

# WMTS Coalition Meetings

## January 13, 2014

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# Introductions

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- Dale Woodin, Executive Director  
*American Society For Healthcare Engineering*
- Mark Gibson  
*Comsearch*
- Lawrence Movshin  
*Wilkinson Barker Knauer, LLP*
- Ari Fitzgerald  
*Hogan Lovells (GE Healthcare)*



# Meeting Goals

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- Update the Commission on WMTS registration activity and review information filed about relocation costs.
- Discuss critical issues involving protection of incumbent WMTS licensees using Channel 37 from interference to critical care and other patient care functionality.
- Promote a band plan that best protects WMTS licensees from harmful interference while also promoting goals of other interested parties.

# WMTS Coalition Meetings

## WMTS Registration Statistics & Relocation Cost Estimates

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# Registration Statistics

Total number of hospitals registered to use WMTS	3220
Total number of hospitals registered to use Channel 37 WMTS (608 – 614 MHz)	2343
Total number of WMTS devices registered to use Channel 37	~ 121,000
Total number of hospitals registered to use the upper WMTS bands (1395 – 1400 MHz & 1427 – 1432 MHz)	1582
Total number of WMTS devices registered to use the upper bands	~ 196,500

- In general, the Channel 37 band is used for one-way transmissions and the upper bands are combined for two-way transmissions.
- Based upon a recent ASHE survey of hospitals and WMTS device manufacturers, ASHE believes that the number of medical telemetry devices deployed in the Channel 37 band is over 212,000.
- **If relocation is mandated, ASHE expects that registrations will more than double in order for systems to be included in any relocation cost reimbursement program.**

# Relocation Cost Estimates

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- The survey estimated costs for a replacement system average almost \$9,500 per transmitter.
  - This totals over \$2 Billion for the 212,000+ installed transmitters.
- The estimates do not include the cost of training hospital personnel, sales/use taxes; costs of re-registration; site preparation; required upgrades to network closets, power supplies, etc.; or the costs involved in removing and disposing of the old equipment
  - This could add an additional \$300-\$500 million to the aggregate costs to the health care industry of relocation from Channel 37.
- With hundreds of comments on the record, the overwhelming sentiment supports retaining Channel 37 for WMTS and Radio Astronomy, with virtually no support for relocating WMTS out of Channel 37.

# WMTS Coalition Meetings

## Band Plans

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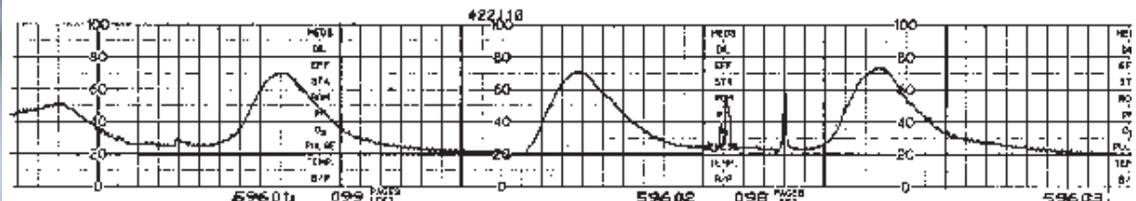
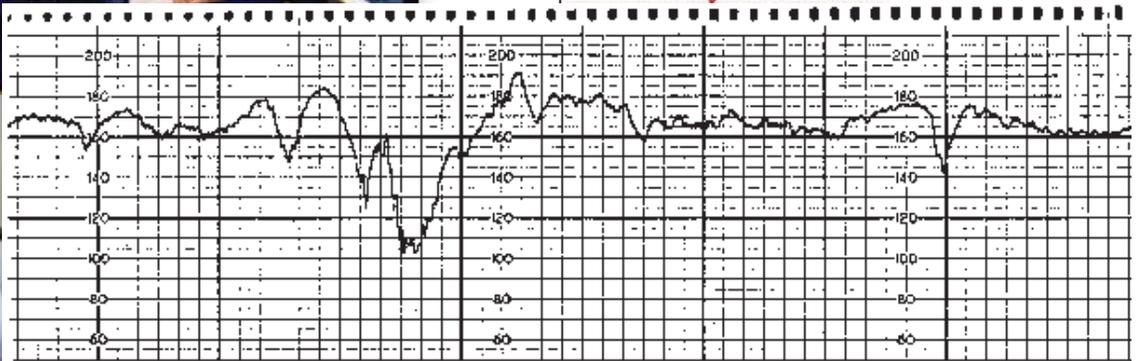
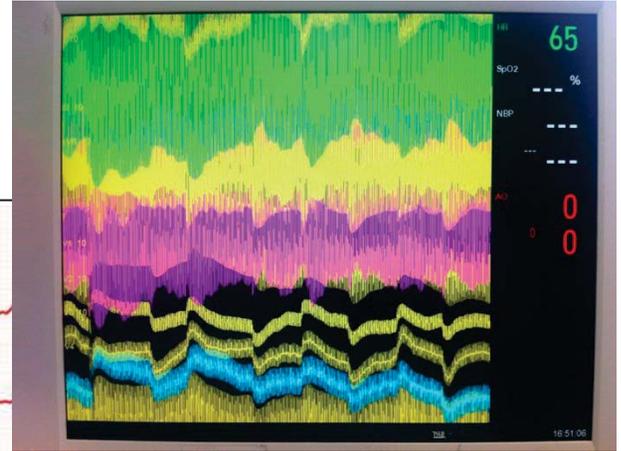
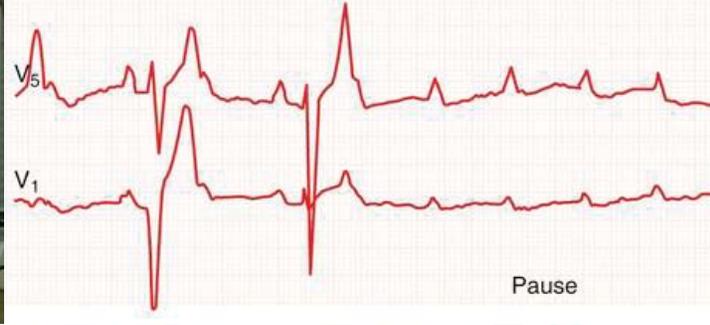


# WMTS Band Plan Concerns

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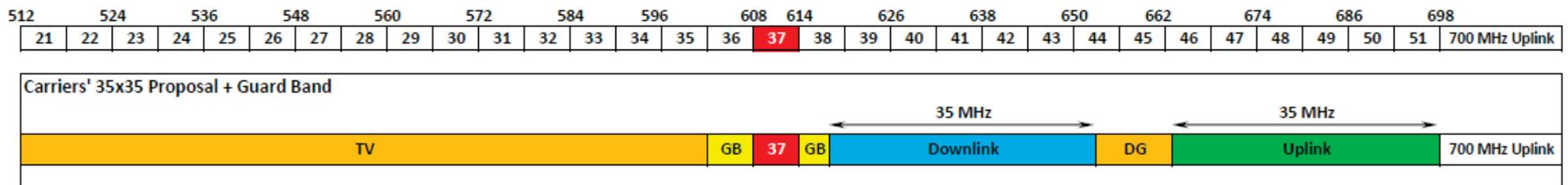
- Adjacent-channel interference from any new high-powered licensees will reduce capacity of existing systems, resulting in:
  - Reduced patient monitoring.
  - Potential significant capital outlays either to add new WMTS capacity in other bands (if available) or to modify systems to avoid harmful interference.
- Because incumbent licensees in Channel 37 provide critical patient care, these concerns should be discussed, considered and addressed in band plan adopted by the Commission.

# Impact on Patient Care



# WMTS Coalition Position: Band Plan

- WMTS installations have been designed to avoid interference from incumbent TV Stations operating in Channel 36 or 38.
- WMTS systems will not be able to tolerate significant additional interference from any “new neighbors” operating in those bands.
- WMTS Coalition strongly favors the Down from 51 (35 x 35) plan generally endorsed by wireless carriers and broadcasters that includes:
  - A 4 MHz guard band above Channel 37,
  - And an additional guard band below Channel 37.
- This will help protect against adjacent-channel interference from either DTV or 600 MHz licensees who may occupy the immediate adjacent channels.



# WMTS Coalition Position: Adjacent channel Downlink

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- WMTS Coalition strongly opposes any band plan that would place **Uplink** channels in close proximity to Channel 37.
- Adjacent-channel Downlink transmitters also will have an impact.
  - The proliferation of base stations will significantly increase the potential that a high-powered transmitter will be located very close to WMTS receivers.
  - This will cause out-of-band emission interference into a WMTS system
- The WMTS Coalition will work with the Wireless Carrier community to seek a consensus proposal that will allow effective operation without creating harmful interference to Channel 37 WMTS systems including either:
  - A requirement for coordination of base stations with registered WMTS health care facilities; or
  - Adoption of more stringent emission limits for base stations in immediate adjacent channels
    - This will be determined based on the size of the guard band.

# WMTS Coalition Position: Adjacent channel DTV Stations

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- Repacking more TV stations immediately above or below Channel 37 will create significant interference for incumbent WMTS licensees.
- Existing WMTS systems have engineered around incumbent TV channels on a hospital-specific basis, but generally cannot be easily or cost-effectively retrofitted to avoid interference from newly re-assigned DTV Stations.
- The Coalition favors a band plan with guard bands directly above and below Channel 37.
- The band plan should utilize Channel 36 only as a last resort for repacking to minimize the location of additional TV stations adjacent to incumbent WMTS licensees.

# WMTS Coalition Meetings

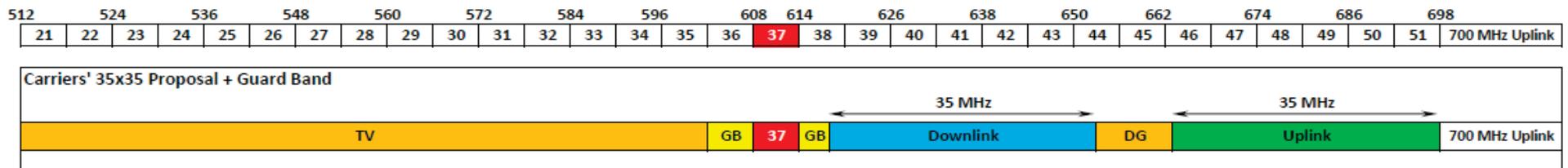
## Sharing with Unlicensed Users

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# Sharing with Unlicensed Users

- The Coalition opposes any sharing of Channel 37 with unlicensed devices.
- Those favoring sharing of Channel 37 for unlicensed uses do not adequately consider or balance risks to patient safety if sharing is permitted.
- The Commission should not risk patient safety simply to accommodate the potential that other unlicensed bands will not be adequate to satisfy demand for unlicensed services.



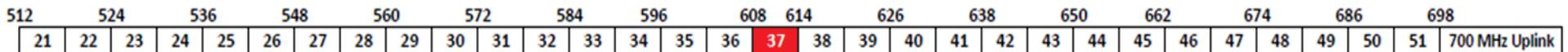
# Sharing with Unlicensed Users

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- A review of the record in the TVWS proceeding confirms that *all* stakeholders recognized it would be impractical for TVWS to operate co-channel with WMTS licensees.
- Nothing has changed except the TVWS community's desire to operate on more spectrum than may be available after the Incentive Auction.
- Suggestions that the Commission can rely on database control of TVWS devices using protection zones around hospitals fail to recognize the virtual certainty that even the best TVWS systems will occasionally fail to restrict TVWS uses in close proximity to WMTS receivers.
- Proponents of sharing Channel 37 through protection zones also fail to recognize that the proliferation of Channel 37 WMTS licensees in most urban areas will make it generally unavailable for sharing with TVWS uses.
  - Little more “white space” than exists today.

# Sharing with Unlicensed Users

If guard bands are created below and above Channel 37, the WMTS Coalition could support unlicensed devices in the guard bands **if** the TVWS device emission mask (already deemed acceptable by TVWS device proponents when the TVWS rules were adopted) is imposed to avoid adjacent channel interference into Channel 37.



# WMTS Coalition Meeting

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## Additional Discussion Items Questions?

