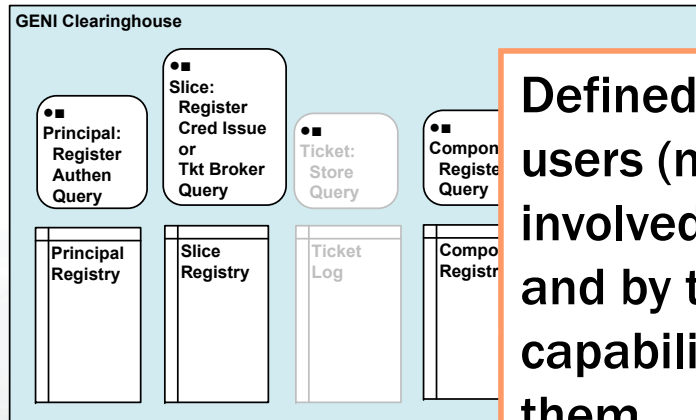
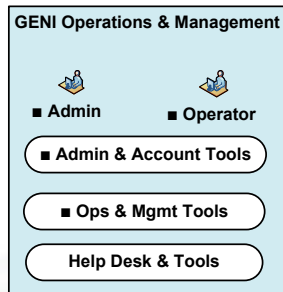


## **Opt-In Policies**

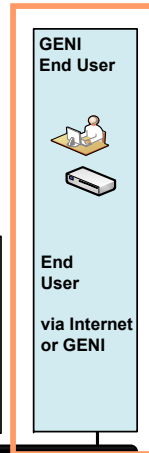
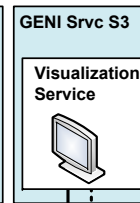
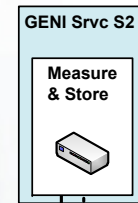
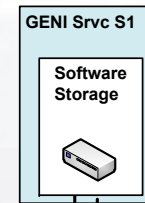
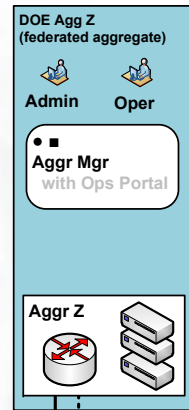
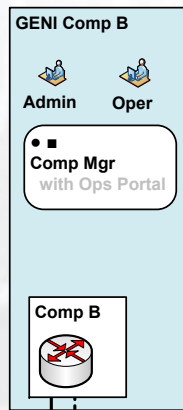
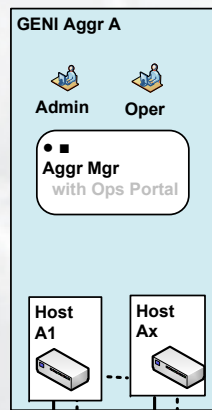
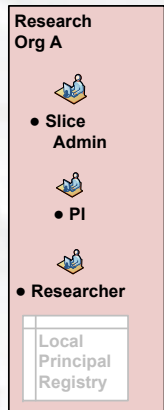
# **GENI Engineering Conference 5 End-User Opt-In Working Group Seattle, WA**

**Henning Schulzrinne**  
**July 21, 2009**  
**[www.geni.net](http://www.geni.net)**

# What is GENI End-User Opt-In?



**Defined by: Use cases where end users (not researchers) become involved with GENI experiments; and by the services and capabilities necessary to support them.**



## Basic End-User Opt-In Use Cases

- **Use Case 1:** A user chooses to participate in a GENI experiment to receive a service
- **Use Case 2:** A user chooses to participate in a GENI experiment to contribute resources for others
- **Use Case 3:** A group of users are pulled into a GENI experiment
- **Use Case 4:** A 3<sup>rd</sup> party use is undesirably affected by a disruptive GENI experiment

- **Governance**
  - sets policies, gathers best practices, monitors operations
- **Policies**
  - “must do”
- **Best practices**
  - “should do”
- **Operations**
  - “red button”

**Explicit informed consent**

**Implicit opt-in**

- e.g., visit web site with privacy statement

**Discoverable**

- e.g., look up SSID on geni.net registry

**Hidden**

- **Harm avoidance**
  - to OptIn users & innocent third parties
  - to researchers (reputation, distraction)
  - to hosting institutions
  - to GENI overall (GENI = PirateBay 2.0)
- **Long-term viability**
  - minimize risk
  - minimize experimenter effort

- **Physical layer**
  - spectrum, fiber
- **Network layer**
  - bandwidth
- **Computing, storage and interface resources**
- **Applications**

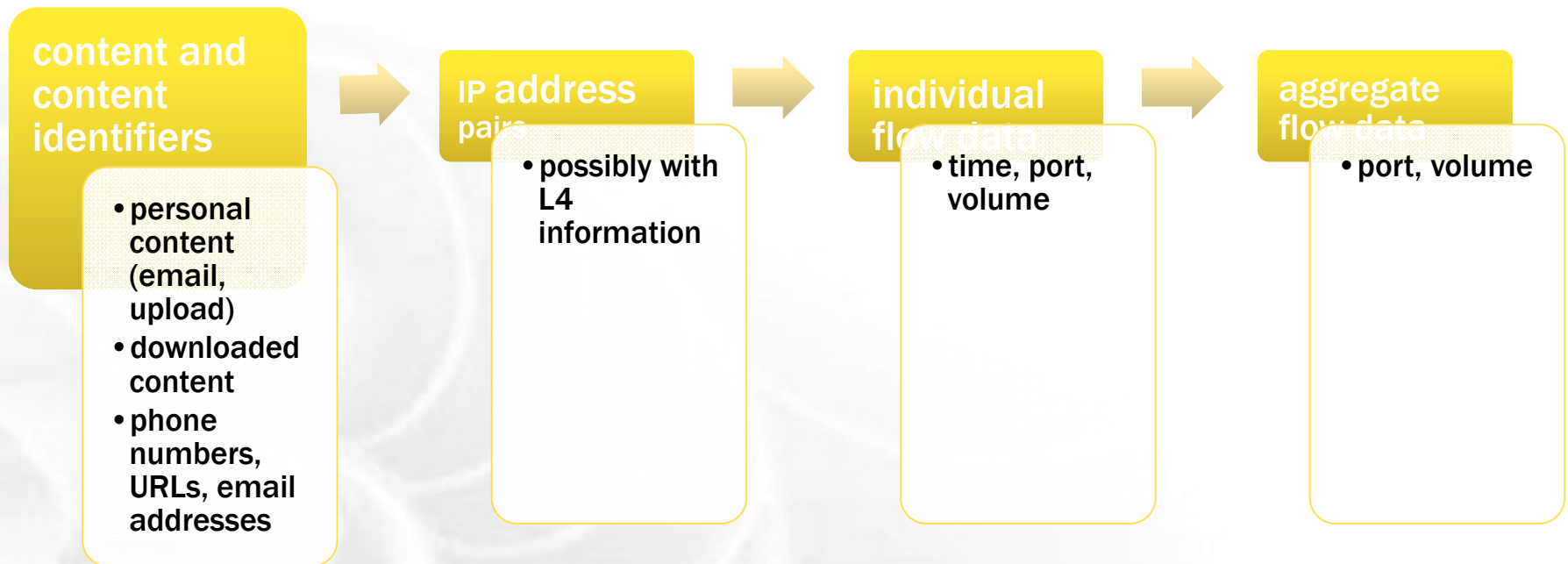
- **Model 1: no choice**
- **Model 2: choose by**
  - **ESSID**
  - **VLAN**
  - **IP address (e.g., add to DHCP list)**
  - **VPN**
  - **web proxy, outbound SIP proxy, ...**



- **Privacy**
  - network usage
  - location
  - sensors (camera, microphone)
- **Disruption**
  - of core Internet service (if opted-in)
  - of other services
- **Security**
  - attack vector to host
- **Legal exposure**
  - inadvertently host child pornography
- **Indirect risks**
  - TOR site → DOS attractor

- **“There is an experiment for that”**
- **Standardized disclosure of services and experiments**
  - informed consent – not always feasible
  - PII data (gathered, stored, distributed)

- cf. nutrition label or credit card disclosure
- What kind of experiment is this?
- Who is responsible for the experiment?
  - escalation hierarchy (grad student → advisor → local sysadmin → GENI NOC)
- Data collection:
  - What kind?
  - How long retained?
  - Who has access?
- Will participation affect other applications?
- Will the experiment prevent my PC from going to sleep?
- How much extra traffic?
- Should I run this application on a cell phone or low-bw device?
- What do I get in return?



- **Primarily probing**
- **Maybe run web server with basic info on probing host?**
- **DNS TXT or HINFO records?**
- **Opt-out list (“do not call” list)**
  - for experiment
  - for all GENI experiments (?)

- **Often, not well matched to GENI-style experiments**
  - **medical → CS/network expertise lacking**
  - **incomplete**
    - **e.g., cannot assess possible harm to user computing equipment**
  - **typically, single institution**
    - **experiments may span multiple institutions**