**GENI**

Global Environment for Network Innovations

**GENI Research Results Sharing Policy**

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**DRAFT**

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## Document Scope

All individuals participating in GENI experiments should read this policy and ensure that their actions comply with it.

### Purpose of this Document

The purpose of this policy is to communicate common guidelines for sharing information related to experiments including the results obtained from those experiments. GENI participants should follow the guidelines stated in Section 3. Consequences for violating the guidelines are stated in Section 4.

### Context for this Document

Figure 1 shows the context for this document within GENI’s overall document tree.

TODO: Figure here (Not sure where in the tree this document would go)

### Document Revision History

Table 1 provides the revision history for this document, summarizing the date at which it was revised, who revised it, and a brief summary of the changes. The list is maintained in reverse chronological order.

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| --- | --- | --- | --- |
| Revision | Date | Revised By | Summary of Changes |
| 0.5 | July 26, 2013 | Giridhar Manepalli  and  Laurence Lannom | New Document |

## Background

The Global Environment for Network Innovations (GENI) is an effort to create a large scale experimental network research facility that will allow researchers to investigate, experiment, and identify novel approaches in the computer network domain. To support network research at a global level, and to ensure that discoveries build on each other, GENI provides infrastructure for sharing experimental research data. Individuals participating in GENI experiments should use the provided infrastructure to publish and share experiment related data.

### Resources of Interest

In particular, for each experiment conducted within GENI, the following types of experimental artifacts should be published and shared. Other types of artifacts may also be published and shared.

* A list of requested resources encoded as GENI-specified RSpec, where resources are network elements leased for conducting an experiment such as switches, routers, VLANs, compute and storage nodes, etc.
* A list of allocated resources also encoded as GENI-specified RSpec.
* Scripts used for configuring, initializing, running, completing, and archiving experiment and experiment related data.
* Measurement data collected during the experiment based on several observations made by active or passive sensors.
* Results from the experiment.
* Documents describing the experiment.
* Details about the experimenters and other participants.
* Details about the scope of the project within which the experiment was conducted.
* Details about the institutions participating in the experiment.

### Persistent Identifiers

Scientific journals and conferences stimulate research by disclosing and disseminating otherwise hidden or little known research. Articles that support research are cited in the articles that discuss the new research, and this chaining of research articles has contributed to the growth of science at a global level with researchers using and citing research conducted at different times and places.

Dataset publishing is now showing similar promise with researchers reusing datasets produced by other researchers at different times and places. GENI infrastructure, in particular the capabilities and guidelines addressed in this document, supports dataset publishing and dataset citation activities.

GENI realizes that for citations to produce long-term effects as mentioned above, a unique and persistent identifier system is necessary. As such, GENI adopted the Handle System to provide those persistent identifier capabilities for the identification and citation of experimental artifacts, which includes the experiment results. The Handle System infrastructure, which enables DOIs, is already used by most of the publishing industry.

### Metadata

GENI participants should use the metadata models and schemas defined by the Instrumentation and Measurement (I&M) working group for describing the experimental artifacts. In particular, GENI shall provide schemas to describe project, experiment, and artifacts used or produced by an experiment. Wherever applicable, GENI envisions using the DataCite metadata models for defining the necessary schemas.

### Short-term and Long-term Sharing

GENI participants should share experimental artifacts with fellow GENI members as well as with researchers outside of GENI who are interested in the computer network research. GENI shall provide one or more instances of a *storage service* to support short-term sharing of research with GENI members. One possibility is a storage service per GENI rack, allowing participants to use a storage service that is in close network proximity to their experiments.

GENI shall also provide an *archive service* for long-term sharing of research with GENI and non-GENI researchers. The archive service will support the persistent identifier notion using the Handle System for identifying the shared information.

The synergistic combination of the three components listed below will amplify the work of GENI experimenters and thus accelerate scientific progress in the network domain.

1. The Handle System for persistently identifying experimental artifacts,
2. The metadata schemas for uniformly describing shared resources for easier understanding of the artifacts by third parties, and
3. The GENI archive service for storing the experimental artifacts for the long-term.

## Guidelines

All GENI users who conduct or manage experiments, hereby called experimenters, should follow these guidelines:

* Experimenters should use the GENI Storage Service for managing experimental artifacts on a short-term basis. Wherever applicable, such artifacts should be shared with fellow GENI members.
* Experimenters should use the GENI Archive Service for publishing and sharing experimental artifacts on a long-term basis with GENI and non-GENI members. Other sharing approaches are acceptable but cannot replace the use of the GENI Archive Service.
* Experimenters should use the Handles generated by the GENI Archive Service for citing experimental artifacts in publications, reports, and any publicly disseminated documents.
* Experimenters should annotate experimental artifacts prior to publishing in the GENI Archive Service using the metadata schemas provided by GENI. It is recommended that annotations be made within a reasonable timeframe, say, within a few days, after the creation of the experimental artifacts to capture the full context of the experiment as much as possible.

## Consequences

GENI is a collaborative infrastructure offered for advancing computer network research. In exchange for using the open infrastructure offered by GENI, experimenters are asked to follow the guidelines stated here in order to promote the research at a global level. If the provided metadata schemas are not used, say, or if the shared artifacts are not referenced using Handles for persistent identification, the benefits of a common approach to sharing and publication will be substantially reduced. As such, and in order to motivate experimenters to adhere to the guidelines, GENI reserves the right to lock experimenter accounts, seize allocated network resources, or stop ongoing experiments if these simple guidelines are not followed. The guidelines are intended to be easy to follow and helpful to experimenters, but they are open to further discussion at any time to address perceived problems or potential improvements.