TELEMETERING STANDARDS COORDINATION COMMITTEE

SPONSORED BY
INTERNATIONAL FOUNDATION FOR TELEMETERING

TSCC Fall 2021
Chair Report

October 25th, 2021
2021 ITC @ Bally's Las Vegas & WebEx Telecon

TSCC Membership

Academia (1)
- (*1) Dr. Michael Marcellin

Government (5)
- Mark Bender
- Albert Gabaldon
- Richard Graham
- Todd Newton (New Member)
- Tab Wilcox

Industry (6)
- Scott Brierley
- Brad Fleury
- Philip Ellerbrock
- Wayne Klein
- Steve Nicolo
- (*2) ~~Gilles Freaud~~
- Malcolm Weir

Ex-Officios
- Clifford Aggen (IFT Rep)

Members Emeritus
- Lee Eccles
- Merv MacMedan
- Erwin (Terry) Straehley

(*1) Dr Michael Marcellin will be retiring when we can replace him.
(2) Gilles Freaud has retired from Airbus and I have not been abe to get in touch with him. He was at the end of his 5 year term and I assume that he has retired from TSCC.

Agenda

1400	Call to Order	P. Ellerbrock
1400	Attendance and determination of Quorum	W. Klein
1405	Review and Approve Agenda	P. Ellerbrock
1410	Officer Reports	

	Chair Report	P. Ellerbrock
	Action Item Review	P. Ellerbrock
	Secretary-Treasurer	W. Klein
	Financial Status	

Agenda (Continued)

1430   **Committee Reports**

Nominating Committee   **S. Nicolo/P. Ellerbrock**

New nominations/follow-up on members & Votes

Discussions on open seats

Radio Frequency   **S. Brierley**

Telemetry Data Processing   **B. Fleury**

Networking and Protocols   **M. Weir**

Recorder / Reproducer   **M. Buckley**

EITTS **(former** ETSC) Report   **TBD**

Agenda (Continued)

1530	**Website**	**S. Nicolo**
1540	**Old Business**	**S. Nicolo**
1555	**New Business**	**All**
	Spring Meeting	
1610	**Adjourn**	**All**

Committee Changes

- We welcome Philip Ellerbrock as the new TSCC Chair. S. Nicolo will handle this meeting and Philip will take over after that. We must all give him our undivided support.

- As per the Bylaws Steve Nicolo will now become Chair of the Nominating Subcommittee

- Steve Nicolo was acting chair of the Network Subcommittee. With the disbanding of the Cyber Security Subcommittee Malcolm Weir has agreed to become the new chair of the Network Subcommittee.

Subcommittee's & Reports

- CURRENT SUBCOMMITTEE REPORTS
  - Nominating Committee   S. Nicolo
  - Radio Frequency   S. Brierley
  - Networking and Protocols   M. Weir
  - Recorder / Reproducer   M. Buckley
  - Telemetry Data Processing   B. Fleury
  - EITTS (former ETSC Report)   TBD

TSCC Activities

- **TSCC Spring 2020: Canceled due to Covid**

- **TSCC Fall 2020: ITC 2020 was canceled due to Covid.**

- **TSCC Spring 2021 - Webex**

- **TSCC Fall 2021 – ITC Vegas/Webex.**

TSCC Activities

More Detail in each group's Report

- *Recorders and Reproducers Group*
  - *IRIG 106 Chapters 9*
    - Work on S-Group to add network data selection data moved to new Q-Group.
    - *Q-Group definition details in work and very active through 2021.*

- *Networks Subcommittee*
  - *Starting draft appendix to Chapter 24 TmNS to add method for using explicit typing and payload definition in Chapter 11.*

Actions

- S. Nicolo updated but needs to update member list again on web site.
- Resolve/Update Attendance History Document (Treasurer will then take ownership)…….. OPEN
- One year Plaques still need to go out… OPEN

Treasurer Report
for the Period 5/20/21 thru 10/25/21

- INCOME (Total) $ 1.00

  Added to keep 'activity' on account

- EXPENDITURES (Total) $ (136.82)
  - Best Standards Paper Award Plaque
- Net Increase (Decrease) in Cash $ (135.82)

- Beginning Cash Balance $ 2478.00

- Ending Cash Balance $ 2342.18

  - Note(s): 1) TSCC account #: xxxxxx2632

TELEMETERING STANDARDS COORDINATION COMMITTEE

TSCC

SPONSORED BY
INTERNATIONAL FOUNDATION FOR TELEMETERING

TSCC FALL 2021
Nominating Subcommittee Report

October 25, 2021
Bally's Las Vegas, NV
ITC 2021

Nominating Sub-Committee Membership

- Current Nominating Subcommittee Membership
  - CHAIR …S. Nicolo Chair
    - Scott Brierley - United Launch Alliance
    - Wayne Klein – Apogee Labs

Sub-Committee Focus

- The nominating sub-committee shall **propose TSCC members and officers** for approval by the membership.

- **Prospective TSCC members and officers can be nominated by the TSCC membership or by a nominating subcommittee.**

- All nominations must be approved by a membership **vote.**

TSCC Membership Rules

- The TSCC shall have **16 members**.
- **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 (1/3)** of the regular TSCC Membership
- The **remaining one-third (1/3) may include, but is not limited to those in commercial, government, and academic organizations**
- Membership by representatives of non-US entities shall not exceed 25% of the total regular membership

TSCC Membership Terms

- TSCC Membership Terms are for five years
  - Terms are staggered so that the terms of 20% (rounded to the nearest integer) of the regular membership end each year
  - Members may be re-nominated for additional terms by the nominating sub-committee.

- 5 Year Term Expirations –

We have not had a quorum for past several meetings due to COVID and also because of retiring members over the COVID period. I will purpose at this meeting that in special cases like this, we change the rule to a majority and not require a quorum for the vote.

  - Fall 2019: (Must Vote)
    - Mark Bender (Government): Would like to serve another term- MUST VOTE
    - Dr Michael Marcellin (Academic): Dr Marcellin will stay another year (to the end of 2021) or until he can be replaced. -NO VOTE REQUIRED
      - Recommended a replacement (Chuck Creusere from New Mexico State- I will contact Chuck)
  - Fall 2020
    - Brad Fleury
    - Steve Nicolo (Can not stay for another 5 year term. Will stay for TBD period to help get things back on track after Covid)
  - Fall 2021
    - Scott Brierley
    - Albert Gabaldon
    - Tab Wilcox

Membership Changes

- MEMBERS:
  - TSCC currently has 12 members with 1 additional member retiring at the end of 2021. We are currently short 4 members (5 at the end of the year).
  - Members Retiring or retired from TSCC: Joe Sulewski, Myron Moodie, Sergio Penna, Gilles Freaud
    - Dr Michael Marcellin (Retiring from TSCC at the end of 2021 or until we can replace him)
- Voting on Members & Alternates:
  - Member Replacement for Myron Moodie (Todd Newton) Voted in via email last month. He is now a new member.
  - Fall 2019: (Must Vote)
    - Mark Bender (Government): Would like to serve another term- MUST VOTE
  - Fall 2020
    - Brad Fleury
  - Fall 2021
    - Scott Brierley, Albert Gabaldon,Tab Wilcox
- Alternates still needed for: Mark Bender, Albert Gabaldon Tab Wilcox, Malcolm Weir, Richard A. Graham Jr (Has proposed Antonio must verify), Steve Nicolo

TSCC Membership

- Academia (1)
  - (*1) Dr. Michael Marcellin

- Government (5)
  - Mark Bender
  - Albert Gabaldon
  - Richard Graham
  - Todd Newton (New Member)
  - Tab Wilcox

- Industry (6)
  - Scott Brierley
  - Brad Fleury
  - Philip Ellerbrock
  - Wayne Klein
  - Steve Nicolo
  - (*2) ~~Gilles Freaud~~
  - Malcolm Weir

- Ex-Officios
  - Clifford Aggen (IFT Rep)

- Members Emeritus
  - Lee Eccles
  - Merv MacMedan
  - Erwin (Terry) Straehley

(*1) Dr Michael Marcellin will be retiring when we can replace him.
(2) Gilles Freaud has retired from Airbus and I have not been abe to get in touch with him. He was at the end of his 5 year term and I assume that he has retired from TSCC.

Open Membership Slots

- We currently have 12 of 16 full members as of Fall 2021.
- Need 5 (4 now and 1 next January) members.
- We must all go into full gear to recover from Covid.

TSCC Officers

- **Officers shall serve for a two year term of office**
  - The **term** of office shall begin at the **start of the TSCC Year** in even calendar years
  - The **TSCC Vice-Chair** succeeds to the Chair's position to fulfill a two year term as Chair
  - The Secretary-Treasurer may be re-elected
  - **<u>Officer Terms up December 31, 2020</u>**

- Officers
  - Chair – New Chair Philip Ellerbrock
  - Vice-Chair - TBD
  - Secretary-Treasurer – Wayne Klein
- Subcommittee Chairs
  - All filled at this time

Open Actions

- TSCC has 5 open positions.
- Members needed (major focus)
- Alternates still needed for several members

Sub Committee Membership

- Scott Brierley, Chairman
- Members:
  - Johnny Pappas
  - Mark Bender
  - Mark Dapore
  - Brad Fleury
  - Lloyd Lautzenhiser
  - Bill McNatt
  - Rich Siegal
  - Brad Oney
  - James Carwell

Sub-Committee 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

- **Ping sheet review of Appendix 2-D of IRIG-106**
  - IRIG 106 Appendix provided LDPC (Low Density Parity Check) examples to verify parity generation correctness
    - Appendix provides test pattern input and resulting parity values
  - Examples provided for each of the six LDPC variants
    - Data Block (k=1024)
      - Code Rate = 1/2, Information Block Size = 1024, M = 512
      - Code Rate = 2/3, Information Block Size = 1024, M = 256
      - Code Rate = 4/5, Information Block Size = 1024, M = 128
    - Data Block (k=4096)
      - Code Rate = 1/2, Information Block Size = 4096, M = 2048
      - Code Rate = 2/3, Information Block Size = 4096, M = 1024
      - Code Rate = 4/5, Information Block Size = 4096, M = 512
  - Pink sheets provided to RF subcommittee
    - No comments to pink sheets

Open Actions

- None

Committee Members

- Brad Fleury – Director Edge consulting and sales

- Alternate – Mike Bartoldus

Sub-Committee Standards

- **Current standards**
  - IRIG-106 -17 (-19)
  - Telemetry App's Handbook.
    - TMATS use cases, complete but updates are made as needed
    - RCC XML handbook for IHAL and DDML XML

Sub Committee Membership

Looking for new members

Jon Morgan – possible replacement needed
Joe Sulewski –
Joe Merritt – part time Kratos
Jack Sheldon
Erwin Straehley
Duane Wheaton

Sub-Committee Focus

- Very low activity last year
- Pink sheet – IRIG Appendix 2D review. All committees
- IRIG 218 was updated and released
  - Tm over ip spec has been released
  - Vendors and customers are using new spec

Open Actions

- Support RCC ongoing efforts:
  - TMATS Handbook releases
  - IRIG standards
- Support RCC –TG Telemetry Data Processing telecons and RCC meetings.

Networks Subcommittee

- No Report Yet

Sub Committee Membership

- Mark Buckley (Telspan Data), Chairman
- Albert Gabaldon (NAVAIR-CL), Alternate Chairman

1.	Balázs Bagó	Safran
2.	Bob Baggerman	ATAC
3.	Paul Carrion	Calculex
4.	Chris Dehmelt	L3-Harris
5.	Justin Denning	EAFB
6.	Paul Ferrill	ATAC
7.	Tim Gatton	Aerogear Telemetry
8.	Dan Green	Safran
9.	Bill Harrison	Smartronix
10.	Eric Lamphear	Telspan Data
11.	Jake Layer	Smartronix
12.	Mike Lockard	EMC Corp
13.	Hung Mach	Boeing
14.	Gary Marker	Wideband
15.	Doug Novak	Tyndall AFB
16.	Johnny Pappas	Safran
17.	Steve Proudlock	Net Acquire
18.	Charles Reyzer	Boeing
19.	Christian Rueck	Databus Tools
20.	Malcolm Weir	Ampex
21.	Craig Wierzbicki	Curtiss Wright
22.	Rick Williams	SDS

Sub-Committee Focus

- Data Recorders, Ground and Airborne

- Standards in Place
  - IRIG 106 – Range Commanders Council (RCC) Telemetry Standards

    http://www.wsmr.army.mil/RCCsite/Pages/Publications.aspx

    https://www.trmc.osd.mil/wiki/display/RCC/Home
  - STANAG 4575 – North Atlantic Treaty Organization (NATO) Standard Agreement (STANAG) – NATO Advanced Data Storage Interface (NADSI) Allied Engineering Documentation Publication (AEDP)

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

    Note the new URL. Hosted by TRMC
    - **DoD ONLY ← ← ← ← ← ← ← ← ← ← ← ← ← ←**
      - **Not likely to ever change**
    - **Publicly released documents should still be available**

Significant Activity

- RCC Telemetry Group Recorder & Reproducer Committee
  - IRIG 106 Chapters 6/9R/10/11
    - 2021 version to be released, shortly. **REALLY!!!**
- STANAG 4575

Significant Activity

- Finally made progress on ~~SQ~~-Group
  - Publication is "Ready Soon" **REALLY!!!**
- Numerous weekly telcons held from Dec to June
    - Sporadic to rare telcons since then
  - Much discussion and resolutions on
    - Distributed DAUs.
      - (Not their encouragement but guidance on using.)
      - Update to handbook(s) to include this information
    - Nice resolution to using current header in modern implementations
      - Backward compatible but with added usefulness

Future Work

- Finish up the IF analog recording, Format 2
  - You know who you are…..coming for you.

- New proposed CRs (via email to RnR Chair)
  - Redo naming convention. yyyymmdd.
    - Gives a more 'natural' sorting of the file names
  - Use reserved bits of secondary header
    - IEEE 1588 time uses UTC instead of TAI time value
  - Clarifications on the test methods

  - No new TG Task(s) have been submitted. To be done shortly