Outreach and Education

November 13, 2014

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Stakeholders

- Government agencies

- Research community

- Developer communities & end-users

- Educators

Focus domains

- Transportation/vehicles

  - DOT/Volpe labs, UM safety pilot, DOT Michigan testbeds

  - Communication in (high-speed) trains

- Disaster response

  - DHS: OEC, OCIA, MPPD, FEMA, border patrol

- Public safety

  - FirstNet: DOC, NIST (Boulder)

  - Interoperation between legacy and new systems systems

    - P25 standards interoperability for trunck UHF radios

Modes of outreach interaction

- **Government agencies & industry**
  - NSF networking infrastructures of use to others
  - Existing non-NSF infrastructures of use to the (NSF) research communities
    - DOT CAV testbeds & pilot deployments
    - Automaker consortium: CAMP
  - Concerted cross-agency future initiatives

- **Research community**
  - Training/outreach workshops (e.g., GENI, NSFCloud)

- **Developer communities & end-users**
  - US IGNITE challenges in advanced networking
  - NIST Global City Teams Challenge in CPS
  - Race/test tracks inside university campus (Kettering Unviersities)

Shared infrastructures

- Benefits
  - Shared investment in infrastructure
  - Cross-discipline innovation

- Examples
  - DOT/automaker interest and current investment in wireless-enabled CAV
    - Warning application => different levels of automation/control
  - FirstNet
    - Shrot-term goals + research on D2D & group communication

- Consortium of federal agencies (e.g., via NITRD): cross-discipline synergy
  - NSF as portal for shepherding universities
  - Understanding domain problems
  - Long-term (20+ years) vision

- (GENI) Slice/virtualization

  - Resource allocation

  - As context for authorization, opt-in …

    - Emergency response: multi-agency involvement + public

- Maturity vs. research prototypes?

  - USDOT CV pilot deployments

Education

- Labs on testbeds, in addition to paper-exercises
  - large scale, heterogeneous networking
  - Impact of wireless: video streaming
  - Emulation: vehicle mobility

- MOOCs on testbeds

  MOOCs + hands-on labs

- K-12/16
  - UAVs, robots (lego mindstorms)
  - Phones, apps