

# **GEC 10 Software Track Engineering Session Outbrief**

**Tom Mitchell, Aaron Helsinger**  
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**[www.geni.net](http://www.geni.net)**



# Software Track Engineering Meetings

- Software track had 4 engineering meetings:
  - Identity Management and Attributes
  - Authorization
  - Resource Specification
  - Stitching

- Prior to GEC 10:
  - A few key stakeholders discussed the topic
  - The group generated a consensus proposal
- Engineering Meetings at GEC 10:
  - Proposal presentation
  - Stakeholders will provide various viewpoints
  - Open floor for community discussion
  - Come to agreement on the proposal
  - Decide on next steps

# Identity Management and Attributes

- Authentication capability
- External identity providers
  - Shibboleth, OpenID, Google, Yahoo, Facebook
- Authoritative source of attributes
  - Some more authoritative than others
  - Some provide more attributes than others
- InCommon federation
  - ~200 educational institutions
  - Maintained accounts and attributes



# Identity Management and Attributes Community Agreement

- Agreed to add external identity providers to GENI
  - Existing control framework accounts do not change
  - Control frameworks do not need to add support
- Agreed that GPO should build an InCommon compatible GENI portal/slice authority
  - InCommon is the starting point
  - Other sources of identity can be considered in the future
- Agreed on an initial set of required identity attributes
  - Name, institutional affiliation, contact information



- Authorization determines the level of access a particular authenticated user should have
  - Is user X authorized to access resource R?
  - Is user X authorized to perform operation P?
  - Is user X authorized to perform operation P on resource R?
- Attribute Based Access Control
  - Use asserted attributes to make policy decisions
  - Trust anchors make assertions
  - Policy is declarative
  - Decisions are based on logical proofs

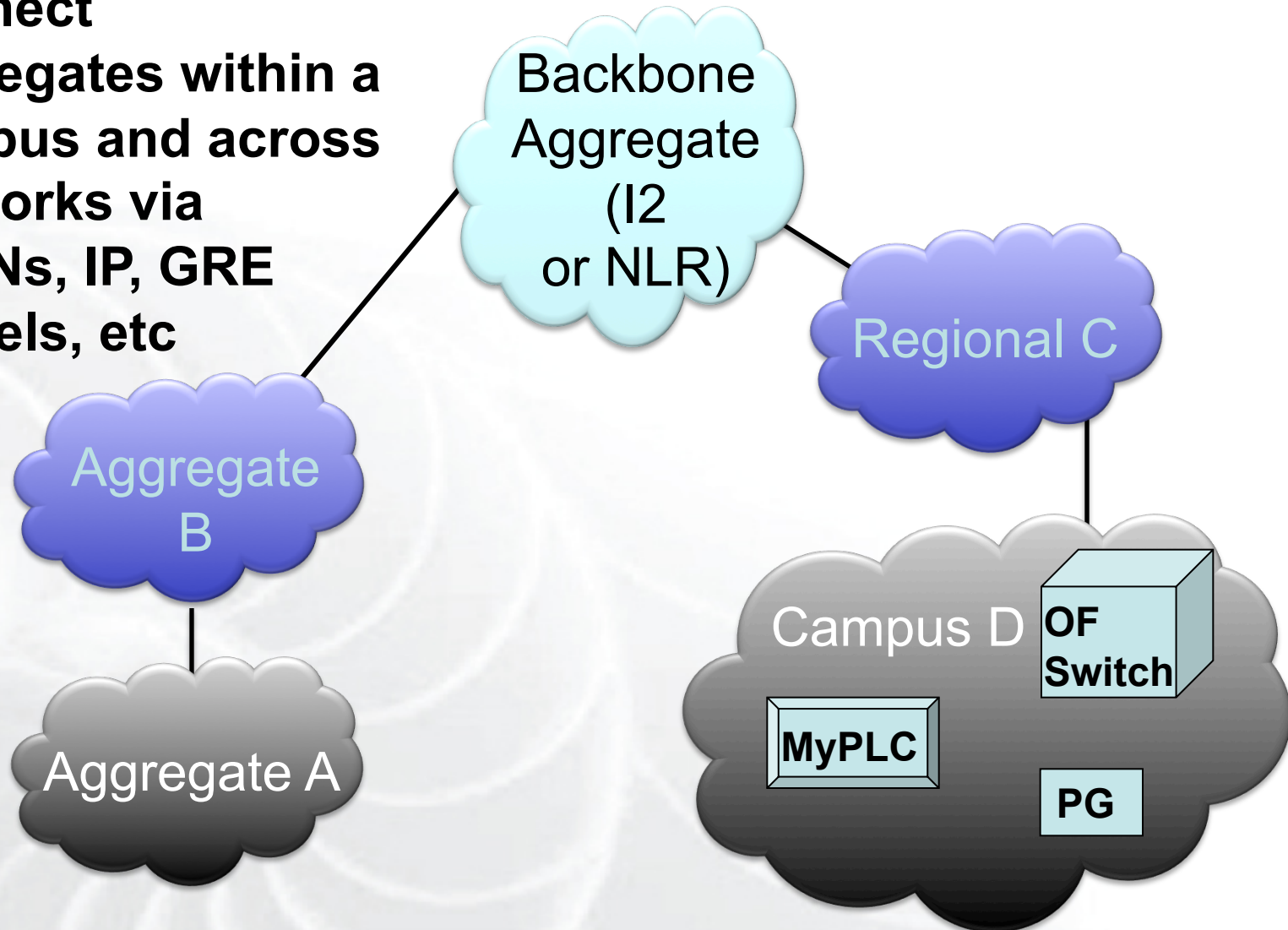
- Agreed that GENI should add ABAC authorization to the GENI AM API
- Agreed that an existing aggregate (ProtoGENI) should be ABAC-enabled.
  - Experience to be reported at GEC 11
  - Propose next steps for Authorization at GEC 11
- Agreed to a 1 year timeline

- Describe resources
  - If I want a computer, how do I say it? Who has one?
  - What is a computer?
- Need a common language so software can interoperate
  - New tools need to find resources
  - New resources need to be quickly findable
- Control Framework have their own approaches that vary
  - Format: RDF? XML? Property lists?
  - Resource Types Network resources, wired resources, wireless resources, services, measurement data, etc
  - Highly specified formats? Or flexible, loosely specified?
  - Based on what we have? IEEE or ITU standards?



- ProtoGENI RSpec V2 with Extensions is the format on the wire
  - AM API will specify that format
  - geni.net will host adopted GENI schema
  - Extensions allow extensibility
- Aggregates can run translators
  - Iliia demonstrated a PG request RSpecs -> NDL converter
- Come to agreement on basic semantics
  - Community members will produce diagrams, PG/GPO will produce schema

**Connect  
aggregates within a  
campus and across  
networks via  
VLANs, IP, GRE  
tunnels, etc**



- Agreed to the draft stitching architecture
  - Support two stitching models
    - Chain
    - Tree
  - 6 functional areas with defined responsibilities
  - Use a common schema and API
- Agreed goals for GEC11:
  - Revised schema for stitching information
  - Revised stitching API
  - Present for community agreement