

**Meeting of the IEC/IEEE 60802 Joint Project**

2019-08-17

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**INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)**

**TC65:** Industrial-process measurement, control and automation

**SC65C:** Industrial communication networks

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**Institute of Electrical and Electronics Engineers, Inc. (IEEE)**

**IEEE 802:** LAN/MAN Standards Committee

**IEEE 802.1:** Higher Layer LAN Protocols Working Group

**IEEE 802.1 TSN:** Time-Sensitive Networking Task Group

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**Meeting:** IEC/IEEE 60802 Joint Project  
Meeting was based on the meeting announcement; see IEC collaboration tool <http://collaboration.iec.ch/> and <http://www.ieee802.org/1>

**Date:** 2019-03-13 — 2019-03-15

**Location:** Vancouver, British Columbia, Canada

**IEC MT9 Convenor and IEC/IEEE 60802 Joint Project chair:** Ludwig Winkel

**Daily minutes by:** Josef Dorr

**Minutes compiled by:** Ludwig Winkel and Jessy Rouyer

**Published minutes:** Collaboration tool <http://collaboration.iec.ch/>, and IEEE 802.1 web site <http://www.ieee802.org/1/files/public/60802>

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Ludwig Winkel, IEC MT9 Convenor and IEC/IEEE 60802 Joint Project Chair (60802 Chair), and János Farkas, IEEE 802.1 TSN Task Group Chair (TG Chair), presided.

The IEC/IEEE 60802 Joint Project Secretary (60802 Secretary), Josef Dorr, wrote the minutes.

At the beginning of the meetings on each day:

- The IEEE-SA PatCom Patent Slides for Standards Development Meetings and the IEEE 802 Participation slide were presented (<http://standards.ieee.org/about/sasb/patcom/materials.html>).
- The Call for Potentially Essential Patents was made. There were no responses to the calls prior to the end of the week’s session.
- The IEC MT9 Convenor reminded the IEC participants that patent rules similar to those of IEEE-SA apply in IEC, reminded all that patents required for use of the IEC/IEEE 60802 profile must be announced to IEC and IEEE and made available using the IEC licensing form, and reminded that presentations shall not have copyright marks or confidentiality information.
- The agenda and the expected results of the day were reviewed and approved. The final agenda is in <http://www.ieee802.org/1/files/public/docs2019/admin-60802-agenda-0319-v02.pdf> and also available at <https://1.ieee802.org/march-2019-plenary-meeting-in-vancouver-bc-canada-tsn-tg-agenda/>.

Draft minutes were reviewed at the end of the week’s session under the lead of the 60802 Secretary.

Attendance:

Joint TSN-IEC/IEEE 60802 Joint Project (Friday, 15-Mar-2019, 13:00 - 15:30)								
Joint TSN-IEC/IEEE 60802 Joint Project (Friday, 15-Mar-2019, 08:00 - 12:00)								
IEC/IEEE 60802 Joint Project (Thursday, 14-Mar-2019, 08:00 - 12:30)								
IEC/IEEE 60802 Joint Project (Wednesday, 13-Mar-2019, 13:30 - 18:00)								
IEC/IEEE 60802 Joint Project (Wednesday, 13-Mar-2019, 10:30 - 12:30)								
Joint TSN-IEC/IEEE 60802 Joint Project (Wednesday, 13-Mar-2019, 08:00 - 10:00)								
Last name	First Name	Affiliation						
ADEMAJ	Astrit	TTTech Computertechnik AG	•	•	•	•	•	•
Assmann	Ralf	Marvell Semiconductor, Inc.	•				•	•
Baba	Takenori	Mitsubishi Electric Corporation	•	•	•	•	•	•
Boiger	Christian	b-plus GmbH	•	•			•	•
Bottorff	Paul	Hewlett-Packard Development Company, L.P.				•		
Canchi	Radhakrishna	Kyocera International Inc.	•	•	•	•	•	•
Chandran	Sarin	Broadcom Corporation		•				
Chen	Evelyn	Ericsson AB				•		
Chen	Feng	Siemens AG	•	•			•	
Cummings	Rodney	National Instruments Corporation	•	•	•			
Dorr	Josef	Siemens AG	•	•	•	•	•	•
Duan	Shihui	China Academy of Information and Communications Technology (China Academy of TeleCommunication Research, MIIT) CAICT (CATR)	•	•	•	•	•	•
Enzinger	Thomas	B&R Industrial Automation	•		•	•	•	•
Farkas	Janos	Ericsson	•		•	•	•	•
Fedyk	Donald	LabN Consulting, L.L.C.				•		
Fincher	Scott	Extreme Networks	•				•	

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Last name	First Name	Affiliation					
Fujishima	Mitsushiro	Mitsubishi Electric Corporation	•	•	•	•	•
Garner	Geoffrey	Huawei Technologies Co. Ltd	•	•	•		•
Gravel	Mark	Hewlett Packard Enterprise	•				
Gunther	Craig	Robert Bosch GmbH	•				•
Gutierrez	Marina	TTTech Computertechnik AG					•
Hantel	Mark	Rockwell Automation	•	•	•	•	•
Hemmer	David	PILZ	•	•	•	•	•
Holness	Marc	Ciena Corporation	•				
Hotta	Yoshifumi	Mitsubishi Electric Corporation	•	•	•	•	•
Igarashi	Shunsuke	Mitsubishi Electric Corporation	•		•	•	•
Kabra	Lokesh	Synopsys, Inc.					•
Kehrer	Stephan	Hirschmann Automation and Control, Inc.	•	•	•	•	•
KONDO	Kenji	Yaskawa Electric Corp	•	•	•	•	•
Kondo	Yoshihisa	Advanced Telecommunications Research Institute International (ATR)			•		
KOTO	Hajime	National Institute of Information and Communications Technology (NICT)				•	
Lawlis	James	Ford Motor Company	•		•		
Mangin	Christophe	Mitsubishi Electric Corporation	•	•		•	•
Maruhashi	Kenichi	NEC Corporation			•	•	•
McCall	David	Intel	•	•	•	•	
Mustala	Tero	Nokia Networks	•	•	•	•	
Myers	Roy	INDEPENDENT	•				
Neet	Kyle	Rockwell Automation	•	•	•		•
Noseworthy	Bob	University of New Hampshire InterOperability Laboratory (UNH-IOL)	•	•	•		•
Ohsawa	Tomoki	NICT			•	•	•
Osagawa	Daisuke	Mitsubishi Electric Corporation	•	•	•	•	•
Osuga	Toru	National Institute of Information and Communications Technology (NICT)	•	•		•	•
Pannell	Donald	NXP Semiconductors	•	•	•		•
Petre	Razvan	Spirent Communications	•				•
Rettig	Thomas	Beckhoff Automation				•	
Riegel	Maximilian	Nokia Networks				•	
Rouyer	Jessy	Nokia	•			•	•
Sato	Atsushi	Yokogawa Electric Corporation	•	•	•	•	•
Seewald	Maik	Cisco Systems, Inc.	•	•	•	•	•
Sivakolundu	Ramesh	Cisco Systems, Inc.	•	•			
Specht	Johannes	University of Duisburg-Essen and General Motors Company			•		
Stanica	Marius	ABB AB	•	•	•	•	•
Stanton	Kevin	Intel Corporation	•				

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Last name	First Name	Affiliation							
St-Denis	Bernie	NXP Semiconductors	•						•
Steindl	Guenter	Siemens AG	•	•	•	•	•	•	•
Tarui	Isao	Mitsubishi Electric Corporation	•	•	•	•	•	•	•
Unbehagen	Paul	Avaya Inc.	•						
Wamsser	Reiner	IEC SC65C MT9-Member	•	•	•	•	•	•	•
Wang	Xinyuan	Huawei Technologies Co. Ltd	•						•
Wang	Xuehuan	Huawei Technologies Co. Ltd							•
Weber	Karl	Beckhoff	•	•	•	•	•	•	•
Winkel	Ludwig	Siemens AG	•	•	•	•	•	•	•
Wolfe	Jason	Non-Member	•						•
Wood	Graeme	British Standards Institution (BSI), Rockwell Corp	•		•	•	•	•	•
Woods	Jordon	Analog Devices Inc.	•	•	•	•	•	•	
Xu	Dayin	Rockwell Automation			•				
Yamaura	Takahiro	TOSHIBA Corporation	•						•
Zinner	Helge	Continental Automotive Systems AG	•	•					
Zweck	Harald	Infineon Technologies AG	•						

**Wednesday March 13, 2019**

**8:00 AM (call to order by the TG Chair and the 60802 Chair) to 10:00 AM**

The TSN TG and IEC/IEEE 60802 Joint Project had a joint meeting.

The TG Chair and the 60802 Chair:

- Welcomed the participants of the IEC/IEEE 60802 Joint Project, a joint effort of the:
  - IEC 65C/MT9/PT 60802 (TSN) Project Team, led by Ludwig Winkel; and
  - IEEE 802.1 Time-Sensitive Networking Task Group, led by the TG Chair.
- Provided information about internet access, lunch, attendance log to the IEC/IEEE 60802 Joint Project.

The TG chair reminded that the deadline for text contributions associated with ballot comments is the end of the ballot period. The TG Chair noted that it is good practice to take a look at the proposed disposition and associated contributions prior to the meeting.

The 60802 Chair reported on Conformity Assessment activities. The 60802 Chair announced two IEC 65C/PT60802 Task Force (TF) meetings in Frankfurt/Main, Germany to prepare an IEC project: April 16-18, 2019, and May 7-9, 2019, per [802.1 - 13060] Task Force Meetings IEC SC65C/PT60802 on TSN Conformance Testing according to IEC/IEEE 60802 <http://www.ieee802.org/1/private/email2/msg28171.html> and [Meeting announcement for task force meetings of the IEC.IEEE.60802](#) <https://collaborate.iec.ch/#/pages/workspaces/139201/documents/111335/details/395991>.

Stephan Kehrer gave a briefing on his proposal for a new project for *TSN Configuration Enhancements* <http://www.ieee802.org/1/files/public/docs2019/new-kehrer-TSN-Configuration-Enhancements-0319-v01.pdf> that he presented the day before in the TSN TG. [The scope that should be covered by a new project was discussed.](#) The TG Chair proposed to continue the discussion in teleconferences or offline until the next IEEE 802.1 interim session. The topic was to be resumed on Friday. There was to be a related motion at the IEEE 802.1 closing plenary.

Jordon Woods, 60802 editor, presented *Editor's Report 60802 Draft 1.0* <http://www.ieee802.org/1/files/public/docs2019/60802-woods-D10-update-0319-v01.pdf> on the TG ballot and IEC Committee Draft (CD) on <http://www.ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0.pdf>. The 60802 Chair reminded that the IEC CD review of the draft was started on January 28, 2019 and was ongoing until March 22, 2019. The 60802 Chair copied the comments received in the TG ballot to the IEC collaboration tool indicating that the national committees should not provide comments that are already in the IEC collaboration tool. The 60802 Chair will provide the comments from the IEC CD review to the 60802 editor for incorporation into the comment database.

János Farkas presented <http://www.ieee802.org/1/files/public/docs2019/60802-farkas-d1-0-ballot-comment-support-steps-1-and-2-clean-0219-v01.pdf> supporting ballot comments #578 (regarding restructuring) and #579 (regarding conformance) to slightly restructure 60802/D1.0. **Disposition:** Further discussion is needed. The topic will be resumed.

The TSN TG and IEC/IEEE 60802 Joint Project met separately afterwards.

**10:30 AM (call to order by the 60802 Chair) to 6:00 PM with a 1-hour lunch break**

Graeme Wood presented a proposal to revise 60802 subclause 4.1 Control Loop Basic Model <http://www.ieee802.org/1/files/public/docs2019/60802-wood-d1-0-comments-clause-4-1-0119-v01.pdf>.

**Disposition:** The contribution will be integrated with modifications into the next 60802 draft.

Mark Hantel presented *A Sample Selection for an Industrial Profile of TSN (with contributions)* <http://www.ieee802.org/1/files/public/docs2019/60802-Hantel-SampleSelection-0319-v00.pdf>.

**Disposition:** Further discussion is needed.

Jordon Woods, 60802 editor, continued resolving comments received in the TG ballot on <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0.pdf>.

**Disposition:** Partial disposition recorded in <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0-pdis-v03.pdf>.

#### Thursday March 14, 2019

**8:00 AM (call to order by the TG Chair and the 60802 Chair) to 1:30 PM with a 30-minute break**

Jordon Woods, 60802 editor, continued resolving comments received in the TG ballot on <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0.pdf>.

**Disposition:** Partial disposition recorded in <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0-pdis-v03.pdf>.

Jordon Woods presented *Considerations for securing the Industrial Network* <http://ieee802.org/1/files/public/docs2019/60802-woods-SecurityConsiderations-0319-v01.pdf>.

**Disposition:** Further discussion is needed.

Jordon Woods, 60802 editor, continued resolving comments received in the TG ballot on <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0.pdf>.

**Disposition:** Partial disposition recorded in <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0-pdis-v03.pdf>.

Astrit Ademaj presented *Traffic Type Introduction* <http://www.ieee802.org/1/files/public/docs2019/60802-ademaj-traffic-type-introduction-0319-v03.pdf>

**Disposition:** Further discussion is needed.

Jordon Woods, 60802 editor, continued resolving comments received in the TG ballot on <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0.pdf>.

**Disposition:** Partial disposition recorded in <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0-pdis-v03.pdf>.

#### Friday March 15, 2019

**8:00 AM (call to order by the TG Chair and the 60802 Chair) to 3:30 PM with a 90-minute lunch break**

The TSN TG and IEC/IEEE 60802 Joint Project had a joint meeting.

The TG Chair and the 60802 Chair summarized the work performed so far in this session, and pointed out that future IEEE 802.1 sessions <https://1.ieee802.org/meetings/> and upcoming TSN TG conference calls <https://1.ieee802.org/tsn-calls/> are linked from the 60802 project page <https://1.ieee802.org/tsn/iec-ieee-60802/> and the IEC Collaborative Tool <https://collaborate.iec.ch/#/pages/workspaces/139201/documents/42125>.

Jordon Woods, 60802 editor, led a discussion on the structure of the 60802 conformance clause.

The 60802 Chair proposed to document the high-level principles for the essence of 60802 then give license to the editor to implement these principles in 60802 as he sees best fit. The IEC/IEEE 60802 Joint Project agreed to this approach.

Jordon Woods, 60802 editor, drafted the following high-level 60802 principles together with the IEC/IEEE 60802 Joint Project during the session:

1. The 60802 standard shall explicitly identify which parts (clauses, subclauses, figures, lists, tables, etc.) of the cited standards apply to this profile.
2. The features of any cited standard that are mandatory, optional, excluded, or not applicable shall be explicitly identified.
3. Additional constraints for features of any cited standard shall be identified.

The IEC/IEEE 60802 Joint Project agreed to these 60802 principles that were to be recorded in the resolution of comment #579 in <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0-pdis-v03.pdf>.

Graeme Wood and Mark Hantel presented <http://www.ieee802.org/1/files/public/docs2019/60802-Wood-clause411-0319-v04.docx> and <http://www.ieee802.org/1/files/public/docs2019/60802-Hantel-Ch4Contribution-0319-v02.docx>, respectively.

**Disposition:** The updated proposals will be integrated into the next 60802 draft.

Jordon Woods, 60802 editor, continued resolving comments received in the TG ballot on <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0.pdf>.

**Disposition:** Partial disposition recorded in <http://ieee802.org/1/files/private/60802-drafts/d1/60802-d1-0-pdis-v03.pdf>.

### **Future meetings/teleconferences**

Agreed (informally, none dissenting) to hold biweekly teleconferences starting on Monday March 25, 2019.

The IEC/IEEE 60802 Joint Project meets next May 22-24 during the May 2019 IEEE 802.1 interim session in Salt Lake City, Utah, USA.

### **A.O.B.**

No other business was discussed in this meeting.