



## MICHIGAN PUBLIC SAFETY FREQUENCY ADVISORY COMMITTEE (MPSFAC)

Serving Michigan RF Spectrum Users in the 39, 155, 460, 700 and 800 Mhz. bands Since 1946

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June 17, 2013

Mr. David S. Turetsky, Chief  
Public Safety and Homeland Security Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

**RE: PS Docket 13-87**

Dear Sir,

Certain of the proposed rule changes may have direct impact on Region 21. Therefore, Region 21 offers the following comments:

**12/13/2016 Deadline for Narrowbanding Transition to 6.25 KHz** - It is the position of the Region 21 RPC that it is unnecessary to impose a mandatory migration deadline as migration is occurring based on need and such a mandate may impose a tremendous financial burden on local governments which is not in the public interest.

Migration to spectrally efficient technologies is occurring and should be allowed to continue based on need. It seems the industry trend (perhaps in large part due to past Commission initiatives) is toward spectrally efficient technologies and this equipment is getting a lot of attention from the public safety community. For example, Oakland County, a large constituent in southeast Michigan, is operating a 700 MHz 6.25 KHz equivalent system today. Applicants with pressing needs for additional channel or "talk path" capacity can now acquire that capacity through various manufacturers' equipment offerings. Eventually, manufacturers will cease marketing technologies that have no demand.

To set a mandatory time frame for migration based on arbitrary "life cycle" periods as some have argued ignores the very real financial stress, brought about by today's economy, under which state and local governments labor. In our experience, public safety systems in the region are used beyond the manufacturers predicted "life cycle" (in some cases way beyond) due

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in large part to the cost of replacement. Any such system upgrades or replacements can and should be the result of a constituent's business process. Region 21 constituents are even now discussing migration onto the more spectrally efficient 6.25 KHz equivalent equipment, but any migration plan that may result from these discussions will be predicated primarily on availability of funding and not spectrum efficiency. Spectrally efficient upgrade paths may result in overall system cost savings...a primary concern...if additional infrastructure is not required to duplicate original system performance.

If the nationwide broadband network delivers on its promises, we may look back on today's voice networks as quaint relics of a by-gone era. But until that time, it should be left to the constituents of the regions to decide which technology it is appropriate to deploy depending on need, ability to pay and the guidelines already put forward in established regional plans.

### **2010 NPSTC Petition – Air –Ground Communications on Secondary Trunking Channels -**

Secondary trunking channels should not be mandated for air-to-ground use. Local agencies and or regions should be allowed to implement air-ground communications in a manner and with frequency resources that suit their needs.

Airborne operations primarily for the EMS service in Region 21 are currently conducted on two assigned trunked talk groups on the Michigan Public Safety Communications System (MPSCS), which offers coverage to the entire region along with the Michigan portion of Region 54. Since these are trunked talk groups, airborne operations share channel resources along with other users in the system. As has been demonstrated in Region 21, airborne operations are fraught with potential for unintended interference to incumbent MPSCS system users due to site capacity issues. No power level seems too small to avoid this, especially for aircraft at altitude. The MPSCS is in the planning stages for adding aircraft specific sites that will utilize 700 MHz voice channels from among those channels licensed for statewide operation. These sites would be fully integrated to the existing statewide MPSCS using existing facilities but would be designed specifically for and limited to aircraft communications. Once implemented, they will

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allow radios in aircraft to communicate reliably and seamlessly to ground units. By carefully selecting 700 MHz frequencies from the state allocated channels and limiting reuse, MPSCS will be able to avoid the interference issues seen by aircraft on the system today which is caused by frequency reuse in the 800 MHz band. A small number of sites will be able to cover the entire state due to the lack of terrain obstacles limiting signal propagation. The number of required channels will also be minimal because the sites will be part of the existing trunked system and we envision only a limited number of aircraft capable of utilizing these channels in the air at a given time. We believe this design will provide the best possible solution for both routine and disaster air to ground communications because aircraft radios will be on the same system and operate exactly the same as radios on the ground. This avoids complications and inherent errors of relaying or patching communications from separate aircraft only frequencies. Of course, close cooperation with adjacent regions will be necessary to implement such a system using statewide channels, but the same can be said of a system using the secondary trunking channels.

We do not believe limiting the ERP of airborne transmission to two watts would be beneficial with the system we envision. Instead, we propose that using normal transmission power levels for airborne communications will minimize the infrastructure required for a complete airborne communications solution. It will also minimize required spectrum if the efficiencies of trunking are utilized.

The responsibility of coordinating airborne frequency usage would fall on the 700 MHz statewide license holder. The licensee would be required to involve the various agencies who will utilize these channels e.g. EMS, search and rescue, drug interdiction, etc., in their system planning. These planning efforts should produce agreements between agencies spelling out the terms of use of the airborne system. The various agreements would then be forwarded to the state interoperability office and regional planning committee (RPC). The RPC could then assist in coordinating the application with adjacent regions. Adding new agencies or modifying existing agreements could be done at the licensee's discretion; however, both the RPC and the statewide interoperability coordinator should be notified of these modifications or additions.

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We believe these measures will ensure a consistent process that will serve the needs of all public safety users within each specific region. It will also allow for coordination of frequency reuse across state and regional borders thereby avoiding interference with adjacent regions. Furthermore, we believe that use of the statewide channel allotment would avoid any potential interference to operations on the interoperability frequencies simply by not being in proximity to these operations.

While there appears to be limited use of the secondary trunked channels at present this may not always be so. However, since use of these channels on trunked systems is secondary to interoperability operations, there appears to be some hesitation on the part of applicants to include them in their system channel plans. Why not open them up for populating temporary mobile trunked interoperability infrastructure? After all, they are already designated for trunked operation in the band plan and therefore also in international agreements.

### 2008 NPSTC Petition – Proposed Revision to 700 MHz Channel Plan

**Nationwide Interoperability Travel Channel** - Region 21 does not support the nationwide travel channel proposal as presented. The proposal mentions utilizing a travel channel for direct communications to provide "...Incident Commanders advanced notice..." of the arrival of resources so that these resources can be "...deployed to an area directly..." and bypass staging areas. The comments further indicate that benefit will be realized to incident response by this faster deployment of resources and the avoidance of "confusion" should two pairs of calling channels be retained. Region 21 submits that the hoped for functionality of the travel channels as described in the NPSTC comments already exist within the framework of the current interoperability channel assignments. Further, it is our opinion that the proposal violates certain tenets of the Incident Command System. And, any tendency toward confusion can be easily remediated by referring to published regional plans for communications protocols when planning disaster response.

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It seems to us that a “travel channel” is merely a duplication of functionality already ascribed to the calling channels. In Region 21, the primary purpose of the calling channel is to “...contact other users in the region...”<sup>1</sup> In the context of a multi-agency mutual aid response, users deploying to the incident scene would use the calling channel to contact incident command for information and instructions. But this is precisely the functionality desired in a “travel channel”. We submit therefore that the current utilization of the calling channel, particularly in Region 21, renders pre-designation of a nationwide travel channel unnecessary.<sup>2</sup>

In our opinion, the proposal seems to fly in the face of current NIMS guidelines. What Incident Commander (IC) would deem it desirable to deploy resources without first determining precisely what he or she was receiving in terms of equipment and personnel and without first assuring that responding personnel would be properly accounted for? We may also ask; would the incident commander monitor this traffic? Or, would someone in the incident command post be tasked with this function...say a “Travel Channel” officer? What if the IC is not ready to deploy this particular resource when they contact him or her? Does the resource then wait for the IC to issue deployment instructions? If so, where would they wait? Would they not then be directed to contact the staging officer for instructions concerning their stay in the designated staging area? How much advanced notice is an IC liable to receive with some type of “travel channel”? Put another way, how much distance from the command post would a resource be required to approach before contact with the IC is possible? This seems problematic and highly dependent on incident specific factors such as terrain and what “travel channel” infrastructure exists and where it is located. One would expect that this information, after it has been determined, would be published in the incident action plan, but who would provide the information?

Any confusion resulting from having two Calling Channels can be easily dealt with through use of published regional plans in which disaster response communications are

<sup>1</sup> FCC Region 21 Planning Region Regional Plan,pg19

<sup>2</sup> An in place 8CALL/8TAC repeater system services the entire state of Michigan

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exercised. One would expect that published Incident Action Plans would provide relevant communications information as well. And should more than one large incident occur at the same time, which is not entirely unheard of, a second or third calling channel may be of inestimable value.

Regions should be allowed to designate an existing nation-wide calling channel or other channel they may chose as a regional “travel” channel if they deem such use appropriate to their region. The relevant interoperability governance body can then set parameters for use of the “travel” channel and publish their intentions in their regional plan. If adjacent regions agree that a common travel channel meets their needs, these agreements would be published in their respective regional plans as well.

To reassign an interoperability Calling Channel seems to us to be unwise; particularly so when the sought after functionality already exists, reassignment decreases the number of channels available, one of the touted “benefits” seems to be in direct contradiction of established disaster response protocols and repurposing and renaming these resources would seem to invite unnecessary confusion and potential delay. As the Commission points out in the NPRM document, as in the case of Katrina communications are better served with more resources on-scene, not fewer.

**Tactical Voice Communications on Data Interoperability Channels** – We agree with the NPSTC proposal to allow secondary tactical voice communications on the data interoperability channels. Such a use need not effect primary data operations in the international border areas or elsewhere within the region. It would seem to us that successful interoperable data communications would require a good deal of planning. When utilized, data communications would be initiated and maintained under the conditions of these plans. As such, any usage of these channels, secondary or otherwise, that might interfere with data communications would likely be prohibited.

**Reserve Channels** - NPSTC proposes that the “Reserve” channels be designated as nationwide deployable infrastructure channels. The proposal, as we understand it, is to pre-

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program subscriber units with these channels thereby eliminating the need to "...reprogram radios in the field..." or distribute "...cached radios..." We applaud the idea of readily available deployable infrastructures; however, in the opinion of Region 21, pre-programming such infrastructure with the Reserve Channels may not be the best use of these resources. Also, we believe this proposal, should it be adopted, would place an unnecessary burden on tax payers due to the rather large amount of work involved in the logistics, planning and coordination required for its implementation.

As all disaster response, like politics, is local we may ask; what happens if the next Katrina happens tomorrow? Would we reprogram all of the affected area subscriber units to operate on a deployable infrastructure or would we program a deployable infrastructure to operate with the existing subscriber units? In light of the NPSTC comment that reprogramming subscriber units in the field is "...time consuming and may be impossible..." we are left with the latter as our only viable choice. We would like to raise several points in support of this:

Trunking infrastructures are not constructed in a vacuum. Federal, state, local and regional planners are all aware of the existence, location and operating parameters of trunked systems regardless of band. Therefore, programming parameters of potentially at risk systems are readily obtainable. Once archived, these parameters can be programmed into deployable infrastructure(s) as needed. This programming may be done on a permanent or ad hoc basis. Programming infrastructure is of course not trivial and will take some time. But, emergency planners are very much aware of the risk vectors associated with communities under their charge and disasters such as hurricanes for example, do offer some degree of warning as to potential land falls and consequent areas at risk.

The logistic challenge of programming potentially thousands of subscriber units is avoided along with the cost and burden to the owners of the subscriber units. In a disaster scenario, subscriber units would simply operate using the parameters with which they are already programmed once the temporary infrastructure is moved into place.

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The challenge of potential coordination of these systems on a nationwide basis is alleviated by utilizing existing system parameters; particularly in international border areas. Frequency coordination would seem to be less of an issue if channels used on a deployable infrastructure are the same channels already authorized for use in that area. Licensing can be approached using station temporary authorizations or other temporary designations.

Pre-programming deployable infrastructure, either on a permanent or ad hoc basis, with system parameters of at risk systems avoids many of the potential problems of designated channel pools as: there is less effort involved in programming deployable infrastructure, frequency coordination and licensing are simplified and minimal additional burden is placed on potential beneficiaries.

Region 21 believes the reserved channels should be made available for use of the regions. In some regions, international treaties exclude allotted channels from primary use of eligibles in the United States. Further, some applicants find their channel requirements have surpassed their needs as envisioned in the original channel allotment process. The reserve channels could be utilized better by the regional planning committees in making up these shortfalls; shortfalls which, not unlike natural disasters, adversely affect licensees through no fault of their own.

**Power Limit for Low Power Channels** - Region 21 believes that power limits should be increased for these channels and further, we believe that it is practical to do so whether the increased limits apply to border or non-border regions. Modern equipment is programmable and therefore power levels can be programmed differently for users in different regions. But, Region 21 would advocate that international treaties be revisited to accommodate these higher power levels in all regions. Region 21 is virtually bisected by the 140 km zone within which treaty rules apply. This zone contains the south east portion of the region, the most populous, where the itinerant channels have proven popular for use with mobile repeaters to augment in-building coverage. Users of these resources in Region 21 would stand to gain much benefit from an increase in the power levels which are at present subject to the limitations imposed by the US/Canada treaty.

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An increase in the power limits will improve existing operations while causing insignificant interference concerns. Operation on the channels subject to regional planning will be coordinated through the regional planning process. Operation on the itinerant channels will remain subject to cooperation among users to avoid interference. To date, no instances of interference on any of the low power channels have been reported to the regional planning committee.

### Miscellaneous Issues

**Interoperability Network Access Code** – It is our belief that use of a common Network Access Code (NAC), as opposed to multiple NACs, will facilitate and not hinder IO communications. A common NAC is simple and has already found broad adoption. Here in Region 21, we have adopted the NPSTC suggested NAC \$293 as *the* NAC to be used for interoperability purposes. This NAC is written into our plan document and therefore the region requires and expects all digital interoperable communications will utilize NAC \$293 on the 700 MHz IO channels within the region. As we understand the purpose of the nationwide IO channels, this NAC has been adopted by other regions as well. If this is not the case, we would expect those regions that chose to use a NAC other than \$293, or none at all, will inform adjoining regions as well as the Commission of their intentions through their regional planning and coordination efforts. Therefore, Region 21 sees no utility in mandating a NAC by rule, as it seems to us, the NPSTC recommended NAC, \$293, is already the defacto standard.

**User Access to Interoperability Channels** – Region 21 already requires, through its regional plan, a minimum channel capacity for the IO channels for its constituents.<sup>3</sup> But this is only made possible because manufacturers are making subscriber units with the necessary capacity. It seems to us that high channel or talk group capacity radios are becoming the norm as manufacturers tout this feature to potential customers as a selling point. In fact, one manufacturer ceased manufacturing a two channel version of one of its popular portable radio products offering instead a sixteen channel version in its place. Therefore, Region 21 contends that the

<sup>3</sup> Region 21 700 MHz Public Safety Band Regional Plan, pg20

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current language in the rules is adequate. Individual regional planning committees should be left to decide subscriber unit capacity issues based upon the particular plans and requirements of their regional constituencies.

**Analog Operation on the Interoperability Channels** - Far from being written out of the rules, analog operation should continue to be permitted on the 700 MHz IO channels on a secondary basis. In our opinion, having choice in operating mode does nothing to thwart interoperability per se. It is also our opinion that there may be certain users who find analog operation meets their needs, and that interference issues can be alleviated through existing mechanisms.

Many first responders have access to state of the art communications equipment and up to date communications planning tools. Yet, after action reports of exercises and incidents continue to reveal that communications issues plague response efforts. We contend that these difficulties are, for the most part, issues of training more so than of subscriber unit programming. Without proper prior planning, provisioning and training, it is very likely that first responders, even first responders utilizing the same operating mode, will experience communications difficulties at a large incident scene. It seems to us that most regions have interoperable communications guidelines or plans in place for those constructing 700 MHz systems and require applicants conform to these plans as part of the application approval process. It also seems to us that use of interoperable communications equipment – without adequate training on the equipment including exercising plans for its use – is an invitation to communications chaos no matter what equipment or operating mode is used.

For some, analog operation may be the preferred mode. In the digital realm, bit error rate above a certain percentage results in no audio at the subscriber unit's speaker. In the analog realm, audio becomes noisier until eventually; it is indistinguishable from noise. While it may be a matter of perception, noisy analog audio may be better than no audio at all.

To date, no instances of analog interference to digital operations have been reported in Region 21. Of course, this does not mean that such cases are impossible. However, well

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Michigan Department of Community Health • Michigan Department of Natural Resources • Michigan Department of Transportation  
Michigan Municipal League • Michigan Public Safety Communications System • Michigan Sheriff's Association • Michigan State Police



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published and exercised incident communications plans should go a long way toward ensuring that this sort of interference does not occur. It hardly seems the best course to write the analog mode of operation out of the rules altogether based merely on rare or hypothetical situations.

Thank you for the opportunity to comment on these issues of importance to the public safety community. If you have any questions or require additional information, please do not hesitate to contact me.

Respectfully Submitted,

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