

# 2020-12-02 5G-xHaul Meeting notes

## Date

02 Dec 2020 | 6am PST | 6am EST | **10:00 UTC** | 11:00 CET | 12:00 EET | 15:30 IST | 18:00 CST | 19:00 JST |

Web Conference:

<https://thorsten-heinze-telefonica-de.webex.com/join/andreas.lattoch.external>

## Attendees

- Alex Stancu
- @Andreas Lattoch ★
- Alok Surve
- Daniela Spreafico ★
- Danilo Pala ★
- Daniel Perez Calvo ★
- Andrea Delmonte ★
- Eduardo Yusta ★
- Hubing
- Hsudarsa
- Jorge Lopez
- Istvan Vencz ★
- Jasper Yang
- Leo
- Ma Yong
- Michael Binder ★
- Nader Zein ★
- Paul Parva
- Pawel Krecicki
- Petr Jurcik
- Prathiba ★
- Roberto Servadio ★
- Shuzhan
- Thomas Seitz
- Tian Zhu
- Thorsten Heinze ★
- Yossi ★
- Zhang Dong
- Martin Skorupski ★

## Info to:

- Tracy Van Brakle

## Goals

- going forward

(please feel free to correct and update your names 😊 Thank you very much!!!)


## Discussion items

Time	Item	Who	Notes
00:00	chair topic		no update
00:00	Admin		<b>Next meetings</b>  2020-12-02: <a href="#">Thorsten Heinze</a>  2020-12-09: <a href="#">Martin Skorupski</a>  2020-12-16: ???  2020-12-23: ???
00:05	INFO: Demo Day	<a href="#">Martin Skorupski</a>	2020-12-03 16:00 CET- 18:00 CET  Joint PoC "Proof of Concept" O-RAN/OSC/ONAP  ZOOM session: <a href="https://zoom.us/j/436210993">https://zoom.us/j/436210993</a> ; Note that Zoom is being used to accommodate participants from O-RAN member companies who have LFN credentials but may not have (may not need) O-RAN Atlassian accounts.  O-RAN-SC: C-Release: <a href="https://wiki.o-ran-sc.org/x/D4w_AQ">https://wiki.o-ran-sc.org/x/D4w_AQ</a>

00:10	In VlanInterface historical-performance-data attribute name to be corrected	<a href="#">Thorsten Heinze</a>	<p>The following issue incl. proposal has been introduced</p> <p><a href="https://github.com/openBackhaul/vlanInterface/issues/24">https://github.com/openBackhaul/vlanInterface/issues/24</a>.</p> <p>Decision has been scheduled for 9th of December.</p>
00:25	Firmware	@Eduardo Yusta	<p>Eduardo explained his proposal about how to describe firmware (<a href="https://groups.google.com/a/opennetworking.org/g/wireless-transport/c/3BJHnPa5PRU">https://groups.google.com/a/opennetworking.org/g/wireless-transport/c/3BJHnPa5PRU</a>) and addressed a couple of questions to the vendors.</p> <p>Vendors gave details about their implementations.</p> <p>Thorsten explained two different ways of modeling Eduardo's proposal.</p> <p>AP <a href="#">Thorsten Heinze</a>: List attributes in Excel and send Excel to vendors to mark supported attributes.</p> <p>AP all vendors: Respond until Monday e.o.b. so discussion about way of modelling can be continued on Tuesday 8th of December</p>
	End of the meeting		
	Discussions to be continued:		
00:00	VLAN FC creation	<a href="#">Thorsten Heinze</a>	<p>Creation of objects</p> <p>S1 use case</p> <ul style="list-style-type: none"> <li>▪ new VLAN must be configured</li> <li>▪ VLAN FC needs to be created</li> <li>▪ generation of IDs for local-ids and uuids</li> <li>▪ Up to know the idea is that the Device is the master of object identification <ul style="list-style-type: none"> <li>▪ main reason: mediator alignment/synchronization with the device</li> </ul> </li> <li>▪ Process <ul style="list-style-type: none"> <li>▪ first LTP for VLANs must be created with a given identifier</li> <li>▪ second FC for VLAN is created with a given identifier</li> </ul> </li> <li>▪ minimum requirement for FC(VLAN)-uuids <ul style="list-style-type: none"> <li>▪ unique within the <del>ForwardingDomain(VLAN)</del> device</li> </ul> </li> <li>▪ 3 proposals by E// <ul style="list-style-type: none"> <li>▪ <b>VLAN-ID FC identifier</b> <ul style="list-style-type: none"> <li>▪ drawback - same id for different object times (not universal unique) - unique "only" per device/object-type <ul style="list-style-type: none"> <li>▪ so not a big limitation</li> </ul> </li> <li>▪ <b>specific pattern</b> for identifier values, to indicate that the server will later sign the final value <ul style="list-style-type: none"> <li>▪ Example: :NEW:</li> <li>▪ NetConf client needs to accept in the response a different identifier at least must re-synch</li> <li>▪ Similar tasks expected for the NetConf Server</li> <li>▪ netconf:merge vs netconf:create <ul style="list-style-type: none"> <li>▪ in both cases the identifier must be given</li> <li>▪ NetConf server will use the given identifier <ul style="list-style-type: none"> <li>▪ seems to be impacting NetConf Server Platform implementations</li> </ul> </li> </ul> </li> </ul> </li> <li>▪ Define a specific <b>VLAN-FC-Creation RPC</b> Action <ul style="list-style-type: none"> <li>▪ RPC for entire object creation (except the identifier) <ul style="list-style-type: none"> <li>▪ Device can then define the final identifier</li> <li>▪ Object Creation Notification required for the VLAN-FC (as in all other cases too)</li> </ul> </li> <li>▪ two procedures <ul style="list-style-type: none"> <li>▪ create <b>empty</b> FC first, then add later the interfaces references</li> <li>▪ give interface reference as property to the creation RPC</li> <li>▪</li> </ul> </li> <li>▪ Alternative: RPC to get the next valid identification value <ul style="list-style-type: none"> <li>▪ function generateVlanFCuuid( parameter: vlanId )</li> </ul> </li> </ul> </li> </ul> </li> </ul> <p>new proposal by SIAE:</p> <p>In order to provide to the application the "next" uuid an option could be the following:</p> <ol style="list-style-type: none"> <li>1) Add in the model in the section "status" the "next-uuid" parameter</li> <li>2) In case this "next-uuid" is influenced by some value: add in the section "configuration" the corresponding "influencer" values</li> </ol> <p>i.e. with reference to the VLAN creation, in VlanFd we could have something like:</p> <ul style="list-style-type: none"> <li>- In section "configuration": "next-vlan-fc-vlan-id"</li> <li>- In section "status": "next-vlan-fc-uuid"</li> </ul> </li></ul>

00:00	Issues in General	Thorsten Heinze Martin Skorups ki	INFO: <a href="https://github.com/openBackhaul/core/wiki/summary-of-issues">https://github.com/openBackhaul/core/wiki/summary-of-issues</a>
00:00	Firmware	@Eduar do Yusta	<p>Use case discussion challenging the model proposal:</p> <p>Please see updated slides (thanks Eduardo).</p> <p><a href="https://wiki.opennetworking.org/download/attachments/265093121/201102-TEF-working-document-FirmwareModeling.pptx?api=v2">https://wiki.opennetworking.org/download/attachments/265093121/201102-TEF-working-document-FirmwareModeling.pptx?api=v2</a></p> <p>Feedback from vendors:</p> <ul style="list-style-type: none"> <li>• working assumption: (running) Firmware pointing to (actual) Equipment <ul style="list-style-type: none"> <li>• assumption <ul style="list-style-type: none"> <li>• 2 banks (logical structure of firmware) <ul style="list-style-type: none"> <li>• on running bank list of firmware <ul style="list-style-type: none"> <li>• some of the unused those wont have an associations to (actual) Equipment</li> </ul> </li> </ul> </li> <li>• Question: is the "top-level" firmware a "bank"? <ul style="list-style-type: none"> <li>• software packages 1 and 2 bank 1 and 2 or active/inactive top-level firmware.</li> <li>• Consideration: firmware without software package</li> </ul> </li> </ul> </li> <li>• SIAE: option to implement in addition also pointer from Equipment to Firmware</li> </ul> </li> </ul> <p>Firmware inventory</p> <ul style="list-style-type: none"> <li>▪ UML and yang creation</li> </ul> <p>Firmware operations</p> <ul style="list-style-type: none"> <li>▪ download, activation, upgrade, downgrade</li> <li>▪ terms and definitions, needed before UML and yang</li> </ul>
00:00	Reboot	Martin Skorups ki	<p>As a result of the discussion about Firmware, their might be a need for a "restart" trigger.</p> <p>The "software activation trigger" usually also leads to a "restart" but with new software, which a "restart" reboots using the currently running software.</p> <p>Other terms for the same? or similar? function:</p> <ul style="list-style-type: none"> <li>▪ cold start (Power down, power up; traffic loss for sure)</li> <li>▪ warm start (restarting software - may have - may not have traffic loss)</li> <li>▪ <del>reboot</del> - this term should not be used as it is not clearly defined/used</li> </ul> <ul style="list-style-type: none"> <li>▪ (factory) reset (configuration is lost) - not a field/remote-controller operation LCT operation should not be covered in your API models</li> </ul> <p>Questions:</p> <ul style="list-style-type: none"> <li>▪ Is a "cold start/warm start" trigger beneficial on ControlConstruct level only?</li> <li>▪ Is a "cold start/warm start" trigger beneficial on Equipment level only? There are devices offering such options:</li> <li>▪ both?</li> </ul> <p>General reboot</p> <ul style="list-style-type: none"> <li>▪ cold start / warm start on device level</li> </ul>

	@Eduardo Yusta	License Management	<p>Questions:</p> <ul style="list-style-type: none"> <li>• Are License be updated during life time of the device? <ul style="list-style-type: none"> <li>• Answer: yes - there are such cases, particularly for feature enhancements or for later enabling a license - xPIC may come later, when the second link is deployed.</li> </ul> </li> <li>• Understanding association between License Firmware, LTP, Hardware, Features/Function?</li> <li>• Do all devices require a license?</li> <li>• Is a "feature-key" a "License" - from functional point: yes</li> <li>• What kind of License types needs to be supported - Software, Hardware, Interface, LTP, Capacity, Features, Function, .... <ul style="list-style-type: none"> <li>• Frist idea: focus on interface-capabilities</li> </ul> </li> </ul> <p>First proposal:</p> <ul style="list-style-type: none"> <li>• ControlConstruct <ul style="list-style-type: none"> <li>• LicenseList <ul style="list-style-type: none"> <li>• License <ul style="list-style-type: none"> <li>• Name</li> <li>• Type</li> <li>• Description</li> <li>• key (value; hash to be checked against, ...)</li> <li>• additional-configuration - (e.g. max capacity is xyz MBit/s)</li> <li>• State: activated; expired, no-active, ....</li> <li>• pointing to "something"</li> </ul> </li> </ul> </li> </ul> </li> </ul> <p>2020-11-18</p> <ul style="list-style-type: none"> <li>▪ further introduction of the last slide: <a href="https://wiki.opennetworking.org/download/attachments/265093121/201102-TEF-working-document-FirmwareModeling.pptx?api=v2">https://wiki.opennetworking.org/download/attachments/265093121/201102-TEF-working-document-FirmwareModeling.pptx?api=v2</a></li> <li>▪ collection of ideas / use cases driving a model are ongoing.</li> </ul>
00:00	PureEthernetStructure, HybridMwStructure	Daniela Spreafico	<p>Please see <a href="#">email_</a></p> <p>Please see related issues:</p> <ul style="list-style-type: none"> <li>• <a href="#">PureEthernetStructure #19</a></li> <li>• <a href="#">HybridMwStructure #22 (alarms)</a></li> <li>• <a href="#">HybridMwStructure #19 (currentPerformance)</a></li> <li>• <a href="#">HybridMwStructure #18 (PM types)</a></li> </ul> <p>Please confirm by email to <a href="#">Martin Skorupski</a> by end of this week (Nov6) that keeping FM and PM for xyzStructure is ok?</p> <p><b>Status:</b> positive feedback to keep it as it is:</p> <p><b>Decision:</b> we keep xyzStructure as they are and close the issues above.</p>
00:00	Centralize RMON counters	Roberto Servadio	<p>RMON counter</p> <ul style="list-style-type: none"> <li>▪ RMON counter in ETH-Container, while others are in MAC-Interface</li> <li>▪ Open question: Where centralize the RMON counter</li> <li>▪ Working assumption: All RMON counters should be part of the EthernetContainer_PAC (Status and PerformanceMonitoring)</li> <li>▪ Next Step: <ul style="list-style-type: none"> <li>▪ update related ETH and MAC issues in OpenBackhaul for final proposal</li> <li>▪ AI <a href="#">Martin Skorupski</a> consolidate proposed solutions</li> </ul> </li> </ul> <p>Update:</p> <p>Support is welcome to consolidate with respect to RMON</p> <ul style="list-style-type: none"> <li>▪ <a href="https://github.com/openBackhaul/ethernetContainer/issues">https://github.com/openBackhaul/ethernetContainer/issues</a></li> <li>▪ <a href="https://github.com/openBackhaul/macInterface/issues">https://github.com/openBackhaul/macInterface/issues</a></li> </ul>

00:00	Layering discussion (FCs, FDs etc.)	Thorsten Heinze	<ul style="list-style-type: none"> <li>• Will publish in wiki the latest slide which is the result of discussions:</li> </ul> <div data-bbox="667 184 1170 684" style="border: 1px solid gray; padding: 10px; text-align: center;">         slides to be published.pptx     </div> <ul style="list-style-type: none"> <li>• link to the contribution: <a href="#">2020-09-16 5G-xHaul Meeting notes</a></li> <li>• Continue discussion from last week</li> <li>• Question:       <ul style="list-style-type: none"> <li>• 1x VLAN FD and 2x VLAN FC           <ul style="list-style-type: none"> <li>• Impact on MAC interfaces</li> </ul> </li> </ul> </li> <li>• 1:1 between VLAN-IF-LTP and EthernetContainer-LTP</li> <li>• 1x physical only one MAC-Interface?</li> <li>• MacSwitch attributes: mac-address-learning, aging-time - are such attributes sufficient to instantiate a new FD/FC objects.</li> <li>• MacFC could give a better overview - further clarifications</li> </ul> <p>Agenda: 2020-09-30</p> <p>Discussion and agreement about the following proposal:</p> <ul style="list-style-type: none"> <li>▪ <a href="#">Link to email with the proposal</a></li> </ul> <p>Discussion</p> <p>The following aspects are proposed to be decided by the 5G-xhaul subproject.</p> <ul style="list-style-type: none"> <li>- The ForwardingDomain shall be interpreted as a Potential for Forwarding (e.g. SDH Matrix).  <a href="#">[sko] Potential: something which allows the creation of "forwarding" based in the FD:LTP</a></li> <li>- The ForwardingConstruct shall be interpreted as an Actual Forwarding (e.g. Connection between two VC-12 endpoints at the SDH Matrix).  <a href="#">[sko] Actual: configured Forwarding – check operational states and traffic flow</a></li> <li>- There might be 0 .. * ForwardingConstructs inside a ForwardingDomain.  <a href="#">[sko] ok</a></li> </ul> <p>Discussion on dependencies between LTPs, FD, FC and between the layers will continue...</p> <p>Agenda: 2020-10-07</p> <ul style="list-style-type: none"> <li>▪ Last week we started discussing a HUB presentation using FD and FCs: but there are several ways to represent a HUB: Depending on the chosen representation there are different consequences. ... (see attachment: <a href="#">link</a>)</li> </ul>
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Action items