

# Get Ready for the AS9100C Transition

Auditor training is finally underway for the latest revision to the aerospace quality management system standard. Find out how your company can benefit from the upgrade.

By Dennis Rosa, MAGNET Senior Consultant

As manufacturers in the aerospace industry are aware, a new revision to the International Aerospace Quality Group's (IAQG) aerospace quality management system standard (AS9100) was adopted in early 2009. The new standard may be referred to as AS9100C, AS9100:2009 or AS9100 Rev C.

Although the revision was officially adopted more than a year ago, implementation of this new "C" revision is only just getting underway this summer. The reason: the IAQG was waiting for approval of other related standards—AS9101D (a checklist for the entire AS series of standards) and AS9104-1 (for Oversight of Aerospace Quality Management Systems). In addition, the course for training Aerospace certification body auditors only became available on April 30.

Certification body auditors must attend the approved training course, pass it, and obtain RABQSA approval. Certification bodies (registrar's) must submit applications and be audited by ANAB and be accredited before performing AS9100C audits. So once the registrar's are accredited and auditors are approved—just a matter of a few weeks or months—registrar's will be able to begin conducting audits to the new "C" standard.

## Advantages of AS9100C

This new standard is not just for aerospace (i.e. aviation and space). It also includes "land and sea based defense applications" standards. By moving to AS9100C, suppliers will find it easier to compete in the international marketplace in all three categories: aviation, space and defense. Active aerospace programs in China, Russia and Brazil will provide many opportunities to grow and diversify your markets.

## Key Changes in the AS9100C Revision

To create this international standard required four years of consultations among civil aviation authorities, defense and space authorities, certification bodies, trade associations, suppliers and companies who are members of the International Aerospace Quality Group.

These stakeholders added six requirements, revised eight existing requirements and deleted three requirements from the previous standard. There are also a host of minor changes.

Management and quality engineers will need to assure cross-functional time and resources are deployed to develop, implement and maintain the key new processes to meet the key changes.

## Six Additions

Two key goals of the revision were to put emphasis on product and process improvement (e.g. risk management, critical items and project management) and to provide additional focus on IAQG's objective of on-time and on-quality deliveries.

The revision adds three new definitions and three new requirements.

The three new definitions:

- ◆ **Risk:** "An undesirable situation or circumstance that has both the likelihood of occurring and a potentially negative outcome."
- ◆ **Special requirements:** "Those requirements which have high risks to being achieved thus, requiring their inclusion in the risk management process."
- ◆ **Critical item:** "Those items having significant effect on product realization and the use of products that require specific actions to ensure they are managed."

The three new requirements:

- ◆ **Customer Focus/Satisfaction:** Measuring product conformity and on-time delivery performance and planning for appropriate actions when planned results are not achieved (clauses 5.2/8.2.1).
- ◆ **Project Management:** Planning and managing product realization in a structured and controlled way to meet requirements at acceptable risk (Clause 7.1.1).
- ◆ **Risk Management:** Implementing a risk management process covering: responsibility, criteria, mitigation and acceptance (Clause 7.1.2).



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# An Integrated Approach to Management Systems Yields the Best Results

Cross-functional teams working together provide higher overall system performance than an individual systems approach.

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When considering how to implement various management systems, companies are often faced with challenging decisions. Say, for example, a company was considering integration of a Quality Management System (ISO 9001:2008) with an Environmental Management System (ISO 14001:2004) and/or an Occupational Health and Safety Management System (OHSAS 18001).

In my opinion, it is possible that Toyota Motor Corp.'s widely publicized problem with unintended acceleration of some of its vehicles may be an example where an integrated systems approach might have achieved better results, protecting the company's reputation and saving dozens of lives.

An integrated approach provides the most benefit from management systems that are structured around their business processes. Process owners and cross-functional teams working together provide improved integrated process/system outputs resulting in higher overall system performance versus an individual systems approach.

This is synergy—the performance of the combination is greater than the sum of the individual parts.

For example: A product development engineer, sales person and manufacturing engineer work together to achieve a new innovation or new final product. The team more than satisfies the customer, market needs, safety and environmental, resulting in better overall business results, than if each person was working toward the same goal individually.

## Advantages of an Integrated Systems Approach

- ◆ More concise minimalist management system with all aspects adding value without redundancy
- ◆ Enhanced communication through simplicity and uniformity
- ◆ More effective and efficient processes
- ◆ Reduction of internal and external audit costs



***If you are new to management systems, consider implementing a quality management system initially to continually improve your business processes, improve customer satisfaction, allow market growth and diversification and improve bottom line profits.***

- ◆ Reduction of implementation costs
- ◆ Integrated objectives and measures
- ◆ Increased satisfaction for customers, suppliers, stakeholders and the environment
- ◆ Reduced system risk overall by providing risk analysis comparisons between quality, environmental and safety risks
- ◆ Enhanced competitiveness and business security
- ◆ Increased profitability through lower costs, improved productivity and creativity

## Summary

Consider the benefits a management system (Quality, Environmental or OHSAS) can contribute to the success of your company in the future. Depending on your current needs, consider the implementation of an integrated systems

approach. If you are new to management systems, consider implementing a quality management system initially to continually improve your business processes, improve customer satisfaction, allow market growth and diversification and improve bottom line profits.

*About the Author: Since joining MAGNET in 1992, Dennis Rosa has helped more than one hundred manufacturing organizations improve their bottom lines through quality and productivity improvement efforts. He received his BS in industrial engineering from Cleveland State University. Dennis has managed both Manufacturing Engineering and Quality functions at CE Cast Equipment, Lubriquip and KTISwasey (Warner & Swasey).*

*For more information about how MAGNET can help your company implement a quality management system project, contact Dennis Rosa at 216.391.7506. ◆*

# Six Sigma and the ISO Quality Management System

Six Sigma and ISO quality management systems can be mutually beneficial.

Six Sigma and the ISO quality management system are often viewed as mutually exclusive, separate approaches to process management.

The ISO system is about quality management and reducing variability in processes. The focus is on setting standards and ensuring adherence to those standards through auditing and documentation.

Six Sigma focuses squarely on process improvement through the use of statistical tools and performance measurements.

In allocating resources for a process improvement system, decision makers often view ISO and Six Sigma as a one-or-the-other proposition.

While it is true that there is some difference in focus and methodology, it is also true that the two systems can complement, and even mutually benefit, one another.

The most recent edition of the ISO quality management standard (ISO 9001:2008) requires a process approach, customer focus and a commitment to quality improvement.

These demands correspond perfectly with the philosophy and principles that underlay Six Sigma. Six Sigma can provide specific tools, techniques, and training to help organizations meet and exceed these requirements.

## Six Sigma and the Eight Guiding Principles of ISO Quality Management

The ISO 9000 family of standards is generally regarded as resting on eight guiding principles. The list below shows how Six Sigma complements these six principles.

### 1. Focus on the Customer

Six Sigma can help an organization align itself through customer-focused process performance measurements.

### 2. Provide Leadership

Six Sigma encourages and requires support and involvement from top executives to be properly implemented. Six Sigma projects involve training and coaching with the goal of developing leadership from within the organization. Critical thinking, innovation, and involvement from each employee are all encouraged.

### 3. Involvement of People

One of the many benefits of Six Sigma is how it helps to develop people. The combination of training and team projects in Six Sigma not only helps to develop leaders from within your organization, but it empowers all stakeholders to be knowledgeable and valuable contributors to the success of the enterprise.

### 4. Process Approach

Six Sigma is an extension of the process approach. Its underlying principles are that all business activities involve processes, that all processes can be measured as to results or performance and that all measured processes will vary. Six Sigma provides a set of tools to measure, analyze, understand, and improve processes.

### 5. Manage Through a Systems Approach

The Six Sigma approach applies statistical analysis in a system-wide context, to help organization understand the variations and performance levels of all of their business processes. A successful

Six Sigma project recognizes that all processes and people in an organization are interconnected and provides measurable goals, which span the organization from end to end.

### 6. Continual Improvement

Six Sigma is a time-tested methodology for effecting continuous process improvement through the use of a proven set of statistical and analytical tools. ISO quality management systems provide the framework for continual improvement by standardizing practices and reducing variability. Six Sigma provides the nuts and bolts to make continuous improvement happen.

### 7. Factual Decision-Making

Six Sigma provides a means for a fact-based approach to decision making. Its graphs and charts and other statistical analysis tools allow organizations to obtain measurable, quantitative information about its processes that can cut through arguments and opinions and help to gain a consensus for making decisions about process improvements.

### 8. Work Effectively With Suppliers

Six Sigma sees customers and suppliers as part of a connected system. Customer and supplier interactions occur at all points of the business life cycle and thus impact the performance of each business process. Supplier interactions form a key component in a Six Sigma project as each process is measured and analyzed.

Six Sigma then, is a proven process management system that can provide the tools, techniques and training to help organizations satisfy ISO 9000 requirements in demonstrating leadership and top management involvement, achieving customer satisfaction, working with suppliers, measuring processes, and making decisions based on reliable data and information, and in making the commitment to continual process improvement. ♦

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The IAQG also made six key revisions to the standard:

- ◆ Configuration Management (Clause 7.1.3)
- ◆ Work Transfer (Clause 7.1.4)
- ◆ Recognition of Supplier Data (Clause 7.4.1)
- ◆ Approval Status of Suppliers (Clause 7.4.1)
- ◆ Production Process Verification (Clause 7.5.1.1)
- ◆ Sampling Inspection (Clause 8.2.4)

For complete details on all the changes to the standard, download **IAQG 9100:2009 Revision Overview (Revision 3)**, by the IAQG 9100 Team, May 14, 2010. PDF (630k) at [www.sae.org/iaqg/projects/9100changes.pdf](http://www.sae.org/iaqg/projects/9100changes.pdf).

## Timeline

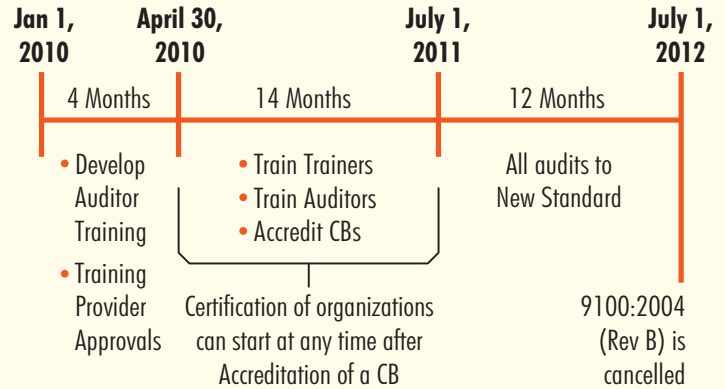
Registrars have until July 2011 to complete the process of training trainers, training auditors and obtaining their accreditation to the "Rev C" standard. So, until July 1, 2011, audits can still be conducted to the AS9100B standard. After that, audits will be conducted only to the AS9100C standard. After July 1, 2012, the "B" standard will be cancelled.

Timing your company's upgrade to AS9100C will require careful consideration. If your company recently received recertification to the "B" standard, it may make sense to wait until your next annual surveillance audit to upgrade to the "C" standard.

However, there are two reasons not to wait too long. First, registrars and auditors will soon get very busy with AS9100C certifications. You might find your company has to wait in line for your turn. Second, if, during the certification process, your auditor issues findings for any corrective actions, your company will need enough time to close those out before the July 1, 2012 deadline.

Two years might seem like a long way away. But the deadline will arrive sooner than you think! So allow for the

## IAQG Proposed Implementation Schedule



Source: IAQG 9100:2009 Revision Overview (Revision 3), by the IAQG 9100 Team, May 14, 2010.

unexpected, pay attention to messages from your registrar and follow their suggestions.

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