Agenda

• Who is Southern Linc today?
• Why Southern Linc is building LTE?
• What is Mission Critical LTE?
• What are Southern Linc’s LTE PTT standards?
• What about handsets?
Reasons for a New LTE Network

- Automation, including Smart Grid technology, will contribute to more efficient operation of Southern Company utility T&D systems, will increase reliability, and facilitate timely restoration of service.

- Automation requires the ability to transmit data at speeds that exceed the capability of and at network latencies not achievable on Southern Linc’s iDEN network.

- Evolving cyber-security encryption requirements cannot be met by narrowband technologies like iDEN.

- Vendor support of iDEN technology through 2018.
Mission Critical LTE
Why is LINC LTE different?

• Network Redundancy
• Coverage
• Prioritization
• Fixed Data
• PTT
• Incident Response
LTE Data Centers and Sites

- 2 fully redundant EPCs
- Backup battery, redundant power and generator backup for each EPC
- Backup battery and generator/fuel cell at cell sites
- Redundant last mile transport to sites
- Company-owned and maintained transport backbone
LTE Network Structure

- Up/Down Link
- Microwave Link
- Fiber
- Ethernet
- Radio
- Shelter
- MPLS Aggregation Nodes
- MPLS over SOCO Transport
- Evolved Packet Core (APC)
- Evolved Packet Core (GPC HQ)
- Ext Svc (PSTN, Internet, Etc)

UE (Mobile)
UE (Router)
Don Horsley
Network Operations Center
EPC – Evolved Packet Core
EPC – Battery Backup
EPC – Backup Generators
EPC – Backup Generators
Hydrogen Powered Fuel Cells
Last Mile Transport Design

Site B
Site A
Site C
Site D
Site E

Carrier A
Fiber Provider

Carrier B
Fiber Provider

Southern Linc
Agg Location A

Southern Linc
Agg Location B
LTE Storm Resilience

- Similar storm and incident response tactics as iDEN uses today – Cell On Wheels, Emergency Microwave Units, Generator on a Trailer, Satellite Backhaul, etc.

- Committed to getting LINC up and running quickly so that power can be restored
Voice and Data Prioritization

- Prioritize PTT calls over other types of data traffic
- Prioritize critical user groups over general use groups
- Prioritize critical data usage over general data use
Southern Linc Wireless engaged in 3GPP Standards Organization

• Southern Linc is part of the 3rd Generation Partnership Project (3GPP) that is working to create a global standard for Mission Critical PTT (MCPTT)

• Southern Linc participates in a Mission Critical Applications working group within 3GPP

• Through 3GPP, Southern Linc successfully modified the lower edge of Band 26 to encompass Southern Linc’s spectrum and added mechanisms in the 3GPP standards to mitigate the potential of interference with other licensees
3GPP – Participation List

- AT&T
- BlackBerry
- Ericsson
- ETRI
- ETSI
- General Dynamics
- Harris
- Huawei
- Kodiak
- KT Corp
- LG
- Motorola
- Nokia
- Orange UK
- OTD
- Qualcomm
- Samsung
- SK Telecom
- Southern Linc
- Thales
- PD Netherlands
- TTA
- UK Home Office
- US Dept. Commerce
- VodaFone
Push To Talk
Push To Talk

Follow Mission Critical 3GPP Product Standards
• Large Group Call … eMBMS
• Call Setup Times

Handsets
• PTT Centric
• Hardened
• Accessories
Handsets