Welcome!

Thank you for joining this session on:

**Energy/Cyber Security Assessment**
*Data Analytics for Cyber Resilience of Strategic/Critical Electrical Grid Infrastructure*
Data Analytics for Cyber Resilience of Strategic/Critical Electrical Grid Infrastructure

Presenter:
Dr. Steve Chan
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IARIA KEYNOTE: DATA ANALYTICS FOR CYBER RESILIENCE OF GRID INFRASTRUCTURE

**People to People**
**Machine to People**
**Machine to Machine**

**Data Flow and Volume**

**Eras**
- Industrial Internet & Smart Utilities
- Critical Infrastructure Protection
- Continuous Streaming Data: C37.118a (2005/2011/2014)

**Strategic Infrastructure**

**Critical Infrastructure**

**“Little” Data**
**“Big” Data**

**Internet**
**Internet of Things**
**Internet of Everything**

**Point of View on Data**

**Smarter and More Creative Cities & Smarter Megacities**

Wed 11/15/17 9:15-10:15  IARIA KEYNOTE: DATA ANALYTICS FOR CYBER RESILIENCE OF GRID INFRASTRUCTURE  Slide Number: 9
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IEEE 1547 Std: 2 seconds

- Signal Ingestion: 100 ms
- Breaker Actuation: 200 ms
- Trip Time: < 1 second
- Aberration Detection: 1 to < .5 seconds

Measurement Time: 0.05
Communications Latency: 0.2
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Microgrid Stability Paradox

Microgrids are expected to provide a higher level of availability than the current Grid paradigm. Yet, the microgrids’ high use of renewables results in less stable operation of the distribution system and introduces heightened instability.
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...for attending this IARIA Session:

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