

# **MIGRATION FROM ISO 9001:2008 TO ISO 9001:2015 IN THE INTEGRATED SIMULATORS COMPLEX, ARAB ACADEMY FOR SCIENCE, TECHNOLOGY AND MARITIME TRANSPORT**

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## **ABSTRACT**

The International Organization for Standardization (ISO) reviews its published standards every five years to meet changing market demands. In 2015, the world wide popular ISO 9001:2008 International standards for Quality Management Systems (QMS) have been revised and updated to correlate with the continuously changing business environment. The new standards improve QMS performance by following a proactive rather than a preventive approach. This is achieved by employing risk-based thinking on the process approach to detect and prevent undesirable actions and thus reduce corrective actions.

All organizations that are currently certified with ISO 9001:2008 are given a grace period of three years to comply with the new requirements. Organizations must remain in compliance with the old requirements until new ones are met or else they lose their certification. Furthermore, each organization has its own product or service requirements. To successfully complete this migration to the new requirements, a thorough comparison must be conducted between both requirements and a detailed action plan must be devised to carry out the necessary changes. This study aims to provide guidance for the Integrated Simulators Complex at the Arab Academy for Science, Technology and Maritime Transport to complete the transition from ISO 9001:2008 to ISO 9001:2015.

**KEYWORDS:** Migration from ISO 9001:2008 to ISO 9001:2015 in the Integrated Simulators Complex

## **INTRODUCTION**

Quality Management Systems (QMS) are utilized to improve overall performance of an organization. Each organization design its QMS based on its context, size, structure, objectives, risks associated with those objectives, products/services delivered, processes employed, competence of employees, needs and expectations of its interested parties (ISO, 2014). That is why international standards and requirements of QMS are generic so that they could be applied on different organizations. These standards do not imply uniformity of structure of different QMS, or uniformity of documentation, or impose specific terminology to be used within an organization (ISO, 2014).

One of the most popular international standards is ISO 9001. It was mainly designed for organizations manufacturing products but due to its benefits upon application, it gained much popularity among service providing organizations too. This is due to the increased awareness that adherence to quality standards provides major competitive advantages.

ISO standards and requirements are never static, but they are revised periodically. The increasing complexity of

the business environment within which organizations must operate, have pushed upon the continuous update of the standards of ISO. In September 2015, ISO 9001:2008 was revised and replaced by ISO 9001:2015. Since then, organizations have startled with the uncertainty of the needed changes that are needed to fully comply with the new standards. For those organizations currently certified to ISO 9001:2008, the transition deadline is three years from the date of publication, September 2018 (IAF, 2015). Coleman (2015) stated that organizations which are already certified with ISO-9001:2008 already meet many of the new requirements. However, to fully comply with all the requirements of the new standards, each organization must thoroughly address its own requirements.

This study aims to provide guidance for the Integrated Simulators Complex (ISC) at the Arab Academy for Science, Technology and Maritime Transport (AASTMT) to complete the transition from ISO 9001:2008 to ISO 9001:2015. First, the new concepts introduced in the revised standards are highlighted. Second, a comparison is made between both standards to conclude needed changes. Finally, an action plan is suggested for implementation in the ISC to comply with the new requirements while still complying with the older requirements.

### **Integrated Simulators Complex (ISC)**

The Integrated Simulators Complex (ISC) is one of the major entities of AASTMT, established in 1996 with a budget exceeding 65 million dollars. Its mission is to provide Education, Training and consultancy services to multi-national seafarers and officials from the maritime industry. These services are provided by academically and technically competent lecturers using state-of-the art integrated simulators and lab systems who continuously seek to achieve higher levels of performance. ISC contains five different departments: marine, dynamic positioning, GMSS, Liquefied Natural Gas (LNG) and tanker operations. ISC has established itself as a regional center of excellence in the maritime industry providing up to 1200 tailored and mandatory training courses to more than 20,000 trainees from 32 different countries. To continuously improve the quality of its services, most AASTMT main bodies implement QMS based on the standards and requirements of ISO 9001:2008. ISC is certified with ISO 9001:2008 to ensure its continuous improvement and development.

### **ISO 9001**

ISO (the International Organization for Standardization) is a worldwide federation that is made of national standards bodies (ISO member bodies). ISO technical committees are responsible for preparing international standards. Each member body interested in a subject for whom a technical committee has been established has the right to be represented on that committee. International organizations, governmental and also non-governmental also take part in this work.

ISO 9001 is a document that specifies all the generic requirements for a quality management system (QMS) which can be applied to any organization, regardless of its type or size, or the products and services it provides. QMS aims to enhance customer satisfaction by assuring conformity of products/services to customer and applicable statutory and regulatory requirements. This is achieved through the effective application of the system, including processes for improvement of the system.

ISO 9001 is only one of the three core standards in the ISO portfolio of QMS standards. ISO 9000 provides the fundamentals and vocabulary necessary for understanding and correctly implementing these standards. ISO 9004 provides self assessment methodology for an organization to be able to evaluate its level of maturity of its QMS.

The committee responsible for ISO 9001 is the Technical Committee ISO/TC 176 (Quality Management System and Quality Assurance). The newest edition of ISO 9001 was published in November 2015 as the fifth edition (ISO 9001:2008). This edition has introduced new concepts which will be highlighted in the following section.

**New Requirements of ISO 9001:2015**

ISO 9001:2015 introduced a number of significant new requirements aiming to better integrate and align quality management with business strategies of any organization whether product or service oriented (Coleman, 2015). The following sections will overview some of these new requirements:

**High Level Structure (HLS)**

The first major change in the new standards was its high level structure (HLS). To simplify alignment, integration and implementation of more than one ISO standard by any organization, all new standards will follow the high level structure” provided in Annex SL, Appendix 2 of the ISO/IEC Directive, Part , Consolidated ISO Supplement, 2013 (ISO, 2015b). The new HLS standardizes sub-clause titles, core text, common terms and core definitions to enhance compatibility and alignment with other ISO management system standards. The British Standards Institute (2015) defines the new structure as containing ten clauses as shown in the following Table 1.

**Table 1: High Level Structure for New and Revised ISO Standards, Annex SL (BSI, 2015)**

Clause	Title	Description
1	Scope	Set out the intended outcome of the management system.
2	Normative References	Reference standards or publications
3	Terms & Definitions	Terms & Definitions related to standard
4	Context of Organization	4.1 Understand organization and its context: Define internal & external issues that impact its outcome 4.2 Define interested parties and their needs and expectations 4.3 Determine scope of QMS 4.4 Determine QMS Processes
5	Leadership	5.1 Top management has greater accountability & commitment to the QMS: Integrate QMS requirements into organization core business processes Allocate resources and ensure QMS achieve its outcomes 5.2 Policy 5.3 Organization roles, responsibilities & authorities
6	Planning	6.1 Actions to address risks & opportunities. Plan (when, who, how & what) to address risks & opportunities 6.2 Objectives of QMS must be measurable, monitored, communicated, and aligned to the policy of the organization. 6.2 Plan to achieve these objectives
7	Support	Support needed to achieve goals and objectives: 7.1 Resources 7.2 Competence 7.3 Awareness 7.4 Communication 7.5 Documented Information
8	Operation	8.1 Operation planning and control: Both in-house and outsourced procedures are controlled to manage planned and unintended changes
9	Performance Evaluation	To ensure QMS conform to organization requirements and standards 9.1 Determine when, what and how to Monitor, Measure, Analysis, Evaluation 9.2 Internal Audit 9.3 Management Review QMS suitable, adequate & effective

10	Improvement	10.1 Determine how to handle Non conformities and corrective actions 10.2 Strategies for continuous improvement
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### **Service Orientation**

ISO 9001 was originally made for manufacturing and industrial organizations. However, due to its widespread and applicability, many service providers were also attracted to the ISO 9001 standard. The standards have been revised to include the new service context in addition to the already existing product context. Choice of vocabulary and level of abstraction of the new standard were modified to enable its efficient implementation whether the final output is a product or service.

### **Risk Management**

The revised standard places great emphasis on the concept that reducing risk would improve performance (Lloyd's Register, 2015). The standards take a preventive rather a reactive attitude by applying risk management within organization context and processes. The organization must identify and avoid all possible risks in its processes. Risks that fail to be identified will eventually result into corrective actions.

### **Leadership**

The revised standards direct organization leadership to be more committed to the implementation of quality. Top management is now the driving force making it easier to acquire needed resources and motivation. Quality policy is more in line with organization goal and the QMS is now merged with the business processes of the organization (Coleman, 2015).

### **Documented Information**

The revised standards introduced the term "documented Information" to replace the terms "documented procedures" and "records." Also even though, the Quality Manual is deeply rooted into the culture of quality, it is not required to be maintained by the new standards. However, it is still advisable to maintain the Quality Manual as it still fulfills many of the requirements of the new standard. This change in the requirements of the standard, aims to provide more freedom to organizations to handle information. As information is handled further and further away from paper, eventually the quality manual will fade out of the QMS.

### **Organization Context and Stakeholders**

The new standards put more emphasis on the context surrounding the organization. Context of an organization requires the determination of the internal and external issues and requirements that impact the QMS. Also requires the identification of all Stakeholders to evaluate their expectations and focus on achieving. Context is important as it ensure the QMS is designed and suitably adapted for the organization (Lloyds, 2015).

### **Knowledge Management**

The new standards consider Knowledge as a resource within the organization. An organization must determine the Knowledge it needs to achieve conformity of its products or services (Lloyds, 2015). This knowledge must be identified, maintained and protected. Changes in needs for knowledge must be predicted and the risk of failing to acquire such knowledge in due time must be managed.

In summary, ISO 9001:2015 increases emphasis on organization context, utilizes risk-based thinking to improve the process approach, increases the responsibility of leadership, and provide more applicability for service oriented organizations, and simplify integration with other standards through its HLS.

### **Requirements Dropped in ISO 9001:2015**

The updated version of ISO 9001 dropped a number of requirements that were previously requested in the older version. This provides more flexibility for any organization and was not aiming to force organizations to get rid of existing documents or roles. Some of the dropped requirements include:

- The Quality manual is no more required (clause 5.1.1)
- Documented procedures are not a standard requirement but could be required by the organization based on its needs (clause 4.4.)
- Requirement to plan performance evaluation replaced by identifying what needs monitoring and measuring and methods to be used (clause 8.1).
- Preventive actions are implemented through risk management.

To simplify compliance with the above mentioned changes in requirements, the following section will suggest a transition plan for organizations certified with ISO 9001:2008 to fully comply with the new requirements of ISO 9001:2015.

### **Migration from ISO 9001:2008 to ISO 9001:2015**

The International Accreditation Forum (IAF) which is the worldwide acceptance facilitator among Accreditation Bodies, declared a three year transition period from the publication date of ISO 9001:2015. Since the new standards were officially published in September, 2015, organizations worldwide already certified with ISO 9001:2008 must comply with the new requirements of ISO 9001:2015 before September 2018. During this migration, they must mitigate to the new requirements while still complying with the old ones. Organizations should maintain their accreditation with ISO 9001:2008, while seeking accreditation for ISO 9001:2015 (IAF, 2015).

The degree of change required by any organization depends on the maturity and effectiveness of its current management system. IAF (2015) has recommended the following actions to be completed by any organization to comply with the new requirements:

- Conduct gap analysis to identify the issues that need to be addressed by developing a requirements matrix by comparing clauses of ISO 9001:2015 with organization status.
- Develop an implementation plan to cover the above gaps while considering time and resources needed.
- Provide awareness and training for needed parties of the organization.
- Update the existing QMS to meet the revised requirements and provide verification of effectiveness.
- Coordinate with the Accreditation Body for transition arrangements.

The British Standards Institute (2015) also suggests the following transition plan:

- Discuss organization challenges and timeline.
- Attend training courses to deeply understand the new requirements.
- Communicate the new requirements to organization leadership.
- Setup a project team to conduct the transition.
- Conduct a gap analysis against organization QMS to create a requirements matrix.
- Create an implementation plan and monitor progress.
- Implement the new requirements on leadership, risk and organization context.
- Change documentation to reflect the new requirements.

Both of the above migration plans could be integrated and summarized into the following suggested plan:

- Assign a project team to conduct the transition.
- Provide awareness and training for organization bodies.
- Conduct gap analysis comparing old and new requirements against organization QMS to create a requirements matrix.
- Create an implementation plan and monitor progress.
- Implement the new requirements while changing documentation to reflect the new requirements in coordination with the Accreditation body.

#### Requirements Matrix for ISC to Migrate From ISO 9001:2008 to ISO 9001:2015

After completing the first two steps of the suggested migration plan, gap analysis must be conducted to prepare a requirements matrix for actions to be completed. The gap analysis will compare the relevant clauses of both standards against the current QMS of ISC. The following Table demonstrates the resultant requirements matrix:

**Table 2: Requirements Matrix for ISC to Migrate From ISO 9001:2008 to ISO 9001:2015 Requirements**

Clause	Title	Description
1	Scope	Determine the outcome of QMS.
4	Context of Organization	Determine Context of organization (products and services to be delivered). Define internal & external issues that impact organization outcome Define interested parties, their needs and expectations Determine scope of management system
5	Leadership	Take accountability for the effectiveness of the QMS. Ensure the quality policy and quality objectives are compatible with the context of the organization Integration QMS requirements into the organization's business processes promote risk-based thinking in the process. ensure that the QMS achieves its intended results engage, direct and support persons to contribute to the effectiveness of the QMS supporting relevant management roles promotion of improvement Integrate QMS requirements into organization core business processes Allocate resources and ensure QMS achieve its outcomes Determine .2 Policy

		5.3 Organization roles, responsibilities & authorities
6	Planning	6.1 Actions to address risks & opportunities Plan (when, who, how & what) to address risks & opportunities 6.2 Objectives of QMS must be measurable, monitored, communicated, and aligned to the policy of the organization. 6.2 (cont.) Plan to achieve these objectives
7	Support	Support needed to achieve goals and objectives: 7.1 Resources 7.2 Competence 7.3 Awareness 7.4 Communication 7.5 Documented Information
8	Operation	8.1 Operation planning and control: Both in-house and outsourced procedures are controlled to manage planned and unintended changes
9	Performance Evaluation	To ensure QMS conform to organization requirements and standards 9.1 Determine when, what and how to Monitor, Measure, Analysis, Evaluation 9.2 Internal Audit 9.3 Management Review QMS suitable, adequate & effective
10	Improvement	10.1 Determine how to handle Non conformities and corrective actions 10.2 Strategies for continuous improvement

## CONCLUSIONS

ISO normally reviews its standards every around five years to ensure that they are relevant to changing market demands. ISO 9001:2008 was recently revised and replaced by ISO 9001:2015, where holders were given a three year period as a transition period to fully comply with all requirements of ISO 9001:2015, which will end on August 2017. Organizations around the world must fulfill these requirements while still complying with older ones.

The Integrated Simulators Complex (ISC) is one of the main entities of AASTMT serving a huge sector of maritime deck and offshore officers. It has been certified with ISO 9001:2008 since 2014 and has maintained its certification since then. However, the inception of ISO 9001:2015 requires much work to be done to comply with the new requirements. It is still unclear k introduced a lot This paper provides guidance for the transition from ISO 9001:2008 to ISO 9001:2015 within AASTMT. It identifies activities which should be considered by relevant interested parties and increases understanding of the context of ISO 9001:2015.

ISO 9001:2015 introduced a number of significant changes aiming to integrate and align quality management with business strategies of any organization. First of all, the structure of the standards was changed to follow a higher level structure adhered to by future standards (based on Annex SL). Second, the revision added new terms and abstractions for the service providing organization, since the standard was initially designed for manufacturing products only. More emphasis was put on organization leadership to ensure whole organization participation towards achievement of the organizations goals and objectives. The new standards also integrated Risk Management within organization processes taking a preventive rather than reactive strategy to identify risk and deal with other than let unidentified risks reduce performance then handle using corrective actions.

To migrate ISC from compliance with ISO 9001:2008 to ISO 9001:2015, a mitigation plan is suggested. Gap analysis is conducted as part of this plan to generate a requirements matrix to be completed by ISC. The gap analysis will compare the relevant clauses of both standards against the current QMS of ISC.

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