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Need for Rapid and Collaborative Decision Making



Lesson Learned from 9/11

“There was a lack of comprehensive coordination... Information that was critical to informed decision-making was not shared among agencies...”

“The attacks on 9/11 demonstrated that even the most robust emergency response capabilities can be overwhelmed if an attack is large enough... Teamwork, collaboration and coordination... are critical to a successful response.”

***Final Report of the National Commission
on Terrorist Attacks Upon the United States***



- **Incidents are local in nature:**
 - **Immediate impacts are local**
 - **Ground truth of situation is local**
 - **Consequences and response may need to be coordinated and escalated from local to regional to global levels**
- **Islands of automation and lack of incentives hinder the timely information sharing and collaboration among communities of interest**
- **Majority of efforts are focused on specific domains (i.e., law enforcement, federal agencies, intelligence community, defense, etc.)**
- **Authorities on the ground and those offering support need a common integrated view of the situation and a mechanism for communicating**



Value Proposition



- Access **INFORMATION INFRASTRUCTURE**

- Universal access to content and services
- Bandwidth
- Fidelity

- Access to timely source **CONTENT**

- Raw data
- Knowledge
- Intelligence

- Access **SERVICES**

- Tools/applications
- Automate current processes and offer content to broader audience
- Collaboration tools (e.g., VTC, white boards, phone bridge, etc.)



Vision for a Rapid and Collaborative Decision Making Environment



- **Regional Information Sharing Environment (RISE)**

Vision:

- ✓ A easily accessible, persistent and autonomous environment
- ✓ Allowing authorized users to share information and collaborate in order to ensure situational awareness among communities of interest
- ✓ The ability to share information and collaborate shall be independent of the origin and nature of the information or the users' organic information system(s)

$$RIJAN = \lim_{s \rightarrow RISE} f(s)$$

- **Regional Information Joint Awareness Network (RIJAN) prototype:**

- ✓ First instance of RISE in the New York and New Jersey region

Where:

$$f(s) = \lim_{\bar{x} \rightarrow \text{Information Infrastructure}} g(x) + \lim_{y \rightarrow \text{Content}} h(y) + \lim_{z \rightarrow \text{Services}} i(z) + E(t)$$



An executive level decision support collaborative environment intended to address issues related to interagency communications, collaboration and operations center-to-operations center networking to provide for improved situational awareness and coordinated multi-agency response to a large-scale crisis



Federal Partners



U.S. COAST GUARD



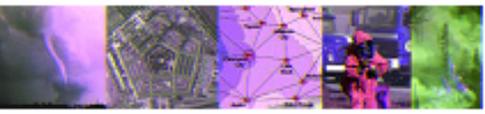

RIJAN Partners – Regional Steering Committee



Academic Partners Visualization Team

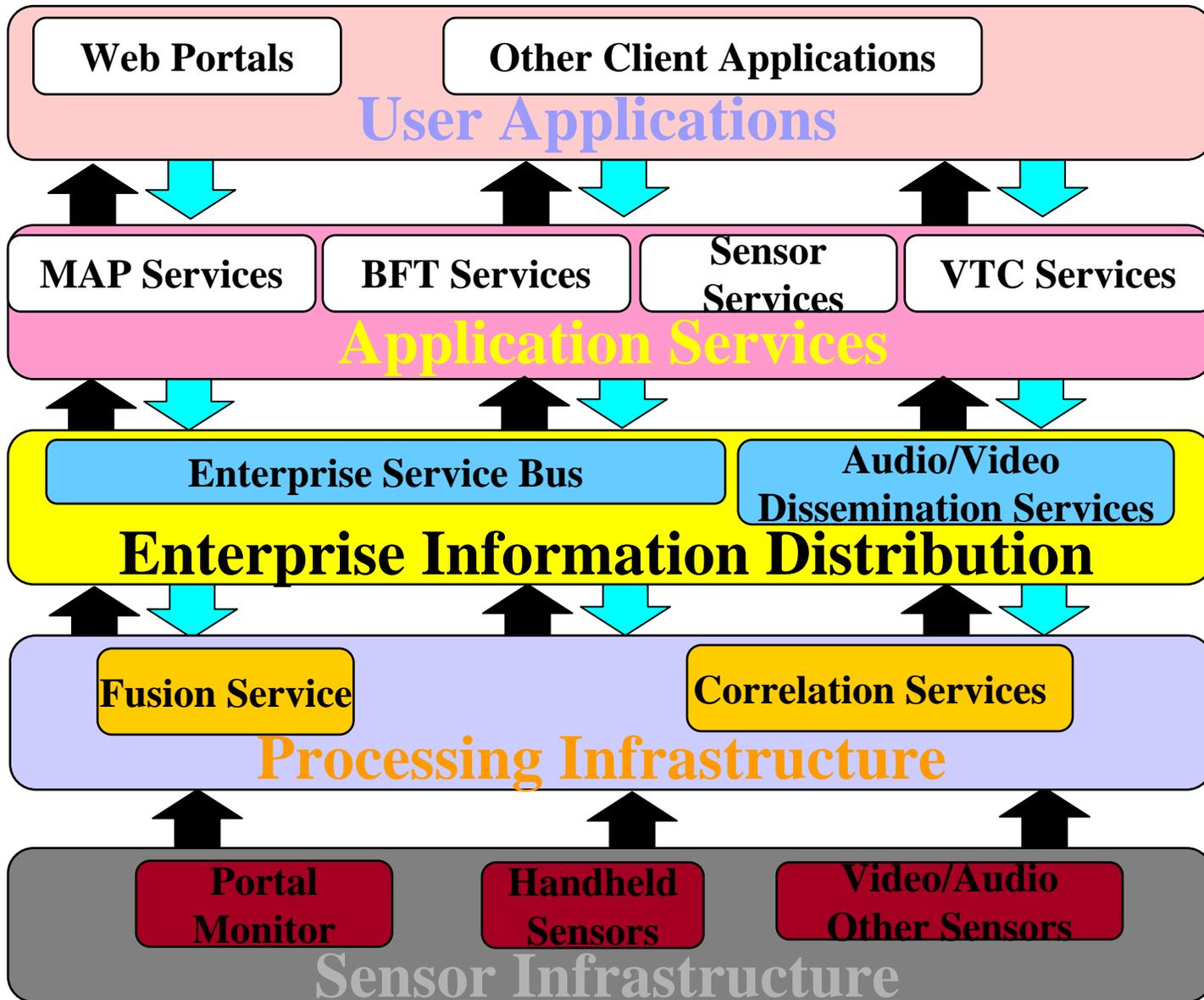


GeoCollaborative
Crisis Management





RIJAN Layers

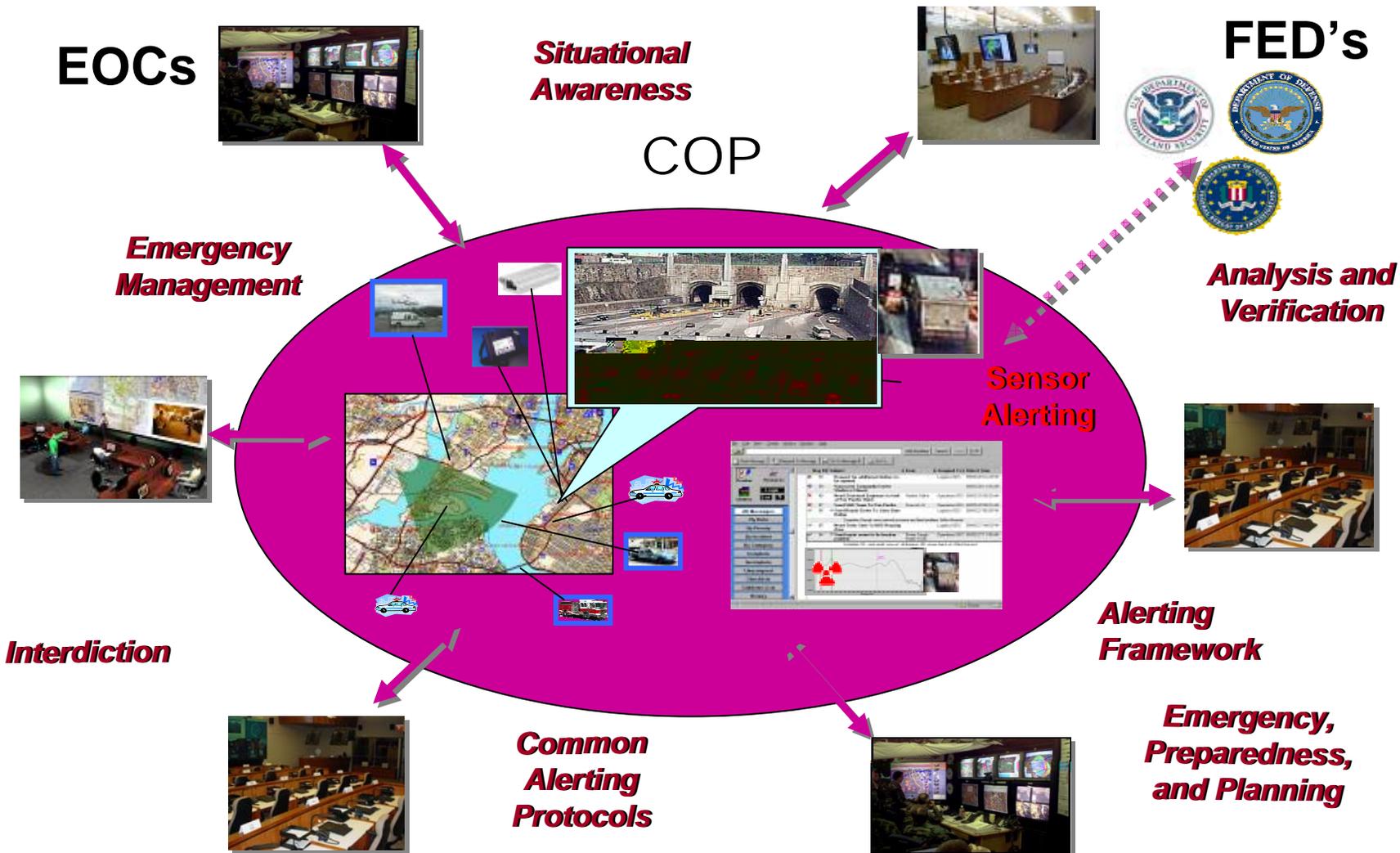


Source: N. Thakkar





Information Sharing Environment (ISE)





Visualization



ORG COMM User List Task List Map Street - Topography - Satellite - Weather User 211 Screen 211 Driver 211

video 1

video 2

collaboration

REPORTS TUE, 6 SEP 2005 14:38 MT-0400

16 18 20 22 0 02 04 06 08 10 12 14 16 18 20 22 0 02 04 06 08 10 12 14

Current Hour

- Alarm: California Tunnel, Lane 6 7 / 14
Date: 20 JUL 2005 Time: 03:00:00 GMT-04:00 Author: PA Status: Resolved
- Alert: California Tunnel, Lane 6 8 / 14
Date: 20 JUL 2005 Time: 02:00:00 GMT-04:00
- Alarm: California Tunnel, Lane 6 9 / 14
Date: 20 JUL 2005 Author: Sencer, 1250 Status: LSS

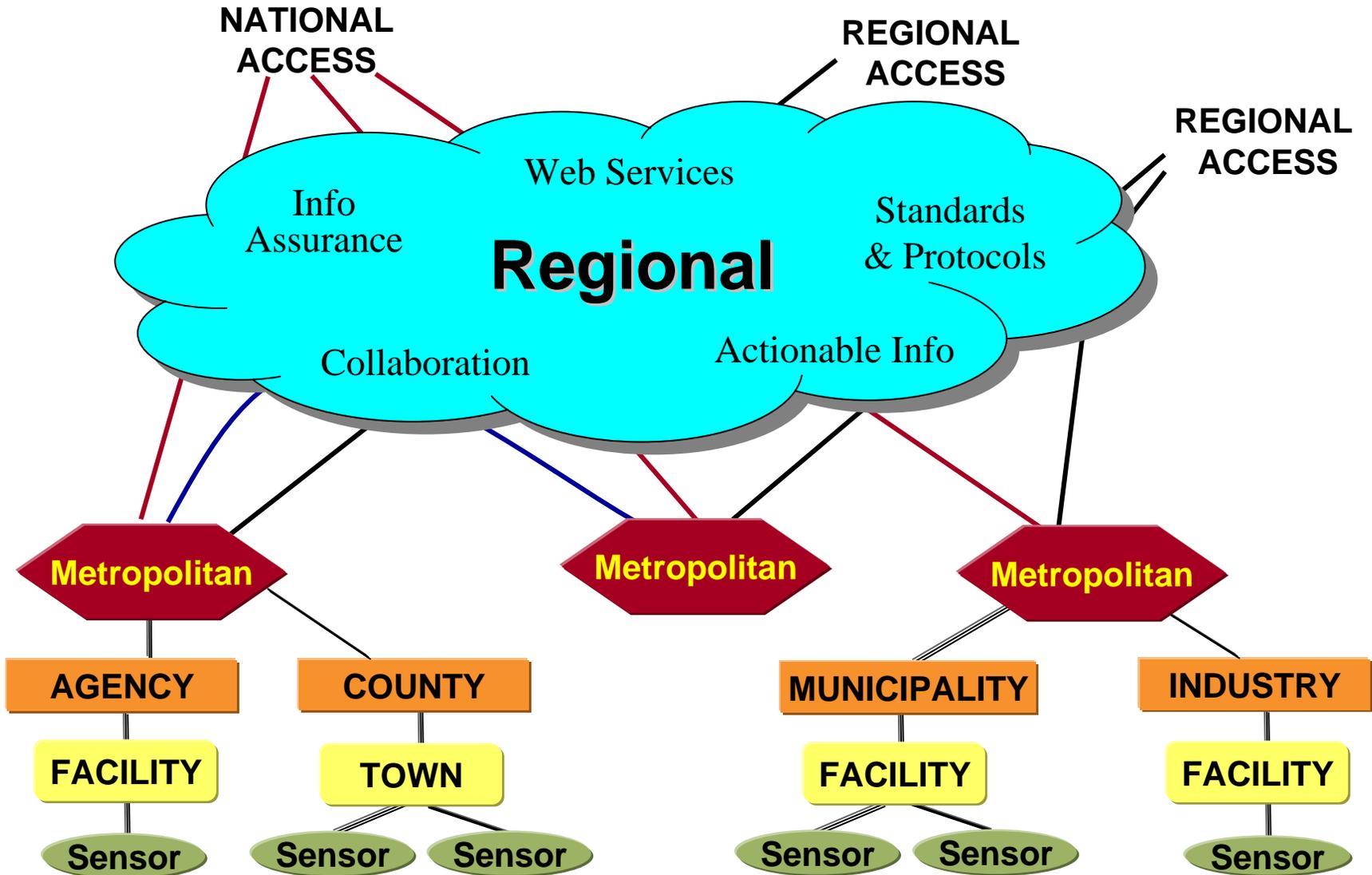


RIJAN RIJAN
Firewall Router





National Network Information Flow

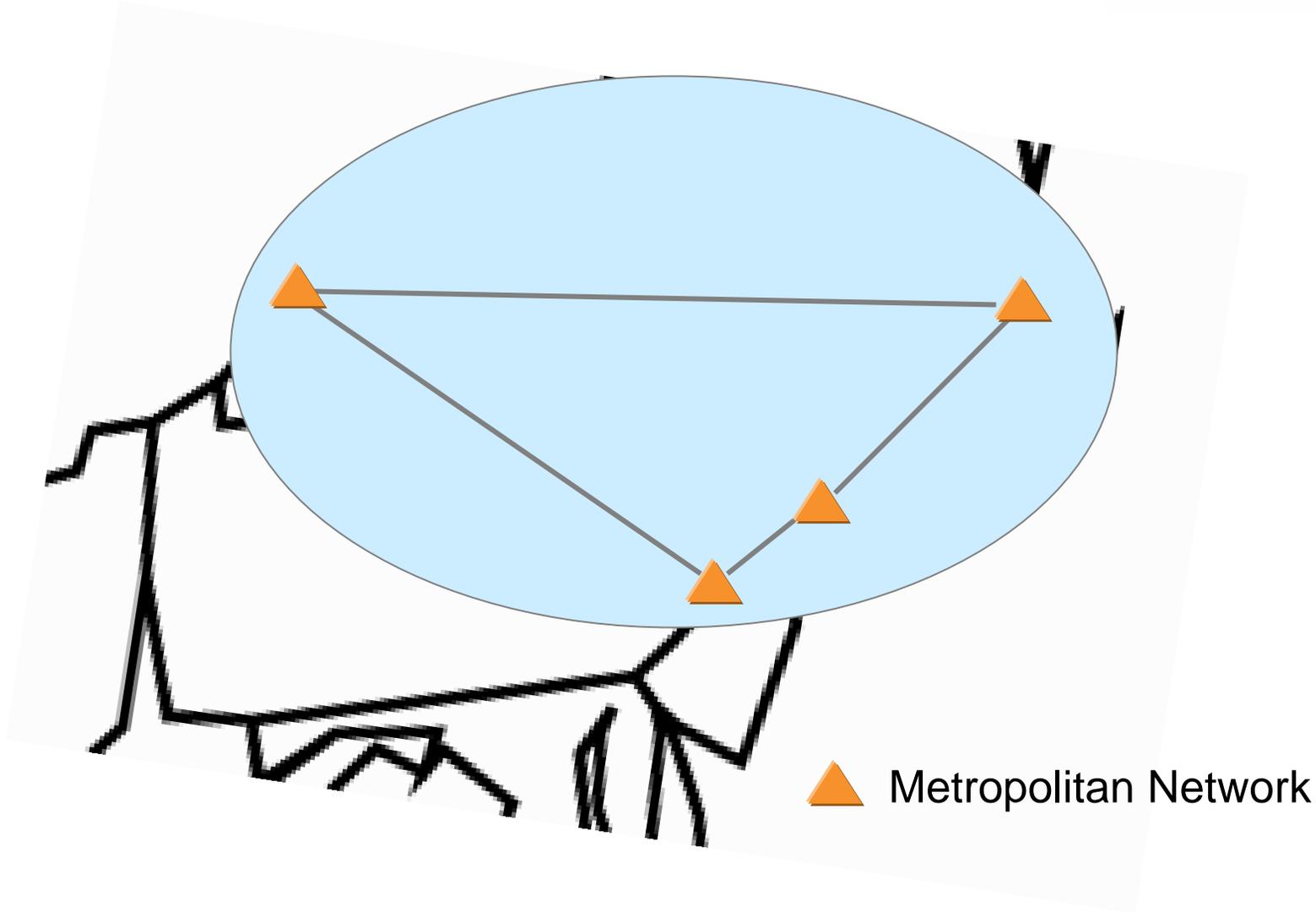


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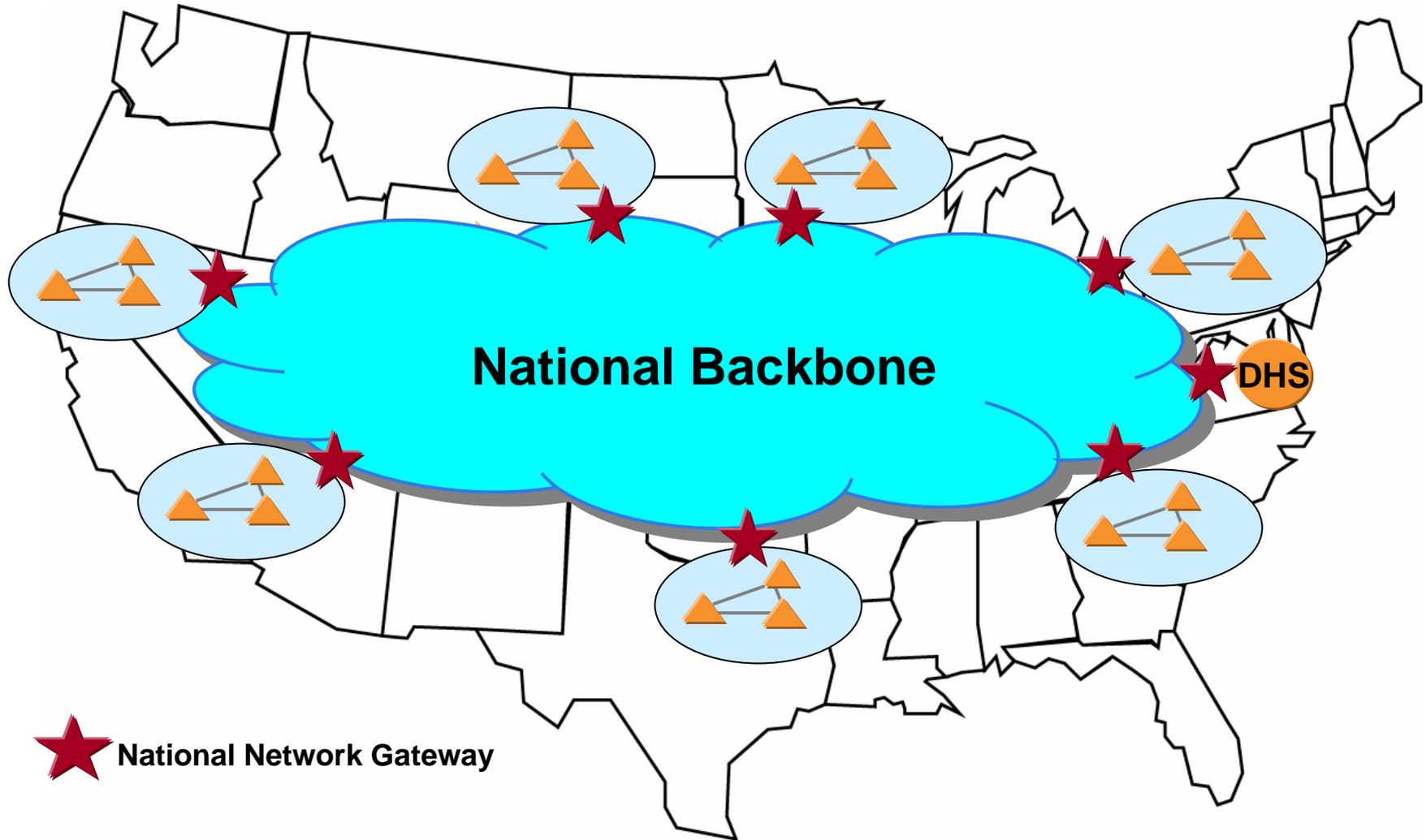


Notional Regional Network





Notional National Network



 National Network Gateway



Regional Information Sharing Environment



- **Institutional Relationships**
- **Governance**
- **Architecture**
- **Sensor Integration**
- **Application Integration**
- **Business Rules**
- **Security**
- **Sustainment (Training, Operations and Maintenance)**
- **Finance**



CERDEC Role



- **Program Manager**
 - Honest Broker to Regional / Federal Stakeholders
- **Deliverables**
 - Document Existing “As Is”
 - Engineer an Operational Prototype (“SSA”)
 - Prototype first instance of RISE
 - Develop Architecture Design to Support Growth
 - Recommend Standards and Protocols
 - Common standard for information exchange and collaboration
- **Non Linear “Spiral and Block” Approach**