# GNA-G NREN Advancement workgroup charter

Workgroup charter: 0.9
Name of workgroup: NREN advancement workgroup
Charter author: Pieter de Boer

## Background

Over the years we’ve been using plain vlan’s to operate links in systems like ANA (Advanced North Atlantic collaboration), AER (AsiaPacfic Europe Ring) and others. Using plain layer-2 vlan’s proofs operational hard. Quite often we ended in very long e-mail threads, if it doesn’t work configuring IP addresses so we can figure out till where we can reach.

In addition there are complaints about a lack of redundancy and on the other hand over and under used links. For instance the ANA links SURF terminates on its open exchange Netherlight in Amsterdam, have in general ample bandwidth available, where for links terminating in GEANT open Paris and London are more heavily used. Or the Sinet trans Siberian circuit through Russia that will likely disappear in AER context, backups have been provisioned via Kaust and are still being worked on after months. We should have sufficient tools today to remove this manual work and pass redundancy questions to automated systems.

## Goal of the workgroup:

The question is how can we advance this? For this we want to establish a new GNA-G workgroup to investigate, test, probe, experiment, learn what could a new technology do and how could it advance our day to day operations. Things that come to mind are multi domain MPLS, combined with Segment Routing or PCE (Path Computation element), or maybe an overall GNA-G orchestrator that talks to all other NREN orchestrators, or even something else. We need to answer as a community what is viable, this could be anything. The suggestions earlier are just what comes to my mind. We need to investigate, experiment, try, learn and gather knowledge what can work. The knowledge we gain should be disseminated to the relevant systems like ANA, AER and others, so they can decide if interested what is the best way forward.

## Contributers

In the last few months I’ve had long discussions at the Nordunet 2022 conference in Reykjavik, as well as during SuperComputing 2022 in Dallas. Networks interested to participate include: Canarie, ESnet, GEANT, Internet2, NEAAR, Nordunet, Sinet, SURF. I expect more will be interested. Note I’ve specifically reached out to ANA partners, right now we’re actively working on better backups. So in that sense it is more relevant. Haven’t reached out to others, but expect participation from other systems around the globe.

## Deliverables

In general we want to deliver knowledge that can be used by respective systems like ANA, AER and likely others how to advance those systems, improve redundancy and more efficient system usage. Timelines for this are totally dependant on the thing we find, the idea that might be proposed to research. In general we shouldn’t be focused on a specific solution, we need to try/research those available, analyse the results and from that also with input from engineering groups determine the path forward.

## Timeline

Start of workgroup early 2023

## Collaboration methods

NREN slack
Zoom/teams
Mailing-list: [gren-engineering-wg@lists.gna-g.net](https://lists.gna-g.net/postorius/lists/gren-engineering-wg.lists.gna-g.net/) / https://lists.gna-g.net/postorius/lists/gren-engineering-wg.lists.gna-g.net/

## Co-chairs

Pieter de Boer (SURF)
Others to be determined