

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

In the Matter of )  
)  
Maritime Communications/Land Mobile LLC ) DA 10-664  
and )  
Warren Havens, Environmental LLC, ) PR Docket No. 92-257  
Intelligent Transportation & Monitoring )  
Wireless LLC, Skybridge Spectrum ) FCC 97-217  
Foundation and others )  
Petitions for Reconsideration )

To: Office of the Secretary  
Attn: The Commission

Application for Review<sup>1</sup>,  
or in the Alternative, Section 1.41 Request<sup>2</sup>  
Errata Copy<sup>[\*]</sup>

The undersigned (“Petitioners”) hereby file this application for review (the “ApRev”) of the Order on Reconsideration (the “Recon Order” or “Order on Recon”) that ~~dismissed~~ **denied** their previously filed petition for reconsideration (the “Recon” or “Petition”)<sup>3</sup> of the FCC’s *Letter Ruling*<sup>4</sup> regarding **rule** Section 80.123 that was created in 1997 by the Commission by the

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<sup>1</sup> The defined terms used herein have the same meaning they had in the petition for reconsideration.

<sup>2</sup> Petitioners are concurrently filing a Declaratory Ruling Request under Section 1.2 and in the alternative a Section 1.41 request with essentially the same content as this filing, since ~~it~~ some of the material in this filing may be deemed new and not previously considered at the Bureau level. While the principal new material is known to the FCC (in FCC records), it may still be deemed new in this declaratory ruling proceeding. Since a request under Section 1.41 may be submitted on any non-frivolous matter and FCC practice is to respond (and this matter is of major importance to the AMTS service), Petitioners submit both this and the concurrent Declaratory Ruling Request as requests that, in the alternative, may be processed under Section 1.2.

<sup>[\*]</sup> Deletions in striketrough, additions in dark red.

<sup>3</sup> *Order on Reconsideration*, DA 10-664, released April 19, 2010.

<sup>4</sup> Dennis C. Brown, *Letter*, 24 FCC Rcd 4135 (*Letter Ruling*).

above-captioned order (the “R&O”)<sup>5</sup> and in the above-captioned docket, PR 92-257 (the “AMTS Docket”).<sup>6</sup>

- I -

1. Petitioners pose these questions:

(1) Did the Recon Order (and underlying declaratory ruling it upheld, **the Letter Ruling**, herein after included in the term “Recon Order”) err in relying on a thirty-year old FCC decision ~~that~~ solely concerning Maritime service (the “Maritime Ruling” discussed below), to interpret a rule that now in large part applies to land mobile service, and that may now by election of licensees apply almost entirely to land mobile service or land fixed service?

Petitioners seek a Commission ruling finding that was an error.

(2) Does the Recon Order err in not utilizing, relying upon and citing FCC engineering, or any engineering, to support its findings, which were fundamentally on a technical matter?

Petitioners seek a Commission ruling finding that was an error.

(3) Did the Recon Order err in interpreting a rule on permissible ERP power levels without considering power spectral density, in the AMTS radio service in which any channel width may be used.?

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<sup>5</sup> *Second Report and Order and Second Further Notice of Proposed Rule Making*, FCC 97-217, released June 26, 1997, *12 FCC Rcd 16949, 62 FR 37533*. (the “R&O”). The Letter Ruling also cites 92-257.

<sup>6</sup> This ApRev is filed on ECFS since, as noted above, the subject rule was promulgated in this docket 92-257 and so that other parties who hold AMTS licenses can fully participate. There are at this time a substantial number of AMTS licensees. A Declaratory Ruling **directly** affects all licensees as does the rule being interpreted or clarified. (In contrast, a waiver request particular to one licensee, or one licensee and one of its licenses, may not **directly** affect other licensees and other licenses.) Thus, Petitioners believe that the only effective, and administratively efficient, means to submit this ApRev is on ECFS and to serve copies on other AMTS licensees. If this is not done, it is likely that **some** said other AMTS licensees may object to any ruling on this ApRev since it will effect them but without their knowledge. That could cause administrative inefficiency and also **hinder** full and efficient use of the AMTS service and licenses issued in it.

Petitioners seek a Commission ruling finding that was an error.

2. Petitioners assert herein that the Recon Order is (i) contrary to established Commission policy, (ii) involves a question of law or policy which has not previously been resolved by the Commission, (iii) involves application of a precedent or policy which should be overturned or revised, and (iv) is an erroneous finding as to an important or material question of fact.

3. Petitioner request that the Commission issue a ruling that (i) finds the errors noted above, and (ii) vacates the Recon Order by finding that the AMTS rules on permissible power level cannot be interpreted at all, given the allowance to use either very narrow or very wide channels, and thus, transmitter output power *per se* has not meaning in terms of ERP **per channel-width unit**, and unless and until there is a rulemaking that sets a power-spectral-density (“PSD”) limit for AMTS, any such interpretation is futile, misleading, and contrary to the principals of spectrum efficiency, encouragement of modern advanced radio technology, and administrative efficiency, and will only serve spectrum hording.

4. Alternatively, Petitioners request that the Commission vacate the Recon Order with instructions to process Petitioners’ concurrently filed Petition for Declaratory Ruling. This is Petitioners preference. However, they file this Application for Review to not loose the right to this form of relief, in case ~~this~~ **that** alternative is not granted.

- II -

If for any reason the FCC does not accept or process this as an application for review, then Petitioners ask that the Commission consider it as a Section 1.41 Request, including for consideration of the facts and arguments herein for a more full and complete record and determination in the public interest, especially since they deal with the fundamental issues of spectrum efficiency and prevention of spectrum warehousing, which the Letter Ruling would negatively impact if upheld. It also requests that the Bureau provide technical analysis to backup

up its decisions of technical nature that stand to affect real-life operations of licensees.

- III -

The exhibit hereto, from a NTIA document, describes the direction that the NTIA and the FCC should take in spectrum-efficient regulation and spectrum authorization. The FCC Spectrum Task Force Report did this also. These support a main element of this ApRev, which is that the subject Recon Order fundamentally erred in a decision contrary to these needed directions that are now practical by advanced radio technologies (those available now, and even more, those in the near future) and good system architecture, and are now greatly needed due to growth in wireless systems and traffic in limited spectrum to accommodate it. The spectrum hoarding of the party that sought and obtained the **Letter Ruling Recon Order, Maritime Communications/ Land Mobile LLC (“MCLM”)**, only makes it an especially a-wrong decision, since clearly it fosters that hoarding, by allowing higher power (that is clearly not needed by rule) and less spectrum efficiency.

- IV -

Section 80.123 was not put into effect by publication in the Federal Register until July 28, 1997. However, the basis in the *Letter Ruling* upheld in the Order on Recon was a FCC decision from 1981,<sup>7</sup> a time when :

- (1) there was no service to land permitted for AMTS,<sup>8</sup> and
- (2) the channels and radio equipment all used were all 25 kHz,<sup>9</sup> and thus the

permitted power was in that bandwidth.

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<sup>7</sup> See footnote 15 of the Recon Order: Amendment of Parts 2, 81 and 83 of the Commission’s Rules to Allocate Spectrum for an Automated Inland Waterways Communications System (IWCS) along the Mississippi River and Connecting Waterways, *Memorandum Opinion and Order*, Gen Docket No. 80-1, 88 FCC 2d 678, 685 ¶ 24, 686 ¶ 28 (1981). (the “1981 Order”)

<sup>8</sup> At time of *Letter Ruling* AMTS was default CMRS, but could be used for PMRS if applied for and granted under Section 20.9(b). In this Recon, Petitioners discussion of AMTS means whether it is on a CMRS or PMRS basis. Both land PMRS and land CMRS follow the same principles of good engineering described herein.

Therefore, the only logic of the Bureau at that time was service to ships-- including appropriate power levels for ships along coastlines using 25 kHz wide channels. Prior to the creation of Section 80.123, service to stations on land was not permitted.<sup>10</sup>

The Recon Order assumed that certain ERP that is believes was allowed in an ancient (in the life of wireless) 1981 decision for maritime 25 kHz channels and equipment is applicable now to AMTS that can by rule use either far more narrow channels (and MCLM from all its public information, uses 12.5 kHz equipment, where it has any at all in service at its alleged operational stations),<sup>11</sup> The same ERP that is permissible in 25 kHz channels, if applied to 12.5 kHz or more narrow channels, is far greater on a power spectral density basis, and that is the only real basis for power measurement. Thus, the entire logic of the Recon Order – to keep the power level the same as it was since 1981, fails on a real-life basis. It fails ~~since~~ because equipment since then has both moved to more narrow band (on a physical or effective-channel basis), but also since after that date the AMTS rules were changed to allow any channel size (and equipment in other sizes are now available). Thus, with the same ERP, there could be far more or far less power spectral density.

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<sup>9</sup> This is clear in the FCC records of AMTS licensing. For example, the initial site-based license applications by Paging Systems Inc. and Fred Daniels all specified 25 kHz channels and transmitters: those were long after 1981.

<sup>10</sup> When the 1981 Order came out the only maritime service permitted was along coastlines and the Mississippi Inland ~~w~~Waterway system.

<sup>11</sup> See filings by Petitioners challenging the Mobex site-based AMTS stations now owned by MCLM, including their assignment to MCLM, and the renewals of Mobex-MCLM stations, that contain or show: (1) reports by Mobex-MCLM concerning past granted construction deadline extension request to use MPT1327 12.5 kHz wide equipment, and at other stations, reporting use of Motorola 12.5 kHz wide Passport equipment. (2) that Mobex, after buying Watercom, publicly reported it was decommissioning the Watercom maritime stations using 25 kHz wide equipment, and moving to land mobile service and 12.5 kHz. See also (3) the MCLM-Mobex attachment to a UCC filing that listed its “license holder” stations at many locations in the US with said 12.5 kHz equipment. The FCC staff dealing with AMTS licensing and the just noted license restricted proceedings is familiar with all of these filings.

It fails, in addition, since maritime service is far different than land service, and as noted above, Section 80.123 did not exist until long after the 1981 decision that is the basis of the Recon Order.

What is needed in AMTS is rule making to consider current and future technology and equipment and appropriate power spectral density. This **ApRev**, of course, is not a request for rulemaking. But until such rulemaking, no interpretation of the current power rules (for ship or land mobile stations, or fixed base stations) makes any sense for reasons indicated above. It only serves to suggest that the old rules, without power spectral density, are useful for current purposes, but they are not.

Further, the Recon Order means that the EPR in 1981 (if the Recon Order is correct in its interpretation) can be used in far more narrow channel equipment MCLM uses, resulting in far higher power spectral density, but that is not what the Recon Order intended. In that way, it merely helps spectrum hoarding and inefficiency.

- V -

Public Coast service to ships on the open ocean or major navigable waterways is entirely different than service using the same spectrum to units on land. The former involves low-density traffic where coverage range is critical and not spectrum efficiency per given amount of spectrum per square mile. In addition, to provide high quality, reliable coverage on land one must use a lower power level with a far greater number of stations because the terrain varies greatly and man-made structures are **also** in the way versus radio communications from coastal stations to ships out on the **flat** waterways where the only obstruction is the curvature of the earth. It is well established in wireless system engineering that to obtain high quality, reliable service to units on land a greater number of base stations at lower power is required, not only compared to maritime service, but **also** to land service using fewer base stations at higher ERP. The latter may achieve theoretical, **or in cases actual**, coverage over the same area **or distance** as

the former but in reality there will be far more dropped calls and areas of weak or no signal for voice communications or substantial data rates. In addition, there is also no question that the trend in all wireless communications on land is use of hand portable devices. These devices are capable of only operating at modest power levels and therefore there is no sense whatsoever for two-way communications to use more than modest power and modest height at base stations since if any greater is used the hand portables will not talk back and there will be no two-way communications.

Petitioners challenge the FCC to demonstrate that the FCC did any engineering in support of their *Letter Ruling* upheld in the Order on Recon. The Bureau should not clarify a rule for use of AMTS for modern wide area, geographic license PMR service on land ~~not use~~ by using an ancient rationale: citing a 30-year old 1981 Order, when there was not even a first generation of reliable multi-site wide area land mobile communications,<sup>12</sup> and where that decision was only regarding public coast **maritime** service. The Bureau was obligated to demonstrate a technical basis for using that rationale in the current situation. There is no question that spectrum efficiency is one of the foremost policies of the Commission and of Congress for the FCC to follow. There is no sense in geographic licensing, which was the FCC's choice for AMTS over continuing site-based licensing, if not to support modern, multi-site, wide area reliable communications. The FCC decided to receive from Maritime Communications/Land Mobile LLC ("MCLM") its request on this matter and to decide upon it without notice to Petitioners. Had Petitioners been noticed, they would have submitted the same engineering analysis that they submitted in the following pending proceeding before the FCC: *Petition to Deny* filed by

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<sup>12</sup> Petitioners commenced their career in wireless in the cellular AMPS stage, as a co-owner and manager of a cellular operating company. Cellular was not proven up and significantly deployed until after 1981. Before cellular, there were no multi-site, wide area land mobile communications, except a few experiments. After that time, multi-site, wide area PMR was developed, using similar techniques as in cellular. **Good-practice** Cellular-type techniques are much different than wireless system architecture used for ship-to-shore or ship-to-ship maritime communications.

Environmental LLC et al. on April 8, 2009 re: File No. 0003767487. (the “BREC Proceeding”) (See e.g. the supplement filed by Petitioners on December 16, 2009 at Exhibit 2 that contains Dr. Douglas Reudink’s analysis, which is consistent with the discussion herein).

It is required by **Congress** for the FCC to be expert in radio communication matters, which are ultimately technical issues. The regulatory part is secondary and has no meaning apart from fully knowing the technical issues. Courts have regularly found that it is proper to give the FCC a “Chevron deference” in review of FCC final orders on the assumption that the FCC is the nation’s expert first in the technical aspects of radio communication and only secondarily in appropriate regulations based upon that technical expertise. The FCC has demonstrated in AMTS that it has never employed engineering even for determining whether site-based AMTS licensees’ initial application met the requirement of overlapping coverage or whether their asserted constructed stations met the requirement (Intelligent Transportation & Monitoring Wireless LLC submitted a FOIA request, FOIA Control No. 2007-177, to the FCC asking for all records and documentation of any engineering studies the FCC had conducted to determine if AMTS incumbent licensees had met the requirements of Section 80.475(a) in construction and operation.<sup>13</sup> The FCC responded to the FOIA 2007-177 in a letter.<sup>14</sup> That Letter reveals that the

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<sup>13</sup> In part, ITL stated in its request:

All records in written (paper or electronic form) that pertain to: (1) all FCC "engineering" (defined below [\*]) that was used to consider or determine coverage and other technical requirements stated in FCC Rule Section 80.475(a) in the form of said rule set forth below and any predecessor or successor form of said rule that applies to site-based AMTS (the "Rule"), for any license application or license matter (any original, renewal, amendment, assignment or other licensing application, or any challenge or complaint regarding any such application or any granted license, or any other licensing related matter) ...

[\*] "Engineering" definition: (1) any determination of any sort by any means--including by use of manual or computer aided mathematical calculations, and including by use of computer generated depictions or descriptions of estimated radio-signal propagation contours or levels-employed to consider or determine "continuity of coverage" "proposing to serve" "technical

Bureau never conducted any engineering studies to determine if AMTS incumbent licensees had met the coverage and continuity of service requirements of Section 80.475(a) sufficient for renewal at the time of submission of renewal applications for licenses). The FCC should not extend that lack of proper engineering to similar effect, which is to allow incumbent station licensees to warehouse spectrum or provide use of it to parties who will not adhere to good land mobile communication engineering practices.

The FCC made a proper decision in the *Spectrum Task Force* report headed by Dr. Paul Kolodzy. Petitioners commented in and supported that report and had direct communications and meetings with Dr. Kolodzy on topics of the report (after he had left the Commission). A principle in the *Spectrum Task Force* report was spectrum efficiency based on good systems engineering and modern technology now available and becoming available including software-defined radio (SDR) and cognitive radio (CR). One of the principle developments in both of those in the US has come from the DARPA XG program, first headed up by Dr. Kolodzy and then by Dr. Preston Marshall. Petitioners met with Dr. Marshall concerning the XG technology that would be commercially available since they planned to use best available technology for their AMTS and other spectrum. Dr. Marshall has summarized the huge advantages of XG SDR-CR technology to modern wireless communications systems. One of the principles is to use minimum power in particular places, times, directions and bandwidth to achieve the needed signal/ noise + interference (S/N+I) ratio for a particular wireless communication session (depending in part upon the order of modulation being employed. For example, 64 QAM requires a higher S/N+I than a lower order of modulation.) Petitioners submitted a technical showing regarding using advanced communications technologies for AMTS spectrum to the

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characteristics," "proposing to locate," "engineering study" or any other matter of a technical nature in the "Rule" defined above.

<sup>14</sup> See *Letter* from Thomas Derenge, Deputy Chief, Mobility Division, Wireless Telecommunications Bureau, to Intelligent Transportation and Warren Havens dated April 3, 2007, regarding FOIA Control No. 2007-177 (the "Letter").

FCC in the matter of the BREC Proceeding. The Dr. Reudink technical analysis, noted above, is consistent with the *Spectrum Task Force* Report and Dr. Kolodzy's and Dr. Marshalls' description of the principles involved in advanced SDR-CR. Spectrum efficiency can be increased by 10 to 100 times by good system architecture and use of modern radio technologies even without waiting for future advances in SDR-CR) simply by use of moderate power and a greater number of well-placed bas stations versus the type of system architecture and higher power that MCLM sought Commission approval of and which would be permitted under this *Letter Ruling*. The Commission should not further support spectrum warehousing and inefficient use of spectrum particularly for a company that has so clearly demonstrated warehousing and even illegal operation of stations and multiple cases of fraud on the FCC.<sup>15</sup>

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<sup>15</sup> Regarding illegal operations: MCLM's predecessor-in-interest, Mobex Network Services LLC ("Mobex") (for which MCLM has full liability) operated stations that automatically terminated in many parts of the country for many years—that is evident in the FCC's 2004 AMTS "audits" in which Mobex admitted to non-construction of stations previously reported as constructed and renewed. In addition to this day, MCLM operates many AMTS site-based stations illegally at higher heights and power and ERP than permitted under FCC rules and the AMTS freeze order. Petitioners have pointed this out repeatedly to the FCC citing the particular stations and details.

Respectfully,

*/s/ Warren Havens [Filed electronically. Signature on file.]*

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Warren Havens, President  
for each of Petitioners listed above  
Verde Systems LLC  
Environmental LLC  
Intelligent Transportation & Monitoring Wireless LLC  
Telesaurus Holdings GB LLC  
Skybridge Spectrum Foundation

Each Petitioner:

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Date: May 19, 2010

Declaration

I, Warren C. Havens, as President of Petitioners, hereby declare, under penalty of perjury, that the foregoing Application for Review was prepared pursuant to my direction and control and that all the factual statements and representations contained herein are true and correct.

[Submitted Electronically. Signature on File.]

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Warren C. Havens

Date: 19 May 2010

From—

**NTIA Report 07-447**

## **Assessment of Federal and Non-Federal Land Mobile Radio Frequency Assignment Methodologies**

[As noted in the title, this report concerns non-Federal also.]

This report describes how the current frequency assignment process influences spectrum efficiency in the federal land mobile radio frequency bands. In light of the increasing demands for land mobile radio communications, federal spectrum managers must use frequency assignment methods that accurately represent interference to and from systems in the environment to ensure that spectrum is used efficiently. The results of this report will be used to support the implementation of an interference-based frequency assignment process that will improve spectrum efficiency. Standardizing the interference analysis methodologies used in identifying interference-free frequencies in the land mobile radio bands will also improve the overall effectiveness of the federal agencies in performing their missions. This report is one of a series of studies being performed by the National Telecommunications and Information Administration to develop techniques for evaluating and improving the efficiency and effectiveness of federal spectrum use in response to the President's Spectrum Policy Initiative. The results of these studies will be considered as a whole in setting future policies to improve federal spectrum efficiency.

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### **Section 6 Recommendations**

In light of the increasing requirements for land mobile radio frequencies, federal spectrum managers should apply interference calculation and frequency assignment/coordination techniques that are as detailed as possible.

To achieve this goal, NTIA recommends that federal agencies use interference analysis programs for assigning frequencies in the land mobile radio frequency bands based on the methodology of TSB-88-B or a similar methodology. Some of the advantages of TSB-88-B require information not in the GMF, and, where possible, industry common practice or typical equipment characteristics should be used. In other cases, the complete implementation of some of the algorithms may have to await the implementation of the OSM Data Dictionary. As a minimum, the interference analysis methodology should include the following:

- A performance analysis that is based on  $C_p/(I+N)$ , rather than a degradation analysis based on  $I/N$ . (Where possible, use a graphical replication of an agency's actual operational area and statistical methods to analyze areas where interference is calculated to determine the effect on the agency's mission.);
- Terrain-based propagation models where terrain data is available, otherwise use the Okumura/Hata/Davidson model for urban areas or a terrain based model in the area mode in which a general roughness parameter is included to represent a class of terrain;
- One arc second terrain data where available;
- Clutter loss values that are available from USGS in terms of LULC or the NLCD. (However, they are finely granulated and NTIA recommends the ten clutter categories as defined in TSB-88-B are adequate in most cases.);
- Transmitter power spectral density curves and receiver filter selectivity curves that more accurately represent actual equipment performance;

[Underlining added. Footnotes in original removed.]

Certificate of Service

I, Warren C. Havens, certify that I have, on this 19<sup>th</sup> day of May 2010, caused to be served, by placing into the USPS mail system with first-class postage affixed, unless otherwise noted, a copy of the foregoing Application for Review to the following:<sup>16</sup>

Dennis Brown (legal counsel for MCLM and Mobex)  
8124 Cooke Court, Suite 201  
Manassas, VA 20109-7406

Audrey Rasmussen ( legal counsel to Paging Systems Inc)  
[arasmussen@hallestill.com](mailto:arasmussen@hallestill.com)

While not required under FCC rules,\* Petitioners will also serve by email a copy of this filing on other AMTS licensees, once they assemble a current full list off of ULS.

\* Thus, Petitioners will not update this Certificate of Service.

*[Filed Electronically. Signature on File]*

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Warren Havens

Note to Errata Copy: this copy will be filed on ECFS and served to the above named persons on May 20<sup>th</sup>, 2010.

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<sup>16</sup> The mailed copy being placed into a USPS drop-box today may not be processed by the USPS until the next business day.