

# Day 2 Discussions

Day 2: 11:15 am to 3:15 pm EST

# IoT scope examples – what's in scope? What isn't?

In (examples)

- Connected sensors
- Robotics
- Drones
- Autonomous tractors
- Cameras
- Smart meters
- Medical devices (IoMT)
- Smart phone app?
- PLC

- Gateways (LoRa, etc.)
- Middleware
- IoT platforms

Out (examples)

- Routers
- Laptops with cameras
- Servers
- SCADA?
- Edge servers and storage

For discussion purposes – to be revised during meeting

# Discussion topics

- **Smart traffic and transit technologies** [Steve, Debbie, Nicole, Benson, Kevin]  
*traffic and traffic management systems and vehicle technologies, transportation, including electric and autonomous vehicles (trucks, cars, and others used for transportation)*
  - **Augmented logistics and supply chains** [Robby, Steve, TomK, Ann, Mike]  
*those activities involved in supply chain and logistics including freight transport, logistics, warehousing, distribution, etc.*
  - **Sustainable and critical infrastructure** [Arman, Benson, Nicole, Steve, TomK (c), Pete (c)]  
*refers to infrastructure (roads, rail, transit, buildings, broadband, waterways, energy/grid, manufacturing, etc.) that is used to support the needs of a growing population while being environmentally and financially sustainable, operationally scalable and resilient against a number of future threats like climate change, disasters, economic and others*
  - **Precision agriculture** [Ranveer, Nick]  
*crop farming, livestock, greenhouse and indoor farming, aquaculture and associated activities*
  - **Environmental monitoring** [Arman, Ranveer, Nick, Mike]  
*Broadly refers to air, water, soil/land, forests, energy, etc.*
  - **Public safety** [Nicole, Mike, Maria, Ann]  
*refers to the prevention, detection, mitigation, response and recovery to natural and manmade incidents and events, such as fires, disasters, pandemic, etc.*
  - **Health care** [Ann, Maria, Mike]  
*refers to patient physical and mental health care related topics, from wellness, prevention to recovery, and other related activities*
- **Verticals**
    - Smart homes – Mike, Kevin, Ann, Steve,
      - Hvac, security, lighting,
    - Consumer – Debbie, Maria, Mike
      - Appliances, TVs, wearables, etc.
    - Manufacturing (within supply chain and critical infrastructure?)
    - tbd
  - **Horizontals** (Debbie)
    - Security – Kevin, Steve, Tom, Pete, Mike, Ranveer
    - privacy/data ownership – Maria, Kevin, Mike, Debbie
    - Skills/education/workforce development – Pete, Kevin, Nicole, Robbie, Debbie
    - Standards – Steve, Tom, Mike, Debbie, Nick
    - Regulations/Commerce – Debbie, Robbie
    - Policies - Benson, Ranveer
    - International engagement - Dan, Ann, Mike, Tom, Debbie, Nick

## **5 IOTAB Report Dimensions**

- 1. All IoT types (OT, IoMT, IoDT) and their components (Hardware, Software, Firmware)**
- 2. Vertical sectors (some of Discussion topics list)**
- 3. Horizontals (security, privacy, equity, bias, data, policies, IP, adaptability)**
- 4. Education, Skills, and Experience levels**
- 5. B2C, B2B and B2G**

# Discussion topics

- **Smart traffic and transit technologies** [Steve, Debbie, Nicole, Benson]  
*traffic and traffic management systems and vehicle technologies, including electric and autonomous vehicles (trucks, cars, and others used for transportation)*
- **Augmented logistics and supply chains** [Robby, Steve, TomK, Ann]  
*those activities involved in supply chain and logistics including freight transport, logistics, warehousing, distribution, etc.*
- **Sustainable and critical infrastructure** [Arman, Benson, Nicole, Steve, TomK]  
*refers to infrastructure (roads, rail, transit, buildings, broadband, waterways, energy/grid, etc.) that is used to support the needs of a growing population while being environmentally and financially sustainable, operationally scalable and resilient against a number of future threats like climate change, disasters, economic and others*
- **Precision agriculture** [Arman (energy), TomK, Ranveer, Nick]  
*crop farming, livestock, greenhouse and indoor farming, aquaculture and associated activities*
- **Environmental monitoring** [Arman, Ranveer, Nick]  
*Broadly refers to air, water, soil/land, forests, energy, etc.*
- **Public safety** [Nicole]  
*refers to the prevention, detection, mitigation, response and recovery to natural and manmade incidents and events, such as fires, disasters, pandemic, etc.*
- **Health care** [Ann]  
*refers to patient physical and mental health care related topics, from wellness, prevention to recovery, and other related activities*

What are the opportunities for IoT and benefits it brings?

What are the barriers hindering IoT development, adoption and operation?

What are some potential recommendations?

Who else should we consult or speak to us?

Who wants to write about this?

# Analysis Model/Framework for capturing and classifying challenges

Category	Develop	Adoption/Deployment	Operate/Use
Technical maturity			
Infrastructure - technical			
Infrastructure - standards			
Policies			
Funding			
Cost			
Risk			
User/adopter			
Regulations			
Organizational			
Innovation			
Governance			
Commerce/trade			
Intellectual property			
Safety			
Accessibilty, inclusion, equity			

# Actions

- Send your pdfs to Barbara
- Add “Define IoT” on Day 2 agenda (30 minutes)  
- done
- Update report outline; identify your specific items that should be considered to be included
- Consider inviting a speaker to talk about critical infrastructure needs for IoT (security, privacy, etc.)
- Consider inviting a speaker for deploying IoT in brownfield implementations
- Ann - create comments re: device ID in form of email
- TomK - produce report summary on device identifiers
- Develop an updated proposed report outline (broader action) – Benson, Debra, Mike
  1. How should we organize the environment in the report, usage settings, etc.
  2. Future of IoT
  3. Personas, profiles of users, adopters, implementers, etc.
  4. graphic/visual that organizes the content, the horizontals, the verticals, etc.
- Develop personas – Debbie, Nicole, Debra
- Develop draft content regarding “IoT definition/what is IoT/what it is not” to be placed in report – Mike, Steve, Tom
- Form and plan your small ad hoc groups (see list) - All
- Provide templates - NIST
- Forward any recommendations for potential future speakers - all
  1. Susan Landau (Kevin)
- Next meetings planning and logistics – Barbara
- 125 Billion devices – where did that come from? NIST
- Market research report – can we get? Barbara to check on that