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Development of Measurement and Inspection within the global Aerospace Supply Chain through generation of industry minimum standards, collaborative working and audit programmes

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Background

Development measurement and inspection activities have been a key challenge for the Aerospace Industry in recent years. Significant investment and focus has been directed into this area by individual companies, with encouraging results across a small scope. To realise a more significant impact and benefit across the entire aerospace industry a different approach is required.
To realise this vision, the industry – Aerospace Primes, Suppliers, Academic Bodies and National Measurement Institutes (NMIs) – will need to co-operate. Initially this may be difficult to coordinate with barriers due to commercial issues; however an integrated approach has the potential to deliver significant long-term benefits to ensure cost and quality benefit for those involved with measurement and inspection.

Purpose

The purpose of this piece of work is to raise the standard of measurement and inspection compliance and performance across the Aerospace Supply Chain.

Hypothesis

The current approach taken by bodies across the industry has realised benefits, however the model used is not appropriate for delivering benefits across a wider scope. Therefore the proposed new approach is to use collaborative working to establish a set of minimum standards for measurement and inspection across the aerospace industry. The compliance to the agreed minimum standard will be raised using an industry wide audit programme.

Methodology

Establishment of minimum standard for Measurement Systems Analysis (MSA) will be via Aero Engine Supplier Quality (AESQ) G-22 Committee. Agreement of other aspects of measurement and inspection would be a value across the industry, with MSA providing the first point of investigation. Collaborative programmes across the industry are beginning to focus on a range of activities in training, technology and standards. Details of a range of these programmes are reviewed as part of this work.

Compliance will be verified and developed via the Nadcap audit programme for Measurement and Inspection, administered by the Performance Review Institute (PRI). This will help to raise compliance to the standards of the individual companies and the agreed industry standards.

Data Collected

At the time of writing the AESQ work stream to establish minimum standards for MSA has been initiated, but is yet to deliver results in terms of an agreed method and acceptance criteria for measurement capability studies.

The Nadcap audit programme for Measurement and Inspection (M&I) has been established with the aim of raising the level of compliance to minimum standards for the aerospace industry. The task group has support from aerospace primes and suppliers and has issued the first audit checklists and launched the formal audit programme. Trial audits have shown good value in the process and

findings, which have helped to develop the general compliance. The audit programme will be mandated and deployed through the subscriber members of the Nadcap task group and extend across the whole supply chain subsequently.

Summary

Although the investigation is in its early stages the findings suggest that the collaborative approach across the Aerospace Industry will be key in the development of the discipline, bringing in formal mechanisms of standard setting and auditing.

Items to add in:-

- Emphasize this is a whole industry thing with multiple collaborators (will be a joint presentation effort)
- Define the benefits of Nadcap
- May include details of other collaborative projects e.g. NPL Product Verification Programme