



Value of the GNA

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Internet2



Main Question

- What does the GNA enable you to accomplish that you could not accomplish prior to the GNA principles being defined?
 - This would include the Reference Architecture, OXP Document, Operations document and all of the White Papers.
 - These are all on the gna-re.net web page

Greater Global Connectivity?

- Not really. There is not new GNA specific connectivity being built as a consequence of this work, however the GNA has leveraged existing resources and sparked some new ideas for resources.
 - Examples are Cape Town OXP, Montreal OXP, Cape Town to London and others.
- However a benefit does come from that capacity being better organized and thus more efficient than previously.

Is the existing connectivity better utilized, more rationally employed connectivity

- Yes, this is the case. Greater cooperation between groups with connectivity, and other resources, on similar paths has lead to more deterministic predictable and reliable connectivity on those paths.
 - That is certainly a win.
- It is early in the process of instantiating the GNA, this should only improve.

Documentation

- For resources to conform to the GNA specifications they are required to more completely document their capabilities as well as any limitations or constraints. This will make decisions about what resources to use for any given activity better grounded.
 - More information about paths and resource utilization will make predicting expected performance easier and more accurate.
- Still needs some work on being available and consistent
 - but the specifics of what should be documented are becoming clearer.

Operational Benefits

- Operations centers are very good at managing their own resources. However when uses cross boundaries problem diagnosis and solution can be much harder to manage and complete.
- The GNA work lays a foundation for more effective interaction between NOC's for:
 - Monitoring
 - Troubleshooting
 - Problem Resolution
- It also lays the groundwork for OLA's/SLA's both in the general case and for specific projects.
 - Much of this work is still in process.
 - Look for version 2.0.

Participant Co-operation

- This is a big Win for the GNA activity. The GNA work sets up a model for co-operation between organizations at every level, from purchasing to operations to engineering.
 - This co-operative framework leads to better organized, more efficient network utilization.
- In many cases organizations are spurred to look at intercontinental cooperative arrangements in ways they had not done before.

New Ideas

- The GNA includes an explicit calling out of the network as an Information Commons.
 - This idea has always been implicit in the various instantiations of the R&E internet activity but not recognized as an important feature.
- This feature brings value in
 - Encouraging net neutrality
 - Encouraging new participation
 - Encouraging new research areas
 - Encouraging new connectivity
 - Encouraging new investment.
- For more detail see the white paper on the GNA website.

Next Steps

- The real promise of the GNA is a global structure that fosters better end-to-end connectivity.
- Creating a new normal is the goal.
 - The new normal implies getting performance on a path that is more aligned with the physical capabilities of the path.
 - You should not get 100M on a 100G path!
 - The GNA should enable characteristics like
 - More predictable performance
 - More consistent throughput
 - More resilient infrastructures
 - Easier to diagnose and fix when performance is substandard.

Next Steps

- All of this activity is about creating an environment our members/users will benefit from.
 - Such an environment is a healthy, efficient structure where End-to-End connectivity in fact works in accord with realistic user expectations.