

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

In the Matter of)
)
Enterprise Wireless Alliance and Pacific) RM -11738
DataVision, Inc. Petition for Rulemaking)
Regarding Realignment of 900 MHz)
Spectrum)

To: The Commission

**COMMENTS OF
THE AMERICAN PETROLEUM INSTITUTE**

The Telecommunications Subcommittee of the American Petroleum Institute (“API”) hereby submits its Comments in response to the Commission’s Public Notice regarding the Petition for Rulemaking (“Petition”) filed by the Enterprise Wireless Alliance (“EWA”) and Pacific DataVision (“PDV”) (together “Petitioners”) proposing realignment of the 896-901/935-940 MHz band (“900 MHz Band”).¹

API agrees with Petitioners that there is a shortage of broadband spectrum available for use by the Critical Infrastructure Industry (“CII”) , particularly for higher speed point-to-multipoint data applications. A commercial LTE service offering priority to CII users also may be a useful tool for satisfying certain oil and gas industry communications requirements.

However, two-way voice operations in the 900 MHz band often represent the most critical of applications employed by API members, including voice systems that literally are the lifeline for workers at refineries, chemical plants, exploration and production fields, and along

¹ See Enterprise Wireless Alliance and Pacific DataVision, Inc. Petition for Rulemaking Regarding Realignment of 900 MHz Spectrum, *Public Notice*, RM-11738 (November 26, 2014).

pipelines. API is concerned that the Petitioners' proposal for the creation of a Private Enterprise Broadband ("PEBB") licensee is not fully developed and does not clearly ensure the continued, uninterrupted availability of the 900 MHz band for CII two-way radio use.

For that reason, API does not support the FCC moving forward with a Notice of Proposed Rulemaking ("NPRM") unless and until more details regarding the PEBB service proposal are provided as described herein. Until such time as the details of Petitioners' proposed operations are finalized and subject to scrutiny, an NPRM is premature.

I. BACKGROUND

API is a national trade association representing more than 600 companies involved in all phases of the petroleum and natural gas industries, including exploration, production, refining, marketing and transportation of petroleum, petroleum products and natural gas. Among its many activities, API acts on behalf of its members before federal and state regulatory agencies. The API Telecommunications Subcommittee evaluates and develops responses to state and federal proposals affecting telecommunications facilities used in the oil and gas industries. API is supported and sustained by companies that make use of a wide variety of wireline, wireless and satellite communications services on both a private and commercial basis.

API member companies rely on 900 MHz systems principally in refineries and chemical manufacturing plants. These two-way communication systems support critical operational, security, maintenance and safety-related functions. A typical large refinery operates 365 days-a-year, 24 hours-a-day, and employs from between 1,000 and 2,000 workers. Refinery-based mobile radio facilities, including these 900 MHz systems, are used to communicate critical

operational instructions from unit control rooms to personnel responsible for task execution.² In large refineries, there may be dozens of these production units, each responsible for one or more steps in the complex process of refining and producing multiple products, including jet fuel, gasoline and home heating oil. The secure and reliable transmission of these instructions ordinarily ensures incident-free operations. There can be “upsets” from time to time, however; and, when there is a mishap, reliable two-way communications are essential to immediately respond to potentially dangerous situations and return the process to normal operation.

These 900 MHz systems are also used extensively in the transportation of refined products. This includes communications with railroad crews operating inside refineries, personnel at truck racks, and those employees responsible for operating multiple pipelines that transport various products from every refinery.

There are key safety functions associated with 900 MHz refinery systems. Due to a typical refinery’s large size and often close proximity to hundreds of thousands of neighboring citizens, operators are acutely aware of their duty to protect the public’s safety. Prompt emergency response to any incident that may occur limits the extent of injuries to workers and the surrounding communities, and it keeps facility damages to a minimum. Effective communications are essential for rescue and emergency response teams to provide immediate assistance in the event of a serious incident. For example, workers may need to relay a message to “close the valve” in a section of the refinery. If two workers hear the same command, or if there is a communications failure and the message is not properly relayed, there can be significant and dangerous consequences. To ensure safe refinery operations, employees *must*

² As older refineries and plants modernize their infrastructure, many will look to replace mobile radio communications systems. The continued availability of 900 MHz assignments for site-by-site licensing will become increasingly important.

have clear and reliable radio communications capabilities that are only provided by secure private two-way radio systems. If a safety event does occur, most refinery 900 MHz systems have a dedicated “emergency response” channel that allows messages to be quickly disseminated plant-wide. The ability to quickly initiate and communicate the facility’s emergency response plan reduces or prevents altogether injuries and other damages.

In all events, the Commission must ensure continued, uninterrupted access to spectrum necessary to support these critical applications.

II. The Proposals in the Petition Do Not Clearly Protect Narrowband Systems

Petitioners have proposed to divide the 900 MHz band into a 3/3 MHz broadband segment (898-901/937-940 MHz) and a 2/2 MHz narrowband segment (896-898/935-937 MHz). Because the 900 MHz band is currently used entirely for narrowband land mobile operations, Petitioners propose to relocate existing licensees that wish to continue narrowband operations to “comparable facilities” in the narrowband segment. In the broadband segment, Petitioners propose the creation of a PEBB licensee that would be required to offer a build-to-suit broadband solution to any requesting B/ILT entity, with mandatory priority access for CII entities. Due to the sensitivity and importance of current uses of the 900 MHz band, API urges the Commission to conduct an extremely diligent review of Petitioner’s proposals to ensure protection of current and future narrowband operations before initiating a rulemaking proceeding to adopt them.

Regarding the proposed rebanding, further clarity needs to be provided on several specific points.

a. *Rebanding Guidelines Must be Better Defined*

Petitioners state they will ensure “comparable facilities” for incumbent narrowband users to be relocated from their current frequencies. In the context of 800 MHz rebanding, a comparable facility is a facility that provides the same level of service (technological and operational capability) as an incumbent’s existing facility and the determination of whether a facility is comparable is made from the perspective of the end user.³ There are four factors that must be considered when measured against the preexisting facility during an involuntary relocation. The four factors to consider to determine whether a replacement facility meets the definition of a “comparable facility” are: (1) system – base station facilities and all associated mobile units; (2) channel capacity – same number of channels with the same bandwidth; (3) quality of service- end user enjoys the same level of interference protection; and (4) operating costs- rental, utility, and maintenance costs among others.⁴

Replacement channels must be compatible with the co-channel and adjacent channel environment and also the site’s existing infrastructure, (*i.e.* cannot induce interference, including through intermodulation within the system). This should include a requirement to provide a specific technical documentation and a relocation plan illustrating 1:1 replacement of channels well before commencing relocation in any MTA.⁵

Petitioners’ plan should also detail solutions to avoid taking trunked systems out of service during relocation of the control channel. These systems are operated 24/7/365 and cannot be out of service for any period of time to accommodate retuning unless a suitable backup

³ See 800 MHz Second Report and Order, 12 FCC 19079, 19112 (1997).

⁴ *Id.*; see also 800 MHz Report & Order, 19 FCC Rcd 14969, 14977 ¶ 11, 15077 ¶201 (2004). See also 47 C.F.R. § 90.699(d).

⁵ This documentation must not require or assume a reduction of modulation for narrowband radios or mandatory migration to new radio infrastructure other than that used by or acceptable to the incumbent.

is in place and available for a seamless transition. It is not clear to API that sufficient spectrum exists in the 900 MHz band to accommodate such transitions and spectrum may be temporarily required in other bands.

Petitioners must provide absolute assurance that 1:1 channel replacement to Comparable Facilities is practicable. Petitioners argue that the reduction in channels currently authorized for B/ILT operations from 199 to 160, will not, as a practical matter, reduce the overall number of channels available to B/ILT users because Sprint had converted an average of forty (40) B/ILT channels to SMR use in each MTA.

Despite assurances from PDV, API has not seen documentation this is true, particularly in critical areas, and especially taking into account that B/ILT users would be required to share the 160 remaining channels with site-based SMR licensees as well as with MTA licensees that do not wish to participate in the PEBB.

API is concerned not only that rebanding may not be practicable with respect to existing systems, but that even if practicable, it may also deplete the continued availability of channels for modification or expansion of 900 MHz band systems in the future.⁶ Conclusive documentation that the plan is practicable must be provided as a threshold matter before moving forward with an NPRM.

b. A Reliable Cost Estimate Must be Provided, and a Bond or Letter of Credit May be Necessary.

Petitioners should be required to provide reasonable business projections regarding the time and financial costs associated with the relocation of incumbent systems to Comparable Facilities. They especially must demonstrate full consideration for the complexity and level of

⁶ The Commission should be aware, that at least at the present time, LTE does not support and is not a replacement for push-to-talk land mobile systems. Thus, migration of voice systems to the LTE network to reduce congestion is not an option.

planning that will need to go into retuning larger, more complex, critical systems deployed within the Oil and Gas Industry, including critical voice systems serving large refineries and wide area systems with integrated SCADA dependencies. Petitioners also must show they have considered the age and flexibility of equipment used in existing systems.

Unlike 800 MHz rebanding, which was undertaken to resolve interference to public safety systems, the principle purpose of the Petition is to promote one licensee's business plan (albeit for a claimed public benefit). Incumbent users should not be required to bear any costs, including costs associated with internal staff time to retune systems.

Depending on the level of expected costs, the Commission should impose a bond or revolving letter of credit requirement on the PEBB. In the 800 MHz rebanding proceedings, the FCC initially set a requirement for Sprint to hold an irrevocable letter of credit in the amount of \$2.5 billion. This amount was based on what the FCC felt was a balance between Sprint's estimated re-banding costs (\$850 million) and comments received that Sprint's estimate was too low.⁷ The letter of credit amount was reduced several times by the FCC based upon a recommendation by the 800 MHz Transition Administrator ("TA"), which assessed whether a reduction in the amount of the line of credit would "leave a sufficient letter of credit balance to cover the remaining cost of completing rebanding as estimated by the TA."⁸

Here Petitioners do not provide a cost estimate, instead only stating that relocation costs will be paid by the PEBB licensee and "Petitioners are confident that a 900 MHz realignment can be accomplished with relatively minimal difficulty."⁹ Although API expects costs to reband the 900 MHz band will be less than the 800 MHz rebanding, a reliable cost estimate must be

⁷ 800 MHz Report and Order, 19 FCC Rcd 1496, 14987 ¶ 30.

⁸ Memorandum Opinion and Order of Proposed Modification, 29 FCC Rcd 11549, 11550 (2014).

⁹ Petition at 17.

provided. Depending on those costs, assurances that the PEBB actually has the ability to pay should be imposed.

c. A Workable Dispute Resolution is Required

Petitioners do not suggest the use of a formal Transition Administrator and suggest EWA coordinate all proposed system modifications. Petitioners state that disputes regarding the rebanding process between API's members and the PEBB should be resolved by API. API never agreed to this condition, however, and will not agree to undertake the role of neutral arbitrator, certainly not between the PEBB and API's own members.

Petitioners should be required to provide a well-defined process for appealing coordination recommendations to a neutral third party and ultimately to the Commission. One approach could be the formation of an initial review panel at the Commission consisting of representatives of impacted industries as well as appropriate legal, policy, and technical staff from the Commission.

III. The Petition Does Not Clearly Protect Narrowband Systems

In addition to questions regarding the proposed reallocation of the band, other threshold questions must be addressed and resolved regarding the PEBB service offering and technical rules before an NPRM should be considered by the Commission.

Most critically, Petitioners must confirm that a 3x3 LTE network can operate adjacent to narrowband 900 MHz systems with no guard band without causing harmful interference to adjacent channel licensees. In other nearby bands with similar propagation characteristics, including the 800 MHz band and 700 MHz public safety narrowband channel block, the Commission has seen fit to establish a guard band between cellularized broadband licensees and private land mobile operations. Petitioners must explain why for some reason similar treatment

is not warranted here. This must be supported by demonstrated test results showing interference free operations to support the PEBB's operating strategy. API has engaged with Petitioners to begin testing the potential for interference into narrowband 900 MHz systems but to date no results have been established.

Assuming adjacent channel issues can be resolved, service and technical rules including power limits, antenna heights, and out-of-band emission limits must be submitted for public review prior to commencement of a rulemaking. Without this type of core technical information, it is impossible to comment meaningfully on the Petition.

Petitioners also must give a better explanation of how the PEBB service will be deployed; whether the proposal is a spectrum leasing proposal or a provider-based service;¹⁰ will service level agreements be offered; what security and levels of encryption will be made available; will eligibility restrictions be imposed; whether equipment that is available or planned; and whether end-users be required to invest in infrastructure as well as mobile, handheld and fixed units. Information also should be provided describing the potential applications and capabilities of the 3X3 MHz LTE broadband network. API is encouraged that Petitioners are seeking to provide service to B/ILT entities, but without more detailed information regarding the service to be provided it is difficult to determine whether the proposal is in the public interest, particularly in light of the potential negative impacts to existing critical voice systems.

API is open to allowing Petitioners to acquire spectrum under the Commission's existing secondary market rules and begin to clear the upper portion of the 900 MHz band through voluntary agreements with current licensees while the above issues are being resolved. However, API does not support allowing a PEBB to commence LTE service in the 900 MHz

¹⁰ CII priority should be ensured whether operations are under lease or provider-based services.

band until technical and service rules are finalized except on a temporary, secondary basis pursuant to experimental licensing to evaluate pilot and test-case systems.

III. CONCLUSION

API is concerned there is insufficient information available in the Petition to support initiation of a rulemaking proceeding at this point. We urge the Commission to defer action on the Petition until further information is provided on the record consistent with these Comments.

Respectfully submitted,

**AMERICAN PETROLEUM
INSTITUTE**

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