivity in relation to methods applied and local conditions. In order to gain the trust into the quality of work, checkups, tests, measuring and comparison of sampling of the demined areas are conducted by the inspection bodies. All these activities are conducted with the operational staff engaged, with the equipment used during work and at the area treated to the contracted depth.

Sampling presents a part of technical inspection, which by set of methods is chosen by plan. Samples of demined areas are controlled in relation to meeting the required quality of demining from the cleared area, area without defined risk or technically surveyed area to contracted depth. In order to meet the required quality in humanitarian demining, depending on demining methods used, for each task's start there is an agreement about unacceptable critical non-conformities for which the sampled area will be returned to correcting – repetition. Sampling is conducted by competent demining teams under the supervision of BH MAC Inspection Bodies.

Specified Quality Limit SQL from 0,35% as accepted in International Standard (IMAS 09.20), represents tolerance in requirements of clearance operations, between the possible realisation of quality and acceptable quality (risk) for BHMAC. With clearance, a minimum of 99, 65% of threat must be removed regarding mines and UXO at the assigned area to the depth agreed or minimum required of 10cm. The set request in relation to mines must be achieved for declared AWDR in technical survey.

Acceptable risk presents allowed digressions in the demining procedure, depending on methods applied, while the stated above does not related to direct presence of the explosion threat.

1.2. Area size

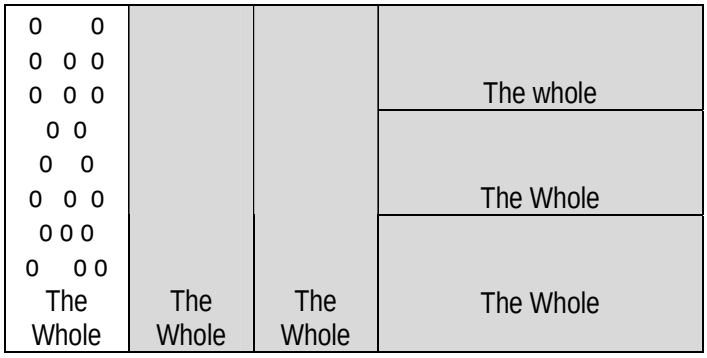
Area size (i.e. ground size for sampling) will be chosen based on four factors stated bellow:

a) Size of clearance tasks within one contract or more contracts at the same time for one demining organisation.

b) Intention of use of the ground, i.e. category of clearance priority. (I-III).

c) Level of technical inspection based on competence and experience of demining organisation, i.e. based on level of work quality. That information will set forced, normal or decreased or skipped inspection level.

d) Method of choosing areas for sampling.



A sketch of parts of the whole area of the demining task for sampling check and the sketch of the method of random sampling in a whole area, sized 1m^2.
Particular sampling units represent 1m^2 size value. In order to make it easier for quality control conduct in sampling, the 1m2 sized samples may be grouped into separate groups not to exceed 30m2. Groups can be of any shape, such as: circle, square, rectangle, but to be of the same size as that of the areas to be sampled, depending on the method applied.
Using the method of quality control in clearance with randomly chosen samples of 1m2 for stating critical non-conformity, which is developed in ISO 2859-0, we end up with size of sample by using formula stated below:

$$n= (N-d/2) (1-B^{1/(d+1)}) B^{1/(d+1)})$$

Where letters present:

n	Sample size – circled to the closest decimal (whole number)
N	Size of the whole in m^2.
B	Possibility of failure in finding a mine, i.e. level of trust
p	Maximum search of the contaminated area, i.e. quality in demining
d	Maximal number of discrepancies (faults) allowed for the area – circled at closest decimal (d=Nxp)

Basis for counting the size of sampling is the stated mathematics formula incorporated into Windows programme.

Programme is stated in IMAS 09.20 (http://www.mineactionstandards.org) in which the needed values must be incorporated (the factors) based on which we will get the sampling area. Size of the sampling area, according to ISO 2859-0 presents objective mathematical possibility of achieving the required level in demining.

1.3. Planning of sampling of the cleared area

Cleared area where quality control is to be conducted by sampling can be divided into one or more ground ''wholes'' for checkups. According to dynamics plan provided for the conduct of the task sized for sampling, it is to be agreed on the work start with the demining organisation. In principle, clearance sampling tasks will be of a size from 10.000 to 15.000 m2, due to specific conditions (or lesser area of the task). Lesser area can be approved by QC inspector. When contracted size of the area is achieved for the sampling during progress, sampling is planned for the next technical inspection visit. It is not allowed to conduct sampling on two or more areas at the same time.
In setting the sizes for sampling, consideration must be taken that it can be completed in a short period of time after the task is completed. If possible, it should be done on the day organisation completed work on the task.
Sampling wholes may be different, which would vary on the success in the clearance process.

Example: It is possible to divide a 50.000 m2 area to two 10.000 m2 areas in the beginning stage of clearance. If the task progresses satisfactorily, areas can be broaden to 15.000 m2

In order to cut expenses of sampling, it is possible to group several smaller areas into one and plan it for check-up / inspection, provided the work is conducted by the same demining organisation within one task / contract in the same manner (same or similar procedures and methods of work, same equipment and personnel including management). In order to sample all the areas regardless of their size, there must be a proportion to the size of each task. This process is known as ''stratification'' or layering.

Example: Organisation for demining contracted to demine four separate areas in the same location (three are 1.000 m² while one is 2.000 m²). BH MAC inspection bodies may approve and plan for the demining organisation to group areas into one sampling whole.

1.4. Intentional use of the ground

The size of the sample will depend on intentional use of the ground. If the ground is intended for settling and frequent movement of people, sampling area is to be larger because the higher level of trust is needed (I floor). It will decrease to the II floor if the intention is for agriculture and farming, i.e. it will be of lowest floor (III) if the area will not be used frequently. According to priorities of the return of refugees and displaced persons in BH, stated levels of priority set as they are should use while sampling the areas for check-up – inspection. According to IMAS-09.20 intention of ground is marked with LU 1, LU 2 and LU 3, which will be used in budget programme for demining priorities of intentional use of ground from I – III in BH.

1.5. Levels of technical inspection

In the process of technical inspection and procedures of sampling as its containing part, stated within ISO 2859-0 for quality control of critical non-conformities, four levels are included. Levels of technical inspection reflect proved efficiency and competence of demining organisation according to the following:

a) «*Forced*» level of technical inspection encompass visit of inspection body to the site within 1 – 2 days and shall be applied for organisations that are in demining activities in BH for the first time, as well as at the start of every contract for clearance in demining season, while the organisation proves itself and its work as safe, quality and productive. This level shall be applied onto the proved successful organisation while introducing new and unchecked procedures or new and unchecked equipment, as well as new operations management.

b) *«Normal»* level encompasses visits to site by the inspection bodies in order to conduct technical inspection within 3 – 7 days and an average size of the sampling area which will provide sufficient reliability that the demining organisation removed all mines and UXO to the required depth from the area assigned.

c) *«Decreased»* level of technical inspection encompasses visits to sites paid by inspection bodies within 8 – 10 days and gives acknowledgement to efficient demining organisations that proved safe, productive and high quality work.

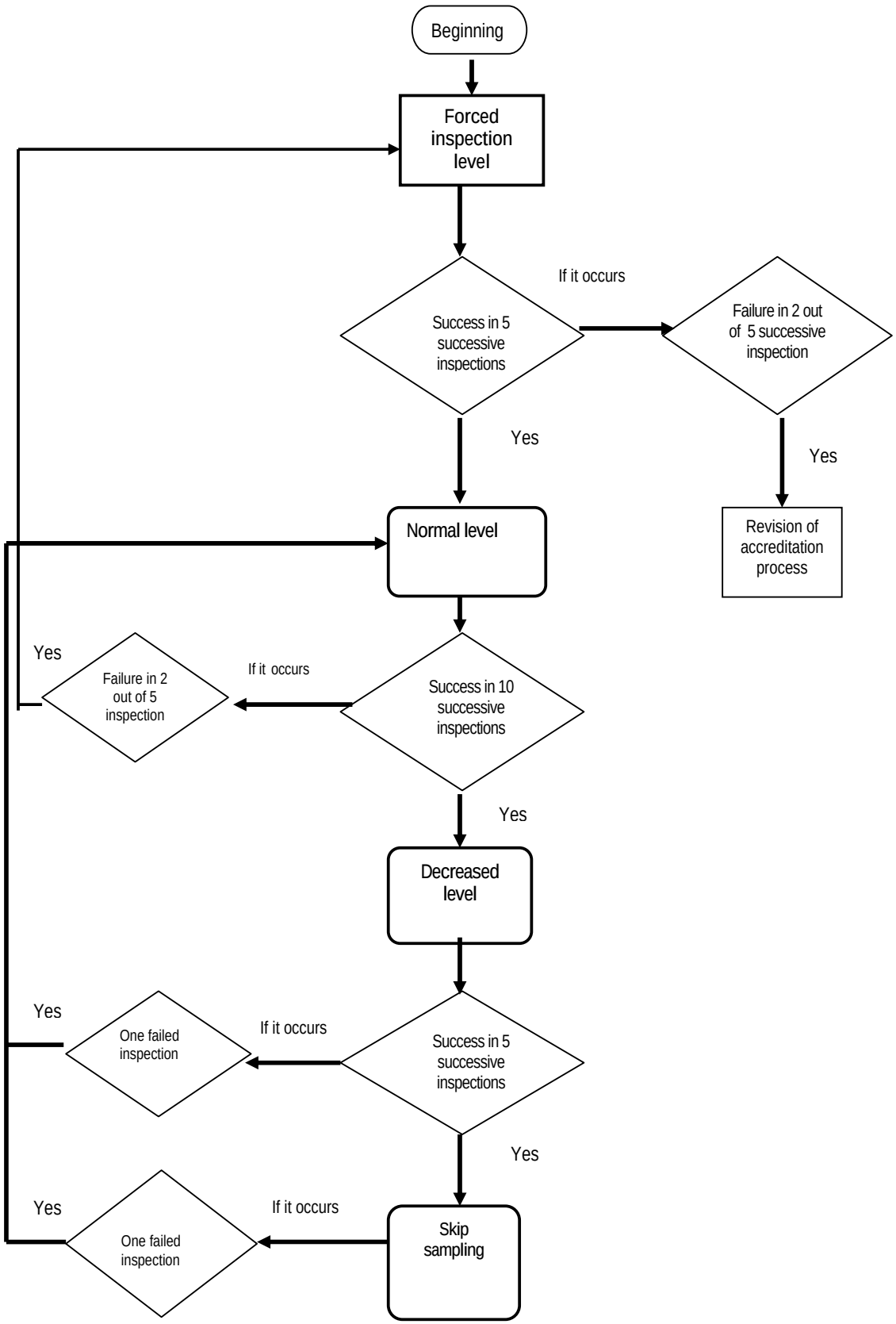
d) *«Skipped technical inspection»* is applied with demining organisations that continuously prove safe, quality and productive work.

REMARK: Apart from proven efficiency of a demining organisation, when changing the level of technical inspection, we must take into consideration engaged capacities and the progress on the task.

Example: In the table bellow it is an exemplary cleared area of 12.000 m² with sampling areas and percentage in relation to intention and levels of inspection.

Cleared area (m²)	Intentional Use (categories)	Forced level (m²)	Normal level (m²)	Decreased level (m²)
12.000	I (LU 1)	1.216 (10, 1%)	806 (6, 7%)	652 (5, 4%)
	II (LU 2)	599 (5%)	517 (4, 3%)	453 (3, 8%)
	III (LU 3)	426 (3, 5%)	380 (3, 2%)	339 (2, 8%)

The switch over from one level to another of the inspection, follow in principle the scheme bellow:


Beginning
Forced inspection level
Success in 5 successive inspections
If it occurs
Failure in 2 out of 5 successive inspection
Yes
Yes
Revision of accreditation process
Normal level
Yes
Failure in 2 out of 5 inspection
If it occurs
Success in 10 successive inspections
Yes
Decreased level
Yes
One failed inspection
If it occurs
Success in 5 successive inspections
Yes
Yes
One failed inspection
If it occurs
Skip sampling

2. SAMPLING PLAN

Method of random samples for quality control inspection of the cleared area in units of 1m^2 or grouped into groups and shapes up to 30m^2, need to be applied at all times. Digression from random sampling by *assumptions* and *assessments* will diminish the validity of the process and is not in accordance with principles stated in ISO 2859-0. In order to make a sampling plan, SQC consultant will, in accordance with the inspector, create a random sampling plan according to programme for defining the random sample. In order to get random number of steps, the highest number is to be entered into the programme in one direction, depending on shape and size of the whole, as well as the entire sampling area. When calculating maximum number of steps in one direction, it should nod exceed 25 steps. Based on this information, SQC consultant shall control the sampling team. An example of random samples plan in a planned area for sampling by method of random movement is given in addition under No 5.

Regardless of the calculated size of the sampling pattern, maximum sample may be 5% of the cleared area.

In technical survey, sampling plan will be done for area where there are no indications of mine threat during implementation of task, using same principles as in clearance. The difference in creating the plan is that sampling areas present areas methodically worked out (as a whole or from parts). Other difference is that they are part of calculation for getting the sample size, instead the whole in clearance. Regardless of the calculated size for sampling (individual methods) maximum sample size will be 5% in area without defined risk, treated mechanically or by EDD teams, while it is always 5% if worked manually of entire area, which has been manually worked (included areas between working lanes, which are not treated)

3. METHODS OF SAMPLING

Sampling method will be agreed with the demining organisation at the start of their activities, in relation to methods applied in clearance. Depending on methods applied in clearance, sampling will, if possible, use another method.

In technical survey, sampling on the area without defined risk will be conducted at the completion of the task, according to areas and methods used, in principle using the same method with which the area was treated.

3.1. Criteria for accepting the sampled area

Cleared area will be considered clear only if all the samples of the sampled area are without mines and UXO to the depth agreed. Apart form removal mines and UXO, other obstacles are to be removed from the area, which that make critical non-conformities for which mine or UXO (or their explosive part) can be missed. Unacceptable critical non-conformities will be agreed with demining organisation at the beginning of the activities on the task, depending on the clearance methods. Missing mine or UXO, as well as agreed unacceptable critical non-conformities, cannot pass the sampling and the sampled area must be repeated.

Critical non-conformities, in the sense of meeting humanitarian demining standard criteria, are divided as follows:

a) Location of mine or UXO

b) Other critical non-conformities

Finding a whole mine or UXO is a clear and unbiased critical non-conformity which requires repetition of the area sampled. Other critical non-conformities that also present a basis for the sampled area not to pass the inspection, i.e. asks for repetition, will be agreed with demining organisation at the beginning of their activities on the site, depending on methods applied (entire area or parts of cleared areas). If EDD teams were used for clearance, in order to plan methods of work on sampling, as well as stating other acceptable or unacceptable critical non-conformities, it will be agreed with demining organisation to leave as an obligation marking pickets at the corners of the boxes until all the areas are successfully samples.

For technical survey, critical non-conformities are also agreed at the beginning of the task, in dependence of method/s applied.

Finding mine in AWDR is a new knowledge about the border of a mined area. It does not represent critical non-conformity, which would have to be repetition / correction in area if manual methods were used and mine found in untreated area. In areas treated in technical survey with mechanical equipment, EDD teams and in manually treated lanes, finding mine or UXO is a critical non-conformity for which the area to be repeated is calculated, where the real border of a mined area must be defined.

3.1.1. Other critical non-conformities

- Each explosive part of mine or UXO (including ammunition of 20 mm calibre or higher), containing the fuse with some explosives or fuse only.

- Each signal of approved metal detector, to the depth of 10, which has not been excavated, where the prodding procedure and excavation finds an item in dimensions of 3 cm in diameter or more.

- Each broken explosive exceeding 15 g to the depth of 10 cm, found in areas treated by EDD teams.

- Any other metal detector signal in the ground which does not allow the use of prodder, where excavation finds metal to the depth of 10 cm (or deeper, depending on the contract).

3.1.2. Other acceptable Critical non-conformities:

-Each metal content and ammo under 20 mm to the depth of 10 cm if area was searched with EDD teams

-Each metal content less than 3 cm in diameter to the depth of 10 cm if prodder was used.

-Every broken quantity of explosives (defused) found in working lanes of a deminer, which was neither visible to sight nor found by the prodder, or / and bigger if detector was used.

1.1. Corrections and re-check (sampling)

Repetition of the area that did not pass the sampling check will be proposed by QC Inspector in the Request for repetition, where the method of work will be regulated, which will be different to the method used in work. In order to set methods for repetition, QC inspector will ask that demining organisation create a written explanation for stated critical non-conformities. After repetition of the area, it will be subject to sampling again while the level of inspection will be set in accordance to explanation given in 1.5.

In repetition of the area within AWDR, which had failed technical survey, same procedure will be used for repetition as it is used for repetition of a cleared area. Before issuing Decision on repetition of the area (provided in Annex G, adapted for technical survey), QA inspector will estimate and define area to be repeated in order to reach real borders of mined area. After repetition is conducted, total of (new) AWDR will be sampled.

4. SAMPLING PROCEDURE

In principle, sampling is to be conducted as follows:

a) Using the programme given in ISMA 09.20 achieve the calculated area for sampling. If during the technical inspection a change in level of inspection happened that includes sampling as well, than the calculation is to be done again to get a new area which will, in percentage, be applied at the whole of the area to be sampled according to plan.

b) Cleared area is to be divided into areas to be sampled and accordingly, in a mathematical manner set the part of the area size for sampling for each planned whole, which is to be sampled by completion of work. If the whole for sampling comprises of more small and separate cleared areas done by one organisation within one contract and in a similar manner, than use the principle of layering in each of separate cleared areas.

   Technically surveyed area without defined risk will be sampled in areas per methods used.

c) Set the size and shape of particular samples, depending on method(s) applied. The size and shape in each separate whole must be the same, i.e. they may differ only in methods if for each method a different size and shape are planned.

d) According to planned method of *random movements in steps* according to table that follows, sample as stated:

4.1. Manual methods :(detector and / or prodder).Taking separate samples of 1m^2 size (or larger planned area) to be conducted as follows:

a) Randomly choose the entrance point from the safe into the cleared area for sampling

b) Randomly choose first row in a column (column I) and mark with arrow entrance in the column II.

c) Enter directly into the cleared area with the number of steps in the column III of the chosen row

d) Turn to the direction set in column IV.

e) Make number of steps stated in column V.

f) Take a sample and conduct a check.

g) Take another row and continue the direction coming from the sample taken for the number of steps in the III column. Turn to the direction given in IV column, make number of steps stated in V column and take a sample again.

h) Repeat the following procedure until reach the exit of the area from any of the sides, taking into account to always stay in safe area. The border of exit from the planned area to be marked with arrow in that row (column VI).

i) When the border of cleared area is reached from any of the sides, cease the procedure and once again choose a random entrance point from a safe side and repeat the procedure under b).

j) The procedure is to be repeated until the sampling is done in the planned area, i.e. until the planned size of m^2 for that area is reached, which is to be followed in columns VII and VIII. In the last column (IX) with "+" mark the satisfying samples, while with "-"mark the founding of mine or UXO, or other unacceptable critical non-conformity. At the sample of the whole that does not satisfy, leave ending pickets of turning points, properly mark the location of critical non-conformity, document it with a photograph, notify QC inspector and responsible person in the organisation for QA.

k) During sampling of technically surveyed AWDR using manual method, within the marking plan, *random working lane sampling* is to be used within a sequence of separate samples of 1m2 in size Since the working lane will be sampled in a series of separate samples, after procedure from a) to e), sample under f) will not be taken into consideration but sampling will follow in procedure from g). Depending on the whole of the entire sampling area, it is possible to group individual areas up to 10m^2 in size, but all of them must be of the same size and shape in the sampled area.

4.2. Use of EDD teams. When using EDD teams, individual samples will be grouped into groups from 10 to 30m^2 into the shape of rectangle (box) 1-3x10m, search it as one whole with two EDD teams. When setting separate areas for sampling, also use the method of random walking as explained under A).

EDD teams will mostly be used for larger wholes and in combination with manual sampling methods, when clearance is done with previous mechanical disturbance of ground.

4.3. Use of machines. With the use of machines for sampling, separate samples to be grouped in groups up to 30m^2, rectangular shape. The width of rectangle is to be the same as the width of the working tool of the machine, circled to a whole metre. (E.g. the width of working tool of a machine is 2.6 metres, for sampling we will count the width of 2 metres. Machines to be used in sampling must disturb the ground to minimum 10 cm into

depth and break ground into pieces of no bigger than 5cm. When setting separate areas for sampling, use the method of random walking as described under A).

Machines will mostly be used with larger parts and in combination with manual methods of sampling, when EDD teams were used for clearance or sampling in *technically surveyed* areas with mechanical preparation where there were no explosions, surface thrown visible mines or their parts, i.e. areas to be declared as AWDR.

REMARK: According to method of *randomly made working lane* in a sequence of separate samples, (as in *random walking method)* it is possible, according to second example in the table, to make the working lane 1 metre wide with the sequence of separate samples up to 1 m2, until we reach the planned sampling area. In this example, the method is identical with the one under 4.1, except upon the finishing of the working lane in the taken row we don't take a sample, because the lane is made in the sequence of separate samples of up to 1m^2. This sampling method is possible in manual methods or combined, using EDD teams.

5. SAMPLING TEAM REPORT

R E P O R T ON SAMPLING AN AREA WITHIN A DEMINING TASK			
No and Date		Grids for datum points of the task	
Task location (village, municipality)		Size for sampling	
MAC ID No		Demining organisation	
Organisation and team for sampling:			
Unacceptable critical non-conformities on the task agreed with BH MAC and attached sketch of the planned whole for sampling with the sampling plan:			

METHODS USED, SIZE AND SHAPE OF THE SEPARATE SAMPLES			INFORMATION ON SAMPLING
Method:	a.-manually	d.- EDD teams e.- machines	a)-manually…….m^2 b)- EDD……..m^2
Size:	……..m2	……m2. ……..m2	c)-machine…….m^2 TOTAL:……m^2
Shape:	……..……..	……..…….. ……..……..	

Remarks on sampling results

Proposal for corrective measures for the state unacceptable critical non-conformity(s):

Signed by:

_____ _____

(SQCC or QC Inspector) (sampling team leader signature)

Annex: Sketch of a sampling area with the sampling plan, photographs, additions to sampling results report etc.

DEMINING ACCIDENT AND INCIDENT INVESTIGATION

C O N T E N T S

1. INTRODUCTION

GENERAL

1.1.Mine incidents and accidents must as soon as possible be reported to Police Stations and BH MAC, provide documents and in needed scope investigate the accident/incident as soon as possible. Depending on activity which for its consequence had an unexpected activation of explosive devices, we make difference between:

a. **Mine incident.** Mine incident is activation of mine or UXO out of defining process that resulted in material damage, where cattle or other animals were killed. Mine incidents are to be reported to BH MAC in order to make the input into database of mined areas. BH MAC RO will do this report upon notification, on a form given in Annex A, while they can as well be reported by other bodies or persons.

b. **Demining incident.** Demining incident is an unexpected activation of an explosive device without consequences to health or life. Incident is to be reported to BH MAC on a from given in Annex A, for reviewing and issuing lesson learned to the demining community for future work.

c. **Mine accident.** Involves a mine or UXO with consequences for health and lives of people but it had not occurred during demining operation. Mine accidents will be reported to BH MAC according to same procedure as a mine incident.

d. **Demining accident.** Accident that involved a mine or UXO, which happened during the demining operations and had consequences for health and life of people. It is reported to BH MAC by a demining organisation on Annex A, in order to conduct investigation and make lesson learned for the future work.

1.2.Reporting, investigation and documentation about demining accidents and incidents must be done as soon as possible. A thorough investigation with the aim to find out the violation of procedures that led to the accident or incident must have for its aim the making of the lesson learned and prevent repetition of accidents and incidents in BH demining community.

DEMINING INCIDENT

1.3.In order to review the demining incident, BHMAC director will appoint an expert person from the operation department. The appointed person will as soon as possible visit the location of the incident; collect certain data and proofs needed for the lesson learned. When reviewing the status on the ground, a special attention must be paid to procedures that might lead to activation of the mine as well as the use and efficiency of PPE. In order to review the demining incident, if it is necessary take statements and talk to relevant personnel.

1.4.The content of the lesson learned should in principle encompass questions given for demining accident, No 13.7 of this SOP.

1.5.Lesson learned for a demining incident is to be created within three days, record it into database and distribute it to all the demining organisations in BH at the TWG.

DEMINING ACCIDENT

1.6 All demining accidents must be investigated to detail in order to state possible causes, in order to make lessons learned and if necessary, adjust procedures for prevention of future accidents. Upon a demining accident, the activities will, in principle, be as follows:

a. First medical aid is provided and the injured is evacuated to the medical facility/hospital. If killed, the body will remain on the site until police arrive for their investigation.

b. The task site is closed, while the working lane, i.e. the immediate area where accident happened will be left in the same status it was in the moment of accident (accident location may be disturbed in case of providing first medical aid only).

c. The Initial Report is sent to BHMAC and closest Police Station is informed.

d. BH MAC Director will appoint and send for investigation the Investigation board within 24 hours from the accident occurrence.

e. BH MAC coordination department or the Investigation board, if possible prior to leaving for the accident site, will distribute the notification to the demining community in BH with the necessary data on weather, location and consequences of the accident, in order to stop disinformation.

f. Investigation Board will conduct the investigation and provide to BH MAC Director their written report with the lesson learned within seven days.

g. Lesson learned will be distributed to the entire demining organisation in BH at the meeting of the Technical Working Group.

1.7 Table review of activities after the accident, according to executives:

Ser	Site manager	Members of demining team	Demining organisation (Operational centre)	BHMAC (Operations Sector)	Investigation Board
(a)	*(b)*	*(c)*	*(d)*	*(e)*	*(f)*
1.	Organises the access to the injured, first medical aid (*CASEVAC*) and checks if there are more injured in the need of medical aid.	Work is stopped; only the access to the injured is to be cleared, as well as evacuation to the closest safe area, providing first medical aid *(CASEVAC).*			
2.	Organises evacuation to the closest medical facility / hospital (*MEDEVAC*) and reports about the accident the Operational Centre (OC) of the demining organisation as well as closest police station	Gathering on the control point and providing help in further medical evacuation *(MEDEVAC).*	Informs the hospital and sends initial report about the accident to the BH MAC		
3.	Organises the closure of site and leaving the accident site as it is.	Gathering equipment form other working lanes except from the accident location, closure of working lanes, wait for police and investigation board either on the ground or in base where the team is settled.	States person responsible for observer as a help for the investigation board.	Gathering data on the accident, convening the investigation board and tasking. Sending reports to the demining community if IB did not do so before.	Notification of demining community about the demining accident.
4.	Organisation and help to the police and BH MAC IB throughout investigation.	Writing statements, interviews, if needed clearance in order to make safe access for the police and IB to the place of accident.	If needed by the IB, providing other proofs and information needed for investigation.		Accident investigation according to BH MAC SOP procedures, creation of report and lesson learned.
5.	Participation in planning and conducting minimum one day re-training from procedures that led to the accident.	Participating in training according to the demining organisation plan.	Planning and conduct of necessary training with deminer team, from the procedures that were violated and led to the accident.	Archiving accident report and input into database, delivery of copy reports to interested parties and lesson learned for demining organisations	

2. DEMINING ACCIDENT REPORT

2.1.According to Chapter 13. of the BH Standard, BH MAC director will initiate the investigation by appointing the Investigation Board (IB), who will gather and start investigation within 24 hours. IB will consist of the chairman and minimum two members (two from BH MAC and one from BH MAC RO). Equipment needed for the work of the IB is given in the following part of the document (13.3).

2.2.BH MAC director might ask that an organisation that is not directly involved in the accident to provide IB with one observer as a member of IB. Demining organisation that did have an accident will give one representative as an observer and a help out to the IB during the conduct of the investigation. Prior to leaving to the accident location, a briefing will be held in BH MAC Director office in Sarajevo for all available members of the Investigation Board in order to precise their instructions for work.

2.3.Investigation Board is to conduct the thorough investigation and provide the BH MAC director with their written report within seven days (or this deadline can be prolonged for justifiable reasons). The report must contain all the questions that are listed in 13.6 of this SOP.

2.4.The Recommendations of IB should contain the following:

a. State the correct procedure, which should be performed in order to stop another accident.

b. Suggest another measures, including penalties, all in order that the accident does not happen again.

c. Propose all about other notices faults outside demining organisation, which is to be done in order for deminers to work efficiently and safely, while safety directly relates to final users.

2.5.All personnel that were on site in the moment of the accident must be available for the IB during the investigation, in order to give statements and make interviews that might put light on the causes of this accident. Personnel must be available for the IB around the clock – from the moment IB start their work to their completion (even if it includes weekends and holidays), i.e. until the Chairman of the IB does not state to the person from the demining organisation who was observing and helping, that they are no longer needed.

2.6.BHMAC (Operations Sector or Investigation Board prior to leaving for investigation) will notify the demining community in BH about the accident as soon as they find out any relevant information on getting the Initial Accident Report. The authorised person for public relations will inform the entire public in Bosnia and Herzegovina.

2.7.If it is stated that the accident could have been avoided if there was a prescribed procedure, BH MAC (Operations Sector) shall issue proposal for the procedure that will prevent it from future happening, and if necessary, it will be discussed along with the representatives of demining community in Bosnia and Herzegovina in order to amend or change the Standard. If the conclusion would be that the accident was a result of negligence, i.e. violation of procedures, IB will suggest that demining organisation takes disciplinary measures against the personnel who contributed to the accident.

2.8.The team in which the accident happened, as well as the management who actually contributed to the accident, are to go through a minimum one-day training programme from procedures violated and faults notices that led to the accident.

2.9.Upon finishing the investigation on the ground, IB will, based on status reviewed (causes that led to the accident, consequences for individuals and psychological status of all the time) propose to the person from demining organisation, a particular topic that should be reviewed through the training programme and when to continue with work on the task, or should another team be deployed.

3. EQUIPMENT NECESSARY FOR THE INVESTIGATION BOARD

3.1.The following equipment is necessary for the IB in order to conduct the investigation:

Ser.	Item title	Qty	Remark
(a)	*(b)*	*(c)*	*(d)*
1.	Terrain vehicle with belonging equipment	1	
2.	Bag for personal clothes and equipment	1	Per member of IB
3.	Visor or helmet with a visor	1	Per member of IB
4.	Protective jacket	1	Per member of IB
5.	Blast-proof protective boots	1	Per member of IB
6.	Working suit or overall	1	Per member of IB
7.	Base stick	1	
8.	Tripwire feeler (antenna)	1	
9.	Metal detector	1	Spare batteries
10.	Prodder	1	
11.	Spade	1	
12.	Grass cutting scissors	1	
13.	Bushes cutting scissors	1	
14.	Small axe	1	
15.	Pulling rope 50-100m with a hook	1	
16.	Mine mark	10	
17.	Mine tape	1	500m
18.	30 cm straighter	1	
19.	2m long measuring tape	1	
20.	30-50 m measuring tape	1	
21.	Magnet	1	
22.	Box for investigation samples	1	Metal or wooden
23.	Map of accident area 1: 50 000	1	
24.	Road map 1:500.000	1	
25.	Compass or GPS	1	
26.	Notebook and a pen	1	Per member of IB
27.	Torchlight	1	
28.	Binoculars	1	
29.	Photo-camera	1	Spare batteries and a spare film
30.	Video camera or digital camera with memory	1	Spare batteries
31.	BH Standard	1	
32.	“Laptop” computer	1	
33.	Mobile telephone	1	
34.	Medical first aid kit	1	Outside the one belonging to vehicle

4. INVESTIGATION PERFORMANCE

4.1.As in principle, the work of the IB should be done according to following schedule:

a. Leaving for accident location as soon as possible, no later than 24 hours, wherever it is possible. For that sake, contact the contact person within demining organisation in order to state the place of meeting the team that had the accident as well as with the person in charge for observation and help to the IB during the conduct of investigation.

b. Visit the site in order to confirm the location, identify problems of access to the accident site, safety of the site (if the working lane is closed) and check-up of the site in order to have opinions for gathering statements. It is not a rule to visit a site before the statements are taken. It is a possibility estimated and taken by the IB.

c. IB gets familiarised with the performance of the task up to the moment of the accident occurrence by the manager responsible for the site. IB then will then take statements and will analyse written statements of the personnel present at the site, as well as confirm the ‘’Initial Report’’ sent to BH MAC.

d. Approach the site where accident happened and perform the gathering of evidence from the very spot. It has to be taken into consideration that the site is mined until proved opposite. Visit to the site must be completely supported in safety and medical manner by the team that had an accident or other available team from the organisation. If possible. The visit to the site performs with the representatives of the police, in order for the status of the site would not be disturbed by police investigation.

e. After evidence is gathered, in an estimated period of time IB will conduct verbal interviews in the estimated scope with the personnel present at the site when the accident happened.

f. Visit all wounded in the accident (if possible), and regarding deceased, take over the Death Report from the Medical facility and the Report from the police as soon as possible (if available) or later on, if it is need in order for police to complete their investigation and stating the causes of the accident.

5. GATHERING INFORMATION, MATERIAL EVIDENCE AND CONFIRMING THE FACTUAL STATUS

5.1.During the visit to the team that had an accident either in their base or on the site, it is necessary to gather information, proofs, material evidence as well as facts related to the accident. The chosen questions and their contents (given in their SOP 13.6). This is for the IB to make their report. For that aim the IB is to do the following:

5.2.**Check records and documentation** to be held on site through the manual of following questions:

a. Was there a valid version of the SOP on the site at the time of the accident, and was there a manual for UXO if there were EOD teams?

b. Data from the daily reports on the site from the site diary and if the report was made on that day until the moment of accident? Is there any information that the discipline in the team was unsatisfactory? What was the productivity compared to actually possible according to the status of the ground etc.?

c. Is there a Red folder on the site?

d. Is there the evidence of personal data of team on site and does it match the team structure as well as the structure that is suggested to the SOP?

e. Is there evidence about the detector status and is it conducted properly?

f. Is there Medical Evacuation Plan and does it satisfy the time needed for the closest hospital? When the CASEVAC was conducted?

g. When was the last internal QC by the responsible person from demining organisation and what these controls stated and conducted within their QC?

h. MAC inspections reports – when was the last visit, what the reports stated and what measures were taken?

i. How the monitoring is organised (if it exists) or the supervision from the contractor and what measures were taken for safety and QA measures through daily reports?

j. Are there any other prescribed reports and evidences (EDD teams, EDD accreditation sheets, mechanical preparation of the ground, evidence on visitor and evidence on explosives for demolition)? All this must be reviewed in needed scope if connected to the accident.

A part of documentation that is important for analysis and stating the causes that led to the accident are to be copied in order to document annexes for the investigation report.

5.3.**Written and signed statements** by personnel that were present on site (either of all or those chosen by the IB) must contain information that might help stating the cause of the accident. The statements must contain answers to questions related to activities on that day until the moment of accident and immediately afterwards, while providing the first medical aid and further, medical evacuation to the hospital and the closure of the site. Personnel write their statements individually, while the statements contain the following questions:

a. At what time the team left the base in the morning?

b. What activities were conducted upon arrival on the site?

c. When the work on the site started?

d. Which working lane was assigned to whom at the task site?

e. Where was the section (team) leader?

f. What were you doing in the moment of the accident?

g. What were you doing after the accident?

Prior to visiting the site or at the site itself, the IB must check the statements in order to comparison of the statements and formulating questions for the interviews with people they estimate will be questioned. The statements can if necessary be translated by an independent interpreter on the ground or in the BH MAC.

5.4.**The interview** with chosen persons from the team will in principle be done individually, in any time estimated as needed, all in order to put light on the possible causes of the accident. If necessary, get an interpreter from BH MAC as an independent person or other person from organisation that had no part in the accident.

5.5.**Facts and proofs from the accident site.** While visiting the site, the following is to be done and collected:

1) <u>Analyses and measurement of the crater</u>

a. Photographing the location and the size of the crater with video camera, digital camera with memory or a simple photo camera; as a helping tool, use an item with well-known dimension.

b. Draw a sketch of the crater profile as an annex for the report.

c. Within this activity, gather material evidence at the crater what was the mine in question, as well as information about what mine and quantities were laid; state as well how many mines were cleared from the area.

2) Draw in possible scale the sketch of the site area where the accident happened. As an annex to the report, the sketch must contain following data:

a. Task site layout with areas, reference points as well as areas where the teams were deployed during the moment of the accident.

b. Distances between the team members during the explosion.

c. Distances of safety (administrative) area and areas in working (operational) part.

d. Location of explosion and mines found so far, as well as stated places of previous activations.

e. If necessary, locations and distances of tools and equipment for work at the accident area.

3) Photographs of the site must include the following:

a. Control point and areas in its vicinity.

b. Surrounding areas, areas cleared up to that moment, areas for clearance as well as visible local conditions of the ground.

c. Access to explosion location.

d. Location where explosion happened.

e. Location and status of tools and equipment.

4) Conduct check, record and photograph the personal protective equipment used in the moment of accident, as follows:

a. Visor or helmet with visor.

- Have the fragments pierced the visor? If so, at how many places?
- Have the fragments pierced the helmet? If so, at how many places?
- Was the fragment piercing from the outside or the inside of the helmet?
- Did the helmet contain leftovers of blood or tissue?
- Was the helmet fastened under chin?

b. Protective jacket and other protective clothes, if used.

- Have the fragments pierced the clothes? At how many places?
- Note down the places of fragments piercing on the clothes.
- Was the fragment piercing from the outside or the inside?
- Were there any leftovers of blood or tissue on the protective clothes?
- Check belts and zippers.

c. Footwear.

- Was the injured personnel wearing boots or shoes and of what kind?
- Note down the type and quantity of damage to the footwear.

5) While on the site, test at least one metal detector, which was used for work, as closest as possible to the point of explosion. If possible, use the metal detector, which was used during the moment of accident. In this case conduct the following:

a. What was the status of batteries?

b. Is it possible to efficiently use the metal detector at the type of ground where the accident happened? Is the soil contaminated with metal or minerals?

c. Estimate if it is possible at the entire site locate the type of mine included into the accident and at what depth?

d. Was the ground contaminated with fragments before the accident?

e. Sample a part of previously cleared area and state what is the average number of signals for the metal detector at the area of one m2, as well as if there are traces of digging and at what depth?

f. If necessary check a part of the area on the site that is meant for clearance and state average number of signals given by the metal detector at the area of 1 m2.

6) Check types and quality of established communication system.

7) Check ambulance and equipment for quality and contents.

6. DEMINING ACCIDENT REPORT– FORM, QUESTIONS AND CONTENTS FOR PROCESSING

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БОСНИ И ХЕРЦЕГОВИНИ
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

R E P O R T

ON A DEMINING ACCIDENT BY THE INVESTIGATION BOARD

IN THE REGION OF_____, MUNICIPALITY_____

from _____200___.

_____200__. (Write down the date of writing the report)

Reference:
A. –BH MAC Standard

B. -SOP BHMAC – Demining Accident Investigation

C. -SOP (of which demining organisation)

D. -Map (mark, scale and grid references of the accident location)

6.1. INTRODUCTION

a. Date, time and location of the accident;

b. Which organisation conducted demining?

c. How long the organisation is conducting demining activities?

d. How long the organisation is deployed at that particular task?

e. BH MAC Director's procedure upon receiving the accident report?

f. The members of the IB, time of gathering, other data about time for start and completion of the investigation on the ground?

g. Who is appointed by demining organisation for observer and help to the IB during investigation?

h. Any other important issues for the investigation and its completion (information from police investigation bodies, medical facility etc.)

6.2.**SEQUENCE, DOCUMENTATION AND TASKCING**

a. What organisation or Entity required demining at particular location?

b. Which ID is assigned to this task?

c. What is the type of demining conducted?

6.3.**GEOGRAPHY**

a. Describe the task site in detail: ground, soil/vegetation, and infrastructure.

b. If necessary attach photograph of the area.

6.4.**TASK PRIORITIES**

a. What was the task priority?

b. Who set the task priority?

c. What is the rational explanation of the priority?

6.5.**TASKSITE LAYOUT AND MARKING**

a. Draw a sketch of the site with appropriate photographs attached.

b. What was the organisation of the site in relation with the demining methods?

c. How the task site was marked and did it meet the requirements of the SOP and BH Standard?

d. Are all the intentional areas established, as well as reference points needed for the task site?

e. Is the metal detector test area set by the SOP and what is the testing piece?

f. Where were the access lanes?

g. Was the base stick used and was it appropriate?

h. In what manner the previously found mines were marked?

6.6.**SUPERVISION AND DISCIPLINE ON THE SITE**

a. Who was the team leader on the site?

b. Who is the higher level of supervision on the site?

c. Did anyone (if yes, who) from the organisation's management conducted supervision?

d. Estimation of quality of work of the organisation of work and discipline on the site.

6.7.**QUALITY ASSURANCE**

a. Who conducted internal quality control on the site, in what manner and what were the results?

b. Did the contractor conducted QC / QA, how, in what manner and were there any results?

c. Which BH MAC Regional Office is responsible for the site? When and how many times the inspectors visited the site? What were the results?

6.8. COMMUNICATIONS SYSTEM

a. What is the way communication system on site was established inside the site and towards the OC (how many types of communication) and did it meet the SOP requirements?

b. Who is responsible for establishment and control of the communication system?

c. In what manner the ambulance in incorporated into communication system?

d. Who reported the accident and in what way?

6.9. MEDICAL COVERAGE, INCLUDING DESCRIPTION OF INJURIES SUSTAINED

a. How many medics were on the site?

b. Was it enough and did it meet the SOP requirements?

c. Was there on the spot the intentional ambulance?

d. Was there the adequate medical equipment for the ambulance?

e. Who provided the first medical aid?

f. In what period after the explosion did the medic provided urgent medical aid and was the medical facility aid needed?

g. Was the hospital notified about the injured before he was driven there?

h. Who was the injured person and what are the injuries sustained?

i. If there was anybody killed, who stated death?

j. Was the priority for providing first medical aid set in proper manner and what other measures were taken for the injured?

k. How much time was needed to drive the deminer to the hospital for care?

6.10. PERSONNEL, CALL SIGNS AND ID NUMBERS

a. ID and task of the team included in the accident.

b. List of team members and other personnel with any function on the site.

c. Deployment of personnel at the moment of explosion.

d. Written statements of those included in the accident.

6.11. EQUIPMENT ANT TOOLS

a. State what type of equipment and tool the team was using, as well as the injured deminer, and what were the efficiencies/deficiencies?

b. Was the metal detector tested – who tested it, in what manner and when? Is there evidence on testing?

c. What is the quantity of metal in the ground at the location of the accident, at the previously cleared areas and areas to be cleared?

d. Was the detector efficient – to what depth in relation to the activated mine?

e. Were the correct procedures deployed in dependence of local conditions?

f. Was the productivity of work real in relation with the local condition, tool and equipment used?

g. Were the EOD procedures correct, as well as necessary equipment and tools for EOD?

6.12. **DETAILS ON MINE / UXO**

a. What mine was it?

b. What are the bases we can conclude / assume?

c. What types of mines were found on the task so far and is there evidence on mining with types and quantities?

d. Was the mine that was activated surface laid or in the ground, if in ground, on what depth?

e. Crater (shape, dimensions, soil content etc.) and what it can prove?

6.13. **EVIDENCE ON REMINING**

a. Was there any evidence on remining?

6.14. **CLOTHES AND PERSONAL PROTECTIVE EQUIPMENT**

a. What personal equipment was used by the injured / killed deminer?

b. Did it meet the SOP and Standard requirements?

c. Was it damaged and to what degree?

d. Was it efficient in soothing the injuries?

6.15. **THE USE OF EED TEAMS / IF USED**

a. Were the EDD teams accredited by BH MAC?

b. For what activities the EDD were used and in what manner?

c. Was the procedure used in accordance with SOP?

d. How efficient they were?

6.16. **MECHANICAL PREPARATION – IF CONDUCTED**

a. What type of machine was used and what requirements of Standard were met?

b. Was the work conducted in compliance to approved SOP procedure?

c. How efficient it was?

6.17. **DETAILED LIST OF ACTIVITIES ON THE DAY OF THE ACCIDENT**

a. Write down detailed list of activities up to the medical evacuation of the injured.

b. Write down everything unusual.

c. How did the accident occur?

d. What activities were conducted after the accident?

e. Were the procedures after accident correct?

6.18. **SUMMARY**

a. Summary of sequence of happenings and everything else relevant for the accident

6.19. **CONCLUSIONS**

a. Conclusions on what might provoke the accident and other stated faults in the organisation as well as violations of humanitarian demining procedures.

6.20.**RECOMMENDATIONS**

a. Recommendations how to prevent future accidents similar to this one and other stuff significant for demining which was possible to review.

REMARK: All copies of the written documents, sketches and photographs that confirm the statements of the Investigation Board, in scope needed, attach as annexes to the Report.

7. DEMINING ACCIDENT LESSON LEARNED – FORM, QUESTION AND CONTENTS FOR PROCESSING

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БОСНИ И ХЕРЦЕГОВИНИ
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No_____
Date _____200__.

Subject: Demining Accident Lesson Learned from _____200__.

7.1.**INTRODUCTION**

a. Data on the accident with date, weather, location and demining methods.

b. Consequences.

7.2.**SUMMARY**

a. Shortly about the task that was cleared with data on mining, was it between the confrontation lines etc.

b. Shortly about the site, soil, vegetation etc.

c. Possibility of methods used and efficiency

d. How the mine was activated?

e. What were the conditions after the activation at the accident location etc.?

f. What were the consequences for people and efficiency of protective equipment?

7.3.**CONCLUSIONS**

a. Conclusions on what might have caused the accident or anything else of a negative kind that might have happened?

7.4.**RECOMMENDATIONS**

a. Recommendations how to prevent future accidents like this one and other significant stuff related to demining that can be reviewed.

Distribution: D I R E C T O R
-Accredited demining organisations

INICIJALNI IZVJEŠĆE O INCIDENTU/NESREĆI OD MINA
ИНИЦИЈАЛНИ ИЗВЕШТАЈ О ИНЦИДЕНТУ/НЕСРЕЋИ ОД МИНА
INITIAL REPORT OF A MINE INCIDENT/ACCIDENT

Izvješće poslati u roku od 6 sati u BHMAC na faks 033 667 311
Изветај послати у року од 6 сати у БХМАЦ на факс 033 667 311
Send this report – within 6 hours – to BH Mine Action Centre, Sarajevo, Fax. 033 667 311

Izvješće popunio
Извештај попунио
Report made by _____

Nadnevak incidenta/nesreće
Датум инцидента/несреће
Date of incident/accident _____

Vrijeme nesreće
Време несреће
Time of accident _____

Tel/faks broj
Тел/факс број
Phone/Fax number _____

Policijska stanica Полицијска станица Police Station	Istražitelj Истражитељ Investigating Officer	Šifra Шифра Case No

Lokacija/Selo
Локација/Село
Location/Village _____

Najbliži grad
Најближи град
Nearest town _____

Koordinate
Координате
Grid Reference

I-И-E Y=	S-C-N X=

❑ UTM - УТМ ❑ Gauss Kruger

Da li ljudi i dalje ulaze u ovo područje? ❑ *Da –Да –Yes*
Да ли људи и даље улазе у ово подру□је? ❑ *Ne – Не – No*
Do people continue to go into this area?

Ako da, zašto? – Ако да, за□то? – If yes, why?
❑ *Zbog zemljoradnje – Због земљорадње– For farming*
❑ *Zbog putovanja – Због путовања –For travelling*
❑ *Zbog sakupljanja drva – Због сакупљања дрва – To gather wood*
❑ *Zbog lova/ribolova – Због лова/риболова – For hunting/fishing*
❑ *Zbog igre – Због игре –For playing*
❑ *Ostalo – Остало – Other*

Da li je zona označena? – Да, ли је зона означена? – Is the area marked?
❑ *Da, priručnim sredstvima – Да, приручним средствима – Yes, local signs*
❑ *Da, službenim znacima – Да, службеним знацима–Yes, official signs*

Da li je do sada bilo incidenata/nesreća u ovoj zoni?
Да ли је до сада било инцидената/несрећа у овој зони?
Have incident/accidents occurred in this area before?
❑ *Da – Да –Yes* ❑ *Ne – Не –No*

Vrsta eksplozivnih sredstava – **ВРСТА ЕКСПЛОЗИВНИХ СРЕДСТАВА – TYPE OF EXPLOSIVE**

❑ Protupješad. mina – Противпешад. мина –Anti-Personnel Mine
❑ Protutenkovska mina – Противтенковска мина –Anti-Tank Mine
❑ NUS – НЕС – UXO
❑ Nepoznato – Непознато – Unknown

Ako je poznato, koji tip i količina ? Ако је познато, који тип и количина? If known, what model, number

_____
_____

OZLJEDE – ОЗЛЕДЕ– I NJURIES

❑ *Bez povreda* *Без повреда* *None*	*Broj – Број– Number of*		*Ime(na) ozlijeđenog(ih)* *Име(на) озлијеђеног(их)* *Name(s) of victim(s)*	*Dob* *Год.* *Age*	*Detalji/Opaske* *Детаљи/Примједбе* *Details/Remarks*
	Odraslih *Одраслих* *Adults*	*Djece* *Деце* *Children*			
Manje ozljede *Мање озледе* *Minor injuries*					
Ozbiljne ozljede *Озбиљне озледе Seriously injured*					
Ubijeno osoba *Убијено лица* *Killed person(s)*					

LOKACIJA NESREĆE – ЛОКАЦИЈА НЕСРЕЋЕ –LOCATION OF ACCIDENT

❑ *Urbano područje – Урбано подручје –Urban area* ❑ *U prirodi – У природи –Country side*
❑ *Fabrika – Фабрика– Factor y* ❑ *Škola – Школа –School* ❑ *Bolnica – Болница– Hospital* ❑ *Kasarna –Касарна –Barracks*
❑ *Kuća – Кућа– House* ❑ *Ulica – Улица– Street* ❑ *Put – Пут–Road* ❑ *Željeznica – Железница– Railways*
❑ *Most - Мост – Bridge* ❑ *Staza – Стаза– Path* ❑ *Rijeka – Река –River*
❑ *Šuma – Шума– Forest* ❑ *Poljopriv. zemljište – Пољоприв. земљиште– Agricultural land* ❑ *Močvara – Мочвара– Swamp*
❑ *Ravnica – Равница –Flat land* ❑ *Kamenito zemljište – Каменито земљиште –Stony land* ❑ *Brdo – Брдо –Hill*
❑ *Građ. otpad – Грађ. отпад– Rubble* ❑ *Visoka trava – Висока трава –High grass* ❑ *Ostalo – Остало– Other*

Kratak opis radnji koje su uzrokovale incident/nesreću	Кратак опис радњи које су узроковале инцидент/несрећу	Brief description of activities that cause the incident/accident.

↓ ↓ ↓ Skica lokacije – Скица локације –Site Sketch ↓↓↓

1 cm/цм=

Sjever – Север– North

Prilog B

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БОСНИ И ХЕРЦЕГОВИНИ
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No_____
Date,_____200_

Subject: Convening the Investigation Board

1. Based on demining accident reported, that happened in demining organisation _____ _____, on _____ 200__, at _____hrs on the site_____ ID No_____, Municipality_____**,** I appoint the Investigation Board as follows:

a._____, chairman

b._____, member

c._____, member

d._____, member

2. Demining organisation _____that had the accident, will appoint a person for observing and help for the IB during investigation.
3. IB is to complete the entire investigation and provide me with a written report no later then _____ hrs, _____ 200__.
4. Investigation Board Report must contain details stated in Annex B of BH Standard Chapter XIII.
5. Prior to leaving for the investigation, the chairman will contact the demining organisation and define details on start and sequence of investigation.
6. Based on information gathered about the accident (Initial Report and other sources), IB shall issue a short notice on the accident to the members of demining community in Bosnia and Herzegovina either before or after the investigation is over, where they will inform them about the accident and all relevant information and immediate activities to be taken.

Distribution:
- Chairman of the IB
- RU BHMAC.....
- Demining organisation.....
- archives

D I R E C T O R

_____

IX PART

INTERNAL BHMAC CONTROL

C O N T E N T S

I DEFINITION OF INTERNAL CONTROL OF QUALITY ASSURANCE

Internal Control in Quality Assurance presents a group of measures and activities to be conducted in order to maintain and enhance the level of quality through:

- Conduct of basic and other duties and obligations prescribed by the Law and Regulations,
- Control of activities which realise the set of planned aims and tasks
- Analysis of results achieved and measures to enhance the present status
- Taking prevention measures in order to prevent unwanted events,
- Enhancing the level of technical competence and efficiency

The main executive for internal control in the managerial personnel, as the most responsible for the conduct of working tasks and achieving aims in Quality Assurance

II AIM AND TASKS OF INTERNAL QUALITY ASSURANCE CONTROL

The aim of internal control is that, through persistent application of authorisations and responsibilities from the Demining Law, as well as requirements from the BH Standard, that relate to Quality Assurance, it keeps the high level of Quality Control and continuation of work for all participants all BH MAC participants of countermine actions, all in order to keep the trust into the demining process for the users of ground or infrastructure and the donors.

Basic tasks for Internal Control:

1. Tracking and confirming of the level of quality in planning and realisation of operational tasks conducted by BH MAC, as listed bellow

   1.1. Quality of work in general survey, including preparation and creation of project documentation for demining or technical survey, marking and mine risk education.
   1.2. Within quality control of demining and technical survey:
      2.1.1. tracking of work of the internal control of the demining organisation and monitoring

2.1.2. Assessment of the level of trust into the quality of work of particular demining organisation

1.3. Tracking and estimation of inspection bodies work:
3.1.1. Permanent tracking of the inspection bodies work on the sites
3.1.2. Quality of inspections bodies planning
3.1.3. Review and verification of inspection reports
3.1.4. Tracking of planning and conduct of sampling
3.1.5. Estimation of measures taken in accordance with the Law.

2. Noticing and analysing damaging occurrences and possible risks, as well as conduct of preventive and other measures in order to correct the faults noticed.
3. Taking measures in order to remove the consequences that came as result of damaging occurrences
4. Estimation of the competence level for the conduct of work as well as the need for technical improvement, as well as the improvement of the level of technical equipping.

III RESPONSIBILITES AND AUTHORISATIONS RELATED TO INTERNAL CONTROL IN QUALITY ASSURANCE

1. BH MAC Director (assistant directors)

1.1. Manages the Quality Assurance system in accordance with the Demining Law, Standard for Mine Clearance and EOD operations in Bosnia and Herzegovina, as well as other Regulations,
1.2. Conducts control of realisation of tasks set and completion of yearly working plans
1.3. Approves opening of new tasks for demining, technical survey and permanent marking,
1.4. Reconsiders appeals from demining organisations and makes solutions on appeals which are result of decision of lower hierarchy bodies and BH MAC inspection bodies,
1.5. Issues Certificate on Quality Control / Technical Opinion

2. Chief (Assistant Chief) of BH MAC Office:

2.1. Manages Regional offices and ensures that assigned tasks are conducted for required quality
2.2. Plans and controls the use of available personnel and material resources of the BH MAC RO.
2.3. Proposes the deployment of personnel for quality control between the Regional offices, i.e. according to needs shown.
2.4. Issues general survey tasks to the Regional office, according to requests and priorities stated.
2.5. Approves monthly plans for survey and quality control for Regional office
2.6. Verifies the results of general survey and takes care about the achieved level of project documentation.
2.7. Issues and verifies the Certificate for Areas Without Obvious Risk, stated in the general survey procedure
2.8. Tracks the sequence of tasks and their quality in progress through the OTWT Department.

2.9. Verifies the Record on Handover of Technically surveyed or Demined area and verifies the proposals of inspectors for quality control in order to issue Certificate on Quality Control / Technical Opinion.

3. BH MAC RO Chief

3.1. Creates a monthly plan for general survey according to requirements form BH MAC office.
3.2. Creates Quality Control Plan based on demining organisations conduct plans and level of technical inspection, deploys junior consultants for QC assigning them tasks. Familiarises the QC inspectors about the stated above.
3.3. Coordinates with the QC inspectors in BH MAC office related to estimation of reality of the organisation's conduct plan and possible changes within the process of demining tasks.
3.4. Engages available personnel and material resources in Regional office according to plans made and needs shown.
3.5. Controls the quality of the work of surveyors and inspection teams.
3.6. Verifies the report on general survey of the team that conducted the planned task and estimates the results of general survey.
3.7. Signs the Records of the technical inspection of demining sites, which are during the visit, made by consultants for QC, all in order to get familiar with the sequence and quality of work, i.e. the need to plan the technical inspection.
3.8. Through the QC consultant he conducts the Decision on forbidding the progress of work on the site and plans the conduct of measures issued by BH MAC director, upon the appeal of demining organisation.
3.9. Signs the Record on technical inspection of the demining site completed. He analyses the task with the QC consultant regarding its quality of the task completed.
3.10. Plans and conducts technical inspection and with the QC consultant conveys the technical inspection at the whole of the task where there is a decision that repetition must be done, i.e. which did not meet the criteria while conducting the sampling.
3.11. With the QC consultant who was in charge for the task, the Chief analyses the documentation provided – Record on Handover of technically surveyed / Cleared area (with Statement, Official Declarations and attachments). After the analysis and the attachments provided by the QC consultant, he delivers the completed documentation within 7 days to the further procedure to the Chief of OTWT of the BH MAC office.
3.12. Controls the borders of the task assigned, by engaging surveyors and QC consultant for the technical control at the start and at the completion of the task, and if necessary, during the survey as well.

4. Senior technical consultant for internal control

4.1. Provides help to chief inspector in ensuring the high level of quality control or the humanitarian demining operations in Bosnia and Herzegovina.
4.2. Tracks the compliance of inspection visits with the plan and dynamics of the conduct of demining task, as well as with the status on demining task site (contamination on demining site with mines, UXO and metal, as well as other circumstances or faults that influence the safety and quality which affect safety and quality on a demining site, including unacceptable faults that were stated during sampling.)

4.3. Tracks the application of the level of technical inspection on the demining site (normal, lowered, enforced, skipped) in relation to the faults stated by the inspection bodies during the inspection.
4.4. Analyses reports about technical inspection as well as other inspection activities (visits to demining sites, observations and measures proposed/issued by inspection bodies). With this analysis he creates an expert file for every inspector/consultant, which is the basis for valorisation of the inspection work.
4.5. Tracks applications of authorisations given by the Law, i.e. analyses the justifiability of the measures taken.
4.6. In order to track the quality of the conduct of assigned tasks, occasionally visits demining sites, regional offices and BH offices in Sarajevo and Banja Luka.
4.7. Analyses justifiability of tasks proposed in general survey for technical survey or clearance (competence and quality in gathering information and proofs).
4.8. Participates in the work of Technical working groups, listen the proposals and remarks by the demining organisations given on the work of the inspection bodies, as well as all other remarks related to the conduct of demining tasks.
4.9. In cooperation with the chief inspector, suggests changes and amendments to the BH Standard and other instructions for work in order to improve the quality in demining process.
4.10. Keeps documentation of all proofs and conclusions: objective and subjective factors in the work of inspection, technical competence of the consultant/inspector, the structure of faults noticed by consultant/inspector, as well as attitude towards demining organisation in relation to the references (number and size of tasks done, productivity, number of demining accidents, violation of Standard and the SOP etc.).
4.11. In case of unfulfilling or violating the working obligations of the staff for the quality control, proposes to the chief inspector preventive and discipline measures.
4.12. Based on competence files he creates list of the BH MAC operational staff competent for the demining accidents and incidents investigations. After the IB Report, he suggest to the chief inspector factual preventive and operational measures for inspectors/consultants who were conducting technical inspection on the demining site.
4.13. Proposes to the chief inspector the need for further training / technical improvement of competence for quality assurance personnel.

CHAPTER X

SYSTEMATIC SURVEY

CONTENTS

GENERAL EVALUATION OF MINE ACTION

SYSTEMATIC SURVEY

I DEFINITION AND AIM IN SYSTEMATIC SURVEY

Systematic Survey is analytical and investigational procedure used to evaluate mine suspect areas, which were zones in warring factions' conflicts (hereinafter: suspect area). Systematic Survey is a part of general evaluation of Mine Action in Bosnia and Herzegovina, which is conducted from the level of a suspect area micro-location up to the evaluation for the country as a whole.
The aim in Systematic Survey is the assessment of mine threat, size, shape and characteristics of the suspect area, with the help of all available information.

Systematic Survey results would present:

1. Evaluation of range and impact of mine problem for the country and individual local communities,
2. Precondition for the procedure of landmine impact survey in Bosnia and Herzegovina,
3. Basis for long-term planning of mine action,
4. prethodnu procjenu na temelju koje se utvrđuje potreba za generalnim izviđanjem
5. Source of information for creation of mine action plans for local communities.

II SYSTEMATIC SURVEY ORAGNISATION

Systematic Survey is a BH MAC continuous activity, conducted in collecting, evaluation, analysis and updating data on suspect areas and their characteristics.

BH MAC Regional Office conducts continuous evaluation and analysis of suspect area in its zone of responsibility, based on which corrections are made within the database. For such evaluation, Regional office shall cooperate with authorised municipality and cantonal bodies and/or other organisations and institutions.

BH MAC office shall put together Systematic Survey results, update information, and issue regular corrections of the suspect area to be conducted by Regional offices, preparations. BH MAC office shall, upon need, issue elaborate documents and other evaluations of the suspect areas for specific region.

BH MAC Operations Sector shall examine the realisation and data update in Systematic Survey, conduct analysis and present Systematic Survey results. BH MAC Operations Sectors shall comply plans in accordance with results presented.

III SYSTEMATIC SURVEY INFORMATION RESOURCES

1. Reconstructed confrontation lines / combat activity zones
   1.1. Studies and analyses on history of combat operations for armies and SFOR, issued by commands on various levels;
   1.2. Interviews with combat commanders for reconstructing confrontation lines and risk assessment;
   1.3. Reconstruction of confrontation lines, performed on the basis of up-to-date general survey results;
2. BHMAC database and other databases from Government, NGO and other humanitarian organisations in Bosnia and Herzegovina
   2.1. Geographical information;
      2.1.1. Areas in regions

2.1.2. Information on populated locations

2.1.3. Topographical and other ground characteristics;

2.2.Mine situation;

2.2.1. Information on humanitarian demining operations;

2.2.2. Information on registered minefields

2.2.3. Information on incidents and accidents

2.2.4. Information on mine lifting

2.2.5. Landmine impact survey results

3. Information on confrontation lines from MND SFOR database
4. Information on casualties form ICRC database and other databases in organisations, which provide help for mine victims and/or survivors.
5. Priority lists for humanitarian demining operations
   5.1. Requests form authorised bodies and economical subjects,
   5.2. Priorities for OHR, UNHCR, ICRC etc.,
   5.3. Request form other organisations, institutions and individuals.
6. General Survey Final Report
   6.1. Reports on risk areas
   6.2. Reports on areas without defined risk
   6.3. Other information from the evaluation and general survey sketch
7. Return Projects (serve as tools in setting priorities)
   7.1. Offices within Cantons,
   7.2. Governments in Cantons,
   7.3. Citizens' Associations for Return,
   7.4. Regional Offices of OHR,
   7.5.Regional Offices of UNHCR,
8. Direct review into the situation on the ground
   8.1. Planned visit for the reason of observation and measurement on the ground for more accurate evaluation of suspect areas,
   8.2. Along with preparations for general survey and locations re-survey, other humanitarian operations and Mine Risk Education

IV SYSTEMATIC SURVEY PROCEDURE

Systematic Survey procedure of the suspect areas shall be conducted within four phases:

1. Planning and preparation of the Systematic Survey,
2. Collecting information on suspect areas,
3. Processing of collected information on suspect areas,

This phase will comprise of:

3.1. Sorting collecting documentation, evaluation of their quality as well as recording documents per municipalities,

3.2. Classification of information per micro-locations by the means of entering information onto the operational map of Systematic Survey,

3.3. Processing and drawing the known shape areas into the database (MapInfo),

3.3.1. Risk areas identified through general survey and processed in projects and

database,

3.3.2. Risk areas not processed within project, but presented in General Survey Final Report / Sketch,

3.3.3. Proposals for demining and/or requests for General Survey, provided in the form of a sketch,

3.4. Reconstruction and input of confrontation lines into the database (MapInfo),

3.4.1. Plotting of confrontation lines identified during General Survey,

3.4.2. Plotting of confrontation lines collected from the armies,

3.4.3. Plotting of confrontation lines collected from other sources.

3.5. Analysis of micro-locations through Systematic Survey,

3.5.1. Comparison of collected information per micro-locations,

3.5.2. Risk Assessment and determination of suspect area characteristics,

3.5.3. Plotting of suspect areas into the database (MapInfo).

4. Re-assessment of Systematic Survey results

PLANNING AND PREPARATION IN SYSTEMATIC SURVEY

Planning and preparation of Systematic Survey implies evaluation of available resources needed for Systematic Survey, evaluation of time needed, evaluation of usability and availability of information sources, creation of Systematic Survey Plan, as well and preparation of personnel and material resources. This survey is created for the area of one local community and in principle encompasses a scheduled period of activities per phases of Systematic Survey and information on contractors/performers.

COLLECTION INFORMATION ON SUSPECT AREAS

Collection on information on suspect areas is a planned activity, during which information is ensured related to municipality (geography, population, economy and was damage), information on history of war operations and information on mine contamination[1]). Collecting information can be initial, where most of the information is ensured, and additional, which is conducted in continuation, as a continues BH MAC activity. All collected information will be recorded into the Systematic Survey File for a particular municipality.

PROCESSING OF INFORMATION COLLECTED THROUGH SYSTEMATIC SURVEY

Processing of information collected through Systematic Survey will present the most significant phase in the conduct of Systematic Survey. BH MAC Regional Offices shall conduct this activity through comparative analysis of gathered information, with the aim of establishing real assessment of the size, shape and characteristics of identified suspect area.

1. **Sorting collected documents, evaluation of their quality as recording documents per municipalities.** All materials gathered must be carefully prepared and classified in order to achieve efficiency in work and make it easier for analysing, whether this process is to be done manually or electronically. The term *original material* implies all original documents, whether obtained from other sources or as a result of the work of BH MAC. *Original materials* do not imply the documents, which were in any manner processed in the database (such as Mine Incident Report, processed in database is not to be treated as *original,* demining project, since it is not the original document, though the file for the project and/or part of that file, containing other useful, unprocessed information **may be** *original*

[1] Annex A: Information collected during Systematic Survey

material.). Sorting materials for the needs of Systematic Survey analysis is achieved on two bases: sorting materials per municipalities and sorting materials per the characteristics of information they contain. All information will previously be sorted per municipality. Inside municipalities, they will be sorted based on characteristics of information they contain.

In relation, each Regional Office creates a Survey File for a municipality, in which all the documents interesting for processing data will be recorded. These data will be periodically gathered and analysed for purposes of updating of suspect areas status and Systematic Survey Elaborates. Senior Operations Consultant in each Regional office shall conduct evaluation of the gathered material. This material will be used for establishing the accuracy of information, which is making decision on acceptance or denial of an information and/or document as reliable. Quality assessment is conducted on the basis of: information on reliability and credibility of the source, analysis of document contents, and comparison with similar or identical information obtained from other document or processed within database, as well as checked with the other source. Recording of accepted documents and filed per municipality, by designated each document a number within the record[2] of Systematic Survey, where the name and source of document will be recorder, along with the date of obtaining and character of the information (risk area, mine incident, municipality priority, record, citizen's statement, working sheet, etc).[3]

2. **Classification of information per micro-locations using plotting process onto the operational map of the Systematic Survey.** As for the process of collecting information for processing in the database, it is required to create exact image of the qualification and distribution information on the ground, with the aim of achieving accurate vision of the status on the ground and information related to micro-locations. This will be achieved by plotting information about original document, using specific legend. Information on original document is plotted onto the Systematic Survey operational map of the community, using the specific legend. Operational chart enables the insight of activities on collecting information, their processing and analysis of micro-location. The clipboard for the Systematic Survey operational map is the mine situation map for the municipality situation, format A0, which will be issued by BH MAC offices, according to requests received from Regional Offices. It can also be an appropriate background/clipboard in the MapInfo database.
3. **Processing and plotting areas of a know shape into the database.** Processing and plotting of areas of a known shape into the MapInfo encompasses already familiar area identified as risk or suspect area. They are then entered into the Systematic Survey table within MapInfo database. Accordingly, this activity precedes the evaluation, meaning it is not analysis but technique for recording existing information. This technique comprises of:
   3.1. Plotting of the risk area identified through General Survey and processed in project and database. In such cases, only data prescribed with this SOP shall be entered in the structure of the information, while other shall be neglected (such as coordinates of turning points). Plotting will be conducted through transferring a shape from the General Survey database
   3.2. Plotting of the risk areas, which are not processed in projects, yet shown in General Survey Final Report - Sketch.
   3.3. Plotting of proposals for demining or requests for General Survey, provided in the form of a sketch. It has to be taken in consideration that each sketch provided by interested

[2] Annex B: Form of record for the Systematic Survey file
[3] Efforts are usually made to simplify this procedure, since it has been considered of lower significance, while it would be fount out later, through processing and analysis, that a great deal of data is unusable or neglected, so that additional informatiom must be obtained.

subject cannot be used, which depends on the quality of sketch provided.

Requests for survey where the obvious purpose is issuing of Technical Opinion on Area without Defined Risk are not to be on the sketch.

4. **Reconstruction and plotting of confrontation lines – combat activity zones into the database -** Reconstruction of confrontation lines is created on the basis of information gathered from sources and based on the status of confrontation lines, as they are presented in MapInfo database. Accordingly, this activity is partially a technique and partially an evaluation. It will be considered technique when plotting of confrontation lines is done based on information form *original* documents, while it will be evaluation when reconstruction of parts of confrontation lines for which we have no information[4] is conducted. Plotting into database is conducted based on the following:

   4.1. Confrontation line identified during General Survey,

   4.2. Confrontation line obtained from armies and SFOR

   4.3. Confrontation line obtained from other sources

5. **Analysis of Micro-location in Systematic Survey** - Analysis of micro-location in Systematic Survey implies following procedures:

   5.1. Comparison of all collected information per each micro-location,

   5.2. Evaluation of the risk level and setting up the basic characteristics for the suspect area,

   5.3. Plotting of the suspect area into the database[5]

Comparative analysis of information per micro-locations[6] commences with studying *original documents* by grouping them on the same working map, where information significant for analysis will be marked. Such information will be compared with the mine situation shown on the operational map and in more details in MapInfo database. Based on comparative analysis of available information, risk assessment will be conducted as well as defining particularities for a certain suspect area, where following must defined: if the information were sufficient enough as to define characteristics of the suspect area of additional information collection is to be done, if it is possible to estimate if assessment of characteristics for a risk area can be done (risk assessment, priority category, shape and potential use of suspect land). Plotting of the suspect area is the activity conducted sequentially with the risk assessment and defining characteristics of the suspect area for each micro-location. Upon assessment and definition of characteristics for a certain micro-location, borders of the suspect area will be drawn for the particular micro-location and prescribed information are input into database as stipulated by this SOP. Upon conducted assessment and definition of characteristics for a particular micro-location, suspect area borders will be plotted for the stated micro-location, while information prescribed by this SOP will be input into database.

Such working manner is necessary for two reasons: due to the size of municipality territory it would be impossible to calculate a complete range of the suspect area, since stretching and size of the suspect area is both conditioned and limited by characteristics (e.g. a shape for a first

[4] Assessor, in this case a senior operations consultant within the Regional office, shall not asses missing confrontation lines in an arbitrarily manner. This assessment is created based on information on combat deployment, topographic and other ground characteristics, as well as observations and measuring the ground. This reconstruction shall be based on particular information. In its scope, it will represent a smaller operation within the entire activity. A larger amount of information on confrontation lines shall be obtained through the sources.

[5] Annex C: Structure of database

[6] Comparative analysis of information per micro-location, which will define the existence of suspect area, can only be performed by an expert person familiar with standard and standard operational procedures, having thorough knowledge about the situation on the ground. Analysis of micro-locations is not a geometric analysis of information deployment. It is primarily a quality analysis, requiring that analyst is experienced in operational and planning segments of humanitarian demining. Therefore, the main analyst of the micro-location will be the senior operations consultant in Regional office.

category priority suspect area shape must be drawn separately for the same micro-location, while another will be drawn for the second category in priority etc.). Drawing borders of the suspect area will be conducted based on ground characteristics (ground specifications, natural and artificial obstacles), where characteristics of the ground, vegetation and population of great significance in setting priority category for certain areas in a micro-location. This cyclic repetition of assessing and drawing may lead to "failure/omitting" of certain suspect areas, with a result of non-existence of the stated area in the database. For this reason, it is significant that the Systematic Survey operation map contains assessed sections as *marked*, that is those where assessment has already been completed.

Guidelines for suspect area assessment:

1) Locations claimed risk within General Survey,
2) Locations candidates for demining by local authorities and other organisations and institutions, for which no survey sketch has been provided,
3) Area between confrontation lines, with demined location excluded, locations claimed to be of no defined risk and locations for which the observations on the ground and any other activity stated that there are no indications of risk, or it is possible to reconstruct combat deployment of units in the conflict based on available information.
4) All locations of notified minefields in the central and other databases, with excluded demined areas and areas claimed to contain no defined risk. Due to lack of sufficient data on minefields, these borders might be wider than registered minefield borders in the MapInfo database, encompassing all location out of use, which are in the closer surrounding of the registered minefield.
5) All locations for which there are information about casualties in the central database, ICRC database and databases of all organisations of range under same criteria as stated under No 3.
6) All locations which are included in return projects, economy and other projects, provided they cannot be claimed areas without defined risk.
7) Areas stated to be suspect areas through direct observation on the ground or based on information from other sources.

EVALUATION OF RESULTS IN SYSTEMATIC SURVEY

Evaluation of results in Systematic Survey will be conducted through continuous assessment, analysis, correction and update of information on the suspect areas. The aim of this evaluation is input of all changes related to the characteristics, shape and size of the suspect area, which might be result of new circumstances, created by new information, through conduct of mine action or any activity conducted by the population. Evaluation of results is also a procedure of measuring results in mine action while reducing the suspect area, whether it is correction or updating status within the database.

Correction of Systematic Survey results presents a repeated assessment of the suspect area on a certain location or within a certain local community, based on information obtained during visits to suspect area locations. This is a continuous activity, conducted by the authorised Regional Office by adding, changing or erasing suspect areas in compliance with this SOP. Correction result will be provided to BH MAC office(s) upon correction is completed, which will be done at least on a three months basis.

Updating Systematic Survey results is the activity used for measuring the suspect area in Bosnia and Herzegovina. This updating results activity shall be conducted on a three months basis, based on corrections of Systematic Survey results and information achieved through realisation of mine action. Authorised office of BH MAC shall conduct this activity.

V EMERGENCY MARKING OF THE SUSPECT AREA FOR MINE RISK EDUCATION

Emergency marking of suspect areas as one of the measures for mine risk education shall be conducted based of Systematic Survey results.

Emergency marking of suspect areas shall not imply marking of the suspect area boundaries, but setting mine signs/*survey markers* as a warning related to immediate existence (occurrence) of suspect areas, i.e. the area behind sign(s)/*marker(s)* is the suspect area.

Civilian Protection teams, BH MAC teams and teams from other organisations can conduct emergency marking. Teams conducting emergency marking shall be aware of safety measures to work by in suspect areas, as well as be trained for needed measurements and sketching.

Every organisation conducting emergency marking of known suspect areas is obliged to make the operational plan for emergency marking prior to this operation, all in cooperation with the authorised BH MAC Regional office. Operational plan for emergency marking shall be provided to BH MAC for approval.

Provided particular socio-political community predicted certain financial means for emergency marking of the suspect area, special plan shall be created. The authorised body from this socio-political community shall create such plan in cooperation with BH MAC. Authorised BH MAC Regional Office shall provide expert help to the teams from the organisation conducting permanent marking. This help shall consist of observing the ground together in order to define locations where the signs/*markers* shall be placed.

Emergency marking of the suspect area shall be conducted by placing prescribed mine signs/*markers* onto the safe area, facing the safe area with the front side. Signs/*markers* shall be placed on recognizable places in order to make them easy to spot from the distance of at least 50 metres.

Mine sign/*marker* shall be placed at the height of approximately 120 - 140 cm, on a wooden stake of 5cm x 5 cm profile, with its length of 150 cm. Provided all other conditions are fulfilled, mine sign/*marker* can be placed onto a house, fence, tree or any other hard surface.

Number of mine signs/*markers* to be placed on a certain location depends on the size and availability of the stated suspect area. The place where the sign/*marker* is placed shall be photographed, marked on the map and defined with grid references (on a cadastral plan or exceptionally on topographic map). Mine sign/*marker* on the sketch shall be a small red quarter with white diagonal across it.

Organisation conducting placing of signs/*markers* is obliged to send a report at the end of the month, which shall contain the following data: location's name, grid references for the sign/*marker* placed, photographs and date of placing. BH MAC shall create a database on emergency marking signs/*markers* placed on the suspect areas.

BH MAC shall inform municipalities about placed emergency mine sings/*markers* from its database.

Organisations, which conducted placing of the signs/*markers,* shall ensure the control according to the record of signs/*markers* placed. They shall plan visits and maintenance with full cooperation from the municipalities and owners of the land. Control and possible renewal of placed mine signs/*markers* shall be conducted at least once in a year. It shall be recorded in a special record, which is then sent to BH MAC for the purpose of updating database. In cases when municipalities or owners of the ground have information that the sign/*marker* is removed, destroyed or in any other manner out of function, it shall be renewed, depending on available material means for purchasing new mine signs/*markers*.

BHMAC shall organise occasional control of emergency signs/*markers* placed on the suspect area by random choice of location, taking into consideration that all areas where emergency marking is conducted are controlled.

VI ISSUING INFOMRATION ON SUSPECT AREAS AND THE CONDUCT OF GENERAL SURVEY

BH MAC shall provide information on suspect areas for municipalities and upon request of potential land users. The request shall be provided on a prescribed form, which is attached to this SOP. These information are provided as a topographic map of a scale of 1:25000 or smaller.

In cases where BH MAC is asked to conduct general survey on a location, which is, according to Systematic Survey results, out of the range of suspect areas, authorised Regional Office is obliged to visit the location and additionally observe and state whether there are indications on the existence of mine (suspicion on mine existence). Regional Office shall inform in written the authorised BH MAC office. If the visit to the requested location confirms that there were no mines, BH MAC authorised office shall inform the person / body, who submitted the request, that the requested area is out of range of suspect areas and as such, cannot be the subject of reconsidering mine threat (general survey)[7]. Attached to information, there shall be a map with the exact location in comparison to the closest suspect area (information form is attached to this SOP).

Providing signs of mine threat are confirmed on the ground, the authorised BH MAC office shall ask that Regional Office conducts general survey.

Annexes:

A. Information gathered during Systematic Survey
B. Record list of documents in Systematic Survey file
C. Database structure
D. Sign/*marker* for emergency marking of the suspect area
E. Emergency marking plan for mine risk education
F. Record list of mine signs/*markers* placed for mine risk education purposes
G. Record on control of the status of emergency mine signs/*markers* placed
H. Information on the location out of suspect area range

[7] Annex H: Information on the location, which is out of suspect areas range

INFORMATION GATHERED DURING SYSTEMATIC SURVEY

1. Geographical position, ground, hydro-graphic characteristics, climate and vegetation
   - 1.1. Total size of municipality area and the length of borders
   - 1.2. Geographical description of the location of municipality within canton and Bosnia and Herzegovina (geographical description implies certain places within community in the wider territorial organisation, calculated with sides of the world, (N, S, W, E and combinations), geographical latitudes and longitudes)
   - 1.3. Description of where the municipality stretches in relation to most important topographic characteristics
   - 1.4. Most significant populated places
   - 1.5. Most significant characteristics of the ground along with most significant waters and vegetation
   - 1.6. Climate (significant climate characteristics, description of seasons within year, temperature scales)
2. Population within the municipality
   - 2.1. Number and national structure of the population dated from 1991
   - 2.2. Latest estimation on number and national structure, which are known to the local authority
   - 2.3. Latest data on number and structure of employed persons
3. Most significant natural characteristics and its significance for the development of the municipality
4. History of war operations
   - 4.1. Short review of war operation and percentage of municipality territory, which was under warring activities
   - 4.2. Description of confrontation lines: description of stretching, according to topographic objects on the ground, grid references of warring factions' lines and estimation of the confrontation lines length.
   - 4.3. Information on war damage, available to municipality authorities
5. Mine situation from the central database
   - 5.1. registered minefields
   - 5.2. Information on demining, locations, which were technically surveyed as well as ongoing tasks
   - 5.3. risk areas and areas without defined risk observed through general survey
   - 5.4. Information on mine lifting
   - 5.5. Information on mine incidents
   - 5.6. Information on confrontation lines
6. Military information
   - 6.1. war records, war working maps, available studies and analyses of warring activities
   - 6.2. records of interviews with warring commanders
   - 6.3. copies or original documents
7. Information gathered from authorities and economical subjects
   - 7.1. Municipality and cantonal priority lists of all categories, intended for demining
   - 7.2. Information available from the Civilian Protection
   - 7.3. Information on mine incidents available through the local authorities
   - 7.4. Information gathered from the economical subjects
8. Information gathered through general survey
   - 8.1. Risk areas outside the projects (outside the base)
   - 8.2. Information on confrontation lines

8.3. Information on priority category and risk
8.4. Information on areas without defined risk, which were not processed for database
9. Information gathered from international organisations
9.1. OHR and UNHCR reconstruction and return projects
9.2. Information on victims/survivors gathered from ICRC and other organisations
9.3. Information on risk locations provided by MRE organisations
10. Direct knowledge of the situation on the ground

ANNEX B:

RECORD LIST OF DOCUMENTS IN SYSTEMATIC SURVEY FILE

BH MAC Regional Office		MUNICIPALITY			
DOCUMENT NO	**DOCUMENT TITLE**	**DOCUMENT SOURCE**	**DATE WHEN DOCUMENT IS FOUND**	**CHARACTERISTICS OF INFORMATION**	**LEVEL OF PROCESSING**

ANNEX C

DATABASE STRUCTURE

All locations defined as suspect area shall be input into the Systematic Survey database using MapInfo software.

Every suspect area location shall be fenced and shall present a closed polygon with the following table structure:

1. «ID» ID of the location (five digits number)
2. «RO_OFFICE» Regional Office (RO Bihac, RO Mostar, RO Sarajevo, RO Tuzla, RO Travnik, RO Brčko, RO Pale, RO Banja Luka)
3. «Date» Date of entry (dd.mm.yy.)
4. «Category» Priority category (1,2 or 3)
5. «Region» RS or canton (according to list of cantons attached)
6. «Municipality» Municipality (according to list of municipalities attached)
7. «Area_in_sq_km Area in m^2
8. «Perimeter_in_km» Perimeter in km
9. «Intended land use» Information on land use

Identification number for each location shall be provided by Regional Office as follows:

1. RU Sarajevo 10.000 -19.999
2. RU Tuzla 20.000 -29.999
3. RU Bihać 30.000 -39.999
4. RU Mostar 40.000 -49.999
5. RU Travnik 50.000 -54.999
6. RU/K Brčko 55.000 -59.999
7. RK Banja Luka 60.000 –69.999
8. RK Pale 70.000 –79.999

Reconstructed confrontation lines shall be entered into the specific table, structured as follows:

⇒ «Date» Month and year until the line was active (mm.yy)
⇒ «FACTION» Army on particular line (ABiH, VRS, HVO, UNKNOWN)

SIGN/*MARKER* FOR EMERGENCY MARKING OF THE SUSPECT AREA

The looks and characteristics of the mine sign/*marker*

The looks of the mine sign/marker and the scale of letters and symbols must be identical as shown on drawing 1. Back side of the sign/*marker* is painted white.

Dimension of the mine sign/*marker* shall be 40x40 cm.

Material for constructing mine sign/*marker* shall be of no use for local population. It is absolutely necessary that both material and paint are capable of withstanding atmosphere conditions in Bosnia and Herzegovina through the period of 5 years. Proposed material is 2 mm thick plastic. Metal can also be used provided it is available regarding cost and fulfilling the stated conditions.

Holes shall be drilled on the sign/*marker* in order to enable efficient nailing onto the wooden stake or attached to other appropriate background.

Provided metal sign/*marker* is in use, it shall be of no use for any other intention.

Wooden stake dimensions shall be 5x5 cm and 150 cm in height.

ANNEX E.

EMERGENCY MARKING PLAN FOR MINE RISK EDUACTION PURPOSES

Organisation conducting marking	
Location, place	
Municipality	
Period of marking	
Planned number of emergency signs/markers tables to be placed	
Description of location and place where emergency marking tables will be placed	
Number of persons engaged	
Remark	

Place and date: **Responsible person in the organisation:**

BHMAC Approval

Place and date: **BH MAC authorised person:**

RECORD LIST OF MINE SIGNS/*MARKERS* FOR MINE RISK EDUCATION PURPOSES

Location, place	
Municipality	
Canton	
Marking date	
Number of tables	
Description of the location and number of tables placed (grids)	
Is additional marking necessary and what are other ways of MRE	
Team, which conducted marking	
Remark	

Annex: Photographs of signs/*markers*

Place and date: S i g n a t u r e:

RECORD ON CONTROL OF THE STATUS OF EMERGENCY MARKING SINGS/*MARKERS* PLACED

Location	
Municipality	
Canton	
ID (risk or suspect area)	

On the date ..... employees of RO .....BHMAC have conducted control (number of sings/*markers* for emergency marking which were place (date of placing), for the location stated above.

Having checked on the ground, following is confirmed:

- (Number of signs/*markers*) operational
- (Number of signs/*markers*) damaged or destroyed
- (Number of signs/*markers*) removed

Following activities took place at the location:

- (Number of signs/*markers*) placed again
- (Number of signs/*markers*) additionally placed

Annexes:

- Sketch with grid sign/*marker* place defined by grid references
- Photographs of warning signs/*markers*

BH MAC RO Employee

_____

Remark:
If the control proved emergency marking signs/*markers* to be stolen, it is necessary to provide sketch with the place defined by grid references as well as photographs, so that pursuit procedure can be started.

ANNEX H.

INFORMATION ON THE LOCATION OUT OF SUSPECT AREAS RANGE

BOSNA I HERCEGOVINA
MINISTARSTVO CIVILNIH POSLOVA
KOMISIJA ZA DEMINIRANJE U BiH
CENTAR ZA UKLANJANJE MINA U BiH

БОСНА И ХЕРЦЕГОВИНА
МИНИСТАРСТВО ЦИВИЛНИХ ПОСЛОВА
КОМИСИЈА ЗА ДЕМИНИРАЊЕ У БиХ
ЦЕНТАР ЗА УКЛАЊАЊЕ МИНА У БиХ

BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No:

Date:

For:

REFERENCE: Information

Pursuit to No VIII of BH MAC Standing Operational Procedures for Systematic Survey, we inform You that the location_____ municipality_____ defined in Your request No:_____ dated _____is out of the defined suspect areas, thus no mine threat is expected.

We attach the map with the review of requested location in relation with the closest defined suspect area.

Possible existence of unexploded ordnance (UXO) cannot be estimated, thus we recommend users pay attention while on this location. Provided they notice UXO, they are not to take any activities but inform expert Civilian Protection team for UXO removal.

Chief of BH MAC Office

XI

COMMUNITY INTEGRATED MINE ACTION PLANNING

C O N T E N T S

Contents title **Page**

List of Annexes

1. Basic principles

1. Standing operational procedures for mine action integrated planning in Bosnia and Herzegovina (hereinafter SOP) present guidelines for the conduct of individual procedures in collecting information, assessment and creation of mine action integrated plan for an impacted community.

2. Strategy for Mine Action in Bosnia and Herzegovina, Strategy for Mine Risk Education in Bosnia and Herzegovina, Standard for Mine Clearance and EOD Operations in Bosnia and Herzegovina, researches conducted so far in Bosnia and Herzegovina, which were related to the management of mine and UXO risk, as well as experiences gained so far in creation of integrated mine action plans in Bosnia and Herzegovina present the corner stone for this SOP.

3. Accredited organisation which conducts mine action is obliged to accord to regulations from this SOP, as well as to use it in creation of their on SOP documentation.

4. The application of integrated approach in mine action has for its aim the increase of risk reduction effects through the optimum use of resources, actually available financial means and correlation between various mine activities.

5. Mine action integrated planning for communities impacted with mines and UXO is based on ten principles. First five out of ten grow out of the UN mine action policy and strategy. The other five grow from the theory and practice in mine action developed so far in Bosnia and Herzegovina. These are:

1) Principle of planning and evaluation based on impacted community.

2) Principle of achieving maximum effect.

3) Principle of being based on international standards.

4) Principle of transparency and responsibility towards the donors.

5) Principle of integrated mine action.

6) Principle of being based on theory and practice of risk management and other scientific achievements.

7) Starting point in landmine impact research.

8) Continuity with practice and results gained so far.

9) Most effective use of available resources.

10) Inclusion of the community into the resolving of the problem.

2. Organisation and responsibility

6. Following are the participants in integrated planning process: (1) Mine Action Centre Bosnia and Herzegovina (BHMAC), (2) organisations accredited for the conduct of MRE and local communities.

(1) **BHMAC** responsibilities in this process are as follows: (I) survey, (II) risk assessment and (III) integration of various mine actions, i.e. preparation of integrated mine action plan for impacted community - CIMAP (*notice* SOP for humanitarian demining, Part I, General Survey, for detailed description of activities, procedures and responsibilities of BH MAC in the process of survey, as well as SOP for planning mine risk education for impacted community for detailed description of activities, procedures and responsibilities of BH MAC within the process of creating MRE plan.);

(2) **Organisations accredited for mine risk education** are held responsible for creation of MRE plans, which is a consisting component of integrated mine action plans. (*Notice* SOP for creation of MRE plans for impacted community for detailed description of activities, procedures and responsibilities of accredited organizations);

(3) **Local communities** are involved in the process of integrated mine action plan through their active participation in the preparation of the plan during the work in the impacted community;

7. Process of assessment and creation of plan is conducted by independent planning consultant from BH MAC Regional Office. In realization, help will be provided by BH MAC Regional Office Survey team, consisting of team leader and one surveyor or one team leader and at least two MRE instructors in an organization accredited for MRE.

8. Provided the organization accredited for MRE is helping Regional Office BH MAC in creation of integrated mine action plan, independent consultant from Regional Office will directly cooperate with the operational manager of the organization in both planning and engaging MRE teams.

3. Safety measures

9. Team, which is engaged on preparation the integrated mine action plan, will not leave the area which is safe in accordance to Standards for Mine Clearance and EOD Operations or the area which is without defined risk, in accordance to criteria of General Survey Guidelines.;

10. Work on the ground will be exclusively conducted by personnel that is technically trained and adequately equipped for data collection and risk assessment;

11. Independent consultant for planning in BH MAC and operational manager of the organisation accredited for MRE will not allow ground activities if they estimate the team is under-trained for the conduct of particular task.

4. Process of integrated mine action planning

12. Process of integrated mine action planning for communities impacted by mines and UXO consists of five sub-processes: (1) preliminary assessment, (2) data collecting on the ground, (3) risk assessment for the impacted community, (4) needs and capacities assessment of the impacted community and (5) preparation of the MRE plan (Annex A: Course of action Diagram – process of integrated mine action planning for impacted community). Further on, sub-processes consist of procedures, through which assessment techniques and decision making were used in risk management.

4.1. Preliminary assessment

13. Preliminary assessment is a process with an aim to acquire first view on the impacted communities and impacted groups of population. Such assessment is not complete but it is sufficiently accurate for directing teams and setting intensity of ground activities, in order to

confirm existing or collect missing data. Preliminary assessment consists of three procedures: (1) collecting and processing available information, (2) preliminary risk assessment and (3) analysis of missing information.

(1) Collecting and processing available information

14. Collecting of available information encompass information from original documents and databases, which does not require the terrain activities. Groups of available information are:

1) Information on social and economic impact of landmines (Study on Landmine impact survey in Bosnia and Herzegovina, database and archives on landmine impact surveys in impacted communities).

2) Systematic survey information (reports on systematic surveys in municipalities, BH MAC database of suspect areas and confrontation lines).

3) Information acquired through general survey (final reports on general survey from reports and BH MAC database).

4) Information on mine situation from BH MAC database and other organisations' databases (minefield records, humanitarian demining operations – clearance, technical survey and permanent marking, incidents and mine victims, former and on-going MRE activities).

5) Information on priorities in mine action, development plans and other information of significance for the impacted community, which are at the disposal of municipality demining coordinator.

6) Information provided by partner and other organizations present in impacted communities.

(2) Preliminary risk assessment

15. Preliminary risk assessment is a procedure of starting mine risk identification, in a manner which is described in item 21 of the risk assessment in this SOP.

a. During preliminary assessment, neither starting identification is conducted of the impacted groups of population, nor the risk analysis and registry creation,

due to the lack of elements necessary for determining the level of risk and characterization of risk. It is not the aim of preliminary risk assessment at this stage. (*Notice* risk assessment for impacted community in Annex 1: Course of action diagram – process of integrated mine action planning for the impacted community).

(3) Analysis of missing information

16. Analysis of missing information suggests missing or incomplete information, sets aim groups to be questioned or interviewed as well as sets necessary level of observing and measuring on the ground. Most frequent information to be additionally collected on the ground will be:

1) Information needed for risk assessment, which are missing or not confirmed: (1) information on risk resources and their social and economic impact; (2) information on the nature of risk and possible consequences; (3) information on impacted groups – existing and potential and (4) information on community's perception of risk.

2) Information crucial for the analysis of needs and capacities: (1) information on activities conducted by the community and the manner of securing existence in the community; (2) information on development plans and priorities; (3) information upon which persons are identified, who are capable to participate in mine risk reduction, with following important values: authority within the community and leadership characteristics (personal authority supersedes the formal authority), knowledge and skills a persons has as well as motivation for participation; (4) information on community resistance in regard of mine threat: whether community is informed and organized, including organizational resources, which are not directly related for resolving the mine problem but potentially exploitable, effects of earlier and on-going mine action activitities, communication with other communities and higher authorities in resolving mine problem.

17. Result of analysis of missing information will be created in the form of report, according to No 1) and 2) item 16.

4.2. Collecting information on the ground

18. Collection of information on the ground will be conducted by trained teams through observing, measuring and communicating with information resources, through interview and questionnaire techniques.

19. Starting point for collecting information on the ground is the result of analysis of missing information from item 17.

20. Results gathered through collecting information on the ground present original documents such as questionnaires, questionnaire reports, reports on conducted interviews, sketches and photographs. Organisation which is conducting collection of information on the ground is obliged to create original documents on collected information and keep them in file for a particular impacted community.

4.3. Risk assessment

21. Mine and UXO risk assessment encompasses the following procedures: (1) identification of risk locations, (2) identification of risk, in relation to mine and UXO threat and areas of their social and economic impact; (3) identification of impacted groups of population; (4) risk estimation and (5) creation of risk registry.

4.3.1. Identification of risk locations

22. Identification of risk locations is conducted in accordance to procedures prescribed for systematic survey, general and technical survey. Identification procedure for risk areas in integrated mine action planning, which is applied in Bosnia and Herzegovina is the procedure of general survey, detailed in Standing operation procedures of Mine Action Centre Bosnia and Herzegovina.

4.3.2. Identification of risk

23. Identification of risk encompasses identification of threat as the source of risk, as well as the area of its social and economic impact.

24. Threats caused by mines and UXO, as sources of risk, are divided in three basic categories: (1) attitude of the community members, (2) economical circumstances and public

safety and (3) environment. Categorisation of landmine impact accords with categories defined through landmine impact survey, yet supplemented by experiences from Bosnia and Herzegovina and other countries. It encompasses two basic categories: (1) social and (2) economic mine and UXO impact. (Categories and sub-categories for mine threat sources and areas of their social and economic impact are provided in Annex B).

25. Identification of mine threat and the areas of their impact are related thus forming unified process. Results are input into the matrix for risk identification. Risk is identified at a point where threat and impact "collide" in the matrix; in the procedure of risk assessment and creation of risk registry, risk is analysed and described (Form for risk identification is attached in Annex C). Precondition for identification of impacted groups of population is identification of mine threat and areas of its social and economic impact.

4.3.3. Identification of impacted groups of population

26. Identification of impacted groups of population is conducted by applying following related techniques for resolving problems and decision making. These are: (1) method of gathering ideas (brainstorming); (2) diagram of cause and consequence (ISHIKAVA diagram); (3) intensity analysis and (4) Pareto diagram (ABC analysis or priority method). The use of these techniques implies group work of all participants. Quality of results gained depends on representative quality of the group.

27. Systematic quality in identification of potentially impacted groups will enable the creation of **diagram of risk and consequences** (Annex D). This method is used in combination with **brainstorming**.

a) The manager of the procedure has to be familiar with the state within the mine impacted community and must possess experience in conducting brainstorming.

b) The size of brainstorming team should not exceed 10-12 persons. In order to achieve representative quality of the team, the number of persons should not be less than six persons, which will ensure the minimum of participants for different subjects.

c) Participants must be well familiar with problems to be resolved by brainstorming, while at least half of the participants must be from the impacted community.

d) Threads of cause and consequence diagram create basic categories for identification of mine threat (human behaviour, economic circumstances, public safety and environment) as well as areas of their social and economic impact (landmine impact).

e) Prior to beginning of works, participants will be informed once more on the situation in the impacted community as well as with available information. After being informed on situation in impacted community, specific brainstorming will be conducted for each questioned thread.

f) Each thread will contain information for each impacted group related to particular thread of risk (source of risk) or their impact. Impacted groups can reappear in several different questioned threads.

g) Team manager will register all stated groups as the team members stated them. Once all ideas on possible impacted groups are exhausted, the cause and consequence diagram is fully constructed. The next step will encompass grouping of results by setting the starting level of threat for each group. Participants of brainstorming will determine if the danger for the group is high, medium or low and that will be visibly marked. The brainstorming manager will direct opinions of the participants on the level of threat and accordance in opinions. If necessary, he will organize voting if the attitudes are divided. It is usual to classify great number of impacted groups by the use of cause and consequence diagram.

28. Identified groups are input information for the next step in the procedure, which is **intensity analysis** (form for intensity analysis is attached in Annex E).

a) This technique is used to make to compare impacted groups with each other. Provided there is enough of them, only highly impacted groups will be taken for intensity analysis; if their number is not sufficient, medium and low impacted groups and be taken subsequently. The number of analysed groups should not be less than 20.

b) Comparison of groups with each other is conducted in order to define which group between the compared is more impacted. Two points will be assigned to highly impacted group, while zero points will be assigned to less impacted group. If both groups have the same level of threat, both will be assigned one point.

c) Discussion and accordance will be used to estimate intensities. If it is not possible to reach accordance, team manager will decide based on provided opinions. Precisely for such dilemma, it is necessary to have member of impacted community within the group, since they have a clear opinion on the level of threat for their local community.

d) For each impacted group, the points are added horizontally and the intensity will be set in percents.

29. Results gained through intensity analysis will further be processed through **Pareto diagram**.

a) Percents gained through intensity analysis will present the level of mine risk for certain group, where the cause of the influence is in the nature of the group itself (its characteristics, risk behaviour, location in relation to the suspect area etc).

b) Percents of intensity of groups are drawn onto Pareto diagram, from the highest to the lowest. These values will be drawn cumulatively, by adding intensity values of all previous groups with the one, which follows.

c) Graphic presentation of results is the most significant phase in application of Pareto diagram. Analysis of cumulative line will show three areas – A, B and C. There are no strict rules in setting borders between areas. The essence is „in analysis of cumulative line and extracting areas in relation to the level of impact significance. “ (Annex F) Area A is determined in the steepest part of cumulative curve, while area C of the curve is almost flat. Area A should encompass 10-30% groups out of total number of groups on which the intensity analysis was conducted, because 60-80% of the entire landmine impact relates to these.

30. Organisation conducting risk assessment will create a brainstorming report with results in cause and consequence diagram, intensity analysis and ABC analysis.

4.3.4. Risk assessment

31. Risk assessment is the process in which the values are set for probabilities and consequences. The result of risk assessment is defining the level of risk with its next step, which is setting priority for treatment of the risk areas.

32. Defining the level of risk is conducted by construction of matrix for threat level and matrix for determination of landmine impact on the impacted group. Matrix of risk level is gained through the scale of ongoing and potential consequences of mine accidents and incidents, along with the scale of probability for minefield existence in the suspect area (Annex G). Risk levels gained through this matrix are classified as very high (VH), high (H), medium (M) and low (L).

33. Matrix of impacted condition of a group (Annex H) is achieved by combining ABC scale, which classifies impacted groups within A, B and C area, set by Pareto diagram (Annex F: ABC scale of impacted groups) and relative majority of the impacted group. Estimated potential landmine impact on impacted group, presented by A, B and C area, will be taken as risk consequence indicator. Probability risk indication is the size of impacted group in relation to the total of population; higher the population numbers in the conditions of the same indicated risk, higher the probability of a risk accident. Levels of risk gained through the matrix are classified as very high (VH), high (H), medium (M) and low (L).

34. Result of the use of matrix is the scales for risk and endanger of groups with equal number of classes. These two scales construct new matrix for setting risk level (Annex I), where there is threat as the source of the risk on one side and the impact on impacted groups on the other. It is at the same time the priority level matrix for treatment of the risk occurrences.

35. Matrix for setting the priority level for risk locations will be constructed by combining risk level scale, which is defined before (*Notice* Annex J: Matrix for priority level) and new scale for the level of use. The scale for the level of use is made of three priority categories for humanitarian demining.

4.3.5. Creation of Risk Registry

36. Characteristics of risk will be defined in the last phase of risk assessment. Technique to be used for this purpose is called characterization of risk, where the essence is to provide answers to questions, which will define the risk.

1) What threats and exposures are to be considered?

2) What is the nature and probability of risk for health?

3) What individual and what groups are at risk?

4) Is it likely that some persons were at risk more than the others?

5) How serious can be the adverse impact or its effects?

6) Are the effects reversible?

7) Which scientific proofs support conclusions on risk? How strong the proofs are?

8) What is uncertain regarding nature or importance of risk?

9) What is the scope of opinions, collected on nature and probability of risk?

10) How reliable risk analysists are regarding their assessments on risk?

11) What other sources may cause different types of effects or risk?

12) What is the contribution of each particular source in creation of all types of effects of the total risk in impacted community for the entire benefit of the community?

13) How is the risk distributed in relation to other risks in the community?

14) Apart from benefit and environment, is there risk effect in relation to social and cultural consequences?

These questions, related to characterization of risk, encompass all previous steps in risk assessment; provide help in full definition of risk in impacted community as well as in classification, setting risk level, priority level and identification of control measure.

37. All identified risks must be described and registered, regardless of the fact whether they will be treated, controlled or detoured.

38. Registering risk is conducted within risk registry for impacted community, which consists of the following elements (Annex K: Risk Registry for impacted community):

a) Description of risk: potential risk event, place of potential event, most impacted group.

b) Probable consequence of the risk event: description of the worst possible consequence, possibility of the risk event.

c) Risk control measures taken (type of measure and the level of adequacy).

d) Level of risk (threat level and its impact for the impacted group).

4.4. Estimation of needs and resources

39. Risk assessment and estimation of needs and capacities in the impacted community are sub-processes, which are inter-dependent and rely on each other. Although priority setting is positioned within risk assessment, it cannot be realized without previously defined particular characteristics of impacted groups (*Notice* Annex A: course of action diagram – process of integrated mine action planning for impacted community.) Characterisation of impacted groups cannot be started as a process either without previous identification within risk assessment.

40. The risk assessment defines the size of problem (magnitude of risk), while the estimation of needs and resources will define actual possibilities of the community to deal with the problem: what will be the manners to treat risks, in what time scope, what kind of help in needed, how vulnerable community is as well as its impacted groups of population and what status is acceptable for the community).

41. Assessment of needs and resources consists of three procedures: (1) characterization of impacted groups, (2) characterization of impacted community and (3) analysis of previous mine action.

42. Result of needs and resources assessment contributes to the creation of the first part of MRE plan in the form of concise conclusion on the community and its impacted groups.

(1) Characterisation of impacted groups

43. Characterisation of impacted group implies defining of the characteristics for particular group. Groups impacted by mines have general and specific characteristics.

General characteristics are: (1) common aims and interests; (2) interaction on a regular basis; (3) defined leadership; (4) adherents (size of groups and sub-groups, gender, age, education, health); (5) behavior manners; (6) differences in group members' status; (7) role inside the group.

Specific characteristics of impacted group: (1) vulnerability (number of victims, consequences of accidents / incidents, exposure to risk); (2) risk behaviour (informing, communication between group members, perception of risk).

44. In order to efficiently create a real vision inside the local community, SWOT analysis is used (analysis of advantages, weaknesses, possibilities and threats), which will identify areas within which the analysed units should focus on their advantages, minimize their weaknesses and use available options (i.e. resources) to the highest possible extent. The results of SWOT analysis as a summary would be a consisting part of MRE plan documentation.

(2) Characterisation of impacted group

45. Characterisation of impacted group encompasses analysis of characteristics grouped in nine categories, which are: (1) basic information on the community, (2) cultural and traditional features, (3) religion and ethnic groups, (4) behaviour rules, (5) mine victims, (6) human resources, (7) material resources, (8) holders of development and (9) communication channels.

(3) Analysis of previous mine action

46. This analysis ensures quantity and quality history information on results and impact previous mine action had on risk reduction and improvement of general life conditions in the community.

5. Preparation of mine action plan for impacted community

Preparation of integrated mine action plan for impacted community is a sub-process implying following procedures: (1) defining aims and tasks, (2) choosing best of options for integrated activities, (3) creation of plan and (4) ensuring agreement in the community.

5.1.

47. When planning mine action for an impacted community, following form can be used in hierarchy of aims, which are by cause and consequence lined one under the other.

1) Ultimate aims – aims which are set to be achieved by the conduct of mine action in impacted communities.

2) Specific aims – aims connected to a particular impacted community, with which ultimate aim will be achieved.

3) Immediate aims closely define manners in which specific aims will be achieved.

48. Ultimate aim of mine action for an impacted community is to reduce or remove risk presented in abandoned mines and UXO to the level, which will prevent harm for population and enable undisturbed use of most significant natural, economic and other resources in the community.

49. Specific aims are basically defined by mine action components in relation to characteristics of impacted groups and communities as a whole, as well as in relation to defined risks, which are to be treated. Each specific aim is detailed through two or more immediate aims.

50. Immediate aims reflect priorities for mine action in impacted community. Several operations will be detailed for each immediate aim, depending on available resources, finance and time needed for their realisation.

5.2. Selection of the best option for integrated activities

51. Selection of options implies choice and description of the activities, which will lead to the realization of immediate aims. There is cause and consequence relationship between tasks and aims, as well as retroactive feedback. Tasks will depend on available and potential resources (human, material, organizational, educational and financial resources) and timeline given. They must be achievable. Non-achievable aims, which cannot be realized through defined tasks, will be discarded.

52. The selection of most favourable option will lead to division of mine action plan onto several phases. The first phase tasks should resolve risks with highest impact, i.e. those which are of highest priority. This phase should be shortest in duration, with use of limited resources. Number of phases may depend on the contamination level, number of resources blocked, resources available for mine action and financial resources.

5.3. Creation of plan

53. Integrated mine action plan for impacted community is a document of a standard form, into which quantitative and quality information is recorded as table and description data. It consists of two main parts (form of plan attached in Annex L).

54. The first part of the plan contains result assessments of the situation in mine impacted community in the form of numbers and concise conclusions from assessment, containing: (1)

general information, (2) mine situation in the community, (3) most important impacted groups, (4) description of major risks to be treated and (5) list of risk / suspect areas.

(1) General information on the community: (I) table review of the size of the community, age and population in number, (II) summary on social and economic situation in the community, containing following information: landmine impact on the status in the community (war damages, number of killed in war, information on the whereabouts of displaced and refugees), after-war reconstruction (number of reconstructed houses, reconstructed economic facilities, communication and alike, present level of return, whether further return is expected), predominant occupation and possible investments.

(2) Mine situation in the community: (I) table review of numerical indicators for size of the risk area and number of hazard devices, (II) summary based on information regarding landmine impact (description of incidents / accidents with area and time framework and consequences, economic resources blocked), description of suspect areas (location in the community, possible intentional use and probability of mine threat, especially of most hazardous mines) as well as history of mine action (recent demining operations, MRE projects and mine victim assistance).

(3) Information on most impacted groups– summary, which is result of analysing information gathered on the ground and analysing needs and resources of the impacted groups;

(4) Description of most significant risks, which will be treated in accordance to the results from the risk registry;

(5) List of risk / suspect areas in the impacted community.

55. Second part of the plan is called activity plan, containing following elements: (1) aims, (2) tasks per phases (plan will contain one or more phases), (3) manner of integrating mine action, (4) effects expected from the realization of the plan, (5) accordance from the community and (6) Annexes.

(1) Aims – ultimate and specific aims will be input into the plan, as well as their immediate aims, which will be realized through the task.

(2) Tasks – shorter description of task per phases, where it is clear what is the connection with the immediate aims defined, with information of the conduct time, organisation, investor and the phase of realisation.

(3) The manner of integrating mine action – concept of realization of the plan, in which it is described how to realize linking and accordance in time and intensity of planned activities, in order to achieve the maximum of possible results.

(4) Effects expected from the realization of the plan – Assessment of effects expected from realization leans onto defined aims and timeline set to achieve them. A grade is provided for risks to be reduced or eliminated and to what measure their total social and economic impact will be reduced.

(5) Accordance from the community – Prior to final approval from Mine Action Centre Bosnia and Herzegovina, plan will be presented to the representatives of the impacted community. MRE plan cannot be approved unless community accepted it and agreed with it.

6. Inspection measures

56. BH MAC Office will follow and define the level of quality in creation of integrated plan through (1) following the quality in general survey, including preparation and creation of project documentation for demining, technical survey and marking and (2) following the quality of work in creation of MRE plans for impacted communities.

57. Chief of BH MAC Office or his assistant will task Regional Offices for creation of integrated plans, in accordance with requests and defined priorities; he will take care of responsibilities and obligations prescribed in the SOP for general survey, all in accordance with the SOP for integrated planning.

58. Chief of BH MAC Office (or his assistant) will approve request for creation of MRE plan for impacted community, which is submitted by an accredited MRE organisation. Request for creation of MRE plan must be in accordance with annual mine action plan and operational MRE plan;

59. Chief of BH MAC Regional Office (or his assistance) will approve integrated MRE plan.

60. BH MAC Regional Office will conduct inspections over BH MAC team as well as accredited MRE organizations, which conduct assessment activities and create integrated mine action plans for impacted communities.

61. Inspection is conducted by QC consultant / inspector from BH MAC Regional Office. He will make reports on his inspections and deliver them to the Chief of BH MAC Regional Office, higher inspection body and accredited organisation over which the inspection has been conducted;

62. Chief of BH MAC Regional Office:

a. Creates monthly plan for creation of integrated plans based on the request from BH MAC Office;

b. Provides agreement on the request for creation of MRE plan for impacted community, which is submitted by accredited MRE organisation. Final approval is provided by the Chief of BH MAC Office. Request for creation of MRE plans must be in accordance with annual mine action plan and operational plan for mine risk education;

c. Creates the plan for inspection over integrated plan, including general survey and creation of MRE plan, based on implementation plans provided;

d. In cooperation with QC inspector, he will asses feasibility of the implementation plans as well as he will follow potential changes within dynamics of the creation of integrated plan;

e. Conducts responsibilities and obligations as prescribed in the SOP for general survey;

f. In cooperation with QC inspector, he will analyse delivered documents and provide accordance for the integrated plan for the impacted community.

63. Quality control consultant / inspector of BH MAC Regional Office does the following:

a. Conducts control through (1) visiting terrain activities, (2) estimation of documentation quality as described under item 55 and (3) communication with representatives from the accredited MRE organisation, which is the subject to inspection.;

b. It is in his power to stop the procedure until the non-conformities are corrected or procedure is repeated provided there was a severe violation of this SOP or the SOP of the organisation;

c. Participates in the work of technical working groups and pays attention to remarks and suggestions from organisation, which work on the creation of integrated plans, which are related to the work of inspection bodies, as well as all other remarks related to the creation of integrated plans;

d. Attends when the mine risk education plan for impacted community is presented;

e. Proposes to the Chief of BH MAC Regional office to accord with the plan;

64. Organisation accredited for mine risk education is obliged to provide BH MAC Regional office its activity plan at least 10 days prior to operations. Organisation is obliged to notify BH MAC Regional office about changes in plan which are in relation to particular procedure, at least three days prior to the conduct of procedure.

65. Activity conduct plan must contain following information: (1) type of activities, (2) place of activity to be conducted, (3) team members who will conduct the activities and (4) timeline within the activities will be held;

66. Upon request from QC Inspector from BH MAC Regional Office, organisation is obliged to provide all requested documentation.

7. Reporting and records

67. Separate dossier will be created for each community for which the integrated mine action plan is created, where the dossier will consist of the following documents:

(1) Documents gathered from the available reports (Para 14, item 1-5);

(2) Documentation from gathering information on the ground (questionnaire and interview forms and reports on them);

(3) Documents created as result of assessment:

a) risk assessment – form for risk identification, Ishikava results, form for intensity analysis, results of Pareto / ABC analysis, Risk registry form; summaries of

SWOT analyis, records from meetings with the representatives of local communities, including Ishikava, intensity analysis and participation list;

b) General survey result – list of documentation (*Notice* SOP for humanitarian demining, part I, General survey, General survey Report, item 37;

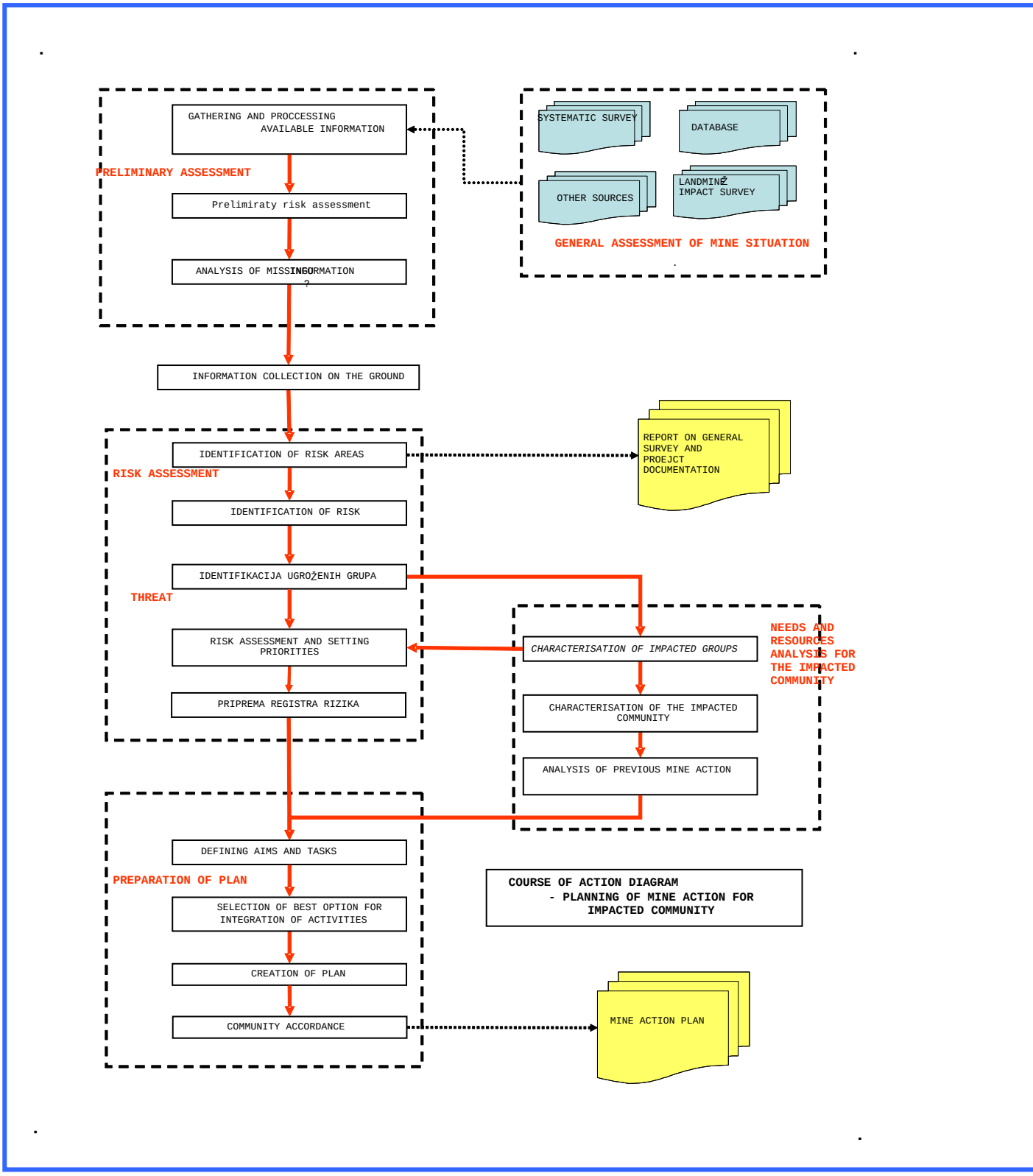
(4) Integrated mine action plan – filled integrated plan form

68. The dossier will be kept in BH MAC Regional office until the integrated plan is approved. Full dossier along with the plan, which is signed by operational staff and the representative of the community, in one copy, will be delivered to the Operations department of BH MAC.

69. Accredited organisation is obliged to report BH MAC Regional office on its activities. Organisation will provide their activity conduct plan 10 days prior to commencement of their activities. Activity conduct plan must contain following information: (1) type of activity, (2) place where activity will be held, (3) members of the team to conduct activities and (4) timeline in which the activities will be conducted;

70. In case of changes in activity conduct plan, organisation is obliged to notify BH MAC Regional office no later than 3 days prior to commencement of activities.

Annex A: Course of action diagram – process of integrated mine action planning for impacted community



Annex B: Categories and sub-categories for mine risk sources and the span of their socio-economic impact

Mine threat / hazard sources

1. Behaviour of the community members:

   1.1. Human behaviour of an individual (aware, not aware):

      1.1.1. Entrance into suspect area: (1) existential reasons (processing ground, pasturing, collecting fire-wood or forest fruits, herbs etc); (2) recreational needs (hunting, fishing, sports, children's play etc).

      1.1.2. Contact with mines and UXO: (1) self-initiated mine removal (in order to approach blocked resources – water springs, land, forest etc, for explosives or metal, for decreasing threat for the rest of the group members); (2) burning of suspect area; (3) marking of mines / UXO; (4) holding (keeping) mines.

   1.2. Behaviour typical for social groups and community as a whole:

      1.2.1. Behaviour of social groups (division by categories is identical as it is for the individual behaviour).

      1.2.2. Behaviour of the community: (1) social stereotypes and traditional beliefs (religious and national prejudice, prejudice on gender); (2) information and communication between population (weak or no level of information about mine threat, weak or no information on measures for risk reduction, lack of communication between various groups of population; (2) movement of population; (3) low level of organisation in the community and indifference regarding the mine problem.

2. Economic environment and public safety:

   2.1. Reconstruction of agricultural object in or nearby the suspect area.

   2.2. Work in the vicinity of the minefield (electrification, road construction and other infrastructure, safety and police issues).

3. Environment:

   3.1. Minefield and areas contaminated with UXO:

3.1.1. Identified minefield (marked and unmarked);

3.1.2. Suspect locations

3.1.3. Identified UXO (individual or scattered on particular area)

3.2. Natural causes:

3.2.1. Displacement of mines (floods, erosion and subsidence of soil).

3.2.2. Activation due to fire.

3.2.3. Activation of mines by animals.

Landmine impact

1. Social impact:

1.1. Impact on lives and well-being:

1.1.1. Mine accidents (past year, past two years, three or more years: (1) death consequences (children, adults); (2) wounded (children, adults); (3) no consequences for life and health.

1.1.2. Potential probability for mine accident: (1) with death consequence (children, adults); (2) wounded (children, adults); (3) no consequences for life and health.

1.1.3. Hardened or disabled access to health care.

1.1.4. Disabled access to potential sources of infection or poisoning.

1.2. Impact on return of population:

1.2.1. Disabled or hardened return of the refugees.

1.2.2. Disabled or hardened return of the displaced.

1.3. Impact on education, culture and other aspects of social superstructure:

1.3.1. Disabled reconstruction of school.

1.3.2. Disabled or hardened approach to school for children.

1.3.3. Disabled or hardened access to other facilities of social significance for the community (religious objects, cemeteries, public buildings etc).

2. Economic impact:

2.1. Area to which mines are blocking access

2.1.1. Unprocessed ground.

2.1.2. Pastures.

2.1.3. Agricultural land: (1) land with irrigation; (2) land without irrigation.

2.1.4. Roads.

2.1.5. Residential area: (1) reconstruction of devastated houses in order to inhabit; (2) reconstruction of other objects; (3) building new houses for inhabiting; (4) building new objects.

2.1.6. Access to water: (1) drinking water; (2) water for other uses (irrigation, cattle, industrial purposes).

2.1.7. Other infrastructure.

2.1.8. Negative impact for potential barriers of economic development (tourism, sports, economic subjects).

Annex C: Matrix for mine and UXO risk identification

RISK IDENTIFICATION IN MINE AFFECTED COMMUNITY OF (_____)

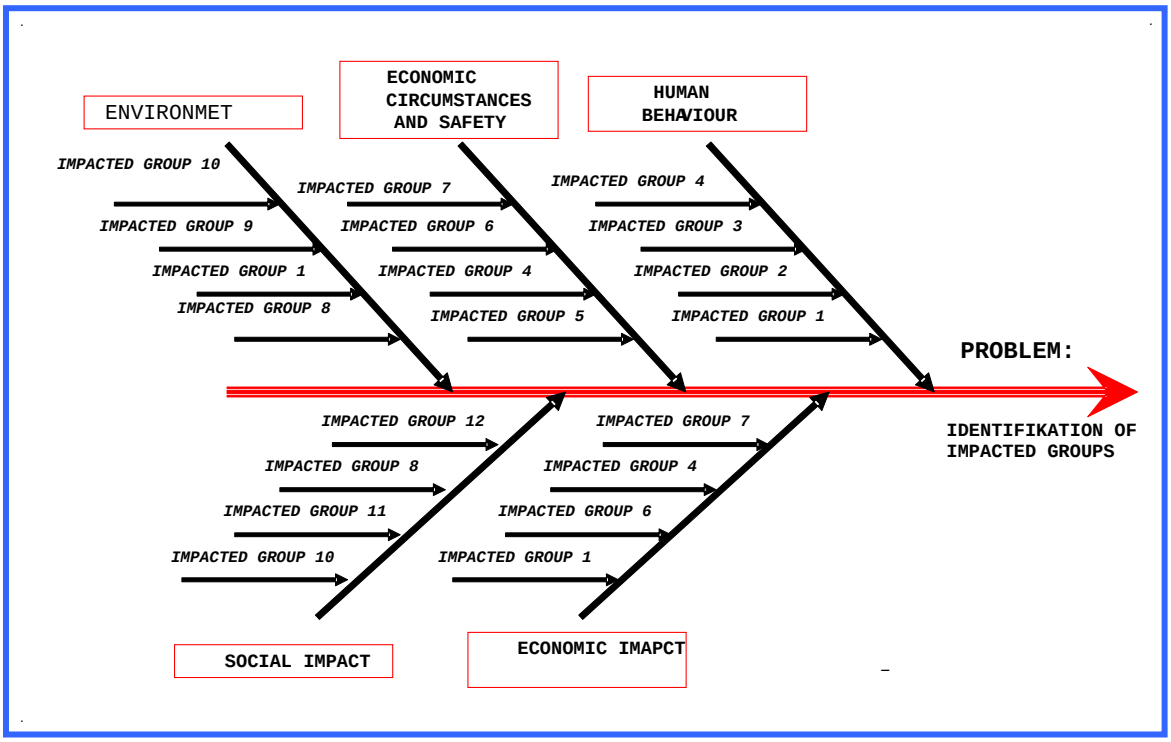
ORGANIZATION: (_____)

RISK SOURCES		AREA OF IMPACT	
		SOCIAL	ECONOMICAL
INDIVIDUAL HUMAN BEHAVIOR	GOING INTO SUSPECTED LAND		
	CONTACT WITH MINES/UXOs		
BEHAVIOR IN THE COMMUNITY			
ECONOMIC CIRCUMSTANCE			
ENVIRONMENT	MINE THREAT		
	NATURAL PHENOMENA		

DATE:	DATE OF REVISION 1:	DATE OF REVISION 2.

DEVELOPED BY:	CONTROLLED BY:	APPROVED BY:

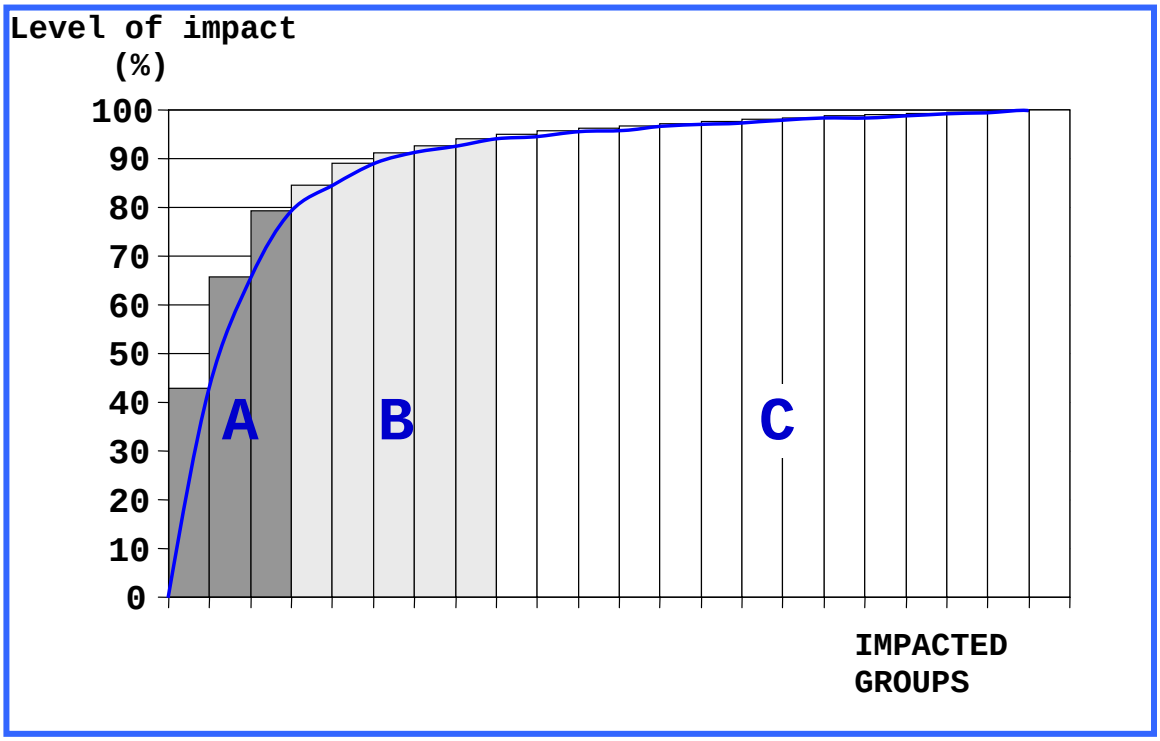
Annex D: Cause and Consequence diagram (Ishikava diagram) for identification of impacted groups



Annex E: Matrix for intensity analysis

A/A	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_n	Σ_{1-n}	%
A_1										
A_2										
A_3										
A_4										
A_5										
A_6										
A_7										
A_n										
								UKUPNO		

Annex F: Pareto diagram



Annex G: Matrix of threat level

MATRIX OF THREAT LEVEL		CONSEQUENCES OF MINE ACCIDENTS / INCIDENTS SO FAR			POTENTIAL CONSEQUENCES OF MINE ACCIDENTS	
		death	wounded	No victims	No victims	wounded
PROBABILITY OF MINEFIELD EXISTENCE IN THE RISK AREA	Almost probable	VV	VV	V	VV	V
	probable				V	S
	Not probable				N	N

Criteria for setting probability scale for minefield existence

1. Almost probable minefield existence: area used to be between confrontation lines, area is out of use, there are records on minefields and visible traces of possible mine threat
2. Probable minefield existence: area used to be between confrontation lines, area is out of use, there are no records on minefield existence, there are certain traces and information indicating possible mine threat

3. It is not probable that minefield exists: area is not used or it is used partially, there are neither minefield records nor signs indicating mine threat

Annex H: Matrix of impacted group

MATRIX OF IMPACTED GROUP		IMPACTED GROUPS)PARETO DIAGRAM		
		A	B	C
RELATIVE SIZE OF IMPACTED GROUP	HIGH	VH	M	L
	MEDIUM	M	M	L
	LOW	L	L	L

ABC scale of impacted group (according to Pareto diagram)

Area A: approximately 10-30 % groups with approximately 60-80% total mine impact

Area B: approximately 20-40% groups with approximately 20-30 % total mine impact

Area C: approximately 50-70 % groups with approximately 5-10 % total mine impact

Scale of relative size of an impacted group

1. Large group: 10 % or more of the total population in the community
2. Medium group: from 5% to 10% out of total population in the community
3. Small group: less than 5% out of total population in the community

Annex I: Matrix for risk level

MATRIX FOR RISK LEVEL		THREAT LEVEL			
		Very high	high	medium	low
LEVEL OF IMPACTED GROUP	Very high	1	2	3	3
	high	2	3	3	4
	medium	4	4	4	5
	low	5	5	6	6

Annex J: Matrix for priority level in humanitarian demining

MATRIX FOR PRIORITY FOR RISK LOCATIONS		THREAT LEVEL			
		VERY HIGH	HIGH	MEDIUM	LOW
LEVEL OF BENEFIT	1.category	1	2	4	7
	2.category	3	5	8	10
	3. category	6	9	11	12

Level of benefit presents existing priority categories for humanitarian demining.

Annex K: Risk Registry for impacted community

REGISRE OF RISK FOR TEH IMPACTED COMMUNITY (name, community

ORGANISATION: (name)

NUMBER OF RISKS	Description of risk			Poss.consequence of a risk event		RISK CONTROL MEASURES TAKEN		LEVEL OF RISK		
	POTENTIAL RISK EVENT	LOCATION OF POTENTIAL EVENT	MOST IMPACTED GROUP	DESCRIPTION OF WORST POSSIBLE CONSEQUENCE	PROBAPILITY FOR THE EVENT	MEASURE	ADEQUACY	RISK LEVEL	DANGER LEVEL	THREAT LEVEL
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

DATE CREATED	DATE REVISED 1.	DATE REVISED 2.

CREATED BY	CONTROLLED BY	APPROVED BY

Annex A: Form for integrated mine action plan for community impacted with mines and UXO

INTEGRATED MINE ACTION PLAN

FOR COMMUNITY IMPACTED BY MINES AND UXO

IMPACTED COMMUNITY, MUNICIPALITY	

DATE OF CREATION		ORGANIATION	

<table>
<tr><td colspan="3">GENERAL IFNORAMTION ON THE COMMUNITY</td><td colspan="2">Size of community in km^2</td><td></td></tr>
<tr><td colspan="3">Population - Present number</td><td></td><td>Population - number before the war</td><td></td></tr>
<tr><td colspan="6">Present structure of population</td></tr>
<tr><td colspan="3">Number of families</td><td rowspan="8"></td><td>0-5</td><td></td></tr>
<tr><td colspan="3">Number of employed</td><td>6-14</td><td></td></tr>
<tr><td rowspan="2">Gender structure in %</td><td>Male</td><td></td><td>15-18</td><td></td></tr>
<tr><td>Female</td><td></td><td>19-30</td><td></td></tr>
<tr><td rowspan="3">Education degree in %</td><td>Elementary school education</td><td></td><td>31-42</td><td></td></tr>
<tr><td>Secondary school education</td><td></td><td>43-54</td><td></td></tr>
<tr><td>University education</td><td></td><td>55</td><td></td></tr>
<tr><td colspan="6">Summary on social and economic situation in the community</td></tr>
<tr><td colspan="6"></td></tr>
<tr><td colspan="3">MINE SITUATION IN THE COMMUNITY</td><td colspan="2">Suspect area in km^2</td><td></td></tr>
<tr><td colspan="3">Mine impact level</td><td>Number of suspect locations</td><td></td></tr>
<tr><td colspan="3">Estimated number of mines</td><td>Number of AP mines / Number of PROM mines</td><td></td></tr>
<tr><td rowspan="2">Incidents / accidents</td><td>Number of incidents</td><td></td><td rowspan="2">Consequence</td><td>Death</td><td></td></tr>
<tr><td>Number of victims</td><td></td><td>Injured</td><td></td></tr>
<tr><td colspan="6">Summary on mine situation in the community</td></tr>
<tr><td colspan="6"></td></tr>
</table>

<table>
<tr><th colspan="6">MOST SIGNIFICANT IMPACTED GROUPS</th></tr>
<tr><td colspan="2">IMPACTED GROUP 1.</td><td colspan="4"></td></tr>
<tr><td colspan="2">Size of the main group</td><td></td><td colspan="2" rowspan="2">Level of mine threat</td><td rowspan="2"></td></tr>
<tr><td colspan="2">Size of the sub-group</td><td></td></tr>
<tr><td rowspan="2">Incidents/ accidents</td><td>Number of incidents</td><td></td><td rowspan="2">Consequence</td><td>Death</td><td></td></tr>
<tr><td>Number of accidents</td><td></td><td>Injured</td><td></td></tr>
<tr><td colspan="6">Summary on the characteristics of the impacted group</td></tr>
<tr><td colspan="6"></td></tr>
</table>

DESCRIPTION OF THE MOST IMPORTANT RISKS TO BE TREATED				
Serial	**Potential risk event**	**Location of potential event**	**Most impacted group**	**Level of risk**

RISK / SUSPECT AREAS								
Grade	**Name of location**	**ID No of general survey**	**Area in m^2**	**Potential benefit**		**Level of threat**	**Risk registry numbers related to location**	**Priority level**
				Intentional use	**Category of use**			

PLAN OF ACTIVITIES
ULTIMATE AIM:
1. specific aim 1.1 immediate aim 1. specific aim

PHASE:							
	TASK	Type of activity	Timeline of conduct	Investor	ID Task	Organisation	Status
Humanitarian demining							
Mine risk education							
Assessment							

MANNER OF INTEGRATING MINE ACTION

RESULTS EXPECTED FROM THE REALISATION OF THE PLAN

AGREEMENT OF THE COMMUNITY

Annexes:

DATE OF ISSUE	REVISION DATE 1.	REVISION DATE 2.

PREPARED BY	CONTROLLED BY	APPROVED

ANNEX 1.

BH MAC STANDING OPERATIONAL PROCEDURES FOR HUMANITARIAN DEMINING (SOP)
(Issued June 1st 2003)

GENERAL

REVISIONS

1. In the context of phrase "area without obvious risk" (abbreviated AWOR), the word "obvious" is to be changed with the word " identified" (abbreviated AWIR). The stated shall be applied in text of I, VI and VII parts of the SOP.

PART I
REVISION - GENERAL

AMMENDMENT

1. Into Remarks: Clause 2.3 – Criteria for Classification of the Surveyed Area within the General Survey Report, Annex C, clauses 1. and 3., clause 9. of the Criteria of Defined Conditions shall be added into text. Remark No 5 shall be added too, which is as follows:

   Areas for which there is a record / records or a reliable witness of mining (clause 1. and 2.) will be suggested for clearance in size which encompasses mines laid, with a safety belt of 5 – 10 metres from all access paths towards mines. If the record cannot be precisely identified on the ground for the creation of real mined area for clearance (safety belt included), a real assessed area will be proposed for technical survey (areas over 5.000m2).

PART VI
TECHNICAL SURVEY

REVISION

1. INTRODUCTION, clause 4. shall be changed as follows:

For areas that were declared without identified risk by the organisation that conducted technical survey and agreement of the inspection bodies, BH MAC would, based on the contents of the quality control activities issue the *Certificate of Technical Survey Quality Control.* The Certificate would be issued to interested parties, meaning that the area has been technically treated, with acceptable level of trust into non-existence of risk. A copy of task documentation would be recorded in database and BH MAC archives.

INSTRUCTIONS FOR WORK, clause 8, fourth line, text in brackets, make correction "at" (clause 20).

2. Clause 14. has been changed as follows:

In order to remove doubt into the possibility of mine existence on a technically surveyed area, which would be declared as area without *identified risk*, BHMAC will plan sampling procedure at the completion of task. Sampling will be conducted by the method of random sampling, where the task will be divided into separate wholes according to method applied on entire task or its parts. Method of work on sampling the area will in principle be the same as the whole task or its parts were treated. Sampling will be conducted according to sampling procedures (part VII, Annex L, clause 4.) by engaging demining organisation teams or other approved teams, under professional supervision of BH MAC inspection bodies.

After the sampling is completed on the treated area, which was treated with manual methods, which additionally confirmed the area, excluded from suspect to risk, demining organisation shall remove the leftovers of vegetation, in order to gain additional trust of the final user. Removal of vegetation will be conducted as cutting or sawing of the vegetation, which is usually removed manually. Though for this removal no demining tools shall be used. Vegetation that is cut shall be left in the area where it is cut.

3. Clause 18. changes as follows:

Technical declaration of AWIR in the Record of Taking Over the Technically Surveyed Area shall be conducted based on criteria given (clause 20), according to which there were no signs of mining during technical survey. For technically declared areas approved by BH MAC inspection bodies, BH MAC shall issue *Certificate of Quality Control* of the Technically Surveyed Area (which is in accordance to Chapter V of BH Standard)

4. Clause 20. marks the changed Review of activities for and during the technical survey, with criteria for area declaration as follows:

20. R E V I E W

OF ACTIVITIES FLOW FOR AND DURING THE TECHNICAL SURVEY WITH CRITERIA FOR DECLARING AREAS

CHARACTERISTICS OF THE AREA THAT IS CLASSIFIED FOR TECHINAL SURVEY DURING GENERAL SURVEY	***METHOD SUGGESTED BY GENERAL SURVEY***	***CONTENTS OF WORK METHODS***	***CRITERIA FOR TECHNICAL DECLARATION OF AREA TREATED BY TECHICAL SURVEY***
Flat ground, with or without a slope and vegetation that enables the use of machine. Area for the use of machine should not be intersected with channels, swampy, rocky, with objects on it etc	***Mechanical Preparation***	Treating the entire area proposed for mechanical preparation into the depth of minimum 10cm, at pieces of 5cm in diameter. After a machine treats the area, parts of the area without explosions should be intersected with working lanes from two directions, 25m distant from each other, in order to locate traces of mining.	***-Area Without Identified Risk*, as a whole or at parts where there were no explosions or surface thrown mines and their parts.** ***-For clearance*, area where there were explosions, surface thrown mines or their parts, with moving borders minimum 5 metres backwards.**
Non flat ground with big slope and vegetation that enables the use of EDDs	***Manual methods and EDDs***	Opening working lanes in the area and clearance with manual methods, from minimum two sides, at a maximum distance of 10m, while the boxes made would be treated by two EDD teams until the location of first mines.	***-Area without identified risk*, as a whole of a part towards the mines located from possible sides of locating.*** ***-For clearance*, the area from which the mines were located from the sides, moved to the minimum of 5 metres backwards.**
Uneven area with a big slope and vegetation that does not allow the use of either machines or EDDs, swampy, rocky and channel intersected area, containing objects etc.	***Manual methods***	Opening working lanes in the area and clearance with manual methods, from minimum two sides, at a maximum distance of 10m, until first traces of mining is located *REMARK: This method is used on a suspect area in specific conditions, where the use of other two methods is not allowed.*	***-Area without identified risk*, as a whole or its part towards the mines located from possible sides of locating.*** ***-For Clearance*, the area from which the mines were located from the sides, moved to the minimum of 5 metres backwards.**

PART VII
TECHNICAL SUPERVISION OVER DEMINING ACTIVITIES
REVISIONS AND AMMENDMENTS

1. In the entire text, instead of Technical Opinion for Declared Area Without Obvious Risk, this phrase it to be changed into *Certificate on* Quality Control of the Technical Survey.

2. Text under clause 1. t), is changed as follows:

In order to remove doubt in the possibility of existence of mines on a technically surveyed area, that is to be declared as the area without identified risk (AWIR), a planned sampling is to be conducted. Sampling according to random sampling method will be conducted by dividing task into separate wholes according to method applied, either on entire task or its parts. The sampling method will in principle be the same as the one used on the whole or the part of the area treated. The sampling will be conducted according to sampling procedures (Annex L, Clause 4.) engaging demining organisation teams or other approved teams.
After the sampling is completed on the treated area, which was treated with manual methods, which additionally confirmed the area, excluded from suspect to risk, demining organisation shall remove the leftovers of vegetation (cutting or sewing), in order to gain additional trust of the final user. Leftovers of cut vegetation will be left in areas that were not treated (boxes).

3. Text under clause 1. u.), changes as follows:

If during the process of technical survey of a suspect area mechanical preparation is conducted on entire area or its parts, the technical supervision will monitor if the machine disturbs the ground to required quality, in accordance to BH Standard requirements, i.e. to the minimum depth of 10cm, breaking soil to pieces not bigger than 5cm in diameter. Apart from ground disturbance, technical supervision will monitor if the overlap has been done, were there explosions and on what part (the sketch) and if there were surface thrown mines or their pieces. This control is conducted in working lanes of the boxes (maximum size 25x25), as well as visually from the working lanes demining organisation opened in the area, which should be declared as area without identified risk according to knowledge and confirmed by sampling. If it is identified that within the working lanes there are parts of the area where machine has not disturbed the ground to required quality, it will be asked to repeat the work from the flank side in relation to former direction of the machine work.

4. Revision of Annexes J and K

Annex J

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
?????? ?? ????? ? ? ? ???? ? ?????? ? ??????????
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

Pursuant to Article 11. clause a) of the Demining Law in Bosnia and Herzegovina (''Official Gazettes'' No 5/02), Bosnia and Herzegovina Mine Action Centre and the organisation that conducted work will create,

R E C O R D

On taking over the technically surveyed area, consisting of:

I - Declaration on Technical Survey

II - Official Declarations on Taking over the Technically Surveyed Area

III - Annexes

I - DEMINING ORGANISATION DECLARATION ON TECHNICAL SURVEY	
1. Demining Organisation	
2. Declaration made by: (operational officer or programme manager)	
3. ID task No	
4. Location (village-settlement, municipality)	
5. Map (name-number of plan or map, scale and date of issuance)	
6. Grid system	☐ UTM ☐ Gauss Kruger
7. Reference Point	Y= X=
8. Datum Point	Y= X=
9. Start / Completion Date	
10. Methods of works used	☐ Manually ☐ Mechanical preparation ☐ EDD teams
11. M2 of technically surveyed area with methods applied	Manually……..m^2 Mechanical preparation……..m^2 EDD teams……m^2
12. Depth of technically surveyed area	……..mm
13. Is the technical area without metal after survey	☐ Yes ☐ No
14. Methods of Internal Quality Control	
15. Internal quality control conducted by: The size of internal sampling in m2	

16. Monitoring conducted and by whom	☐ Yes …….. ☐ No
17. Types and quantity of mines and UXO found or activated	

II- OFFICIAL DECLARATIONSS ON TAKING OVER THE TECHNICALLY SURVEYED AREA

HANDOVER BY DEMINING ORGANISATION	**TAKEOVER BY BH MINE ACTION CENTRE**
I hereby declare that technical survey of the area suspect of risk, described in this document, has been conducted in accordance to Standard for Mine Clearance and EOD operations to the required depth, while the tasked area is declared as: ✝ Without identified risk _____ m^2, ✝ Mined_____ m^2 ✝ Cleared _____ m^2 Based on the method/s applied, area without identified risk is free of mines and is handed over to BH MAC as such The area declared as mined, according to knowledge defined, contains mines and needs to be cleared* The mine threat risk has been removed from the stated cleared area, thus it does not exist on the entire stated task. * Declaration of the area is shown on the sketch with the grid references of turning points, with accordance of BH MAC inspection bodies.	I ……, BH MAC QC Inspector, to the best of my knowledge and through technical supervision by QC inspectors …….., RO…….., take over the stated declared area on behalf of BH MAC, since quality control and sampling proved that technical survey and declaration of area has been conducted in compliance with BH Standard for Mine Clearance and EOD Operations. Regarding suspect area without identified risk (and cleared *) in technical survey, Certificate of conducted Quality Control can be issued. Area declared as mined contains mines based on defined mining. A task is to be created and the area cleared according to procedures. * …….. (Inspector's signature)
18. Name and position of the responsible person from demining organisation	19. Name of BH MAC RO Chief
20. Signature and stamp	21. Signature and stamp
22. No of declaration:…… Handover date:……	23. No of record:…… Takeover date:……..

* State if defined and declared area is mined. State if mine threat is totally removed from the technically surveyed area by methods applied (a row of mines or individual mines that give no possibility of forming a mined area for further clearance).

III- ANNEXES:

A) Demining Organisation Annexes:

Annexes a), b), c), d) and f) follow the same example as with Annex H.

e)-Graphic review of the task – sketch in the scale on geodetic layers or the largest scale of topographic map with grid references of turning points and marked defined areas: without identified risk (AWIR) and reduced mined. Regarding mines and UXO found, state grid references of locations where mines and UXO were found. The sketch is to be done according to explanation and requirements provided by Annex H. The methods of work are to be marked on the sketch for particular parts of the tasks, while for working with EDD teams, mark boxes and EDD teams that conducted search of particular boxes.
g)-Description of task flow (problems in the conduct of plan, faults stated by internal quality control and monitoring, if engaged, as well as by MAC inspection; state the way faults were resolved, type and number of found / located mines, what method defined the border of AWIR and mined area if clearance is not conducted immediately, photographs of found / located mines etc)
h)- Record on familiarising the authority representative / final user about the marking of the AWIR borders and border of the mined area.

B) Inspection Bodies annexes:
Annexes a), c) and d) following the same example as in annex H.
Annex b) Final record on technical supervision (positive in sense of quality of defining declared areas through technical survey in order to issue *Certificate of Conducted Quality Control* for AWIR, as well as for taking further actions for clearance of defined reduced mined areas.).

EXPLANATION FOR FILLING IN THE *RECORD* ON TAKING OVER THE SURVEYED AREA WITH THE DECLARATION, OFFICIAL DECLARATIONS AND ANNEXES

GENERAL**.** *Record on* takeover of a technically surveyed area with Declaration, Official Declarations and annexes, is actually a set of documents presenting final *Report* on technical survey task. The original of the Record, after the verification process and issuing *Certificate on Conducted Quality Control in Technical Survey* for excluded area without identified risk and reduced area defined as mined, is being archived in the database and BH MAC archives, along with the Blue Folder of the task. For reduced area defined as mined, project documentation is created and a task as such is given for realisation.

I – DECLARATION ON TECHICAL SURVEY BY DEMINING ORGANISATION

This part is to be filled in by demining organisation, as explained in annex H, except for following clauses:

11. Technically surveyed area in m2 must be stated (entire treated area including method/s applied)
12. Depth of technically surveyed area with the method applied.
13. In the "X" box mark if all the metal removed to the treated depth *of immediately treated* technically surveyed area, with method applied.

II - OFFICIAL DECLARATIONS ON TAKING OVER THE TECHNICALLY SURVEYED AREA

This form is divided into left and right side – the left side is filled and recorded by demining organisation, while the right side is filled and recorded by BH MAC. It is filled according to request and explanation in Annex H.

Annex K

CENTAR ZA UKLANJANJE MINA U BOSNI I HERCEGOVINI
?????? ?? ????? ? ? ? ????? ? ?????? ??????????
BOSNIA AND HERZEGOVINA MINE ACTION CENTRE

No…….

Date……200_.

Pursuant to Article 9, clause g) of Bosnia and Herzegovina Demining Law, (''Official Gazettes'' BH No. 5/02) and clause 29. of Chapter V of BH MAC Standard, BH MAC is issuing

THE CERTIFICATE

ON CONDUCTED QUALITY CONTROL OF THE TECHNICAL SURVEY

The certificate relates to the location stated bellow and attached documentation:

Name of Location		***MAC ID task No***	
Municipality		***Grid references of the reference point***	Y X
Task area (m²)		***Demining organisation – conductor of works***	

Bosnia and Herzegovina Mine Action Centre confirms that quality control of the area without identified risk in technical survey conducted according to contents written bellow

Serial	**Contents of activities and quality control**
1.	Creating and issuing a working task conducted by BH MAC, after survey bodies stated doubt in risk through general survey
2.	Demining organisation had complied to BH Standard requirements and conducted work according to Standing Operational Procedures approved (SOP)
3.	Internal quality control measures within demining organisation were conducted according to procedures from approved SOP.
4.	During the conduct of the task, the BH MAC quality control inspection bodies conducted supervision. Stated faults were corrected during work as requested by inspection.
5.	During technical supervision of quality control by sampling, which is conducted according to ISO 2859-0, i.e. by applying random sampling method. During sampling no mines or UXO were found to the standard required depth, which is recorded in the final record about technical supervision of the technical survey task completed.
6.	A Record is made about the takeover of the technically surveyed area, with the declaration on technical survey, official declarations and annexes, which indicate that area excluded by technical survey (marked on sketch and defined by grid references) provides acceptable level of trust in non-existence of risk

Annex: Task Sketch

D I R E C T O R

5. In Annex L clause **1.5. Levels of Technical Supervision (inspections),** after clause d) add remark text as follows:

REMARK: Apart from proved efficiency of the demining organisation in application of technical supervision level, take into consideration the size of engaged capacities and progress on site.

6. In Annex L clause **2. SAMPLING PLAN**, a new line is to be added at the end of the text as follows:

Regardless of calculated size of a sample in clearance, maximum sampling area can be 5% of the cleared area.

In technical survey, sampling plan is to be done for area where there were no indications of mining during the conduct of the task, using same patterns as for clearance. Difference in making sampling plans is that areas for sampling present areas treated with a method (as a whole or a part); they are put into calculation for getting the size of the sample, instead of entire area for clearance. Regardless of calculated size for sampling (of different methods) maximum sampling size can be 5% AWIR on area treated with mechanical preparation and EDD teams, while with manual methods, the sampling size will always be 5%.

7. In Annex L, clause **3. SAMPLING METHODS**, a new line is to be added with the text as follows:

In technical survey on **AWIR**, sampling is to be conducted at the completion of the task, on the parts of methods used, using in principle the same method the area was treated with.

7. In Annex L, clause **3.1. Criteria for takeover of sampled area**, a new line is to be added with the text as follows:

Critical faults in quality of work are also agreed for the task of technical survey, depending on method/s applied. Encountering a mine in AWOR presents a new knowledge about the border of a mined area, thus not presenting a critical fault for which during manual method the area would be returned for correction, if mine were found in a non-treated area. Regarding treated areas in technical survey, using mechanical preparation of the ground, EDD teams and manual methods in treated lanes, encountering mine or UXO will present a critical fault for which the area will be assessed to be done again and state the actual border of mined area.

8. In Annex L, clause 3.1.1.Other unacceptable critical faults, addition to the text will be as follows:

- Every metal detector signal in the soil that does not allow the use of prodder, while digging method finds a metal in the depth of 10cm (or deeper, depending on the contract)

9. In Annex L, under clause **3.2. Correction and re-check (sampling)**, a new line at the end of the text is added, as follows:

In repetition of the AWIR area, which did not pass the check in technical survey, the same procedure is to be applied as for repetition of the cleared area. Prior to issuing Resolution on repetition of an area (given in Annex G, adapted to technical survey), QC inspector shall assess and define the area for repetition, in order to define actual borders of the mined area. After repetition is conducted, another sampling of entire (new) AWIR will be conducted.

10. In Annex L, clause **4. SAMPLING P ROCEDURE,** at the end of the text under clause b) add as follows:

Technically surveyed AWIR are to be sampled according to wholes of working methods.

11. In Annex L, under clause **4.1. Manual Methods,** addition is made at the end of text under clause k) as follows:

While sampling technically surveyed AWIRs with manual methods, by sampling plan use the method of *random making a working lane* in a sequence of separate patterns of 1m2. Since the working lane is conducted in a sequence of separate patterns, after stated procedure from a)-e), do not apply step f) but continue the procedure from g). During conducting the working lane, take into consideration that randomly chosen entrance is always made from the safe i.e. cleared working lane. If encountering cleared working lane, the pattern that enters that lane is not to be controlled, but by direction transferred to area that has not been treated.

12. In Annex L, under clause **4.3. The Use of Machines,** the last part erase completely.

REMARK: Based on Decision of the Demining Commission in Bosnia and Herzegovina, No 01/1-1-25/04 dated March 18th 2004, this Annex comes into effect from April 1st 2004.