

TELEMETERING STANDARDS COORDINATION COMMITTEE



**SPONSORED BY
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Spring 2010 Meeting Newport News, VA

April 20, 2010

Agenda

800 Call to Order Horan

810 Attendance and determination of Quorum Grebe

815 Review and Approve Agenda Horan

0830 Officer Reports
Chair **Horan**
Secretary-Treasurer **Grebe**
Approval and review of last Minutes
Financial Status

Agenda

0900 Committee Reports

Nominating Committee

Yates

New nominations/follow-up on members

Changes since Last meeting/votes

Radio Frequency

Brierley

Data Multiplex

Nicolo

Networking and Protocols

Yates

Transducers

Eccles

Break

Coding/Data Compression

Horan

Recorder / Reproducer

Klein

ETSC Report

Mayer

1030 Old Business

Horan

1200 Lunch

All

1400 New Business

All

1700 Adjourn

All

TELEMETERING STANDARDS COORDINATION COMMITTEE



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Chairman's Report

April 20, 2010

Significant Activity (2009-10)

- Current Meeting at local site – view NASA Langley. Next spring meeting should again be with RCC (alternate meetings)
- 2 meetings of the TSCC were held - 2009
 - (Spring) March 11th joint TSCC/RCC/TG/iNET meeting in San Antonio, TX.
 - (Fall) October 26th in Las Vegas in conjunction with ITC

Significant Activity (2009-10)

- Awarded Best telemetry standards paper award at ITC 2009 **KEY COMPONENTS OF THE INET TEST ARTICLE STANDARD** Thomas B. Grace (Naval Air Systems Command (NAVAIR) Patuxent River, Maryland), Joshua D. Kenney, Myron L. Moodie, Ben A. Abbott. Note: Now that Myron is on the TSCC, he can not win any more of these papers awards. (Kenney, Moodie and Abbott are from Southwest Research Institute® San Antonio, Texas)

Significant Activity (2009-10)

- ITC Special Session
- This session was created to allow a panel of experts to share their perception of the current state of the frequency spectrum they use, issues or concerns in the usage and what impacts they see based on current legislation. Input from the audience is expected. The last hour consisted of reports from the RCC.
- Panel consisted of: Howard McDonald, Darryl Holtmeyer, Robert Selbrede, and Mikel Ryan.

Significant Activity (2009-10)

- Review of RCC 218-08 standard
 - At least two reviews were submitted:
 - Myron Moodie
 - Wayne Klein
- Request to review iNet standards work (off the iNet site)

Current TSCC Focus Areas

- New Telemetry Standards: i-net
- Review requested standards
- Membership recruiting – non active members
- Web improvements
- Best paper and special sessions for ITC
- Stay current with Bylaws.

Current TSCC Scope

The TSCC shall serve as a focal point to receive, review, coordinate, and disseminate information concerning telemetry standards, methods, and procedures to users, manufacturers, and supporting agencies. The TSCC shall not initiate or approve standards.

TSCC Tasks

- 1. Determine what standards are in existence and published.
- 2. Comment on the potential impact of planned and existing standards.
- 3. Communicate the industry desire for additional standards.
- 4. Coordinate the review of new standards.
- 5. Maintain records of the coordination and review process.

TELEMETERING STANDARDS COORDINATION COMMITTEE



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Treasurer's Report

April 20, 2010

Treasurer Report

for the Period 10/25/09 thru 4/19/10

■ INCOME	
• Funding Received, IFT	\$0.00
■ EXPENDITURES	
• Web Hosting	\$ 59.85
■ Beginning Cash Balance	\$ 1285.46
■ Ending Cash Balance	\$ 1225.61

TELEMETERING STANDARDS COORDINATION COMMITTEE



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Nominating Subcommittee

Status Report
April 20, 2010

Membership

- James Yates - L-3 Communications
- Scott Brierley - United Launch Alliance
- Lee Eccles - Boeing

TSCC Membership Rules

- Adequate representation shall always exist from the diverse groups constituting the telemetry community
- Representatives of government and commercial entities shall each constitute a minimum of one-third of the regular TSCC Membership
- The remaining one-third may include, but is not limited to those in commercial, governmental, and academic organizations
- Membership by representatives of non-US entities shall not exceed 25% of the total regular membership

TSCC Group Definitions

- Government entities are defined to include agencies of the United States Government, foreign governments, and not-for-profit organizations under contract to them
- Commercial entities are defined as manufacturers or vendors of equipment, software, or systems, for-profit companies that use telemetry equipment, and suppliers of telemetry-related services, such as consulting, on a for-profit basis.

TSCC Makeup

- The TSCC currently consists of
 - 2 academic organization members
 - 6 government entity members
 - 6 commercial entity members
- Members from commercial entities belong in two different groups:
 - Telemetry equipment suppliers
 - Telemetry equipment users

TSCC Membership

** as of October 2009*

- Academia
 - Sheila Horan, PhD
 - Gerhard Mayer
- Government
 - Loren Klein
 - Greg J. Kazz
 - Filiberto Macias
 - Dan Skelley
 - Myron Moodie
 - Mark Bender
- Industry
 - Scott Brierley
 - Lee Eccles
 - David Grebe
 - John Kolb
 - Steve Nicolo
 - James A. Yates

TSCC Membership

** as of April 2010*

TSCC Membership					
2010	2011	2012	2013	2014	2015
Macias	Brierley	Klein	Bender	Moodie	Eccles
Nicolo	Yates	Grebe	Kolb		Myer
Kazz	Skelley	Kolb	Horan		

Committee Recommendations?

- Charles Weaver for Membership
- Renew memberships – Nicolo, and Kazz
- Open Slot?
- Replacement for WSMR?

TELEMETERING STANDARDS COORDINATION COMMITTEE



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TSCC Spring 2010 RF Subcommittee Report

April 20, 2010
Omni Hotel
Newport News, VA

Membership

- Scott Brierley
 - Mark Bender
 - Mark Dapore
 - Lloyd Lautzenhiser
 - Eugene Law
 - Warren Martin
 - Bill McNatt
 - Rich Siegal

Subcommittee Focus

- RF Subcommittee reviews standards dealing with the Radio Frequency (RF) telemetry link
- Current standards
 - **RCC IRIG-106**
 - **RCC IRIG-118**
 - **RCC RF Handbook**
 - **CCSDS-401**
 - **CCSDS-411**
 - **SGLS**
 - **STDN**
 - **1451.5**

Significant Activity

- No standards reviewed since the Spring meeting

Open Actions

- No open actions

TELEMETERING STANDARDS COORDINATION COMMITTEE



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TSCC Spring 2010 Data Multiplex Subcommittee Report

April 20, 2010
Omni Hotel
Newport News, VA

Membership

- Steve Nicolo
 - Bob Downing (NEW)
 - Howard Eckstien
 - Alain Hackstaff
 - Bill Rymer
 - Jack Sheldon (NEW)
 - Dave Sniffin
 - Erwin Straehley
 - Duane Weaton

Sub-Committee Focus

■ Current standards

- IRIG-106
 - Part 1: Telemetry Standards
 - Chapter 3: FM Data Standards
 - Chapter 4: PCM Data Standards
 - Chapter 8: Bus Data Formatting Standards
 - Chapter 9: TMATS
 - Part 2: Telemetry Networks
 - Chapter 4: Packet Telemetry Standards
- RCC IRIG-118: Test Methods
- RCC IRIG-119: Telemetry App's Handbook

Significant Activity

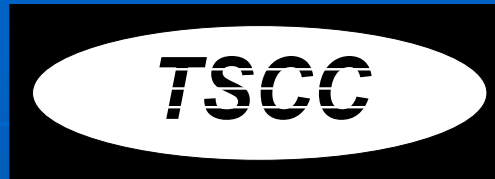
- TSCC Meeting at ITC October 2009
- TMATS
 - RCC Work Continues on TMATS Handbook Pink Sheets 3Q10
 - RCC Agreed to Provide Early TMATS Handbook to TSCC Data Multiplex Committee
- Signed up 2 Additional Subcommittee Members With TMATS Experience to Support TMATS Handbook Review
 - Bob Downing (NEW)
 - Jack Sheldon (NEW)

Open Actions

■ New Work Tasks

- Review TMATS Handbook- Pink Sheets 3Q10
- Support RCC ongoing effort to keep TMATS IRIG 106 Chapter 9 and XML Scheme Current
- Explore possible related INET activities

TELEMETERING STANDARDS COORDINATION COMMITTEE



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**TSCC Spring 2010
Networking & Protocols
Sub-Committee**

April 20, 2010

TELEMETERING STANDARDS COORDINATION COMMITTEE



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TSCC Spring 2010 Transducer Committee Report

April 20, 2010
Omni Hotel
Newport News, VA

Membership

- Lee Eccles, Chair – Boeing Test & Evaluation
 - None
 - ...

Membership - Continued

- Member n
- ...

Subcommittee Focus

- Transducer Standards
- Current Standards
 - IEEE 1451 – Four active standards
 - IEEE 1451.2 is being revised
 - ISA 100

Significant Activity

- None

Open Actions

- None
- ...

TELEMETERING STANDARDS COORDINATION COMMITTEE



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Coding and Data Compression Subcommittee

Status Report
April 20, 2010

Membership

- Sheila Horan, Chair - NMSU
 - Michael Marcellin, Alternate - Univ. of Arizona
 - Chuck Creusere – NMSU;
 - Stephen Horan – NMSU;
 - Aaron Kiely – JPL;
 - Matt Klimesh – JPL;
 - M. MacMedan – emeritus;

Membership - Continued

- George Nelson - Delta Information System;
- Jimmie Perkins – Raytheon;
- Khalid Sayood - Univ. of Nebraska – Lincoln;
- Pen-Shu Yeh - NASA – Goddard;
- Gary Thom - Delta Information System;
- Steve Nicolo - GDP Space Systems

Sub-Committee Focus

- Data Compression and Coding
- Current standards – updates

Significant Activity

- JPEG updates - <http://www.jpeg.org/>
 - The *Advanced Image Coding and Evaluation Methodologies (ISO/IEC 29170 - AIC)* ad hoc group is working on a technical report on evaluation methodologies to help in the definition and refinement of coding techniques. AIC is issuing two calls for requirements and technologies: one for medical imaging and one for camera sensor data interchange and archival applications.
 - *JPEG XR (ISO/IEC 29199-2)* is now an International Standard and also an ITU-T Recommendation (T.832). New work has been started to enable the use of JPEG XR image coding within the JPIP protocol, which allows interactive browsing of networked images. The Motion JPEG XR specification for support of video sequences is currently approaching the Final Committee Draft phase of the ISO/IEC approval process. WG 1 is pleased to note the successful completion of JPEG XR verification testing experiments for low dynamic range images.

Significant Activity

- JPEG updates - <http://www.jpeg.org/>
 - The *JPEG File Interchange Format (JFIF)* has been a popular file format for images encoded by the JPEG standard (ISO/IEC 10918-1 | ITU-T T.81). The JPEG Committee has now created a Committee Draft of a new JPEG Part 5 (10918-5) which officially standardizes JFIF. This standard will provide an opportunity to include new developments relating to image metadata such as JPSearch metadata into the JFIF file format.
 - *JPSearch (ISO/IEC 24800, Still Image Search), Part 4 (File Format for Metadata Embedded in Image Data)* is promoted to Final Committee Draft. Part 5 (Data Interchange Format between Image Repositories) is promoted to Committee Draft. The JPSearch ad hoc group issued a call for proposals for reference software for Part 6 (ISO/IEC 24800 - 6, JPSearch Reference Software).

Significant Activity

- JPEG updates

- The *Digital Cinema (DC)* ad hoc group has been very successful in seeing its work adopted by the industry. The ad hoc group created a new amendment (ISO/IEC 15444-1 Amendment 5) to add additional frame rates to the digital cinema distribution and archive profiles which allows support for a wide range of content source types. The group also defined new visual weighting factors (ISO/IEC 15444-1 Amendment 3) for digital cinema presentation that are being evaluated. The broadcast application sub-group has progressed the new broadcast profiles. Comments and requirements are welcome and can be sent to JPEG Committee.

Significant Activity

- JPEG updates

- The *JPEG 2000 Part 9 - JPIP* standard for network access to images has passed through interoperability testing between several vendors using different implementations. Servers and clients from different vendors were shown to fulfill interoperability, demonstrating JPIP's utility as a vendor-independent interchange method. Supporting information will be available to the general public on the www.jpeg.org web site along with test streams to assist developers in developing new implementations. A paper is being published which developers should also find useful: Richter, Brower, Martucci, and Tzannes: Interoperability in JPIP and its Standardization in JPEG 2000 Part 9, *In: A. Tescher (Ed.): Applications of Digital Image Processing XXXII, Proc. SPIE 2009*. A new amendment to JPIP will be added to better support UDP transport (in addition to TCP/IP transport).

Significant Activity

■ JPEG updates

- The JBIG committee continued its work on the color amendment to JBIG2. This will allow images of office documents which contain only "spot" color to be more efficiently compressed than by the use of standard baseline JPEG.
- The JPWL ad hoc group advanced Amendment 1 of JPWL (ISO/IEC 15444-11) to PDAM status. This allows use of the JPWL syntax and tools over error prone IP networks.

Significant Activity

- ITU:
- A new white paper by Polycom highlights “G.719: The First ITU-T Standard for Full-Band Audio”.
 - Recommendation ITU-T G.719 describes a coding algorithm for conversational speech and audio supporting the full human auditory bandwidth (from 20 Hz to 20 kHz), that is, all sounds that a human can hear.
 - The paper concludes that “major technical achievements of the G.719 codec are its high quality and low complexity that make it perfect for devices ranging from telephones and low-power mobile devices to soft clients and to high end video and telepresence systems.” First products implementing ITU-T G.719 are expected to appear in 2009/2010.

Significant Activity

■ ITU:

- New Video Codec Partnership - Call for proposals
- Leading standards bodies, ITU-T and ISO/IEC have launched a new project that seeks to better the Emmy award winning Advanced Video Codec ITU-T Rec. H.264 | ISO/IEC 14496-10.
- The announcement on the new Joint Collaborative Team (JCT) accompanies finalization of a recent call for proposals on a successor to the H.264/14496-10 codec that has been widely adopted by the telecom, broadcast, and digital storage media industries.

Significant Activity

- ITU:
 - New Video Codec Partnership - Call for proposals
 - ITU-T and ISO/IEC-MPEG are the pre-eminent standards bodies in the area of digital video compression and have collaborated in the past to produce H.264/14496-10 and the MPEG-2 Video and Systems Standards (also known as ISO/IEC 13818, and ITU-T H.262 and H.222.0).
 - The Video Coding JCT will consist of a group of video coding experts from ITU-T Study Group 16 (VCEG) and ISO/IEC JTC 1 SC 29 / WG 11 (MPEG). The group will meet to coincide with meetings of ITU-T SG16 and/or MPEG and aims at the new standard for 2012.

Significant Activity

- **CCSDS**
 - **Multispectral & Hyperspectral Data Compression Working Group**
 - **May 2010 Meeting Agenda May 3-5 (in Virginia)**
 - **May 3 (MON) – May 4**
 - Discussion of White Book (draft) *Lossless Multispectral & Hyperspectral Image Compression*, suggested changes and next steps.
 - **May 5 (WED)**
 - Discuss lossy compression latest results and plans.
 - Wrap up, assign new action items

Significant Activity

■ CCSDS

- - **SPACE LINK CODING & SYNCHRONIZATION WORKING GROUP (SLS-C&S)**
- **Work is continues updating the existing set of Channel Coding Blue Books to incorporate recommended coding scheme for new bandwidth efficient codes with low complexity. The update work includes also the extraction of the coding layer out of CCSDS 211.0-B Prox-1 Protocol.**

Significant Activity

- **CCSDS – Pink Sheets**
- Draft Recommendation for Space Data System Standards. TC SYNCHRONIZATION AND CHANNEL CODING. DRAFT RECOMMENDED STANDARD CCSDS 231.0-P-1.1 PINK SHEETS. February 2010 – updating of previous document to include repeated transmissions.
- TM Synchronization and Channel Coding, Issue 1 September 2003. Original issue CCSDS 131.0-P-1.1 TM Synchronization and Channel Coding, Draft Recommended Standard, Issue 1.1 November 2009
Current draft:
 - – adds LDPC Code and Security Section;
 - – updates other coding sections for uniformity of presentation;
 - – corrects and updates erroneous and obsolete material

Open Actions

- Complete information table for website
- Update membership
- Find new Chair

TELEMETERING STANDARDS COORDINATION COMMITTEE



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TSCC Spring 2010 Recorder Reproducer Subcommittee

April 20, 2010
Omni Hotel
Newport News, VA

Membership

- Lorin Klein (AAC, Eglin AFB, FL, USA), Chairman
- Mark Buckley (JDA Systems, Concord, CA, USA)
Alternate Chairman
 - Balázs Bagó (Heim Systems GmbH, Bergisch Gladbach, Germany)
 - Bob Baggerman (Georgia Tech Research Institute, Atlanta, GA, USA)
 - Tim Chalfant (AFFTC, Edwards AFB, CA, USA)
 - Tim Gatton (Wyle Laboratories, California, Maryland, USA)
 - Mike Lockhard (EMC Corp, Irvine, California, USA)
 - Barbara Wood (QinetiQ Boscombe Down, Salisbury, Wiltshire, UK)

Sub-Committee Focus

- Data Recorders, Ground and Airborne
- Standards in Place

- IRIG 106-09 -- Range Commanders Council (RCC) Telemetry Standards

<http://www.irig106.org/docs/106-09/>

- STANAG 4575 – North Atlantic Treaty Organization (NATO) Standard Agreement (STANAG) – NATO Advanced Data Storage Interface (NADSI)

<http://www.nato.int/STRUCTUR/AC/224/standard/4575/4575.htm>

- ANSI INCITS 175-1999 (R2004) 19mm Type ID-1 Recorded Instrumentation Digital Cassette Tape Format (revision and redesignation of ANSI X3.175-1990 (R1995))
- MIL-STD-2179 – Helical Digital Recording Format For 19-MM Magnetic Tape Cassette Recorders/Recorders

Significant Activity

- RCC Telemetry Group Recorder Reproducer Committee Planned "Pink Sheets"

Changes effect:

- 118 Test Methods
 - 106 Ch-10 (Digital Recorders)
 - 106 Ch-9 (TMATS)
 - 106 Ch-6 (Recorder C&C)
- STANAG 4575

Significant Activity

IRIG 118 Test Methods Pink Sheets

- - Title Change: IRIG 118 Volume 4 - TEST METHOD FOR DIGITAL RECORDER SYSTEMS AND RECORDER MEMORY MODULES
- - Agreement at TG 121 to use commercial test equipment and software as part of procedure (METS-231 hardware and METS Validation Software from Scientific Data Systems)
- - IRIG 118-11 will specify test methods for IRIG 106-09 with subsequent releases trailing each release of IRIG 106 by 2 years
- - Only the basic packet types covered by the METS-231 will be included for this release
- - Future interoperability workshop will produce a set of "Golden Files" for potential incorporation
- - Pink Sheet of 118-11 Volume 4 planned to be available in July

Significant Activity

IRIG106-11 Ch-10 Pink Sheets

The Committee is using a Change Request (CR) protocol to manage the activities under the -11 Update Release task.

- CR 11 (Clarification to the Analog Channel Specific Data Word, Bit 28)
- CR 32 (Added definitions for reproduction, reconstruction, reply and playback)
- CR 37 (Updated the "Revision Number" in the Directory Block Format table)

Significant Activity

IRIG106-11 Ch-10 Pink Sheets (cont)

- CR 19 New Message Types for TSPI/CTS
 - Format 0(GPS NMEA-RTCM) TSPI/CTS Data
 - Format 1(EAG TSPI-ACMI) TSPI/CTS Data
 - Format 2(ACTTS)TSPI/CTS Data,
 - Format 3 – Format 7(Reserved for future use)

Significant Activity

IRIG 106-11 Ch-9

Telemetry Attributes (TMATS) Pink Sheets

- CR 38 (Added "Number of Sample Schedules" attribute in the R group to support the number of samples contained within each packet)
- CR 14 (Added "Derandomize" field to indicate how the data arrived and if any additional processing was performed)
- CR 19 (Added the TSPI data type attributes)
- CR 23 (Added a single line to describe a 1553 message or 2 TMATS for a RT-RT command)
- CR 24 (Added data processing list to event)
- CR 39 (Corrected Recorder-Reproducer Media Location parameter name)

Significant Activity

IRIG 106-11 Ch 9

Telemetry Attributes Pink Sheets (cont.)

- CR 0034: TMATS Handbook (S Group)
 - Update Ch 9 Handbook table for the S Group. Add 1) Required, Optional, or Conditional and 2) Default
 - Reviewed the proposal to the S group section of the Chapter 9 handbook

Significant Activity

IRIG 106-11 Ch 9

Telemetry Attributes Pink Sheets (cont.)

- CR 0015: TMATS Handbook (R Group)
 - Update Ch 9 Handbook table for R Group. Add 1) Required, Optional, or Conditional and 2) Default values

Significant Activity

IRIG 106-11 Ch 6 Command and Control Pink Sheets

- CR 0017: Partitioning of RMM.
Operational units.
 - Allows RMM use as a DTU for other data sources (maps, etc).
 - Approved to not specify partitioning but will allow vendors to use as they see fit. Implement by changing Block 0 from "reserved" to "not used" or what ever STANAG says...Changed to 10.5.2 (pg 10.19)

Significant Activity

IRIG 106-11 Ch 6 Command and Control Pink Sheets

- CR 0029: Rewrite Chapter 6 as Recorder/Reproducer Command Control
 - Current Chapter 6 deals strictly with serial asynchronous (RS-232/422) COM command and control of recorders.
 - The rewrite of Chapter 6 will consolidate all command and control of recorders, including discrete (switch/lamp) control from Chapter 10, MIL-STD-1553 RT control, and networked control via Ethernet.
 - Expand command set to include control of multiple RMMs, circular buffer recording, and multiple simultaneous data flows into and out from the recorder / reproducer.

Significant Activity

STANAG 4575

- Current Status
 - Latest version is 8 May 2009
 - Defense IT Standards Registry (DISR)
- Potential Issues
- Sanitization
 - AEDP-3 was updated and promulgated 2009
 - No change planned for near future

Significant Activity

STANAG 4575 Issues Raised

- What standard approach should be used for recording multiple data streams
- How should mixed data be handled?
- Should additional record side guidance be included in STANAG 4575?
 - In section A or B 1.1?
- Should a "Certification Input" be considered by the CST for a full recorder certification?
- Should a "Recording Input" be defined?

Significant Activity

STANAG 4575 Logical Unit Number (LUN)

- JITC recommends a new required command to establish the LUN of an RMM at start-up
- LUN vs. partitions
- What command should be required? What note (if any) is required in the table?
 - REPORT LUN, REPORT LUN=0, Other?
 - Note must be accurate and informative
- Responses and comments from CST members
- IRIG 106 Chapter 10 defines LUN=1

Significant Activity

STANAG 4575 Issues

- The RMM may have physical sub-unit memories that can be addressed as LUNs and used for specific purposes. The RMM could also have multiple Logical units, used for multiple purposes, on a single recording element.
 - Any LUN could have partitions
- IRIG defines LUN=1 as a “processor” so the STANAG would not allow its use in an RMM as a sub-memory unit in order to be compatible with IRIG 106.
- It would seem that “REPORT LUN” would be appropriate rather than “REPORT LUN=0” as the required command.
- The STANAG is the controlling document and following AEDP-6 guidance is not required. Should additional specifics be discussed and potentially added to the STANAG itself?
- We have encountered problems with download caused by alternatives allowed in the various referenced standards.

Significant Activity

STANAG 4575 NADSI Download Workstation (NDW)

- Laptop NDW version has been evaluated and updated for ATARS imagery screening and interoperability evaluation
- Desktop NDW completed, tested and provided to JITC for use to supplement their certification/interoperability testing
- Update to the NDW at the DTB completed
- Space Dynamics Laboratory working on the initial STANAG 7023 EO conversion software

Significant Activity

STANAG 4575 Sanitization Update

- US NSA is continuing investigations into requirements for sanitization of solid state memories used in systems and devices
- Guidance for one erasure has been released by one group at NSA but the computer security group does not support it
- A new single POC for SSR sanitization has been identified and new investigations are under way
- No new information which would change the requirements of AEDP-3 is available yet.
- Discussions with NSA will continue

Significant Activity

STANAG 4575 Ethernet Investigations

- Ethernet physical interface is well supported from the desktop to the data center levels and has been demonstrated with copper cable up to 10 Gbps.
- Commercial standards organizations (ISO, IEEE etc.) are working and maintaining all levels of the interface definition
- Ethernet is well known and implementations are broadly used

Significant Activity

STANAG 4575 Fibre-Channel

- Fibre channel continues to be the storage interface of choice in data centers
- Development and support is expected to continue well into the future with lower cost HBAs becoming available
- Copper cable interfaces are being used for short distances (meters, not kilometers) at up to 8 Gbps.
- Fibre channel provides high rate and other benefits for reliable data download

Significant Activity

STANAG 4575 Metadata Investigations

- NDW updates convert imagery and metadata to standard National Imagery Transmission Format (NITF)/National Spatial Information Framework (NSIF) format in support of US and NATO standards
- ATARS and TARS data retain current US metadata types and format (limited data)
- STANAG 7023 metadata can be in multiple formats but basic data (time, location, etc.) is being mapped to NITF/NSIF
- Preferred NSIF metadata formats are being investigated and will be used if possible

Significant Activity

Next STANAG CST Meeting

- Next STANAG 4575 Custodial Support Team (CST) meeting
- 19 May 2010
 - PARIS LA DÉFENSE,
 - Tour Ariane
 - 5, Place de la Pyramide
 - La Défense 9
 - 92088
 - Paris, France

Open Actions

- RCC TG preparing Pink Sheet release for IRIG 106-11, IRIG 118, and TMATS Handbook Release
- STANAG CST 19 May 2010

TELEMETERING STANDARDS COORDINATION COMMITTEE



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TSCC Spring 2010 ETSC Report

April 20, 2010
Omni Hotel
Newport News, VA

Membership

- **Committee Chair**

Gerhard Mayer , Gilles Freaud (A)

- **Subcommittee Chair**

- **SC-1: RF Spectrum & Frequ. M^{nt}**

Jean-Claude Ghnassia, Jean Isnard (A)

- **SC-2: Data Acquisition & Processing**

Werner Lange, Christian Herbepin (A)

- **SC-3: Data Recording & Storage**

Steve Lyons , Balasz Bagó (A)

(A)...Alternate

Subcommittee Focus(1)

- SC-1: Spectrum availability & efficient use, data integrity in the transmission channel
- Current Standards
 - IRIG 106-09, Chapter 2+Annex A&M
 - IEEE 802.11n/15.3/15.4
 - DVB-T & OFDM derived industry standards (ETSI EN300 744 V1.6.1)

Subcommittee Focus(2)

- SC-2: Ensure acquisition and time tagging in high-rate data streams
- Current Standards
 - IEEE 1451
 - IEEE 1588
 - IEEE 802.11.n/15.1/3/4
 - IRIG 106-09, Chapter 3
 - IRIG 218-07 (TMoIP)

Subcommittee Focus(3)

- SC-3: Info collection dissemination on recording system and techniques
- Current Standards
 - IRIG 106-09, Chapter 10
 - XidML 3.0

Significant Activity

- ETSC meeting at the ETTC 2009, addressing the storage media evolution (Pascal Morel, Zodiac Aerospace)
- ETSC round table (ETTC session 12) „Towards a common Ethernet Data Format for Instrumentation“ (chair Gilles Freaud)
- Reviewing RF classical modulation standards, comparison with OFDM-based techniques
- Review and comments on IRIG 106-Ch.10

Open Actions (1)

- "WRC`07" C-band for AMT, RF standards
- IEEE 802.n and UWB as a basic standard for wireless intra-aircraft RDA-networking
- ETC 2010: ETSC Open Meeting
(*Venue: Hamburg Congress Center, 20 May*)

Open Actions (2)

ETSC Meeting 2010

ETSC Open Meeting

Hamburg Congress Center

Thursday, 20 May 2010, 10:30 am

ETSC Meeting

1. *Welcome and ETSC Chairman Report*
2. *Committee Reports*
 - *ETSC Subcommittee Reports (J.-C. Ghnassia, W. Lange, B. Bagó)*
 - *RCC TG (T. Chalfant)*
 - *TSCC (J. Yates)*
3. *Technical Reports*
 - *Mass data storage on USB-Sticks: Evaluation of standard products and mechanical integration for avionic applications . (Airbus France)*
 - *Multipath resistant modulation techniques: COFDM versus SC-CP (Airbus France)*
 - *Emerging standards for Cognitive Radio Techniques (N.N.)*
4. *New Business*
5. *Adjourn*

TELEMETERING STANDARDS COORDINATION COMMITTEE



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OLD BUSINESS

April 20, 2010

Old Business

- Request for funding – spring report
- Review Possible members
- TMATS members for Data Multiplex committee
- Updates on the Web
- I-net impact - review

TELEMETERING STANDARDS COORDINATION COMMITTEE



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LUNCH

April 20, 2010

TELEMETERING STANDARDS COORDINATION COMMITTEE



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NEW BUSINESS

April 20, 2010

NEW Business

- Letters of support for each TSCC member
- 2.2.1 Bylaws: TSCC members and alternates shall be appointed to sub-committees by the TSCC Chair. Additional sub-committee members may be appointed by the sub-committee chair.
- Each member needs an alternate

TSCC Program for 2010

- Follow-up on i-net Standards
- Review any standards requested
- Fall meeting October 25, 2010 at the Town & Country Resort & Convention Center in San Diego, CA in conjunction with the ITC
 - Best Standards Paper at the ITC
 - Special Session

TSCC Program for 2010

- Best Standards Paper at the ITC
 - Vice Chair will chair the paper selection committee.
 - Tech chair for the ITC is: Mr. Robert Selbrede
 - Papers are due June 1, 2010
 - Email contact: tc2010@telemetry.org
 - No member of the TSCC can win the award

TSCC Program for 2010

- Special Session
 - Work with RCC
 - Topic Ideas:
 - Independent Industry Critique of the iNet standards
 - Building to the Standards
 - Standards in Pushing Technology
 - Format
 - People

Possible TSCC Actions for 2010

- Look into other areas of telemetry standards
- Reporting response to standard reviews (subcommittee reports, and entire group responds)
- Other issues/concerns/ideas?

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ADJOURN

April 20, 2010