

AMT & MBAN

A Spectrum Sharing Solution

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Cycle of Contention: 2007-2009

- Nov 2007 – GE Healthcare (GEH) approached AFTRCC with a proposal to
 - Share 2360-2370 MHz and 2390-2400 MHz on a secondary basis for “low power medical type transmissions”
 - GEH proposed that a 250 meter separation distance would be sufficient to protect AMT from 1 mW MBANs transmitters
 - JHU APL conducts analysis, and advises that a separation distance of over 100 km is needed to meet protection levels for AMT provided in ITU-R M.1459
- Dec 2007 – the “Cycle of Contention” begins
 - GEH filed comments with FCC proposing a new allocation, including proposed rules, and a co-existence engineering analysis seeking to show that a separation distance of 129 meters was sufficient to meet M.1459 protection levels for AMT
 - AFTRCC and GEH alternately file comments at regular intervals, and meet with FCC staff. The debate revolves around protection for AMT sites, link budgets, the noise floor, percent availability for TM links, and whether a static or Monte Carlo analysis is appropriate for two safety of life services
 - AFTRCC conducts noise measurements in Wichita KS and Seattle WA, and commissions an independent party to measure the noise floor in Silicon Valley
 - AFTRCC conducts a series of interference tests in 2009, using live aircraft telemetry and 1 mW interference sources, including surrogate MBAN devices. All tests verify AFTRCC analysis
 - Medical industry’s comments attempt takes issue with the test and measurement results

Breaking the Cycle: 2009-2011

- October 2009 – AFTRCC indicates a willingness to accept a secondary allocation for medical telemetry, but insists on a technological means of enforcement
- Nov 2009 – Phillips Healthcare files comments proposing a technological means of enforcement
 - MBANs would be confined to indoor use at hospitals for 2360-2390 MHz shared spectrum AND
 - A technological fail-safe would ensure MBAN transmitters cease transmission in 2360-2390 MHz if moving from indoors to outdoors
- Dec 2009 - AFTRCC and Phillips open negotiations, soon joined by GEH
 - Coordination procedures and criteria are drafted and fine tuned
 - The technological fail-safe is successfully demonstrated
 - Attitudes change from contention to cooperation
 - Trial coordinations using actual hospitals and AMT sites look good
 - Proposed rules are drafted
- Jan 14, 2011 - AFTRCC, Phillips, and GEH jointly file comments at the FCC setting forth a joint proposal for resolution of the proceeding

The Agreement

- MBANs to be allocated SECONDARY to AMT
 - MBANs must accept any and all interference from AMT
- Protection for AMT is consistent with ITU-R M.1459
 - Based upon progressive analysis steps to see if path loss provides sufficient attenuation
 - Aggregate power of MBANs is included in analysis
 - If sufficient path attenuation is not present, then hospital can't use 2360-2390 MHz, unless AFTRCC & DoD agree to coordinate for temporary MBAN use
 - In the event of interference to AMT from MBANs
 - MBANs operators will cooperate with AFTRCC to identify an interfering MBAN(s)
 - Interfering MBAN(s) to "immediately" cease transmissions upon notification
 - MBANs will accommodate additional new AMT sites if needed

Current Status

- May 24, 2012 - The Commission voted to approve the MBAN proposal
 - FCC modified the draft rules jointly proposed by AFTRCC, Phillips and GEH
 - Most changes of little or no concern to AMT
 - Transition plan for hospitals was removed
 - Some technical criteria for coordination removed, and will need to be inserted into a coordination agreement with an MBANs coordinator
 - Definition of eligible healthcare facility is overly broad
 - The MBANs coordinator has not yet been designated by the FCC
 - FCC seeking comments on criteria for selection of MBANs coordinator
 - Negotiations for an agreement with the MBANs coordinator pending