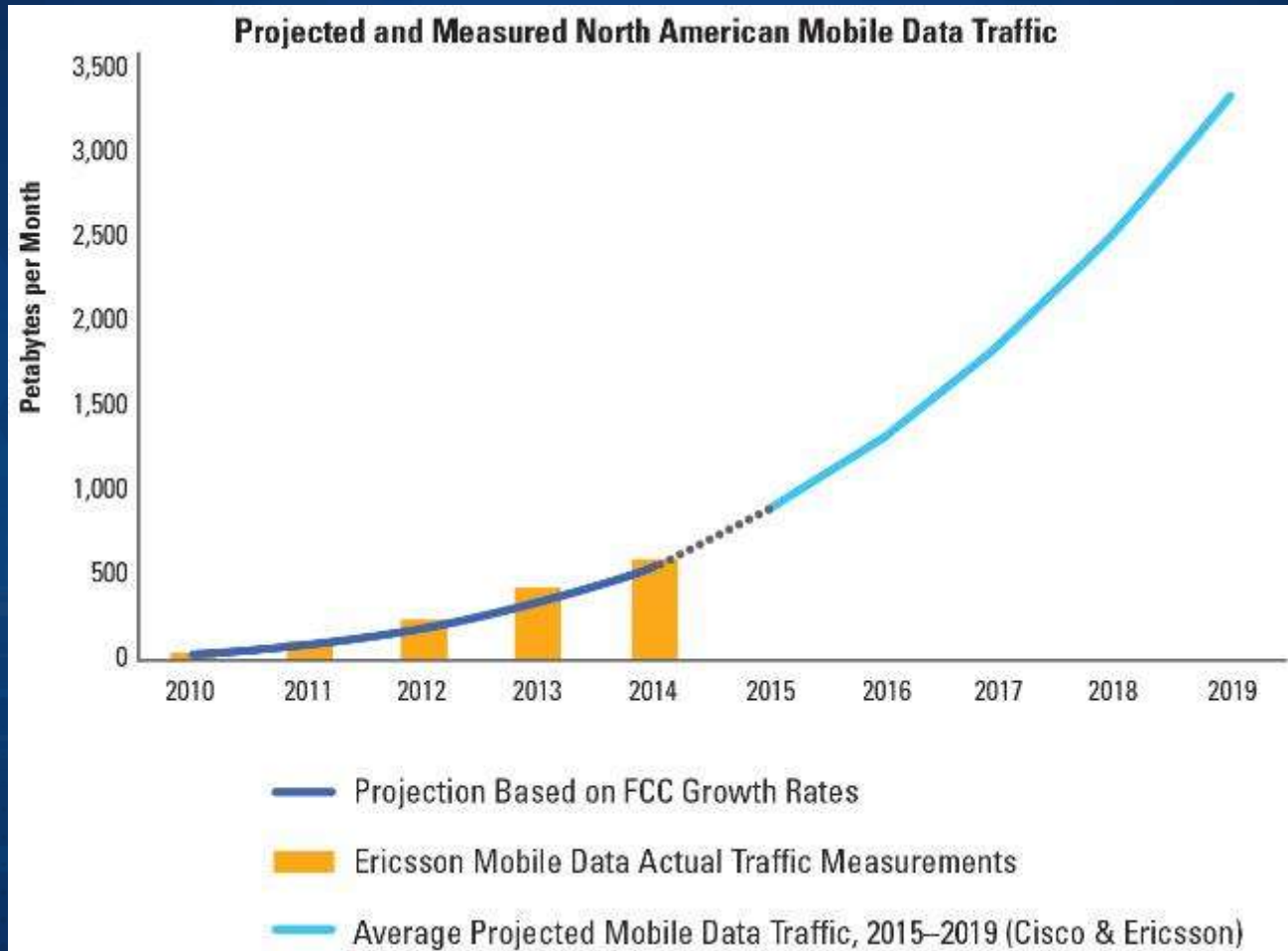


International Symposium on Advanced Radio Technologies

Key Considerations for Spectrum Sharing in Mobile Networks

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Wireless Industry Growth



Spectrum Sharing – Key Considerations

- CTIA supports exploring/validating spectrum sharing
 - Geographic
 - Time-based (e.g. ASA/LSA)
- Technology maturity – cognitive radio, interference detection, intelligent scheduling
- Predictable and measurable interference
- Lab and field testing – NTIA Test Beds
- Database accuracy
- Predictability – Spectrum auction success important

Radio Technology

- Cognitive Radio
 - Spectrum Sensing
 - Interference Detection
 - Intelligent Tuning and Scheduling
- Spectrum Sharing
 - Database-directed
 - Accuracy, completeness
- Development and deployment of new technology
- Device support critical
 - Complexity and cost
 - Needs to support IoT devices



Network Evolution

- Radio Access
- Technology Neutrality
 - LTE
 - LTE-U
 - Wi-Fi
- Small cells
 - Microcells, femtocells, in-building, DAS
- Evolution from 4G to 5G
 - LTE-Advanced
 - '5G'



Core Requirements for Sharing

- Spectrum not truly viable for cleared, licensed access
- Clear spectrum rights to ensure QoE
 - Geographic
 - Temporal
 - Interference
- Confidence to invest in ecosystem
 - Network infrastructure
 - Device and chipset
- Scalable to support many millions of subs
- Strong proof on concept and validation

Path Forward

- Share technology, testing, development
- Database management
- Technological neutrality and flexibility
- Appropriate licensing conditions
- Standards to ensure coexistence
- Resiliency and security