CNS-1624193: Smart and Connected Communities Visioning Workshop

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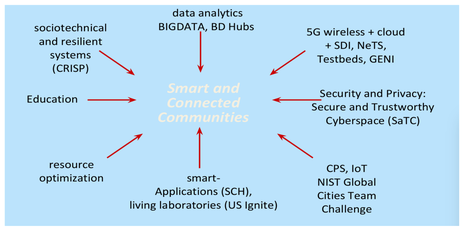
Smart and Connected Communities

Enhancing social well-being by integrating smart technologies into community infrastructures and day-to-day life

Requires a multidisciplinary approach at the intersection of social sciences, urban planning, engineering, and physical sciences

Workshop Goals

- Bring together representatives from academia, municipal, regional, and state governments, industry, international partners, and underserved groups (e.g., First Nations tribes)
- Develop five- and ten-year research agendas to achieve S&CC vision
- Develop a big-picture view of S&CC research initiatives



Schedule and Logistics

Held from January 13-14, 2016 at the Talaris Conference Center in Seattle, WA.

Panel presentations on:
- City Planning and Management
- Urban Infrastructure and Systems
- International Perspectives
- Community Initiatives
- Socio-Cultural-Economic Challenges
- Emerging Technologies
- Education
- Ongoing Research

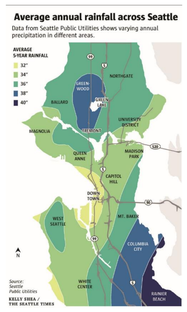
Five- and Ten-Year Visions

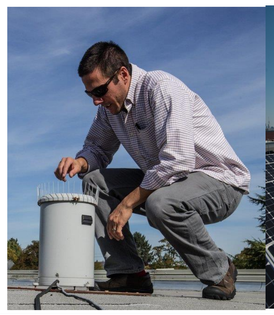
Published in the visioning workshop report

Includes a research and education agenda comprising:
- Creating the S&CC Vision
- Infrastructure for Sensing and Actuation
- Data Analytics and Cloud Resource
- Privacy, Security and Resilience
- Closing the Loop
- Workforce Development and Innovation Ecosystem

City Planning and Management

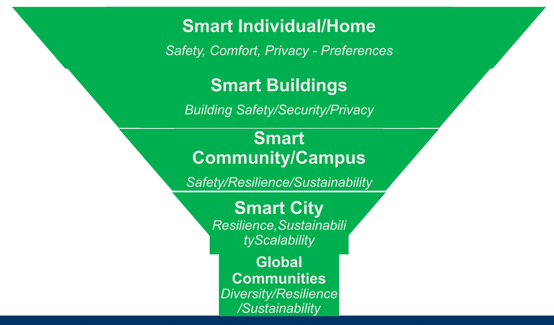
- Representatives from Georgia Tech, City of Seattle, Kansas City, and Amazon
- Presented pilot programs on transportation, emergency response, and urban sensing
- Transportation: Ride and bike share programs, traffic sensors
- Emergency response: Crowdsourcing and communication networks
- Urban sensing: Rainwater measurement
- Discussed challenges associated with large-scale data collection, requirements of cyber infrastructure





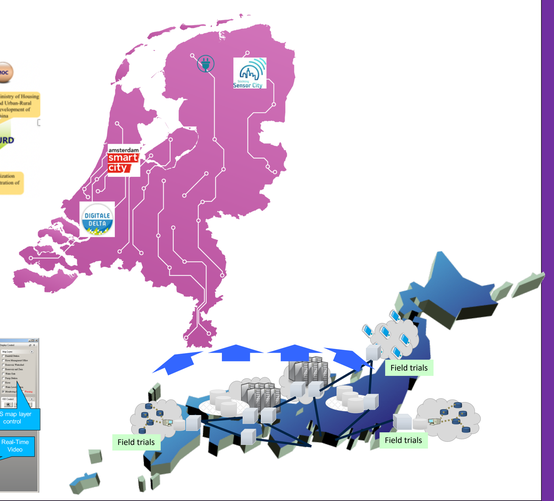
Urban Infrastructure and Systems

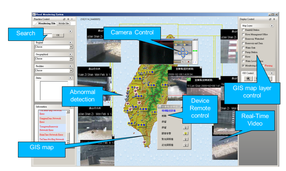
- Roadmap for smart firefighting
- Freight transportation: Interdependent road, rail, port infrastructures must coordinate to meet demand
- Deployment of S&CC technologies: From smart homes and buildings to community-level systems



International Panel Presentations

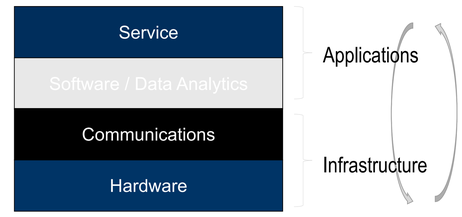
- Participants from Taiwan, China, Netherlands, and Japan
- Disseminated S&CC initiatives and discussed opportunities for international collaboration
- Cross-cutting efforts in disaster response, smart mobility, smart governance, sustainability, and agriculture





Community Initiatives

- Report from US Ignite, Metrolab, and Global Cities Team Challenge initiatives
- Goal of developing S&CC solutions that are scalable and transferable

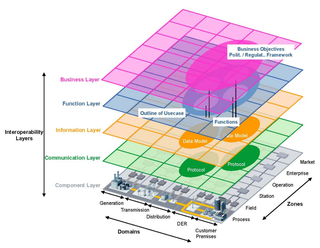


Socio-Cultural-Economic Challenges

- Discussion of S&CC solutions for underserved groups
- Feedback from Suquamish First Nation tribe
- Incorporating moral and ethical values into S&CC
- Smart urban agriculture to mitigate "food deserts"

Emerging Technologies for S&CC

- Low-power sensors
- Smart grid demand response and other instances of "closing the loop"
- Reconfigurable infrastructure to enhance resilience
- Proliferation of crowdsourcing and cloud services
- Opportunities for socially responsible AI
- Security and privacy concerns



S&CC Education

- S&CC will require workforces with specialized skills
- Overview of academic and government education and training initiatives
- Need for living labs identified