**CONFIRMED MINUTES**

**JUNE 21-23, 2016**

**LONDON, UNITED KINGDOM**

**These minutes are not final until confirmed by the Task Group in writing or by vote at a subsequent meeting. Information herein does not constitute a communication or recommendation from the Task Group and shall not be considered as such by any agency.**

**TUESDAY, 21-JUN-2016 to THURSDAY, 23-JUN-2016**

# OPENING COMMENTS – OPEN

## Call to Order / Quorum Check

The Welding (WLD) Task Group was called to order at 9.00 a.m., Tuesday 21-JUN-2016 by Steve Tooley.

Introductions were made and the roster circulated for completion by attendees.

It was verified that only SUBSCRIBER MEMBERS were in attendance during the closed portion of the meeting, except that by invitation of the Chair, Emmanuel Muzangaza attended some items of the closed meeting.

Gary Coleman volunteered to be the Secretary for this meeting, in the absence of the regular Secretary and Alternate Secretary.

A quorum was established with the following representatives in attendance:

***Subscriber Members/Participants Present (\* Indicates Voting Member)***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | NAME |  | COMPANY NAME |  |
|  |  |  |  |  |
| \* | Oscar | Andersson | GKN Aerospace Sweden AB |  |
|  | Roy | Bollig | Raytheon |  |
| \* | Mark | Bredbere | The Boeing Company |  |
| \* | Joakim | Carlsson | GKN Aerospace Sweden AB |  |
|  | Mark | Clark | The Boeing Company |  |
| \* | Craig | Clasper | Spirit AeroSystems |  |
| \* | Gary | Coleman | The Boeing Company |  |
| \* | Karen | Dannis | BAE Systems – E&I |  |
| \* | Andrew | Dewhurst | BAE Systems - MAI |  |
|  | Matteo Mario | Di Nardo | The Boeing Company |  |
|  | Frederic | Duhamel | Thales |  |
| \* | Vukile | Dumani | GKN Aerospace |  |
| \* | Dave | Dvorsky | Rockwell Collins |  |
| \* | Robert | Gilbert | Lockheed Martin |  |
|  | Travis | Grohoske | GE Aviation |  |
| \* | Milan | Hanyk | Honeywell Aerospace |  |
| \* | Valere | Henry | SAFRAN Group |  |
| \* | Tommy | Howland | Spirit AeroSystems |  |
| \* | Jerry | Hulin | GKN Aerospace |  |
|  | Akiko | Inoue | Mitsubishi Heavy Industries |  |
| \* | Michael | Irvin | The Boeing Company |  |
|  | Michel | Jacquaniello | ZODIAC AEROSPACE |  |
| \* | Ralph | Kropp | MTU Aero Engines AG |  |
| \* | Holger | Krueger | Airbus Group | Vice Chairperson |
|  | Joe | Lundin | UTC Aerospace (Goodrich) |  |
| \* | Scott  | Maitland | UTC Aerospace (Goodrich) |  |
|  | Ewan | McKay | UTC |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Jose | Moreno | Airbus |  |
| \* | Marco Luigi | Poletto | Finmeccanica SpA - Aeronautics Sector |  |
| \* | Paul | Slater | Rockwell Collins |  |
|  | Naoki | Sogabe | Mitsubishi Heavy Industries |  |
|  | David | Stapleton | Rolls Royce |  |
| \* | Steve  | Tooley | Rolls-Royce | Chairperson |
|  | Akie | Uchida | Mitsubishi Heavy Industries |  |
| \* | Gerhard | Westenrieder | MTU Aero Engines AG |  |

***Other Members/Participants Present (\* Indicates Voting Member)***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | NAME |  | COMPANY NAME |  |
|  |  |  |  |  |
|  | Graham | Buswell | SPS Aerostructures |  |
|  | Richard | Freeman | TWI Ltd |  |
| \* | Grant | Lilley | Meyer Tool, Inc. |  |
|  | Emmanuel | Muzangaza | The Manufacturing Technology Centre |  |
|  | Stan | Revers | Senior Aerospace - Thermal Engineering |  |
|  | Brian | Reynolds | Alcoa |  |
| \* | Mike | Schleckman | VOSS INDUSTRIES, LLC |  |
|  | Junji | Tsuji | IHI |  |
|  | Paula | Vazquez Macia | Senior Aerospace - Thermal Engineering |  |
|  | Lorenz | Vinke | ALMECON Technologie GmbH |  |
| \* | Christopher | Webb | PCC Structurals Inc. |  |

***PRI / SAE Staff Present***

|  |  |
| --- | --- |
| Gabriel | Kustra |
| Ian | Simpson |

## Safety Information – OPEN

The participants were notified of the meeting safety requirements.

## Review Code of Ethics (Ref: Attendees’ Guide) and Meeting Conduct – OPEN

The Code of Ethics and Meeting Conduct policies were reviewed.

## Present the Antitrust Video – OPEN

The Antitrust policy video was shown.

## Review Agenda – OPEN

Ian Simpson reviewed the agenda for the June 2016 Nadcap meeting. New business items were identified for inclusion in item 6.0 (in closed meeting) and item 20.0 (in open meeting).

## Approval of Previous Meeting Minutes – OPEN

Motion made by Marco Poletto and seconded by Mike Schleckman to accept the February 2016 Nadcap meeting minutes. Motion passed.

## Rolling Action Item List (RAIL) Review – OPEN

The RAIL was reviewed by Ian Simpson. There are 3 action items with a June 2016 deadline that remain outstanding:

* 289 – Subscribers to provide details of weld failures to Steve Tooley
* 308 – Subscribers to provide the details of Suppliers that they intend to have audited to the new Additive Manufacturing checklist
* 313 – North America Subscribers to determine if they are able to provide hands-on training to auditors on Additive Manufacturing

For specific details, please see the current WLD Rolling Action Item List posted at www.eAuditNet.com, under Public Documents.

* 1. Staff Engineer Communiqué – OPEN

Ian Simpson presented a Nadcap Communiqué to the Task Group.

1. OP 1116 Appendix WLD issued. This is the WLD specific appendix to the Auditor hiring and training procedure OP 1116. The revision was primarily to align with the re-write of OP 1116 but also formalized the process used by the Task Group to remove process restrictions from an auditor’s restricted list.
2. Next Nadcap Task Group meeting will be in October 2016 in Pittsburgh, PA, USA. The Auditor Conference will be at the weekend prior to the meeting.

# AUDITOR CONFERENCE – CLOSED

At the February 2016 Task Group meeting, the Task Group identified a number of training items for consideration for the 2016 Auditor Conference.

Items identified include those items identified by the auditors, previously identified training items, and the review of auditor consistency per OP 1117.

A draft agenda was developed by Ian Simpson and sent to the Task Group Subscribers in April 2016 for review. Minor modifications have occurred since this date and hence this was reviewed at the meeting. The Nadcap Management Council (NMC) requested for 2 agenda items to be added to all commodity agendas. These items were already included in WLD’s agenda. Per discussion in item 3.1.4, an additional item was added to have an Auditor prepare and present best practice for time management. Some additional minor modifications with respect to allocated time for some of the items were identified and Task Group members were assigned to the agenda items. Ian Simpson will finalize the agenda and forward to the PRI Conference Team.

It is also noted that an additional day’s training specific to Additive Manufacturing has been included. Provision has already been made to have meeting space available and for Auditor’s schedules to be made free to allow for this. Auditors need to be notified of how the Task Group intends to train and qualify them for this process, so that they can decide if they wish to undertake this training and become qualified. See agenda item 13.0 for further details.

The Task Group was reminded that there is provision for Auditors to have face-to face meetings with a Task Group representative at the Auditor Conference. Auditors will have their annual assessments with Staff Engineers prior to the Conference and may elect to have a discussion with a Task Group representative. Should any requests be received, the Staff Engineers will notify the Task Group and seek volunteers at that time.

***ACTION ITEM: Ian Simpson to update the Auditor Conference agenda to add an item for an Auditor to present best practice, extend the item on audit effectiveness and to forward the finalized agenda to PRI Auditor Conference team (Due Date: 31-Jul-2016).***

***ACTION ITEM: Ian Simpson to develop Auditor Conference training material for Auditor Consistency, Smart checklist, and audit issue updates (Due Date: 30-Sep-2016).***

***ACTION ITEM: Les Hellemann to develop GE specific training material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Paul Slater to develop Rockwell Collins specific training material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Michael Irvin to develop Boeing specific training material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Robbie Adams to develop Honeywell specific training material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Gary Coleman to develop an update on AWS specification revisions for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Holger Krueger to develop an update on ISO specification revisions for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Steve Tooley to prepare for facilitating Audit Preparation Best Practice training at the Auditor Conference (Due Date: 22-Oct-2016).***

***ACTION ITEM: Steve Tooley to develop Weld Failures training material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Michael Irvin to develop NCR Grouping re-fresher training material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Holger Krueger to develop ISO Visual Inspection of Welds material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Les Hellemann to develop Visual Weld Inspector certification training material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Ian Simpson and Steve Tooley to develop Audit Effectiveness training material for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Holger Krueger to develop Resistance weld nugget evaluation training for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Richard Freeman to develop Additive Manufacturing training for the Auditor Conference and forward to PRI (Due Date: 30-Sep-2016).***

***ACTION ITEM: Ian Simpson to notify auditors of training program for Additive Manufacturing (Due Date: 31-Jul-2016).***

# AUDITOR EFFECTIVENESS – CLOSED

1. Review of OP 1117

The Auditor Consistency procedure (OP 1117) requires the Task Group to review several items as part of the process to monitor and ensure consistency among its Auditors.

The following items were discussed:

1. Annual Review of Auditors

As previously agreed the Staff Engineers will develop an evaluation for each Auditor by 30-Sep-2016, and discuss any areas of concern with them. Auditors without noted concern can request a discussion with a Staff Engineer if they desire. All Auditors have the opportunity to meet with a Task Group representative at the October conference if they desire. An action item for Staff Engineers to conduct the annual Auditor assessments is already included in the RAIL.

1. Auditor Performance Data Set Charts

Per an action from the February 2016 meeting, Scott Maitland presented a recommendation for control limits to be applied to the red-line chart. This was reviewed by the Task Group and agreed. The chart used for this was the one presented at the February 2016 meeting and showed one Auditor to lie outside of the limits. Even though the one Auditor fell outside of the control limits, the Task Group decided that no specific action was required for this Auditor at this time.

The current Auditor performance data set charts (NCRs per audit day, NCRs per checklist paragraph, red-line, and Auditor Variation) were reviewed by the Task Group.

It was noted from these charts there is an Auditor who has written very few NCRs this calendar year. A sub-team of Karen Dannis and Jerry Hulin was formed to review these and prior audits at these Suppliers to try and determine if there is any concern with the Auditor. Further discussion and actions on this item are noted in 3.1.3.

***ACTION ITEM: Sub-Team of Karen Dannis and Jerry Hulin to review audit data for auditor who has written few NCRs in 2016 (Due Date: 24-Oct-2016).***

The Task Group did not identify any improvements that would be required in Task Group documentation (e.g. checklists or handbooks) as a direct result of this analysis.

1. Auditor Observation Plan

The observation plan for 2016 was developed at the October 2015 Task Group meeting using the prioritization tool that the Task Group has developed. The Task Group updated the prioritization tool based on the analysis as defined in 3.1.2. This resulted in the identified Auditor being moved to the high risk category. As such the Task Group reviewed potential audits for observation and a Task Group member volunteered to observe this Auditor.

To date 4 observations for 2016 have been completed with a further 3 requested. When the plan was developed, 2 Auditors were identified for observation based on risk. Since this plan was developed, one of these Auditors is no longer auditing and the other has already been observed. Hence all observations of high risk have been completed (other than the new one identified above). There are 2 Auditors who were hired in 2015 that still require observation. One of these has defined Observers, while no observations on the other have yet been requested. The Task Group was encouraged to review and establish if they are able to observe the second new auditor.

***ACTION ITEM: Ian Simpson to post the revised Auditor observation plan in the Task Group work area forum (Due Date: 31-Jul-2016).***

1. Observation Reports

The Task Group reviewed 4 observations. One of these observations was for an Auditor identified for observation. The observation noted an improvement in the items that the observation was arranged to review. There are still areas for improvement and the Task Group noted that it would be beneficial for this auditor to develop training and present at the Auditor Conference.

***ACTION ITEM: Ian Simpson to notify an Auditor of the Task Group’s request for him to prepare and present material on time management at the Auditor Conference (Due Date: 31-Jul-2016).***

One of the observations recommended that Audit Handbooks be re-located to ease the Supplier’s access to them. As all public documents had been reorganized to standardize file structures for all commodities, the Staff Engineer requested that this be reviewed by the Committee Service Representatives (CSRs). This was reviewed by the CSR team and it was agreed to create a new folder in each Commodities filing system titled ‘Handbooks and Guides’. This change has already been made.

This observation also noted that the terminology in the checklists for qualification welds and evaluation of welds should be reviewed. This item has been added to the checklist rolling action item list and was discussed in item 19.2.

1. Review Dashboard

The dashboard metrics, as required by OP 1117, were reviewed. Three of the four metrics are green. The metric for the percentage of Observations completed is yellow, as neither of the new Auditors have been observed at this time. As noted in item 3.1.3, Task Group representatives were encouraged to review the Observation Plan and encouraged to observe Auditors where possible.

1. Identify Training Needs for Auditors

The review of data defined here and also from item 2.0 has resulted in identified training items that have been included in the Auditor Conference agenda.

1. NMC Annual Review

The Task Group submitted their annual review to the NMC in October 2015. No feedback has been received on this.

1. Audit Effectiveness – NMC request and update

At the October 2015 Task Group meeting, Auditors were addressed by the NMC to establish if there are additional tools that can be made available to help the Auditors perform the audit. The NMC has been analyzing the data from all Task Groups and requested each Task Group to review a number of items and report back on how they intend to meet each of these:

* Job audit selection. As an interim, an Auditor Advisory was issued to remind Auditors of the need to select the jobs and that the Job Selection Handbook is required to be used. The item has also been added to the Auditor Conference agenda.
* Paper / Demo / Virtual / Coupon audits. The Task Group does allow in-process representative test pieces in lieu of actual hardware. This is already stated in the Job Selection Handbook. Auditors were reminded of this in the Auditor Advisory that was issued for the item above. The item has also been added to the Auditor Conference agenda.
* Define Level of Specifications. The Task Group discussed and noted that as a minimum the weld, welder qualification and visual weld inspector qualification specifications are included in checklists and are therefore required to be audited. There is also provision for supplemental checklists to test any additional items that Subscribers define as necessary. The Task Group noted that access to specification may also be of benefit to Auditors, but do however recognize the logistical problems associated with this.
* Validate Flowdown of Customer Specifications. The Task Group discussed and noted that there is a specific section in the core AC7110 checklist that requires the contract review process to be audited.
* Job Audit Length. As checklists have been developed test audits have been conducted to verify audit length is appropriate. Task Group members who have observed audits confirmed that the audit length is appropriate for the audit. It was also noted that the Task Group conducted a comprehensive study on audit length prior to modified cycle checklists being introduced.
* Update of checklists. The Task Group regularly reviews and revises checklists. The associated handbooks are also regularly reviewed and revised to provide more specific guidance on what is required to be compliant to the checklists.
* Training on Subscriber Requirements. The agenda at the October Auditor Conference always has dedicated time for Subscribers to give training on their unique requirements, and for a Question and Answer session for Auditors to ask Subscriber representatives questions about specific Subscriber requirements.

The Task Group completed the NMC template for Steve Tooley to present at the Planning and Operations meeting.

***ACTION ITEM: Steve Tooley to present the WLD Task Group Audit Effectiveness review to the NMC at the Planning and Operations meeting (Due Date: 22-Jun-2016).***

The Task Group did however note that the job selection handbook states that it is for use on modified cycle checklist. It actually applies to any checklist whether standard or modified. Hence the Staff Engineer was actioned to revise the handbook to state this.

***ACTION ITEM: Ian Simpson to revise the job selection handbook to note that it is to be used for all checklists and not just those on modified cycle (Due Date: 31-Jul-2016).***

1. OP 1117 items not requiring review at this meeting

There are a number of items that OP 1117 requires the Task Group to review on a periodic basis. All of the items were reviewed at the February 2016 Task Group meeting; hence the following items were not reviewed at this meeting:

* Supplier feedback data
* Audit Report Reviewer feedback
* Communication plan
* Weld specific appendix to the Observer form
* Weld specific training
* Proficiency testing

The next Supplier feedback data for the period January – June 2016 will be available prior to the October 2016 Task Group meeting. Sub-group of Steve Tooley and Ian Simpson will review and present summary at the October 2016 Task Group meeting.

As the Auditor Conference occurs prior to the Task Group meeting in October, the Task Group agreed that any generic items seen in the 6 month data review should be included in the October training.

***ACTION ITEM: Steve Tooley and Ian Simpson to review the Supplier feedback data and present to the Task Group at the October meeting (Due Date: 24-Oct-2016).***

***ACTION ITEM: Steve Tooley and Ian Simpson to include any generic issues found in the review of Supplier feedback data into the Auditor Conference training (Due Date: 30-Sep-2016).***

1. Auditor Status

The Staff Engineer gave an update of new Auditor candidates and the status of process restriction removals for current Auditors.

# SUPPLIER ADVISORIES – CLOSED

## Review of Advisories since February 2016 Nadcap Meeting.

Three Supplier Advisories have been issued by WLD since the February 2016 Task Group meeting, #2783, #2784, and #2819. These were reviewed by the Task Group.

Two Supplier Advisories were issued by other commodities that could have an effect on WLD accreditations. These advisories, #2778, and #2800 were reviewed. No additional actions were identified.

## Review of Subscriber Advisories.

No Subscriber Advisories were brought up for discussion by the Task Group.

# STAFF ENGINEER DELEGATION – CLOSED

1. The Staff Engineer reviewed data for Audit Report Reviewers using delegation oversight form t-frm-07, including percentage oversight by Task Group, percentage NCRs concurred with by the Task Group, and other items pertaining to audit completeness. All requirements of OP 1115 were met for the delegated Audit Report Reviewers and the following motions were made.

Motion made by Marco Poletto and seconded by Holger Krueger to maintain Ian Simpson’s delegation. Motion Passed.

Motion made by Marco Poletto and seconded by Holger Krueger to maintain Mike Gutridge’s delegation. Motion Passed.

Motion made by Marco Poletto and seconded by Holger Krueger to maintain Wayne Canary’s delegation. Motion Passed.

* 1. The Task Group reviewed non-delegated reviewer, Gabe Kustra’s concurrence data. Gabe has met the requirements of OP 1115 and the additional requirements of the WLD appendix of OP 1114 to become delegated.

Motion made by Michael Irvin and seconded by Rob Gilbert to grant Gabe Kustra delegation. Motion Passed.

The required delegation form, t-frm-99k was completed and approved by the Task Group Chair.

***ACTION ITEM: Gabe Kustra to submit the delegation form to the PRI Quality Department for retention (Due Date: 10-Jul-2016).***

***ACTION ITEM: Ian Simpson to notify eAuditNet support of the change in delegation status for Gabe Kustra in order for delegation status to be changed in eAuditNet (Due Date: 30-Jun-2016).***

# NEW BUSINESs – CLOSED

## Review of NCRs associated with audit 166863.

The Supplier for audit 166863 requested to address the Task Group with respect to the validity and categorization of NCRs. The Task Group listened to the request and asked questions appropriately. The Task Group members agreed that the information presented would be taken into account when reviewing the audit.

# Review Membership Status – OPEN

1. The following Subscriber members were noted as attending their first WLD meeting.
* Roy Bollig – Raytheon
* Joe Lundin – UTC (Goodrich)
1. Mark Bredbere of Boeing attended his second meeting. The Task Group Chairperson agreed to the appointment of Mark Bredbere as an Alternate Subscriber Voting Member (ALT/UVM) for Boeing and m-frm-01 was completed.

Vukile Dumani of GKN Aerospace attended his second meeting. The Task Group Chairperson agreed to the appointment of Vukile Dumani as an Alternate Subscriber Voting Member (ALT/UVM) for GKN Aerospace and m-frm-01 was completed.

Oscar Andersson of GKN Aerospace-Sweden attended his second meeting. The Task Group Chairperson agreed to the appointment of Oscar Andersson as an Alternate Subscriber Voting Member (ALT/UVM) for GKN Aerospace-Sweden and m-frm-01 was completed.

***ACTION ITEM: Ian Simpson to add Mark Bredbere as ALT/UVM for Boeing (Due Date: 31-Jul-2016).***

***ACTION ITEM: Ian Simpson to add Vukile Dumani as ALT/UVM for GKN Aerospace (Due Date: 31-Jul-2016).***

***ACTION ITEM: Ian Simpson to add Oscar Andersson as ALT/UVM for GKN Aerospace-Sweden (Due Date: 31-Jul-2016).***

1. Although not in attendance at this meeting, Andrew Jackson of AMPP Ltd has attended two meetings and submitted a request to become a Supplier Voting Member (SVM). The Task Group Chairperson agreed to the appointment of Andrew Jackson as SVM for AMPP Ltd and m-frm-01 was completed.

***ACTION ITEM: Ian Simpson to add Andrew Jackson as SVM for AMPP Ltd (Due Date: 31-Jul-2016).***

1. The Task Group meeting attendance and ballot participation was reviewed per Program Document PD 1100 requirements.

BAE Systems E&I, GKN Aerospace, UTC (Hamilton Sunstrand) and Gulfstream have all missed 2 consecutive letter ballots, and by default would lose their voting status.

Brian Harvey of Gulfstream has however already requested that his voting status be removed as he is no longer able to support the Weld Task Group. This has already been actioned. PRI has not been notified of a replacement representative from Gulfstream.

The representatives for the other delinquent Subscribers were notified of their failure to meet requirements prior to the meeting, and all explained why this situation occurred and that they are committed to supporting the Task Group. On this occasion, the Task Group Chair therefore agreed to maintain the voting status for the representatives of BAE Systems E&I, GKN Aerospace and UTC (Hamilton Sunstrand).

# Supplier Support Committee (SSC) Report – OPEN

1. Mike Schleckman gave a presentation on SSC activities. This gave information on its role, current activities, the mentoring program and SSC initiatives and events. SSC provides an avenue for Suppliers to have input and give feedback to the Nadcap system, and provides answers and support for Suppliers who have questions and problems. The 2015 Supplier Survey closed in February 2016 and preliminary information was given in the SSC meeting.

There are also sponsored events organized which include items such as Subscriber Updates for Suppliers, Nadcap from a Chairperson perspective, and keys to a successful audit, etc.

# NMC Metrics – OPEN

1. Ian Simpson reviewed the NMC metrics, including:

Accreditations Issued/Lapsed, Eligible Merit, On-Time Certification, Staff Cycle Time Initial, Staff Cycle Time Reaccreditation, Task Group Cycle Time Initial, Task Group Cycle Time Reaccreditation, Supplier Cycle Time Initial, Supplier Cycle Time Reaccreditation. All metric charts for the period ending 30-APR-16 were green, except Task Group Cycle Time for Initial and Reaccreditation which were yellow. These non-green metrics have been previously discussed and the Task Group chose to take no further action.

A revision to OP 1114 has occurred that requires any red metric since the prior meeting to be reviewed and actions documented. A review of the monthly metrics since the last meeting was performed and no red metrics have occurred in this period.

# Specification Changes – OPEN

## Gary Coleman provided an update on the status of American Welding Society (AWS) specifications.

* AWS D17.1 - Major revision in work for procedure qualification, visual acuity, welder qualification for tack welding and manned space flight. An expected release date to occur around the end of 2017, or early 2018.
* AWS D17.2 - Planned next revision for end of 2018.
* AWS D17.3 - 2nd edition expected to be available to public imminently. Already started work on 3rd edition. Topics to be covered include tack welding, rework and repair, self-reacting Friction Stir Welding, Phased Array Ultrasonic Testing and residual oxide defect.
* The next AWS D17 Committee meeting will be in Las Vegas in November.

Holger Krueger provided an update on the status of ISO specifications. The ISO Committee met in Berlin on 15-17 JUN-2016.

* ISO 19828 Visual Inspection – Currently in ballot ending 30-JUN-2016.
* ISO 24394 Welder Qualification. Systematic review in progress. In ballot process at this time.
* ISO 11745 Amd1 – Brazer Qualification. Amendment introduced new vision test, which was accepted and specification issued in April 2015.
* Eyesight requirements. Agreed to 3 alternative options that will be adopted for welders, brazers, operators and inspectors.
* ISO 16338 – Resistance Welding – correcting clear annulus zone definition and incorrect table. Expect to release in Quarter 1 of 2017.
* ISO 17533 – Welding information in design documents. Published in August 2015.
* ISO 17927 – Fusion welding of metallic components. Intend to split into 2 sections: process requirements and acceptance requirements. Work continues on this specification.
* Topics under discussion: Additive Manufacturing (qualification of machines and operators), Electron beam welding, Laser beam welding, Linear and orbital friction welding.

The next ISO meeting will be 18-20 OCT-2016 at the AWS Headquarters in Miami. This is the week prior to the Nadcap meeting.

Holger also presented the status of DIN specifications for Additive Manufacturing. The DIN standards committees are writing specifications for acceptance testing of powder bed laser beam machines, qualification of operators of powder bed laser beam machines, methods of inspection, and generic powder requirements.

Holger Krueger and Gary Coleman gave permission for the ISO, DIN and AWS Committee updates to be posted in eAuditNet. This will be added to the Public Documents section for Welding (Resources / Documents / Public Documents / Welding / Data Folder).

***ACTION ITEM: Ian Simpson to post the ISO, DIN and AWS Committee update presentations in eAuditNet (Due Date: 31-Jul-16).***

# annual review of op 1114 appendix wld – OPEN

1. Annual review of OP 1114 Appendix WLD

The Task Group reviews the appendix to the Task Group Operation procedure, OP 1114, every year. This is to ensure that the appendix aligns correctly with the main procedure, that there are no conflicts or redundant items, and that it still accurately reflects the existing operation of the Task Group.

The Staff Engineer provided a summary of possible revisions which were reviewed by the Task Group. Two items of redundancy and a possible item of conflict with other procedures were identified. The Task Group actioned the Staff Engineer to remove these and ballot the procedure.

***ACTION ITEM: Ian Simpson to ballot OP 1114 Appendix WLD to the Task Group (Due Date: 31-Jul-2016).***

The Staff Engineer noted that revisions to OP 1114 were currently in ballot with respect to Suppliers performing self-audits. This will require further revision to OP 1114 Appendix WLD. The Task Group elected not to discuss this item any further until such time the requirements have been implemented into OP 1114.

# diffusion welding – OPEN

1. At the February 2016 Task Group meeting, a sub-team of Marco Poletto, Scott Maitland and Andrew Dewhurst was actioned to further review the proposal made by Marco Poletto to transfer the checklist into a format to allow modified cycle checklist. Marco Poletto presented the sub-team’s checklist to the Task Group and explained the reasons for revision. The Task Group agreed to the checklist being balloted.

***ACTION ITEM: Ian Simpson to ballot the AC7110/8 checklist to the Task Group (Due Date: 31-Jul-2016).***

# Additive Manufacture – OPEN

## Richard Freeman gave a presentation on progress of checklist development, Auditor training requirements, size of Additive Manufacturing market, items still required. Details of each item are below:

The Additive Manufacturing draft checklist for laser and electron beam powder bed was balloted to the Task Group. There were no disapprovals and the required number of votes was achieved. There were however several ballot comments. The required notification that ballot comments would be addressed at this meeting was sent as per the requirements of the Document Control procedure OP 1101. The Task Group dispositioned the comments. Based on the resolution of comments there are 2 changes to paragraphs where technical changes are required, as well as numerous editorial changes. Per OP 1101 this limited number of technical changes allows for an affirmation ballot to the Task Group.

***ACTION ITEM: PRI to complete ballot disposition in eAuditNet ballot manager, incorporate ballot comments and ballot checklist (affirmation) for Additive Manufacturing to the Task Group (Due Date: 31 -Jul-2016).***

At the February 2016 Task Group meeting, Subscribers were asked to provide details of Suppliers that they would wish to be audited, mandates that are likely to be made and timescales for audits. Concurrently Richard Freeman was to survey the industry to establish the likely number of Aerospace Suppliers who may require audit. Richard Freeman provided the information he was actioned to find, noting that the market for Additive Manufacturing is growing at an extremely fast rate. There has however been very little information provided by Subscribers in terms of potential mandates and the number of Suppliers likely to require audit. At this time two Subscribers have identified approximately 10 Suppliers that they would be encouraging to be audited. It was re-iterated that without this information, we do not know how many Auditors are required and when we need them to be qualified by.

Per discussion at the February 2016 Task Group meeting, the Task Group wishes to train existing weld Auditors, where possible, to perform audits in this process. Subsequent discussion at this meeting noted that we should only consider current Auditors with laser and /or electron beam welding. Richard Freeman has agreed to develop a training course that can be given at the October Auditor Conference and provision for this to occur has been made by PRI. This will give Auditors the necessary theoretical training in the process. Subsequent to this, hands-on training is required on the actual equipment. GKN Aerospace and MTU offered to train up to 5 Auditors each. As both of these facilities are in Europe, it would also be beneficial if a US Subscriber would be prepared to offer similar training. Once the number of Suppliers is known and which Subscribers are able to offer hands-on training, a plan can be developed for the Auditors. The Staff Engineer will determine which existing weld Auditors have the pre-requisite laser and / or electron beam weld experience and invite them to attend the theoretical training. In addition, 2 Auditors have stated that they have experience of Additive Manufacturing. The Staff Engineer is to determine their exact knowledge of this.

***ACTION ITEM: Ian Simpson to determine existing WLD Auditors with laser and / or electron beam weld approval and invite them to attend the theoretical training in October 2016 (Due Date: 31-Jul-2016).***

***ACTION ITEM: Ian Simpson to determine the specific knowledge that 2 existing Auditors have on Additive Manufacturing (Due Date: 20-Oct-2016).***

Subscribers were reminded that training costs will be significant and that it is important to train the required number of Auditors based on number of expected audits.

Once further information is provided on Supplier numbers, the Staff Engineer will liaise with GKN Aerospace – Filton and MTU to agree suitable times for hands-on training.

Once theoretical and hands-on training has been completed the Task Group wish to examine and interview candidates prior to granting them approval. As such a sub-team of Holger Krueger, Rob Gilbert, Andy Dewhurst and Richard Freeman was set-up to develop an exam specific to Additive Manufacturing. The preferred format is for multi-choice questions so that it can simply be added to the existing exam. The sub-group requested that they be sent the existing exam so they can structure questions for Additive Manufacturing in the same format.

The sub-team also requested that they see the details of the theoretical training course so that questions are developed that test knowledge that the Auditors will learn in the training.

***ACTION ITEM: Ian Simpson to send the existing weld Auditor exam to the sub-team responsible for development of the Additive Manufacturing exam (Due Date: 31-Jul-2016).***

***ACTION ITEM: Richard Freeman to provide the course details for the Additive Manufacturing theoretical training to the sub-team responsible for development of the exam (Due Date: 31-Jul-2016).***

***ACTION ITEM: Sub team of Holger Krueger, Rob Gilbert, Andy Dewhurst and Richard Freeman to develop Additive Manufacturing exam (Due Date: 20-Oct-2016).***

A timeline for the introduction of the checklist was reviewed. This brings together, checklist approval, Auditor training, and Subscriber mandates. The plan was reviewed by the Task Group and agreed. Assuming no slippage, then the anticipated date that we will be ready to audit is April 2017.

The existing sub-team agreed to start development of a handbook to support the checklist.

***ACTION ITEM: Additive Manufacturing sub-team to develop handbook to support the Additive Manufacturing checklist (Due Date: 20-Feb-2017).***

# Create NMC Feedback Chart – OPEN

The Task Group generated the feedback chart for presentation by Steve Tooley at the NMC meeting.

# NMC Meeting Report – OPEN

1. Steve Tooley gave a summary of key items that were discussed in the Planning and Operations meeting and NMC meeting. Key items were:
* The Risk Mitigation process will be performed by Staff Engineers in the future. The required changes to procedures are approved, however an eAuditNet enhancement is required before this can be fully implemented. The expected date for this to be operational is the end of 2016.
* New dashboard for Observation audits.
* Audit Effectiveness. Each Task Group reported out on items as requested by the NMC. The information will be analyzed further by the NMC.
* Self-Audit. The procedures to make self-audit a requirement are being balloted. Although the self-audit will be a requirement, the overall process is still being developed.

# Forum for Supplier Issues – OPEN

1. Christopher Webb requested that the Task Group review the requirement for having to have a standard cycle checklist audit after a checklist revision change (rather than just having modified scope and enhanced review of the actual changes made). Ian Simpson and Steve Tooley explained that during development the eAuditNet coding had been made to require this at the direction of the NMC sub-team who developed the process. Per discussion with the eAuditNet team, there is no simple way to simply change this process. It was however agreed that an enhancement request be submitted to start the process to change eAuditNet.

***ACTION ITEM: Ian Simpson to submit an eAuditNet enhancement request to change requirements for modified scope (not require standard scope after a checklist revision) (Due Date: 30-Sep-2016).***

# OP1116 APPENDIX WLD – OPEN

1. Time was allocated on the agenda to resolve any comments made in the ballot of this procedure. One editorial comment was received in the Task Group ballot. This was dispositioned and agreed by the Commenter. As such no additional Task Group review was required and the procedure was therefore balloted to NMC. There were no comments on the NMC ballot and the procedure was issued on 29-APR-2016.

# Auditor Advisories – OPEN

## Two Auditor Advisories have been issued since the February 2016 Nadcap Meeting. These were reviewed by the Staff Engineer.

The Task Group was reminded that these are posted in eAuditNet (Resources / Documents / Public Documents / Welding / Auditor Advisories).

# Checklist Items – OPEN

1. Handbook Revisions

The Staff Engineer noted the following handbook revisions for discussion:

The Supplemental checklist for Welder / Weld Operator qualification, AC7110/12S, becomes effective in September 2016. A handbook to support the introduction has already been issued in order to help Suppliers prepare for their audits. The handbook for the base requirements for Welder / Weld Operator qualification currently contains details about some unique Subscriber requirements. This unique customer requirement information needs to be transferred to the supplemental handbook and removed from the base requirement handbook. The supplemental handbook to support AC7110/12S Rev H can be issued now, however the base requirement handbook supporting AC7110/12 should not be changed until after AC7110/12S Rev H becomes effective.

An Auditor also requested clarification of Boeing’s 812B code. Michael Irvin has provided revised verbiage that will also be included at this time.

***ACTION ITEM: Staff Engineer to revise the AC7110/12S handbook to include Subscriber unique information currently contained in the AC7110/12 handbook, and to include Boeing’s additional guidance for their 812B code (Due Date: 31-Jul-2016).***

***ACTION ITEM: Staff Engineer to revise the AC7110/12 handbook to remove Subscriber unique information (Due Date: 15-Sep-2016).***

A Supplier requested the Task Group to review the AC7110 checklist para 8.1 (prohibition of visible dye penetrant) to permit any customer authorization allowing visible dye usage. As written the question requires the specification to allow visible dye penetrant whereas the Supplier argues that the allowance may be in the form of other documentation such as a purchase order, waiver request etc. The Task Group discussed and agreed that a revision to the handbook was appropriate to clarify that allowance from the ‘Design Responsible Engineering Authority’ should replace ‘Customer’s specification’. The Task Group does not believe that the checklist requires revision as this change to the handbook provides sufficient guidance.

***ACTION ITEM: Staff Engineer to revise the AC7110 handbook to revise the acceptable objective evidence to clarify that acceptance from the Design Responsible Engineering Authority is needed with respect to visible dye control (Due Date: 15-Sep-2016).***

1. Checklists Revisions

The braze checklist (AC7110/1) completed NMC ballot with one editorial comment for a typo error which was resolved, hence the review and disposition of comments that was planned for this meeting was not required. The Staff Engineer revised the associated handbook and requested the Task Group to review this in April 2016, in order to support the issue of the checklist. Subsequently the checklist was issued with an effectivity date of 7-AUG-2016.

The stud welding checklist (AC7110/9) completed NMC ballot with one editorial comment for a format error which was resolved, hence the review and disposition of comments that was planned for this meeting was not required. The Staff Engineer revised the associated handbook and requested the Task Group to review this in April 2016, in order to support the issue of the checklist. Subsequently the checklist was issued with an effectivity date of 7-AUG-2016.

The supplemental checklist for welder / welding operator qualification (AC7110/12S) was submitted on Task Group and then NMC ballot without any comments received on either ballot. Only 3 Subscribers (GE, RRplc and Boeing) submitted requests for revision on this checklist. The handbook to support this checklist was revised and sent to the 3 Subscribers, who had made changes to the checklist, for review and approval. This was agreed and hence the checklist was issued with an effectivity date of 4-SEP-2016.

The base requirement checklist (AC7110) was revised to incorporate items from the rolling list of checklist items and to add some items proposed by the NMC Audit Effectiveness team. This was balloted to the Task Group. Formal notification was sent that resolution of comments would be addressed at this meeting. Since the ballot of this checklist, the NMC Standardization team has proposed revisions to some Operating Procedures to control self-audits. It was apparent from discussion at the Planning and Operations meeting that although self-audits are to be imposed, the requirements of what is to be required is not yet finalized. As a number of items in this ballot requires the decision on what a self-audit must contain, the Task Group elected not to disposition the ballot comments at this time. It is hoped that the NMC requirements will be finalized by the October 2016 Nadcap meeting and the ballot comments for this checklists will be dispositioned at this time.

***ACTION ITEM: PRI to ensure October 2016 agenda has disposition of AC7110 ballot comments included (Due Date: 15 -Jul-2016).***

Boeing previously requested the Task Group to consider moving the currently unique to Boeing requirements for reviewing disqualification requirements when determining extended welder qualification from AC7110/12S to the baseline checklist AC7110/12. Michael Irvin and Gary Coleman explained that disqualification needs to be a part of the review to allow extended qualification for qualifications to AWS D17.1 and Boeing specifications. It was however noted that there may be some welder qualification specifications that do not require all of the items currently listed in Boeing’s supplement. It was agreed that Subscriber members will require some time to evaluate their specifications to know whether these items can be simply transferred to the base requirement checklist or if another approach is required. It was agreed that this be added to the October 2016 meeting agenda, for formal vote to occur.

***ACTION ITEM: PRI to ensure October 2016 agenda has item for extended welder qualification discussion and vote. (Due Date: 15-Jul-2016).***

***ACTION ITEM: Subscribers to determine if the currently unique Boeing requirements for reviewing disqualification requirements, when reviewing extended welder validity records, can be adopted into the baseline checklist and come to the October 2016 prepared to vote on this change (Due Date: 24-Oct-2016).***

The Task Group maintains a rolling list of items for requests on checklist revision. Since the last Task Group meeting in February 2016, 2 items have been requested to be added to the list. The Task Group dispositioned this as follows:

* As a result of an Audit Observation, the Task Group was requested to review the use of terminology; qualification welds versus evaluation of welds, and the need for the use of accredited labs. The Task Group agreed that the titles of questions in this series of questions need revision to specifically state that they are related to qualification. This will be changed at the next revision of checklists. With respect to requiring the use of accredited labs, the Task Group noted that the checklists are structured correctly as they require a check of customer approval and where necessary Subscribers have defined further via supplemental checklists.
* Milan Hanyk requested the Task Group to revise the verbiage in the checklist question associated with disposal of filler stubs into ‘non-retrievable’ containers. The Task Group agreed to change this to state ‘to prevent inadvertent use’. Guidance in the handbook already clarifies this, so the checklist change was not deemed important and as such will be made at the next checklist revision.

The Staff Engineer informed the Task Group that the Job Tracker enhancement as required by NMC is being implemented. This requires 8 fields to be tracked with an optional 2 fields at the Task Group discretion. Due to the urgency in defining the additional fields, the Task Group Chair made the decision to utilize thickness and material as the optional fields. Some editorial changes are required in the job details collection paragraphs to meet this requirement. The changes for WLD checklists are not however significant: split existing ‘Customer / Prime Contractor’ into ‘Customer’ and ‘Subscriber’; changing ‘Complete’ to ‘Historical’ and adding ‘Equipment / Tool ID’ to checklists where this does not currently exist. The eAuditNet team has gathered requirements and is in the process of creating the enhancement. Going forward, Auditors will be able to download the jobs that have occurred on prior audits per checklist to enable them to select the most varied range of jobs and enable easier compliance with the Job Selection handbook.

1. Smart Checklist

At this time, the only existing checklist that has not yet been approved to use modified cycle is the diffusion weld checklist, AC7110/8. Per action item 12.0 this checklist is however to be balloted.

The new checklist for Additive Manufacturing has not however been formatted for modified cycle at this time. It is recognized that this checklist will likely require revision to accommodate feedback from the initial audits of this process, and it will be converted to allow modified cycles at that time.

# New Business Items – OPEN

1. Per an action from the Board of Directors, Task Groups have been requested to discuss the viability of moving to 2 meetings per year. A survey was sent to Task Group Chairs and vice-Chairs and this was reviewed by the Task Group. The survey was completed by the Task Group. The Task Group was unanimously in favor of retaining 3 meetings per year.

***ACTION ITEM: Staff Engineer to return the completed survey on Frequency of Nadcap audits (Due Date: 15-Jul-2016).***

# OCTOBER 2016 Agenda – OPEN

One new item was requested for inclusion in the October meeting; systematic review of Subscriber specific supplemental requirements. The agenda will also include the majority of items as per this meeting. The Staff Engineer will incorporate any items that the Task Group reviews on an annual basis at the October 2016 meeting.

***ACTION ITEM: Ian Simpson to develop an agenda based on the items of the June agenda, include any items that the Task Group includes on an annual basis, and to include systemic review of Supplemental requirements for the 2016 October meeting (Due Date: 15-Jul-2016).***

# Review of Action Items – OPEN

1. All action items were reviewed for proper assignment and due date.

# Review of Meeting Effectiveness – OPEN

1. The meeting was considered to be effective in meeting its goals. It was noted that the room size is becoming too small as the number of attendees increases.

# Next Meeting – OPEN

1. As the weekend preceding the October 2016 Nadcap meeting includes the Auditor Conference, the Task Group requests to meet Monday to Wednesday. Hence the meeting will be 24-26-OCT-2016 in Pittsburgh, PA, USA.

ADJOURNMENT – Thursday 23-JUN-2016 – Meeting was adjourned at 4:30 p.m.

Minutes Prepared by: Gary Coleman gary.w.coleman@boeing.com

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| \*\*\*\*\* For PRI Staff use only: \*\*\*\*\*\*Are procedural/form changes required based on changes/actions approved during this meeting? (select one)YES\* [x]  NO [ ] \*If yes, the following information is required: |
| Documents requiring revision: | Who is responsible: | Due date: |
| OP 1114 App WLD | Ian Simpson | 31-JUL-16 (Ballot to Task Group) |