

January 8, 2016

Ms. Marlene H. Dortch, Secretary  
Office of the Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, NW  
Washington, DC 20554

**Re: IB Docket No. 13-213, Terrestrial Use of The 2473-2495 MHz Band for Low-Power Mobile Broadband Networks (Collectively “Globalstar”)**

**GN Docket No. 14-177, IB Docket No. 15-256, RM-11664, WT Docket No. 10-112, IB Docket No. 97-95 (Collectively “Spectrum Frontiers NOI”)**

Dear Ms. Dortch:

On January 7, 2016, I met with Julius Knapp, Chief of OET, and Ira Keltz, Matthew Hussey, Mark Settle and Walter Johnston, also of OET, with regard to the above captioned proceedings.

### **Globalstar**

PK stated that, while Public Knowledge believed that Globalstar’s willingness to accept a mitigation mechanism provided a workable framework for moving forward, it remained just that – a *framework*. For the Commission to formulate service rules, Globalstar must provide greater detail on how its proposed mitigation mechanism would work. Specifically, and looking to the *Progeny* Order to provide useful guidance, Globalstar should provide greater detail with regard to:

1. How will Globalstar control deployment in the early stages and alert interested parties that Globalstar has activated its system in the relevant geographic area – while still protecting Globalstar’s confidential information as to its actual clients and business plans?
2. How will the Network Operating System (NOS) process complaints? To be successful, the complaint process should, on the one hand, operate in as self-executing a manner as possible. Every time the Commission must become involved in a dispute, that takes time and increases resources. On the other hand, Commission oversight must be sufficiently real so that stakeholders have confidence that complaints will depend on Globalstar’s sole discretion to address.
3. This raises the question of how to define “unacceptable levels of interference.” Unfortunately, this is easier to define at the extremes than in the intermediate case. At one extreme, impact to a single device consistent with the normal impact of adding an additional Part 15 device is clearly not an “unacceptable” level of interference. To the contrary, it is precisely the level of interference to which all Part 15 devices are subject. At the other extreme, blanking interference which would wipe out or seriously degrade

operation of all other devices over the coverage area would constitute unacceptable levels of interference by any definition.

4. PK proposes that OET, based on the input of the stakeholders, should generally rely on a behavioral definition rather than a strict engineering definition. In loose terms, ‘if you don’t notice it, then don’t worry about it.’ If correcting the interference is no more costly than addressing the interference issues typical to the Part 15 space, then it cannot be considered unacceptable. By contrast, if operation of Globalstar’s system results in a significant increase in the difficulty of maintaining operation beyond what a service provider relying on Part 15 could reasonably anticipate, then Globalstar must abate the interference to a acceptable levels.

Certainly this definition is less satisfying from an engineering perspective than traditional measures such as packet loss or increase in the background noise threshold. But an increasingly complex environment makes the effort to arrive at bright line engineering rules difficult if not impossible. Instead, the Commission must move to more pragmatic measures designed for an increasingly crowded environment which prevents major catastrophes and allows technologies to continue to evolve to meet these additional challenges.

### **Additional Testing**

PK stated in its last *ex parte* that the Commission should consider the tradeoff between the strength of the mitigation measures and the need for further testing. PK continues to see this as an important policy change the Commission should adopt to facilitate the entry of new wireless technologies. At the same time, however, PK also made clear that the record in the Globalstar proceeding still lack sufficient engineering evidence to authorize full power, outdoor use. Globalstar has not conducted any outdoor tests, an area of considerable importance in light of the growing dependency of wireless carriers and potential “Wi-Fi first” competitors with traditional CMRS.

At the same time, Globalstar must have sufficient certainty as to what conditions it must satisfy and in what timeframe Globalstar can expect a decision. While other stakeholders must have the opportunity to present concerns, it is ultimately the responsibility of the Commission (and particularly OET) to clearly articulate what *specific* concerns it believes additional testing must address, to approve a specific test (or set of tests) to address these concerns, or to state clearly what combination of certification and interference mitigation will adequately address these concerns. Applicants for new services cannot remain in “testing Hell,” or be forced to negotiate against themselves – a process which gives incumbents an effective veto over any new technology. At the same time, however, a potential new entrant cannot entirely shift the burden of defining and proving unacceptable interference to existing stakeholders. Additionally, the Commission can only make a determination on what is in the record. If the record lacks crucial evidence for the Commission’s decision, then it cannot act without gathering the needed evidence.

PK cannot, at this time, state what additional testing should be necessary because the record lacks critical details with regard to the implementation of the proposed interference mitigation

mechanism. PK does note that the lack of any outdoor testing data remains a concern. Other stakeholders have raised issues regarding the potential impact on Bluetooth devices, and whether the power levels used in the indoor tests have adequately addressed concerns about operation at full power authorized for unlicensed devices in the 2.4 GHz band using the ISM underlay.

PK observes, however, that the Commission is in a position to provide certainty to Globalstar and to stakeholders by defining rules and setting a timetable and process for moving forward. The Commission followed this approach with both M-LMS/*Progeny* and in the TVWS.

PK clarified that its suggestion for “collaborative testing” does not mean that the parties necessarily agree on the outcome. Rather, it means that the relevant stakeholders, under the supervision of OET, agree on a test design to test for specific concerns identified by OET. The parties then jointly run the test, and submit their own analyses of the result. There is no requirement for the parties to agree on what the test data shows. To the contrary, based on experience, it is more likely that stakeholders will draw opposite conclusions based on the data.

Rather, it is the role of OET to make an independent judgment based on its own analysis of the data and the submissions of the parties. Only by exercising firm control over the process from beginning to end can OET guarantee fairness to all parties. OET must not confuse the idea of collaborative testing (meaning that all relevant stakeholders are involved in the test design and have a right to observe the tests and obtain the test data) with arriving at a decision by consensus. It is simply unrealistic to expect that stakeholders with radically different concerns can arrive at a workable consensus in a reasonable time.

## **Spectrum Frontiers NOI**

With regard to the Spectrum Frontiers NOI, PK raised concerns about the proposed geographic licensing schemes in the lower bands. Given the radically different propagation characteristics of the spectrum, traditional cellular architectures cannot meaningfully be deployed without using power levels that create public health risks. The failure of existing licensed services in the bands to effectively utilize their existing geographic licenses underscores the spectrum inefficiency and technical difficulties in deploying geographic area licensing.

Instead, the Commission should consider alternative licensing schemes, such as site-based licensing and the 3.65 GHz “licensed lite” regime, or variations on these proposals. The Commission can authorize these on a secondary basis to existing licensees, requiring that existing licensees demonstrate actual interference with their existing operations in order to claim interference protection. This would facilitate deployment of 5G technology while avoiding a potentially complicated overlay auction.

If the Commission does use an overlay auction, it will need to have some mechanism to require incumbents to negotiate in good faith. The history of the transition of the ITFS band to the BRS band demonstrates how, in the absence of a clear deadline to conclude negotiations, incumbent users are likely to engage in significant “hold up” behavior.

In accordance with Section 1.1206(b) of the Commission's rules, an electronic copy of this letter is being filed in the above-referenced docket. Please contact me with any questions regarding this filing.

Sincerely,

/s/ Harold Feld  
Senior Vice President  
Public Knowledge

CC: Julius Knapp  
Matthew Hussey  
Mark Settle  
Walter Johnston  
Ira Keltz