Ready for Takeoff
Revision of AS9100 expected this fall

THE INTERNATIONAL Aerospace
Quality Group (IAQG) is putting finishing
touches on the next revision of AS9100,1
the quality management system (QMS)
standard for the aviation, space and de-
fense (AS&D) industries.

AS9100 is based on and includes all of
ISO 9001, which is scheduled for a minor
amendment this fall. This amendment is
triggering the revision of AS9100, which
will include not only the ISO 9001:2008
changes, but also changes determined to
be essential to the continual improvement
of AS9100. These changes will include:
• Expanding the scope to include the
defense sector.
• Adding or revising requirements to
meet stakeholder needs.
• Complying with IAQG’s strategy.

The first draft of the AS9100 revision
was developed in July 2007 after extensive
data mining from stakeholders. An AS9100
coordination draft to receive input to the
added or revised requirements was sent to
all stakeholders in November 2007.

The IAQG 9100 team then met in April
to deal with the 182 comments received
regarding the coordination draft and
used the design specification to ensure a
disciplined process in the evaluation of all
comments.

AS91000 changes and additions being
considered for inclusion meet the follow-
ing requirements:
• Constitute QMS requirements that are
not contractual or contain product
specific requirements.
• Enhance clarity of requirements or ad-
dress stakeholder needs.
• Satisfy the needs of the broad IAQG
9100 user community through require-
ments that are suitable for use by all
sizes and types of organizations in the
AS&D sectors.
• Provide benefits that outweigh the im-
 pact of implementation.
• Are not prescriptive (establish what but
not how) and can be audited.

The IAQG 9100 team also planned de-
ployment support material and discussed
synergies with other IAQG strategies and
standards.

AS9100 changes and additions being
considered for inclusion meet the follow-
ing requirements:

Release schedules
The approved AS9100 comments and
ISO 9001 amendments were included in
an AS9100 ballot draft that was issued
for IAQG member company voting in
May. The team expects AS9100:2008 to
be completed about one month after
ISO 9001:2008, which is scheduled to be
released in October.

The IAQG 9100 team plans to have
deployment support material available
concurrent with the completion of
AS9100. These materials will include a
press release on the main changes, fre-
quently asked questions, overview train-
ing material and coordination actions
planned with other IAQG standards
and documents impacted by AS9100
changes.

Other IAQG standards and documents
that will be updated shortly after the re-
vised AS9100 standard include AS91012 on
QMS assessment, AS9110 for maintenance
organizations and AS9120 for stockist
distributors.

Additional IAQG standards and docu-
ments, such as AS9102,3 which covers the
aerospace first-article inspection require-
ment, and AS9103,4 which addresses varia-
tion management of key characteristics,
will be reviewed for updates later.

The third-party (other party) registra-
tion transition period for AS9100 has not
yet been determined but is expected to be
two to three years after publication.

Any questions about AS9100 can be
e-mailed through the IAQG website at
www.iaqg.sae.org/iaqg/publications/SDRs_
listing.pdf (case sensitive).

Turn the page for a summary of the
major changes in the AS9100 revision. QP

REFERENCES
1. IAQG (AS/EN/JS-Q) 9100—Quality Management Systems—
2. IAQG (AS/EN/5JAC) 9101—Quality Management System
Assessment, IAQG, 2006.
3. AS9102, Aerospace First Article Inspection Requirement,
4. AS9103, Variation Management of Key Characteristics, SAE
<table>
<thead>
<tr>
<th><strong>Major AS9100 changes</strong> / <strong>TABLE 1</strong></th>
</tr>
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<tbody>
<tr>
<td><strong>AS9100 scope</strong></td>
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<td>The scope will be changed from aerospace to aviation, space and defense to recognize that complex systems can include multiple sectors. The U.S. Department of Defense was interested in this change so it could contractually flow the AS9100 QMS into defense procurements. It is hoped this scope expansion into defense will result in additional recognition and synergies with NATO-allied quality assurance publications.</td>
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<tr>
<td>The application section was clarified to help organizations know when to apply AS9100 instead of AS9110—Quality Management Systems—Aerospace—Requirements for Maintenance Organizations¹ or AS9120—Quality Management Systems—Aerospace—Requirements for Stockist Distributors².</td>
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<td><strong>QMS requirements imposed by customer, statutory and regulatory authorities</strong></td>
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<td>The requirement to include quality system requirements imposed by regulatory authorities when developing QMS documentation is currently required by clause 4.2.1.</td>
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<td>This requirement was broadened to include customer and statutory authorities and was moved to the revision’s clause 4.1 dealing with general requirements. The movement to clause 4.1 addresses customer and applicable statutory and regulatory QMS requirements within the entire organization’s QMS. In the past, this requirement could be interpreted to apply only to QMS documentation.</td>
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<tr>
<td><strong>Introduction of a new term, “special requirements”</strong></td>
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<td>Special requirements are those identified by the customer or determined by the organization that have high risks to being achieved, thus requiring their inclusion in the risk management process. Factors used in the determination of special requirements include product or process complexity, past experience and product or process maturity. Examples of special requirements include performance requirements imposed by the customer that are at the limit of state-of-the-art, or requirements determined by the organization to be at the limit of their technical or process capabilities.</td>
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<tr>
<td><strong>Introduction of a new term, “critical items,” including key characteristics</strong></td>
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<td>Critical items (for example, functions, parts, software, characteristics and processes) are those having significant effect on product realization and use of the product. They include safety, performance, form, fit, function, producibility and service life, all of which require specific actions to ensure they are adequately managed. Examples of critical items include safety critical items, fracture critical items, mission critical items and key characteristics.</td>
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<td><strong>New clause 7.1.1, project management</strong></td>
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<td>This new AS9100 requirement provides additional emphasis on planning and managing product realization activities (product life-cycle) in a structured and controlled way to meet requirements at acceptable risk and within resource and schedule constraints. ISO 10006³ can be used as an information resource for organizations that might want insight on how to apply project management using ISO 9001’s principles and structure.</td>
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<tr>
<td><strong>New clause 7.1.2, risk management</strong></td>
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<td>This new AS9100 requirement involves implementation of a risk management process throughout product realization (product life-cycle). The stated requirement for risk management within the current version of AS9100 is to understand risk during review of requirements related to the product during contracting activities. Risk management, to some extent, has always been at least inferred by QMSs through planning and preventive action processes. The new risk management clause requires organizations to establish a process for managing risks to achieving customer, statutory and regulatory requirements. The process should consider: assignment of responsibilities for risk management; criteria for risk acceptance; identification, assessment and communication of risk; and identification, implementation and management of actions to mitigate risk.</td>
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### Major AS9100 changes / TABLE 1 (CONTINUED)

<table>
<thead>
<tr>
<th>Move</th>
<th>Description</th>
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<tbody>
<tr>
<td>Moved configuration management to clause 7.1.3 and added more detail</td>
<td>This clause was moved from 4.3 to 7.1.3 to focus on product configuration management and to add requirements in keeping with ISO 10007, the configuration management standard. Even though configuration management was moved to clause 7, AS&amp;D organizations will be expected to have a configuration management process appropriate to the product. Any section 7 exclusions are required to be justifiable and not affect the organization's ability or responsibility to provide product that meets customer and applicable statutory and regulatory requirements.</td>
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<td>Moved control of work transfer to clause 7.1.4</td>
<td>This clause is being broadened to include all work transfers, not just temporary production transfers as in the current AS9100. Therefore, work transfer was moved from clause 7.5.4 (production) to clause 7.1.4 to have a process to plan and control all transfer activities within product realization.</td>
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<tr>
<td>Added a note to consider using recognized certifications as part of the supplier control process</td>
<td>A note was added into clause 7.4.1 for organizations to consider using supplier quality data from objective and reliable external sources, such as AS9100 other-party certification, for use in the supplier selection and evaluation process.</td>
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<tr>
<td>Moved first article inspection to clause 7.5.1.1 and renamed production process verification</td>
<td>This is the formal requirement to validate production processes, documentation and tooling for the first production run of a new part or assembly and to repeat the process when necessary (engineering or manufacturing processes changes). In moving this from 8.2.4.2 (measurement) to 7.5.1.1 (production), the intent remains the same but is now worded to be applicable to all AS9100 stakeholders.</td>
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<td>Product quality and on-time delivery performance</td>
<td>This new requirement is added to clauses 5.2 and 8.2.1. It requires product conformity and on-time delivery be measured and appropriate actions be taken if planned results are not achieved. This reinforces the IAQG objectives to link QMS and organizational performance.</td>
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<td>Formal monitoring of customer satisfaction data</td>
<td>This revision has added a requirement in clause 8.2.1 to monitor customer satisfaction data and develop improvement plans that address deficiencies. This addition will promote continuous improvement of the product and customer satisfaction.</td>
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### REFERENCES


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### AEROSPACE STANDARDS

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