

IMAS 07.12

Draft First Edition
1st July 2016

Quality Management in Mine Action

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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/>. Individual 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

0.1. General approach

The introduction to this standard sets out general principles of quality management (QM), applicable to all activities associated with the different pillars of mine action. The main body of the standard sets out the minimum requirements for a mine action quality management system (QMS).

Detail reflecting the application of these principles to specific mine action activities are included in the relevant IMAS, as identified in Annex A to this standard.

This standard does not seek to introduce new concepts to the mine action sector, or impose additional burdens, but rather to a) consolidate and define much of what already takes place in mine action programmes and b) encourage greater consistency with QM as understood and practised in other sectors and industries.

0.2. Relationship to ISO 9001

This standard draws on the principles and requirements set out in ISO 9001:2015; it does not replace ISO 9001 within the mine action context. Mine action operators are encouraged to consider the adoption of formally certified systems such as ISO 9001 as part of their own management systems.

Mine action programmes and authorities do not have to adopt ISO 9001, or other recognised QM models, in order to comply with this standard, but there are a number of advantages in doing so, including:

- a. benefiting from the body of experience and knowledge embodied in established standards, gained from a multitude of industries and activities over many decades;
- b. access to established templates, tools and principles;
- c. access to a global advisory and training industry;
- d. formal confirmation of the suitability and effectiveness of the QMS;
- e. simplified processes when bidding for many government contracts around the world;
- f. confidence amongst managers in the quality and reliability of work being carried out by their own organisations; and
- g. reduced risk of failure, mistake or nonconformity and the consequences arising from such events.

ISO 9001:2015 also includes additional material, not addressed in this standard (such as the management of design processes), that may be of use to some mine action organisations.

0.3. Background

Concepts of QM have developed in the mine action sector, reflecting a wider understanding of the interactions between practical activities and the needs of affected countries and peoples, and as authorities and operating organisations have chosen to make more use of established QM models, such as ISO 9001.

This standard reflects increased expectations amongst donors, authorities and operators in terms of confidence in relation to every aspect of mine action. While the focus of QM is primarily on the implementation of effective and appropriate processes to deliver outputs and products that satisfy defined requirements, there are fundamental links to wider concepts of results based management (RBM) and the need for mine action to 'make a difference'.

A primary purpose of IMAS is to support National Mine Action Authorities (NMAAs) in the development of National Mine Action Standards (NMAS). At the same time IMAS should provide guidance to other organisations and agencies in the development of their own internal management systems, procedures and processes. The principles and requirements set out in this IMAS are relevant to all organisations operating at any and every level within mine

action.

0.4. Quality in Mine Action

Historically the mine action sector has tended to focus on the quality of one particular product, cleared land, to the exclusion of others. More recently, efforts have been made to broaden the scope of QM in mine action to embrace processes, services and products under all five pillars of mine action (clearance, risk education, victim assistance, advocacy and stockpile destruction). Quality is a concept that is also applicable to other activities that are increasingly addressed by mine action organisations such as Ammunition Safety Management (ASM), Physical Security and Stockpile Management (PSSM) and Small Arms and Light Weapons (SALW) destruction.

All QM relies upon the availability of information: to inform the planning process; to direct implementation; to check performance against requirements; and to take action to improve the quality and safety of processes, services and products. Recent changes to IMAS reflect the increased emphasis on the use of information as evidence to support decision-making, and an improved understanding of the interactions between mine action processes.

In the ISO system quality is defined as the *'degree to which a set of inherent characteristics [...] fulfils requirements'*.¹ In the context of mine action quality can be defined as *'the degree to which a mine action service, product or output fulfils requirements'*.

In order for a mine action organisation to be able to achieve quality it is necessary that requirements are specified. Such specifications may be found in standards, contracts, memoranda of understanding, task orders and other similar documents. Requirements are not always specified in writing – they may be implicit, generally understood or otherwise assumed to be accepted. If requirements are not clearly specified, it makes it hard, and sometimes impossible, to achieve quality.

0.5. QM and Results Based Management (RBM)

'RBM is a management strategy by which all actors, contributing directly or indirectly to achieving a set of results, ensure that their processes, products and services contribute to the achievement of desired results (outputs, outcomes and higher level goals or impact). The actors in turn use information and evidence on actual results to inform decision making on the design, resourcing and delivery of programmes and activities as well as for accountability and reporting'.²

If QM in mine action is about managing processes that relate to the delivery of mine action services and products, then RBM is about the extent to which those products and services make a real difference to affected people. As such, RBM addresses the overall context within which QM takes place. QM focuses on the *'processes, products and services'* in the definition above, but can only do so if the requirements for *'the achievement of desired results (outputs, outcomes and higher level goals or impact)'*, are themselves clearly defined.

RBM relies on successful application of QM to processes, services and products, while QM relies upon effective RBM to ensure that requirements are clearly specified and that actual results are used to drive feedback loops that update and improve all aspects of the QMS. RBM systems often make use of an annual 'steering cycle' linked to annual planning to review and improve performance.

This standard does not directly address RBM within mine action, but it does emphasise the importance of understanding RBM and the mine action context, ensuring that quality requirements are specified and making sure that the needs and expectations of stakeholders

¹ ISO 9000:2015 definition 3.1.1

² Results-Based Management Handbook, United Nations Development Group (UNDG), October 2011

are properly reflected in mine action products and services; doing so requires the consistent and comprehensive application of RBM principles.

0.6. Mine action products

Products of processes may consist of matter, information and/or energy. Mine action products include, but are not limited to:

- a) Information: without accompanying information many products of mine action (especially those relating to land release) are of limited or no value. Information is a product in its own right. Records, reports and public information campaigns all deliver information products to people.
- b) Land: land release processes deliver cancelled, reduced and cleared land. All are required to meet the same basic quality requirement – that they are safe, containing no specified hazard items down to a specified depth.
- c) Hardware: ranging from prosthetic limbs, to training aids made using free from explosive (FFE) UXO items, to scrap material such as explosives, metal casings, and dunnage resulting from demilitarisation and stockpile destruction programmes, to the fencing and warning signs used to delineate hazardous areas and munition depots.
- d) People: mine action engages in a wide variety of recruitment and training processes. Each delivers trained and competent personnel as their product.

Other products/outputs may be associated with specific mine action activities, projects, programmes and contracts.

While most mine action products come under the headings of ‘matter’ and ‘information’ from a QM perspective, ‘energy’ products (sound, light, ground shock, etc.) which are also factors if Open Burning and Open Detonation (OB/OD) are used to destroy excess ammunition and SA/LW, are likely to be of significance when addressing issues relating to protection of the environment.

0.7. Principles of QM in Mine Action

0.7.1 General

Managing quality is not a complex or technical challenge. Instead it relies upon the repeated and consistent application of simple principles across an organisation’s activities. Key principles that are important to the management of mine action quality are described in the remainder of this section.

0.7.2 Customer focus

In the context of mine action, the term ‘customer’ can include a range of organisations and groups that pay for, receive, or have an interest in mine action products, outputs and outcomes. They include:

- a. organisations, groups and individuals that receive mine action products and outputs including: beneficiaries; land users; land owners; local, regional and national governments; victims; trainees; etc.;
- b. authorities, agencies and groups that organise mine action programmes: NMAAs; MACs; UN bodies; etc.; and
- c. organisations that pay for mine action services: international donors; national and regional government departments, ministries and agencies; commercial clients; etc.

QM in mine action is focused on satisfying the requirements of the different customer groups, not just the immediate beneficiaries. In some circumstances (such as between a commercial client and a mine action service provider) the relationship may be relatively simple. In others (such as when an NGO is funded by an international donor, tasked by a national authority, and delivers services/products to a local community) the situation is considerably more complex.

The basic principle of 'customer focus' remains applicable under all circumstances, but managers need to exercise judgement in balancing the needs and expectations of different customer groups.

0.7.3 Leadership

A mine action QMS only succeeds if there is commitment from the highest levels of the mine action programme (MAP), and within individual mine action organisations.

Mine action leaders (whether at the programme or organisational level) formally communicate their focus on customer needs and expectations through the Quality Policy, through the content of QM and other standard operating procedures (SOPs), and through continual improvement reviews. Informally, leaders communicate their commitment through the content of documents, meetings, workshops and on every other occasion when there is interaction with workers and stakeholders.

0.7.4 Engagement of people

An effective QMS doesn't only require commitment from the highest levels of management. It requires the people who implement mine action procedures, processes and activities to understand their roles and responsibilities and have the aptitude, skills and knowledge necessary to fulfil their functions reliably and consistently.

The best QMS make use of the experience and knowledge of the people who will implement the system in identifying key processes, developing procedures and setting objectives. Involving people in the design, development, implementation and review of the QMS encourages a sense of collective ownership and helps maintain staff confidence in the suitability and value of the system.

0.7.5 Gender and diversity

No mine action programme can succeed in satisfying stakeholder requirements unless it reflects the different circumstances, requirements and needs of different gender and diversity groups.

Doing so is not an optional feature of a mine action QMS, but is fundamental to the concept and definition of quality.

0.7.6 Process approach

The process approach is based on recognition that, in order to have confidence in the quality of a product or output from a process, it is necessary to have confidence in the inputs to that process and the activities within that process.

Figure 1 shows key quality elements and interactions in a process. Tick marks identify opportunities to check conformity including:

- a. assessment of suppliers/providers (including accreditation);
- b. quality control (QC) of inputs to a process (such as equipment receiving checks);
- c. in-progress monitoring during activities (as described in IMAS 07.40);
- d. QC of outputs prior to release (including land release completion processes); and
- e. post-release surveys of recipients and beneficiaries (post clearance impact assessments, beneficiary satisfaction surveys, etc.).

When processes interact they become a system.

Figure 1 also highlights the way that QM is surrounded by RBM. In addition to any monitoring of customer/stakeholder satisfaction amongst recipients and beneficiaries, the outcomes and impacts arising from mine action processes and products form an important part of the mine

action context. The results, outcomes and impacts of previous mine action work should inform current and future requirements and directly influence the improvement of mine action processes, products and services.

QM and RBM are often treated as separate, if closely associated functions within a MAP. Mine action managers and authorities should be careful about doing so. The two approaches are so closely related, and rely upon each other to such an extent, that MAP managers should remain constantly aware of the implication of decisions taken in one system upon the other.

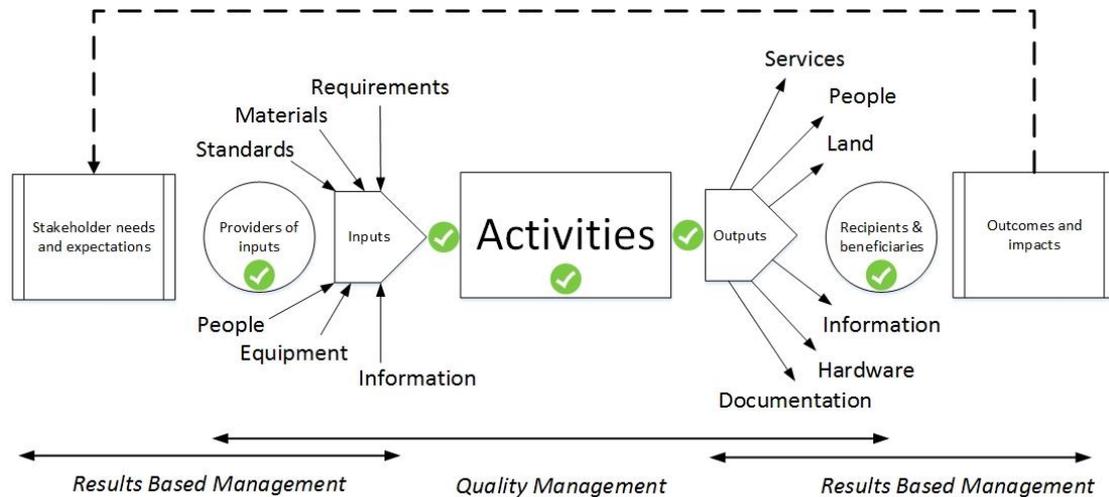


Figure 1: process elements, flow, interactions and checks, including examples of inputs and outputs.

Quality is often defined as the satisfaction of customer (or interested party) requirements, but it is also important to be confident that the requirements fit into the wider strategic goals, policy and direction of a MAP or mine action organisation. Satisfying a given requirement may meet a narrow definition of quality, but it has little merit in the wider context if that requirement is not associated with a beneficial result, outcome or impact.

One of the characteristics of quality managed products is that they are ‘fit for purpose’. RBM focuses on questions of purpose and how managers know that a purpose has been satisfied. The interactions between RBM and QM help ensure that mine action managers understand and reflect both ‘purpose’ and ‘fitness for purpose’ in every aspect of a mine action organisation’s processes, products and services.

0.7.7 Continual improvement

The concept of continual improvement is at the heart of any effective QMS. It also reflects basic principles of professional commitment and an underlying desire to do a good job. Improvement relates not just to identifying existing problems within a system, but also to identifying opportunities to make things better.

The driver behind continual improvement processes is the PDCA cycle (plan – do – check – act). PDCA cycles occur at every level, and within every mine action activity. For most people principles of continual improvement are instinctive. Within organisations the improvement process should be managed in a structured way. There are various ways to illustrate the PDCA cycle, but one of the best known is the Deming/Ishikawa Cycle (figure 2).

Quality mine action organisations are not afraid of finding areas that can be improved; instead they welcome suggestions, feedback and observations of aspects of the system that can be improved, from whatever source they come. Equally, authorities and managers do not seek to punish those who find areas that can be improved; rather they encourage, listen to, and recognise the professionalism of workers, and other stakeholders, who come forward with suggestions for improvement.

Applying the PDCA approach can be quick and simple, or it may be a good deal more demanding, depending on the circumstances and scale of the activity. The MAP strategic planning process is a large scale, long duration PDCA cycle. The land release process (with its repeated decisions in response to non-technical survey (NTS), technical survey (TS), clearance and handover) is a smaller scale, shorter duration example of a mine action PDCA cycle. Responding to a nonconformity discovered during field monitoring is another occasion when the PDCA sequence is put into practice.

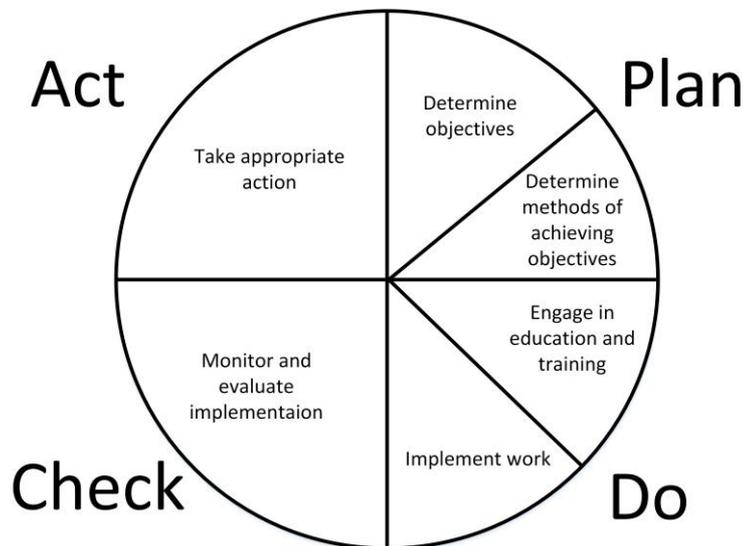


Figure 2: Deming/Ishikawa continual improvement cycle³

Similar cycles can be found throughout mine action: they are of the utmost importance. Improvement takes place every time a PDCA loop is closed. Every time a loop is left open (typically because no follow-up action was implemented) an opportunity to improve is missed and a shortcoming in the mine action system is left unaddressed. Failure to respond to opportunities to improve have a strongly adverse effect on the motivation and engagement of those workers, and other stakeholders, who are aware of both the opportunity to improve and the failure to do so.

Not every improvement opportunity requires full formal management, but mine action managers and authorities need to ensure that those that do justify an active response are identified, captured within the system and appropriate action is taken.

Any organisation that is serious about the job it does, and that wants others to be aware of that seriousness, embraces, highlights and is energetic in applying concepts of continual improvement towards all aspects of its processes, products and services.

0.7.8 Evidence-based decision-making

Using evidence to support decision-making is fundamental to QM in mine action. The same principles apply to core mine action activities such as Land Release – a process that collects data to support an iterative process of decision-making about which land remains potentially hazardous and which can be safely released.

IMAS 07.11 Land Release, 08.10 Non-technical Survey and 08.20 Technical Survey demand a constant focus on the collection and analysis of evidence to support valid and efficient land release decision-making. The concept of ‘all reasonable effort’ is one based upon the use of evidence to show that further action at a land release site is not reasonably (that is logically) justified.

³ Originally developed by Dr W. Edwards Deming; further enhanced by K. Ishikawa.

Whether mine action managers are deciding how best to target and deliver risk education, are identifying appropriate action to support victims, or are engaged in planning and implementing other mine action activities, they should be using available evidence to inform their decisions. Where evidence is not available they should be taking steps to obtain it.

07.40 Monitoring of Mine Action Organisations focuses on the collection and analysis of evidence to support decision-making in relation to the performance of mine action organisations, and the continual improvement of mine action activities, processes and products.

Using, and recording, evidence to support mine action decisions is not only good practice in QM terms. It also plays an important part in the management of liability, by providing objective evidence to demonstrate compliance with standards and SOPs, should decision-makers ever be called upon to justify their actions.

0.7.9 Relationship management

Mine action involves large numbers of individual people and many organisations. Quality is best managed when people and organisations communicate their expectations to, and understand the expectations of, others. Organisations within a MAP should have goals and objectives that are aligned and incentives that are compatible and mutually beneficial.

Relationships need to be managed with all stakeholders, although the means of doing so varies significantly depending upon the roles and level of engagement of different stakeholders.

Relationships may be managed through formal means, such as contracts and agreements, and informally during normal working interactions. Stakeholders who have the opportunity to participate, at an appropriate level, in mine action planning, implementing, monitoring and decision-making, tend to be motivated, supportive and competent.

0.8. Risk management and quality

The mine action sector is making more use of structured risk management principles and tools across all activities and at all levels within MAPs and individual organisations. Formal QM systems (such as ISO 9001) now make more explicit use of risk management approaches and terminology and expect organisations seeking certification to do so.

QM (like environmental and safety management) is a risk management process. It involves identifying aspects of an organisation's processes and products that could fail to satisfy requirements and then developing procedures, checks and monitoring systems to reduce the chances of failure to a tolerable level.

Risk and opportunity are closely associated. Mine action organisations encounter opportunities to improve the services and products they offer, and to improve the extent to which they satisfy stakeholder requirements. Principles of continual improvement help organisations respond to opportunities to improve at every level.

Risk is defined as 'the effect of uncertainty on objectives' (ISO Guide 73:2009). Risk is typically expressed through reference to the 'combination of the probability of occurrence of harm and the severity of that harm' (IMAS 04.10 and ISO Guide 51:1999). The primary means of reducing uncertainty, in any situation or circumstance, is the systematic collection and analysis of sufficient, relevant information.

0.9. Relationships to other management systems

Environmental and safety management are closely associated with quality, particularly in relation to technical mine action activities such as survey and clearance, EOD and stockpile destruction. Existing occupational health and safety management systems, such as OHSAS

18001, and environmental management systems, such as ISO 14001, exhibit many of the same features as QM systems.

Organisations choosing to gain certification against safety and environmental management standards make extensive use of tools (such as management review, response to nonconformity, control of documents) found within the QMS.

Mine action organisations typically address safety and occupational health (S&OH) and environmental management requirements within their SOPs. SOPs constitute a key part of the mine action QMS.

IMAS 10.10 details general requirements for mine action safety and occupational health (S&OH) and IMAS 10.70 addresses requirements in relation to protection of the environment.

The QMS is informed by aspects of the strategic context, reflected in national mine action strategic plans (NMA SPs), as well as at the organisational level. The QMS should also be consistent with the higher level goals and objectives of a programme or organisation. At the same time, principles of QM are applicable when developing a strategic plan. Whether using the PDCA cycle to drive the development, implementation, evaluation and improvement of a strategic plan, or in ensuring that strategic documentation satisfies stakeholder requirements, QM is an important feature of a good strategic management process.

0.10. QM at different levels within the MAP

Although principles of QM are almost universally applicable, across different activities, and at different levels within an organisation or programme, there are important differences to be considered when seeking to apply QM at the overall programme level. QMS (such as ISO 9001) are generally designed to be applied within a clear hierarchical management structure.

In situations where such a structure does not exist, or there is reliance upon consensus rather than directive, such as when applied to an entire MAP, authorities may wish to consider applying additional approaches as well as RBM.⁴

⁴ Such as the Capacity Works cooperation management system – developed by GIZ (the Deutsche Gesellschaft für Internationale Zusammenarbeit)

Quality management in mine action

1 Scope

This standard provides guidelines for the implementation of a quality management system (QMS) for mine action programmes and organisations. It is primarily intended for application by national mine action authorities (NMAAs) and national mine action centres (MACs), but its principles remain valid for, and should be used to form the basis of, internal QMSs employed by mine action organisations and governmental agencies in those countries where the Ministry of Defence or Ministry of the Interior exercise exclusive authority over PSSM, ASM, and SA/LW destruction activities.

The decision, by a NMAA or other authority, to adopt a QMS for the national mine action programme does not in any way remove from mine action implementing organisations the requirement to manage the quality of their own services and products. A mine action implementing organisation's own QMS should be consistent with the QM requirements of the MAP.

This standard should be used in conjunction with IMAS 07.40 Monitoring of Mine Action organisations.

2 References

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

3 Terms, definitions and abbreviations

A complete glossary of the terms, definitions and abbreviations 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. This use is consistent with the language used in the International Organization for Standardization (ISO) standards and guidelines:

- 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; and
- c) 'may' is used to indicate a possible method or course of action.

The term 'National Mine Action Authority' (NMAA) refers to the government entity, in a mine-affected country, with the responsibility for the regulation, management and coordination of mine action.

Note: In the absence of a NMAA, the United Nations, or some other recognised international body, may assume some or all of the responsibilities, and fulfil some or all the functions, of an NMAA.

A mine action organisation is "any organisation (government, military, commercial or NGO/civil society) responsible for implementing mine action projects or tasks. The mine action organisation may be a prime contractor, subcontractor, consultant or agent." IMAS 04.10 May 2013.

A 'sub-unit' is part of a mine action organisation which is operationally accredited to conduct one or more defined mine action activities, such as technical surveys, manual clearance, explosive ordnance disposal (EOD), mine risk education or task prioritisation.

Quality in Mine Action is 'the degree to which a mine action service, product or output fulfils requirements'.

A process is a "set of interrelated or interacting activities that use inputs to deliver an intended result" (ISO 9000:2015)

Inputs are "resources required for a process or intervention including: people; money; materials; equipment; information and energy".

An output is "the result of a process" (ISO 9000:2015). Outputs include "The products, capital goods and services which result from a development intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes" (OECD glossary of key terms in evaluation and results based management).

Outcomes are "the likely or achieved short-term and medium-term effects of an intervention's outputs" (OECD glossary of key terms in evaluation and results based management).

Impacts are the "positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended" (OECD glossary of key terms in evaluation and results based management).

Quality management (QM) is "Management with regard to quality. QM can include establishing quality policies and quality objectives, and processes to achieve these quality objectives through quality planning, quality assurance, quality control and quality improvement." (ISO 9000:2015)

Quality Assurance (QA) is "part of quality management focused on providing confidence that quality requirements will be fulfilled" (ISO 9000:2015). QA is a confidence-building process, based on evidence, that the quality requirements are likely be met. QA encompasses all proactive activity undertaken by an organization to increase confidence in the likelihood that requirements will be met.

Quality Control (QC) is "part of quality management focused on fulfilling quality requirements" (ISO 9000:2015). QC addresses the question "did we get what we wanted?"

Competence is the "ability to apply knowledge and skills to achieve intended results" (ISO 9000:2015).

Improvement is "activity to enhance performance". (ISO 9000:2015)

Conformity is "fulfilment of a requirement", nonconformity is "non-fulfilment of a requirement". (ISO 9000:2015)

An interested party is a "person or organisation that can affect, be affected by, or perceive itself to be affected by a decision or activity" (ISO 9000:2015). In mine action an interested party is often called a *stakeholder*. The term stakeholder is used in this standard.

4 Purpose

The overall aim of mine action QM is to provide confidence (to the beneficiary, the mine action organisation, the NMAA, the donor and to other stakeholders) that quality requirements have been met or exceeded, and that mine action products and services are 'fit for purpose'.

5 Context

Mine action organisations shall identify and assess internal and external aspects that are relevant to the intended strategic direction and that may influence the activities, outputs and intended outcomes of mine action activity.

- a) The internal context relates to the activities, resources, structure, values, culture, knowledge and performance of the mine action organisation or programme.
- b) The external mine action context relates to political, economic, social, technical, environmental and legal aspects relevant to the organisation/programme, at local, regional, national and international levels.

Analysis of the mine action context should include an assessment of key trends of significance to the programme/organisation.

6 Needs and expectations

The needs and expectations of stakeholders shall be identified, analysed, assessed and appropriately reflected in the QMS. Mine Action Programme stakeholders include, but are not limited to:

- a) National mine action authorities (NMAAs);
- b) Mine action centres (MACs), including QM elements;
- c) Beneficiaries;
- d) Monitoring bodies;
- e) Mine action organisations;
- f) Government ministries and agencies;
- g) International institutions;
- h) International donors;
- i) Commercial investors and land developers;
- j) Mine victims;
- k) Land owners and users; and
- l) Local communities, society and the general public, women, girls, boys and men.

7 Gender and diversity

The QMS shall take into account, and appropriately reflect, the different needs, expectations and requirements of gender and diversity groups.

The QMS should collect, report and analyse data relating to gender and diversity aspects of its planning, prioritization, implementation, monitoring, evaluation and review functions. Sex and age disaggregated data (SADD) should be used.

8 Scope of the QMS

The scope of the QMS shall be determined and documented in light of:

- a) the context of the mine action organisation/programme;
- b) the needs and expectations of stakeholders; and
- c) the products, services and outputs of the mine action organisation/programme.

In determining the scope of the QMS authorities/managers should take into account the need for connectivity between the QMS and wider systems of results based management (RBM) including intended results, outcomes and impacts arising from mine action work.

9 Mine action products

Mine action authorities/managers shall identify mine action products relevant to their operations. As a minimum the following mine action products shall be subject to QM:

- a) released land (cancelled, reduced and/or cleared);
- b) EO for disposal (destruction, transfer, sale, etc.);
- c) data, information and reports;
- d) recruited and trained personnel;
- e) procured mine action equipment;

- f) prosthetics and orthotics;
- g) mine risk education materials;
- h) processing lines for demilitarization of ammunition and SA/LW; and
- i) other products identified by mine action authorities/managers as being relevant to the scope of their operations.

10 Mine action processes

Mine action authorities/managers shall identify, define and document processes relevant to their operations. As a minimum the QMS shall include processes relating to:

- a) Delivery of products/services to end users/beneficiaries including;
 - Land release;
 - Risk education (e.g. materials and communication);
 - Victim assistance (e.g. prosthetic manufacture);
 - Stockpile management;
- b) Direct support to processes that deliver product/services including;
 - Planning, prioritization and tasking;
 - Recruitment and training;
 - Procurement and equipment management; and
 - Information management.
- c) Other significant aspects of the organisation/programme's operations, activities, outputs and objectives as determined by the relevant authorities/managers.

Each process within the QMS shall be documented including:

- e) An identifying title/reference for the process;
- f) The inputs and outputs associated with the process;
- g) Interaction between processes and the order of any interaction;
- h) Associated effectiveness and efficiency performance indicators; and
- i) Identification of who/which job functions have responsibility and authority for implementation of the process.

Processes may be documented as SOPs.

11 Leadership and commitment

Successful development, adoption, implementation and continual improvement of a QMS is dependent upon leadership and continued commitment from the highest levels within the organisation/programme.

Authorities and managers shall:

- a) establish, document and maintain a quality policy;
- b) establish, document and maintain quality objectives, consistent with the overall strategic direction and context within which the organisation operates;
- c) monitor and review the progress and performance of the QMS and take action as necessary to ensure that quality objectives are achieved;
- d) integrate the QMS into the organisation/programme's wider strategic goals, objectives and RBM systems;
- e) ensure that adequate resources are available to maintain the QMS;
- f) communicate the importance of conforming to the requirements of the QMS; and
- g) ensure that the integrity of the QMS is maintained whenever changes are planned and implemented.

Authorities and managers shall ensure that the organisation/programme is focused on identifying, understanding and satisfying the needs of end users, beneficiaries and other significant stakeholders.

12 Quality Policy

A mine action quality policy shall be established and documented. The mine action quality policy shall:

- a. Be appropriate to the purpose, functions and strategic objectives of the mine action organisation/programme;
- b. Include a commitment to satisfying applicable requirements including:
 - National Mine Action Standards (NMAS);
 - International Mine Action Standards (IMAS), in the absence of NMAS;
 - International Ammunition Technical Guidelines (IATGs), where applicable;
 - Other applicable national and international conventions, laws, treaties, regulations, standards and agreements.
- c. Include a commitment to the continual improvement of mine action processes, products and services, as well as the QMS; and
- d. Provide a framework for setting quality objectives.

The policy shall be communicated to, and be understood by, all those with functions and responsibilities within the programme/organisation's activities and QMS. The quality policy should be made available to all stakeholders.

13 Objective setting

Mine action organisations/programmes shall specify relevant and achievable quality objectives that are:

- a) relevant to the scope of the organisation/programme's mine action processes, products and services;
- b) consistent with the organisation/programme's quality policy;
- c) measurable;
- d) monitored, reviewed and updated;
- e) communicated; and
- f) include relevant aspects of stakeholder satisfaction.

Mine action organisations shall specify relevant and achievable operational objectives for mine action activities that:

- g) reflect applicable operational requirements;
- h) are measurable;
- i) allow monitoring of performance against deadlines, schedules, budgets and other criteria as appropriate;

14 Planning of the QMS

When planning a mine action QMS relevant authorities/managers shall take action to ensure that the QMS can achieve its intended results including:

- a) understanding the requirements and expectations of mine action stakeholders;
- b) preventing or reducing nonconformity; and
- c) enhancing performance.

Planning of the QMS shall include:

- d) what will be done;
- e) what resources will be required;
- f) who will be responsible;
- g) when action will be completed; and
- h) how the performance of the QMS will be monitored and evaluated.

When changes are made to the QMS, authorities/managers shall:

- i) specify the purpose of the changes;
- j) identify potential consequences of the changes;
- k) ensure the continued integrity of the QMS;
- l) ensure that adequate resources are available to implement the changes; and
- m) communicate any changes to responsibilities and authorities.

15 Mine action resources

15.1 General

Adequate resources shall be provided to perform functions, including QM functions, necessary to maintain confidence in the safety, efficiency and effectiveness of mine action services and products.

15.2 People

Mine action authorities and managers shall:

- a) determine the competence requirements of job functions affecting the performance of mine action processes and products (including those related to PSSM, ASM and SA/LW destruction);
- b) confirm the competence of workers on the basis of appropriate education, training and/or experience;
- c) where necessary, take action to ensure the competence of workers through recruitment, transfer or additional training;
- d) monitor the effectiveness of training; and
- e) retain appropriate records of training and competence.

Mine action workers shall be made aware of:

- f) the quality policy;
- g) quality objectives relevant to their job functions;
- h) the significance of their roles and responsibilities in relation to the quality of mine action processes, services and products; and
- i) the quality and safety implications of not conforming with the QMS.

15.3 Equipment

Mine action authorities and managers shall:

- a) determine equipment requirements necessary to deliver safe, efficient and effective mine action processes, products and services;
- b) specify requirements, communicate requirements to suppliers and implement procurement processes;
- c) ensure that equipment is checked on receipt to confirm that it satisfies requirements;
- d) establish maintenance schedules in accordance with manufacturer's recommendations and as required by prevailing circumstances and conditions;
- e) ensure that adequate training of equipment operators is carried out;
- f) ensure that equipment is tested before operational use;
- g) implement operational controls, checks and tests to confirm the continued suitability and functioning of equipment;
- h) ensure that non-conforming equipment is marked and/or segregated to avoid its inadvertent use;
- i) ensure that appropriate repair or disposal action is carried out on non-conforming equipment; and
- j) maintain and retain equipment documentation appropriate to the type, value and significance of the equipment.

15.4 Information

Mine action authorities and managers shall:

- a) determine information requirements necessary to deliver safe, efficient and effective mine action;
- b) establish policies and procedures as required to ensure that mine action information can be collected/accessed by mine action organisations and stakeholders;
- c) ensure that necessary information is collected, reported, analysed and disseminated by competent persons in accordance with requirements (in the form of standards, policies, SOPs, forms, templates, etc.);
- d) manage mine action information in accordance with IMAS 05.10;
- e) retain, secure, protect and back up mine action information;
- f) ensure that mine action information is available to stakeholders in a timely and easy-to-access form;
- g) identify and respond to continual improvement opportunities relating to mine action information and its management; and
- h) seek feedback from mine action information users to determine levels of satisfaction.

If necessary, mine action authorities should seek the establishment of legislation and other appropriate legal instruments to ensure the availability of mine action information from relevant sources.

Mine action authorities and managers should determine and implement appropriate policies, procedures and practices in relation to mine action information that increase transparency and accountability and that make it easier for stakeholders to access information 'on demand' as well as 'on request'.

16 Infrastructure and working environment

Mine action authorities and managers shall ensure that buildings, equipment (including medical items), software and transport are suitable for safe and efficient mine action activities.

Mine action authorities and managers shall ensure that the mine action working environment is suitable for the safe, efficient and effective implementation of mine action processes. The working environment shall, so far as circumstances allow, be:

- a) safe;
- b) non-discriminatory and non-confrontational;
- c) stress-reducing; and
- d) comfortable.

The nature of mine action is such that work may take place under difficult conditions. Mine action authorities and managers shall, at all times, take all reasonable measures to satisfy the requirements of this standard with respect to working environment.

As a minimum mine action authorities and manager shall ensure that mine action operations comply with IMAS series 10 (Mine action safety and occupational health).

Under circumstances where there is reason to believe that working conditions may adversely influence the safety and/or quality of mine action processes and products, mine action authorities and managers should implement additional measures to address the situation, or suspend operations until more appropriate conditions prevail.

17 Mine action operations

17.1 Requirements for mine action products and services

Mine action organisations/programmes shall determine the requirements for the mine action products and services within their scope of operations. In determining requirements authorities/managers shall take into account:

- a) applicable standards;
- b) accreditation agreements;
- c) applicable laws, regulations and other legislation;
- d) contracts, memoranda of understanding and other relevant agreements;
- e) work plans, task orders and other operational direction; and
- f) requests and preferences expressed by beneficiaries and other stakeholders.

17.2 Planning of mine action processes, products and services

Mine action operations shall be planned and controlled to a level necessary to satisfy requirements and to maintain confidence amongst interested parties in the safety and quality of mine action processes, services and products.

Mine action operational planning shall:

- a) be based upon up to date and relevant information;
- b) reflect the requirements of agreed objectives;
- c) be consistent with quality and other policies;
- d) define intended activities;
- e) identify resources;
- f) specify roles and responsibilities;
- g) reflect gender and diversity considerations;
- h) reflect environmental considerations;
- i) set target milestones and/or completion dates;
- j) describe how results will be monitored and evaluated; and
- k) be documented.

Mine action authorities and managers shall take effective action to access, collect, or otherwise obtain, information necessary for planning purposes.

Mine action authorities and managers shall take appropriate and effective action to ensure that all information necessary for effective and efficient mine action planning is made available to relevant stakeholders.

17.3 Control of mine action processes, products and services

Mine action authorities and managers shall ensure that processes, products and services conform to requirements.

Methods to check conformity include, but are not limited to:

- a) accreditation of service/product suppliers (in accordance with IMAS 07.30);
- b) assessment of suppliers through questionnaires/visits to supplier premises;
- c) review of the supplier's previous performance;
- d) monitoring of supplier performance (in accordance with IMAS 07.40); and/or
- e) inspection of supplier-provided product (in accordance with IMAS 07.40).

The level of checking shall be determined on the basis of:

- f) the safety and quality significance of the process, service or product being provided; and
- g) the effectiveness of the provider's own QMS.

The same level of conformity shall be ensured in relation to externally provided processes, services and products as to those provided from within the mine action organisation/programme. Externally provided processes, services and products are those that:

- h) will be incorporated into the programme/organisation's own mine action products and services; and
- i) are provided directly to beneficiaries on behalf of the mine action programme/organisation.

Mine action processes, services and products relating to the survey, clearance, destruction, management or other handling of explosive ordnance should always be subject to accreditation by an appropriate national authority (in accordance with IMAS 07.30).

In the event that formal accreditation processes (as specified in IMAS 07.30) are not established, the relevant authority should take appropriate action to satisfy itself of the competence of the mine action organisation in carrying out and delivering the specified mine action processes, services and products.

Mine action authorities/managers shall retain documented information necessary to demonstrate conformity of externally provided processes, services and products.

17.4 Identification and traceability of mine action products and processes

Mine action resources, products and materials shall be identifiable and traceable to a level necessary to:

- a) maintain stakeholder confidence in the safety and quality of mine action services and products;
- b) identify nonconforming products;
- c) support root cause analysis in the event of nonconformity;
- d) allow operational analysis of the effectiveness and efficiency of mine action processes and products; and
- e) support continual improvement of mine action processes, products and services.

The following mine action products and resources shall, as a minimum, be identifiable and traceable:

- f) released land: uniquely identified and mapped;
- g) survey and clearance teams, and the members of those teams: uniquely identified and traceable to tasks and sites;
- h) survey and clearance equipment/assets (detectors, locators, mine detection dogs, other animal detection systems, mechanical demining machinery): uniquely identified and traceable to tasks and sites;
- i) Explosive Ordnance (EO) discovered, destroyed, transported, managed or stored: identified by type and quantity and located (in accordance with minimum data collection requirements in IMAS 07.11, 08.10 and 08.20 and applicable IATGs);
- j) prosthetic devices provided to mine/UXO victims: uniquely identified and traceable to users; and
- k) mine and ERW risk education lessons; uniquely identified and traceable to location of delivery.

Additional and/or more detailed identification and traceability procedures should be implemented where stakeholder requirements and the prevailing circumstances and conditions justify doing so.

17.5 Process controls

Appropriate controls shall be applied to mine action processes to ensure conformity to requirements, including:

- a) people: checks to confirm competence, fitness and availability in adequate numbers;
- b) equipment: checks to confirm adequate performance:
 - accredited/accepted (if required);
 - complete;
 - serviceable;
 - tested prior to, during and after use;
- c) documentation: procedures, work instructions and forms are available on site and at the current issue level; and
- d) measures: effectiveness and efficiency performance indicators, deadlines, targets, etc. are established and understood on site.

Process controls shall, in the first instance, be applied by mine action operating organisations in respect of their own processes using appropriate supervisory and internal monitoring functions.

Additional monitoring of process performance should be conducted by external agencies in accordance with IMAS 07.40.

17.6 Release of product

Mine action organisations/programmes shall implement procedures to verify that requirements have been met before products are released to recipients.

Mine action organisations/programmes shall retain documented information on the release of mine action products including evidence of conformity to requirements. The documented information shall, as a minimum, be traceable to:

- a) the organisation delivering the product;
- b) the organisation responsible for quality checking of the product (if applicable); and
- c) the person authorizing release.

Specific requirements relating to release of land are detailed in IMAS 08.30.

17.7 Control of nonconforming products

If there is any doubt about the conformity of product it shall not be released. Non-conforming product shall be identified and its unintentional release prevented.

In the event that product is found or suspected to be nonconforming, action shall be taken in accordance with IMAS 07.40 reflecting the nature of the nonconformity, its significance for stakeholder confidence and safety, and its implications within the QMS to:

- a) segregate/mark nonconforming product to ensure it is not inadvertently released (until it has been corrected);
- b) correct the nonconformity (if possible); and
- c) prevent recurrence of the nonconformity.

Other actions may include:

- d) return of the product to its supplier (if appropriate);
- e) informing the intended product recipient and relevant stakeholders such as donors; and
- f) agreeing with the intended recipient to release the product without further action.⁵

⁵ Known as 'acceptance under concession' in ISO quality terms (ISO 9000:2015).

17.8 Post-delivery activities

Following delivery of mine action services and products authorities and managers shall:

- a) check that requirements have been satisfied;
- b) check for any undesirable or adverse consequences and take action to prevent their reoccurrence; and
- c) analyse performance data in support of continual improvement processes.

Stakeholder feedback shall be obtained as part of mine action product performance monitoring processes.

Long term monitoring of mine action product performance should be carried out in accordance with IMAS 07.40 through:

- d) analysis of data held in mine action information management systems;
- e) analysis of data from information management systems external to the mine action programme (such as national health systems); and
- f) pro-active surveys of locations and regions where product has previously been released to customers.

18 Communication and participation

Mine action organisations/programmes shall communicate with relevant workers, beneficiaries, donors, authorities and other stakeholders:

- a) to provide information relating to mine action products and services;
- b) to ensure awareness and understanding necessary for competent mine action;
- c) when planning and reviewing the QMS;
- d) as required by conventions, treaties, standards, SOPs, agreements and contracts;
- e) when handling enquiries, contracts, tasking including changes; and
- f) in order to obtain and respond to stakeholder feedback.

The form, content and frequency of communication shall be determined on the basis of each stakeholder's relationship with the mine action organisation/programme.

Mine action authorities and managers shall gather and share relevant information, expertise and resources with mine action stakeholders.

Mine action authorities and managers shall be as transparent and accountable in their mine action communication processes as is consistent with legal and commercial limitations.

Mine action planning, implementation and monitoring shall include participation of relevant workers and stakeholders.

Mine action authorities and managers should seek to establish collaborative, rather than confrontational, relationships with other mine action partners, providers and stakeholders. Mine action authorities and managers should recognise improvements and achievements made by mine action providers, partners and other stakeholders.

19 Documentation

The mine action QMS shall be documented in accordance with this standard and shall include additional documentation as necessary for the safe, efficient and effective implementation/delivery of mine action processes, services and products. In determining the level of documentation mine action authorities and managers shall take into account:

- a) the size of the mine action organisation/programme;

- b) the complexity of those mine action processes carried out by the organisation/programme;
- c) the complexity of interactions between mine action processes within the organisation/programme and with external stakeholders; and
- d) the competence of workers.

As a minimum mine action quality documentation shall include:

- e) quality policy;
- f) quality objectives;
- g) management review outputs and results;
- h) Standard Operating Procedures (SOPs) appropriate to the scope of the organisation/programme's activities;
- i) quality, safety and environmental management procedures (which may form part of the body of SOPs);
- j) operational records as required by applicable international/national standards and by the approved SOPs;
- k) QA and QC records as defined within the QMS;
- l) Records of any nonconformity and any corrective actions in accordance with IMAS 07.40;
- m) records of stakeholder feedback;
- n) other operational records and reports as required by relevant authorities/managers; and
- o) other records required to satisfy stakeholder requirements.

Mine action documentation shall be:

- p) uniquely identified and/or described;
- q) appropriately formatted (language, templates, media, etc.); and
- r) reviewed and approved by an appropriate authority/manager.

Mine action authorities/managers shall ensure that:

- s) mine action documentation is available for use when and where it is needed;
- t) externally provided documentation is kept up to date;
- u) changes to documents are controlled to ensure that only the current version is in use; and
- v) mine action documentation is appropriately protected, stored and preserved.

The purpose of mine action documentation is to communicate information. When assessing the quality of mine action documentation, and considering whether it is fit for purpose, mine action authorities and managers should take into account:

- clarity - for the intended readership in the appropriate language;
- completeness – the extent to which the document addresses all relevant points and topics; and
- brevity – the extent to which the document does not include unnecessary material, or material that is already available in other documentation.

Mine action documentation shall be retained for a period consistent with:

- applicable legislation (in the host country and in the country where the mine action organisation is registered);
- national mine action standards; and/or
- donor, customer and other relevant stakeholder requirements.

Documentation relating to the release of land (cancelled, reduced and/or cleared) is of particular importance and should be subject to formal long-term archiving in the host country.

Mine action organisations and relevant international institutions should take appropriate additional action to satisfy themselves that land release documentation will continue to be available irrespective of events in the host country.

20 Performance

20.1 Monitoring, analysis and evaluation

Monitoring of performance is a critical function in any QMS. The mine action organisation/programme shall determine:

- a) what needs to be monitored and measured;
- b) methods for monitoring, measurement, analysis and assessment;
- c) when monitoring of mine action processes and products shall be performed;
- d) how and when results from mine action monitoring will be analysed.

Monitoring in a mine action QMS should be carried out in accordance with the requirements of IMAS 07.40 Monitoring of Mine Action Organisations.

The results of monitoring shall be used to assess:

- e) the extent to which products and services meet requirements;
- f) the degree of stakeholder satisfaction;
- g) the performance of the QMS;
- h) the effectiveness of planning, prioritisation and tasking functions;
- i) the effectiveness of risk management functions; and
- j) the performance of external providers (if applicable).

Evaluation of mine action interventions should be carried out in accordance with the requirements of IMAS 14.10. The results of evaluations should be considered during management reviews of the QMS.

20.2 Quality audit

A quality audit is a particular form of monitoring activity. It implies a degree of formality that may be less evident during routine monitoring activities.

Mine action organisations should implement a programme of internal audits of the QMS in accordance with Annex B of IMAS 07.40.

Mine action programmes (as well as donors, commercial clients and others funding mine action work) may additionally implement a programme of external audits on mine action organisations in accordance with Annex B of IMAS 07.40.

21 Improvement

Opportunities to enhance performance may arise at any time and be identified by anyone. Mine action authorities/managers shall implement measures to encourage workers, managers and other stakeholders to bring real or potential nonconformities, and other opportunities for improvement, to the attention of relevant managers.

Mine action organisations/programmes shall establish processes to identify, assess and act on opportunities for improvement to the QMS and to mine action processes, services and products.

Improvement through correcting, preventing or reducing nonconformities and other undesirable effects shall be managed in accordance with IMAS 07.40.

22 Management review

Management reviews should be conducted by the senior management of mine action organisations/programmes at appropriate intervals to ensure the continued effectiveness, suitability and alignment of the QMS with the organisation/programme's strategic objectives.

Management reviews should be conducted at least annually, or more frequently in light of prevailing circumstances and conditions.

Management reviews should take into account:

- a) the status of actions arising from previous reviews;
- b) changes in the mine action context relevant to the QMS;
- c) performance of the QMS including:
 - stakeholder satisfaction
 - extent to which quality objectives have been met
 - performance of processes, products and services
 - nonconformities and corrective actions
 - monitoring, measurement, audit and evaluation results
 - external provider performance
- d) performance of resources; and
- e) opportunities for improvement.

Management reviews shall include decisions and actions related to:

- f) opportunities for improvement;
- g) changes to the QMS; and
- h) resource needs, suitability and competence.

Actions arising from management reviews shall state what action will be taken, who will be responsible, by when action will be completed and how effective implementation of action will be checked.

The results of management reviews shall be communicated to workers, managers and stakeholders.

23 Responsibilities

23.1 National Mine Action Authority (NMAA)

The NMAA, or an organisation acting on its behalf, shall:

- a) establish, communicate and maintain a MAP quality policy;
- b) ensure that organisations working within the MAP establish appropriate quality objectives;
- c) specify the national standards and provide guidelines for the QM of mine action organisations and activities;
- d) establish, accredit and audit a quality monitoring body (or bodies), in accordance with the requirements of IMAS 07.40;
- e) review the quality performance of the MAP at intervals of no more than twelve months; and
- f) ensure appropriate follow-up action is taken in light of the conclusions and recommendations of MAP QM reviews.

23.2 Mine Action Centre (MAC)

The MAC shall:

- a) establish and maintain an effective and documented QMS;

- b) establish a quality policy appropriate to the scope of its own activities and consistent with any MAP quality policy;
- c) establish quality objectives in line with its own quality policy;

The MAC, or a body operating on its behalf, shall:

- d) have accreditation from the NMAA to operate as a monitoring body; and
- e) monitor mine action organisations in accordance with IMAS 07.40.

23.3 Mine action organisations

Mine action organisations shall:

- a) establish and maintain an effective and documented QMS;
- b) establish a quality policy appropriate to the scope of the organisation's own activities and consistent with any MAP quality policy;
- c) establish quality objectives in line with the organisation's quality policy;
- d) apply management practices, and QM and operational procedures which lead to mine action activities that meet or exceed agreed, specified standards (usually NMAS, IMAS or IATGs), and that also meet or exceed requirements specified in the contract, accreditation agreement, other relevant formal agreements and applicable rules and regulations;
- e) maintain, ensure the accuracy and validity, and make available documentation (including SOPs and other written procedures), reports, records, (including internal monitoring and quality reports), and other data on their activities in accordance with IMAS 07.40;

In the absence of a NMAA or similar authority, the mine action organisation should assume additional responsibilities. These include:

- f) agree with the donor (or client, or customer) a system for managing the quality of the mine action activities; and
- g) assist the host nation, during the establishment of a NMAA, in framing national standards for QM.

23.4 Donors, clients and other stakeholders

Those organisations contracting or funding mine action operations should:

- a) specify and agree their service/product/output requirements to mine action organisations in clear and unambiguous terms; and
- b) include details of the national QM requirements, or in the absence of a NMAA, requirements established by the UN or other appropriate international body.

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 05.10 Information management for mine action;
- c) IMAS 07.11 Land release;
- d) IMAS 07.30 Accreditation of demining organizations;
- e) IMAS 07.40 Monitoring of mine action organizations;
- f) IMAS 08.10 Non-technical Survey;
- g) IMAS 08.20 Technical Survey;
- h) IMAS 08.30 Post-clearance documentation;
- i) IMAS 09.10 Clearance requirements;
- j) IMAS 10.10 Safety and Occupational Health – General requirements;
- k) IMAS 10.70 Safety and Occupational Health - Protection of the environment; and
- l) IMAS 14.10 Guide for the evaluation of mine action interventions.