

Attachment No. 6



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UNCONFIRMED MINUTES

MEETING # 114

Of

SAE COMMITTEE AE-8C1, CONNECTORS

Of

SAE Master Committee AE-8, Aerospace Electrical/Electronic Distribution Systems

Nashville, TN

May 18, 19, 20 & 21, 2010

RECORD OF ATTENDANCE

ASIGNMENTS:

Members Present or Represented:

Please refer to paragraphs indicated next to your name for specific assignments.

Patrick Oakes, Chairman	1.0, 1.1, 1.3, 1.6, 2.1.1(1 & 3), 2.1.2(1), 2.1.6(2 & 5), 3.3, 3.5, 3.10, 5.7, 6.0 & 7.0
Bobby Crumb, V. Chairman	1.5, 3.1, 3.2, 3.7 & 3.9
Alan Miklos, Secretary	1.2, 2.1, 2.1.1(2), 2.1.6(4), 3.4 & 3.8 & 5.9
Douglas Barry	
David Bouzek	2.2.2(4 & 7), & 2.3.1
Charles P. Fischer	
Deron Dickey	
Bryan Harrington	2.2.2(3 & 5) & 4.1
Eric Higa	
Lisa Hoffer	2.1.2(4) & 2.4.3
Matthew Kanetomi	
Dave Kelly	2.2, 2.2.1, & 3.13
Yann Le Luyer	2.1.2(4)
Kelly McNeese	
Richard Misiaszek	3.11
Inho Myong	
Medardo Robles	
Charles (Buzz) Sawyer	5.1, 5.2, 5.3 & 5.4
Eric Shepler	2.1.3(1) & 3.12
Hugues Simon	2.1.2(3)
Dennis Smith	
Mark Smith	
Trevor Williams	2.2.2(6)
Edward Wiseman (R) Darrell Block	

Members Absent:

Please refer to paragraphs indicated next to your name for specific assignments.

George Anderson	
Daniel Adducchio	2.4.1
Jaring Attema	

Attachment No. 6

Don Chambers
Richard Clarkson 2.4.2(3), 5.6
Frank Despain
David Ennis
Bob Gross 2.1.4
John Jacobs
Patricia Madison
Richard Steven McCoy
Kenneth Payne
Anthony Peake 2.3.2
Brad Penman
Lanny Plaisance
William Reid
Mark Richmond
Preston Shultz
Charles Smaczny
Patricia Sykes
William Upstone
Laurence Wesson

Liaison Representatives Present or Represented:

Please refer to paragraphs indicated next to your name for specific assignments.

Robert Adkins
Mick Boag
Jean-Francois Daucourt
Daniel Larson
Patrick Loviat
Dwight Tabit 2.1.7 & 2.4.2(1 & 2)
Edwin Taylor 5.8, 5.9
Apha Ann Thornton

Liaison Representatives Absent:

Please refer to paragraphs indicated next to your name for specific assignments.

Jeff Acevedo
Ronald Caron
Martin Challis
Chad Cowan
Mark DeAngelo
Victor Demko
Laura Feix
Angel Garnica
David Hemm
Robert Hubbard
James Hunt
James Ide
Richard Jones
Karl Kitts
Joe Kurek
Ronald Lai
Lisa McMurray
Christian Pellon
Susan Rogers
Victor E. Saucedo
Raymond Schlegelmilch
Christopher Winslow
Steve Wrighton
Richard Yannitti

Attachment No. 6

Consultants Present:

Mike Barnstead
Mike Peppas
Ron Peterson

Please refer to paragraphs indicated next to your name for specific assignments.

2.1.2(2), 2.2.2(1 & 2), 5.5
2.1.5, 2.1.7, 2.1.8, 2.2.1(1) & 3.6

Consultants Absent:

Howard Little
William O'Hirok

Please refer to paragraphs indicated next to your name for specific assignments.

AAA Plating
Consulting Director, Cannon

Also Present

Darrell Block
Tom Briere
Allen Carter
Michael Johnson
Jason Pedrazzi
Derek Plescia
David Shoudy
Xavier Rose
Jay Sandidge
Benjamin Yearwood

Please indicate the company you're affiliated with.

Representing Ed Wiseman
Tyco Electronics
Isodyne
Sumitomo Electric Interconnect Products, Inc.
Isodyne
Navair
Sumitomo Electric Interconnect Products, Inc.
Navair
Positronic Industries
Naval Air Systems Command

SAE Representative:

Dorothy Lloyd

Please refer to paragraphs indicated next to your name for specific assignments.

1.4

1.0 Call to Order – Chairman, Pat Oakes:

Pat called the meeting to order and welcomed those present to the 114th meeting of the AE-8C1 committee on Electrical Connectors. He reminded the members that, in discharging their responsibilities as members of this committee, they act as individuals and not as representatives of any organization with which they may be affiliated. He also reminded the committee members of their responsibility to disclose at specified times during the technical development process of a specification all patents and patent applications owned, controlled or licensed by a member, member's employer or third party in accordance with the SAE technical standards board governing policy. Last of all Pat apologized for the last minute confusion with respect to the meeting taking place or not in Nashville due to the flood damage the city had encountered.

1.1 Approval of Minutes Meeting # 111 – Committee:

Changes Identified as follows:

Corrected paragraph 2.1.2.2(5), last sentence, wrong word used, is: "resent" should read: "present"

Changes to previous minutes will always be reflected in the next meeting minutes. The change or changes are not made to the minutes affected.

1.2 Membership Review – Secretary, Alan Miklos:

Current membership: 44 members, 32 Liaisons, and 5 consultants.

Membership changes:

Simon Hugues is replacing Mekki Boussairy as the voting member from Souriau.

Attachment No. 6

Mark Falknor from Wright Patterson AFB representing the USAF will be the POC replacing Richard Yannitti.

Additions:

Mike Barnstead from Macdermid was added to the roster as a consultant.

1.3 Announcements – Chairman, Pat Oakes:

Pat mentioned there were last minute changes to the agenda, which are reflected in “red” font. If someone does not have a copy of the latest agenda, copies are available at the SAE staff representative counter.

Pat announced as his first act as being the new AE8C1 chairman the appointment and acceptance of Bobby Crumb as Vice-Chairman.

The next AEISS conference will be held in Denver Colorado in conjunction with our October 2011 meeting schedule. Pat asked that members start considering a call for papers as potential submission for this event.

Bobby Crumb was honored for his 20 + years as chairman of the AE8C1 committee and received an award, which was presented by Pat Oakes on behalf of the committee members and SAE International.

The AE8-C1 activities summary report, see Attachment “A”, addresses many of the key projects being worked in this Committee.

1.4 Staff Report – Dorothy Lloyd:

The SAE staff presentation consisted of the following agenda topics:

- Standard Categories Initiative
- 2009 TSB Award Recipient
- New Project Request Form
- Style Manual Release
- New SAE Membership Model

Each topic was summarized during the power point presentation with opportunities for committee members to comment and ask questions. Of key interest was the TSB award given to Bobby Crumb, the new project request form and the announcement of the next chairman SAE workshop scheduled for June 22nd and 23rd. A copy of the presentation is attached; refer to Attachment “B”.

1.5 Reports – V. Chairman, Pat Oakes:

Pat announced since we have just identified who the new vice chairman is, there is nothing at this point in time to report. General Reminder: The membership is reminded to use the “New Business Form”, which is included as Attachment “C” to these minutes, for all new business to be considered by the committee. Items to be considered are to be submitted to the Vice-Chairman with a copy to the Secretary at least four weeks prior to the meeting.

1.6 Committee Correspondence – Chairman, Pat Oakes:

This is a new topic that will remain on the agenda moving forward. This agenda item provides a means to communicate issues submitted to the AE8C1 for resolution, direction and/or feedback when said issues are between our semi-annual meeting schedule so

Attachment No. 6

committee members are aware of some of the behind the scene activities taking place. Refer to this agenda item in future meetings for issues submitted by industry users.

2.0 **PROJECTS:**

2.1 **Connectors and Accessories – Alan Miklos:**

2.1.1 **Alternate Material/Plating for Connectors & Accessories – Pat Oakes:**

(1) DoD Draft Directive Response Letter:

Apparently there was a glitch in the automation process and the letter written in response to this issue did not go forward. Therefore, the committee correspondence letter was resubmitted just prior to this meeting. It is also posted in the committee work area for future reference.

Action: Bobby Crumb

(2) AIR 5919 Revision / Update:

This document was updated and submitted for a 28-day ballot. The ballot closed on May 17th. Assuming no disapprovals, the document will move forward and should publish before our Fall 2010 meeting.

Action: Alan Miklos

(3) DFAR 2010-7262 Hex Chrome Regulation:

DoD is proposing to amend this DFAR clause to address requirements for minimizing the use of hexavalent chromium in defense weapon systems, subsystems, components, and other items. The proposed rule prohibits the delivery of items containing hexavalent chromium under the DoD contracts unless an exception applies. The comment period on this proposed rule ends June 7th 2010. It was agreed to post this proposed ruling on the SAE website so those interested could review and comment accordingly. It was also suggested and agreed this committee would submit a position letter regarding this proposed ruling, hopefully within the allocated comment time frame. Finally, Mr. Sawyer commented there is a Boeing individual who specializes in material and finish processes, including RoHS issues, and anyone interested in speaking with him can contact him at: stevhpen.p.gaydos@boeing.com.

Action: Pat Oakes

2.1.2 **F/O Advanced Connectors, Accessories, and Test Method – Pat Oakes:**

(1) Connector Accessories:

The only comment under this header was the publication of the AS85049/143, which was dated for qualification procurement in April 2010.

(2) AS5590 Fiber Optic Connector, AS3 Review:

Have not received any input to date from the AS3 group regarding our request for them to review and comment on the last pass of the AS5590 basic draft. Mike Peppas will follow-up and find out if this committee has or is planning on commenting.

Attachment No. 6

Action: Mike Peppas

(3) AS5590/2 Draft:

Pat reported there has been no activity on this new detail specification since our last meeting. Pat asked Hugues Simon (replaced Mekki) to take the responsibility of getting this proposed document off dead-center. Hugues agreed to take over this task and would report its progress back to the committee going forward.

Action: Hugues Simon

(4) AS5590 Modular Rectangular Connector:

Radiall reported they are still in the process of reviewing the basic to determine the rectangular requirements in parallel with the detail specification draft. Yann also mentioned they are still concerned on how to address the size 20 termini since DSCC did state in the last meeting they would not entertain adding this termini to the 29504 specification. Yann asked Lisa if she knew why DSCC would not include this in their document and Lisa was not sure of the reason. She did commit to find out and provide Yann and this committee with a rationale.

Action: Continue evaluation and development activity – Yann Luyer / Lisa Hoffer

2.1.3 MIL-DTL-38999L Electrical Connector – Eric Shepler:

(1) Runway De-Icing Fluid Test for Electrical Connectors:

Eric reported they are 3 weeks into the test. The test is divided into 2 groups (A & B) each having unique fluid immersion times to determine the affect it may have on the connector shell finish. Eric indicated that the group B samples are already showing signs of plating degradation; color lose. The test is scheduled for 6 weeks or until visual damage and/or a conductivity failure occurs. See attachment “D” for grouping and test sequence test method.

Action: Eric Shepler

2.1.4 AS81659A (MIL-C-81659) Rectangular Connector – Bob Gross / Bill Upstone:

Unfortunately Bob was unable to attend this meeting so there is nothing new to report on this activity.

Action: Bob Gross

2.1.5 Ground Power Connector – Ronnie Peterson / Preston Shultz/Charles Fischer:

(1) 270 Volt Ground Power Receptacle (AS81790):

The AS81790/1 document published in February 2009. The go, no-go gage for contact wear is still being considered for AE-8C2 but is low on the priority list.

Action – Ron Peterson

(2) Ground Power Cable Assembly/Plug (AS7974):

Attachment No. 6

The AS7974/5 cable assembly document published in January 2010. This item is complete and will be removed from the agenda.

Action: Ron Peterson

(3) Ground Power Cable (AS5756):

The AS5756/7 270 cable specification document is scheduled to publish in May 2010. Once published, this item will be considered complete and removed from the agenda.

Action: Ron Peterson

(4) QPL Progress:

Ronnie recommended the QA assist in qualifying Cooper/Burton so we have at least one qualified source moving forward.

Action: Ronnie Peterson

2.1.6 AS85049 Connector Accessories – Pat Oakes:

(1) AS85049/80 - Size 16 Dummy Contacts for Fiber Optics

The AS85049/80 was revised to include the size 16 dummy contact and published in November 2009. This item is complete and will be removed from the agenda.

(2) AMS-P-81914 Conversion to AS81914:

The AS81914 basic and associated detail specifications are in WIP and are expected to be submitted to committee ballot late June 2010.

Action: Pat Oakes / Alan Miklos

(3) AS85049/143 (AS81714 Backshell):

This document published in May 2010 and therefore this item will be removed from the agenda.

(4) AS85049/128 Band Tool Reference:

The task group has prepared a first-cut revision draft of this document that now includes both band sizes (.250 and .125 wide) and a reference to the associated AS81306/** banding tool part numbers under development. Once said tool specifications are published or in WIP to be published, the AS85049/128 draft will be finalized and go out for committee ballot.

Action: Alan Miklos

(5) AS85049/140, /141 and AS85049/142:

These documents are in WIP but are on hold waiting for the addition of their material requirements to be included into the AS81765 document. Pat Oakes will submit a request to the AMS P group to include these additional materials.

Attachment No. 6

Action: Pat Oakes

2.1.7 MIL-DTL-5015 (AS50151 Adoption) – Ronnie Peterson/Dwight Tabit

The supersession of MIL-DTL-5015 and its associated documents by AS50151 and its associated documents was issued in December 2009. The group cancellation notice and the adoption thereof to AS***** is available on the ASSIST website. The next order of business will be scheduling the AS50151A to address format, references and editorial comments received from industry users.

Action: Ronnie Peterson

(1) MS90376 vs. AS85049/138:

Ronnie stated the cancellation / suppression notice 2 up-date of MS90376 to include a cross reference table having the applicable superseding AS85049/138 is nearly complete and will be available on the ASSIST website shortly. Dwight Tabit confirmed this and mentioned it could be available on the ASSIST website as soon as June 2010.

Action: Ron Peterson / Dwight Tabit

2.1.8 SAE AS Specification for VG95234 Type Reverse Bayonet Connector – Ronnie Peterson:

A user has requested this committee develop an AS document of the VG95234 reverse bayonet type connector which would include using M39029 contacts and M22520 tools. The basic document will also include all insert arrangements for crimp type contacts. The committee agree to develop this document and associated detail specifications as deemed applicable.

Action: Ronnie Peterson

2.2 CONTACTS AND TOOLING – Dave Kelly:

2.2.1 MIL-DTL-22520 Conversion to AS22520 – Dave Kelly:

Dave indicated the AS22520 was balloted but received disapprovals. He stated that once the disapprovals are resolved, the document will go back out one more time for ballot.

Ronnie also chimed in and requested a sponsor for the AS22520/41 and /43. He asked Dennis Smith if Tyco would be willing to step up and take this task on. Dennis would not commit during the meeting but indicated he would get back to Ronnie. If Tyco can't do it, Ronnie indicated he would.

Action: Dave Kelly

(1) AS81969 Insertion/Removal Tools:

No activity to report at this time due to higher C2 priorities. Ronnie did state he would start work on these documents once the AS22520 work is complete.

Action: Dave Kelly / Ronnie Peterson

Attachment No. 6

2.2.2 AS39029 Contacts – Mike Peppas:

(1) Elimination of Cold Headed Contacts with Square Inspection Holes:

Mike stated that the M38999 AS39029 contact specifications are mainly the ones having the square inspection hole option. These will be corrected first as these documents are revised and/or amended.

Action: Mike Peppas

(2) Miscellaneous Slash Sheets Up-Date:

Document status is as follows: There are 22 documents active in WIP. 4 have published and 4 are in WIP to publish. 50 are waiting to be revised. See Attachment “E” detailing this activity and the on-going effort.

Action: Mike Peppas

(3) High Speed (AS5663) Network (AS39029/115 & /116) – Bryan Harrington:

Both of these documents have been assigned a WIP. However, Brian indicated he is waiting on input from the AS3 group before proceeding.

Action: Brian Harrington

(4) Incorporate Requirement for Gold in Crimp Barrel – David Bouzek:

David reported he is still waiting on the manufacturers’ data and was hoping to have it back in December 2009. Once in hand he will correlate the data and resend it to the committee for review and comment.

Action: David Bouzek

(5) Gold Contact Plating Risk Mitigation – Brian Harrington:

No further action to report on this topic. As stated in the last meeting, until the AS39029 is amended to define a test method for contact fretting, the addition of an alternative finish material to be included in this document is on hold. It was also agreed, assuming this moves forward, that the finish alternative would only be available on standard pin and socket contacts.

Action: Brian Harrington

(6) Fretting Corrosion Test Evaluation – Trevor Williams:

During Wednesday’s task group meeting, Trevor presented a number of concerns requiring further input to help define a test method suitable for detecting contact fretting that simulates actual field conditions. He also presented some additional qualification requirements such as vibration and shock testing for the group to consider, see attachment “G” and a copy of a study IEEE conducted, which includes a potential test apparatus; see attachment “H”. Trevor closed by stating he will be contacting a number of the contact MFR’s over the next several months and solicit any test data they may have regarding this test method subject. He also asked that anyone commenting on the EIA TS 1005 draft document to please copy him.

Attachment No. 6

Action: Trevor Williams.

(7) Non-Traditional / 3 Piece Contact Design – David Bouzek:

David presented a quick overview and suggested actions related to contacts fabricated using a 3-piece design technique, see attachment "I". The concern centered around verification of its performance capabilities using the existing 39029 qualification requirements defined in the basic and, when applicable, in the individual detail specification. David stated that preliminary tests have shown some 3-piece designs do not meet the stated performance requirements.

It was suggested and agreed that David would define the language and unique test parameter requirements when 3-piece designs are presented and submit the data to the task group for review. It was also agreed between the Preparing Activity (PA) and the Qualifying Activity (QA) that the PA would be involved with determining if a proposed design should be tested and if it would require additional testing beyond the scope of the current test perimeters prior to the QA issuing any form of response to the requestor.

Also included as part of the minutes is the presentation by Preci-Dip, QPL supplier of a 3-piece contact design, which was presented at the task group meeting on Wednesday, see attachment "J".

Action: David Bouzek

2.3 LIAISON REPORTS:

2.3.1 EIA – David Bouzek

(1) Test method for Shell-To-Shell Conductivity, Composite / Metal:

David commented the document revision is close to being finalized which will include the test method recommendations Eric supplied. David will continue tracking this item until the document is released.

Action: David Bouzek

(2) Test Method for Susceptibility of Contacts to Fretting Corrosion:

David indicated that the TS 1005 is out for ballot and has already received a number of disapproval comments. David indicated he would make sure Trevor gets copies on all comments received. This item will be moved to agenda item 2.2.2 (6) moving forward.

Included in these minutes is a copy of the EIA agenda/minutes for their last meeting in January 2010, see Attachment "K".

2.3.2 ISO Task Force – Tony Peake

No report available since Tony was unable to attend the meeting. However Tony did send an e-mail indicating the next ISO meeting will be held the week of August 23rd through the 28th in Astana, Kazakhstan.

2.4 MILITARY REPORTS:

Attachment No. 6

2.4.1 Air Force – Daniel Adducchio / George Slenski

No report available, neither of the individuals named above were able to attend the meeting.

2.4.2 Navy – Richard Clarkson / Dwight Tabit

(1) MIL Specification Conversion – Dwight Tabit:

Supersession of MIL-DTL-5015 and its associated documents by SAE AS50151 plus its respective documents is complete. Group cancellation of the military documents and the individual adoption notices are available on ASSIST website. The group cancellations for MIL-C-22909 and adoption notices for SAE AS5259 and AS5259/1 are published and available on the ASSIST website as well. The MS90376 notice update and AS85049/138 adoption is in WIP and is expected to be completed in June. A draft of the group cancellation and adoption notices of MIL-C-81703 to SAE AS81703 is also in WIP.

(2) QPD Status – Dwight Tabit:

The QPL listing for AS22520, AS23190, AS29600, AS81714 and AS83519 has been either transitioned to the QPD or revised since the last meeting. The QPL listing for AS81703 is also in WIP for submission into the QPD. A waiver was granted to publish one final paper revision of the QPL-AS85049. Dwight expects this to be completed and published in about a month. Refer to attachment “L”.

(3) 39029 Initial and Retention Qualification – Richard Clarkson:

Mike Peppas on behalf of Richard who was unable to attend the meeting summarized his report in his absence. The key points are as follows:

- All of the QPLs have been converted to the SIS format and posted on the Navair website.
- The AS39029 amendment is still under review with this committee to finalize the initial and retention qualification test requirements that will be performed by the Qualifying Activity. Additionally, Navair has created a work sheet identifying the similarity family groups that will be added to the specification. The work sheet was sent to all the manufactures for comments.
- Ronnie Peterson is coordinating the effort that identifies the critical tests for the Navy on each specification which will be submitted to the committee for review.
- Authorization letters for qualification retention on the AS23190 and AS83519 have been written for all manufactures. There is a concern regarding the sample sizes for the AS85049. As a result, Mike Peppas and the C1 committee are reviewing the requirements which may require revising the current retention requirements defined in the AS85049B-A3 amendment.

Other activities of interest to this committee in Rick’s report are included as part of these minutes, see Attachment “M”

2.4.3 DSCC – Lisa Hoffer:

(1) Advisory Alert for MIL-DTL-38999/31:

No change on the status of this item since the previously submitted Fall 2009 meeting report. The M38999/36 was published as a potential replacement for the /31 and once

Attachment No. 6

DSCC has a source qualified, they will recommend to the services to consider using the /36 as a replacement to the /31 and will also consider making the /31 “inactive for new design”.

(2) M83723 Bayonet Pin Color Identifier:

The MIL-DTL-83723 revision G was published in December 2009 which has been harmonized to reflect the same requirements related to the current bayonet pin color identifier as defined in MIL-DTL-38999. This item is considered complete and will be removed from the agenda.

(3) Add Clip to Clip Dimension for Size 16 Contacts:

DSCC agreed to include the proposed figure 34 depicting the clip-to-clip dimensional requirements for fiber optic termini in the M38999 specification provided a test method be included to verify the dimensions as part of the submission of this figure into the specification. There is an initial draft for an amendment 2 rev L out for comment so anyone who would like to propose a test method should contact DSCC before the comment period ends so they can consider including this requirement into the amendment.

(4) Rollover Jam Nuts (MS3186):

The second initial draft currently in the comment disposition phase addresses this issue and once published is going to now require a “-C” letter designator to be included at the end of the PIN number when a user wants products supplied with the alternative crimp wire hole design. There were no disapprovals related to this approach so it will go forward. Once the document is published this item will be removed from the agenda.

Another comment DSCC is considering for inclusion is to allow the exception of supplying aluminum nuts with cold-rolled steel connectors. Apparently this practice has been going on for years but only with hermetic connector applications. DSCC agrees with the proposal, but encourages additional input on this issue from this committee.

(5) DSCC Acceptance of SAE New Category of Documents such as “Stabilized”:

Lisa stated in the last meeting that DSCC is not the only government agency that may need to reference SAE documents in MIL specification standards. The executive agent for the Defense Standardization Program determines the type of documents that may be referenced in MIL-Specs and standards. Following the request by this committee, DSCC contacted this DSPO on this issue. Lisa reported that the DSPO has responded and have indicated a draft revision to DoD 4120-M will go forward to allow for a type of DoD “stabilized” document to be referenced on military standards and specifications.

Other Issues:

(a) Quadrax Contacts:

Lisa asked if there are any plans in this committee to develop an AS standard under the AS39029 family for quadrax pin and socket contacts. She indicated they have military applications that utilize these types of contacts and DSCC has been asked to add insert arrangements into the standards they maintain once these type of contacts are standardized. Since the contact designs differ from manufacturer to manufacturer,

Attachment No. 6

including the seal elements, it was agreed this committee would take on the responsibility to standardize these contacts and include them in AS39029. Therefore a task group was formed with Eric Shepler as lead. The task group members are: Brain Harrington, Bobby Crumb, Lisa Hoffer, Buzz Sawyer, Dennis Smith, Richard Misiaszek, Hugues Simon, Mike Peppas and Yann Luyer.

Action: This will become a new agenda item with Eric Shepler reporting. The agenda item will be labeled: "Standardization of Quadrax Pin & Socket Contacts" or something along this line.

(b) Standardization of Smaller Version of MIL-DTL-38999 Type Connectors ("nano" circulars):

Although DSCC has not been officially requested by a user to generate a new connector standard, Lisa indicated that DSCC is aware of military applications that are utilizing commercial type connectors, such as Glenair's Mighty Mouse series in their applications. Based on this awareness, DSCC-VAI is going to conduct a market research study to determine the need to create a standard on these type of connectors.

This issue is an informational comment only, no action required by this committee at this point in time.

Other activity within the DSCC organization that may be of interest to this committee is summarized on the attached DSCC status report. Refer to Attachment "N".

3.0 SPECIAL PROJECTS:

3.1 AE-8D Wire & Cable – Bobby Crumb:

No report, Bobby was unable to attend this meeting.

3.2 AE-8A Installation – Bobby Crumb:

No report, Bobby was unable to attend this meeting.

3.3 Five Year Review – Pat Oakes:

Unfortunately this document did not get posted prior to the meeting. Therefore, Pat committed to review document and assign the status accordingly for each document listed. Those individuals assigned to a particular document will be contacted to confirm the selected status. The 5-year review list will then be posted on the SAE website.

Action: Pat Oakes

3.4 AS9100 Reliability Assurance Program – Alan Miklos:

No change on the status of this item since the last meeting. SAE Aerospace Council approved the guidelines for inclusion into the SAE Organization and Operating Guideline Manual. The revised manual is expected to be available by year-end. Therefore, this item will remain on the agenda until it becomes officially inserted in said manual.

Action: Alan Miklos

3.5 AMS Specifications/Cancellation/Non Current – Pat Oakes:

Attachment No. 6

Pat reported that the AMS-QQ-C-320 was reinstated but the AMS-C-26074 is still pending resolution. The AMS B group is considering the recommendations submitted to them by this committee on other documents having a similar issue including the recommendation to add supersession traceability on those replacement document.

Action: Pat Oakes

3.6 Specification Qualification Update – Ronnie Peterson:

The Qualifying Activity (QA) has set the priorities for retention of qualification for AE-8C1 documents whereas the QA will perform the retention of qualification testing. The following summarizes the status for each document on the priority list:

- AS39029 – amendment addressing the above requirement was disapproved and as a result a limited scope ballot will be scheduled. Committee voting members are reminded that non-technical disapprovals such as the ones received regarding QA conducting all qualification retention testing will not be considered a valid reason to disapprove a document.
- AS81790-A3 – published in January 2010.
- AS50151 – waiting adoption
- AS85049 – published in August 2009. However as stated in 2.4.2(3) forth bullet point, there are issues with the sampling size requiring review and final resolution.
- AS81703 – limited scope is scheduled but requires a sponsor to complete the work. Brian Harrington has volunteered to take sponsorship responsibility.

Action: Ronnie Peterson

3.7 Composite Connector Chipped Plating – Bobby Crumb:

Bobby stated that there is no touch-up process available today or a means to change the base composite materials color to resolve the issue of field user perception of a plating issue and therefore Lockheed has created their own internal document to contend with this issue. However, it is not bullet proof and as a result the recommendation to amend the 505 document to specifically identify what color the base composite material is and the guidelines for visual examination acceptance needs to be included in the 505 document. Based on this recommendation, Ed Taylor volunteered to amend the 505. It was also agreed this item will remain on the agenda so the committee does not loose sight of this issue going forward.

Action: Bobby Crumb / Ed Taylor

3.8 Committee Charter Review – Alan Miklos

The charter was approved by the committee and is posted on the SAE website. Dave Kelly mentioned that AE8 is working on standardizing the format for all AE8 committees and once finalized we will be asked to fill in the blank spaces so to speak. Not sure when this will occur so this item will remain on the agenda.

Action: Alan Miklos

3.9 MIL-DTL-38999 Size 8 Cavity Connector Supplied Seal Bushing – Bobby Crumb:

A task group meeting was held to review and determine the best course of action to

Attachment No. 6

contend with the issues Bobby has identified. During the task group meeting Bobby presented some facts behind the issues with the sealing bushing for a size 8 insert cavity including recommendations to correct the problem, see attachment "O". It seems that the seal bushings (boots) for the size 8 coax contact differ in configuration from one manufacturer to another and is causing the majority of the potential installation issues.

Bobby suggested we reinstate the wire sealing task group, including anyone else on the committee that would want to participate, to work out these multiple issues and make the necessary corrections to the affected documents. However, a task group was formed during the Fall 2008 meeting to address this particular issue under this specific agenda item and therefore this will be the group working the issues going forward. The task group members, with Bobby as the lead, are: Ronnie Peterson, Pat Madison, Rick Clarkson, Mekki Boussairy, Don Chambers, Trevor Williams, Brian Harrington, Eric Higa, Lisa Hoffer, Richard McCoy, and Charles (Buzz) Sawyer. New members are: Pat Oakes and Alan Miklos. Since Mekki Boussairy and Richard McCoy are no longer participating in these meetings, their names will be removed from the task group list.

Action: Bobby Crumb

3.10 AIR for Backshell Installation / Torque / Tooling – Pat Oakes:

Pat stated the document is in process but has not been assigned an AIR number yet. He is hoping to get the first draft out to the task group for input and comments prior to the Fall 2010 meeting.

Action: Pat Oakes

3.11 High Current Carrying Contacts AS39029/xxx – Richard Misiaszek:

Richard is still collecting data with the goal of eventually developing a test plan to verify the performance capabilities with the intent to request new detail sheets based on the product meeting the verification performance requirements.

Action: Richard Misiaszek

3.12 CPC Test for Electrical Connectors – Eric Shepler

Eric commented that his lab has just started working on setting this test up now that they have two (2) CPC fluids. They will be testing these materials with a Cad plated mated pair of connectors having 22 size contacts. Eric indicated he would report on the results @ the next meeting. Bobby also commented that some CPC materials are flammable and cautioned users to look closely at the manufacturer's MSD and usage labels.

Action: Eric Shepler

3.13 AS-3 Fiber Optics Liaison – Dave Kelly / Joe Kurek

Dave had no report per say other than this item was placed on the agenda for solicitation of a liaison from this group. Mark Beranek introduced himself as a representative for the AS-3 group during the self-introduction of those present for the C1 meeting. However, he did not sign the roster nor did he make it clear he would be attending the C1 meetings as the AS-3 liaison going forward. Pat Oakes will contact Mark and determine if he will be attending the C1 meetings in the future.

Attachment No. 6

Action: Dave Kelly / Pat Oakes

4.0 **OLD BUSINESS:**

4.1 **AS39029/112 (AS33481 Sleeves) – Brian Harrington**

No further action to report. Brian stated that we need to define the qualification requirements, conduct testing, perform dimensional verification and verify material certs all as part of the effort recommendations to qualify these sleeves. This item will be moved over to the AS39029 task group going forward.

5.0 **NEW BUSINESS:**

5.1 **External Power Connector Mating Forces – Charles Sawyer**

Charles reported that AS7974 specifies external power cable assemblies as 80 ± 20 pound mating force for engaging and disengaging but with MS90362 connectors the mating force is significantly higher; in excess of 150 pounds. This has resulted in cable assemblies and in some cases airplanes being taken out of service due to damaged cables from the high mating force and/or damaging the connector while attempting to mate the cable. Charles recommended testing the external power cable connectors engaging and disengaging forces with a bona fide connector and determine the forces for sockets, both permanently attached, and removable, to achieve 80 ± 20 when mated to MS90362 connectors. Once defined, change the applicable documents.

Action: Charles Sawyer

5.2 **Backshell to Connector Shell Conductivity – Charles Sawyer**

Charles indicated that the connector and backshell interface dimensions are not fully defined between the MIL-DTL-38999 figure 10 and AS85049 figure 3 specifications. One specifies a minimum inner diameter and the other a maximum outer diameter. Charles stated these dimensions are essential in order to achieve good connector/backshell conductivity values and should be better defined for taking HIRF and lightning currents to ground. He has recommended that both documents be revised to reflect both inner and outer diameter dimensions and coordinate this activity with DSCC and C1.

Action: Charles Sawyer / Pat Oakes

5.3 **Quadax/Coax/Twinax and MIL-DTL-38999 – Charles Sawyer**

Charles reported that Boeing is also experiencing issues with the standardization of quadax contact dimensions, internal connector dimensions, seal elements and associated cable assemblies. This topic was addressed during DSCC's report and a task group was formed to work this issue.

Action: new task group and agenda item; refer to DSCC report, other issues, subparagraph (b).

5.4 **Environmental Sealing of Tape Wrapped Wire – Charles Sawyer**

Charles reported newer construction of airframe wiring using tape wrap insulation

Attachment No. 6

construction requires high density, small gage interfaces with overall shielding for EMI/RFI concerns and quick 45 and 90 degree transitions. Boeing's experience with wire sealing in MIL spec connectors has shown that tape wrap insulations will not meet the typical altitude immersion requirements (IR and DWV after 3 cycles of altitude immersion while submerged). He also mentioned that qualification and qualification retention of electrical connectors is with PTFE insulated wire which most modern applications do not use. He recommended and it was agreed to solicit test data through a coordinate effort with the D38999 manufacturers and affected OEM's to address the issues and identify potential solutions.

Action: Charles Sawyer

Charles presentation is attached to these minutes for the above four (4) agenda items; refer to attachment "P".

5.5 Commercial use of "MS" Part Numbers – Mike Peppas

Mike indicated Navair received a request from a manufacturer asking if they can use the letter "M" or letters "MS" followed by the same part number scheme as their commercial part number equivalent, which would include a disclaimer, since they recognize they are not a QPL supplier. Since under the original M or MS specifications, there is no copyright statement. Mike brought this to the C1 committee to ascertain what SAE's position is so Navair can respond accordingly. SAE's position is: "If the document is now an AS whereas the product would be marked with the "M" or "MS" letter designator, then the SAE copyright statement guidelines would apply". In other words the answer is "no" under these conditions.

Action: Mike to address the SAE response with Navair. No action required by this committee.

5.6 Tellurium Copper Power Sockets – Rick Clarkson

No report was available since Rick was unable to attend the meeting. However this topic was discussed during the course of the meeting and the awareness of the material shortage alert has been duly noted.

This is an informational alert comment only, no action required by this committee at this point in time.

5.7 AS85049/91 and /92 Hardware – Pat Oakes

Pat indicated he has received a request from Lockheed Martin to change the saddle clamp hardware from telescoping panhead screws and lockwashers to self-locking telescoping screws similar to the saddle clamp hardware used on the AS89049/103 and /105 respectively. The issue is when the saddle clamps are fully bottomed, the screw protrudes beyond the telescoping bashful nuts screwdriver slot preventing any means of being able to use a standard screwdriver during assembly or field maintenance on the bashful end of the clamping hardware. Since this change would not affect fit, form or function of the backshell and since the saddle clamps are of the same configuration in terms of cable entry clamping range as supplied on the AS85049/103 and /105, it was suggested we could change the hardware without requiring the sources to re-qualify the product. However, Navair stated they would consider entertaining this concept but needed to check with the current sources and determine the best course of action and

