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.

WEDNESDAY, 19-SEP-2018 & FRIDAY, 21-SEP-2018

1.0 OPENING COMMENTS – OPEN/CLOSED

1.1 Call to Order / Quorum Check – OPEN/CLOSED

The Fluid Distribution Systems (FLU) Task Group was called to order at 9:00 a.m., 19-Sep-2018.

It was verified that only SUBSCRIBER MEMBERS were in attendance during the closed portion of the meeting.

A quorum was established with the following representatives in attendance:

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

<table>
<thead>
<tr>
<th>NAME</th>
<th>COMPANY NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Joe</td>
<td>Bebey</td>
</tr>
<tr>
<td>* Samuel</td>
<td>Buri</td>
</tr>
<tr>
<td>Ron</td>
<td>Clements</td>
</tr>
<tr>
<td>* Benjamin</td>
<td>Hedges</td>
</tr>
<tr>
<td>Eric</td>
<td>Herbay</td>
</tr>
<tr>
<td>* Ulrich</td>
<td>Mueller</td>
</tr>
<tr>
<td>Aaron</td>
<td>Nash</td>
</tr>
<tr>
<td>* Pedro</td>
<td>Perez</td>
</tr>
<tr>
<td>Sara</td>
<td>Pfannenstiel</td>
</tr>
<tr>
<td>* Dan</td>
<td>Smith</td>
</tr>
<tr>
<td>Rfenatas</td>
<td>Stanislovaitis</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>NAME</th>
<th>COMPANY NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maria Olivia</td>
<td>Adapon</td>
</tr>
<tr>
<td>Ricardo</td>
<td>Apparico</td>
</tr>
<tr>
<td>Phoenix</td>
<td>Atkinson</td>
</tr>
<tr>
<td>Jonathan</td>
<td>Beaumel</td>
</tr>
<tr>
<td>Kevin</td>
<td>Bires</td>
</tr>
<tr>
<td>Clifton</td>
<td>Breay</td>
</tr>
<tr>
<td>Ken</td>
<td>Chang</td>
</tr>
<tr>
<td>* Mike</td>
<td>Clemente</td>
</tr>
<tr>
<td>Ben</td>
<td>Emrick</td>
</tr>
<tr>
<td>Ted</td>
<td>Goosen</td>
</tr>
<tr>
<td>Steve</td>
<td>Hudlet</td>
</tr>
<tr>
<td>David</td>
<td>Janes</td>
</tr>
<tr>
<td>Duncan</td>
<td>Jones</td>
</tr>
<tr>
<td>Fabian</td>
<td>Lambert</td>
</tr>
<tr>
<td>Frank</td>
<td>Lee</td>
</tr>
<tr>
<td>Nhat</td>
<td>Mai</td>
</tr>
<tr>
<td>* Andrew</td>
<td>Mau</td>
</tr>
<tr>
<td>Scott</td>
<td>Minadeo</td>
</tr>
</tbody>
</table>

Chairperson

GE Aviation

Eaton Aerospace

GE Aviation

Eaton

Eaton Aeroquip

Airdrome

GE Aviation

Parker Hannifin, Stratoflex Products
**PRI Staff Present**

- Leigh Mulvaney-Johnson - Aflex Hose (UK)
- Shadrach Nanney - Parker Hannifin
- Ky Nguyen - AdelWiggins
- Erwin Oman - SAE
- Nilesh Patel - Shur-Lok
- Mike Paveglio - United Flexible
- Kevin Proschold - Shur-Lok
- Tabassum Qureshi - Esterline
  - * Chris Schofield - Hydraflow
  - * Denis Sindezingue - Zodiac Fluid Equipment
  - Ken Slock - Titeflex
  - Tim Soran - Sandvik Special Metals LLC
  - John Spence - Eaton Aerospace
  - * Justin Straley - Eaton Aeroquip
  - * Matt Swabb - Voss Industries
  - LT Taylor - KLX Aerospace Inc
  - Joe Torre - GE Aviation
  - * Phillip Wade - Smiths Tubular Systems - Laconia
  - Stacy Warsett - The Boeing Company

1.2 Safety Information – OPEN/CLOSED

Fire exits were reviewed. It was noted to inform PRI Staff of any emergencies.

1.3 Review Code of Ethics and Meeting Conduct – OPEN/CLOSED

The Nadcap code of ethics was reviewed.

1.4 Present the Antitrust Video (Only @ the First Open and First Closed Meeting of the Week for Each Task Group) – OPEN/CLOSED

The antitrust video was reviewed.

1.5 Review Agenda – OPEN/CLOSED

The agenda for the September 2018 meeting was reviewed and no additional topics were added.

1.6 Acceptance of March 2018 Meeting Minutes- OPEN

Motion made by Ron Clements and seconded by Phillip Wade to approve the minutes from March 2018 with the adjustment to move John Brittain (Eaton Aeroquip) from Subscriber attendee list to Supplier attendees. Motion Passed.

2.0 AUDITS – CLOSED

Audits in Staff Engineer, Auditee, and Task Group Review were discussed, and no additional actions were required.

The list of currently scheduled audits was reviewed, and Subscriber Task Group members were encouraged to observe audits.

An Auditee move was discussed but no dates for the move have been determined.
3.0 AUDITORS – CLOSED

Auditor performance and consistency data, including the standard data set, were reviewed. No Auditors stood out as requiring additional action.

A former Nadcap FLU TG Auditor is returning as a Nadcap FLU TG Auditor. K. Purnell will review procedures and FLU Audit Checklists that have been revised since January 2017 with the Auditor prior to assigning him any audits.

The two new FLU Auditors require observation. Subscriber Task Group members were requested to notify kpurnell@p-r-i.org if they can observe any audits on the current schedule. If so, K. Purnell will assign one of the two new auditors to that audit.

No Auditor Conference Confidential topics were discussed.

**ACTION ITEM: FLU TG Subscriber Members to notify kpurnell@p-r-i.org if they can observe any audits in the current schedule. (Due Date: 15-Nov-2018)**

4.0 STAFF ENGINEER DELEGATION – CLOSED

Task Group oversight of Audit Report Reviewers was reviewed. Delegated Reviewer, K. Purnell met the requirements of having at least 10% of NCRs reviewed by the Task Group Subscriber Voting Members with over 90% concurrence. Delegation is maintained.

Non-delegated reviewer, A. Baer is having 100% of his NCRs reviewed by the FLU TG Subscriber Voting Members.

5.0 SUPPLIER CHANGE NOTIFICATION – CLOSED

Change notifications since the last meeting were only name changes; no additional discussion was required.

6.0 CLOSED MEETING ISSUES – CLOSED

The Airbus mandate and the use of Subscriber Supplemental Checklists were discussed. Subscribers are concerned about how they would review NCRs on other Subscribers’ unique requirements. Sub teams will be formed during the open meeting for checklist revision and the creation of new checklists and supplemental checklists.

7.0 MEETING CLOSE OUT – CLOSED

All action items were reviewed, and due dates established. For specific details, please see the current FLU Rolling Action Item List posted at www.eAuditNet.com, under Public Documents.

8.0 REVIEW MEMBERSHIP STATUS – OPEN

The following requests for additions or changes to voting membership were received and confirmed by the Task Group Chairperson pending verification of PD 1100 requirements:

- Subscriber Voting Member: UVM
- Supplier Voting Member: SVM
- Alternate: ALT
- Task Group Chairperson: CHR
- Vice Chairperson: VCH
- Secretary: SEC

New Voting Members:
Voting Membership Removed: No Voting Members had their voting membership removed due to not meeting requirements.

Changes to Voting Memberships Since the Last Meeting:

<table>
<thead>
<tr>
<th>First Name</th>
<th>Surname</th>
<th>Company</th>
<th>Position: (new / updated role)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matt</td>
<td>Swabb</td>
<td>Voss Industries</td>
<td>Updated to SVM replacing Michael Schleckman</td>
</tr>
<tr>
<td>Michael</td>
<td>Schleckman</td>
<td>Voss Industries</td>
<td>Removed as SVM</td>
</tr>
</tbody>
</table>

Motion made by Ron Clements, seconded by Phillip Wade, to approve the above changes to voting membership. Motion Passed. All changes are pending completion of all required steps on the Nadcap Membership Form (m-frm-01).

The compliance to voting membership requirements per PD 1100 were reviewed. The following members were non-compliant with voting requirements. The voting requirement was waived for these members by the Task Group Chairperson and they are approved to remain voting members.

<table>
<thead>
<tr>
<th>First Name</th>
<th>Surname</th>
<th>Company</th>
<th>Balloting or Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulrich</td>
<td>Mueller</td>
<td>Airbus Commercial</td>
<td>Balloting – Missed two consecutive ballots</td>
</tr>
<tr>
<td>Dan</td>
<td>Smith</td>
<td>GE Aviation</td>
<td>Balloting – Missed two consecutive ballots</td>
</tr>
<tr>
<td>Mark</td>
<td>Paul</td>
<td>Rolls-Royce</td>
<td>Balloting – Missed two consecutive ballots</td>
</tr>
</tbody>
</table>

**ACTION ITEM:** PRI Staff to send email to non-compliant voting members reminding them of the obligations for voting. (Due Date: 30-Nov-2018)
9.0 STAFF REPORT – OPEN

K. Purnell presented the PRI Staff Report that included Auditor Status, FLU TG Metrics, Most Common NCRs, Latest eAuditNet Changes, Future Nadcap Meeting Dates and Locations and Staff Delegation Metrics. NMC is developing their own checklist that will contain requirements applicable to all Task Groups. The checklist will start out with three questions about Process Change Management. Auditees were reminded to upload their self-audits into eAuditNet at least 30 days prior to the audit. Auditees are also required to include procedure and paragraph numbers for compliance with each self-audit question. Auditees need to ensure Aerospace Standards they intend to work to in the near future are included in their audit scopes. Auditees also need to evaluate how they are determining their corrective action implementation is effective. Non-Sustaining / Repeat findings is the third most common NCR for the FLU TG in the last 12 months.

The FLU TG currently has seven (7) approved auditors.

The FLU TG metrics of Average Audit Cycle Time, Most Common NCRs, Average Number of Major and Minor NCRs, and Number of Lapsed Accreditations were reviewed. Most Task Group metrics are green since the last meeting except for Supplier Cycle Time and Supplier Merit. An effort must be made to vote on audits with a non-delegated reviewer(s).

The most common NCRs covering the last 12 months were reviewed:

#1 Sampling and Periodic Test Requirements, not submitting required data or maintaining part counts
#2 Calibration Issues, labels, outside calibration services, out of tolerance conditions, equipment not in calibration system
#3 Non-Sustaining Corrective Actions, repeat NCRs
#4 Personnel Training, records, trained in operations being performed
#5 Procedure Issues, procedure does not address, not following the procedure, not recording required data.

The latest changes in eAuditNet were reviewed. These changes are posted in eAuditNet under Resources, Documents, Public Documents, eAuditNet, Rolling Release Notes.

The future Nadcap meeting schedule is as follows: 22-25 October 2018 Pittsburgh, Pennsylvania, USA; 18-21 February 2019 New Orleans, Louisiana, USA and 3-6 June 2019 Paris, France.

The next Fluid Distribution Systems Nadcap meeting will be 4-6 March 2019 in Monterey, California, USA.

Delegated reviewer K. Purnell met the requirements of having at least 10% of NCRs reviewed by the Task Group Subscriber Voting Members with over 90% concurrence. Delegation is maintained.

Non-delegated reviewer A. Baer is having 100% of his NCRs reviewed by the Task Group Subscriber Voting Members.

10.0 REVIEW OF PROCEDURE CHANGES – OPEN

10.1 Review any changes to General Operating Procedures since the last meeting

K. Purnell presented the summary of changes to Operating Procedures OP 1105 Audit Process, OP 1110 Audit Failure, OP 1111 Merit Program, and OP 1112 NMC Oversight Activities, OP
1114 Task Group Operation, OP 1116 Auditor Staffing, and OP 1123 Supplier Support Committee.

10.2 Review changes to OP 1114 and OP 1116 Appendices since the last meeting

There have been no changes to the OP 1114 Appendix FLU since the March 2018 meeting.

K. Purnell proposed changes to OP 1114 Appendix FLU to align with the updates to OP 1114 Task Group Operation released earlier this year.

Motion made by Ron Clements and seconded by Andrew Mau to approve the proposed changes. Motion Passed Unanimously.

ACTION ITEM: K. Purnell to update OP 1114 APP FLU with approved changes. (Due Date: 15-Oct-2018)

ACTION ITEM: K. Purnell to review changes to OP 1114 APP FLU with FLU TG Auditors at the October 2018 Auditor Conference. (Due Date: 12-Dec-2018)

Changes to OP 1116 Appendix FLU since the March 2018 meeting include updating the document to the new format in accordance with OP 1116 Auditor Staffing.

11.0 G-3 QPG STATUS UPDATE – OPEN

The new G3 Qualified Product Group (QPG) Chairperson, Aaron Nash, presented an update from the G3 QPG meeting. The presentation included discussion of periodic testing and the use of the periodic test form located in eAuditNet, specifications with QPL requirements and no QPL listings, future changes to PD2101, and the need for additional members. The draft PD2101 will be sent to the FLU TG members for review and comment.

12.0 SUPPLIER MEETING REPORT – OPEN

T. Goosen presented an update on the G3 Supplier Group meeting. The Supplier / OCM change notification process to PRI for QPL products is being reviewed and changes proposed. There was also discussion of future changes on the next revision of PD2101.

ACTION ITEM: T. Goosen to provide K. Purnell a summary of the Supplier Meeting Report. (Due Date: 5-Oct-2018)

13.0 2018 AUDITOR CONFERENCE – OPEN

The agenda for the FLU TG October 2018 Auditor Conference was reviewed. The conference will be held on Friday, 19-Oct-2018, and will include the following topics:

- Most Common NCRs and Auditor Consistency
- Periodic Testing
- Dry Film Lube AC7108/1
- Question / Answer / Discussion Session
- eAuditNet
- NMC Presentation
- Future Checklist Changes
- Question and Answer Session
- Review Checklists and Suggestions for Auditor Handbook Clarifications for AC7112, AC7112/1, AC7112/2, AC7112/3, AC7112/4, AC7112/6, and AC7123

A limited amount of time will be spent on Dry Film Lube to AC7108/1 as there are currently no FLU TG audits scheduled or performed to this checklist. All other topics were accepted.
14.0 MEETING CLOSE OUT – OPEN

All action items were reviewed, and due dates established. For specific details, please see the current FLU Rolling Action Item List posted at www.eAuditNet.com, under Public Documents.

Agenda topics for the next meeting will be the same as this meeting.

15.0 CHECKLIST REVISION – OPEN

Airbus intends to mandate Nadcap Fluid Distribution Systems accreditation

The AC7112 checklist scope was modified to state, "The purpose of the Audit Criteria is to provide a means to verify and document that systems are in place to control the process, and that the process procedures are being followed." This change allows audits to be conducted to requirements beyond the SAE Procurement Standards.

The process for Subscriber Supplemental Audit Criteria, described in PD100, was reviewed. Airbus will likely be writing supplemental Audit Criteria for several of the FLU checklists.

A sub-team was formed to make necessary changes to AC7112/6 for titanium tube manufacture and create an AC7112/6 Supplemental Checklist containing Subscriber unique requirements. Sub-Team members are Dave Hanes, Tim Soran, Ulrich Mueller, Samuel Buri, Isaac Garcia, and Robert Schreiber.

ACTION ITEM: K. Purnell to email T. Soran the Airbus AC7112/6 requirements. (Due Date: 12-Oct-2018)

Another sub-team was formed to develop a checklist for the manufacture of Aluminum and Corrosion Resistant Steel (CRES) tubes similar to AC7112/6. Sub-Team members are Dave Hanes, Tim Soran, Ulrich Mueller, Samuel Buri, Isaac Garcia, and Robert Schreiber.

ACTION ITEM: Robert Schreiber to set up WebEx Meetings for the AC7112/6 and Al and CRES Tube Manufacture Sub-Teams. (Due Date: 8-Nov-2018)

A sub-team was also formed to create a checklist for pipe/tube manufacturing. Sub-Team to create the initial Draft slash sheet Checklist. It is intended to cover bending, cleaning, fitting assembly, and pressure testing with other processes such as welding, nondestructive testing, and chemical processing being covered by existing Nadcap Task Groups and accreditations. Sub-Team members are Holger Krueger, Lori Neal, Samuel Buri, Isaac Garcia, Andrew Mau, Dan Smith, Mike Clemente, Al Baer, and an Eaton representative TBD.

ACTION ITEM: Al Baer to set up a WebEx meeting for the Pipe / Tube Manufacturing Sub-Team. (Due Date: 12-Oct-2018)

ACTION ITEM: K. Purnell to email the FLU TG asking who would like to participate on the AC7112/6, Manufacture of AL and CRES Tubes, or Pipe / Tube Manufacturing checklist development Sub-Teams. (Due Date: 31-Oct-2018)

K. Purnell requested assistance in updating the s-frm-14 Preliminary Questionnaire for Fluid Distribution Systems with the most current Aerospace Standard (AS) References. A new standard AS7510 needs to be added under AC7112/3.

E. Oman is developing a spreadsheet that contains a list of SAE G3 standards, he offered to add columns for identifying standards with QPL and/or QML requirements.

S. Buri volunteered to develop a list of AS that only require QML.

ACTION ITEM: E. Oman to email K. Purnell the G3 Standard Spreadsheet that identifies standards with QPL requirements (Due Date: 1-Dec-2018)
ACTION ITEM: S. Buri to email K. Purnell a list of Standards with only QML requirements (Due Date: 1-Dec-2018)

ACTION ITEM: K. Purnell to email draft s-frm-14 Preliminary Questionnaire for Fluid Distribution Systems to the FLU TG for comment. (Due Date: 12-Dec-2018)

ACTION ITEM: K. Purnell to schedule WebEx meeting to discuss proposed draft s-frm-14 Preliminary Questionnaire for Fluid Distribution Systems and errors in AC7112/4 scope. (Due Date: 25-Jan-2019)

ACTION ITEM: K. Purnell to add review of AC7112/3 to the next meeting agenda. (Due Date: 1-Mar-2019)

ACTION ITEM: Phillip Wade to email K. Purnell the SAE procurement standards applicable to AC7112/1 and s-frm-14. (Due Date: 31-Oct-2018)

ADJOURNMENT – 21-Sep-2018 – Meeting was adjourned at 11:30 a.m.

Minutes Prepared by: Keith Purnell, kpurnell@p-r-i.org

***** For PRI Staff use only: *****

Are procedural/form changes required based on changes/actions approved during this meeting? (select one)

YES* ☒  NO ☐

*If yes, the following information is required:

<table>
<thead>
<tr>
<th>Documents requiring revision:</th>
<th>Who is responsible:</th>
<th>Due date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP 1114 App FLU</td>
<td>K. Purnell</td>
<td>15-Oct-2018</td>
</tr>
</tbody>
</table>