

STATE OF GEORGIA
PUBLIC SAFETY AND EMERGENCY MANAGEMENT AGENCIES

FEDERAL COMMUNICATION COMMISSION MANDATES

Executive Summary

Over the last several years, the Federal Communications Commission (FCC) and other Federal Government agencies have issued multiple mandates that require major changes to radio system infrastructure and subscriber hardware across the entire United States. In many cases, agencies must completely replace both the system infrastructure and subscriber units, while other agencies might simply need to update and/or reprogram various components of their system. Regardless of the path, all agencies must follow these mandates to meet critical deadlines set forth by the FCC and other government agencies. This document will cover in detail the three primary mandates that might affect you and what is expected of all spectrum users moving forward. These are as follows:

- 800 MHz Rebanding
http://www.800ta.org/content/resources/Reconfiguration_Overview_Fact_Sheet.pdf
- Standard Channel Nomenclature for Public Safety Interoperability Channels
<http://apcointl.org/new/commcenter911/documents/APCO-NPSTC-ANS-1-104-1DraftPRC.pdf>
- Narrowbanding of UHF (421–512) and VHF Highband (150-174) spectrum.
http://www.npstc.org/documents/NarrowbandingFactSheet_041223.pdf

Objectives

The first objective deals with 800 MHz Rebanding. This covers systems, frequencies and supported talkgroups which are generally used for specific daily use by agencies.

Most agencies have already completed at least the first phase of the Rebanding process, or at a minimum have deals in place with Sprint/Nextel to undertake their system Rebanding.

The second objective deals with 800 MHz ITAC Rebanding and the renaming of all the conventional analog assignments for interoperability. Some specific issues have arisen from regional 800 MHz ITAC Rebanding which include:

- Agencies not aware of the new naming conventions and instead adopting a localized non-standard naming convention.
- Agencies removing the old 800 MHz ITAC channels assignments.
- Agencies placing project on hold due until regional partners are ready to move to new 800 MHz ITAC channels.

The third objective of this document deals with Narrowbanding for VHF and UHF channels. Narrowbanding is not to be confused with 800 MHz Rebanding. These are two distinct and separate mandates.

The goal of this document is to help agencies within the State of Georgia public safety community to better understand their roles and responsibilities when it comes to complying with each of these mandates. Additionally, we hope to provide some guidance that will enable agencies to update their interoperable communications plans so as to better prepare for both local incidents that may involve your immediate mutual aid partners, as well as to plan for large multi-jurisdictional events that require agencies statewide to come together on shared radio channels under a single unified command.

It is important that this document be shared between your radio staff and/or communication manager, as well as radio vendors and local government officials, to ensure that these mandates are understood; in respect to financial and operational impacts, and that solutions are implemented prior to their respective deadlines. At the end of this document, a list of contacts is provided should you have any additional questions concerning any of these mandates.

1.1 Rebanding of 800 MHz Trunking Channels

In August of 2004, the FCC issued a report and order which advised that due to serious issues with interference in the 800 MHz frequency band, the entire spectrum would be re-allocated in order to separate Public Safety users from commercial wireless carriers (mainly Nextel iDen), who were causing interference and disrupting critical communications to police, fire and other public safety radio users.

Sprint-Nextel Corporation agreed to fund this entire project on a nationwide level. The FCC appointed a special independent third-party administrator, referred to as the Transition Administrator (TA), to oversee this entire process and verify compliance on all levels.

The project was set up to be completed in four “waves” based on specific geographic areas. The Southeastern United States was designated as Wave 3. Originally, it was thought that Wave 3 Rebanding would be completed by 2008. However, numerous extensions and delays have pushed project completions out as far as 2012 in some cases.

Beginning in 2006, the TA began sending out official correspondence to all license holders who are operating systems in the 800 MHz frequency band. These letters should have been delivered to all 800 MHz license holders within the State of Georgia.

Based on the information that is sent out in a monthly status report generated by the TA, all licensees in the State of Georgia have responded to the initial correspondence and at this time, all licensees are in some phase of the process ranging from agreements that are pending FCC rulings to having completed the entire process for their system. Since equipment is required to be reprogrammed, the agency sets up this procedure in a process referred to as “touches”. A touch is when a technician is required to physically connect programming software to the radio to change its programming. In most cases, radio reprogramming requires a minimum of 2 touches. The first touch adds the new frequencies that will be utilized during the transitional period of

reprogramming of fixed equipment such as base stations and repeaters. The second touch removes the old frequencies, leaving only the new frequencies that the system will operate on.

While the 800 MHz Rebanding project has moved along smoothly for most agencies, there are still some issues to be resolved, most notably with the way agencies are handling the rebanding of the 800 MHz NPSPAC mutual aid frequencies, also referred to as ITAC or 8TAC.

The next section of this document will discuss the 800 MHz mutual aid environment and detail how agencies should be working together to maintain interoperability as the mutual aid ITAC channels are rebanded in their systems and subscribers.

1.2 Rebanding and Channel Naming of 800 MHz Mutual Aid ITAC Channels

Most Public Safety agencies in the State of Georgia who operate 800 MHz systems or own subscriber units that operate on a participating Public Safety system have access to the nationwide mutual aid channels generally referred to as ITAC channels. These are 5 distinct channel assignments that are designated for conventional analog communications in support of mutual aid operations and interoperable communications. These channels are generally set aside for 3 main categories.

- Day to Day Interoperability – Generally used during routine Public Safety operations such as accident scene response or other first response activity. Several area jurisdictions may respond to these type calls. ITAC channels are generally used so that Public Safety agencies may all use a designated common channel for communications during these routine events.
- Mutual Aid Disaster Response – Planned use of specified channels during joint response to major disasters that may exceed the resources of one specific agency. These events include possible terrorist activity, airplane crashes, bombings, large forest fires and other major events and acts of nature when the situation overwhelms local responses and outside support is requested. Task Force Interoperability involves state, local and federal agencies coming together for a period of time in response to major events such as sporting events, political rallies, or for investigations related to prolonged criminal activity.

As part of 800 MHz Rebanding, all agencies using 800 MHz ITAC channels were required to reprogram their current ITAC channels from the old 821 MHz band down to the new 806 MHz band and use the newly adopted standard naming convention for these channels, termed 8TAC.

The State, in conjunction with several agencies both in the Metro Atlanta area and outer-lying areas, has developed multiple plans on how ITAC channels should be accessed and used. The two main plans currently available are as follows:

- Metro-Atlanta Urban Area Securities Initiative (UASI) TIC Plan
- Georgia Statewide Communications Interoperability Plan (SCIP)
- Region 10(State of Georgia), 800 MHz Regional Planning Committee(RPC)

1.2.1 Metro Atlanta ITAC Simulcast Repeater System

One of the major concerns regarding ITAC Rebanding within GEMA Area 7 deals with the ITAC Simulcast system, which is operated under the control of Cobb County.

The ITAC Simulcast system is made up of several repeater locations that are to be activated during the event of a major emergency. The metro-Atlanta UASI TIC and Georgia SCIP plans detail the events that might occur and under what process their simulcast network might be activated.

Since Cobb County manages and operates the Simulcast ITAC system, they understood the responsibility to submit a detailed plan to reband and to negotiate an acceptable contract for this system. While Cobb County has begun the first touch process for their trunked system, the ITAC system project is still in the negotiation stage and a Frequency Rebanding Agreement (FRA) is not yet in place. This has required those ITAC user agencies who have already completed their first touch to retain the old ITAC channels and program the new ITAC channels in their radios. Once the Simulcast ITAC system is rebanded, agencies will be able to remove the old ITAC channels from their subscriber units, and all events associated with this Simulcast system will then operate on the newly rebanded 8TAC channels.

1.2.2 ITAC Rebanding Outside the Metro Atlanta Area

One major issue that has come up over the course of 800 MHz Rebanding in the State of Georgia is that several agencies outside the metro Atlanta area may have already programmed their radios to the new 8TAC channels, while also *removing* the old ITAC channels.

This is a cause for great concern as many State and local agencies planned to leave both sets of channels in their radios until all adjacent agencies had cutover to the new 8TAC channels. Agencies that have both sets of 800 MHz channels programmed into their subscriber units would avoid the concern for two separate agencies responding to a major event and one agency not being able to participate due to having already removed the original ITAC channels.

Agencies outside the metro Atlanta area may assume that they will never be called to participate during a major event. The fact remains that many scenarios exist in which agencies from across the entire State of Georgia may be called on to assist in the event of a major catastrophe or other major emergency.

Agencies may also experience a scenario where an adjoining county outside the metro Atlanta area has already rebanded to the new 8TAC channels while removing the old ITAC channels. This will cause a situation where the two agencies may respond to the same event but will not be able to communicate with each other.

It is imperative that all agencies that are currently operating ITAC channels be prepared to have both the old ITAC channels and new 8TAC channels readily available in their subscriber units in case such an event occurs.

There have been some concerns about whether Sprint-Nextel and the TA are drawing a hard line on project time lines and completion dates. While this may be true for most agencies and their

trunked system Rebanding schedules, the schedule for ITAC Rebanding is liberal enough to allow for all participating agencies to hold off on removing their ITAC channels as part of a subscriber second touch.

GEMA strongly supports maintaining the two sets of 800 MHz interoperability channels indefinitely. Again, agencies (both within the State and outside of the State) are rebanding at varying rates and many users may remain on the legacy ITAC channels while others have migrated to the new 8TAC channels. By maintaining both sets in radios for the indefinite future, interoperability efforts should not be impacted because responders will have access to either system. For any agency that has already cut over to the new Rebanded 8TAC channels and removed the old ITAC channels, those agencies should contact their local Rebanding program manager and look into the possibility of making sure that both sets of 800 MHz channels are made available in all subscriber units. It is unclear whether Sprint-Nextel would approve an additional touch if it was not addressed in the original retuning agreement. Each agency would be handled on a case by case basis.

1.2.3 New 8TAC Channel Naming Convention

The Association of Public-Safety Communication Officials (APCO) and National Public Safety Telecommunication Council (NPSTC) have submitted a proposal for a new ANSI (American National Standards Institute) Standard for Channel Naming for Public Safety Interoperability Channels to APCO’s ANSI Standard Development Committee (SDC). This standard is expected to be approved as an ANSI standard sometime during the 1st quarter of 2010 and FCC approval would follow soon afterwards.

The following table is the 8TAC naming conventions recommended by the APCO and NPSTC.

Non-Federal 800 MHz National Mutual Aid Repeater Channels			
Description	NPSTC ID	Mobile TX (MHz)	Mobile RX (MHz)
Calling	8CALL90	821.0125 (806.0125*)	866.0125 (851.0125*)
Calling – Direct	8CALL90D	866.0125 (851.0125*)	866.0125 (851.0125*)
Tactical	8TAC91	821.5125 (806.5125*)	866.5125 (851.5125*)
Tactical – Direct	8TAC91D	866.5125 (851.5125*)	866.5125 (851.5125*)
Tactical	8TAC92	822.0125 (807.0125*)	867.0125 (852.0125*)
Tactical – Direct	8TAC92D	867.0125 (852.0125*)	867.0125 (852.0125*)
Tactical	8TAC93	822.5125 (807.5125*)	867.5125 (852.5125*)
Tactical – Direct	8TAC93D	867.5125 (852.5125*)	867.5125 (852.5125*)
Tactical	8TAC94	823.0125 (808.0125*)	868.0125 (853.0125*)
Tactical – Direct	8TAC94D	868.0125 (853.0125*)	868.0125 (853.0125*)
Default operation should be carrier squelch receive, CTCSS 156.7(5A) transmit. If the user can enable/disable CTCSS without reprogramming the radio, the indicated CTCSS tone should also be programmed for receive, and the user instructed how and when to enable/disable. *The frequency in parenthesis, which is 15 MHz lower, will be the frequency used after rebanding.			

APCO/NPSTC Proposed ITAC Naming Convention

Some agencies have already adopted and implemented these new standards in order to avoid any additional subscriber touches. But it has also been reported that some agencies have already rebanded with improper naming convention such as “new ITAC” or some other naming process. From this point forward, all agencies which have yet to reband should use the new naming convention moving forward. It is the State’s goal to have all 800 MHz ITAC/8TAC channels changed to the new naming convention as soon as possible. This will require agencies to work closely with their radio shop technicians as well as mutual aid partners to insure interoperability is maintained during this time.

Most agencies have an approved second touch to all subscribers to remove old channels from their radios once infrastructure has been cutover. All agencies who have completed their first touch and have used improper naming conventions should correct this during their subscriber second touch. The original ITAC naming convention should be replaced by the new channel names beginning with the number “8”.

Because alternate funding sources are being used for the rebanding effort, the State is not establishing a compliance date. However, the State recommends that each agency weight the impact on interoperability if both programming conventions are not utilized for an indefinite term.

1.3 Narrowbanding Requirements for UHF and VHF Channels

Narrowbanding refers only to UHF and VHF radio systems. 800 MHz Rebanding and Narrowbanding have absolutely nothing to do with each other. This section will discuss UHF and VHF Narrowbanding only.

Private Land Mobile Radio (LMR) systems, including municipal governments and state and local public safety departments, use a block of radio frequency spectrum that are referred to as “channels”. Each channel uses a specific amount of space in the frequency band referred to as “bandwidth”.

Historically, channels have been separated by 25 KHz of bandwidth to allow for protection against interference and other harmful radio frequency characteristics that may result from two channels being placed close together.

As population has grown and as public safety systems have been upgraded and added new channels for capacity, the available number of channels available in the spectrum below 512 MHz has diminished significantly.

Due to advances in technology, radio systems and individual subscriber units have been designed to operate with less than 25 KHz between individual channels, while still maintaining enough separation to avoid harmful interference from users on adjacent channels in the spectrum in which they are operating.

In December 2004, the FCC mandated that all private LMR users operating below 512 MHz move to 12.5 kHz narrowband voice channels and that the final migration must be completed by January 1, 2013.

It must also be noted that several radio manufacturers are already moving towards manufacturing equipment that is Phase 2 compliant, which will allow for a much more seamless transition to Narrowbanding Phase 2 when the dates are finally announced for that requirement. The FCC has no current timetable for the 6.25 KHz spacing requirement.

Finally, it is important to remember that Narrowbanding is the result of a Federal mandate. You must comply with all Narrowbanding Phase 1 requirements by January 1, 2013, or your agency may risk being fined by the FCC for non-compliance.

This is not a regional or State mandate, this mandate is nationwide and was issued by the FCC. Narrowbanding has been discussed for 10+ years and the order was officially issued in 2004. Federal or State grants dollars have typically not been allocated for this mandate because the order was issued well in advance of the compliance deadline. The intention of the deadline being placed several years out was that agencies would have sufficient time to plan and budget for equipment replacement or reprogramming utilizing their existing budget cycles and funding sources.

Summary

Compliance with the mandates discussed in this document are extremely important and require a great deal of action and planning by radio system administrators. Failure to create an adequate plan of action may greatly affect your ability to respond and recover to local, regional or state incidents. With sufficient, detailed planning, a seamless transition can occur with little to no interruption to radio system operations. A lack of planning can result in detrimental and negative impacts on critical communications. It is recommended that agency directors and local government officials ensure that planning is taking place within their respective jurisdictions to ensure that their agency is making progress toward these efforts.

A contact list of State personnel is listed below for additional information and guidance.

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