

memorandum

DATE: June 21, 2006

TO: Ira Keltz, Ahmed Lahjouji, Saurbh Chhabra

FROM: Scot Stone
Deputy Chief, Public Safety and Critical Infrastructure Division (PSCID)

SUBJECT: Peer Review of the JSC Report discussed in the draft *Report and Order, Further Notice of Proposed Rulemaking, and Fourth Memorandum Opinion and Order* (WT Docket No. 04-344)

On March 27, 2006, the Wireless Telecommunications Bureau requested that the Office of Engineering and Technology convene a review panel to conduct a peer review of a February 2004 report (JSC Report) prepared by the Department of Defense Joint Spectrum Center (JSC) and submitted by the National Telecommunications and Information Administration (NTIA) as comments in WT Docket No. 04-344. Pursuant to your review, you concluded on April 17, 2006 that the assumptions, calculations, methodology, and conclusions contained in the JSC Report, with consideration of a January 14, 2004 report prepared by inCode Telecom Group, Inc. (inCode Report), and submitted by MariTEL, Inc., a December 2, 2004 report prepared by Dorr Engineering Services, Inc. (DESI Report), and submitted by the equipment manufacturer RF Neulink, MariTEL's comments and *ex parte* presentations, and JSC's January 27, 2005 response to criticisms of that report by MariTEL (JSC Response), conform to generally accepted standards in the radio engineering field.

Your review agreed with the recommendation in the JSC Report for further studies to determine appropriate techniques to mitigate interference from wideband simplex Automatic Identification Systems to adjacent channel VHF public Coast stations operations.¹ For example, your review states that examining the impact that the recommended forward error correction with depth 16 interleaver would have on design of the receiver and the effects that adding such capability to the receiver would have on latency of the system and throughput, and examining whether antennas with higher gain in the horizontal plane could also be employed to lessen the impact of interfering signals, "could shed additional light on potential mitigation techniques." Your review also states that the JSC Report does not appear to have analyzed the effect that vertical separation of antennas would have on the bit error rate for data communications, and that "that this property could be capitalized on for better results." You note, with respect to the calculations contained in the JSC Report, that the Cosite Analysis Model (COSAM) used in the JSC Report "is an appropriate way to model the system being investigated in this proceeding, but that "a more rigorous review of the results would be possible" if the JSC Report described the choice of values used for the inputs required by COSAM or the actual distributions used to characterize the various parameters. Finally, your review points out that the JSC Report relies on a free space propagation mode, but "a free space propagation model does not adequately describe the actual environment in which these radios will operate and more realistic propagation models may yield results showing even lower predicted interference." Based on your review, we conclude that, while further studies may yield additional means of mitigating interference, it would be reasonable for the Commission to conclude that reasonable and adequate interference mitigation techniques currently exist.

¹ We note that we did not consider your discussion of matters beyond the scope of whether the JSC Report conforms to generally accepted standards in the radio engineering field, such as the possible effect of the proposed action on various business decisions. These matters are beyond the scope of the peer review.