**Notes from the**

**GNA-G Community VCs**

**Q3 2020**

(version 0.1 - DRAFT)

These are the preliminary notes from VC #1 Monday, 14 September 2020 2pm – 4pm UTC

Number of participants in the Zoom call:

VC #1: Max. 61 participants, sustained 58

Agenda and links to the pre-recorded updates from the Working Groups:

<https://www.gna-g.net/attend-a-meeting/gna-community-vcs-2020q3/>

**1. Opening & Welcome – Gerben 5’**

Gerben opened the call at 2pm UTC, and welcomed all. He introduced the agenda for the meeting, and explained that the updates from the existing Working Groups were done through a pre-recording, to safe time in this 2-hour VC. The Community VCs should have ample time for feedback and discussion. Please raise your “virtual hand” (feature in Zoom) or use the Zoom chat.

**2. Setting the scene by Jim Ghadbane (President and CEO, CANARIE) 10’**

GNA-G, the Global (R&E) Network Advancement Group, was created with the merger of the GNA Technical WG and GLIF, in 2019. Jim Ghadbane, President and CEO at CANARIE, and former co-chair of GLIF, has the inaugural role as Executive Liaison for GNA-G.

**3. Updates from the GNA-G Leadership Team – Gerben 15’**

Gerben presented a number of updates from the GNA-G Leadership Team using slides:

<slides>

Questions & Discussion (Live and Chat):

* Jennifer Schopf: Will there be charters written for the existing working groups? Answer Gerben: Yes, the Leadership Team is working with the Working Group co-chairs to get them approved.
* Jennifer Schopf: TransPAC and NEAAR will receive funding for prolonging the connectivity between the USA and the Asiapacific region and the USA and Europe. Tenders are now out. More information soon.
* Harvey Newman: CENIC is completing the upgrade their 400G.
* Lawrence Wong: SingAREN is retendering 100Gs on Singapore – Japan and Singapoer – USA.
* Erik-Jan Bos: The retendering of the Northern ANA 100G link between Amsterdam and Montreal is almost done. Major takeaway is that we are moving away from the retail market into the wholesale market, so towards an IRU.
* David Wilde & Steve Maddocks: AARNet is running the Sydney-Canberra production leg (286 kms) of our network on a 400G wavelength now.
* Last week Ciena released a new 800 Gb/s path in Canada: [www.ciena.com/insights/articles/ciena-and-telus-bring-800g-to-canada-break-worldwide-transmission-record.html](http://www.ciena.com/insights/articles/ciena-and-telus-bring-800g-to-canada-break-worldwide-transmission-record.html)
* Rob Vietzke: Internet2 are deploying 400-800G line side waves. Still waiting on hardware and enabling software for client-side 400G.In July 2021, we expect our new 400G network to go live. Automation is high on the agenda. New software team: 5 people assigned to this.

**4. Network Automation – live presentation by Warrick Mitchell 20′**

Warrick Mitchell introduced the Network Automation Working Group, that recently started, using slides:
<slides>

Questions & Discussion (Live and Chat):

* Ivana Golub: In the GÉANT Project Work Package 6 we are working on similar things:
	+ <https://wiki.geant.org/display/OAV>
	+ <https://wiki.geant.org/download/attachments/123792049/Orchestration%2C%20Automation%20and%20Virtualisation%20Terminology.pdf?version=1&modificationDate=1587389912527&api=v2>
* Rob Vietzke: The Internet2 team is in the middle of this work as well, internal automation first, then stepping up towards APIs supporting external services (including cloud connect).

Warrick asked what should remain out of scope?

Harvey Newman: If you want to integrate with science installations, the tools discussion is important. Three flavors:

1. A compelling tool, everyone wants to adopt,
2. Tool is already there, and you make an API,
3. Tools have a different working context and to make them work together, you create an abstraction layer.

**5. Theme discussion 40’**

**a) How can we best support commercial cloud access (network aspects) – David 20’**

David introduced the topic using slides:

<slides>

Questions & Discussion (Live and Chat):

The gloom and doom of cloud for the NRENs: Threat or opportunity?

* Eli Dart: I think the compute centers would go first, if this would happen. But we are determining the topology of the network, as we know where the data streams are.
* Mark Wolff: 5G is also real estate play, for the antennas. No one player is going to dominate the market. It is not a threat; but we will have to work with them. I think that campuses should be investing in 5G towers, to allow for interoperability. Do not become a testbed for one vendor. The cost will be too high to move to another. Same for cloud: We have to work with cloud compute solutions, as well.
* Harvey Newman: This comes back to the budget. Applications that are compute intensive, and do not move a lot of data. For storage there is no comparison. The cost for storage is way to high with the cloud providers. Networking, getting your data out, is still also very high cost. The question is: Can we change their business models? So far this is not happening.
* David Wilde: At AARNet, we are developing a SOC. This involves a lot of storage and processing. We are running this on AWS today, and we are going to run this on-prem. Otherwise way too expensive.
* Lars Fischer: The cloud providers are a threat, but they are not going to kill everyone. The kind of services for high end will remain for sure. In Europe, there is a tradition for NRENs to serve all users with all their needs. A lot of those are questioning: Can I buy this from a cloud provider. We risk that the NRENs are serving only the CERNs and SKAs and some big universities. This means that we are left only with the power users. This will have an impact on our scaling and on political status. If we lose the long tail of science, we might end up being not efficient.
* David: It is important for the NRENs that we need to address the long tail as well.
* Eli Dart: Yes, especially the socio-political angle is important.

**b) Understanding demands from advanced science & research – Buseung 20’**

Buseung introducing the discussion on the demands from advanced science and research, using slides:

<slides>

Chat:

* Carina Kemp: I see the challenge is over the top services to help researchers with their research data movement, orchestration and general management.
* Jennifer Schopf: Wearing my Engagement Center hat, we talk to researchers on campuses, across fields, and the biggest need they communicate to us is storage. We also help people with end-to-end transfer problems. Most of the time, the problem is within the campus. The big thing we see between institutions is routing errors

(Routing errors == weird asymmetric paths, preference of commercial networks over R&E networks).

* Mark Wolf: There are also advanced services from the Cloud Providers, such as services in data analyses and deep learning. This is “services on top” what they provide and that we provide access to. These are useful for our users.
* Eli Dart: Storage is going to be a significant limiting factor for everyone until we get disruptive technology to change that.

**6. Active discussion on the pre-recordings 25’**

**a) GÉANT: architectures for NREN networks using TMF’s ODA – Maria Isabel Gandia, Sonja Filiposka 5’**

[Orchestration, Automation and Virtualisation (OAV) in GÉANT](https://video.nordu.net/media/Orchestration%2C%2BAutomation%2Band%2BVirtualisation%2Bin%2BG%C3%89ANT%2B%2B%2B-%2BPre-recording%2Bfor%2Bthe%2BQ3%2B2020%2BCommunity%2BVCs/0_lytwfx52) – Maria Isabel Gandia, Sonja Filiposka 19′

**b) GREN Mapping WG – Ryan Davies 5’**

[Update from the GREN Map Working Group](https://video.nordu.net/media/GREN%2BMap%2BWG%2B-%2BPre-recording%2Bfor%2Bthe%2BQ3%2B2020%2BCommunity%2BVCs/0_3vfxv31i) – Ryan Davies 9′

Questions & Discussion (Live and Chat):

* Gerben: Should we go beyond plotting the network maps, e.g., also science instruments?
* Ryan: Good idea, the architecture surely allows for it.
* Jennifer: We created a science registry.
* Ryan: Happy to talk further and integrate.
* Lars: If you have the data, the meta data will be really helpful. We need to think about security concerns and privacy concerns. Other than that, there are no constraints.
* Ryan: Security is surely on our minds. We are going through the recommendations, so everyone who share thjeir data can make good decision.

**c) AutoGOLE/SENSE WG – Gerben van Malenstein 5’**

[Update from the AutoGOLE/SENSE Working Group](https://video.nordu.net/media/GNA-G%2BAutoGOLE%2BWG%2B-%2BPre-recording%2Bfor%2Bthe%2BQ3%2B2020%2BCommunity%2BVCs/0_hlh8twrd) – Gerben van Malenstein 7′

**d) Offshore Students WG – David Wilde 5’**

[Update from the Connecting Offshore Students Working Group](https://video.nordu.net/media/GNA-G%2BConnecting%2BOffshore%2BStudents%2BWG%2B-%2BPre-recording%2Bfor%2Bthe%2BQ3%2B2020%2BCommunity%2BVCs/0_hartaamm) – David Wilde 9′

**e) Data Intensive Science WG – Harvey Newman 5’**

[Update from the Data Intensive Science Working Group](https://video.nordu.net/media/GNA-G%2BDIS%2BWG%2B-%2BPre-recording%2Bfor%2Bthe%2BQ3%2B2020%2BCommunity%2BVCs/0_kx5gafr8) – Harvey Newman 40′

**7. Announcement of next VCs and closure – Gerben 5’**

Gerben thanked all participants for their active participation in the VC. A special thanks from the Leadership Team, on behalf of the GNA-G Community, goes to Maria, Sonja, and Ryan for pre-recording their Working Group updates.

The next GNA-G Community VCs are scheduled to take place on:

* 7 December 2020 from 3pm to 5pm UTC
* 8 December 2020 from 8am – 10am UTC

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