

# IEEE 1904 Access Networks Working Group

Sponsored by the IEEE Communications Society

**15-17 December 2015**

**San Jose, CA USA**

## Minutes

**Chair: Glen Kramer**

**Vice-Chair: Ken-Ichi Suzuki**

**Executive Secretary: Zhou Zhen**

**Chief Editor: Marek Hajduczenia**

**Meeting Recorder: Xhafer Krasniqi**

### **Day 1, Tuesday, 15 December 2015**

#### **1. Call to Order**

- The meeting was called to order at 9:00 am.
- All present introduced themselves and declared their affiliation.
- A sign in sheet captured attendance each day.
- **7 voting member attended meeting. Quorum was not reached.**

#### **2. Opening Remarks**

- G. Kramer, ANWG chair, presented [anwg\\_1512\\_opening.pdf](#).

#### **3. Executive Secretary Report**

- G. Kramer presented [anwg\\_1512\\_exec\\_report.pdf](#) on behalf of Zhou Zhen, ANWG Executive Secretary.
- A report on working group member was provided.

#### **4. Approval of Agenda**

- G. Kramer, ANWG chair, presented the agenda, [anwg\\_1512\\_agenda.pdf](#).
- It was pointed out that there were three contributions that have not been uploaded yet and as such were not part of the agenda either.

- **Motion#1:**

*Approve the agenda for the December 2015 meeting as presented in [anwg\\_1512\\_agenda.pdf](#) with the following additions:*

*Allocate 90 minutes before 1904.3 closing report for 3 presentations by Richard Maiden*

*Moved: Raz Gabe, PMC Sierra.*

*Seconded: Xhafer Krasniqi, NEC.*

*(Procedural, required >50%)*

*Motion passed by voice vote without opposition. **There was no quorum for this motion.***

## **5. Approval of Past Meeting Minutes**

- **Motion #2:**

*Approve minutes of the October 2015 meeting as recorded in [anwg\\_1510\\_minutes\\_unapproved.pdf](#). Post the approved minutes on the WG website as [anwg\\_1510\\_minutes\\_approved.pdf](#).*

*Motion was not taken due to lack of quorum.*

## **6. IEEE Patent Policy**

- Chair made a call for potentially essential patents. No potentially essential patent claims were declared, and no holders of potentially essential patents were identified.

## **7. Treasurer's Report**

- G. Kramer presented treasurer report, [anwg\\_1512\\_treasurer\\_report.pdf](#) on behalf of Zhou Zhen, ANWG Treasurer.
- Balance of WG account and details were shown.

## **8. Logistics for February 2016 meeting**

- It was pointed out that there were not volunteers for hosting any meeting in 2016 and chair urged members to consider this.

## **9. P1904.3 (Task Force 3) Opening Report**

- J. Korhonen, Task Force 3 Chair, presented the Task Force Opening Report, [tf3\\_1512\\_opening.pdf](#) with the emphasis on the delays and the need to speed up the work progress.

## **10. Timestamp format**

- R. Gabe, PMC Sierra, presented [tf3\\_1512\\_tse\\_timestamp\\_format\\_num\\_2.pdf](#) on behalf of R. Tse, PMC Sierra.
- Provided a proposal for a timestamp format by putting the highlight on the advantages compared with other timestamp formats.
- There was no motion on this due to lack of quorum, but group will re-visit this topic again on Thursday.

## **11. Sequence number revisited**

- J. Korhonen, Broadcom, presented [tf3\\_1512\\_korhonen\\_seqnum\\_1.pdf](#).
- There was a discussion if timestamp and sequence number should be considered separately. Group will have a motion on this during this meeting once the quorum will be available.

## **12. CPRI mapper clarifications & corrections**

- J. Korhonen, Broadcom, presented [tf3\\_1512\\_korhonen\\_mapper\\_draft\\_change\\_2.docx](#).
- The following was agreed on this topic:

- Agnostic mapper contains the number of base frame and flow ID and there is no interleaving of mapper
- Aware mapper follows the current principles, except control variable and also will not have stuffing bit which was agreed to be removed.
- Also agreed that the num is an integer of number of a basic frame, except the tunneling part.
- A separate motion on this will be reviewed during this meeting

### **13. PAR from NGFI**

- J. Huang, China Mobile, presented [tf3\\_1512\\_huang\\_1914par\\_intro\\_1.pdf](#).
- The presentation was for information and to attract group's attention to something that is relevant for the group and also it was said it was to keep the group informed on this.
- A PAR on NGFI was presented to IEEE COM/SDB committee and is in the process of becoming a new working group, IEEE 1914.1
- This was discussed during a NESCOM conference call on 4<sup>th</sup> of December and some issues were raised that delayed a decision on this.
- It was said that there were no major issues, except some concern expressed about the scope of this new work and some potential overlapping with 802.1CM

### **14. Length field in RoE packets**

- K. Bross, Intel, presented [tf3\\_1512\\_bross\\_length\\_2.pdf](#).
- This proposal to have length field added to RoE has been given before and it came to the group again for further discussion.
- It was agreed to have the length include extension header + payload and will be 16 bits.

### **15. CPRI tunneling packet formats**

- K. Bross, Intel, presented [tf3\\_1512\\_bross\\_tunneling\\_2.pdf](#).
- The proposal is to consider 64b/66b encoding instead of 8b/10b has taken place before within the group and this time was brought to the group again for further discussion.
- It was agreed to not treat '0xffff as a no special character'.
- On the initiating tunnel part, group suggested to have two different flow IDs for initiating a tunnel.
- Group agreed to set the tunnel as a unidirectional tunnel.
- Group also agreed that packet for starting the presentation time is sequence number 0.
- The author will further update this based on the discussion from the group.

The first day meeting was recessed at 5:36pm.

## **Day 2, Wednesday, 16 December 2015**

The WG reconvened at 9:05am. The quorum was present.

### **16. Approval of Agenda and last meeting minutes**

- **Motion #3**

*Approve the agenda for the December 2015 meeting as presented in [anwg\\_1512\\_agenda.pdf](#) with the following additions:*

*Allocate 90 minutes before 1904.3 closing report for 3 presentations by Richard Maiden*

*Moved: Raz Gabe, PMC Sierra*

*Seconded: Curtis Knittle, CableLabs*

*(Procedural, required > 50%)*

*Motion passed by voice vote without opposition*

- **Motion #4**

*Approve minutes of the October 2015 meeting as recorded in [anwg\\_1510\\_minutes\\_unapproved.pdf](#). Post the approved minutes on the WG website as [anwg\\_1510\\_minutes\\_approved.pdf](#).*

*Moved: Raz Gabe, PMC Sierra*

*Seconded: Richard Maiden, Altera*

*(Procedural, required > 50%)*

*Motion passed by voice vote without opposition*

## **17. CPRI mapper clarifications & corrections for control word handling**

- J. Korhonen, Broadcom, presented [tf3\\_1512\\_korhonen\\_cw\\_1.pdf](#).
- There was a comment suggesting that a control word needs to go to all flow IDs.
- Slow and fast C&M to be visited again. Description for them is needed.
- It was concluded that there should not be overlapping region when going from RoE to CPRI, though the other direction, from CPRI to RoE, is allowed.
- One filtering option of hyper frame was agreed to be removed “Extracted content has changed since the previously generated RoE packet”.
- There was a question if there is any limit in dimensions on some regions and the answer was yes.
- Agreed to have 8 VSDs-control Xs.

## **18. Revision & Maintenance TF Opening Report**

- C. Knittle, RMTF Chair, presented the RMTF opening report [rmtf\\_1512\\_opening.pdf](#).

## **19. Resolution of D2.0 Comments**

- C. Knittle, RMTF Chair, led the resolution of comments against D2.0, as shown in [rmtf\\_1512\\_comments\\_1904\\_1\\_proposed.pdf](#).
- All the comments were resolved.

## **20. L2 Openflow ONF & ITU Update**

- H. ElBakoury, Huawei, presented a use case on OpenFlow, [anwg\\_1512\\_elbakoury\\_L2openflow\\_update\\_1.pdf](#).
- The group had a long discussion using the white board.

The second day meeting was recessed at 5:36pm.

## **Day 3, Thursday, 17 December 2015**

The WG reconvened at 9:04am.

### **21. IEEE 1904.2 Activation Proposal**

- H. ElBakoury, Huawei, presented [anwg\\_1512\\_elbakoury\\_resume\\_unt\\_2.pdf](#).
- The 1904.2 task force has been in the hibernation since April 2015. H. ElBakoury presented a proposal to re-activate the 1904.2 task force.
- Following this discussion, group chair entertained a motion to reactivate the 1904.2 task force.
- **Motion#5:**
  - *Bring the IEEE P1904.2 project out of hibernation*
  - *Only focus on the message format and processing/forwarding operations at the intermediate and end nodes.*
  - *Defer discovery protocol to a future amendment of this standard.*
  - *Update IEEE P1904.2 PAR to*
    - *Clarify what devices can be managed*
    - *Remove Encryption capabilities.*

*Moved: Hesham Elbakoury*

*Seconded: Raz Gabe*

*(Technical >= 2/3)*

*Yes:7 No:0 Abstain:0*

*Motion passed*

### **22. RMTF Liaison to CableLabs**

- C. Knittle, RMTF Chair, presented draft liaison statement from IEEE1904 to CableLabs to review the IEEE 1904 SIEPON draft D2.1 ([rmtf\\_1512\\_LS\\_CL\\_outgoing.pdf](#)).
- Following the review of this liaison statement from CableLabs, group reviewed a motion to provide a reply to CableLabs to allow CableLabs have access to 1904.1 drafts that are referenced by CableLabs.
- **Motion#6:**  
*Authorize IEEE 1904 Chair to send liaison provided in [rmtf\\_1512\\_LS\\_CL\\_outgoing.pdf](#) to*

*CableLabs together with IEEE P1904.1Rev, draft 2.1. Chair has editorial license to make necessary changes to the liaison letter.*

*Moved: Raz Gabe, PMC Sierra*

*Seconded: Hesham ElBakoury, Huawei*

*(Required  $\geq 2/3$ )*

*Motion passed by voice vote without opposition*

### **23. Revision & Maintenance TF closing report**

- C. Knittle, RMTF Chair, presented a summary of the work progress achieved during this meeting and an updated timeline, [rmtf\\_1512\\_closing.pdf](#).
- Total of 51 comments resolved; 0 comments remaining
- **Timeline**
  - Create D2.1
    - Date: Thursday, 12/24/15
  - Working group review
    - Start date: 12/28/15
    - Stop date: 01/27/16 (recirculation doesn't require 30 days)
  - Proposed responses posted
    - 2/5/16
- Following the resolution of review comments achieved during this meeting, a motion was reviewed by the group to allow the editor to incorporate all the resolved comments and produce the next version of the draft.
- **Motion#7:**

*Authorize the Editor to incorporate the resolved comments from the December 2015 meeting as recorded in [rmtf\\_1512\\_mrdb\\_1904\\_1\\_20151217.pdf](#) and produce draft D2.1. Editor has a license to resolve conflicts and apply editorial changes as needed.*

*Moved: Curtis Knittle, CableLabs*

*Seconded: Raz Gabe, PMC Sierra*

*(Technical, Required  $\geq 2/3$ )*

*Motion passed by voice vote without opposition*

### **24. Motions related to 1904.3 task force proposals**

- **Motion #8**

*Approve as the baseline proposal the RoE header 32-bit ordering info field timestamp representation, semantics and example algorithm as described in [tf3\\_1512\\_tse\\_timestamp\\_format\\_num\\_2.pdf](#) page 3 option 2 and [tf3\\_1512\\_tse\\_timestamp\\_format\\_draft\\_change\\_2.docx](#).*

*Moved: Raz Gabe, PMC Sierra*

*Seconded: Jouni Korhonen, Broadcom*

*Technical motion ( $\geq 2/3$ )*

*Yes: 8, no: 0, abstain 0*

*Motion passed*

- **Motion #9**

*Approve as the baseline proposal the RoE header 32-bit ordering info field sequence number representation, semantics and example algorithm as described in [tf3 1512 korhonen seqnum draft change 1.docx](#).*

*Moved: Jouni Korhonen, Broadcom*

*Seconded: Richard Maiden, Altera*

*Technical motion ( $\geq 2/3$ )*

*Yes: 8, no: 0, abstain 0*

*Motion passed*

- **Motion #10**

*Approve as the baseline for the CPRI mapper payload handling the following:*

- *Describe structure aware and agnostic mappers separately so that they do not necessarily share the same "description language".*
- *Structure agnostic mapper shall*
  - *have only two configuration variables: number of CPRI basic frames in a RoE packet and flowID.*
  - *generate only one flow.*
- *Structure aware mapper shall support the "flexible container functionality" as described in [tf3 1512 korhonen mapper draft change 2.docx](#) with the following clarifications:*
  - *"reserved" NIL flowID determines when a container is sent to the "control process".*
  - *The stuffing bits are not supported (CPRI mapping method #1).*
  - *Sample interleaving is explicitly described per mapper, no separate variable.*
  - *.lenSample length is not required anymore.*
  - *Each "container" shall be associated with a single flowID.*
  - *Modulo operation is applied to maximum 256 basic frames and the modulo value shall be such that it wraps on each 10ms radio frame.*
  - *The "RoE.segment.num" describes the number of collected container sets.*

*Moved: Jouni Korhonen, Broadcom*

*Seconded: Richard Maiden, Altera*

*Technical motion ( $\geq 2/3$ )*

*Yes: 7, no: 0, abstain 0*

*Motion passed*

- **Motion #11**

*Approve as a baseline for the CPRI structure aware mapper control word handling as outlined in [tf3\\_1512\\_korhonen\\_cw\\_1.pdf](#) and [tf3\\_1512\\_korhonen\\_cw\\_draft\\_change\\_1.docx](#) with the following clarifications:*

- The maximum number of "containers" is 8.*
- Both Ctrl\_AxC and VSD use the same container definition structure.*
- Remove .cw\_size as it is implicit to different mapper uses.*
- Remove .filter\_mode "content has changed since the previous..".*
- "container" definitions are not used for Fast & Slow C&M but they will have simplified use case specific definitions.*
- "containers" may overlap from CPRI->RoE mapping direction.*
- "containers" should not overlap from RoE->CPRI direction (if they do the outcome is undefined).*
- .offset is relative to the extracted container defined content.*
- Byte ordering is network byte order within a control word and control words follow the order they are received in basic frames when placed into a RoE packet.*
- Modulo operation does not have history of previously received data i.e., modulo cannot be used to collect data from multiple basic frames.*

*Moved: Jouni Korhonen, Broadcom*

*Seconded: Yasser Bajwa, Foxconn*

*Technical motion ( $\geq 2/3$ )*

*Yes: 8, no: 0, abstain 0*

*Motion passed*

- **Motion #12**

*Approve adding a payload length field into the RoE header as described in [tf3\\_1512\\_bross\\_length\\_2.pdf](#) page 4 with a change that the length field includes only the payload length. The payload length counts octets following the common header "ordering info" field in a RoE packet.*

*Moved: Kevin Bross, Intel*

*Seconded: Jouni Korhonen, Broadcom*

*Technical motion ( $\geq 2/3$ )*



Yes: 8, No: 0, Abstain 0

*Motion passed*

## 25. Topologies

- R. Maiden presented a proposal how to handle the topologies for RoE ([tf3\\_1512\\_maiden\\_topologies.pptx](#)).
- **Motion #12a:**  
*Accept logical connection definitions and supported topologies as described in [tf3\\_1512\\_maiden\\_topologies.pptx](#)*

*Moved: Richard Maiden, Altera*

*Seconded: Jouni Korhonen, Broadcom*

*Technical motion ( $\geq 2/3$ )*

Yes: 8, No: 0, Abstain 0

*Motion passed*

## 26. Control Hierarchy

- R. Maiden, Altera, presented a proposal ([tf3\\_1512\\_maiden\\_control\\_hierarchy\\_3.pdf](#)) to define:
  - Parameter structure
  - Parameter priorities
  - Some (mostly agreed) parameters themselves
- Flow direction is removed as per an earlier discussion during the meeting this week
- By default encryption is not required
- By default compression is not required.
- More changes were made online and captured in the revised version of this presentation.
- **Motion #13**  
*Agree on Hierarchy on p3-5 of [tf3\\_1512\\_maiden\\_control\\_hierarchy\\_3.pdf](#).*  
*Agree on parameter priority p6 of [tf3\\_1512\\_maiden\\_control\\_hierarchy\\_3.pdf](#).*

*Moved: Richard Maiden, Altera*

*Seconded: Yasser Bajwa, Foxconn*

*Technical motion ( $\geq 2/3$ )*

Yes: 8, no: 0, abstain: 0

*Motion Passed*

- **Motion #14**

*Agree on baseline proposal for Link parameters p8, flow parameters p9, simple mapper parameters p11 and structure agnostic mapper parameters p12*  
[\*tf3\\_1512\\_maiden\\_control\\_hierachy\\_3.pdf\*](#).

*Moved: Richard Maiden, Altera*

*Seconded: Raz Gabe, PMC-Sierra*

*Technical motion ( $\geq 2/3$ )*

*Yes: 8, no: 0, abstain: 0*

*Motion Passed*

## **27. 1904.3 closing report**

- J. Korhonen, 1904.3 TF Chair, presented Task Force closing report [\*tf3\\_1512\\_closing.pdf\*](#).
  - 2 discussion papers
  - 12 technical contributions for the baseline
  - 1 late contribution was not presented
  - 7 motions during this meeting and all of them approved
- Two open action items were closed as not relevant anymore. They were closed without a need to have a motion for closing them.
- Other discussion as part of this closing report:
  - Update of NGFI (to be IEEE 1914)
  - Status, scope and PAR
  - RoE tunneling mapper
  - Background, realization, management
- There was a discussion on the need to speed up the work progress in order to meet the schedule as it was initially planned. One proposal was to maybe consider not to work on control protocol for configuration nodes and assume manual configuration. Group will need more discussion on this.

## **28. WG closing report**

- G. Kramer, ANWG Chair, presented a high level summary of the work achieved during this meeting ([\*anwg\\_1512\\_closing.pdf\*](#)).
- **Motion #15**  
*In Motion 7, replace the filename **rmtf\_1512\_mrdb\_1904\_1\_20151217.pdf** with*  
[\*rmtf\\_1512\\_comments\\_1904\\_1\\_approved.pdf\*](#).

*Moved:*

*Seconded:*

*(Technical, Required  $\geq 2/3$ )*

The quorum was lost, so the motion was not entertained. The chair will conduct an electronic vote on this motion.

- The WG chair will do a Doodle poll to determine the most convenient days for meetings in Europe, Asia, and North America.
- **Straw Poll #1:**  
*I will be able and willing to travel to London, UK for the 1904 ANWG April/June 2016 meeting*

*Yes: 12*

*No: 0*

- A rough timetable for the 2016 meetings was given as part of the exercise to avoid as much as possible conflicts and overlaps with different regional holidays and other major meetings. Precise dates will be sent by ANWG chair.
  - February meeting, 29 February - 4 March / teleconference meeting.
  - April, towards the end of the month
  - June, second half of the month
  - August, second half of the month
  - October, most likely will be a teleconference meeting
  - December, towards the end of the month

## **29. Unfinished business**

- None

## **30. New business**

- None

## **31. Motion #16**

*Adjourn the meeting*

*Moved: Kevin Bross, Intel*

*Seconded: Raz Gabe, PMC-Sierra*

*(Procedural,  $> 50\%$ )*

*Motion passed by voice vote without opposition*

The WG adjourned at 15:56pm.

## **Attendance Record**

<b>Last Name</b>	<b>First Name</b>	<b>Affiliation</b>	<b>Attendance</b>		
			<b>Tuesday, December 15, 2015</b>	<b>Wednesday, December 16, 2015</b>	<b>Thursday, December 17, 2015</b>
Bajwa	Yasser Kilde	Hon Hai Precision Ind. (Foxconn)	<b>X</b>	<b>X</b>	<b>X</b>
Bross	Kevin	Intel Corp.	<b>X</b>	<b>X</b>	<b>X</b>
ElBakoury	Hesham	Huawei	<b>X</b>	<b>X</b>	<b>X</b>
Gabe	Raz	PMC	<b>X</b>	<b>X</b>	<b>X</b>
Gonzalez	Daniel	Anritsu	<b>X</b>	<b>X</b>	<b>X</b>
Huang	Jinri	CMRI	<b>X</b>	<b>X</b>	<b>X</b>
Knittle	Curtis	CableLabs		<b>X</b>	<b>X</b>
Korhonen	Jouni	Broadcom Corporation	<b>X</b>	<b>X</b>	<b>X</b>
Kramer	Glen	Broadcom Corp.	<b>X</b>	<b>X</b>	<b>X</b>
Krasniqi	Xhafer	NEC	<b>X</b>	<b>X</b>	<b>X</b>
Maiden	Richard	Altera	<b>X</b>	<b>X</b>	<b>X</b>
Suzuki	Ken-Ichi	NTT Corporation	<b>X</b>	<b>X</b>	<b>X</b>
Tucker	Ryan	Charter Communications	<b>X</b>	<b>X</b>	<b>X</b>
Tumber	Perminder	Xilinx	<b>X</b>	<b>X</b>	