Integrated Open Edge

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5G+

- Heterogeneous
- Edgy
- Open

Heterogeneous

- Unlicensed & licensed & satellite spectrum
- Urban & suburban & rural
- Outdoor mobile & indoor mobile & stationary
- Public & private networks
- Industrial & consumer applications

Edge

- Cloud-2-Things Fog continuum
  - Brick-click pendulum swinging

- SCALE:
  - Security
  - Cognition
  - Agility
  - Latency
  - Efficiency

- Unique challenges: heterogeneity, variability, constraints

Open

- Vertical decomposition:
  - Inter-layer interface

- Horizontal decomposition:
  - Inter-geographic-unit interface

ION

- Integrated:
  - Turn-key solutions to network operators
  - Robustness, feature set, and performance
- Open:
  - Faster innovation and diversification
  - Need to sequence/prioritize the "order of opening"

- Evolution vs. revolution
- Agility vs. over-specification

ION-style EDGE

- Division of labor across the fog continuum
- Ajar architecture: progressing steadily from closed to open
- SCALE-driven value proposition
- Interoperability across heterogeneity
- Industrial application-driven reliability and performance

Some Recent Activities

- U.S. State Department "Global CTO Roundtable" in May 2020
  - ION
  - Edge

- U.S. Commerce-State "6G Roundtable" in November 2020
  - Heterogeneous

Some Next Steps

- Indy 5G Zone & Open 5G Edge Testbed
    - Opened on December 17, 2020

- Test deployment in Japan and several other countries

- Accelerate 5G deployment in U.S.

- Search for "killer industrial apps" that only 5G can support

Thank you

Princeton Edge Lab (founded 2009):
www.edge10.princeton.edu

Industrial Internet Consortium (merged with OpenFog Consortium):
www.iiconsortium.org

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