Short Update of GENI Federation Scenarios and Requirements

Sangjin Jeong (ETRI)

Andy Bavier (Princeton Univ.)

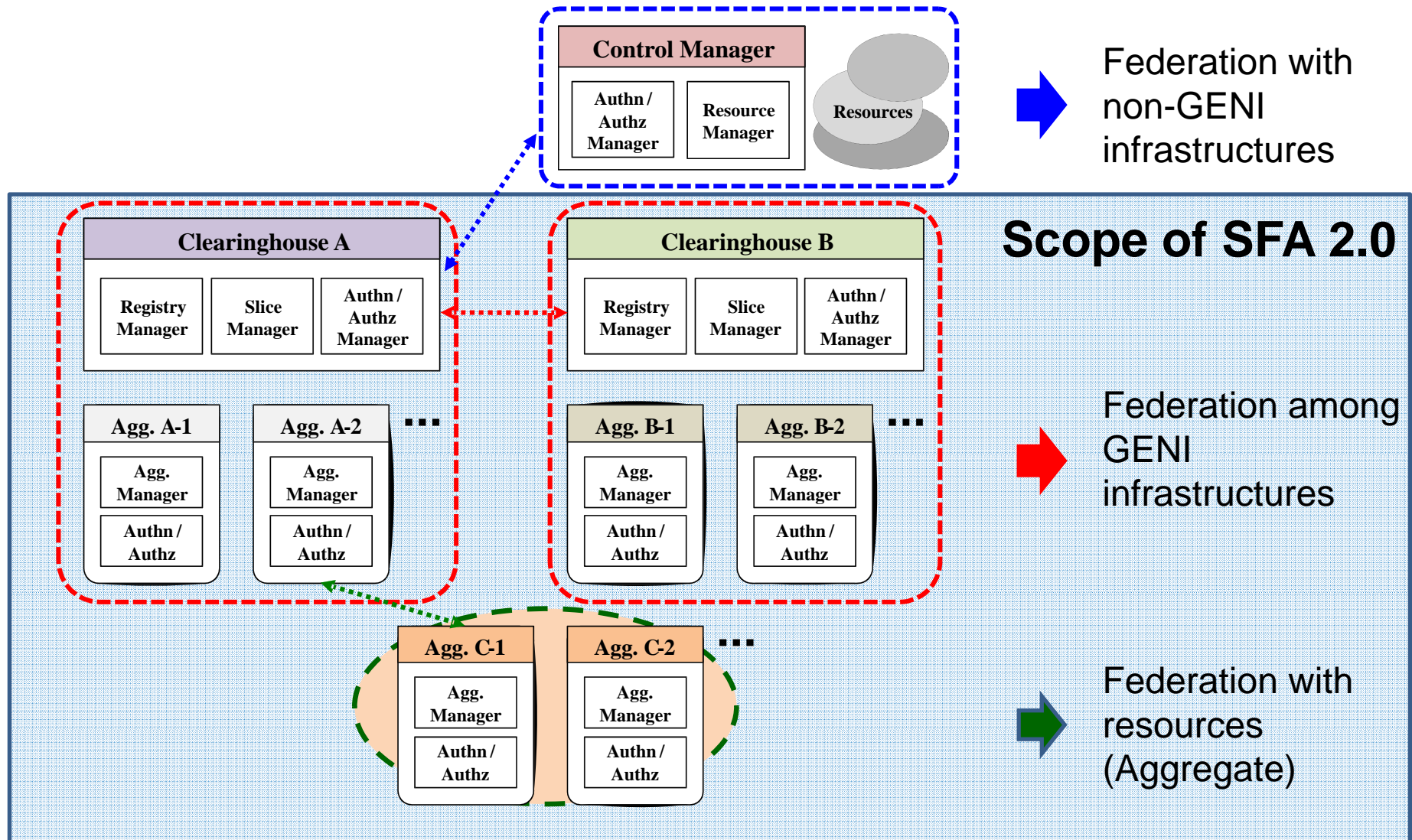July 21, 2010

Control Framework WG meeting @GEC8

Objective

- Discuss federation scenarios and problems which will occur during federating multiple heterogeneous testbeds

- Discuss several requirements to mitigate the identified problems

Document history

- Discussion for initial idea @GEC6
- Updated investigation results @GEC7
  - GENI Federation scenarios
  - Analysis on problem spaces and requirements
- First draft published July '10
  - http://lists.geni.net/pipermail/control-wg/2010-July/000200.html
  - Identified requirements for each federation scenario
  - More feedback needed

GENI federation scenarios

Control Manager

| Authn/ Authz Manager | Resource Manager |

Resources

Federation with non-GENI infrastructures

Scope of SFA 2.0

Clearinghouse A

| Registry Manager | Slice Manager | Authn/ Authz Manager |

Agg. A-1

Agg. Manager

Authn/ Authz

Agg. A-2

Agg. Manager

Authn/ Authz

...

Clearinghouse B

| Registry Manager | Slice Manager | Authn/ Authz Manager |

Agg. B-1

Agg. Manager

Authn/ Authz

Agg. B-2

Agg. Manager

Authn/ Authz

...

Federation among GENI infrastructures

Agg. C-1

Agg. Manager

Authn/ Authz

Agg. C-2

Agg. Manager

Authn/ Authz

...

Federation with resources (Aggregate)

Problem description

- Classification of federation problems
  - Different identity/authority management
    - Identity allocation/authorization policy/mechanism
    - Ex) GID, ABAC (SFA 2.0)
  - Different control procedures
    - Control flows and interfaces/APIs
    - Ex) GENI AM/CM/Slice APIs
  - Different resources and experiments description
    - Resource description schemes (syntax, context, entity, …)
    - Description of experiments, services, experimental results
    - Ex) RSpec

- Global standards/adapters

Next steps

- Status: problem statement document covers various federation scenarios, problems, and requirements
  - Anything missing?
  - More comments?

- WG indicated interest in investigating federation scenarios