GREN Map Working Group Meeting

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| **Date:** | Monday, 3rd March 2025 | |
| **Location:** | Online | |
| **Participants:** | Steve Maddocks | AARNet |
| Dan Sellars | CANARIE |
| Mark Wolff |
| Tom Vitez |
| Joe Topjian | Cybera |
| Alex Ray | ESnet |
| Keith Slater | GÉANT |
| Tom Fryer |
| Chistopher Walker | Jisc |
| Ian Nightingale |
| James Earl-Fraser |
| Tom Chown |
| Erik-Jan Bos | NORDUnet |
| Lars Fischer |
| Gustavo Araújo | RNP |
| Marcos Schwarz |
| Arno Bakker | SURF |

# Meeting Notes

* This was the first meeting of the GREN Map Working Group for some time. The purpose was to provide an update of the status of the work carried out, and discuss the future of the group.
* The meeting was chaired by Tom Fryer (GÉANT) and Mark Wolff (CANARIE).
* Tom Fryer started the meeting by welcoming the participants and giving a brief history of the working group:
  + The GREN Map work was initiated in 2016 following the recommendation by the CANARIE CEO, with the aim of setting up an infrastructure for REN topology data to be shared an REN maps, including a full global visualisation could be made. This would include national and sub-national backbones, as well as world regional and inter-continental links.
  + CANARIE started by leading the technical development of the solution, with contributions from other RENs, including RNP and GÉANT.
  + Promotion of the map has been carried out but global buy-in has not yet been achieved. It is to be noted that some NRENs are small and therefore have limited, if no resources, to be able to participate or even contribute network data.
* Mark Wolff (CANARIE) then provided an update from the CANARIE perspective via a PowerPoint slide deck.



* + From the CANARIE perspective the initial goal was to establish a national map. Work focused on the data structure and in 2021 a first demo was given at TNC.
  + Subsequently, a minimal viable product release was developed and made available in by September 2023, with a visualisation of a Canadian map. It should though be noted that of the 14 partners in the Canadian NREN (i.e. CANARIE and the territorial/provincial RENs of Canada), only eight provided data for the map. CANARIE has not made the Canada map public as not all Canadian backbones have provided their data and so the map view is not consistent for the whole country.
  + The current status is that there is a production hardened software, that does what it is supposed to do, built around has containers. The same model as used for Canada’s national map can be used to extend to an international deployment. The software is available, but networks need to provide their own data and then ensure that the data is kept up-to-date.
  + There have since been no further developments by CANARIE. Furthermore, there have been changes in CANARIE personnel, specifically, Ryan Davies, who was on the development work, has now moved to cybersecurity at CANARIE.
  + In consequence, the software is operational and patched but CANARIE is now putting minimal effort into this. CANARIE is ceasing leadership on the technical development. Cybera have agreed to take over maintenance and patching as they are using the map for their own purposes. Consequently, if a REN wants to use this to create its own map, the software is there and can be used.
  + For the map to go to the international level, a number of elements need to be taking into consideration:
    - A hosting environment is needed for the containers to host data, as it is unlikely that many RENs will deploy their own containers (e.g. there have been no significant requests for the software since it was released.). Note that CANARIE have provided the container for the Canadian map, the partners have only had to provide the network data.
    - Marketing – there has been promotion, e.g. at TNC (on numerous occasions). There has been some interest, but not substantial. So marketing is needed to sell the value of the map. (Mark noted that there is more ability as a group to do the technical side of things, but less on marketing.)
    - Documentation on the data model is required, in order to describe what and how the data needs to be provided.
    - Ongoing technical support will be needed.
* A general discussion followed with focus on the following points:
  + Use cases:
    - The original use case was one of marketing, i.e. to be able to demonstrate the reach of R&E connectivity from one institution to another, across national and international links.
    - There could be technical use cases, e.g. for trouble-shooting, a perfSONAR map, traffic flows. The tech in the background could be used to map data.
    - The My ESnet portal is an example of something already in production.
  + Data collection/provision:
    - The CANARIE data is held in a spreadsheet, and is provided manually.
    - Some NRENs are small and have limited or possibly no resources to focus on map efforts. There could be resource issues at larger RENs as well.
    - RNP note that they have developed their own map for three NRENs and RedCLARA in Latin America. This is a model (like CANARIE of one party helping on the technical side with the provision of the container, and hosting data provided by others).
    - Historically, RENs have shown link capacities on maps. This is something that might be worth discussion – is it still appropriate today?
  + Marketing:
    - There is not an understanding of why only limited RENs have engaged with the GREN Map initiative, i.e. what are the reasons for some not engaging (not having sufficient resources, not relevant for their purposes, etc.?).
    - There are NRENs who publish backbone maps on their websites ([GÉANT Compendium](https://compendium.geant.org/network-map) is a source for European NRENs, the [GÉANT Interactive Map](https://map.geant.org) also includes links where known) . One approach could be to contact these RENs and enquire as to their interest in the GREN Map.
* Next Steps:
  + The group generally sees value in the concept of the GREN Map and there is some interest in it continuing. RNP expressed an interest in contributing to the work.
  + Concrete decisions are now needed for the future direction of the WG.
  + As Co-chairs of the WG to date, both CANARIE and GÉANT feel that new co-chairs would be beneficial to refresh the activities of the group.