IoT Advisory Board Meeting
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Company and Presenter

Who we are

- **Serving M2M and IoT since mid-1990's**
  - Connected vehicles, fleets, monitoring, etc.
  - Recently acquired IoT Accelerator and Connected Vehicle Cloud from Ericsson

- **Global Cellular IoT Services**
  - Thousands of enterprise customers
  - Devices in >200 countries / territories

- **In Top 5 in the World (Cellular IoT units)**
  - Many tens of millions of devices

- **"Super" MVNO ... Intelligent IoT Core**
  - SIMs, connectivity, analytics, cloud, security

- **Founder of Aeris ... 27+ years**
  - Headed Eng and Ops ... 15 years
  - Now: CTO Emeritus & Chief Evangelist

- **Chairman of IFAST**
  - International ANSI-41 number mgmt

- **Boards**
  - IMC Council (Chairman Emeritus)
  - CDMA Development Group (CDG)
  - Mobility Development Group (MDG)

- **Multiple Patents in IoT**
  - Pioneered capabilities used widely

Presentation

Removing barriers to growth

- ## Security and Scale

  - My phrase: "Security *at* Scale"

- ## Technology

  - Cellular sunsets over time

- ## Resources

  - Number assignments in USA

- ## Regulations

  - National / International consistency

- ## *Regardless … IoT deployments growing rapidly!*

  - "Billions" becoming real globally

# Security Alert

Threats in the IoT World are growing rapidly

- ## IoT Cybersecurity Attacks Growing

  - 240% increase in attacks against IoT devices in first half of 2021 (Kaspersky)

- ## IoT Devices are Vulnerable

  - Over 90% of IoT traffic is unencrypted (Z-Scaler, Palo Alto)

  - Average time for device probe by bad actors is 5 min (Kaspersky)

  - 287 days to mitigate breach! (IBM)

  - 53% of IoT projects abandoned due to risk (Z-Scaler)

- ## IoT Data Breaches are Impactful

  - Average cost of breach in 2021: $4.24 million (IBM)

Technology Evolution

Cellular technology changes "rapidly"

- **IoT Devices Are Long-Lived**
  - Useful life of *many* years ... *unlike* consumer handsets

- **Most IoT apps do not need broadband**
  - But, *have* to migrate to use available technology

- **Examples of *US* Sunsets and Impact**
  - AMPS: Aeris customers removed 1.7M units (2008)
  - GPRS: Alarm industry ... 4-5M units (2016)
  - 3G: General monitoring ... 10-12M units (2022)
  - CDMA: Automotive/fleet ... 20-40M units (2022)

- **Near-Future**
  - 4G LTE: Projected sunset ... 2027 to 2030
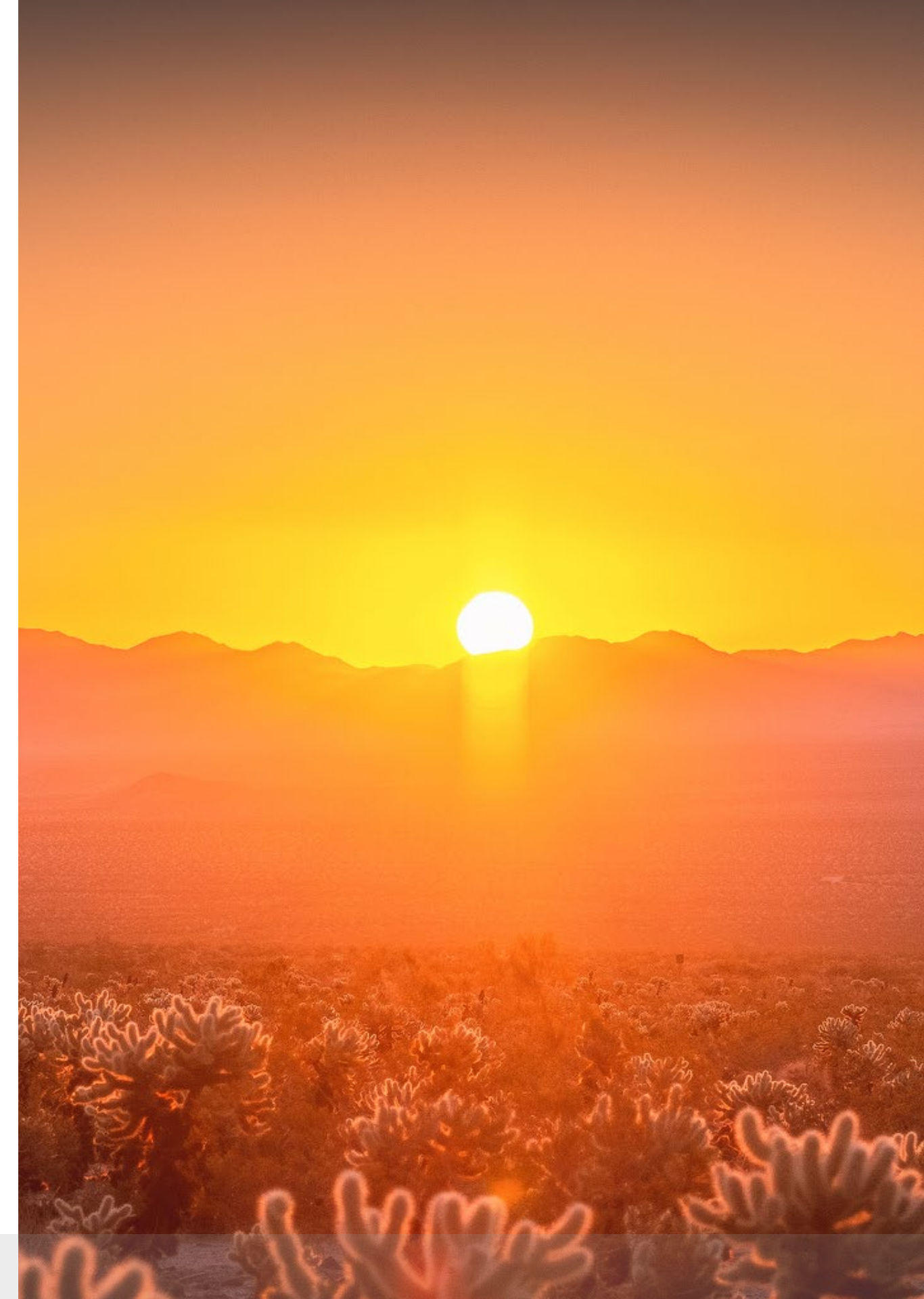
Numbering Resources – USA

Issue for some Cellular IoT applications

- *Certain* IoT apps require Dialable Numbers
  - IFAST ranges cannot receive "calls"

- Outdated Assignment/Allocation Policies
  - Created in an era of NPA wireline assignments
  - Constraints for *nationwide* wireless units
  - IoT units are deployed and operate everywhere
    - Devices in motion ... service area is entire country
  - Stopgap 5YY numbers not sufficient

- IoT Access to Resource is Limited
  - Licensing (e.g., from CLEC) is cost prohibitive
  - Requires carriers to support entities like Aeris

Regulations Evolving

Slower than needed

- ## Security Regulations

  - Mostly geared to protect individual privacy

- ## US States Taking Lead (e.g., CA SB 327)

  - Laws still general and abstract

  - Difficult to regulate ... IoT serves many markets

  - Certification, app-specificity, compliance

- ## Federal Regulations / Oversight

  - Consistent rules easier to meet nationally

- ## International Coordination

  - Global IoT app deployments are very common

An overview of IoT for business uses
and applications

https://www.aeris.com/iotguide

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aeris THANK YOU!

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