GENI Going Forward: Budget and Operations Introductory Material

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- This presentation contains descriptions of different groups responsible for different GENI Operations
  - Some currently covered by the GPO
  - Some currently covered by other members of the GENI community
- In this presentation we will:
  - Describe the efforts and tasks *notionally* assigned to these groups
    - For more details, see the provided "Ops transition" document
  - Present budget estimates for the anticipated 2016 efforts for these groups

> This is intended as a seed for a good discussion about future GENI roles and responsibilities.

GENI Operations Groups

- GENI Council
- GENI Administration
- GENI Site Engineers (possibly w/a Site Coordination Committee)
- GENI Operations and Maintenance Group
- GENI Provisioning Contributors
- GENI Prototyping Contributors
- GENI Software Maintainers
- GENI Community Support

- ## GENI Council
  - Set long-term priorities
  - Authorize significant non-maintenance upgrades or decommissioning
  - Maintain and monitor GENI policies
- ## GENI Administration
  - Track Government Property, warranties, domain renewals
  - Contract and budget/expense/subcontract tracking

GENI Operations Groups: Details [2]

Distributed contributors at campuses, industry, and network providers (core and regional) that provide GENI resources

- ## GENI Site Engineers
  - Provide standard GENI connectivity for control plane and L2 VLAN connectivity for data plane
  - Provide integration support for adapting to GENI/aggregate changes
  - Diagnose and repair site problems, track LLR issues, notify community of events that impact GENI
  - Purchase and install replacement hardware
  - Plan for upgrades, enhancements, refreshes
  - Support requests from GENI Council

Distributed contributors with dev ops and network engineering expertise

- GENI Operations and Maintenance Group
  - Provide integration support to adapt GENI to changes in core, region, GENI interfaces or functions
  - Diagnose and repair reported resource problems, scheduled maintenance, LLR/security issues
  - Provide problem reporting, tracking, response coordination
  - Maintain and revise operations workflows and procedures
  - Maintain and operate tools to support operations (e.g. monitoring, reporting, Wiki/Documentation), Stitching tools
  - Maintain running GENI Software Services (e.g. Clearinghouse, Portal, IDP)
  - Manage GENI account and privilege requests

- ## GENI Provisioning Contributors
  - Provisioning new racks, networks or campus for GENI
  - For known resource types, existing procedures, standard policies
  - E.g. InstaGENI and ExoGENI racks
- ## GENI Prototyping Contributors
  - Provisioning and establishing new types of resources for GENI
  - With new purchasing, setup, testing procedures and policies tailored for use of these new resources
  - E.g. SDX prototypes, WINLAB wireless infrastructure and tools, SCS and MAX AM's, OpenFlow (H/W) rack upgrades, USIgnite racks.

- # GENI Software Maintainers
  - Manage GitHub Software repositories
  - Maintain standard GENI software interfaces
  - Manage GENI Architecture Team activities

- # GENI Community Support
  - Support resource/experimenter use of GENI
  - Support expanded classroom use of GENI
  - Support development of documentation and tutorial materials
  - Discussed in parallel breakout session "Community Engagement"

2016 Projected Budget by Category

GGF Subcontract $ by Category

GENI Council	GENI Admin	GENI Site Engineers	GENI Ops and Maintenance	GENI Provisioning Contributors	GENI Prototyping Contributors	GENI Software Maintainers	GENI Community Support
0	0	0	1.4M	0	0.4M	0.1M	0.5M

GPO Budgeted 2016 FTE's by Category

GENI Council	GENI Admin	GENI Site Engineers	GENI Ops and Maintenance	GENI Provisioning Contributors	GENI Prototyping Contributors	GENI Software Maintainers	GENI Community Support
0.2	0.8	0.0	0.8	0.0	0.0	0.5	1.3

Notes:
- *Some support for Provisioning and Prototyping Contributors provided by Ops and Maintenance Group.*
- *Additional GPO FTE's provided by ongoing GPO Engineering through part of 2016.*

GENI Hardware Maintenance

- Currently site owners cover costs of replacing GENI hardware (or don't)

- No existing spares (except scavenged)

- HW Maintenance budget should cover yearly failures and upgrades from 2018-2021

- Assume yearly repairs/upgrades on 33% of 55 installed racks and 6 selected regional network switches*

- Based on existing costs, budget $287,000 annually

- For comparison, cost of replacing all racks is at least $2.86 million or $954,000/yr (USIgnite price, no discount)

  * Covers only 42 InstaGENI and 13 ExoGENI, not Dell, Cisco, others