

Meeting of the IEC/IEEE 60802 Joint Project

2018-09-13

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

TC65: Industrial-process measurement, control and automation

SC65C: Industrial communication networks

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

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: 2018-09-11 — 2018-09-13

Location: Oslo, Norway

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/minutes/60802>

Ludwig Winkel, IEC MT9 Convenor, and János Farkas, IEEE 802.1 TSN Task Group Chair, presided. 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 Annex A.

Draft minutes were reviewed at the end of the meeting.

Attendance:

Name		Affiliation	Tue 09:00 - 13:00 TSN TG + IEC/IEEE 60802 Joint Project	Tue 14:00 - 18:00 IEC/IEEE 60802 Joint Project	Wed 08:00 - 13:00 IEC/IEEE 60802 Joint Project	Wed 14:00 - 18:00 IEC/IEEE 60802 Joint Project	Thu 08:00 - 13:00 IEC/IEEE 60802 Joint Project	Thu 14:00 - 18:00 TSN TG + IEC/IEEE 60802 Joint Project
Adachi	Yoshiaki	Hitachi, Ltd.	•	•	•	•	•	•
ADEMAJ	Astrit	TTTech Computertechnik AG	•	•	•	•	•	•
Assmann	Ralf	Marvell Semiconductor, Inc.	•					•
Baba	Takenori	Mitsubishi Electric Corporation	•	•	•	•	•	
Bao	Shenghua	HUAWEI	•					•
Bjornstad	Steinar	TransPacket						
Boiger	Christian	b-plus GmbH	•					•
Canchi	Radhakrishna	Kyocera International Inc.	•	•		•	•	•
Chang	Xin	Huawei Technologies Co. Ltd	•	•	•			•
Chen	David	Nokia	•					
Chen	Feng	Siemens AG	•	•	•			•
Congdon	Paul	Tallac Networks; Huawei	•					•
Cummings	Rodney	National Instruments Corporation	•				•	•
DeLaOlivaDelgado	Antonio	Universidad Carlos III Madrid						•
Dorr	Josef	Siemens AG	•	•	•	•	•	•
Elbakoury	Hesham	Huawei Technologies Co. Ltd	•	•	•	•	•	•
Ellegaard	Lars	Microsemi Corporation	•	•	•	•	•	•
Farkas	Janos	Ericsson	•				•	•
Finn	Norman	Huawei Technologies Co. Ltd	•					•
Fontaine	Mickael	TransPacket		•				•
Garner	Geoffrey	Huawei Technologies Co. Ltd	•				•	•
Godfrey	Tim	Electric Power Research Institute, Inc. (EPRI)						
Gunther	Craig	Craig Gunther Consulting, LLC	•					•
Gutierrez	Marina	TTTech Computertechnik AG	•					•
Haddock	Stephen	Stephen Haddock Consulting, LLC	•					
Hantel	Mark	Rockwell Automation	•	•	•	•		•
Harima	Taro	Mitsubishi Electric Corporation	•	•	•	•	•	•
Hellmanns	David	University of Stuttgart	•	•	•	•	•	•
Hemmer	David	PILZ	•	•	•	•	•	•
Holness	Marc	Ciena Corporation	•					
Hotta	Yoshifumi	Mitsubishi Electric Corporation	•	•	•	•	•	•
Itaya	Satoko	National Institute of Information and Communications Technology (NICT)	•	•		•		•
Kehrer	Stephan	Hirschmann Automation and Control, Inc.	•	•	•	•	•	•
Kojima	Fumihide	National Institute of Information and Communications Technology (NICT)	•	•		•		
KONDO	Kenji	Yaskawa Electric Corp	•	•	•	•	•	•
KOTO	Hajime	National Institute of Information and Communications Technology (NICT)		•		•	•	•

Name		Affiliation	Tue 09:00 - 13:00 TSN TG + IEC/IEEE 60802 Joint Project	Tue 14:00 - 18:00 IEC/IEEE 60802 Joint Project	Wed 08:00 - 13:00 IEC/IEEE 60802 Joint Project	Wed 14:00 - 18:00 IEC/IEEE 60802 Joint Project	Thu 08:00 - 13:00 IEC/IEEE 60802 Joint Project	Thu 14:00 - 18:00 TSN TG + IEC/IEEE 60802 Joint Project
Mangin	Christophe	Mitsubishi Electric Corporation	•	•	•	•	•	•
Mansfield	Scott	Telefon AB LM Ericsson	•					•
Marks	Roger	EthAirNet Associates; Huawei						
Maruhashi	Kenichi	NEC Corporation	•	•		•	•	•
Messenger	John	ADVA Optical Networking Ltd.	•					•
Mihalache	Razvan	Robert Bosch GmbH	•					•
Mustala	Tero	Nokia Networks	•					•
Nakamura	Minoru	Mitsubishi Electric Corporation			•			
NOMIZU	TAKUMA	Hitachi, Ltd.	•	•	•	•	•	•
Osagawa	Daisuke	Mitsubishi Electric Corporation	•	•	•	•	•	•
Pannell	Donald	NXP Semiconductors	•					•
Parsons	Glenn	Ericsson AB	•					•
Potts	Michael	General Motors Company	•					•
QIU	WEI	Huawei Technologies Co., Ltd	•	•	•	•	•	•
Riegel	Maximilian	Nokia Networks				•		
Rouyer	Jessy	Nokia	•					•
Roy	Rajeev	NXP Semiconductors	•					•
Sato	Atsushi	Yokogawa Electric Corporation	•	•	•	•	•	•
Seaman	Michael	Individual	•					
Seewald	Maik	Cisco Systems, Inc.	•	•	•	•	•	•
Specht	Johannes	University of Duisburg-Essen and General Motors Company	•					•
Stanica	Marius	ABB AB	•	•	•	•	•	•
Steindl	Gunter	Siemens AG	•	•	•	•	•	•
Tarui	Isao	Mitsubishi Electric Corporation		•	•	•	•	•
traore	karim	Microchip/Microsemi Corporation						
Unbehagen	Paul	Avaya Inc.	•					•
Wamsser	Reiner	IEC SC65C MT9-Member	•	•	•			
Wang	Hao	Fujitsu Research & Development Center						•
Wang	Tongtong	Huawei Technologies Co. Ltd	•	•				•
Weber	Karl	Beckhoff	•	•		•	•	•
Winkel	Ludwig	Siemens AG	•	•	•	•	•	•
Woods	Jordon	Analog Devices Inc.	•	•	•	•		•
Xue	Wenqian	Fujitsu Research & Development Center	•		•			•
YU	XIANG	Huawei Technologies Co., Ltd	•					•
Zein	Nader	NEC Europe (NLE)				•	•	
Zhu	Chunhui	Huawei R&D USA	•					•
Zuponic	Steven	Rockwell Automation	•		•	•	•	•

Tuesday 11 September 2018

9:20 AM (call to order by Ludwig Winkel and János Farkas) to 5:40 PM

Ludwig Winkel and János Farkas:

- 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 János Farkas.
- Provided information about internet access, lunch, attendance log to the IEC/IEEE 60802 Joint Project.

János Farkas and Ludwig Winkel gave a short status report of the IEC/IEEE 60802 Joint Project.

Karl Weber presented the LNI4.0 e.V. liaison request to IEEE 802.1

<http://www.ieee802.org/1/files/public/docs2018/liaison-LNI-4-0-request-access-drafts-0918.pdf> requesting some of the TSN draft documents including IEC/IEEE 60802, and started to present *Labs Network Industrie 4.0 e.V. and BMWi Competence Center 4.0 Augsburg* <http://www.ieee802.org/1/files/public/docs2018/liaison-LNI40-Testbed-TSN-0918-v00.pdf>

Disposition: The liaison request will be discussed in the plenary.

Josef Dorr presented *Use Cases IEC/IEEE 60802 V1.2*

<http://www.ieee802.org/1/files/public/docs2018/60802-industrial-use-cases-0918-v12.pdf>

Disposition: Further discussion needed

Josef Dorr started to present *Requirements IEC/IEEE 60802 V0.6*

<http://www.ieee802.org/1/files/public/docs2018/60802-industrial-requirements-0918-v06.pdf>

Disposition: Further discussion needed

Josef Dorr presented on the structure of the IEC/IEEE 60802 profile

<http://www.ieee802.org/1/files/public/docs2018/60802-Dorr-ProfileContribution-0918-v01.pdf>

Disposition: Further discussion needed

Jordon Woods, IEC/IEEE 60802 editor, presented an initial proposal for the structure of the IEC/IEEE 60802 profile <http://www.ieee802.org/1/files/private/60802-drafts/d0/60802-d0-1.pdf>

Disposition: Further discussion needed

Astrit Ademaj presented *802.1Qcc findings*

<http://www.ieee802.org/1/files/public/docs2018/cc-ademaj-QccFindings-0918-v02.pdf>

Disposition: Further discussion needed

Karl Weber continued to present *Labs Network Industrie 4.0 e.V. and BMWi Competence Center 4.0 Augsburg*

<http://www.ieee802.org/1/files/public/docs2018/liaison-LNI40-Testbed-TSN-0918-v00.pdf>

Disposition: no further action required

Karl Weber presented *Additional parameters for a bidirectional TSN communication with an underlying Sub-structure*
<http://www.ieee802.org/1/files/public/docs2018/60802-weber-AdditionalParameter-0918-v01.pdf>

Disposition: Further discussion needed

Tongtong Wang presented *Multi-traffic transmission in industrial backbone network*
<http://www.ieee802.org/1/files/public/docs2018/60802-chen-multi-traffic-transmission-on-backbone-0918.pdf>

Disposition: Use case document will be updated accordingly

Taro Harima presented *Minimum Traffic Types inside the TSN domain boundary*
<http://www.ieee802.org/1/files/public/docs2018/60802-harima-minimum-traffic-types-0918.pdf>

Disposition: Further discussion needed

Josef Dorr presented the last update of *Use Cases IEC/IEEE 60802 V1.2*
<http://www.ieee802.org/1/files/public/docs2018/60802-industrial-use-cases-0918-v12.pdf>

Disposition: A new revision of the document including the proposed changes from the discussion will be provided

Wednesday 12 September 2018

8:00 AM (call to order by Ludwig Winkel) to 5:30 PM

Ludwig Winkel thanked the host for organizing the very interesting and enjoyable social event at the Oslo Opera House.

Josef Dorr continued to present *Requirements IEC/IEEE 60802 V0.6*
<http://www.ieee802.org/1/files/public/docs2018/60802-industrial-requirements-0918-v06.pdf> and led a discussion about the last changes on this requirements document

Disposition: A new revision of the document including the proposed changes from the discussion will be provided

Jordon Woods presented *Further IEEE802.1Qcc Discussions*
<http://www.ieee802.org/1/files/public/docs2018/60802-woods-QccConfig-0918-v01.pdf>

Disposition: Further discussion needed

Marius Stanica presented *ListExecute Qbv StateMachine*
<http://www.ieee802.org/1/files/public/docs2018/60802-stanica-qbv-statemachine-0918-v02.pdf>:

Disposition: A requirement concerning Scheduled Traffic state machine / List Execute state machine will be added to the IEC/IEEE 60802 Requirements document. Three approaches are possible to handle identified gaps in relevant standards:

1. Fix a gap in the profile;
2. Fix a gap in the profile and communicate it to the community;
3. If a gap cannot be fixed in the profile, a solution from the standards community is required.

Jordon Woods, IEC/IEEE 60802 editor, a further update to the structure of the IEC/IEEE 60802 profile <http://www.ieee802.org/1/files/private/60802-drafts/d0/60802-d0-2.pdf> and led a discussion on the structure of the document.

Disposition: Further discussion needed

Josef Dorr continued to present on the structure of the IEC/IEEE 60802 profile <http://www.ieee802.org/1/files/public/docs2018/60802-Dorr-ProfileContribution-0918-v01.pdf> and led a discussion on the content of subclauses 5.1 to 5.3 of the document.
Disposition: Further discussion needed

Thursday 26 July 2018

8:00 AM (call to order by Ludwig Winkel) to 4:30 PM

Josef Dorr continued to present on the structure of the IEC/IEEE 60802 profile <http://www.ieee802.org/1/files/public/docs2018/60802-Dorr-ProfileContribution-0918-v01.pdf> and led a discussion on the content of subclauses 5.4 to 5.7 of the document. The conventions subclause was enhanced during the discussion.
Disposition: Further discussion needed; and updated version of the document will be uploaded

Steven Zuponic presented *Work Flow Discussion* <http://www.ieee802.org/1/files/public/docs2018/60802-Zuponic-WorkFlow-0918-v00.pdf>
Disposition: Further discussion needed

Karl Weber led a discussion on whether “Coloring of cables” should be covered by the IEC/IEEE 60802 profile. Installation issues including coloring are defined in IEC 61918 and referenced by IEC 61784-5.
Disposition: No further action required

Ludwig Winkel and János Farkas gave a recap of the past days and an outlook for next meetings.

A straw poll for an IEC/IEEE 60802 Joint Project interim meeting in Feb. 2019 was conducted:

- Acceptance: 9 in favor, 2 against
- Continent: 13 in favor of Europe, 8 in favor of America
- Date: 10 in favor of 13-15 Feb., 8 in favor of 18-20 Feb., 5 in favor of 25-27 Feb.

Disposition: Ludwig Winkel will prepare a meeting proposal to be discussed at the Nov. 2018 IEEE 802.1 plenary meeting in Bangkok, Thailand.

Jordon Woods, IEC/IEEE 60802 editor, gave an overview of the current status and structure of the IEC/IEEE 60802 profile: <http://ieee802.org/1/files/private/60802-drafts/d0/60802-d0-3.pdf>

The IEC/IEEE 60802 Joint Project meeting adjourned at 4:30 PM.

Annex A

Agenda of the IEC/IEEE 60802 Joint Project meeting held in Oslo, Norway September 11-13, 2018

1 Tuesday: TSN with IEC/IEEE 60802 (single track)

(Storkvinten)

Edit				
	Subject	Presenter	Affiliation	Length
9:00-13:00	Welcome and organizational issues, incl.: intro , participation	Ludwig Winkel	Siemens AG	25
		János Farkas	Ericsson	
	Agenda	Ludwig Winkel	Siemens AG	20
		János Farkas	Ericsson	
	Status of the IEC/IEEE 60802 Joint Project	Ludwig Winkel	Siemens AG	10
		János Farkas	Ericsson	
	Liaison report on IEC TC57; TR IEC 61850-90-13	Maik Seewald	Cisco	1
	LNI 4.0 liaison	Karl Weber	Beckhoff	15
	Status report on use cases	Josef Dorr	Siemens AG	10
	Status report on requirements	Josef Dorr	Siemens AG	10
	Contribution to the draft	Josef Dorr	Siemens AG	30
Editor's explanation on Draft 0.1	Jordon Woods	Analog Devices Inc.	35	
Qcc findings	Astrit Ademaj	TTTech Computertechnik AG	30	

2 Tuesday: Track A: IEC/IEEE 60802

(Storkvinten)

Edit				
	Subject	Presenter	Affiliation	Length
14:00-18:00	LNI 4.0 TSN testbed	Karl Weber	Beckhoff	30
	Additional parameters for a bidirectional TSN communication with a underlying Sub-structure	Karl Weber	Beckhoff	60
	add on to use cases document: multi-traffic transmission on backbone: presentation and contribution	Lihao Chen, Tongtong Wang	Huawei	30

Edit				
	Subject	Presenter	Affiliation	Length
	add on to use cases document: Minimum traffic types	Taro Harima	Mitsubishi Electric	30
	Discussion on use cases	Josef Dorr	Siemens AG	30
	Review of minutes of the day	Josef Dorr	Siemens AG	20

3 Wednesday: Track A: IEC/IEEE 60802

(Storkvinten)

Edit				
	Subject	Presenter	Affiliation	Length
8:00-18:00	Review agenda; expected results of the day	Ludwig Winkel	Siemens AG	10
	Discussion on requirements	Josef Dorr	Siemens AG	40
	Network Management Model	Jordon Woods	Analog Devices Inc.	90
	Qbv state machines	Marius Stanica	ABB	60
	Finalize requirements	Josef Dorr	Siemens AG	5
	Discussion on draft profile document	Jordon Woods	Analog Devices Inc.	60
	Discussion on profile contribution	Josef Dorr	Siemens AG	200
	Review of minutes of the day	Josef Dorr	Siemens AG	15

4 Thursday: Track A: IEC/IEEE 60802

(Storkvinten)

Edit				
	Subject	Presenter	Affiliation	Length
8:00-13:00	Review agenda; expected results of the day	Ludwig Winkel	Siemens AG	10
	Discussion on profile contribution	Josef Dorr	Siemens AG	230
	Work flow discussion	Steve Zuponic	Rockwell Automation	30
	Cable coloring	Karl Weber	Beckhoff	30

5 Thursday: TSN with IEC/IEEE 60802 (single track)

(Storkvinten)

Edit				
	Subject	Presenter	Affiliation	Length
14:00-18:00	Recap past days	Ludwig Winkel	Siemens AG	10
		János Farkas	Ericsson	
	Next meetings	Ludwig Winkel	Siemens AG	30
		János Farkas	Ericsson	
	Discussion on draft profile document	Jordon Woods	Analog Devices Inc.	40
	Review of minutes	Josef Dorr	Siemens AG	10
	P802.1CBdb Generic mask-and-match stream identification	Christophe Mangin	Mitsubishi Electric	45
Qcc findings	Astrit Ademaj	TTTech Computertechnik AG	30	