IAQG Strategic Plan and
Pace of Progress
2017

IAQG Mission
The mission of the International Aerospace Quality Group (IAQG) is to implement quality initiatives for improvements throughout the aerospace product and services value stream.

For that purpose, the IAQG:
- Promotes a quality culture
- Establishes and maintains harmonized Quality Management System (QMS) standards
- Delivers the internationally recognized Industry Controlled Other Party Certification system
- Provides measurable benefits to Stakeholders, Customers and Suppliers
- Collects and offers best practices, processes, training and harmonized requirements
- Promotes cooperation between international aviation, space and defence companies
- Maintains relationships with key industry stakeholders, regulatory and governmental agencies.

Organizational and Strategic Context
The IAQG membership is comprised of three global Sectors:
- AAQG – Americas Aerospace Quality Group– North, Central & South America;
- APAQG - Asia-Pacific Aerospace Quality Group - Asia and Oceania
- EAQG – European Aerospace Quality Group - Europe, Middle East, Russia & Africa;

Each sector is responsible for the deployment of IAQG initiatives within their Sector through member companies who carry out the design, development, manufacture and support of original equipment at system or subsystem level for:
- Aviation and Space products (including platforms and systems) and services;
- Land and Sea based systems for defence applications
- Trade Associations, and their related bodies

IAQG members are companies, not individuals creating a unique strategic challenge in maintaining resource continuity and prioritization of major projects aligned with company business priorities. Nevertheless, the IAQG has successfully created and managed a robust, recognized and valued industry QMS certification with a supporting Online Aerospace Supplier Information System (OASIS) database to manage the certification data.

The IAQG continues to strategically focus on continuing to improve the processes used by the supply chain to consistently deliver high-quality and safe products. This is all with a focus on reducing non-value added activities and costs by publishing standards, publications and guidance materials emphasizing improvement throughout the product lifecycle. Additionally, this is accomplished in part by decreasing the costs of multi-customer audits and reducing variance in interpretation of requirements. In short; providing a common aerospace language to manage the expected quality of processes and outcomes demanded of an aerospace supply chain.

Stakeholders
With a diverse, global and international membership comes a complex and varied number of stakeholders. Identifying and understanding stakeholder needs is an area of increased focus for the IAQG. Recent analysis has allowed the IAQG to categorize and consider stakeholder needs which will drive the ongoing and future relationships regarding information, sharing and satisfaction. Having a focus on stakeholder needs will help the IAQG monitor and stay informed regarding shifting or changing expectations. This will continue to evolve through the IAQG strategic annual process allowing collaboration between key stakeholders and the IAQG for the development of new initiatives and requirements supported by the IAQG Communication Strategic Plan.

Strategic Goals and Objectives
The IAQG strategic goals are to:
- Establish and maintain a dynamic cooperation based on trust between aerospace & defense companies and other key stakeholders.
- Drive initiatives to make significant improvements in quality performance and reductions in cost throughout the value stream.
- Continuously improve the processes used by the supply chain to consistently deliver high quality products, thereby reducing non-value added activities and costs.

To this end the IAQG Strategic Objectives (3-5 years) are to:
- Focus on our stakeholders so that all value the 9100 series and certifications
- Correlate activities to demonstrate QMS effectiveness and impact to product Quality
- Proactively manage improvements between Quality and Design to deliver Right First Time
- Target activities that will minimize total Supply Chain escapes
- Integrate key competence needs of Aviation, Space and Defence workers through career lifecycles (early, mid and late career).

These strategic objectives are delivered by working teams that align their priorities to enable an agreed pace of progress as measured by key process and outcome metrics with annual targets. Links to correlation

2016 Accomplishments
Towards the Strategic Objectives, the following key Tactical Objectives were accomplished in 2016:
1. The completion of the 91xx:2016 series of standards along with the completion of other key standards.
2. Created the IAQG Space Engagement Plan for Commercial and Non-commercial Stakeholders including the identification of key standards for the Space industry.
3. Created an engagement plan with Space, MDA, NATO, Defense, Civil and ICAO and prepared how to correlate AQAP 2310 and 9100:2016.
4. Completed the 9110:2016 changes for publication and a focused End of Life Management analysis to identify potential future standards.
5. Released and improved multiple Supply Chain Management Handbook (SCMH) sections and delivered supporting training sessions through webinars.
6. Managed the 9100:2016 series release through supplemental rules, language translations and training materials.
7. Progressed the next generation of the OASIS data base and web tool to provide increased functionality and to align with 9100:2016 revisions.
8. Developed revised strategic measures to better understand progress supported by data and allow prioritization of IAQG focused activities. Agreed to discontinue the previous performance metrics process that primarily focused on escapes and delivery.
9. Conducted a preliminary analysis to evaluate and discuss the future of certifications including potential options/defining value add.

2017 – 2020 Objectives and Pace of Change
The following segments further describe the rationale, activities, measures and pace of change that will progress the realization of the Strategic Objectives for 2017-2020:.

Stakeholders value the 9100 series and certifications
Stakeholder acceptance of the 9100 series and certifications is key to the future of the IAQG and its' priorities. In 2017 the use of stakeholder analysis and proactive engagement plans by each of the relationship teams will become increasingly important. While the civil engagement activities have been segmented by sector, there are indications that a more specific engagement plan is needed to progress this important stakeholder segment. This has been agreed in the EAQG sector and will be further progressed in the AAQG and APAQG sectors.
Certifications and Re-certifications of the supply chain continue to demonstrate broad industry acceptance of the 9100 series and certification. Key in 2017 and into 2018 will be the 9100:2016 series transition. The work of the Other Party Management Team (OPMT) in managing the training availability with a focus on the number and skills of the auditors will be critical. The number of certifications to the new standard will be an important data point to understand the supply chain progress in meeting revised requirements and certification transitions.
In 2016 many standards were updated to support the 9100:2016 re-write. As such, in 2017 the Requirements team will be able to focus on the various improvement opportunities including level loading the number of standards required for annual updates to help manage the resource pull from member companies and reduce the number of annual changes into the supply chain.   Additionally, there is opportunity to evaluate improvement opportunities for the publication process based on the learning from 2016.

IAQG Strategic Plan and
Pace of Progress
2017

To this end, the focus in 2017 will be on the following tactical objectives:
1. Complete the 9100:2016 series transition training and retain the existing implemented training courses.
2. Monitor training implementation & ICOP scheme transition for the 9100:2016 series certifications in accordance with SR003 with feedback.
3. Implement OASIS with successful operation (Phase 2) and deliver offline reporting capability (Phase 3).
4. Provide a transition plan (SR004) for the 9104-003 release & deliver required transition plan actions including training
5. Create engagement plan with Space, MDA, NATO, Defense, Civil and ICAO using standard format, linked to metrics, target & stakeholder map,

2018-2020 Focus
In the follow on years stakeholder value related plans will utilize the feedback from the metrics to help gauge future activities. This will allow the IAQG to make data driven decisions and have the ability to better communicate with key business leaders regarding priorities. While the 9100:2016 series transitions highlighted the need for consistent and continued communications, more deliberate communications for all standards projects before and after publication will be a repeated theme in the follow on years.

To understand the progress, the following measures represent the pace of change over the next 4 years as it applies to Stakeholders valuing the 9100 series and certifications:

Key Measures	2016	2017	2018	2019	2020	Vision
Number of Certifications and Re-Certifications	4500 New 1600 Re-Certs	4800 New 1640 Re-Certs	5280 New 1700 Re-Certs	5400 New 1750 Re-Certs	5,800 New 1,800 Re-Certs	All key suppliers to the aerospace value chain are 91xx certified
Number of IAQG Members requiring 91xx to their supply chain	Baseline-50%	>70%	>85%	>98%	Managed Metric with new members	All IAQG members contractually require 91xx certifications in contracts
Number of Key Agency, Regulators or Associations endorsing or referencing 91XX	Baseline number	Validate the number and Baseline	Target Y on Y% Improvement	Target Y on Y% Improvement	Target Y on Y% Improvement	All Key Agencies, Regulators or Associations endorse or reference 91xx

Correlate QMS effectiveness to Product Quality
While having a strong QMS is at the core of aerospace quality, it has been difficult to specifically draw the correlation between the QMS and product quality from the IAQG perspective. This is in part due to needing to manage intellectual information among members. Through the work of the Performance team, the agreed metrics will need to be specifically defined to form a measurement plan that begins to help the organization understand the links while protecting individual business information. A key priority in 2017 will be to develop a revised measurement system using 'promoter' principles in developing operational definitions, data gathering process and implementation plan. The use of the new metrics will be a key element in understanding not only key aspects of stakeholder value, but also the correlation.

Specific to the IAQG, a 2017 focus will be internal IAQG process effectiveness and identifying improvements that pull industry/sector best practices and capture emerging, value added concepts. The concepts will be evaluated for prospective initiatives impacting quality performance and reductions in cost throughout the value stream. Additionally, the publication process will be reviewed to investigate potential ways of working with input from SDOs/customers towards an efficiency improvement. Currently under consideration is the need for a new 'End of Life' standard to address a gap that has been highlighted regarding dismantling, valuation and the potential contribution to counterfeit parts.

IAQG Strategic Plan and
Pace of Progress
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In 2017, the tactical objectives will be as follows:
1. Define the operational definitions for Customer (OEM) metrics / Engineering / Production metrics / Supply Chain (Sub-Tier) supporting the strategic results metrics definition that are clear and understood by membership.
2. Launch a revised survey and data capture process to align with newly defined metrics while protecting individual business information towards a goal of correlating 9100 to Product Quality
3. Document best practices and improve the process for developing certification standards
4. Investigate and recommend improvements for the publication process with a cross sector team.
5. Launch End of Life Management initiative/standard questionnaire and project, if agreed based on Questionnaire feedback.

2018-2020 Focus
In the follow on years the drive will be ensuring that the measurement system continues to mature and that the metrics will allow data driven decisions targeting improvements and progress in the supply chain. Additionally, based on the outcomes of the publication improvement team, there will be opportunity to embed the identified changes for internal process effectiveness and efficiencies.

The following measures represent the pace of change over the next 4 years as it applies to Identifying QMS Effectiveness to Product Quality:

Key Measures	2016	2017	2018	2019	2020	Vision
Measurement System Maturity	Original IER, OTD	New Measurement System Designed and Baselined	Initial Targets from Baseline	Improvements Goals for all Measures	Improvement Measures drive change	**Measurements correlate to performance, key improvements and drive change**
Cost of Non Quality	No Measure	Launch Survey/Promoter Based Measurement	Target Y on Y% Improvement	Target Y on Y% Improvement	Target Y on Y% Improvement	**Businesses continuously report Reduced Cost of Non-Quality**

Proactively manage improvements between Quality and Design to deliver Right First Time
Historically, there has been a predominate belief there are missed opportunities between a linked Engineering and Quality effort regarding engineering to manufacturing process transitions impacting producibility, the design process, drawings and manufacturing. These are often linked back to repeat escapes. Detailed discussions in break out groups identified that while FMEA has had a key impact improving aspects of overall manufacturing quality; there are opportunities to increase the use of quality tools in Engineering and Design. Not only to improve aspects of training but, additionally, targeting the SCMH guidance materials.

In 2017 the tactical objectives will be as follows:
1. Evaluate the training success/failures connected to aspects of Design in the 9100:2016 series to understand where there is a general lack of understanding, issues or gaps. Use the information to target future improvements or training.
2. Inject continual Improvement/Root Cause Analysis use in engineering areas as in other domains through update of 9145/ APQP and QANPD SCMH sections. Based on learning, identify potential future revision of 9145.

2018-2020 Focus
Goals in the out years will be to further utilize audit findings through OASIS to identify process understanding issues. Additionally, newly implemented metrics in the measurement plan will be used to realize trends and other useful information linked to root cause.

The following measures represent the pace of change over the next 4 years as it applies to Quality and Engineering Right First Time:

Key Measures	2016	2017	2018	2019	2020	Vision
Design maturity level using APQP checklist	No Measurement	Launch a Measurement through Survey and Baseline	Target Y on Y% Improvement	Target Y on Y% Improvement	Target Y on Y% Improvement	**Design Maturity reduces supply chain escapes**

Minimize total Supply Chain escapes

With a focus on continuously improving the processes used by the supply chain, a priority is to help minimize escapes and especially repeat escapes. While it is recognized that having a certified QMS system is the expected quality entry prerequisite to the aerospace supply chain, there are target areas that will have a specific impact in reducing escapes throughout the product lifecycle: change management, work transfers, sub tier supplier controls and looking at managing parts at the end of their lifecycle. Reviewing the harmonization of sub tier supplier control and work transfer processes will be undertaken to ensure all are aligned and mutually beneficial. Additionally, it is recognized that there may be potential benefit in now defining maturity levels for key requirements vs. evaluating to a minimum demonstration of compliance. Based on these discussions, the following tactical objectives will progress a step forward regarding escape reduction:

1. Re-launch initiatives to create 'Work Transfer' and 'Supplier Control' standards (with better justification and content).
2. Evaluate the concept of 'Building in Maturity Level Application' to 9100 series and other standards. (targeting this for 3-5 years future).

2018-2020 Focus

The 2017 activities and learning are key to defining the future focus in this area. Outcomes of the maturity level discussion are anticipated to further define specifics to enhance the existing 91xx requirements. Additionally, the escape metric feedback and progress made regarding harmonizing key elements of the work transfer and supplier control standards will provide valuable insight.

To understand progress in supply chain escapes, the following measures represent the pace of change over the next 4 years as it applies to escape improvement:

Key Measures	2016	2017	2018	2019	2020	Vision
Supply chain Item Escape Rate (IER),	No Measure	Launch a Revised Survey and Baseline	Target Y on Y% Improvement	Target Y on Y% Improvement	Target Y on Y% Improvement	**Escapes are dramatically reduced and exceptional events**

Integrate key competence needs of Aerospace, Space and Defense workers

While workforce turnover continuously impacts skills and competencies in any industry, the aerospace industry is being impacted by a large number of experienced worker turnover driven by a late career profile. With supply chain expectations ever increasing, there is concern that the inflow of workers lack the breadth of experience and maturity required to meet the demand and expectations. There will need to be proactive education management of early to mid-career employees regarding minimum expected standards to ensure competencies and skills support the evolving expectations that establish the new normal. There is potential to begin driving this with enhancing the competency of auditors, OP assessors and stakeholders in industry activities including CVP.

While additional evaluation will be needed going forward, in 2017 the following initial tactical objectives will allow progress in this area:
1. Increase the number of webinars/education materials to the key stakeholders and OASIS users.
2. Release/Improve SCMH sections for 'Personal accountability in product manufacturing, inspection & acceptance' as well as other topics as determined.
3. Outline future maturity level competencies aligned with the existing certification scheme/process (linked to the 'application of maturity levels' concept project).

2018-2020 Focus

Based on the learning from training and trending audit feedback related to competencies, further discussion and skill definitions may be needed. The outcomes of the 2017 discussion regarding maturity levels are anticipated to provide the insight needed to address the competency and skill needs.

To understand progress in competencies, the following measures represent the pace of change over the next 4 years as it applies to Competency deployment:

Key Measures	2016	2017	2018	2019	2020	Vision
Number/Ratio of Audit findings in competency clause (9100 §7.2)	No Measurement	Launch the new Metric & Baseline	Target Y on Y% Improvement	Target Y on Y% Improvement	Target Y on Y% Improvement	**Competencies are proactively managed**

Summarised Strategic Vision Goals

The IAQG strategic goals summarized and supported by key metrics are:

Stakeholders value the 9100 series and certifications

- All key suppliers to the aerospace value chain are 91xx certified
- All IAQG members contractually require 91xx certifications in contracts
- All Key Agencies, Regulators or Associations endorse or reference 91xx

Correlate QMS effectiveness to Product Quality

- Measurements correlate to key improvements and drive change
- Businesses continuously report Reduced Cost of Non-Quality

Proactively manage improvements between Quality and Design to deliver Right First Time

- Design Maturity reduces supply chain escapes

Minimize total Supply Chain escapes

- Escapes are dramatically reduced and exceptional events

Integrate key competence needs of Aerospace, Space and Defence workers

- Competencies are proactively managed