# GENI Wireless for Safety-Critical, Traditionally-Closed Sensing and Control Systems

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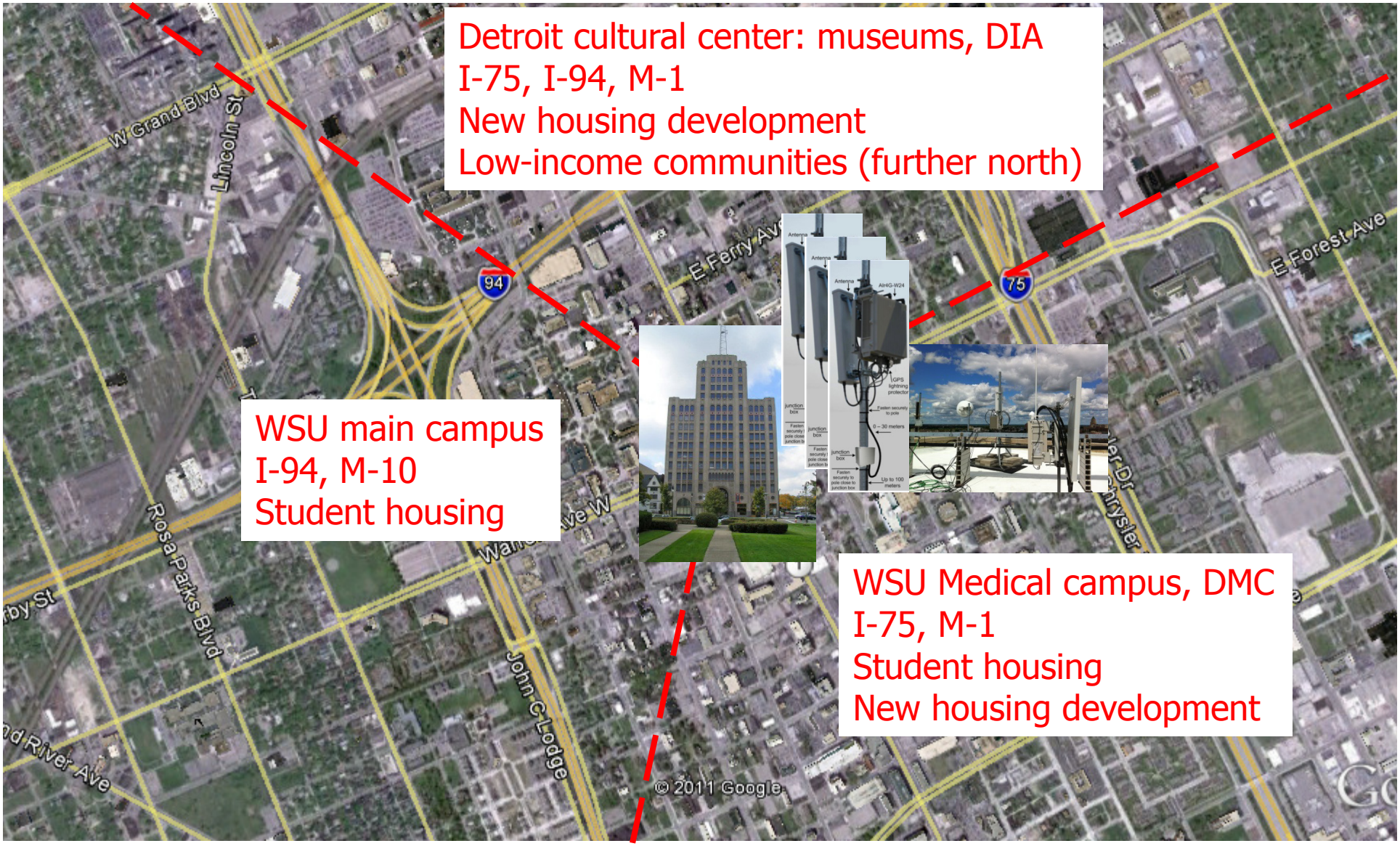
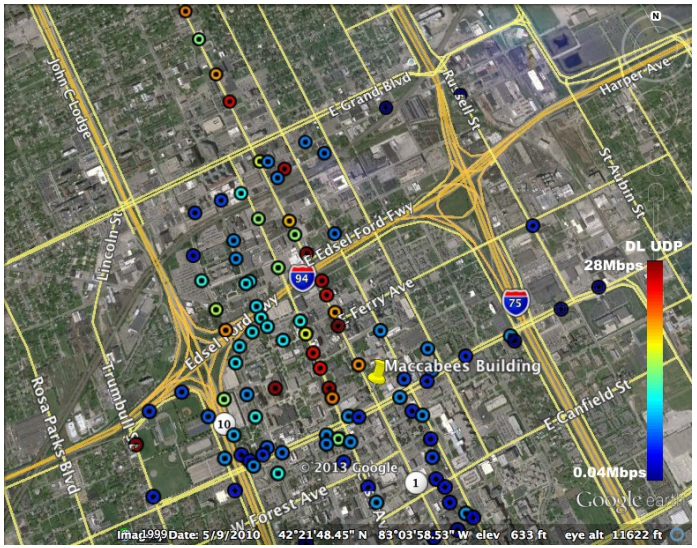
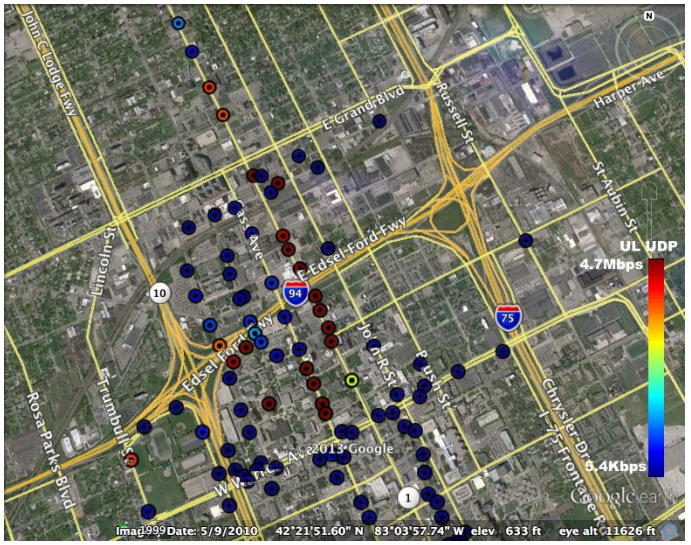
# GENI WiMAX in Detroit: deployment site



# GENI WiMAX in Detroit: coverage

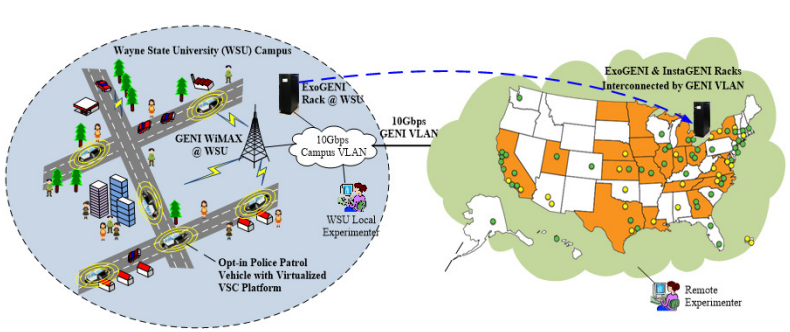



Downlink capacity

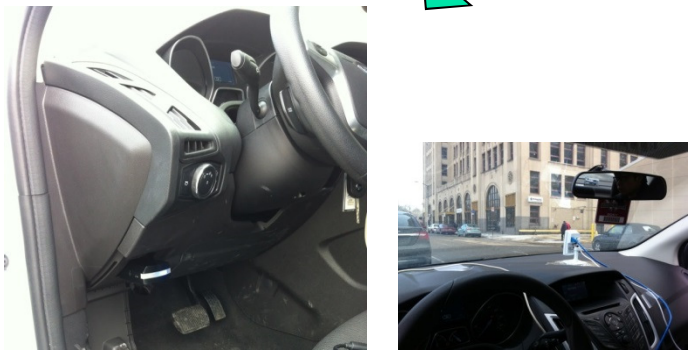



Uplink capacity

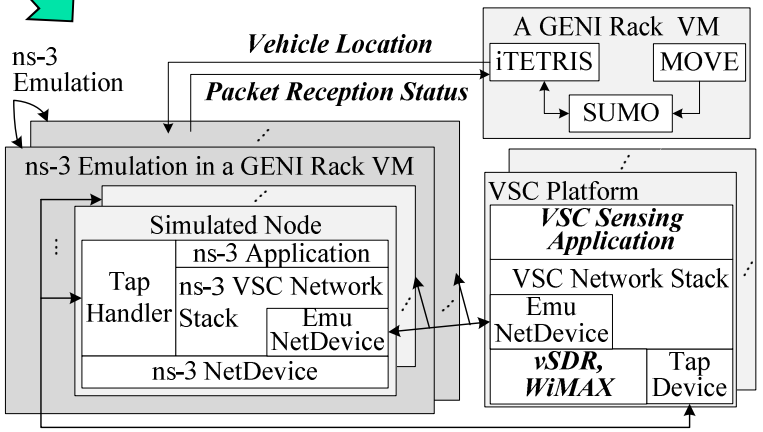
# GENI WiMAX in Detroit: use cases




Networked police patrol



Vehicular sensing: internal & external



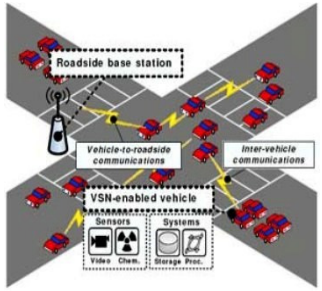

Multi-dimensional vehicular network emulation

Thanks: Jing Hua, Hai Jin

# Roles of GENI LTE (when available)

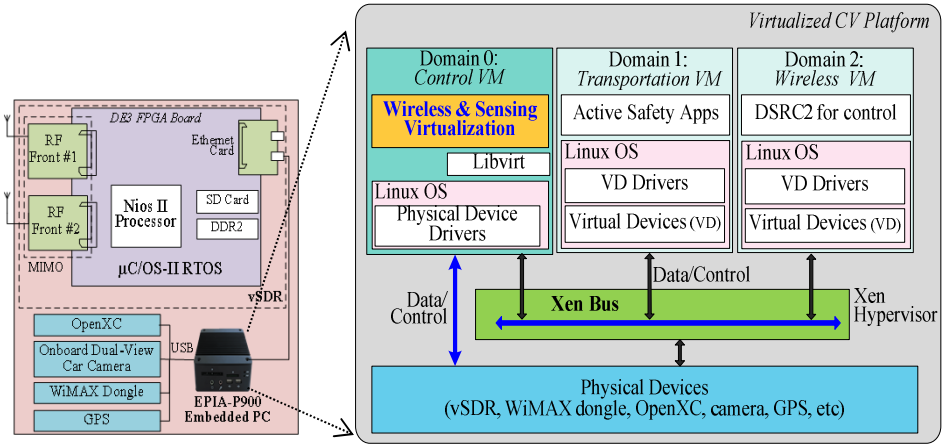
- Immediate impact
  - Aligned with market trend in consumer electronics
    - Ease of integrating smartphones and other devices of opt-in users, e.g., in medical schools
  - Additional/better coverage & capacity
    - Improving streaming quality and responsiveness of VSC emulation
    - Serving as control channel for VSC networking: for DOT at-scale pilot deployments in southeast Michigan
- Longer-term impact
  - Integral part of network solutions to connected vehicles and smart grids

# GENI wireless for safety-critical, traditionally-closed sensing and control systems

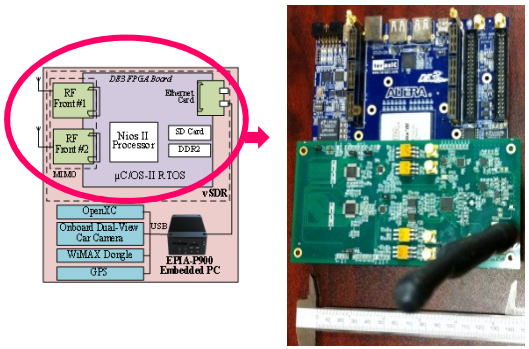



- Commodity LTE vs. software-defined, open-source LTE implementation?
  - Short-term vs. long-term mission of non-NSF agencies
  - Culture: big traditional firms vs. open-source communities
- Great opportunity for broader GENI impact
  - Virtualization, programmability

# Software-defined platform for open-innovation

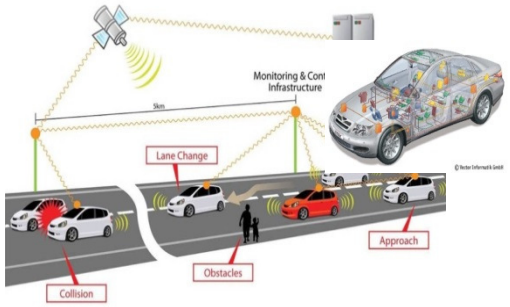



Virtualized VSC platform



Low-cost, high-performance SDR

# Open Innovation
# in Safety-Critical, Traditionally-Closed Sensing and Control Systems

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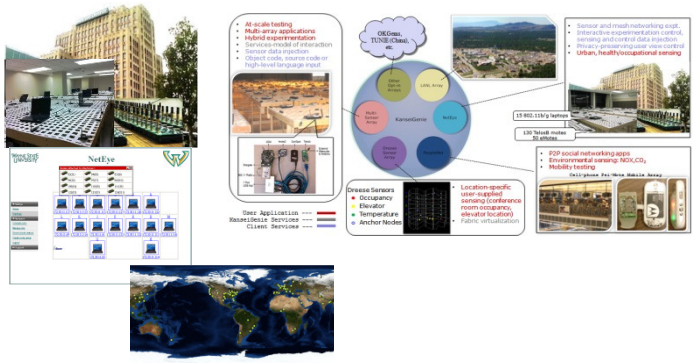
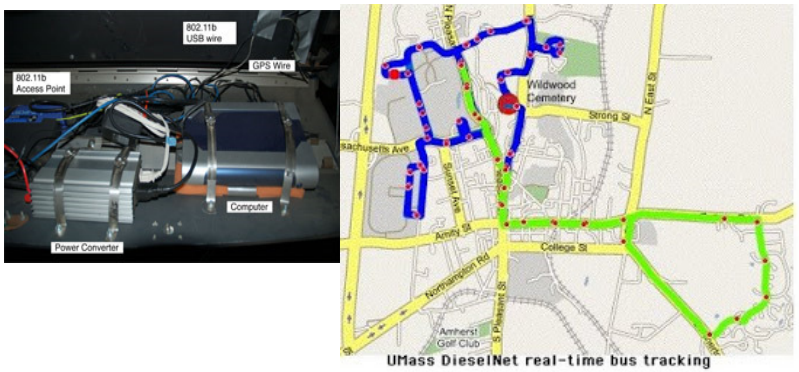
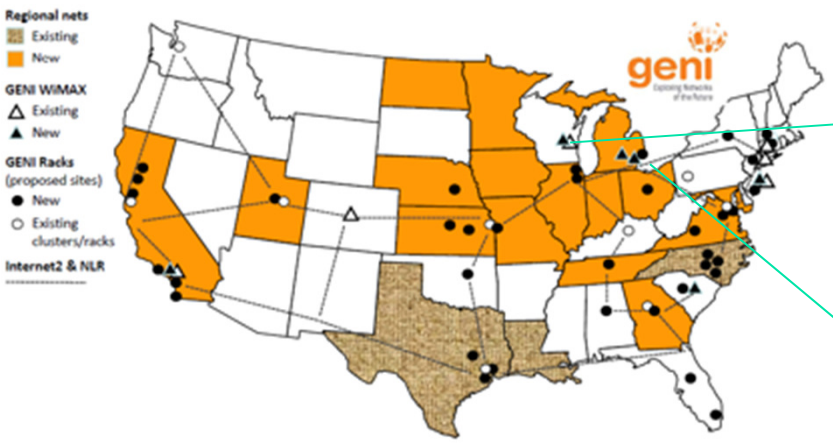
# GENI wireless today



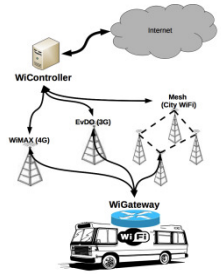

NetEye, Kansei, KanseiGenie



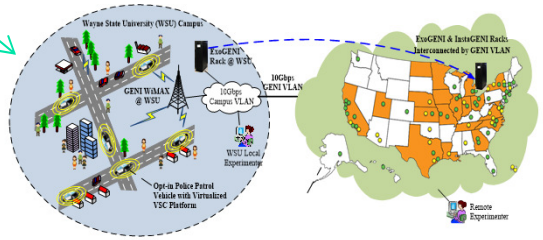

DieselNet




GENI WiMAX




WiRover
@ Wisconsin




Vinsight
@ WSU