

GMOC and GENI Security Architecture – Joint Effort

The team currently plans to implement attribute-based credential mechanisms to enforce the policies for sharing operational data with the researcher, operators, and the general public. The goal is to leverage the current prototyping work being done at the DETER/TIED cluster to provide seamless GENI security extensions and plug-ins, derived from the SPARTA pre-existing ABAC technology. These will eventually enable the GMOC (and the five control frameworks) to incorporate common security semantics across their respective architectures.

We are also currently discussing the requirements for a policy framework for the security and privacy of measurement data collected by the GMOC project. The GMOC project is focused on gathering operational and experiment data from components, aggregates and their interconnections within GENI to provide information that will aid in management and emergency shutdown functions. We envision during the initial prototyping stages, the security mechanisms for such a data repository will not be as critical, as in most cases it will be generic monitoring data which may not have privacy requirements and could be accessible to everyone in the GENI ecosystem. But as the GMOC starts to monitor and collect data that comes from within experiment slices, we will need to define privacy-of-data and usage policies and the ABAC-based prototype will provide the mechanisms to enforce them. We have already started a discussion on what are the possible implications and requirements to ensure the privacy of such data.

We are currently working with Jon-Paul Herron using the GMOC operation data set (v3.1) and trying to provide operational data from TIED/DETER testbed to test the completeness and effectiveness of the data types defined currently. The data we are trying to provide essentially gives resource availability on the testbed, showing which components are up or down, aggregate network traffic levels and usage levels within the testbed.