Secure Cyber Incident Information Sharing

UTSA Team Leads

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UTSA Engineering

I·C·S
The Institute for Cyber Security

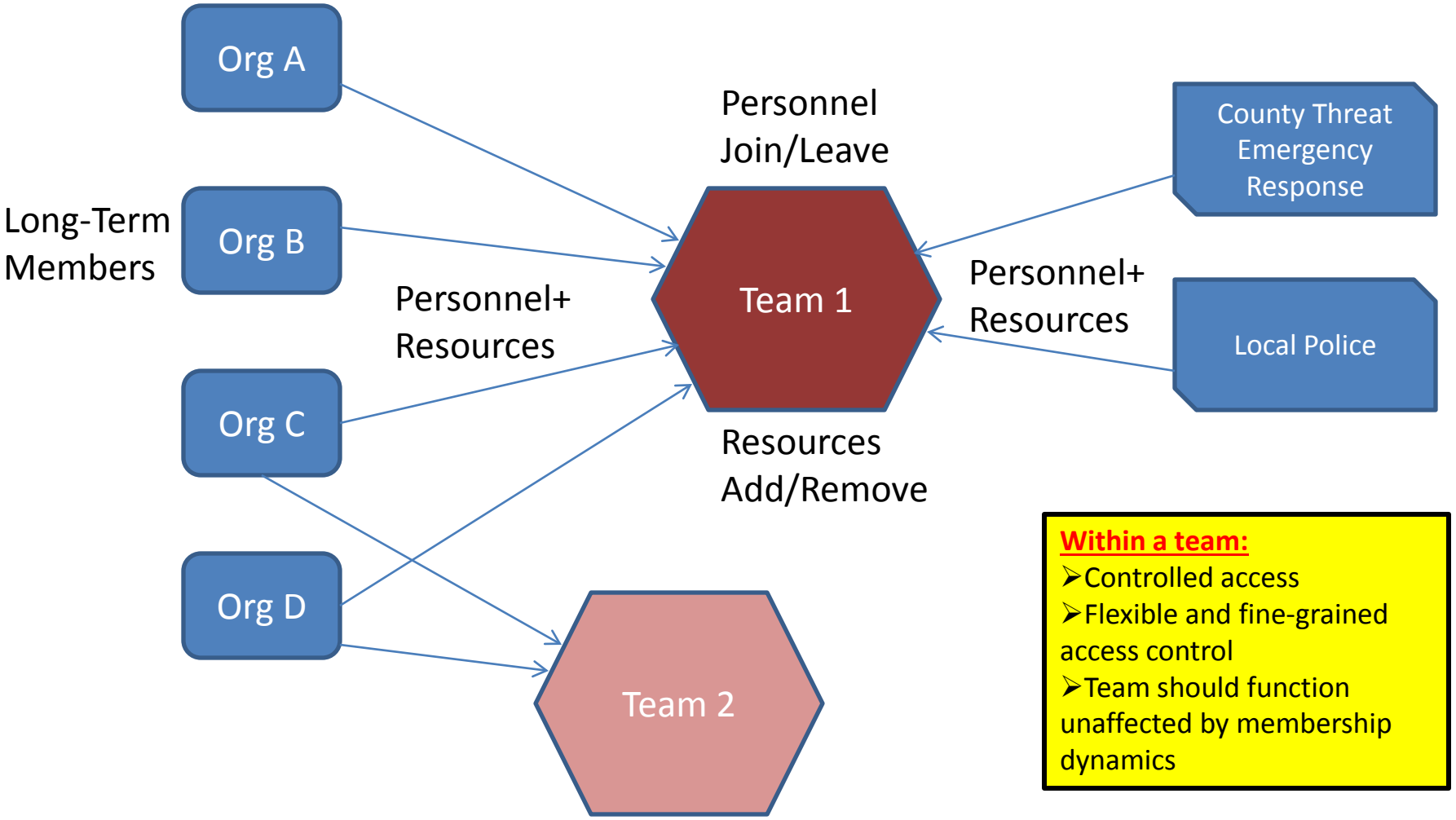
LMI Research Institute (LRI): Academic Partnership Program

- Through formal working relationships with universities across the country, LMI bridges the gap between academia and industry to create innovative solutions and explore new research topics
- The partnership program exposes students to real-world challenges faced by the federal government through structured, funded research projects

Cyber Incident Response

- Secure information sharing amongst a set of entities/organizations
  - Often ad hoc
- What are the effective ways to facilitate information sharing in such circumstances?
  - Information sharing models
  - Infrastructure, technologies, platforms

Agile Incident Response



Within a team:

- Controlled access
- Flexible and fine-grained access control
- Team should function unaffected by membership dynamics

Cyber Incident Information Sharing Scenarios

- High-assurance scenarios
  - Closed network
  - Data exfiltration
- Medium-assurance scenarios
  - Community
  - Electric grid

Key Requirements

- Cyber infrastructure sharing to support data and compute
- Light-weight and agile
- Rapid deployment and configuration
- Secure environment

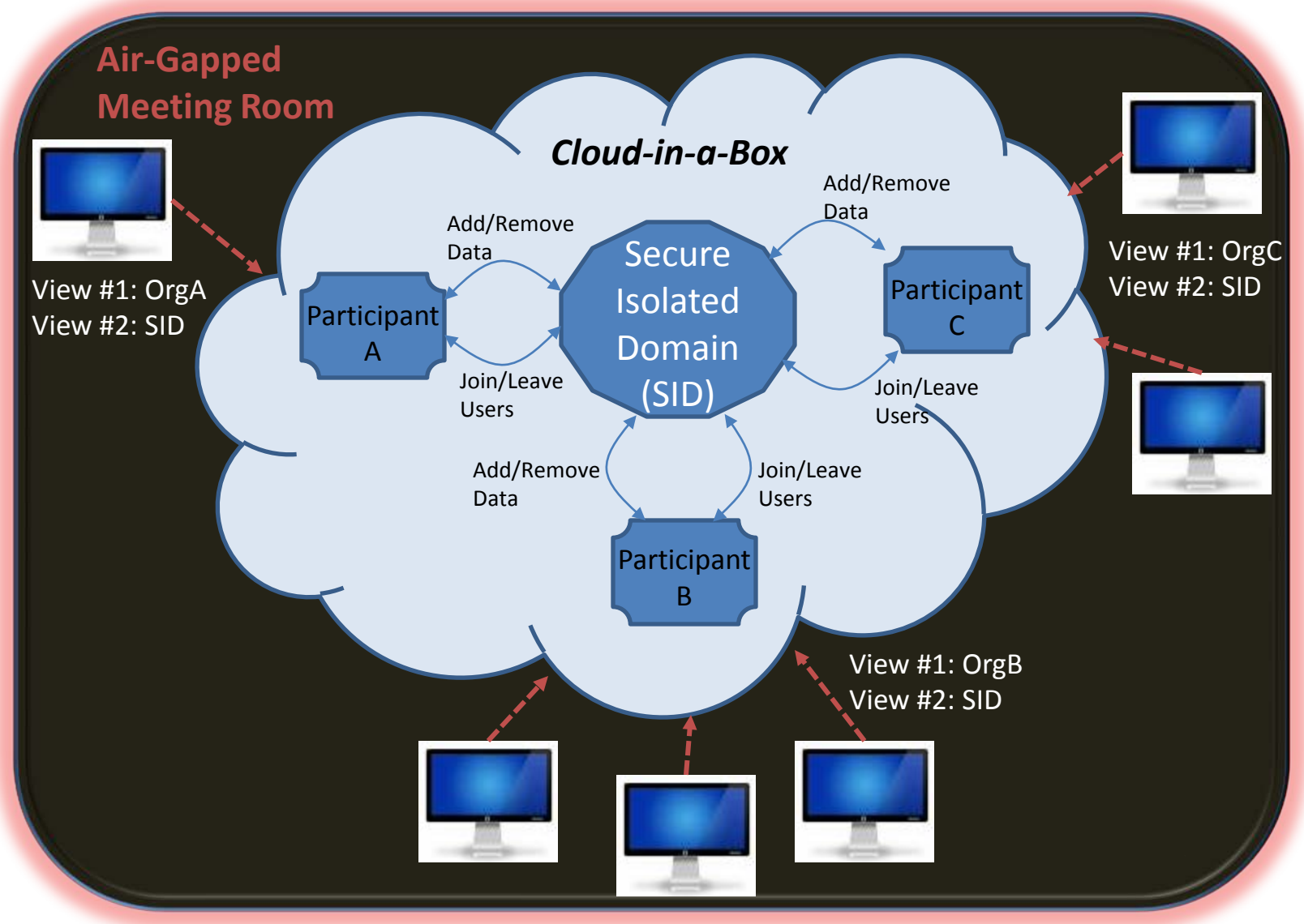
Cloud Infrastructure as a Service

- Virtualized IT infrastructure (servers, storage, networks, OS, etc.)
  - Delivered as a service over a network, on demand, dynamic scaling, etc.
- Prominent examples
  - Amazon AWS
  - OpenStack

Information Sharing in a High-Assurance Scenario

- Physically secure meeting room
- Air-gapped network
- Cloud-in-a-box

Enforcement in Cloud IaaS



Next Steps

- UTSA to incorporate 24 AF input
- Develop prototype in OpenStack
- Share research results with 24 AF
  - August/September

Thanks

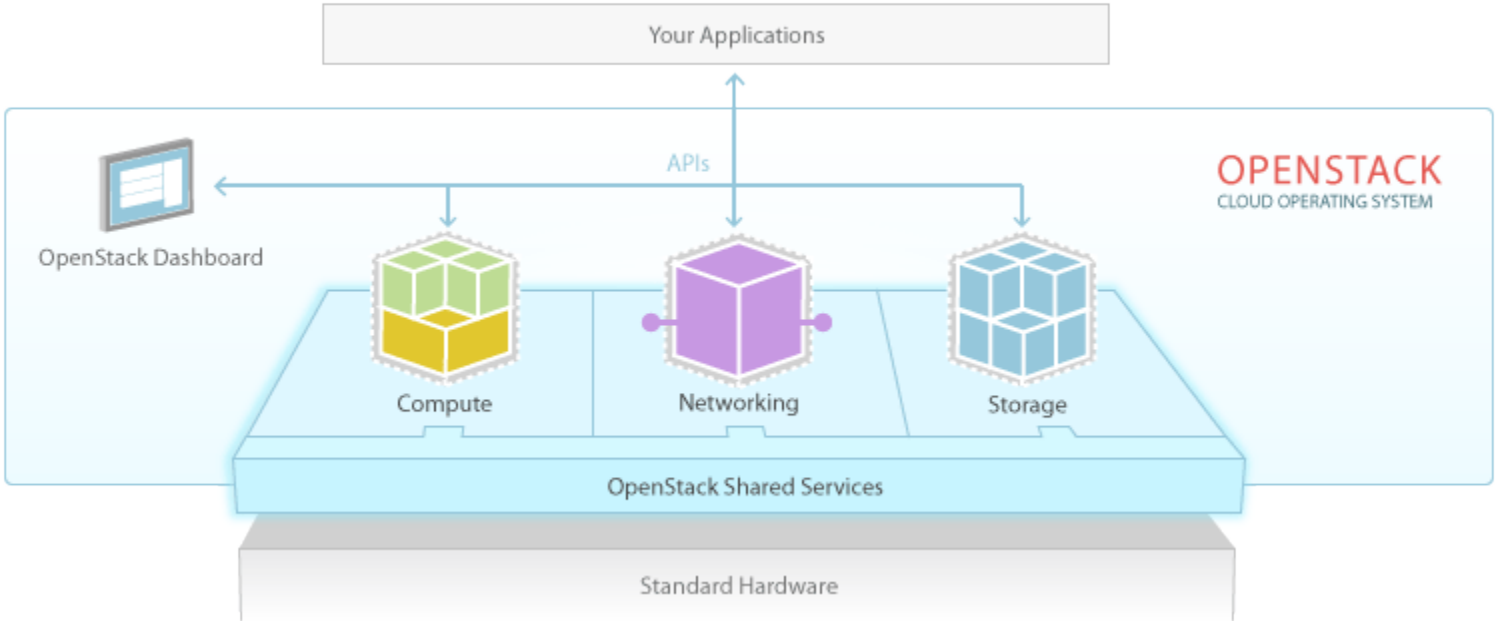
- Comments, Q&A

Backup

OpenStack

- OpenStack
  - Dominant open source cloud IaaS platform

- > 200 companies
- ~14000 developers
- >130 countries



Project Goal