

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Procedures to Govern the Use of Satellite)	IB Docket No. 02-10
Earth Stations on Board Vessels in the 5925-)	
6425 MHz/3700-4200 MHz Bands and 14.0-)	
14.5 GHZ/11.7-12.2 GHz Bands)	

COMMENTS BY PINNACLE TELECOM GROUP

Pinnacle Telecom Group, LLC (“PTG”) respectfully submits the following comments in response to the above-captioned Notice of Proposed Rule Making (NPRM or “Notice”). The NPRM addresses rule changes to allow the operation of C- and Ku-band satellite earth stations on board vessels (“ESVs”).

1. By way of background, PTG’s staff has been responsible for the large majority of ESV frequency coordination activity, starting in 1997 when some of our current staff was then with the engineering firm Edwards and Kelcey. On behalf of Maritime Communications Network (MTN), we developed the “Critical Contour Point” methodology for the analysis of potential interference from in-motion C-band ESV uplinks to shared-band point-to-point microwave systems. We presented that solution to the National Spectrum Managers Association (NSMA) in February 1997, and we began issuing prior coordination notifications (PCNs) for MTN’s C-band ESV operations in April 1997, eventually covering 17 ocean ports. Since 1997, we have performed the same work for the US Navy in five ports (several in common with those for MTN), and for Caprock Communications, operating an ESV on a movable oil platform in the Gulf of Mexico.

2. We have been intimately involved in NSMA discussions from the beginning, and members of our staff have been involved in the current preparation of

comments being prepared by the NSMA. PTG's own views on the various issues raised in the NPRM are presented below.

3. We support the accommodation of ESV shared use of C-band frequencies, as it represents a larger and more effective use of spectrum.

4. We support the "coordination approach", but oppose the "non-coordination approach" in the shared band, as the latter represents an uncontrolled potential for interference to point-to-point microwave facilities. In a band in which frequency coordination has been applied for 30 years and has proven to work well, allowing ESV operations on a "non-coordination" basis represents an unnecessary risk to microwave operations.

5. Should the Commission ultimately allow ESV operation on a "non-coordination" basis, we emphatically support the proposed absolute spectrum limits on such operations. Indeed, given the potential for uncontrolled interference, a spectrum limit per ship per port may not be sufficiently protective of microwave operators' primary rights in the band; we suggest the Commission not only consider a spectrum limit, but a specific spectrum range in which such operations would be permitted. In order to limit the impact for the most popular microwave channel use in the band, ESV operations on a "non-coordination" basis should be limited to the band edges and the middle of the band – regions not normally used by microwave systems with 30 MHz channel bandwidths.

6. We do not support absolute spectrum limits on ESV operations using the "coordination approach". If ESV operations can be successfully coordinated and at the same time are not subject to co-equal primary treatment in the band, there is no basis for imposing an absolute spectrum limit in order to limit the impact of their operations. There simply is no impact.

7. While ESV coordination to date has only involved ships classified as "deep draft", the philosophy behind that was to allow frequency coordinators to easily and clearly define the limits of ESV in-motion operations. Publicly-available NOAA maps include clear delineations of deep-draft port channels and deep-draft sea lanes. The fact

is, though, that to satisfy the intent of a clearly-defined and verifiable in-motion operational contour, such operations need not be so limited. An ESV traveling up and down the Hudson River or the Mississippi River, for example, would have quite a clearly defined path of in-motion operation, and there is no reason such an in-motion operation could not be examined using the same Critical Contour Point method as would be used for ocean port operations.

8. We do believe it is reasonable to limit ESV coordination to frequency ranges that will actually be used (as opposed to “automatic full-band” coordination), in order to limit the spectrum-availability impact on point-to-point microwave operations.

9. It is clear that the interference analysis methodology, interference objectives, and coordination procedures for fixed (docked) ESV operations can follow the same well-established conventions as are used for land-based earth stations.

10. We support the Critical Contour Point Method for analyzing potential interference from in-motion C-band ESV operations to shared-band microwave operations. The method is simple and we believe it largely is conservative – and it basically uses the same familiar mathematical analysis as is used for fixed earth station operations. We are aware of other possible methods, but each one we have seen appears overly cumbersome and may not be readily or easily applied by all interested frequency coordinators.

11. We (along with MTN) were among the proponents for using the -131 dBW/4kHz as the interference protection objective for in-motion ESV operations. We supported that figure because we believe the interference from in-motion ESVs is more “short-term” than “long-term”. All of the frequency coordination we have done for MTN’s C-band ESV operations has been performed with the -131 dBW/4kHz objective, and we are aware of no reported case of harmful interference to microwave facilities as a result of MTN’s operations using our coordinated parameters over the past seven years. As much of MTN’s operations involve large cruise ships operating on regular schedules into and out of the ports they serve, if interference to microwave stations were indeed a problem, we find it hard to believe that no one has ever correlated any instances of harmful interference with the published cruise ship schedules. While our more recent

coordination efforts for other ESV operators have applied the long-term, -154 dBW/4kHz interference objective, that course has only been taken to avoid the need for the operator-applicant to file for an FCC license over and above the possible objections of other frequency coordinators. We continue to believe that a microwave interference objective of -131 dBW/4kHz, or something close to that figure, provides appropriate interference protection for microwave facilities.

12. We understand there are those who suggest the microwave interference protection objective for in-motion ESVs should actually be more strict than the -154 dBW/4kHz. We realize that the -154 dBW/4kHz “long-term” interference objective – and, for that matter, the -131 dBW/4kHz “short-term” objective – are based on what some refer to as “old analog parameters”. However, both those objectives have been in use by frequency coordinators in this country since 1974, and even though newer objectives have been developed in the ITU for digital parameters, the US has several thousand earth stations coordinated and in operation using the “old analog objectives” – and given no record of interference complaints from microwave operators, earth station frequency coordinators have continued to use the “old” objectives and see no pressing need to adopt new ones.

13. Related to this issue, there are also some who argue that we should apply to in-motion ESVs the types of “threshold-to-interference” (T/I) objectives commonly used in interference analysis and frequency coordination between microwave systems. The basis for this argument is that an earth station meeting its conventional microwave interference protection objective might cause a different (and more disruptive) interference level than another microwave system meeting the specified T/I objective. PTG believes that if there is merit to this argument, then new objectives need to be applied to all earth station uplink operations in all bands shared with microwave systems, not just ESV operations.

14. We understand that the ITU came to a conclusion that C-band ESV operations would be treated as co-equal primary, something the NPRM does not propose, apparently for reasons of a perceived significant and negative impact on spectrum availability for microwave systems. Instead, the NPRM asks for comment about various possible treatments for the different aspects of ESV operations. PTG

believes the impact of ESV use on microwave frequency availability is probably less than many imagine, but proposes here a middle-ground approach that may reasonably help the Commission achieve its intended “regulatory certainty” for ESV operations. We propose that both fixed and in-motion ESV operations be treated as “temporary-fixed”, at least from the point of view of interference analysis, frequency coordination, and interference protection rights. (We are not commenting here on any licensing aspects for temporary-fixed facilities.) If all ESV operations are temporary-fixed, they would be frequency-coordinated (and interference-protected) for six-month periods, would be subject to accommodation of microwave frequency conflicts at the end of each six-month period, and there would be a requirement to issue a coordination “renewal” notification every six months, reflecting the latest operating parameters. Given our recommendation that ESV coordination should be limited to the frequencies that will actually be used, this approach should provide a degree of regulatory certainty for ESV operators while minimizing the impact on shared-band microwave operators.

15. In terms of the minimum coordination distance from shore, we believe such a distance can be established via the conventional ITU methodology, along with whatever microwave interference protection objective is applied, or it can be a conservatively set figure (such as the 300 kilometers suggested in the NPRM). Either way, however, the distance from “shore” should be measured from any offshore point-to-point microwave operation that may exist.

16. Having been party to many NSMA discussions on ESV operations, we are aware that there are some who maintain that some form of automated controls need to be required for ESV operations, presumably because the ESV licensees cannot be trusted to keep deep-draft ships inside deep-draft boundaries, or they might operate in ports or other areas in which no coordination was done, or they may operate at higher power or on frequencies not covered in coordination. It is PTG’s opinion that the obligations associated with holding an FCC license, along with the potential FCC penalties for not operating in accord with one’s licensed parameters, more than serve as sufficient controls on any licensee’s behavior. Therefore, we believe any requirement for automated controls on such potential interference are unwarranted and only add unnecessary cost to ESV operations.

17. The NPRM asks for opinions on a requirement for making available tracking information on ESV movement in order to facilitate investigations of interference to microwave systems. We believe such an information requirement is appropriate, but not necessarily on a “real-time” basis. As we can imagine the US Navy, for one, has strong interests in C-band ESV operations and at the same time is probably averse to sharing tracking data on a “real-time” basis (and no doubt for good reason), we propose that such information be made available on request by a legitimate microwave operator or frequency coordinator and be delivered not more than one week after such a request. The one-week lag may be acceptable to all ESV operators, including those whose operations may be sensitive. In addition, we believe it would be reasonable to require ESV operators to cooperate in any investigations of interference to microwave systems.

18. Finally, PTG believes that the Commission should hold any non-FCC-licensed ESV operations to the same standards of operational and interference control requirements as are applied to FCC-licensed ESV operations.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Andrew H. Mermelstein', written over a horizontal line.

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February 23, 2004