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April 29, 2014

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Room TW-A325
Washington, D.C. 20554

Re: GN Docket No. 12-268, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*

Dear Ms. Dortch:

On April 25, 2014, Matthew Grubis, Chief Engineer for Communications and Informatics, GE Healthcare; Michael Fitzpatrick, Senior Manager and Senior Counsel, GE; Orrin Marcella, Manager of Government Relations, GE Healthcare Americas; Neal Seidl (by telephone) and Matthew Pekarske (by telephone) of GE Healthcare, and Ari Fitzgerald, counsel to GE Healthcare, held two meetings with Federal Communications Commission ("Commission") officials. The first meeting was with David Goldman, Senior Legal Advisor to Commissioner Jessica Rosenworcel, and Clint Odom, Policy Director to Commissioner Jessica Rosenworcel. The second meeting was with Erin McGrath, Legal Advisor to Commissioner Michael O'Rielly. At both meetings, the parties discussed the attached slide presentation and why the Commission should both refrain from permitting unlicensed devices to operate in Channel 37 until technical limits can be developed that fully protects wireless medical telemetry service ("WMTS") and impose a coordination requirement for mobile base stations operating near Channel 37.

Consistent with section 1.206(b)(2) of the Commission's rules, please associate this letter with the above-referenced docket.

Respectfully submitted,

/s/ Ari Q. Fitzgerald

Attachment

cc: David Goldman
Clint Odom
Erin McGrath

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Impact of the Incentive Auction Proceeding on WMTS Use in Channel 37

Presentation to the FCC
GN Docket No. 12-268

April 25, 2014

imagination at work

Agenda

1. Introduction to WMTS
2. WMTS's Low Tolerance for Interference
3. Interference Mitigation Review
4. Part 27 Mobile Downlink Concerns
5. Request

Introduction to WMTS

- Channel 37 wireless medical telemetry service ("WMTS") equipment is routinely used in hospitals and other healthcare facilities in fetal monitoring and cardiac rehabilitation.
- By allowing healthcare providers to continually monitor their patients' physiological data, WMTS equipment plays a critical role in patient care.
- WMTS enhances patient mobility and comfort, reduces medical complications, creates workflow efficiencies, and significantly decreases healthcare costs.

As a critical safety service, WMTS cannot tolerate interference

- Just one instance of interference to WMTS could wipe out patient monitoring for a large portion of a facility's WMTS devices, overwhelm its staff, and endanger its patients.
- Channel 37 is generally a very "quiet" band, and existing systems have been designed to take advantage of this (*i.e.*, with very low transmit power and multi-day battery life); if even low-level extrinsic interference is introduced, it could negatively affect WMTS's reliability.
- A single unlicensed device transmitting at the fixed TVBD EIRP limit of 18.6 dBm/100 kHz could cause significant desensitization to WMTS facilities within 21 km.
- A single unlicensed device transmitting at the portable TVBD EIRP limit of 2.6 dBm/100 kHz could cause significant desensitization to the WMTS facility within 3.3 km.

Interference mitigation techniques being considered may not protect WMTS from unlicensed devices

- The use of exclusion zones and geo-location databases is particularly problematic.
- Very large exclusion zones would be needed to protect Channel 37 WMTS from realistic worst-case scenarios (line of sight propagation), which may cause large portions of major urban areas to be unavailable for unlicensed use.
- The geo-location database concept remains largely untested, and serious concerns exist regarding the reliability and security of the devices, databases and device-database access protocols.
- Google's database, for instance, uses only hard-coded URLs and lacks secure authentication, which makes it vulnerable to security and reconfiguration threats.

Part 27 Mobile Downlink Coordination

- The proposed 3 MHz guard band between mobile downlinks and Channel 37 will not be sufficient to prevent interference in all cases.
- Mobile base stations located very near to WMTS installations will require more stringent emission limits than those proposed in the NPRM.
- Rather than impose more stringent limits on all mobile base stations, a more efficient approach would be to adopt a case-by-case approach.
- For instance, the rules could require Part 27 licensees to check the WMTS database before deploying a mobile base station and make accommodations when necessary.
- To provide further flexibility, the rules could exempt from such coordination mobile base stations that meet an optional, more stringent emissions mask (*e.g.*, by simply adding extra filtering between transmitter and antenna).

Request

We ask that the FCC refrain from indicating that unlicensed devices will be permitted to operate in Channel 37 until technical limits are developed that are shown to fully protect WMTS, and impose a coordination requirement for mobile base stations operating near Channel 37.