



KEY ELEMENTS OF HR 3630 IMPACTING PUBLIC SAFETY: T-BAND (470 - 512 MHZ) GIVEBACK

A white paper from L.R. Kimball

March 2012 ©

814.472.7700

info@lrkimball.com

www.lrkimball.com



L.R. Kimball®

**TARGETED RESULTS. EXPERTLY MANAGED.
WE STAKE OUR REPUTATION ON IT.**

A CDI Company

ARCHITECTURE

ENGINEERING

COMMUNICATIONS TECHNOLOGY

AVIATION

CIVIL

CONSTRUCTION SERVICES

DATA SYSTEMS

ENVIRONMENTAL

FACILITIES ENGINEERING

GEOSPATIAL

NETWORKS

PUBLIC SAFETY

TRANSPORTATION

HR3630, signed in February 2012, requires Public Safety entities using the UHF T-Band spectrum relocate their systems to other frequencies within nine years.

Legislation Summary

Section 6103 of the legislation requires giveback of UHF T-Band spectrum by Public Safety licensees. The language in the legislation indicates the spectrum must be reallocated no later than nine years after enactment of the legislation, with relocation of users to be completed two years after the spectrum is competitively bid. The expectation is that this spectrum will be reallocated and auctioned to commercial use, (likely used for TV broadcast). Proceeds from this future auction are to be used to cover the costs to relocate affected Public Safety licensees, with the remainder going to the U.S. Treasury.

The legislation does not provide any language regarding potential spectrum for relocating existing T-Band public safety LMR systems, nor does it identify any funding for pursuing spectrum or migration plans other than the reference indicating proceeds from the future auction are to be used to cover the relocation costs.

Detailed Discussion

Several of the various pieces of legislation introduced and debated during 2011 relative to Public Safety Broadband and the D Block also included provisions directing the give back of previously assigned 700 MHz “Narrowband” spectrum from Public Safety. The Public Safety community mounted an extensive effort in late 2011 to make congress aware that many public safety systems were currently being constructed or planned in this spectrum, and that these systems supporting mission critical voice would still be needed well into the future. In fact, the broader message from the Public Safety community was that giving back ANY spectrum was a major problem, given the numerous existing systems and ongoing need for continuing to build and use these systems for Mission Critical voice communications.

It appears that Congress heard this message about the 700 MHz Narrowband channels, but unfortunately turned their attention to the 470 – 512 MHz spectrum, known as T-Band. Why require any “giveback” of spectrum in the legislation providing funding for Public Safety broadband and assignment of the D Block to public safety? Inputs from the Public Safety community leading the dialog and working with congressional staffers have indicated a number of times the mood in Congress is one that requires giving something to get something. This is the reasoning behind the initial attachment to the 700 MHz narrowband channels, and the resulting shift to the T-Band spectrum and the “give-back” language in the final legislation.

There are also non-Public Safety Licensees with systems in the T-Band spectrum, however there is no mention of them in the legislation.

Some speculation on the choice of T-Band for the giveback is that it's not universally available across the country and there are far fewer Public Safety licensees in this band than any of the others. Keep in mind that this band is shared with the television broadcasters (hence the T-Band designation) and was made available on a shared use basis by the FCC for LMR systems such as public safety in specific areas of the country.

The 11 metro areas where licensees/systems exist using T-Band, including public safety agencies, are:

- Boston, MA
- Chicago, IL
- Dallas/Fort Worth, TX
- Houston, TX
- Los Angeles, CA
- Miami, FL
- New York, NY/Newark NJ
- Philadelphia, PA
- Pittsburgh, PA
- San Fran/Oakland, CA
- Washington, DC/MD/VA

The FCC's licensing database shows a little over 800 licensees in the T-band under trunked and conventional categories for public safety agencies. However, because some entities hold multiple licenses, the total number of agencies affected by the T-Band give-back could be fewer than 500. L.R Kimball's research shows that the heaviest Public Safety use of T-Band is in four markets: New York/North New Jersey, Chicago, Boston, and Los Angeles. All of these markets have a number of large county-wide or regional systems, with many of the smaller communities in these areas either participating in a regional system, or have their own local T-Band system to maintain interoperability.

Also note that there are other licensees besides Public Safety using T-Band channels in these eligible areas. The legislation does not mandate these users give back their licenses, but it seems likely that to make the spectrum attractive and usable by commercial interests, these other licensees will need to at least move to specific portions within the 470 – 512 MHz spectrum or give it up as well. The FCC could attempt to maximize spectrum revenue by clearing all incumbents and mandating the relocation of these non-public safety licensees from the T-Band.

The FCC has existing authority to repurpose all of the T-Band spectrum by relocating these business, industrial, commercial/SMR licensees. No further action or authority is needed from Congress. The FCC would

L.R. Kimball recommends that clients impacted take the legislation at face value and that clients currently using T-Band spectrum begin assessing their specific situation and investigating potential replacement spectrum.

need to consider whether to identify a funding mechanism to reimburse these other licensees for their move, or to mandate covering the costs by auction winners. Again, none of these details or issues are addressed in the current legislation, but we would expect they will be considered and discussed as the FCC opens proceedings and accepts comments leading to formal rulemaking and procedures on the band, the mandated Public Safety giveback, and disposition of these other users.

Analysis and Recommendations

The language regarding the T-Band “giveback” in HR 3630 is fairly brief and does not spell out the specifics or detailed rules on how it will happen. As noted, we expect the FCC will now take the language and develop the detailed rules or processes needed to effect the legislation.

Overall, this process can take a fair amount of time depending on the comments, support and level of complexity of the required rules to support a given legislative direction.

In the meantime, L.R. Kimball echoes the comments that other industry leaders are advocating...i.e. “don’t panic.” First, a lot can happen over the course of nine years, and there is some speculation that things could change on the mandate. However, at the moment, we do need to take the legislation at face value and do recommend that clients currently using T-Band spectrum begin assessing their specific situation and investigating potential replacement spectrum. Even though the legislation indicates that costs for moving off T-Band are to be covered by the auction proceeds, those funds are somewhat meaningless if there’s no available suitable spectrum to move to.

The most likely place to start looking for available, comparable spectrum for many systems is the 700 MHz Public Safety Narrowband assignments, and possibly 800 MHz channels – in particular some that may be coming available from Nextel givebacks. (Nextel has the most 800 MHz spectrum being given back in the same metro markets being impacted by the T-Band giveback). If channels can be identified as becoming available in your area, L.R. Kimball recommends you file the FCC 601 applications with the frequency coordinators for immediate submission when the window opens. It will be first come first serve when each filing window opens but those who get in line now with the coordinators will be the first filed by them.

Although it’s unlikely to identify any “new” channels not yet licensed by others, entities may still want to look at the potential to find usable channels in the traditional 450 – 470 MHz UHF band after the Jan 1, 2013 narrowband deadline.

Having some solid idea of potential spectrum availability - or being able to document the lack of spectrum for your system - could be a critical point for your entity to include in any comments or submission you might make to the FCC.

As you begin investigating potential spectrum and availability in your area, keep in mind that if you are using or are planning to migrate to trunking, moving to P25 Phase II, 2 slot TDMA may be an approach that can minimize the number of channels needed, nearly by half. For example, if your current T-Band trunked system requires 15 channels to support your loading, the equivalent 2 slot TDMA configuration could require as few as 8 physical channels (this number could vary depending on number of cells and other site types in your design).

At some point during the typically iterative search for potential channels and spectrum for your move, we anticipate the FCC will likely release a proceeding or NPRM related to the give-back. Having some solid idea of potential spectrum availability – or being able to document the lack of spectrum for your system - could be a critical point for your entity to include in your submission. If enough jurisdictions on T-Band are in position to document to the FCC (and perhaps Congress as well) that there simply isn't enough other available spectrum to move to, there's a possibility that either the mandate could be re-visited, or the FCC could seek to identify other usable spectrum for Public Safety to move to.

Other strategies and ideas you might begin to explore in order to identify potential approaches to this issue or to help minimize the future impact on your users could include:

Regional or Shared System – Many areas and states have built or are building out regional P25 trunked systems in the 700/800 MHz bands for either day-to-day use or for interoperability. Enhancing these systems as needed to meet local coverage and capacity needs may allow a way to leverage a limited number of available channels by adding them to existing channels in these regional networks. In some areas where T-Band is currently heavily used, there are adjacent existing systems using this band. In these situations, it may be worth jointly exploring with your neighbors the potential to maximize the use of 700/800 MHz spectrum by considering a regional type of architecture or system design, rather than duplicating independent county or local level systems.

Begin Implementing an Overlay System in New Frequency Band – Somewhat related to the preceding strategy, developing and implementing a regional overlay system sooner than later could provide several benefits. First – assuming you can identify at least some available channels in the 700/800 MHz band, licensing them and beginning system construction using them will help assure you get and hold these channels for the future. Second, in many areas where local entities are still using disparate systems and frequency bands, implementing an overlay

Strategies to Consider to Minimize the Impact of Relocating:

1. **Develop a Regional Multi-Agency System to Maximize Spectrum Use**
2. **Develop an Overlay System Using the Future Frequency Band**
3. **Phase in Multi-Band Radio Units**

network could provide a platform for interoperability in the near term as well as the longer term.

Phase in Multiband Radios – If you are lucky enough to identify available channels in a particular frequency band as the likely new home for your system, or have reasonable confidence in the band you will be moving into, you may want to begin acquiring multiband radios as you replace current units. That is, as you replace existing radios due to end-of-life, loss, etc., consider purchasing multiband radios, or radios capable of being upgraded to support multiband operation. In fact, you may want to also consider purchasing radios capable of future P25 Phase II operation as well, in the event that your future system will utilize this standard to provide you enough capacity. Having a number of subscribers already in place before beginning the transition to a new band or system will help make that process significantly smoother.

We are recommending that in the near term, clients begin investigation of potential available spectrum and exploration of the applicable ideas presented, but not necessarily begin actively spending a large amount of funding on a new system.

Summary

To clarify, we are recommending that in the near term, clients begin investigation of potential available spectrum and exploration of the applicable ideas presented, but not necessarily begin actively spending a large amount of funding on a new system. Although the legislation indicates the costs to move these systems is to be covered by the auction proceeds, the details of the process for getting funding, what items will be eligible, etc. are not yet defined. It's expected the FCC will develop this guidance, a process that might take a year or more to be finalized.

In the meantime, make your politicians and decision makers aware of the likelihood of replacing your existing T-Band system, and potential that some local capital costs may be incurred in the process.

Until further details are defined, we would recommend doing research and thinking ahead to fully understand your specific situation and potential options, but not making substantial investments in systems or equipment for the migration. Any costs you might incur in performing this near term research and assessment (consultants, frequency searches, etc.) should be documented in the event they might eventually be reimbursed as an eligible expense.

There's also been some speculation that the FCC might release T-Band from the narrowband mandate, given the future giveback of this band. As of the date of this writing, no formal action or notice on this has been released by the FCC, so we recommend that any actions already underway to meet the narrowband mandate be continued.

L.R. Kimball is actively monitoring the activity on the T-Band givebacks, and will continue to inform our clients as further information is released, and as the opportunities to submit comments and inputs to the FCC or other bodies are presented.

Contact:

J. KEVIN McGEARY

Senior Consultant

kevin.mcgeary@lrkimball.com

BRIAN D. MALINICH, PE

Senior Consultant

brian.malinich@lrkimball.com

814.867.4566

www.lrkimball.com

L.R. Kimball - A CDI Company

Established in 1953, L.R. Kimball is among the nation's leading professional service companies offering its clients architectural and structural, mechanical and electrical design services, security systems designs, civil, environmental and transportation engineering expertise, communications technology solutions and consulting. With a focus on targeted results, expertly managed, L.R. Kimball is committed to offering its diverse public and private-sector clients a tailored approach designed to meet their needs and budget requirements. Headquartered in Ebensburg, Pa., the company employs over 300 people at 11 locations in Pennsylvania, New Jersey, Texas, West Virginia and Washington, DC.