Enabling a System of Systems with End-to-End Trust & Security for Future Wireless Cities

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Future wireless cities will be an inter-connected "system of systems" to improve efficiency, safety, quality of life, energy use, and environment…*What can we enable thinking across the system of systems?*
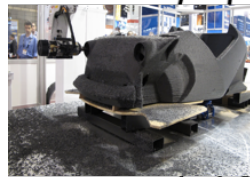
Mesh Networks

V2V, V2I, V2H, V2P

Smart Grid / MicroGrid

Smarter Transportation

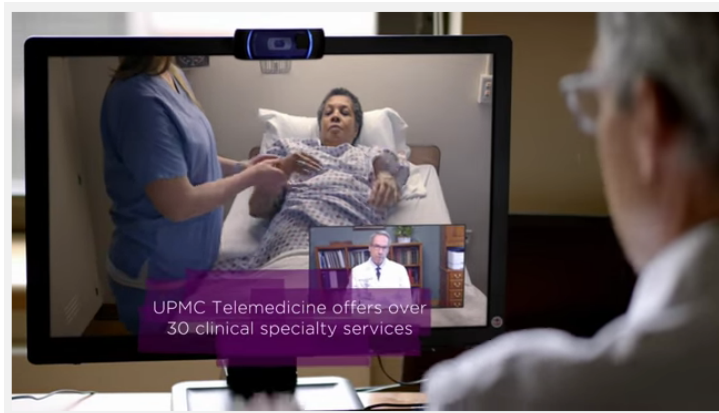Smart Homes/ Buildings

Industrial M2M

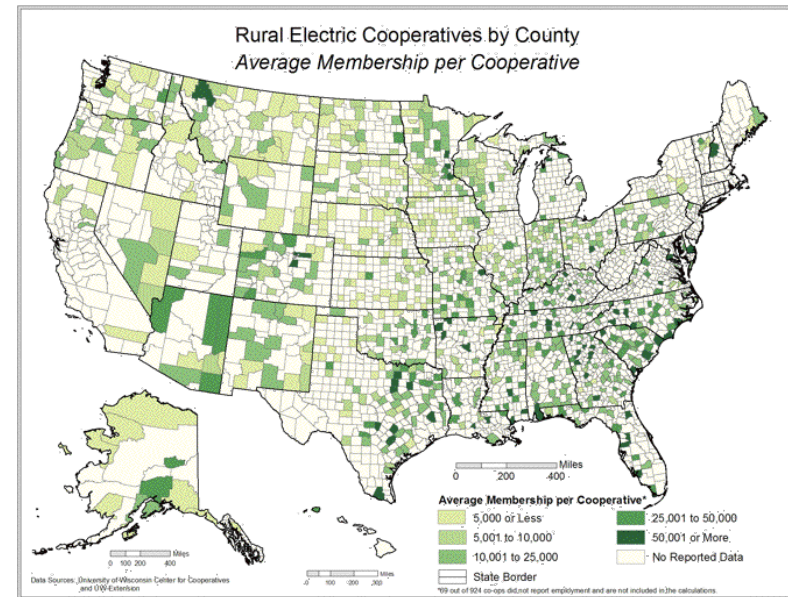Connected Healthcare

Safety

Connected Citizens

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Serving citizens in rural settings is a critical need for wireless cities & communities, particularly for Telemedicine and Smart Grids

University of Pittsburgh Medical Center Telemedicine
http://bit.ly/1SlVUhh

Addressing TIPPSS is essential to achieving safe, secure, scalable future wireless cities architectures

Trust

Identity

Privacy

Protection

Safety

Security

End to End Trust and Security Workshop for IOT
4 February 2016 at GWU, Washington, D.C. 20052

IEEE, Internet2, and the National Science Foundation (NSF) co-sponsors to gather technologists and innovators who can help drive the Internet of Things (IoT) conversation and contribute to the development of an open architectural framework.

- Opening panel of IEEE, NSF, Internet2, DOE, IIC, M2Mi
- Presentations from ISOC, PNNL, Industrial Internet Consortium, IEEE, +35 others
- Breakouts:
  - Access Control & Identity Management
  - Architectural Framework
  - Policy & Standards
  - Scenarios & Use Cases

http://internetinitiative.ieee.org/events/workshops/
ieee-end-to-end-trust-and-security-workshop-for-the-internet-of-things

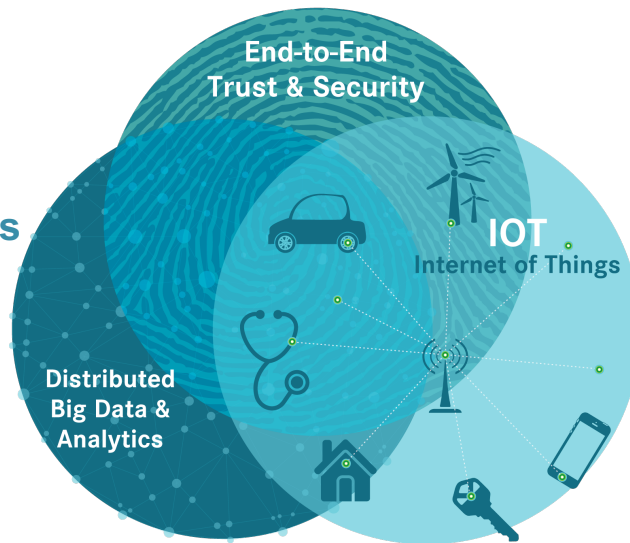INTERNET2®

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Internet2 Collaborative Innovation Working Groups are working key challenges for future wireless cities…join us

E2E Trust & Security:

- **End to End Trust and Security for IoT**
- **TIPPSS – Trust, Identity, Privacy, Protection, Safety, Security**
- **SDP (Software Defined Perimeter), Network Segmentation**

Distributed Big Data & Analytics:

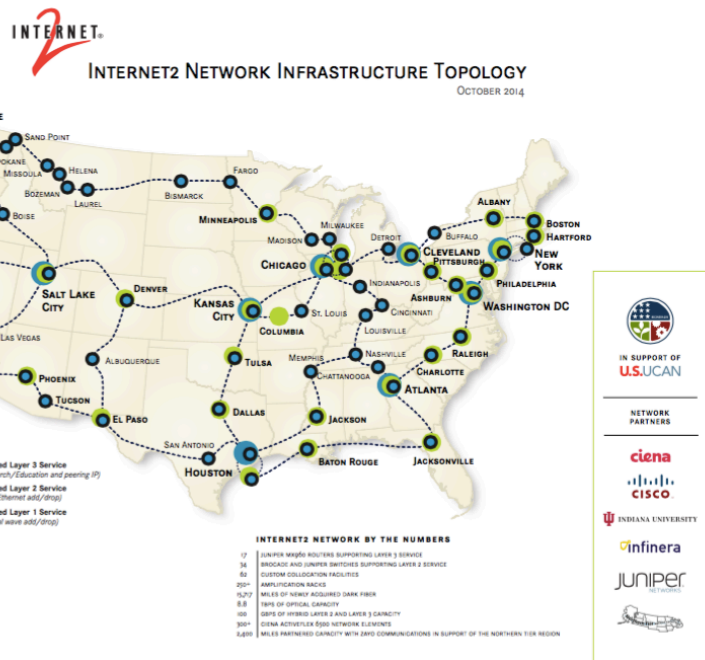- **Smart Cities / Smart Campuses**
- **Digital Humanities**
- **Genomics**

Internet of Things:

- **Smart Cities / Smart Campuses**
- **Smart Grid Testbed**
- **IoT Sandbox**

End-to-End Trust & Security

IOT
Internet of Things

Distributed Big Data & Analytics

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National and Regional Research & education networks can serve as testbeds for smart city and grid systems

- Provide connections to universities, labs, industry, and HPC environments
- Interconnections between smart cities, communities, grids, microgrids
- For example, the Defense Advanced Research Projects Agency (DARPA) Smart Grid proposal for Rapid Attack Detection, Isolation and Characterization Systems (RADICS)
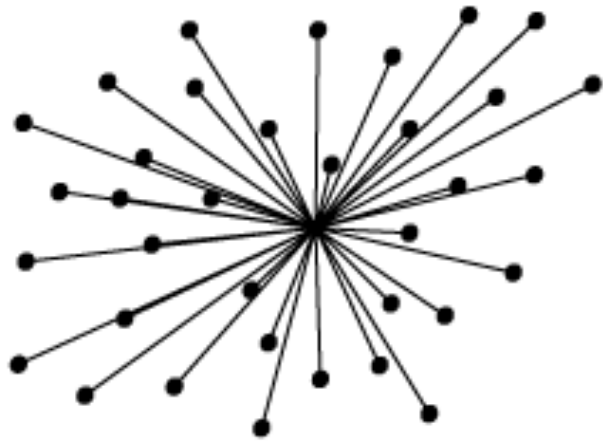
Questions & Answers…
Thank You
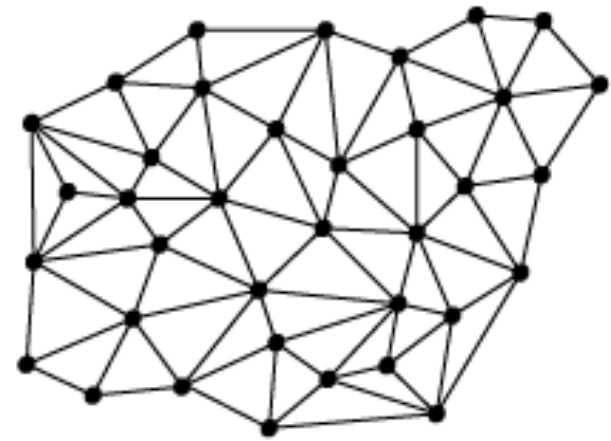**fhudson@Internet2.edu**
@FloInternet2

Different use cases will require different trust architectures, technologies and defense in depth

centralised

e.g., Healthcare

distributed

e.g., Vehicle to Vehicle