

# SIG-PVM Meeting

Thursday, 03.11.2016

Location: SWITCH, 1st Floor RIGI

Program and details: <https://wiki.geant.org/display/PMV/SIG-PMV+Meeting+@+Zurich+2016>

Remote-Access Link (Vidyo): <https://goo.gl/oNNHdR>

F2F Attendees	VC Attendees
<ul style="list-style-type: none"><li>• Richard H-J - GEANT</li><li>• Antoine Delvaux - PSNC</li><li>• Hank Nussbacher - IUCC</li><li>• Tim Chown - Jisc</li><li>• Eli Beker - IUCC</li><li>• Ivan Garnizov - FAU/DFN</li><li>• Miguel Angel Sotos Rodriguez - RedIRIS</li><li>• Pavle Vuletić - AMRES</li><li>• Robert Stoy - DFN</li><li>• Indrek Rook - EENet/HITSA</li><li>• Darren Clarke - GEANT</li><li>• Oleg Nosylovsky - UIIP NASB / BASNET</li><li>• Uladzimir Nozik - UIIP NASB / BASNET</li><li>• Alan Buxey - Loughborough University</li><li>• Susanne Naegele-Jackson - FAU</li><li>• Duncan Rand - Jisc</li><li>• Olav Kvittem - UNINETT</li><li>• Chris Welti - SWITCH</li><li>• Wim Biemolt - SURFnet</li></ul>	<ul style="list-style-type: none"><li>• Yehavi Bourvine - IUCC</li><li>• Eimantas Šerpenskas - Litnet</li><li>• Sylvia Kuijpers - SURFnet</li><li>• Veronique Lefebure - CERN</li><li>• Emanuel Massano - FCT FCCN</li><li>• Kurosh Bozorgebrahimi - UNINETT</li><li>• Brian Mortensen, NORDUnet</li></ul>

The SIG-PMV meeting was passed as a workshop on Performance Monitoring and Verification topics focusing on research, academic ICT's and the Industry as the target audience. Referring to the [AGENDA](#) contributions were presented on Connectivity Fault Management (CFM), Wireless Crowdsourced Performance Monitoring and Verification (WCsPM&V), on the optical layer PM in the optical/DWDM domain, Micro Dependability Measurement, with RedIRIS on their performance and monitoring tools for Universities and research center, an inside view of perfSONAR (pSmall nodes GEANT project) and Wireless Performance fundamentals in the LAN environment.

Further there was a lively discussion based on the [Survey](#) results. Survey rationals can be summarized as the [SIG-PMV](#) was formed recently; one early activity is to get a feel for the PMV landscape in "the community"; thus issued a fairly light and informal survey to get some initial input; complements information from the recent [SIG-NOC](#) tools, which was much broader in the scope of all tools used and presented results here (a little selectively).

Main subjects, addressed in the discussion are listed below:

- **End-Users, Universities:** How “happy” is a university, focus PM&V ⇒ a Quality statement, a statement on the strategy layer with focus how the network should be build in the future?
- **PM&V Capability** - So the question is finally, how many FT’s are defined for network PM&V. Do we talk about outsourced PM&V, support of professional organizations means a dedicated department covering network performance issues and providing PM&V services, which is asking about the right metrics, a QoS or OLAs/SLAs, or is it only on Best efforts means a part of the daily work of the NOCs?...
- **PM&V Metrics** - mostly Jitter and/or packet loss? So we have to ask what we might to measure and what is the “right” metric: Which metric is useful?... e.g. does it really make sense to measure throughput (BW)...it concludes then does a QoS/SLA is really needed, or does it be enough to stay with “overprovisioning of the network”? In this context of the right metric PM&V is a strategy gap ⇒ Should the network capacity be optimized or a priori overprovisioned?...Looking from the end-user perspective, should it be in the end-users’ responsibility to use/aggregate raw data from a tool kit and to visualize it...(give the end-user features) ?
- **PM&V Methodology** - Connectivity Fault Management (CFM) is definitely something that would help the NOCs - implementation form, configuration on use cases - many use cases are there. Further Alien Wavelengths is of NRENs interests.
- **PM&V Services** - The focus # of services was discussed on - Wireless comes up stronger and HPC - Building Performance Monitoring Information, where needed network (test environment) environments should be available ⇒ GEANT GTS?
- **PM&V Community Support** - Helping user communities should focus NOCs / NREN’s / Science by introducing e.g. SDN (not concretized), Script factories etc. As a consequence from this the audience asked is monitoring measurements, and security in a BOX useful? (e.g. pSmall node project)...However all mentioned aspects should simplify, make secure measurements and deliver (new) features...In the context of helping communities a single vendor care on the campus would make the future difficult as this would be more and more the case (so how flexible are universities anymore using Open Source software?). In context of Community Support there was a discussion: **How we can do PM&V better at the NREN’s level:**
  - Could this be solved by a PMV-Architecture as deployed on the GEANT project JRA1T3? Further how to provide Network services, where an architecture means to measure/create SLAs and deliver a statement to Network Quality Assurance (QoA).
  - Methodology of measurement --- single point to multipoint
  - A challenge - measurement below the network

- **PM&V Activities** - So how to get information on ongoing activities focusing PM&V. Into GEANT, NA3 is collecting information on international level. So helpful to know is:
  - Where (NRENs, Research projects...) people are working on PM&V topics
  - Focus on particular topics on PM&V, basics, Best Efforts from the NRENs
  
- **Other tools** - The scope of PM&V should also include other tools, that means investigation on existing tools so that a framework (architecture) in PM&V could be established (e.g. measurement mesh on pS) or building their (own) tool (stitching known technologies with extended functionality) or based on expertise from scratch, a new one. Make or Buy was not explicitly a part of the discussion. However, output of all activities should be efficient - Recommendation: Working toward tool developments, where we have to figure out which features are important, so that they can be prioritized in the road map (e.g. GEANT pS with Internet2). Finally a list of prioritized features should be the outcome. Further a concrete statement come up to use NetFlow statistics, tap the fibre and send all the micro flows to the appliance; so passive monitoring optical by SNMP and active monitoring by ping.
  
- **Open Software Interface** - To establish Open Software Interface, API's so that the NRENs (NOCs) are able to aggregate individually collected measurement data, according to their needs and on top of that to have a tool in place which allows data research and analysis of the collected raw data basis. In this context there were also statements to Open Source Analytic Software as CISCO, IBM, etc.
  
- **Training** - A clear statement, to organize training sessions is essential. Further should we define the term training - is training=defined clear objectives ⇒ a (given) clear output or should a new form be elaborated?...Looking to statements from "other tools" the recommendation would be essential for growing up (deployment) and to introduce a training on prioritized features. The need of training purposes should be evaluated by working towards tools (this is possible at the eduPERT task...).
  
- **Meeting Format:** A discussion come up asking the form of the SIG-PMV meeting - in the earlier stage, in the eduPERT task, participants introduced their own use cases (max. 15 Min) presentation, and how the case would be solved by the NRENs. Discourse on the mailing list - before hand and lessons learned was the communication within the task.

Host of the next SIG-PMV and further plans on PM&V:

- SIG-PMV in Amsterdam - regular yearly event
- At TNC2017 an eduPERT training session.
- At TNC2017 a PM&V session (suggestion)
  - Why PM&V ⇒ QoS ⇒ SLA
  - PM&V - Methodology: What we might to measure
  - PM&V - Feel the community pulse on PM&V

- PM&V - What's about verification or what is the implication of performance monitoring to verification