Dereck Orr and NIST,

I will comment on a couple elements that I believe could have very significant financial impact on deployment of the public safety broadband network, but which need R and D backing to make them recognized alternatives. The first area falls under the general category of network sharing. The ability of manufacturers to produce EnodeB equipment that will support both the carrier's commercial spectrum and band class 14 on the same devices raises many possibilities. Alcatel Lucent has indicated that their new equipment could be manufactured with this capability. Sprint representatives have indicated that their new base station equipment will be able to support this capability. Estimates of the cost to add this capability to carrier's new base stations needs to be established. An additional question following up on this capability would be the ability for EnodeB equipment to correctly function through X2 and S1 interfaces for hand off, load balance and diversity functions if the EnodeBs are on different carrier's networks. I would envision that Public Safety would have their own redundant EPCs, with non core traffic off loaded to the internet at the earliest possible points as is being developed by the carriers to minimize their backhaul demands. Does this structure or some other enhancement allow EnodeB equipment on different carriers networks to have all of the anticipated communications links to allow EnodeB equipment to function with all of their anticipated capabilities?

If the above capabilities are functional at a reasonable price the Public Safety network deployed at all commercial carrier's sites nationwide becomes an option with significant more redundancy and capacity than if deployed on any one carrier's infrastructure. If the technology can achieve the capability, then the political, financial, regulatory, and governance elements could be more seriously discussed. The carriers may have a significant interest in including the PSBB spectrum in their equipment if they have access to use spectrum if not used to capacity by public safety. Prioritization would assure Public Safety of needed connectivity. This low priority access of all carriers to PS spectrum could provide a nationwide roaming capability across all vendor's coverage for the public This approach supports the distributed market place for carriers, lowers costs for PSBB deployment and provides increased roaming coverage for the public. This approach would also generate the market demand for the chipsets that public safety would need. Security elements with this approach would need additional discussion as devices including band class 14 would be made available and enabled to the public. Deployment of the PSBB network as part of the carrier's primary equipment places equipment on the same update, replacement and

maintenance schedules as the carrier's infrastructure. This would be a significant additional cost savings for the operation and maintenance of the PSBB network.

The second item for comment has a much smaller scope of impact but will be significant for Public Safety. Relay nodes are addressed in revision 10 of the 3GPP standards. I have not seen any recognition that those relay nodes may need to be mobile. I believe that vehicle based mobile relay nodes with additional power levels and/or steerable antennas could provide significant coverage gains in a cost effective manner. Research and development of mobile relay nodes is likely to be an area that public safety will have a larger interest in than the cellular industry.

My last observation goes to open standards and multi vendor environments for components of the PSBB network. It is paramount that we maintain open standards supporting the multi vendor environments for components of the network. It is apparent that the carriers are all selecting 2-3 vendors for major components to assure future competition. We have our own example on not selecting an open standard in the costs of the P25 vocoder. Standard development and compliance is a necessary component to assure price competition and performance.

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