

University of North Carolina Hospital System Pilot

Summary & Scope

6/29/2015

Revision History

Version	Date	Author	Reviewed by	Contents
0.1	June 29 2015	David G	Erik O	Original draft
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I. Introduction

In Q3 of 2015 University of North Carolina (UNC) Hospital System, Global Wireless Technologies (GWT) & Wireless System Solutions (WSS) will be undertaking a trial where they will be trialing a LTE cellular network for First Responders ; designed with a commercial feature functionality on the dedicated national public safety band 14 (758-768 Mhz downlink & 788-798 Mhz uplink).

II. Scope

This trial will familiarize the First Responders of UNC Hospital System with the basic and advanced features and functionality that LTE can offer as well as demonstrate a Band 14 Small Cell architecture in a primarily indoor environment with some outdoor overlap. Specific features and functionality that will be trialed are:

1. Indoor Cellular Coverage in rooms, structures or facilities w/ no existing coverage
2. Different radio network architectures
 - a. Multiple low capacity eNode Bs (Small-Pico Cells)
 - b. Small Cells driving a Distributed antenna system (DAS)
 - c. Centralized radio access network (C-RAN)
3. Centralized Network Management System
4. Mission Critical VoLTE features
 - a. Group Calling
 - b. Push to Talk over LTE
 - c. QOS
 - d. Full Duplex
5. Multi-cast Streaming Video
6. Outdoor deployables installed in several hospital vehicles (portable cellular coverage)
7. Policy management, prioritization of communications in the Evolved Packet Core
8. An integrated LTE communications system networked across many disparate locations

III. Phases

5 trial phases

Phase 1:

- Targeted coverage areas
 - o 2 (two) critical rooms and a parking structure
- Ensure cellular coverage in targeted areas
- up to 5 Subscribers

- Ensure inter-working between separate coverage areas (separate eNBs or DAS) in adjacent locations
- Features to be demonstrated are VoLTE, M-VoLTE (Group Calling), Streaming video, Chat messages, non-VoLTE PTT, Network management from central location, Handover

Phase 2:

- Targeted coverage areas (in addition to areas listed in Phase 1)
 - o 3 (three) buildings with 2 (two) floors each
 - o 2 (two) buildings with 3 (three) floors each
- Ensure cellular coverage in targeted areas
- Up to 13 Subscribers
- Ensure inter-working between separate coverage areas in disparate locations
- Features to be demonstrated are VoLTE, M-VoLTE (Group Calling), Multi-cast Streaming video, Chat messages, non-VoLTE PTT, Network management from central location, Handover

Phase 3

- Targeted coverage areas (in addition to areas listed in Phase 2)
 - o several rooms
 - o 1 tower floor,
 - o And an additional room
- Up to 22 Subscribers
- Ensure inter-working between separate coverage areas in disparate locations
- Features to be demonstrated are VoLTE, M-VoLTE (Group Calling), Multi-cast Streaming video, Chat messages, non-VoLTE PTT, Network management from central location, Handover
- Introduce First Responder applications for communications

Phase 4

- Targeted coverage areas (in addition to areas listed in Phase 3)
 - o communications department (multi-room) on a single large floor
- up to 33 Subscribers
- Ensure inter-working between separate coverage areas in disparate locations
- Features to be demonstrated are VoLTE, M-VoLTE (Group Calling), Multi-cast Streaming video, Chat messages, non-VoLTE PTT, Network management from central location, Handover
- Review applications for communications

Phase 5

- Targeted coverage areas (in addition to areas listed in Phase 4)
 - o multiple 3 floor buildings
 - o 2 sub-4 floor buildings
- Up to 55 Subscribers
- Ensure inter-working between separate coverage areas in disparate locations
- Features to be demonstrated are VoLTE, M-VoLTE (Group Calling), Multi-cast Streaming video, Chat messages, non-VoLTE PTT, Network management from central location, Handover
- Release & Review First Responder applications for communications

Areas

Coverage Areas:

Phase	Location
1	Dispatch
1	Parking Palace
1	The Lair
2	Eastowne 500
2	Eastowne 700
2	Hedrick
2	Hillsborough Hospital MOB
3	Emergency Department Major's Office
3	3 rd floor support tower
3	Officer's Wardroom
4	Communication's Department Ground Floor Old Hospital
5	Hillsborough Hospital, other buildings
5	Wakebrook (2 buildings)

Patrol Vehicles:

Phase	Vehicle	Practitioner
2	Marked Sedan	Robert M.
2	Unmarked Sedan	Michael E.
4	Trail Blazer (TBD)	??
4	Tahoe (TBD)	??

Test Devices:

Device No.	Name	Phase
1	J.C.	1
2	W.H.	1
3	K.W.	1
4	M.M.	1
5	R.M.	2
6	M.E.	2
7	B.J.	2
8	J.O.	2
9	Dispatch Position 1	2
10	Dispatch Position 2	2
11	C.W.	2
12	K.H.	2
13	R.G.	2
14	R.S.	3
15	L.T.	3
16	T.M.	3
17	B.M.	3
18	J.T.	3
19	M.Y. 1 (ISD)	Aside
20	M.Y. 2 (ISD)	Aside
21	M.Y. 3 (ISD)	Aside
22	M.Y. 4 (ISD)	Aside
23	M.B.	4
24	S.P.	4
25	L.B.	4
26	E.C.	4
27	D.C.	4
28	W.V.	4
29	R.K.	4
30	D.P.	4
31	R.W.	4
32	J.W.	4
33	J.D.	4
34-43	Enough for on duty staff at the Big House	5
44-50	Enough for the on duty staff at Wakebrook	5
51-55	Enough for the on duty staff at Hillsborough Hospital	5