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Land Release

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Foreword

International standards for humanitarian demining programmes were first proposed by working groups at an international technical conference in Denmark in July 1996. Criteria were prescribed for all aspects of demining, standards were recommended and a new universal definition of “clearance” was agreed. In late 1996, the principles proposed in Denmark were developed by a UN-led working group and the International Standards for Humanitarian Mine Clearance Operations were developed. A first edition was issued by the UN Mine Action Service (UNMAS) in March 1997.

The scope of these original standards has since been expanded to include the other components of mine action and to reflect changes to operational procedures, practices and norms. The standards were re-developed and renamed as International Mine Action Standards (IMAS) with the first edition produced in October 2001.

The United Nations has a general responsibility for enabling and encouraging the effective management of mine action programmes, including the development and maintenance of standards. UNMAS, therefore, is the office within the United Nations responsible for the development and maintenance of IMAS. IMAS are produced with the assistance of the Geneva International Centre for Humanitarian Demining.

The work of preparing, reviewing and revising IMAS is conducted by technical committees, with the support of international, governmental and non-governmental organisations. The latest version of each standard, together with information on the work of the technical committees, can be found at http://www.mineactionstandards.org/. IMAS are reviewed at least every three years to reflect developing mine action norms and practices and to incorporate changes to international regulations and requirements.

Introduction

Resources for responding to Explosive Ordnance (EO) contamination problems are costly, limited and precious. It is appropriate to expect that authorities, agencies, operators and other parties involved in, or associated with, EO programmes do their utmost to ensure that assets are deployed to achieve as much as possible, for the minimum cost in the shortest time. Achieving such efficiency represents a significant challenge when dealing with the complex world of EO contamination. The concept and practice of land release is the primary means of achieving such aims.

Application of the land release process consists of establishing and improving the definition of where EO are to be found (and where they are not) through the application of all reasonable effort, until it can be shown with justifiable confidence that EO are either not present in an area or, if they were found to be present, have all been destroyed or removed from that area.

The nature of the reasonable effort required to implement the process varies depending upon the specific local circumstances and conditions, the stage reached in the land release process, and the implications of new information discovered as the process progresses.

Practical effort is normally applied through non-technical survey (which includes all appropriate non-technical methods), technical survey and clearance. Although it is typical for the process to advance from non-technical survey, through technical survey to clearance, there is no requirement for it to follow any one sequence. Planners, operators and decision-makers should keep the situation under review at all times, identifying all relevant sources of information, techniques and methods, making use of them whenever it is appropriate, effective and efficient to do so.

Surrounding the entire land release process should be an effective information management system that ensures that data is collected accurately and consistently, is reported in compliance with formats and schedules, is entered into databases correctly, and is analysed to provide reliable support to decision makers, quality monitors and other interested parties.
The land release process requires decisions to be taken in real world situations; ones that frequently do not offer simple, clearly defined circumstances. The nature of the hazard and the way in which it is distributed will determine to a great extent how easily and efficiently land release processes can, or cannot, be applied. At the same time the real world offers many sources of factual evidence that can and should be used to plan and prioritise, to take decisions and to check the validity of such decisions. Authorities and agencies should be active in identifying, accessing and using all relevant sources of data, information and analysis in support of the land release process.

The most common source of truly ‘hard’ information is that found during technical operations - the discovery of actual hazard items during technical survey or clearance work. The value of such data cannot be overstated and organisations conducting technical survey and clearance should treat it with the greatest care and attention. Not only should details of ‘what was found where’ be collected, recorded and reported, but authorities and agencies should ensure that the information is analysed to help identify trends, patterns, or other characteristics that can help decision makers take valid, efficient decisions, and increase confidence in land release processes. Where data indicates shortcomings in the land release process then it should be used to support continual improvement of procedures, practice and policies.

IMAS 08.10 Non-technical survey provides guidance on the principles of non-technical survey, the conduct of a non-technical survey, including how land can be cancelled by non-technical survey;

IMAS 08.20 Technical survey provides guidance on the principles of technical survey, the conduct of technical survey, including how land can be reduced through technical survey;

IMAS 09.10 Clearance requirements provide the requirements for the conduct of clearance and the release through clearance;

IMAS 09.11 Battle area clearance provides the requirements for the conduct of battle area clearance and the release of land through battle area clearance.

Land Release

1. Scope

This standard provides guidance and sets out minimum requirements to enable the development of a national land release policy and outlines broad responsibilities and obligations of the National Mine Action Authorities, demining organisations and agencies involved.

2. Normative references

A list of normative references is given in Annex A. Normative references are important documents to which reference is made in this standard and which form part of the provisions of this standard.

3. Terms, definitions and abbreviations

A complete glossary of all the terms and definitions used in the IMAS series of standards is given in IMAS 04.10.

In the IMAS series of standards, the words “shall”, “should” and “may” are used to indicate the intended degree of compliance.

a) Shall is used to indicate requirements, methods or specifications that are to be applied in order to conform to the standard.

b) Should is used to indicate the preferred requirements, methods or specifications.

c) May is used to indicate a possible method or course of action.

The term “**Land Release**” describes the process of applying all reasonable effort to identify, define, and remove all presence and suspicion of EO through non-technical survey, technical survey and/or clearance. The criteria for “all reasonable effort” shall be defined by the NMAA.

The term **'National Mine Action Authority'** (NMAA) refers to the government entity, often an interministerial committee, in an EO-affected country charged with the responsibility for broad strategic, policy and regulatory decisions related to mine action.

Note: Note: In the absence of an NMAA, it may be necessary and appropriate for the UN, or some other body, to assume some or all of the responsibilities of an NMAA.

The term “**Suspected Hazardous Area**” refers to an area where there is reasonable suspicion of EO contamination on the basis of indirect evidence of the presence of EO.

The term “**Confirmed Hazardous Area**” refers to an area where the presence of EO contamination has been confirmed on the basis of direct evidence of the presence of EO.

The term “**Non-technical Survey**” refers to the collection and analysis of data, without the use of technical interventions, about the presence, type, distribution and surrounding environment of EO contamination, in order to define better where EO contamination is present, and where it is not, and to support land release prioritisation and decision-making processes through the provision of evidence.

The term “**Technical Survey**” refers to the collection and analysis of data, using appropriate technical interventions, about the presence, type, distribution and surrounding environment of

EO contamination, in order to define better where EO contamination is present, and where it is not, and to support land release prioritisation and decision making processes through the provision of evidence.

The term "**Clearance**" in the context of mine action, refers to tasks or actions to ensure the removal and/or the destruction of all **EO** hazards from a specified area to a specified depth or other agreed parameters as stipulated by the NMAA/Tasking Authority.

The term **"Explosive Ordnance"** is interpreted as encompassing **mine action's** response to the following munitions:

- Mines
- Cluster Munitions
- Unexploded Ordnance
- Abandoned Ordnance
- Booby traps
- Other devices (as defined by CCW APII)
- Improvised Explosive Devices*

Note: **Improvised Explosive Devices (IEDs)** meeting the definition of **mines**, **booby-traps** or other **devices** fall under the scope of mine action, when their **clearance** is undertaken for humanitarian purposes and in areas where active hostilities have ceased.

The term "**All Reasonable Effort**" describes what is considered a minimum acceptable level of effort to identify and document contaminated areas or to remove the presence or suspicion of EO. "All reasonable effort" has been applied when the commitment of additional resources is considered to be unreasonable in relation to the results expected.

Cancelled land (m^2)
A defined area concluded not to contain evidence of EO contamination following the non-technical survey of a SHA/CHA.

Reduced Land (m^2)
A defined area concluded not to contain evidence of EO contamination following the technical survey of a SHA/CHA.

Cleared land (m^2)
A defined area cleared through the removal and/or destruction of all specified EO hazards to a specified depth.

4. Initial information screening

Removal of redundant, incorrect or duplicate hazard area entries in databases through screening or analysis of existing data is an important activity, although it does not form part of the land release process. Where it is reasonable to do so these entries and areas should be combined, amended as appropriate. As well as carrying out a review of old hazardous areas within databases, resurvey of areas should be undertaken when necessary. Further guidance is provided in IMAS 05.10.

5. The land release process

5.1. General

Land release is an evidence-based decision-making process that helps determine with confidence which land needs further action and which does not. It involves the identification of hazardous areas, the cancellation of land through non-technical survey, the reduction of land through technical survey and the clearance of land with actual EO contamination.

5.2. Principles

The following principles should apply when developing a national land release process.

a) Any new information relating to contamination should be assessed on the basis of evidence gathered through non-technical and/or technical survey and the analysis of any existing data relevant to the associated site/area. New information that is not found to offer evidence of EO contamination in an area, and that does not lead to the creation of either SHAs or CHAs, should not result in the recording of cancellation of land.

b) Hazardous areas should be divided into suspected hazardous areas (SHA) and confirmed hazardous areas (CHA) based on the availability and reliability of information and whether evidence is indirect or direct for each hazard. Areas presenting only indirect evidence of the presence of EO should be classified as Suspected Hazardous Areas (SHA). Areas presenting direct evidence of the presence of EO should be classified as Confirmed Hazardous Areas (CHA).

c) Inaccessible areas, or areas with limited information available, should not by default be recorded as SHA. SHAs should only be recorded in a database when there is sufficient evidence to justify doing so. Other processes for dealing with areas that are inaccessible, or present limited information, may be developed by the NMAA.

d) While fear of the suspected presence of EO contamination may lead people to avoid a particular area, fear on its own is not legitimate evidence of contamination. Fear needs to be substantiated with other evidence before an area is defined as an SHA or CHA.

e) A graduated response should be undertaken when addressing a SHA/CHA. This should normally involve the prioritisation of survey activities over clearance. There may be occasions when it is appropriate to progress directly to clearance, but such a response should not be the default position. The process will generally follow sequentially through some or all of the activities of non-technical survey, technical survey, and clearance until the point at which the suspicion and/or presence of EO contamination is removed. The specific response need not follow any one fixed sequence, but should be determined on the basis of local circumstances and conditions.

f) Effective application of the land release process will mean that the area remaining for clearance will be better defined, thereby resulting in more efficient use of clearance assets. Clearance itself is an information gathering process which leads to the contaminated area being fully defined and allowing efficient decision making about when to stop clearance. IMAS 09.10 specifies the requirements for clearance.

g) Land should only be cancelled, reduced and/or handed over following clearance when it is deemed safe to use after a credible and well-documented evidence-based process has been fully implemented.

h) Local participation, including both men and women, should be fully incorporated into the main stages of the land release process in order to ensure that land will be used following handover.

i) A SHA/CHA assessed as having a low impact on a community should not be cancelled or otherwise released based solely on its lack of impact. It may however be given a low priority.

j) Land may be released from the suspicion of mine or submunition contamination while there may still be a suspicion of other ERW. Additional measures may be required to establish confidently that land is free from all hazardous contamination.

5.3. Indirect and direct evidence

NMAAs should agree criteria for the definition of SHAs and CHAs reflecting specific local circumstances and in the context of analysis of the local EO problem. Examples of indirect and direct evidence may include, but are not limited to:

a) Indirect evidence (SHA)

- Potentially productive land not in use
- Verbal reports from local population/former combatants
- EO records, where the reliability of such records remains open to doubt or has not been assessed
- Analysis of other known contamination areas, tactics and historical sources
- Former combatant zones
- Evidence from previous surveys, not supported by direct evidence of the presence of contamination
- EO accidents or incidents where the location of the event cannot be accurately determined

b) Direct evidence (CHA)

- EO records, where the reliability of such records has been confirmed during previous operations
- Visual observation of EO parts, fragmentation or craters
- Detonations during fires or by animals
- Mine signs, fencing, ancillary equipment (boxes, canisters) etc. associated with contamination
- EO accidents or incidents where the location of the event can be accurately determined

5.4. Associating hazard types with areas

Wherever possible hazard areas (SHA/CHA) should be associated with specified hazard types, such as; mines, cluster munitions, IEDs, booby traps, ERW or a combination of hazard types[1], to ensure that reporting reflects the nature of the contamination and to ensure that prioritisation decisions reflect the risks presented to affected people. In the event that there is sufficient evidence to justify the creation of an SHA, but there is insufficient evidence to determine the associated contamination type, then the hazard type should be recorded as unknown.

5.5. Defining hazard area boundaries

CHA boundaries should be associated with areas where there is direct evidence of the presence of EO or where reasonable extrapolation from identified contamination areas, in light of analysis of contamination characteristics, justifies doing so. Adjacent or surrounding areas that present only indirect evidence of the presence of EO should continue to be defined as SHAs. In all cases boundaries should be defined on the basis of evidence and analysis in order to avoid including excessive areas.

6. Information gathering methodologies

All relevant information-gathering methodologies should be used during the land release decision-making process. The principles of information gathering by non-technical survey are described in IMAS 08.10. The principles of information gathering by technical survey are described in IMAS 08.20. IMAS 05.10 provides further details about the principles and processes of information collation and analysis. IMAS 09.10 provides details of clearance requirements.

[1] This list is not exhaustive, other characterisations or categories/factors exist in IMSMA and may be recorded.

The Land Release process relies upon valid and reliable information to support decision making. Information will not be reliable and useful if the data upon which it is based does not itself meet quality requirements. All information gathering methodologies should include clear guidance on quality requirements for the collection, recording and reporting of data and information.

7. Land release criteria

The criteria to be met before releasing land, will vary depending on local circumstances, but the required level of confidence that the land is free from EO contamination remains the same, whether cancelled, reduced or cleared. The participation and agreement of stakeholders is key to the development of accepted criteria. Stakeholders include the NMAA, demining organisations, local stakeholders, land owners and land users.

In general terms land release criteria will have been met when it can be shown that either:

a) In areas where no evidence was found, the efforts applied could reasonably have been expected to find evidence of contamination had it in fact been present; and/or

b) In areas where evidence of contamination was found, the efforts applied could reasonably have been expected to find and remove all such contamination (within specified limits).

IMAS 08.10 provides guidance on developing criteria for cancellation through non-technical survey. IMAS 08.20 provides guidance for developing criteria for reduction through technical survey. IMAS 09.10 provides details of clearance requirements.

8. Confidence in cancelled, reduced and cleared land

8.1. General

Before land can be cancelled, reduced or accepted as cleared, it should be established, with a sufficiently high level of confidence, that there is no longer any evidence that the area contains EO contamination. This confidence can only be gained after all reasonable efforts have been made to investigate whether EO contamination is present and, when contamination is found to be present, to remove it.

8.2. All reasonable effort

The term “all reasonable effort” is widely used in many industries and legal systems. It refers to the level of effort required to be expended to achieve a desired level of confidence in the output of a system.

Almost all of the effort associated with the identification of hazardous land and its subsequent cancellation, reduction and clearance processes relates to the collection, processing and analysis of information in order to support decisions about where EO is to be found (and where it is not) and where further efforts should be applied.

“All reasonable effort” in mine action represents the effort that it is reasonable to expect should be applied in order to achieve the desired level of confidence that cancelled, reduced and cleared land is free of EO contamination within specified limits. Effort is ‘reasonable’ when it can be shown, on the basis of reason (or logic), that the efforts applied could be expected to have discovered evidence of contamination had it been present, and/or could be expected to have found and destroyed/removed all contamination where it was present.

“All reasonable effort” for the cancellation, reduction or release following clearance of previously suspected land is reached at a point where sufficient, reliable information has been obtained to conclude, with confidence, that there is no evidence of EO contamination. A range of information analysis, survey and clearance activities may be required to reach such a point. In relation to the achievement of confidence in mine action activities, the point at which it is unreasonable to

expect more effort to be expended to achieve the desired result should be determined by the NMAA.

"All reasonable effort" may include, but not be limited to:

- Identifying and accessing all relevant sources of information, including women, girls, boys and men, as well as historical and analytical material
- Establishing and maintaining appropriate and effective information management systems
- Establishing and maintaining appropriate and effective quality management systems
- Carrying out appropriate practical activities, using competent resources and appropriate procedures in order to define, analyse and respond to evidence of contamination
- Monitoring the performance of the land release process and improving it in light of the results of monitoring
- Monitoring the quality of cancelled, reduced and cleared land and taking action to improve the process in light of the results of such monitoring
- Establishing and maintaining appropriate and effective communication systems to ensure that stakeholders understand, agree with and accept the land release process

The following should be defined:

a) Reasonable levels of effort required to investigate, collect, report and analyse evidence of EO contamination;

b) Objective criteria for assessing and quantifying the individual survey value of all types of non-technical survey information; and

c) Criteria for the amount and reliability of information required to make survey conclusions.

8.3. Quality management

Quality management in land release includes the application of Quality Assurance (QA) and Quality Control (QC).

QA involves the accreditation (IMAS 07.30) and monitoring (IMAS 07.40) of survey and clearance organisations before and during the land release process. QA should confirm that survey and clearance organisations consist of competent personnel, employing appropriate equipment, applying approved and effective procedures, in compliance with agreed policies, and with effective internal and external systems to identify and correct shortcomings in the land release process or any of its products.

QC consists of checks and inspections to confirm that products of the land release process satisfy specified requirements. Products may include, but not be limited to, land, information and reports. Any checks of land (whether cancelled, reduced or cleared) and reports should be designed, defined and conducted so that they provide meaningful evidence in an efficient way in support of the maintenance of confidence in the quality of cancelled, reduced and cleared land. Formal post-clearance inspections may not always be necessary or justified, but longer term monitoring of cancelled, reduced and cleared land, to maintain confidence in its quality, should be a feature of the overall land release process.

Any land release quality management system should include the requirement to continually improve the system through the analysis of data relating to the performance of the system and the quality of cancelled, reduced and cleared land.

The NMAA should specify requirements for survey and clearance organizations in a national standard or other policy document.

9. Documentation

9.1. General

Information management is a key part of the land release process. Proper management procedures, including adequate decision-making mechanisms, recording, training, monitoring and adjustment, are essential requirements of the process. Documentation provides the evidence that such procedures and systems have been properly implemented.

Quality documentation is required:

a) as evidence to form the basis for decisions to create SHAs and CHAs and to cancel, reduce and handover land;

b) as the basis for, and evidence of, internal and external quality control;

c) if hazards subsequently appear on cancelled, reduced or cleared land, to form the basis for any investigation into the decision to cancel, reduce or otherwise release the SHA or CHA, and to identify appropriate actions to correct problems or prevent their reoccurrence; and

d) as essential evidence where liability is in question.

9.2. Minimum data/information collection requirements

While the impacts of EO contamination upon a population present a wide range of social and economic features, and are reflected in important decisions about prioritisation, the physical nature of EO contamination is essentially a geographical one. Impacts are placed in a geographical context and land release efforts include the geographical targeting of resources and activities to achieve the aim of releasing land for productive use. As such it is important that geographical aspects of the problem, and responses to it, are recorded accurately and consistently.

In addition to recording the boundaries of SHAs and CHAs, organisations should record:

a) What was found where and when

b) What was done where and when

When EO are discovered organisations should record the type of device (as specifically as possible), the depth of the device, the location of the device (in geographical terms and in relation to other associated devices), and the condition of the device.

Significant activities, such as clearance, technical survey and non-technical survey should be recorded in relation to the areas/locations where they took place. The performance of survey and clearance assets against different hazard types should be recorded and analysed.

Geographical data/information should be collected with sufficient accuracy, detail and frequency to satisfy requirements to perform meaningful analysis in support of the land release process and to satisfy the requirements of report recipients. Data collection and information management systems should be developed such that it is possible to disaggregate data by activity (Non-technical Survey, Technical Survey and Clearance) and by type of contamination. Additional guidance is provided in IMAS 05.10.

A standardized land release symbology representing priority land and activity attribute values is provided in Annex C. Technical Note 07.11/01-2016 provides further guidance on how to implement the symbols in Geographic Information System (GIS) products.

NMAAs should define requirements for positional accuracy of different data.

9.3. Reporting

Data and information about EO contamination, defined areas, operational activity, asset performance and decisions taken during land release processes should be made available to all appropriate recipients, in such a way, and in such formats, that they meet the reasonable requirements of those recipients.

Higher level reporting, such as in relation to international treaty compliance, or to other recognised authorities, should be done in compliance with any procedures, formats and schedules promulgated by those authorities.

National level reporting, such as to NMAAs, information management systems, operational managers and other users of information, should be done such that data and information is managed for quality, consistency and compliance with the requirements of report recipients. Formats, schedules and other requirements for reporting at the national level should be defined in NMAS.

Reporting systems should include the capability to disaggregate data by activity (Non-technical Survey, Technical Survey and Clearance) and by type of contamination.

10. Developing national policy and standards

10.1. General

National policy and standards on land release may be articulated through specific legislation or policy documents issued by the relevant national authority. National policy and standards on land release, particularly in relation to the criteria for cancelling and reducing land, should be reached through consultation with all stakeholders.

10.2. Developing national policy on land release

A policy defines the purpose and goals of an organisation, and it articulates the rules, standards and principles of action which govern the way in which the organisation aims to achieve these goals. Policy evolves in response to strategic direction and field experience. In turn, policy influences the way in which plans are developed, and how resources are mobilised and applied. A national policy on land release should be issued by the NMAA and contain the following as a minimum:

a) an overview of agreed terminology;

b) a statement describing how land will be cancelled, reduced and cleared (i.e. through non-technical survey, technical survey, and clearance);

c) a description of the agreed principles of the land release process;

d) a list of the agreed criteria for cancellation and reduction;

e) an overview of the land release concept and how it will be applied;

f) direction on the development of national standards on land release.

The policy should be reviewed at appropriate intervals and updated as necessary to maintain the effectiveness and credibility of the land release process.

10.3. Developing national standards on land release

A standard is an established norm or requirement. It is usually a formal document that establishes uniform technical criteria, methods, processes and practices. Guidance on non-technical survey is provided in IMAS 08.10 and on technical survey in IMAS 08.20.

NMAAs should develop appropriate and effective National Standards for Land Release, based upon this and associated standards, and reflecting local circumstances and conditions.

11. Risks and liability

Liability refers to any legal responsibility, duty or obligation that a country, organisation or individual may have. Liability in relation to an adverse event, such as an accident or the discovery of a missed item in an area, is normally linked to non-compliance with an agreed policy or procedure.

A well-documented, transparent, evidence-based approach to land release, demonstrating the application of "all reasonable effort" provides the primary mechanism for addressing questions of liability in such a way that decision-makers at all levels have the confidence to take efficient and appropriate decisions.

Residual risk is the risk remaining following the application of all reasonable effort to identify, define, and remove all presence and suspicion of EO through non-technical survey, technical survey and/or clearance.

Residual risk is minimised when the land release process has been applied by competent organisations following approved procedures and processes. Residual risk may be quantified over time through the monitoring of cancelled, reduced and cleared areas to identify any incidents, accidents or evidence of missed items. The results of such monitoring should be used to maintain confidence in land release systems and to identify areas requiring improvement.

It is important that the NMAA, on behalf of the government, develops a policy that details liability aspects, including the transfer of liability from the mine action organisation to the government or the local community when certain criteria have been fulfilled. The following principles should apply:

a) EO contamination is primarily and ultimately a national responsibility and, as such, the nation state (or relevant national authority) has a responsibility to accept accountability and liability for victims in all areas affected by EO. This includes known as well as unknown areas, areas that have been cleared and handed over to the national authority or local population, as well as areas that have been cancelled or reduced as a result of the land release process. Only when an implementing agency is directly, and currently, responsible for an affected area could they be considered liable for injuries in that area. Even then the validity of this claim will need to be proved on a case-by-case basis.

b) An endorsed land release policy implies that all stakeholders agree on the definition of "all reasonable effort". A process to identify and quantify these efforts during the design of the land release policy will help to prevent disputes related to liability issues.

c) If a land release policy has been approved by a government, appropriate application of the principles by operators and acceptance of handover by the national authority implies that the level of risk of EO contamination in the area after survey or clearance is deemed tolerably low by the government.

d) If EO contamination is found in areas that have previously been cancelled, reduced or cleared, liability disputes should in principle be settled based on how well organisations have implemented the land release process that is normally enshrined in national standards. The appearance of EO contamination does not automatically imply that the organisation should be held liable.

e) The organisation will in principle not be liable in cases of missed EO contamination or accidents if an investigation shows that the agreed land release policy has been implemented appropriately and thus that the organisation has made all reasonable effort to ensure that the area was safe before cancellation, reduction and/or handover following clearance. Additional guidance on the conduct of investigations is provided in IMAS 10.60.

f) An organisation will in principle be liable in cases of accidents caused by missed EO contamination if investigation shows that:

   i) the accident was caused by wilful or criminal misconduct, gross negligence, reckless misconduct or a conscious, flagrant indifference to the rights or safety of the individual(s) harmed;

   ii) the organisation was not properly accredited, licensed, certified or authorised to carry out acts leading to the erroneous land release decision;

   iii) the organisation wilfully infringed prevailing national policy or standards;

   iv) the organisation had conducted gross procedural errors or grossly deviated from an agreed land release concept.

g) Liability for dealing with items found after land release should be clarified in the national land release policy.

12. Post land release actions

Residual risk can be mitigated to a large extent by monitoring cancelled, reduced and cleared land and making survey and clearance resources available if EO contamination is subsequently discovered. If EO contamination is discovered, a rapid response with appropriate assets and a transparent investigation process will limit the loss of public confidence in the land release process. The NMAA should provide clear guidelines about what actions should be undertaken. These may include:

a) monitoring cancelled, reduced and cleared land over a reasonable period to confirm that local communities are using the land and that EO contamination has not been discovered;

b) developing mechanisms to enable the reporting and investigation of EO contamination discovered on land that has previously been cancelled reduced or cleared;

c) regular review of the documentation and decision-making process leading to recommendations to improve the land release process;

d) making mine action assets available to deal with unexpected EO contamination and to undertake additional survey;

e) reclassifying previously cancelled land to CHA and updating relevant databases if direct evidence of EO contamination is found;

f) initiating investigations into the root causes that led to the decision to release the land and, if necessary, adjusting the land release policy; and

g) imposing restrictions, and/or identifying precautions, associated with land to reflect residual risk.

13. Responsibilities and obligations

13.1. National Mine Action Authority

The NMAA shall:

a) develop, review and maintain a national land release policy and relevant standards;

b) accredit organisations as capable of undertaking non-technical survey, technical survey and clearance;

c) prepare and publish standards and guidelines for land release including:

   i) quality assurance and quality control to be applied to non-technical survey, technical survey, and clearance contracts and agreements;

   ii) documentation for land release;

   iii) requirements for data collection including accuracy of different types of positional data

d) define levels of reasonable effort to investigate whether or not there is evidence of hazards;

e) define agreed criteria for the cancellation/reduction of land where there is no evidence of an explosive hazard after non-technical survey and/or technical survey;

f) define liability issues relating to survey and clearance organisations, the local community, and the individuals undertaking survey and clearance in accordance with national legislation;

g) maintain and make available, as required, documentation on the recorded operational use of all assets used during the land release process (who, what, where, when);

h) ensure that appropriate and effective information management systems are established and maintained to record and analyse evidence and to support planning, prioritisation and reporting systems; and

i) ensure that appropriate monitoring systems are established in relation to cancelled, reduced and cleared land.

13.2. Demining organisation

The organisation undertaking survey or clearance shall:

a) gain (from the NMAA, Mine Action Centre or equivalent) accreditation to conduct land release activities;

b) comply with the national standards for survey and clearance. In the absence of national standards, the organisation shall apply the IMAS standards, or such standards as are specified in their contract or agreement;

c) collect and make available the necessary information as required by applicable standards;

d) where applicable, conduct a formal handover of sites, including all relevant information, to organisations conducting follow-on activities;

e) maintain and make available documentation as specified by the NMAA or Mine Action Centre or equivalent;

f) consult closely with affected communities including women with regards to all decisions to cancel, reduce or handover cleared land.

In the absence of an NMAA or similar authority, the organisation should assume additional responsibilities. This includes assisting the host nation, during the establishment of a NMAA and Mine Action Centre or equivalent, in framing national standards for the land release process by non-technical survey, technical survey and clearance, including quality assurance and quality control.

Annex A
(Normative)
References

The following normative documents contain provisions, which, through reference in this text, constitute provisions of this part of the standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of the standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid ISO or EN:

a) IMAS 04.10 Terms and definitions;
b) IMAS 07.30 Accreditation of demining organizations;
c) IMAS 07.40 Monitoring of demining organizations;
d) IMAS 08.10 Non-technical Survey;
e) IMAS 08.20 Technical Survey;
f) IMAS 09.10 Clearance requirements;
g) IMAS 09.11 Battle area clearance;
h) IMAS 05.10 Information management for mine action;
i) IMAS 08.30 Post-clearance documentation ;
j) IMAS 08.40 Marking mine and ERW hazards;
k) IMAS 09.50 Mechanical application.

Informative:

l) Technical Note 07.11/01-2016 land release symbology

The latest version/edition of these references should be used. GICHD hold copies of all references used in this standard. A register of the latest version/edition of the IMAS standards, guides and references is maintained by GICHD, and can be read on the IMAS website (http://www.mineactionstandards.org/).

National mine action authorities, employers and other interested bodies and organisations should obtain copies before commencing mine action programmes.

Annex B
(Informative)
Relevant International Instruments

Three international conventions contain legal obligations regarding the survey and marking of areas that are known or suspected to be contaminated with mines/ERW, and the removal and destruction of EO from these areas.

Amended Protocol II (AP II) to the **Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects** (Convention on Conventional Weapons) requires that "all reasonable precautions should be taken to protect civilians from the impact of mines, booby-traps and other devices."

Protocol V to the same convention requires that States Parties and parties to armed conflict take action to clear, remove or destroy explosive remnants of war (Art. 3), and record, retain and transmit information related to the use or abandonment of explosive ordnance (Art. 4). They are also obligated to take all feasible precautions for the protection of civilians (Art. 5) and humanitarian missions and organisations (Art. 6).

Article 5 of the **Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction** (Anti-Personnel Mine Ban Convention or Ottawa Convention) requires each State Party to "make every effort to identify all areas under its jurisdiction or control in which anti-personnel mines are known or suspected to be emplaced and [to] ensure as soon as possible that all anti-personnel mines in mined areas under its jurisdiction or control are perimeter-marked, monitored and protected by fencing or other means, to ensure the effective exclusion of civilians, until all anti-personnel mines contained therein have been destroyed." It requires each State Party to "destroy or ensure the destruction of all anti-personnel mines in mined areas under its jurisdiction or control." A "mined area" is defined as "an area dangerous due to the presence or suspected presence of mines."

Article 4 of the **Convention on Cluster Munitions** requires each State Party to "[s]urvey, assess and record the threat posed by cluster munition remnants, making every effort to identify all cluster munition contaminated areas under its jurisdiction or control, … [to ensure the areas are] perimeter-marked, monitored and protected by fencing or other means to ensure the effective exclusion of civilians… [and to] clear and destroy all cluster munition remnants located in cluster munition contaminated areas." The Convention defines a cluster munition contaminated area as "an area known or suspected to contain cluster munition remnants."

In 2008, the States Parties to the Anti-Personnel **Mine Ban Convention**, "in recognising the value of States Parties making use of the full range of emerging practical methods to more rapidly release, with a high level of confidence, areas suspected of containing anti-personnel mines," agreed to encourage States Parties, as appropriate, to implement the recommendations contained in a paper entitled *Applying all available methods to achieve the full, efficient, and expedient implementation of Article 5.* These recommendations are as follows:

- The States Parties acknowledge that three main actions can be undertaken to assess and, where applicable, to release land that has been previously identified and reported as part of a .mined area.: through non-technical means, technical survey, and clearance.

- In order to ensure the expedient, efficient and safe release of mined areas, States Parties in the process of implementing Article 5 are encouraged to develop national plans that employ, as required, the full range of methods, in addition to clearance, available to release land.

- States Parties are encouraged to take all necessary steps to effectively manage information on changes in the status of previously reported mined areas and to communicate to other States Parties and relevant communities within their own countries such changes in status.

- States Parties preparing Article 5 extension requests are encouraged to incorporate into their requests, in accordance with Article 5.4(d), an indication of how clearance and other methods of land release will be applied in the fulfilment of obligations during the requested extension period.

- States Parties providing assistance to mine action activities should ensure that the support provided facilitates the application of the full range of actions for reassessing and releasing .mined areas.

- Just as many States have established national policies and standards on clearance and technical survey based upon existing best international practices, they are also encouraged to observe and apply, where appropriate, such practices with respect to non-technical land release.

- In developing national policies or standards on land reassessment and release through non-technical means, States Parties are recommended take into account the following principles; A formal, well documented and recorded process for identifying mined areas; Well defined and objective criteria for the reclassification of land; a high degree of community involvement and acceptance of decision-making: a formal process of handover of land prior to the release of land; an ongoing monitoring mechanism after the handover has taken place; a formal national policy addressing liability issues; and, a common set of terminology to be used when describing the process.

- The States Parties acknowledge that land reassessment and release through non-technical means, when undertaken in accordance with high quality national policies and standards that incorporate key principles highlighted in this paper, is not a short-cut to implementing Article 5.1 but rather is a means to more expediently release, with confidence, areas at one time deemed to be .mined areas.

Similarly, in 2011, the States Parties to the **Convention on Cluster Munitions**, "in recognizing the value of States Parties making use of the full range of practical methods to rapidly release, with a high level of confidence, areas suspected of containing cluster munition remnants", agreed to encourage States Parties, as appropriate, to implement the recommendations contained in a paper entitled *Application of all available methods for the efficient implementation of Article 4*. These recommendations are as follows:

- the States Parties acknowledge that, in order to reduce the humanitarian impact of cluster munitions, return affected land to communities for productive use and implement efficiently their obligations under Article 4 of the Convention, all available and efficient measures to identify and remove the contamination of cluster munition remnants should be employed.

- the States Parties acknowledge that three main actions can be undertaken to assess and, where applicable, to release land that has been previously identified and reported as part of an area suspected of being contaminated with cluster munition remnants – through non-technical survey, technical survey, and clearance.

- given the unique characteristics of cluster munition remnants these measures will, in most cases, be different to those employed for mines and other types of ERW.

- States Parties are encouraged to review their approach to the identification and subsequent release of cluster munition-affected land and, if necessary, adjust the methodologies employed bearing in mind the recommendations suggested in this paper in order to determine the most efficient system for their specific situation.

- States Parties are encouraged, where they have not yet done so, to develop National Mine Action Standards, in accordance with the International Mine Action Standards, that detail the land release methodologies and techniques for the efficient survey and clearance of cluster munition remnants.

Annex C
(Normative)
Land Release Symbology

The land release process is associated with geographic areas undergoing a series of activities aimed at releasing hazardous areas for productive use. Since mine action is inherently geographic, Geographic Information Systems (GIS) perform an important role in the management and analysis of land release data, and facilitate evidence-based decision making for planning, prioritization, reporting and monitoring. Serving as the graphical language on maps, intuitive cartographic symbols allow for a clear and standardized representation of the land release process and are thereby beneficial for promoting consistency, efficiency and safety in survey and clearance operations.[2]

The land release symbology takes into account the basic information requirements of the land release process by representing priority land and activity attribute values. The 12 point and 8 polygon symbols visualizing various land values, as well as the 13 point symbols illustrating mine action activity values are listed in the table below. The Technical Note 07.11/01-2015 provides a detailed description on the methodology and the design considerations applied to develop the symbology, as well as guidance on how to apply the below symbols in GIS products.

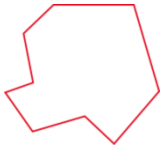
The new land release symbols can be downloaded in different GIS compatible formats (style files and true font files) to be used for various desktop and web applications, such as IMSMA, ArcGIS Desktop, ArcGIS Online, Google Earth, and others. The image URLs of point-symbols and detailed description of the polygon symbols are available on IMSMA Wiki (http://mwiki.gichd.org/IM/Symbology).

Flexibility in the colour design of the symbols is permissible due to the variation in the meaning of colours between cultures.

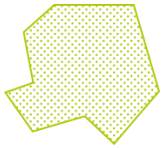
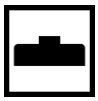
Feature	Attribute	Value	Symbol	Function
Land	Classification[3]	CHA		Polygon symbol to indicate the location of a CHA on a large scale map.
				Point symbol to indicate the location of a CHA on a small scale map.
		SHA		Polygon symbol to indicate the location of a SHA on a large scale map.
				Point symbol to indicate the location of a SHA on a small scale map.

[2] Kostelnick, J.C., Dobson, J.E., Egbert, S.L., Dunbar, M.D. (2008) 'Cartographic Symbols for Humanitarian Demining.' In *The Cartographic Journal*, Vol. 45, No.1, p. 19

[3] Land classification values follow traffic light colour coding used by many mine action actors

Feature	Attribute	Value	Symbol	Function
Land	Status[4]	Open		Polygon symbol to indicate the location of an open hazard (CHA or SHA) on a large scale map. The hazard has been reported but no activities have taken place to reduce or clear it.
				Point symbol to indicate the location of an open hazard (CHA or SHA) on a small scale map. The hazard has been reported but no activities have taken place to reduce or clear it.
		Worked on		Polygon symbol to indicate the location of a worked on hazard (CHA or SHA) on a large scale map. Activities are taking place on the hazard to reduce or clear it.
				Point symbol to indicate the location of a worked on hazard (CHA or SHA) on a small scale map. Activities are taking place on the hazard to reduce or clear it.
		Closed		Polygon symbol to indicate the location of a land that has been closed/released on a large scale map.
				Point symbol to indicate the location of a land that has been closed/released on a small scale map.

[4] Land status values follow traffic light colour coding used by many mine action actors

Feature	Attribute	Value	Symbol	Function
Land	Land Release product	Cancelled		Polygon symbol to indicate the location of a land that has been cancelled through non-technical survey on a large scale map.
				Point symbol to indicate the location of released land on a small scale map. There is no distinction between cancelled, reduced and cleared land at this scale.
		Reduced		Polygon symbol to indicate the location of a land that has been reduced through technical survey on a large scale map.
				See above
		Cleared		Polygon symbol to indicate the location of a land that has been cleared through clearance on a large scale map.
				See above
	Type of contamination	APM		Point symbol symbolizes an anti-personnel mine to indicate the location of a hazard contaminated by anti-personnel mines.
		AVM		Point symbol symbolizes an anti-vehicle mine to indicate the location of a hazard contaminated by anti-vehicle mines.
		UXO		Point symbol symbolizes a mortar stuck in the ground to indicate the location of a single UXO item or a hazardous area containing a larger number of UXO.
		Cluster Munitions		Point symbol symbolizes an explosive weapon releasing smaller submunitions to indicate the location of a hazard contaminated by cluster munitions.
		AXO		Point symbol symbolizes three mortars neatly pilled up to indicate the location of AXO.
		Other/ Unknown		Point symbol showing a square with a question mark in the ground to to indicate the location of a hazard contaminated by unknown explosive ordnances.

Feature	Attribute	Value	Symbol	Function
Activity	Type	EOD Spot Task		Point symbol symbolizes a white spot on a black ground to indicate the location of disposal activity of explosive ordnance(s).
		Non-Technical Survey		Point symbol symbolizes a clipboard and a pen to indicate the location of non-technical survey activity.
		Technical Survey		Point symbol symbolizes lines in an area to indicate the location of technical survey activity.
		Clearance		Point symbol symbolizes a hole in the ground with an arrow pointing to it to indicate the location of clearance activity.
	Method	Mechanical		Point symbol symbolizes the wheel of a demining machine used on the ground to indicate the location of activities using mechanical methods.
		Manual		Point symbol symbolizes a deminer probing for landmines to indicate the location of activities conducted by deminers .
		Animal		Point symbol symbolizes a dog and a rat to indicate the location of activities conducted by trained animals.
	Status[5]	Planned		Point symbol to indicate the location of a planned activity.
		Ongoing		Point symbol to indicate the location of an ongoing activity.
		Completed		Point symbol to indicate the location of a completed activity.
	Spatial Dimension	Surface		Point symbol symbolizes a triangle pointing to indicate the location of surface clearance activity.
		Sub-surface		Point symbol symbolizes a triangle in the ground to indicate the location of sub-surface clearance activity.
	Point type	Evidence Point		Point symbol symbolizes a magnifier to indicate the location of direct or indirect evidence points.

[5] Activity status values follow traffic light colour coding used by many mine action actors

Amendment record

Management of IMAS amendments

The IMAS series of standards are subject to formal review on a three-yearly basis, but this does not preclude amendments being made within these three-year periods for reasons of operational safety and efficiency or for editorial purposes.

As amendments are made to this IMAS they will be given a number, and the date and general details of the amendment shown in the table below. The amendment will also be shown on the cover page of the IMAS by the inclusion under the edition date of the phrase ”incorporating amendment number(s) 1 etc”.

As the formal reviews of each IMAS are completed new editions may be issued. Amendments up to the date of the new edition will be incorporated into the new edition and the amendment record table cleared. Recording of amendments will then start again until a further review is carried out.

The most recently amended IMAS will be the versions that are posted on the IMAS website at www.mineactionstandards.org.

Number	Date	Amendment Details
1	1 Mar 2010	UNMAS address updated. NMAA definition updated. Inclusion of a note in Clause 3 that ERW includes unexploded sub-munition. Minor changes to ensure gender issues. Removal of Annex B from IMAS series, and re-naming Annex C to B.
2	1 Mar 2013	Reviewed for impact of IATG development (Aug 2012). Updated introduction. Inclusion of new definitions for NTS, TS, cancelled land, reduced land and cleared land Incorporation of term ‘reduce/reduction’ throughout the document. General editing of text throughout. Relabelled the IMAS 07.11. Updated normative references in Annex A.
3	15 Feb 2016	Inclusion of Annex C (Normative) Land Release Symbology. Inclusion of a reference to Annex C and Technical Note 07.11/01 in Section 9.2.
4	26 July 2018	Replaced ‘mine/ERW’ with ‘explosive ordnance’ or ‘EO’ throughout. Updated definition of ‘clearance’, page 3. Updated section 5.4 to include IEDs and Booby traps, footnote included to refer to IMSMA hazard categories, page 5. Updated section 7 to reference local stakeholders, page 6. Updated normative references in Annex A.
5	04 February 2019	Definition of ‘explosive ordnance’ added to Section 3 Minor edit section 9.3 para 3 – remove the word significant, replace ‘(mines, cluster munitions, specified ERW) with ‘EO’