Arizona Interagency Radio System (AIRS) State Plan
Standard Operating Procedures and
National Interoperability Shared Channels

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Distribution Statement: This is a public document providing Standard Operating Procedures for users of AIRS. The Point of Contact (POC) for this document is the Public Safety Interoperable Communications (PSIC) Office in the Arizona Government Information Technology Agency (GITA).
Current contact information for the PSIC Office can be found at www.azgita.gov/psic/.

Record of Changes

Change No.	Date	Description	Signature
1	10/19/2010	Reorder AIRS (AIRSAZ to the end) - Approved by SIEC 10/19 and PSCC 11/16	Michael Britt
2	3/24/2011	Correct order of CTCSS tones	Michael Britt

Signature Page

Approved by:

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AIRS Standard Operating Procedures and National Interoperability Shared Channels

Purpose

This document contains standard operating procedures for the Arizona Interagency Radio System (AIRS). These procedures are intended to inform monitoring, dispatch and user actions regarding the system. AIRS is a suite of full-time, cross-banded mutual aid channels designed to provide interoperable communications capability to first responders of police, fire, and Emergency Medical Service agencies, as well as other personnel of municipal, county, state, tribal, and federal agencies performing public safety or public service activities. The Arizona Department of Public Safety (DPS) may also determine that selected non-governmental organizations (NGOs) performing public safety or public service activities are eligible for approval to use AIRS.

These radio frequencies are to be used in the event of a multi-agency operation requiring the use of the common state radio channel(s), specifically for the use of coordinating activities during identified incidents. AIRS frequencies are not designed to be used by a single agency for routine public safety operations.

This document also details the National Interoperability Channels and makes recommendations regarding their use and programming.

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1 Introduction

1.1 Policy

This Standard Operating Procedure (SOP) defines how to use the statewide interoperability system known as the Arizona Interagency Radio System (AIRS).

1.2 Use

AIRS is a suite of full-time, cross-banded (i.e. VHF, UHF, and 800 MHz[1]) mutual aid channels designated specifically for multi-agency use across the State of Arizona. The AIRS suite is limited to one frequency pair per band for the entire state. See the county maps in Appendix A to identify areas where there is AIRS coverage.

Agencies and organizations wishing to operate on AIRS must sign a Memorandum of Understanding (MOU) with the Department of Public Safety (DPS) which holds the licenses for AIRS frequencies.

AIRS is designed to provide interoperable communications capability to first responders of police, fire, and EMS agencies, as well as other personnel of municipal, county, state, tribal, and federal agencies performing public safety or public service activities. DPS may also determine that selected non-governmental organizations (NGOs) performing public safety or public service activities are eligible for approval to use AIRS.

These radio frequencies are to be used in the event of a multi-agency, multi-discipline, and/or multi-jurisdictional operation requiring the use of the common state radio channel(s), specifically for the purpose of coordinating activities during identified incidents. AIRS frequencies are not to be used by a single agency for routine public safety operations. AIRS frequencies may, however, be used by a single agency to reconstitute communications in the event of a system failure or other significant communications loss.

1.3 Administration

The Arizona Statewide Interoperability Executive Committee (SIEC) provides AIRS oversight.

1.4 Document Terminology

The terms “shall,” “must,” “will,” and “required” are used throughout this document to indicate required parameters and to differentiate from recommended parameters. Recommendations are identified by the words “should,” “desirably” and “preferably.”

[1] All 700 MHz radios can be programmed to access AIRS 800 MHz frequencies

1.5 Updates & Revisions

The SIEC will review and update this SOP as needed. Agencies and organizations using and/or monitoring AIRS are responsible for checking the PSIC website at www.azgita.gov/psic/AIRS to obtain the current release of the AIRS SOP. Those wishing to submit revisions or additions to this SOP should send their requests electronically to siec@azgita.gov or in writing to the PSIC Office, Government Information Technology Agency, 100 N 15th Avenue, Suite 440, Phoenix, AZ 85007. The PSIC Office will agendize the revisions for the SIEC.

2 AIRS Standards

2.1 Introduction

2.1.1 History

The Arizona Interagency Radio System (AIRS) is an outgrowth of Arizona's Inter-Agency Radio System (IARS) which was started in the mid 1970s. IARS was developed to allow communications between law enforcement agencies using VHF radio systems and UHF systems (primarily the Department of Public Safety and the Maricopa County Sheriffs Office). Over the next 20 years, this system grew to 15 communications sites covering Interstates I-8 and I-40, Maricopa County and southeast Arizona. While initially envisioned as a law enforcement asset, the Arizona public safety community later identified IARS as a valuable all-hazards resource.

Due to an increased interest in and need for interoperability and the availability of federal grant funds, the Arizona Division of Emergency Management (ADEM) undertook a project to modernize the IARS network. Radio coverage was increased by installing radios at more communications sites and the 800 MHz band was added at each site to create a AIRS suite of radios. The VHF system was also converted from simplex operation to a repeater, allowing for communications between users on all three frequency bands (i.e. VHF, UHF, and 800 MHz). In 2006, this new tri-band system was named the Arizona Interagency Radio System (AIRS).

2.1.2 Operations

The state is broken up into AIRS Regions. See Page 17, AIRS Regional Channel Assignments. Although these regions are drawn on the county boundaries, the radio coverage provided by a single communications site may extend beyond a single region/county. There are also gaps in coverage. Within a region, most communications sites are electronically "voted" to select the site that has the best received audio quality. The "voted" signal is sent to the communications center and a control signal is sent to the selected communications site to enable the cross-band/repeater operation. This operation is automatic, does not require any interaction with the communication center, and provides repeater and cross-band operation to field users.

Because the AIRS regional channels use a single frequency (per band) to cover the entire state, system originators developed a means of controlling intra-system inference by dividing up primary channel usage among the ten regional areas. Breaking the state into ten regional areas ensures that the amount of intra-system interference can be minimized while still providing good field coverage with a minimum of channel changes. Five CTCSS (PL) tones control the ten regions. By reusing the CTCSS tone around the state, Arizona reduces the number of channels needed in the subscriber radios.

In addition to the regional channels, the AIRSAZ channel is available throughout the state, except for Maricopa County. However, because interference is minimized in the regional channels AIRS1 through AIRS5, their use is encouraged, and the use of the statewide channel AIRSAZ is discouraged.

2.1.3 Access

Eligible users must contact the DPS Wireless Systems Bureau (WSB) Administrative Secretary at 602-223-2247 to request access to AIRS. Governmental agencies and NGOs utilizing mobile and portable radios that are operated by personnel actively engaged in incident-related activities are eligible users.

DPS will provide applicants with the AIRS Memorandum of Understanding (MOU) and an information packet. The applicant agency must sign and return the MOU. DPS may sign the MOU for eligible applicants and send an executed copy, along with a Certificate of Participation and user documentation, to the applicant. The applicant will then be authorized to operate on the state licensed frequencies used by the AIRS system under the terms of the MOU.

All signatory agencies to the AIRS MOU should preferably program AIRS frequencies into their radios in order (AIRS1, AIRS2, AIRS3, AIRS4, and AIRS5 followed by AIRSAZ). The programming zone may differ depending on the agency or the type of radio.

2.1.4 National Interoperability Channels

While the AIRS MOU applies specifically, and only, to AIRS-suite channels and does NOT include VCALL/VTAC, UCALL/UTAC, or 8TAC channels, agencies are encouraged to program all of the interoperable channels operating in their frequency band into their radios. At a minimum, the calling channel and the first tactical channel should be programmed.

When possible, programming the National Channels in a separate segment from the AIRS Channels is recommended. Since there are not enough slots to combine state and national interoperability channels in the same segment, agencies inconsistently determine which channel to drop. Programming the channels in two different segments allows all channels to be retained and facilitates standardization of statewide radio programming. It also helps to ensure the availability of channels for the future expansion of AIRS.

While not all radios currently have enough space to have national interoperable channels in a different segment from state channels, this programming convention can be adopted more universally as agencies acquire radios with additional capacity.

2.2 Regional Assignments

2.2.1 VHF Interoperability Channels/Frequencies

The VHF AIRS frequencies are licensed to the State of Arizona and an FCC license is required to operate on those frequencies. The AIRS MOU allows the signatory agencies to operate under the State's mobile license (KA89942). The VHF simplex tactical (TAC) channels are FCC designated national interoperability channels requiring no separate FCC license.

Table 1 Statewide VHF Shared Channels

AZ-SIEC NAME	BAND-WIDTH	TX FREQ MHz	TX CTCSS Hz	RX FREQ MHz	RX CTCSS Hz	NCC[2] NAME	NPSTC[3] NAME
AIRS1	12.5 kHz	155.1900	141.3	155.4750	CSQ		
AIRS2	12.5 kHz	155.1900	131.8	155.4750	CSQ		
AIRS3	12.5 kHz	155.1900	110.9	155.4750	CSQ		
AIRS4	12.5 kHz	155.1900	123.0	155.4750	CSQ		
AIRS5	12.5 kHz	155.1900	167.9	155.4750	CSQ		
AIRSAZ	12.5 kHz	155.1900	156.7	155.4750	CSQ		
VLAW31	12.5 kHz	155.4750	156.7	155.4750	CSQ	1LAW16	VLAW31
VFIRE21	12.5 kHz	154.2800	CSQ	154.2800	CSQ	1FIR9	VFIRE21
Open(VFIRE21W)*	(25 kHz)	(154.2800)	(CSQ)	(154.2800)	(CSQ)	1FIR9	VFIRE21W
VCALL10	12.5 kHz	155.7525	156.7	155.7525	CSQ	1CAL18	VCALL10
VTAC11	12.5 kHz	151.1375	156.7	151.1375	CSQ	1TAC5	VTAC11
VTAC12	12.5 kHz	154.4525	156.7	154.4525	CSQ	1TAC13	VTAC12
VTAC13	12.5 kHz	158.7375	156.7	158.7375	CSQ	1TAC22	VTAC13
VTAC14	12.5 kHz	159.4725	156.7	159.4725	CSQ	1TAC23	VTAC14
Open							
Open							

* Programming VFIRE21W is recommended during the narrowbanding conversion.

2.2.2 UHF Interoperability Channels/Frequencies

The UHF AIRS frequencies are licensed to the State of Arizona and an FCC license is required to operate on those frequencies. The AIRS MOU allows the signatory agencies to operate under the State's mobile license (KA89942). The UHF simplex TAC channels are FCC designated national interoperability channels requiring no separate FCC license.

Table 2 Statewide UHF Shared Channels

AZ-SIEC NAME	BAND-WIDTH	TX FREQ MHz	TX CTCSS Hz	RX FREQ MHz	RX CTCSS Hz	NCC[2] NAME	NPSTC[3] NAME
AIRS1	12.5 kHz	465.3750	141.3	460.3750	CSQ		
AIRS2	12.5 kHz	465.3750	131.8	460.3750	CSQ		
AIRS3	12.5 kHz	465.3750	110.9	460.3750	CSQ		
AIRS4	12.5 kHz	465.3750	123.0	460.3750	CSQ		
AIRS5	12.5 kHz	465.3750	167.9	460.3750	CSQ		
AIRSAZ	12.5 kHz	465.3750	100.0	460.3750	CSQ		
UAIRS_D	12.5 kHz	460.3750	100.0	460.3750	CSQ		
UCALL40	12.5 kHz	458.2125	156.7	453.2125	CSQ	4CAL27	UCALL40
UCALL40D	12.5 kHz	453.2125	156.7	453.2125	CSQ	4CAL27D	UCALL40D

[2] NCC refers to the National Coordination Committee common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

[3] NPSTC refers to the National Public Safety Telecommunications Council common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

AZ-SIEC NAME	BAND-WIDTH	TX FREQ MHz	TX CTCSS Hz	RX FREQ MHz	RX CTCSS Hz	NCC[2] NAME	NPSTC[3] NAME
UTAC41	12.5 kHz	458.4625	156.7	453.4625	CSQ	4TAC28	UTAC41
UTAC41D	12.5 kHz	453.4625	156.7	453.4625	CSQ	4TAC28D	UTAC41D
UTAC42	12.5 kHz	458.7125	156.7	453.7125	CSQ	4TAC29	UTAC42
UTAC42D	12.5 kHz	453.7125	156.7	453.7125	CSQ	4TAC29D	UTAC42D
UTAC43	12.5 kHz	458.8625	156.7	453.8625	CSQ	4TAC30	UTAC43
UTAC43D	12.5 kHz	453.8625	156.7	453.8625	CSQ	4TAC30D	UTAC43D
Open							

2.2.3 800 MHz Channels/Frequencies

The 800 MHz channels are all FCC designated national interoperability channels requiring no separate FCC license for mobile equipment. Mobile Relay (FB2) and Fixed Stations (FB) require FCC licensing. The following channel-specific information provides additional details related to the use of these channels:

AIRSAZ is the national channel with a designated national CTCSS tone and has a number of other recognized channel names (for example, ICALL).

The regional AIRS channels, AIRS1 through AIRS5, have CTCSS tones only used in Arizona.

The 8TAC91 through 8TAC94 channels are also national channels. Optionally, the channel name can be modified when used in the direct or talk around mode with the addition of “D” to the end of the channel name (for example, 8TAC92D).

The 8TAC95 and 8TAC95_D Channels are only recognized in Arizona. They can be programmed using the specifications below in Table 3 Statewide 800 MHz Shared Channels, if desired. The 8TAC95 channel must be licensed. The license to the 8TAC95_D channel is provided under the 8TAC95 license (see 4.4 of the ARRC Plan[4]). Use of these channels is restricted per 4.5.2.1 of the ARRC Plan.[5]

[4] 4.4 Application Procedures. All interoperability channel licensees for Mobile Relay (FB2), or Fixed Stations (FB) shall be obtained by and in the name of the entity authorized by the Arizona Regional Review Committee. Other base radios shall be licensed in the name of the applicant agency. In accordance with FCC Report and Order General Docket 87-112, vehicular, portable, and aircraft stations using either the five National channels or the Statewide interoperability channel (Channel 6, 8TAC95) may operate without further FCC authorization. However, the prospective vehicular/portable/aircraft user must comply with 4.5.4 of this section.

[5] Use of Arizona Tactical (8TAC95) is prohibited in some areas in the Counties bordering California; however, it shall be included in all portable/mobile equipment in all other areas. Use of 8TAC95 in La Paz and Mohave Counties is subject to interference from a State of California transmitter located near Needles, California and use is prohibited within a 70 mile radius of the transmitter located at 34°40’ 54”N, 114° 41’ 24”W.

Table 3 Statewide 800 MHz Shared Channels

AZ-SIEC NAME	BAND-WIDTH	TX FREQ MHz	TX CTCSS Hz	RX FREQ MHz	RX CTCSS Hz	ARRC[6] NAME	NCC[7] NAME	NPSTC[8] NAME
AIRS1	20 kHz	821.0125	141.3	866.0125	CSQ			
AIRS2	20 kHz	821.0125	131.8	866.0125	CSQ			
AIRS3	20 kHz	821.0125	110.9	866.0125	CSQ			
AIRS4	20 kHz	821.0125	123.0	866.0125	CSQ			
AIRS5	20 kHz	821.0125	167.9	866.0125	CSQ			
AIRSAZ	20 kHz	821.0125	156.7	866.0125	CSQ	AIRSAZ	8CAL90	8CALL90
8TAC91	20 kHz	821.5125	156.7	866.5125	CSQ	8TAC1	8TAC91	8TAC91
8TAC91D	20 kHz	SIMPLEX	156.7	866.5125	CSQ	8TAC1_D	8TAC91D	8TAC91D
8TAC92	20 kHz	822.0125	156.7	867.0125	CSQ	8TAC2	8TAC92	8TAC92
8TAC92D	20 kHz	SIMPLEX	156.7	867.0125	CSQ	8TAC2_D	8TAC92D	8TAC92D
8TAC93	20 kHz	822.5125	156.7	867.5125	CSQ	8TAC3	8TAC93	8TAC93
8TAC93D	20 kHz	SIMPLEX	156.7	867.5125	CSQ	8TAC3_D	8TAC93D	8TAC93D
8TAC94	20 kHz	823.0125	156.7	868.0125	CSQ	8TAC4	8TAC94	8TAC94
8TAC94D	20 kHz	SIMPLEX	156.7	868.0125	CSQ	8TAC4_D	8TAC94D	8TAC94D
8TAC95	20 kHz	821.0375	156.7	866.0375	CSQ	8TAC5	8TAC95	8TAC95
8TAC95D	20 kHz	SIMPLEX	156.7	866.0375	CSQ	8TAC5_D	8TAC95D	8TAC95D

2.2.4 Regional AIRS Monitoring Assignments

AIRS is generally monitored by region. However, not all regions have a communications center capable of and responsible for monitoring the entire region. Also, some suite locations are too far from any communications center for monitoring to take place.

Appendix A.13 AIRS Regional Monitoring Assignments identifies the monitoring communication centers by region. Since AIRS monitoring practices are just beginning to be standardized throughout the state, AIRS users must inform themselves about monitoring practices currently in place in their regions and understand any limitations to using AIRS related to those practices.

[6] ARRC refers to the 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) Arizona Regional Review Committee common nomenclature recommendations.

[7] NCC refers to the National Coordination Committee common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

[8] NPSTC refers to the National Public Safety Telecommunications Council common nomenclature recommendations. Public safety professionals responding to Arizona from other areas in the nation might use these channel names.

2.3 Operational Guidelines

2.3.1 Rules of Use

AIRS channels are reserved for situations that require interoperable communications to coordinate multiple public safety/public service entities and/or activities across two or more separate radio systems. The following rules of use shall apply to these channels:

- **National Incident Management System** – Use an Incident Command System (ICS) compliant with the National Incident Management System (NIMS) when using a regional interoperability resource such as AIRS.
- **Plain Language** – All interoperable communications during multi-agency, multi-discipline incidents will be in plain language. Avoid using radio codes, acronyms, and abbreviations as they may cause confusion between agencies. Ensure that all verbal requests for assistance or backup specify the reason for the request.
- **Unit Identification** – Announce your home agency prior to announcing your unit identifier during interoperable communication situations (i.e., Flagstaff Engine 1).

2.3.2 Prioritization

In response to events or incidents which cross over political jurisdictions, there will potentially be competing demands and priorities for interoperable communications assets.

Until such time as Incident Command is established, the lead agency designee (i.e., communications supervisor/command personnel), in cooperation with their counterparts in other assisting agencies, will have the authority to designate the use of interoperable assets, including AIRS channels. Once Incident Command has been established, Command Staff or Communication Unit Leaders (when designated) direct the further coordination and delegation of the interoperable communications assets assigned to the event or incident in question.

Agencies should judiciously activate needed interoperable assets so as to both effectively respond to the event and/or incident and also minimize any negative impact on surrounding agencies or jurisdictions.

When the same resources are requested for two or more incidents, AIRS assignments should be based on the priority levels listed below:

1. Disasters, large scale incidents, or extreme emergencies requiring mutual aid or interagency communications.
2. Incidents where imminent danger exists to life or property.
3. Other incidents requiring the response of multiple agencies.
4. Pre-planned events requiring mutual aid or interagency communications.
5. Incidents involving a single agency where supplemental communications are needed for short term agency use.
6. Drills, tests and exercises.

In the event of multiple simultaneous incidents within the same priority level, AIRS channels should be allocated with the following priorities in mind:

1. Incidents with the greatest level of exigency (e.g., greater threat to life or property, more immediate need) have priority over less exigent incidents.
2. Agencies with single/limited interoperable options have priority use of those options over agencies with multiple interoperable options.
3. When at all possible, agencies already using an interoperable asset during an event should not be redirected to another resource.

2.3.3 Restrictions and Limitations

The AIRS Suite is limited to one frequency pair per band for the entire state.

Known restriction and limitation issues include:

- **Coverage**. The AIRS Regional Channel Assignment Map (see Page 17) is intended to show assignment of AIRS Channels and should not be interpreted as showing that coverage is available throughout the region and follows along county lines. Users must see the County Maps following the Regional Map to help determine actual availability of coverage and identify gaps in coverage.

  The County Maps show composite radio coverage aggregated from all individual single site coverage estimates in the county. This aggregated coverage is mapped in a single color as the top layer on the County Map. The assigned regional AIRS channel shown on the AIRS Regional Channel Assignment Map is generally available throughout most of the aggregated coverage area shown on the County Map.

  There may be additional AIRS coverage from an adjacent county that is not visible on the County Map. That coverage can be identified on the County Map for the adjacent region where it is mapped as the top layer. In areas where coverage from more than one region overlaps, user need to become familiar with both coverage areas to understand which AIRS Channels and monitoring agencies may be active. Users risk losing their monitoring and dispatching support when they move to an overlapping channel because that channel has a different CTCSS (PL) tone.
- **Non-voted towers and voted towers not monitored**. There are some AIRS towers not voted back to a communications center. Other towers may be voted back to a communications center that is not actively monitoring AIRS. See Appendix A.13 AIRS Regional Monitoring Assignments to identify those locations.
- **Encryption**. AIRS channels are NOT encrypted.
- **Monitoring**. Several locations exist statewide where users have AIRS coverage but presently do not have any communication center monitoring AIRS (See Appendix A.13 AIRS Regional Monitoring Assignments documenting these locations.)
- **Communication.** AIRS makes use of conventional repeaters. Therefore, monitoring communication centers can communicate with users throughout the regional coverage area. However, user to user communication is possible only between users having coverage from a common tower within the region.

2.3.4 Monitoring and Dispatch Actions

The communication centers identified in Appendix A.13 AIRS Regional Monitoring Assignments are responsible for monitoring the regionally assigned AIRS channel at all times. DPS may monitor AIRS in areas where communication centers cannot monitor. The volume for AIRS must be set to a level allowing dispatchers to immediately hear and respond to any message traffic across that channel at all times. Note that direct or simplex AIRS usage will not be monitored by any dispatch center and that direct or simplex users will not have the ability to communicate across different bands.

1. **Incident Use**

   Agencies leading multi-agency incidents where AIRS channels are needed will notify the monitoring communication center of their need for the channel either by clearing on air or calling the center, and will describe the nature of the incident.

   Multi-agency Incidents for which AIRS is available:

   1. The monitoring communications center will confirm availability of the AIRS channel and tell the agency to go ahead and begin use.
   2. The lead agency will confirm that it is assuming responsibility for dispatching the incident and take responsibility for notifying additional agencies, as appropriate.
   3. The monitoring communications center will continue to monitor AIRS traffic in the event of a change in the incident or the development of a subsequent incident.
   4. The lead agency's communication center will provide dispatch services for the incident. Providing dispatch services includes the responsibility for monitoring and responding on AIRS channels and coordinating other agency unit responses as requested or necessary.
   5. During an incident, communication centers and agencies will document radio traffic on AIRS in a manner consistent with their agency operating procedures for AIRS incidents. This will vary by center. For example, monitoring communication centers will log the incident if creating a log record for AIRS use is consistent with their daily operations protocols. Agencies using AIRS will initiate a CAD record for the incident if creating such a record is consistent with their daily operations protocols.
   6. In case of system failure, the lead agency's communication center will attempt alternate communication methods. If alternative communication methods cannot be established, dispatch responsibilities will be transferred to the next appropriate communication center.
   7. At the termination of an incident, or when the incident no longer requires the use of AIRS, the lead agency should announce that AIRS will no longer be used for incident traffic and that all field personnel should return to their home communication center. The lead agency will then announce that the channel is clear, document the time in their incident records and notify the monitoring communication center that the channel is available.

Multi-agency Incidents for which AIRS is unavailable:

1. If the channel is not available and Incident Command has not yet been established, the primary monitoring communication center will advise the agency requesting the channel that it is in use and attempt to provide both requesting agencies with any available information needed to prioritize the use of AIRS for the simultaneous incidents. Monitoring personnel, at their discretion, may suggest other interoperable communications resources based on their knowledge of the in-progress incident utilizing AIRS, other available resources, and so on.
2. The agencies leading the simultaneous incidents will determine which incident will be assigned the AIRS channel based on prioritization guidelines outlined above in Section 2.3.2 Prioritization.
3. If the AIRS asset is transferred, the lead agency or Incident Command relinquishing the AIRS channel will contact the primary monitoring communications center to advise them of the transfer.

2. Itinerate Use

1. AIRS is available for emergency use by itinerate users. Itinerate users are defined as responders working outside of their agency's coverage area. They may use AIRS channels to request assistance through the monitoring communication center for the region where the emergency occurs.
2. The monitoring communication center will assist the requester by contacting an appropriate local agency to respond and will maintain communication with the requester as needed until communications can be moved to another asset.
3. The primary monitoring agency may facilitate notification to the responder's agency of the responder's situation if requested to do so.
4. The communication centers and agencies involved will document itinerate use of AIRS in a manner consistent with their daily practices for incidents within their agency.

2.3.5 Field User Actions

1. Initiate command protocols according to the Incident Command System (ICS) for all incidents or events requiring the response of multiple agencies.
2. Before transmitting on AIRS, listen to the channel first to ensure that your radio traffic will not be covering or interfering with that of another user.
3. Identify yourself by agency name and call sign. Users from agencies without call signs should identify by organization and individual name.
4. Keep radio traffic to a minimum and use plain language.
5. Be available on the assigned channel.
6. Do not use AIRS as a travel/chat channel for traffic unrelated to an incident or itinerate user emergency.

7. Report any problems with AIRS to agency/communication center personnel who will initiate the AIRS problem identification and resolution process.

2.4 Problem ID and Resolution

Technical and maintenance problems with AIRS are resolved by DPS. Agencies must make sure their equipment is functioning before placing a service call on the AIRS system.

The SIEC, with the support of the PSIC Office, recommends solutions for oversight issues and any unresolved technical and maintenance issues.

2.4.1 During an incident:

1. Report any technical and maintenance problems with AIRS to the primary agency dispatcher or to the COML, if designated. Dispatch personnel for the agency initiating the call for service, incident command staff, and/or the incident COML will report those problems with AIRS to DPS by contacting the WSB Network Operations Center (NOC). The WSB NOC will be responsible for ensuring effective resolution of all reported problems.
2. Contact the DPS WSB NOC by calling 602-223-2245. During duty hours, an on duty technician will take the trouble report. After normal hours, the On-Call Supervisor will be notified.
3. Move the incident off of AIRS channels if the issue cannot be resolved satisfactorily.

2.4.2 Non-emergency and after incident issues:

1. Personnel for the agency initiating the call for service, incident command staff, and/or the incident COML can report any technical and maintenance problems with AIRS to the DPS WSB NOC. The DPS WSB NOC will be responsible for ensuring an effective resolution to all reported problems.
2. The DPS WSB NOC can be reached via email at WSB_NOC@AZDPS.GOV. Include as much information about the nature of the problem as possible, such as the number of users, what location(s), which frequency (band), and any other defining characteristics.

2.4.3 Oversight issues and unresolved AIRS problems:

1. Report oversight issues and unresolved AIRS problems to the SIEC via the PSIC Office. The SIEC will discuss reported AIRS issues/problems and recommend an action plan.
2. Reports may be submitted electronically to siec@azgita.gov or in writing to the PSIC Office, Government Information Technology Agency located at 100 N 15th Avenue, Suite 440, Phoenix, AZ 85007. The PSIC Office will agendize the oversight issue or unresolved problem report for the SIEC.

2.5 AIRS Testing Protocols

Each communication center responsible for AIRS monitoring duties should host regular open-net tests of the AIRS system.

1. Each center's test will be set and announced in advance at the discretion of the center.

2. At the onset of the test, communications center personnel will announce the start of the test, ensure that the channel is not otherwise in use, and execute a roll-call of public safety and service agencies within the monitored area that have agreed to take part in the test.
3. Additional agencies not included in the roll-call should be given an opportunity to announce themselves at the end of the roll-call.
4. The communication center can then terminate the test and document it as required by its own policies and procedures.
5. If AIRS problems are identified during the open-net test, the center will follow the Section 2.4 Problem ID and Resolution procedures to initiate the resolution process for those problems.

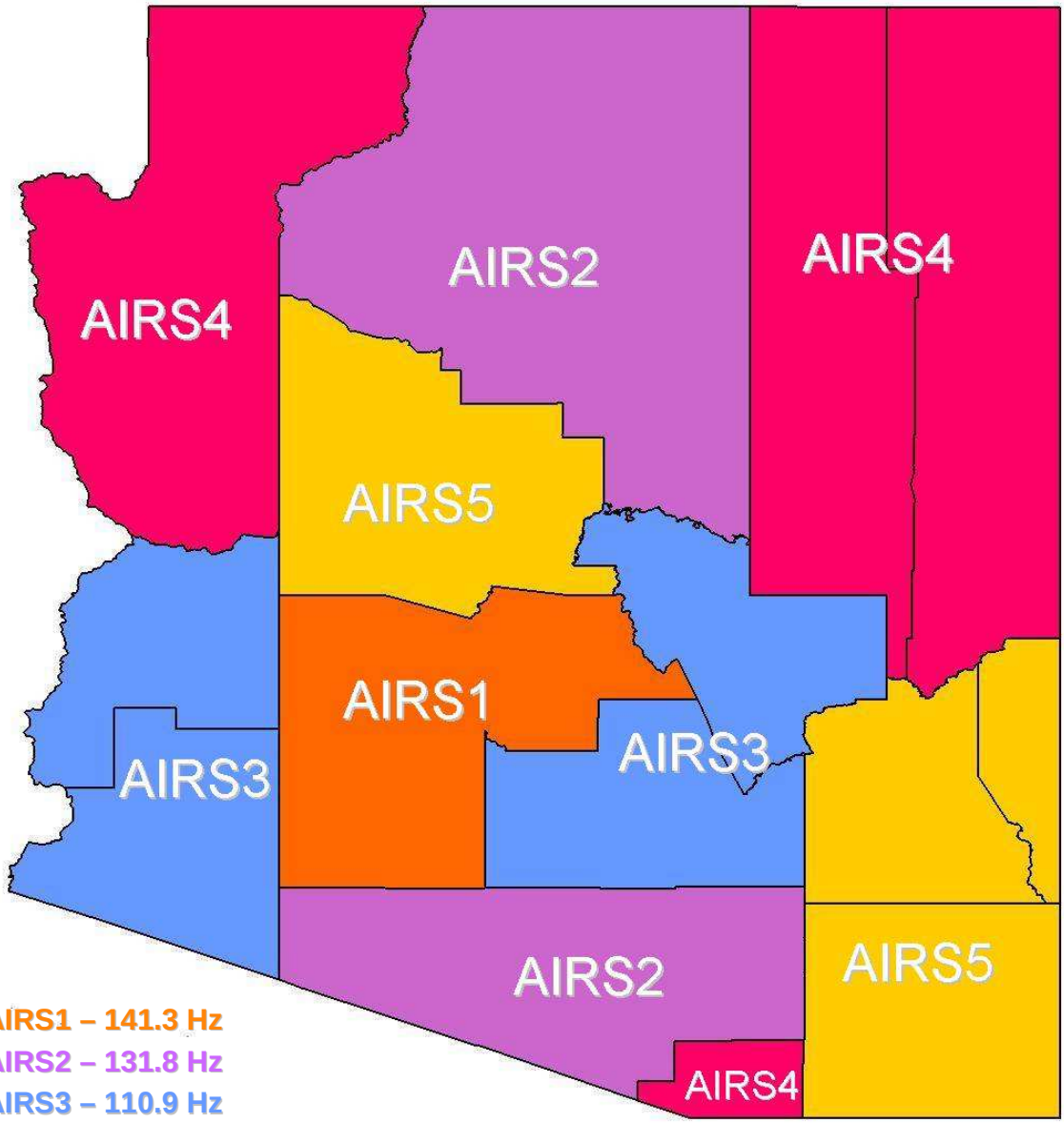
2.6 AIRS Training

It is the responsibility of each user agency to ensure that all of its dispatchers and field users are properly trained in the use of AIRS. Overview training is available upon request from the PSIC Office, but end user training is the responsibility of the user agency. At a minimum, all user personnel should understand the following:

- When AIRS is to be used
- How to select the right channel
- The requirement for plain English
- The requirement to use agency affiliation and title
- The regional monitoring and dispatching capabilities
- Who to notify in their agency if there is a problem

Appendix A: AIRS Regional Channel Assignments & Coverage Maps

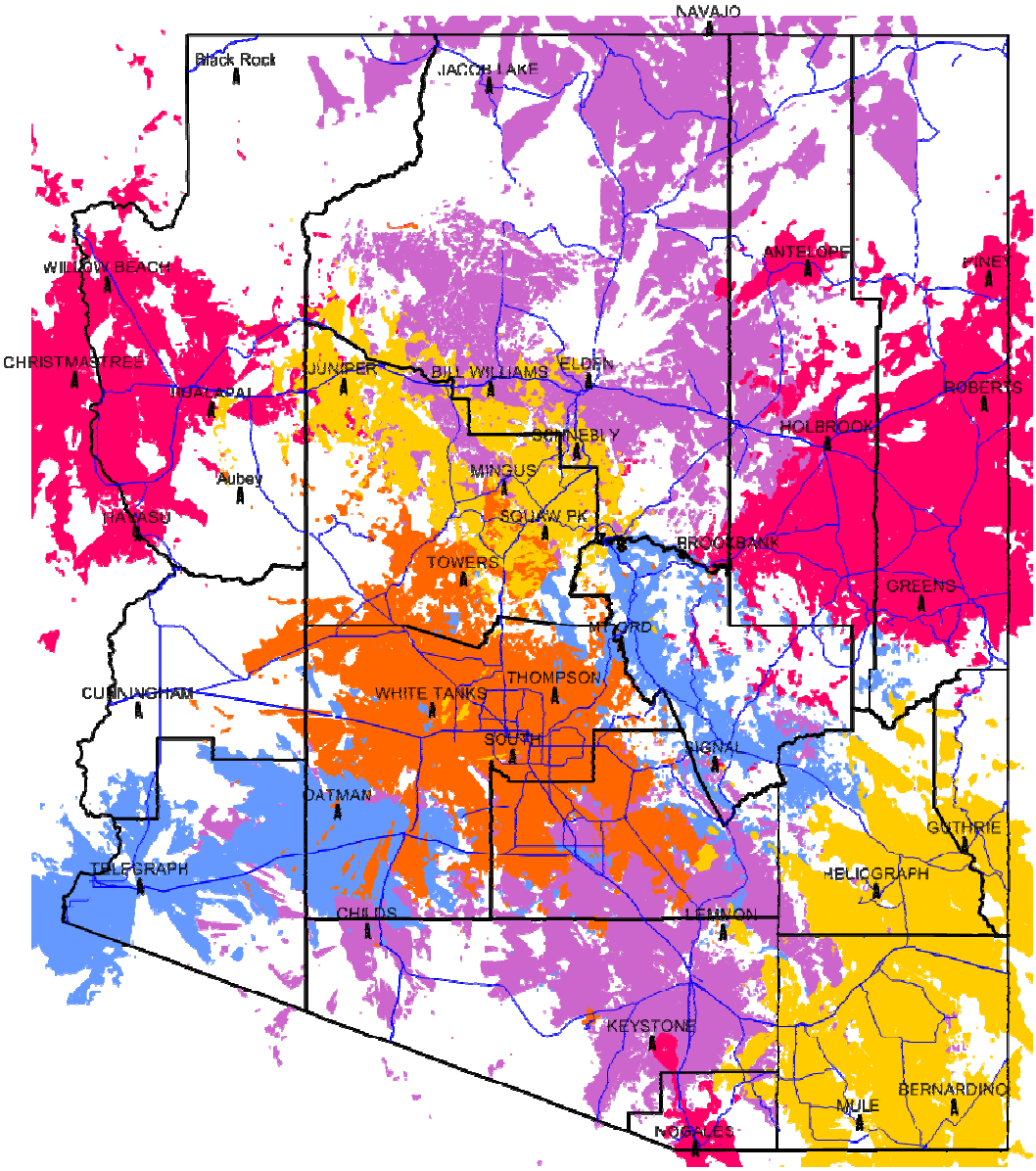
A.1 AIRS Regional Channel Assignments



AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.2 AIRS Statewide Map of Regional Coverage



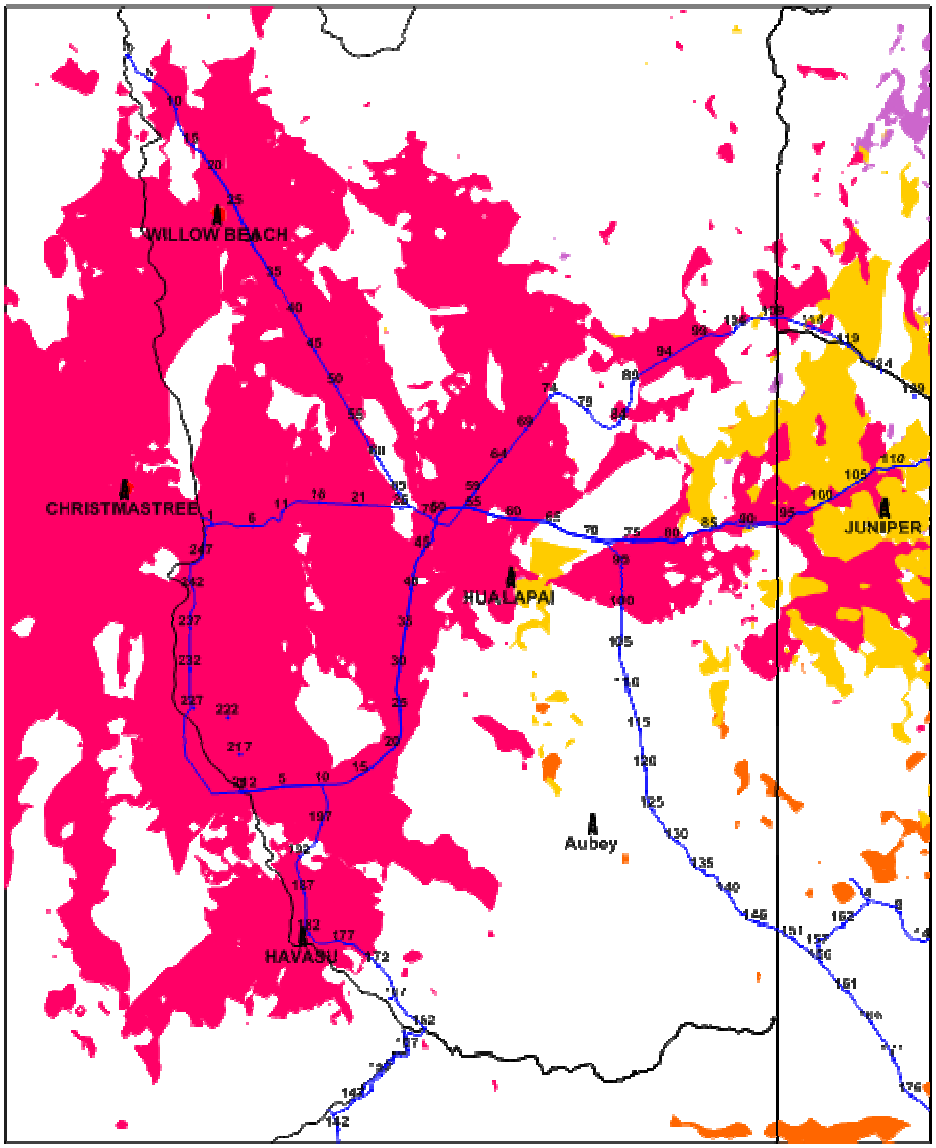
Statewide AIRS Predicted Regional Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.3 Mohave County Coverage – AIRS4



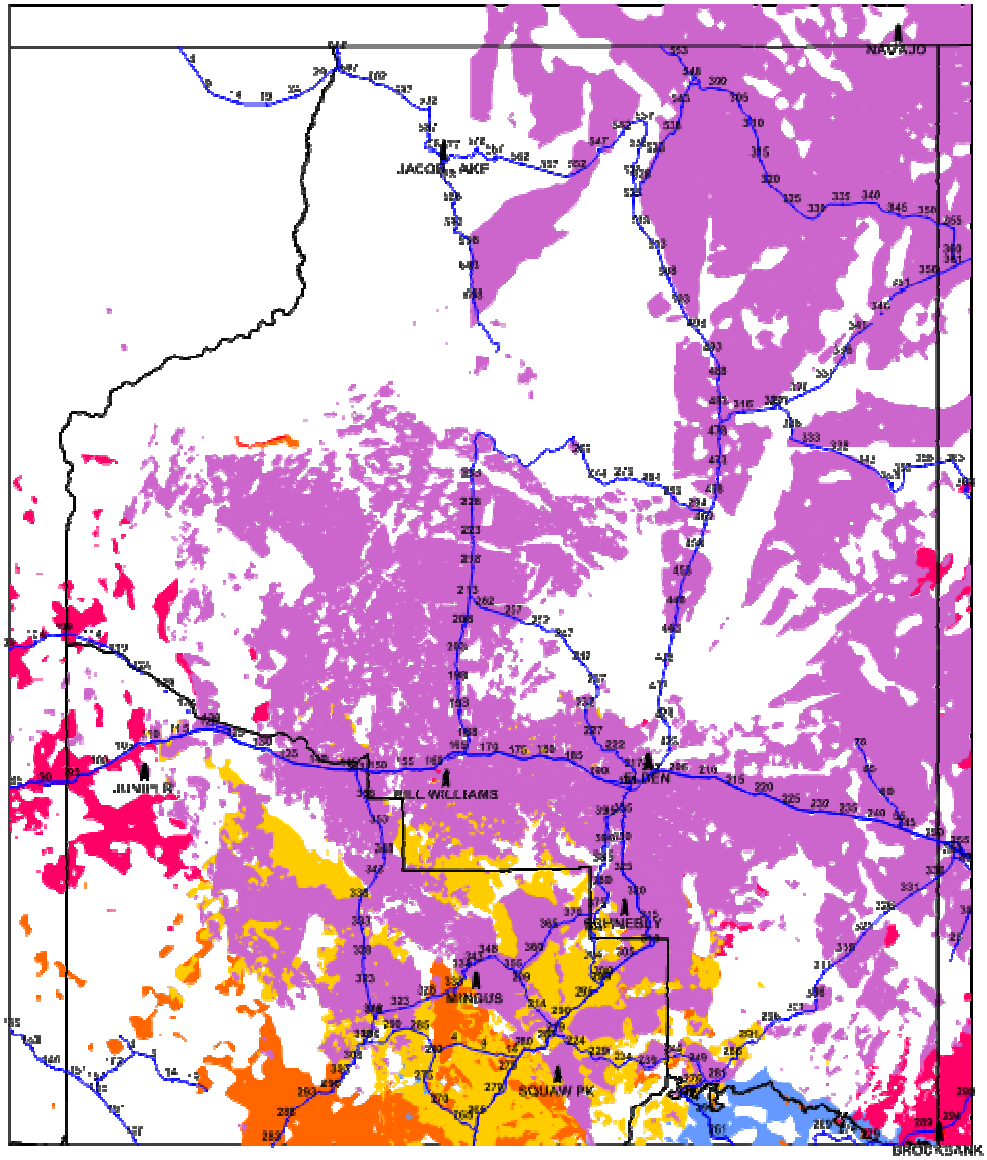
Mohave County Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.4 Coconino County Coverage – AIRS2



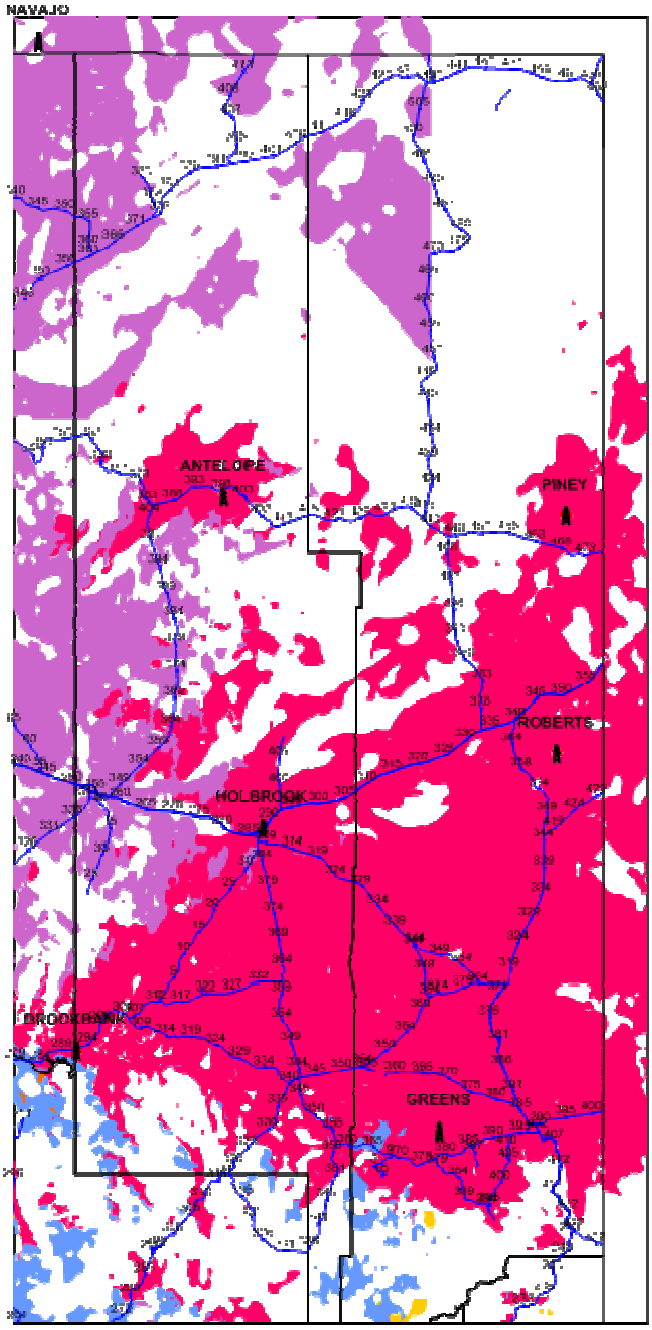
Coconino County Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.5 Apache and Navajo Counties Coverage – AIRS4



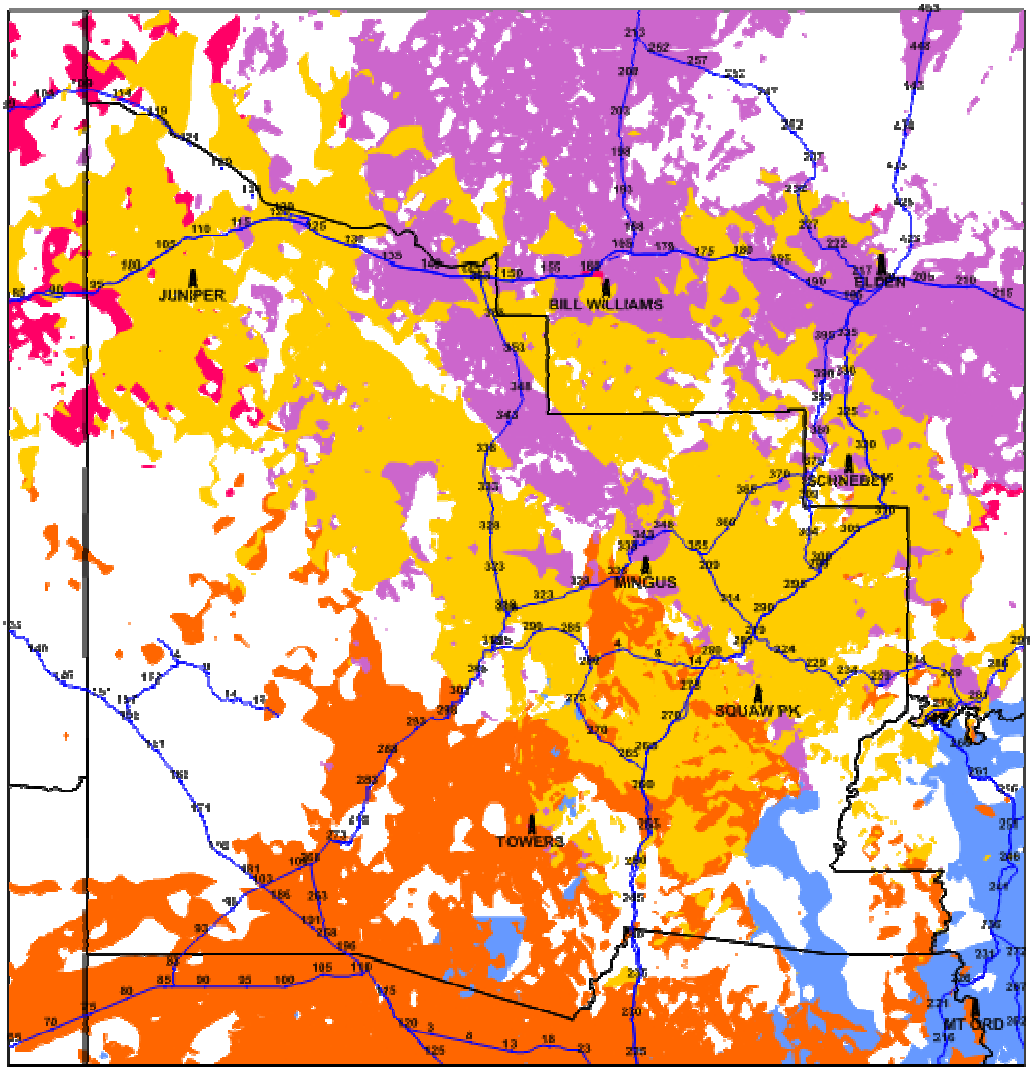
Apache and Navajo Counties Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.6 Yavapai County Coverage – AIRS5



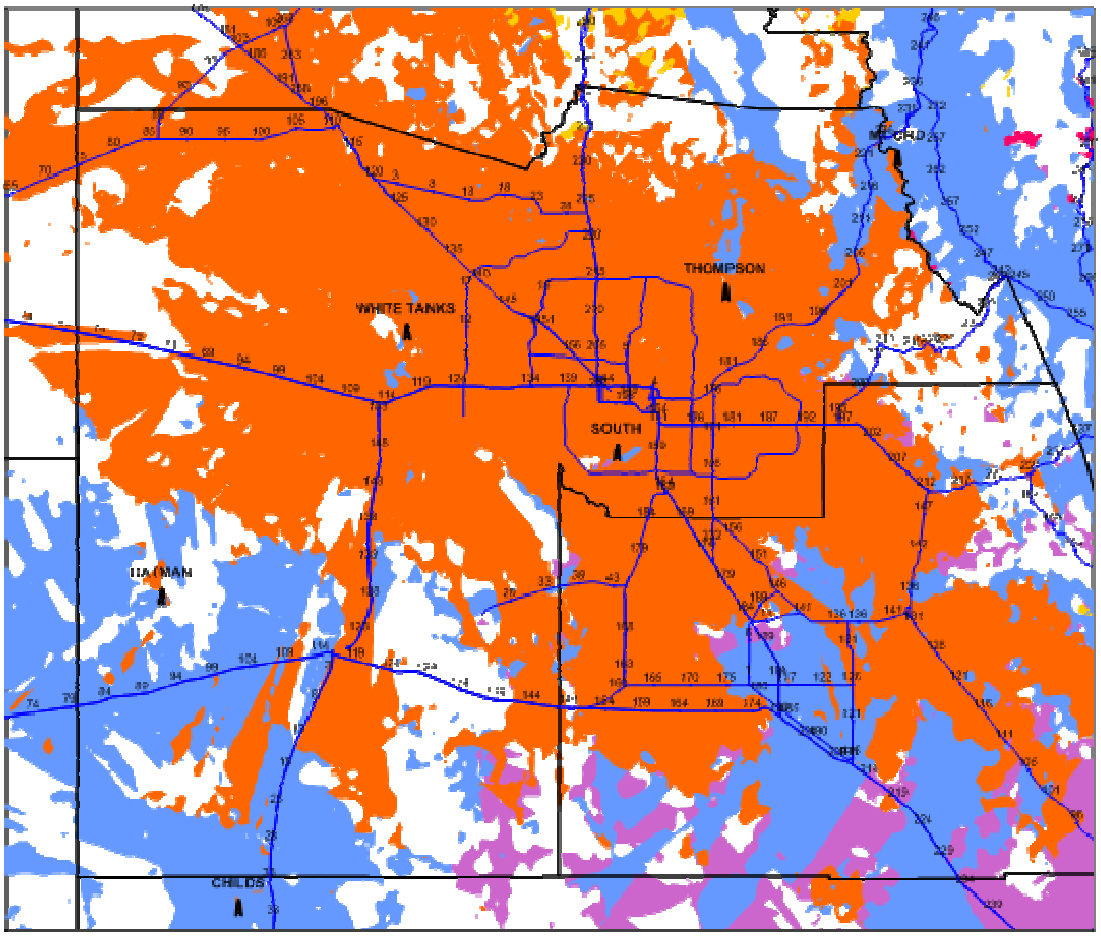
Yavapai County Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.7 Maricopa County Coverage – AIRS1



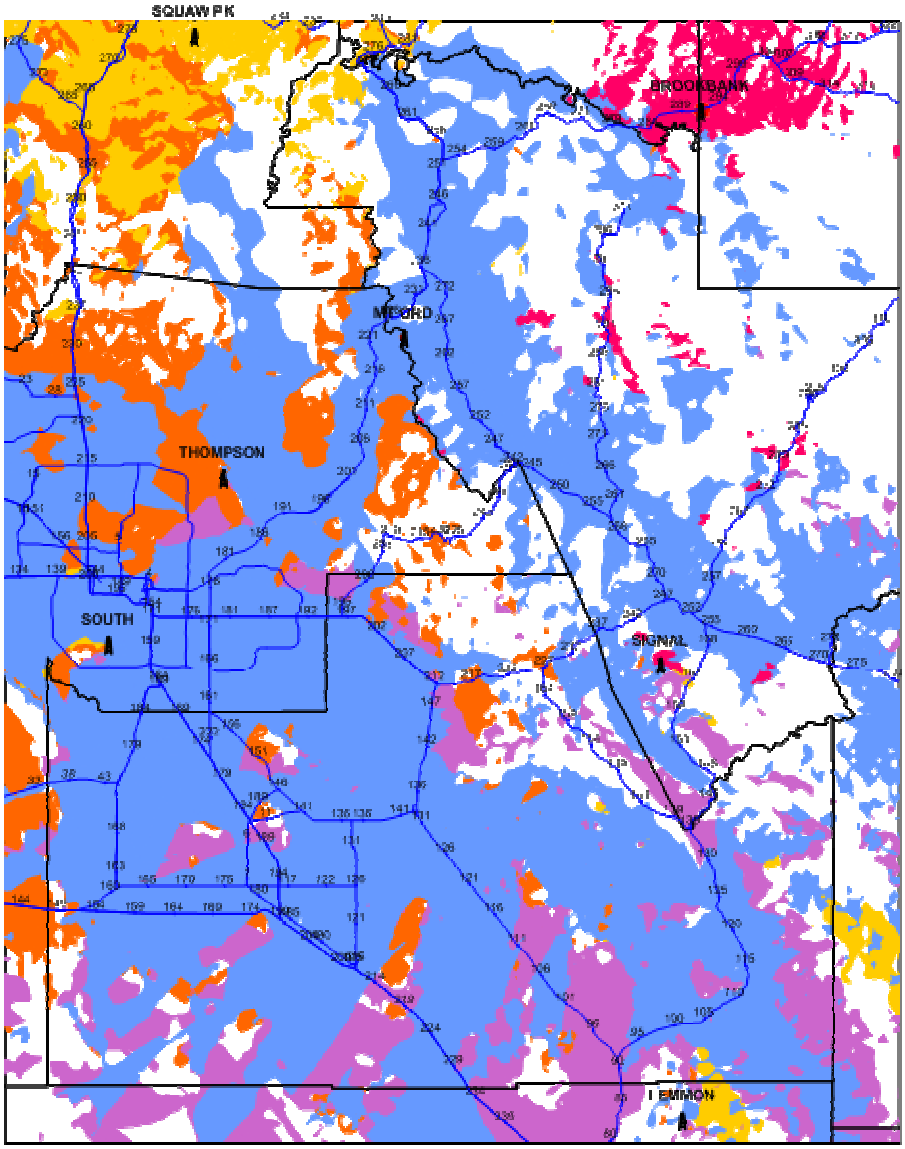
Maricopa County Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.8 Gila and Pinal Counties Coverage – AIRS3



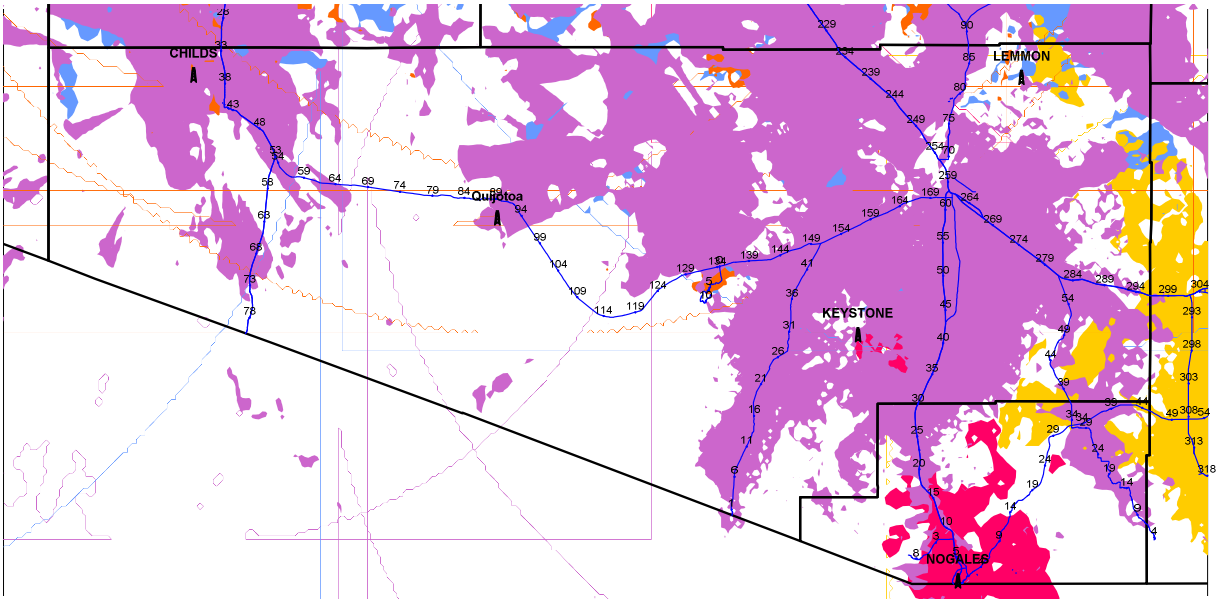
Gila and Pinal Counties Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.9 Pima County Coverage – AIRS2

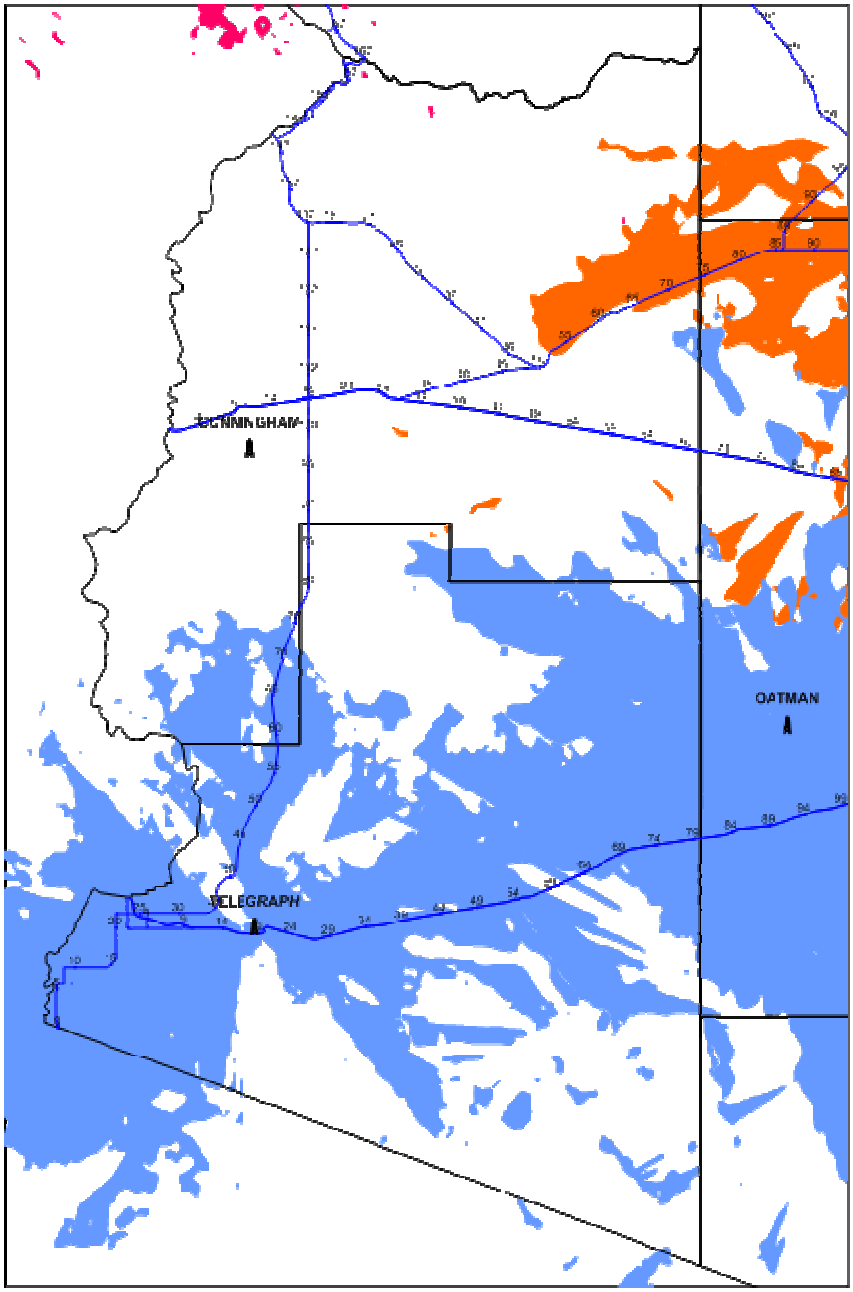


Pima County Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Cover May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz **AIRSAZ VHF – 156.7 Hz**
AIRS4 – 123.0 Hz **AIRSAZ UHF – 100.0 Hz**
AIRS5 – 167.9 Hz **AIRSAZ 800 MHz – 156.7 Hz**

A.10 La Paz and Yuma Counties Coverage – AIRS3



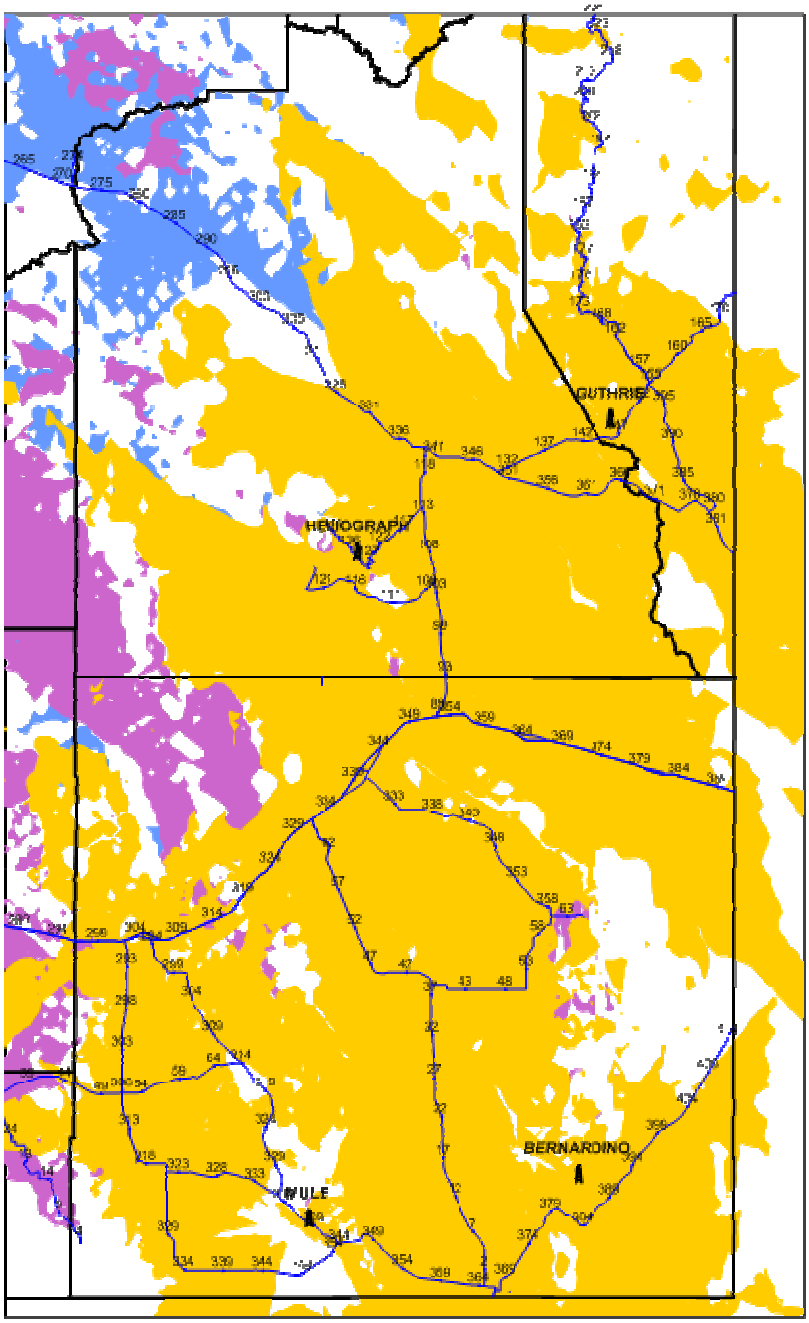
La Paz and Yuma Counties Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.11 Cochise, Graham, & Greenlee Counties Coverage – AIRS5



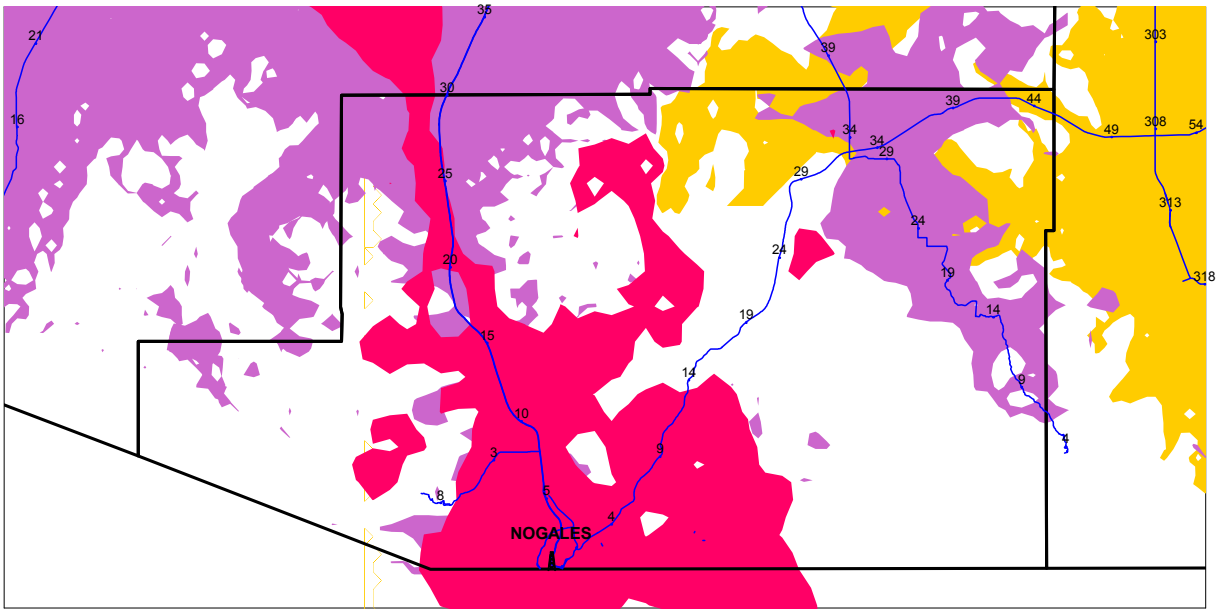
Cochise, Graham & Greenlee Counties Predicted AIRS Regional Radio Coverage for a UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.12 Santa Cruz County Coverage – AIRS4



Santa Cruz County Predicted AIRS Regional Radio Coverage for UHF Mobile

VHF & 800 MHz Coverage May Differ

AIRS1 – 141.3 Hz
AIRS2 – 131.8 Hz
AIRS3 – 110.9 Hz
AIRS4 – 123.0 Hz
AIRS5 – 167.9 Hz

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

A.13 AIRS Regional Monitoring Assignments

Effective Date: 10/19/20

(See www.azgita.gov/psic/AIRS for updated assignments)

Table 4 Regional Monitoring Assignments

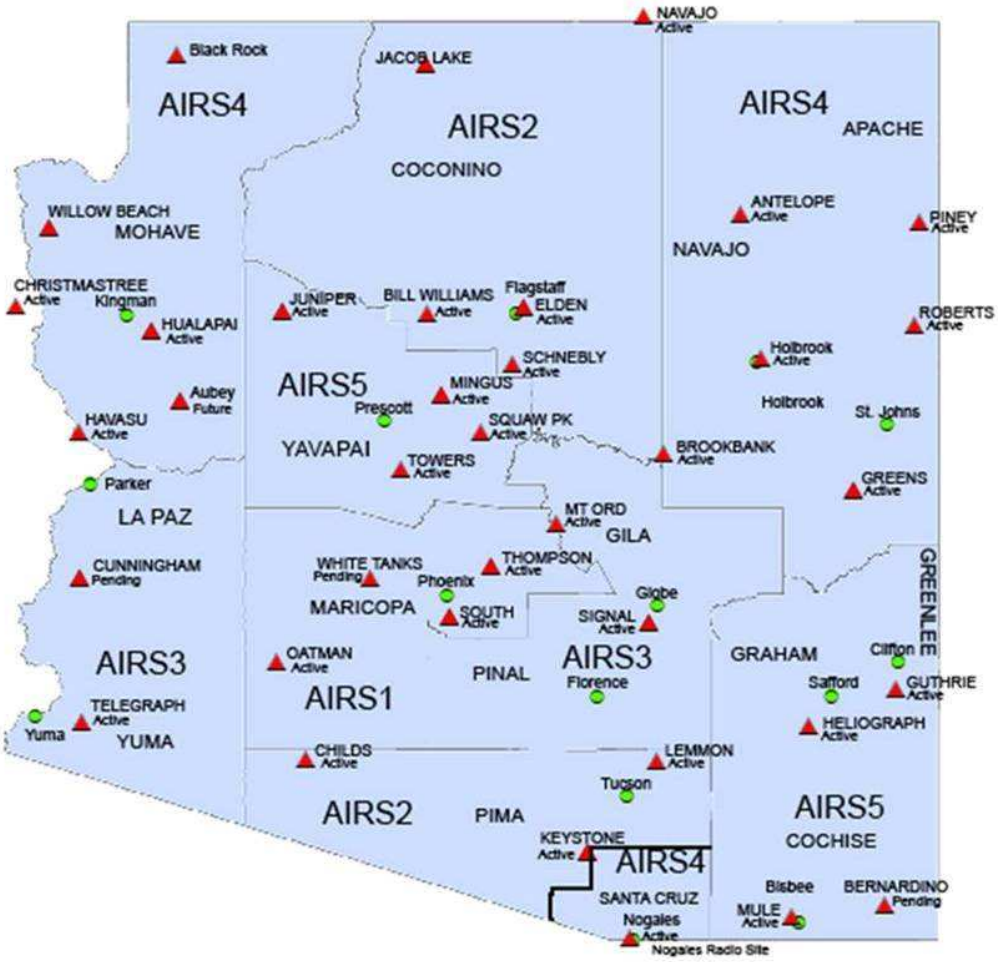
AIRS Channel	County Serviced	Monitoring Communication Center	Suite Location(s)	Additional Monitoring Information
AIRS1	Maricopa	Not Monitored	Towers Mountain	Voted to MCSO
			Thompson Peak	Voted to MCSO
			South Mountain	Voted to MCSO
			White Tank Mountain	Pending replacement
AIRS 2	Pima	Pima County and Ajo Sheriff's Office	Mt. Lemmon	Pima County
			Keystone Peak	Pima County
			Childs Mountain	Ajo Sheriff's Office
AIRS2	Coconino	Coconino County	Navajo Mountain	
			Mt. Elden	
			Bill Williams Mountain	
			Schnebly Hill	
			Jacob Lake	Pending installation
AIRS3	Gila Pinal	Pinal County Casa Grande PD (Partial Coverage)	Signal Peak	
			Mt Ord	Not monitored
AIRS3	La Paz	Not Monitored	Cunningham Peak	Pending installation
AIRS3	Yuma	Yuma County	Telegraph Pass	
			Oatman Mountain	Not monitored
AIRS4	Santa Cruz	Not Monitored	Nogales Hill	Not monitored
AIRS4	Navajo Apache	Navajo County	Piney Hill	
			Roberts Ranch	
			Greens Peak	
			Antelope Mesa	
			Holbrook	
			Brookbank Point	
AIRS4	Mohave	Mohave County and Havasu PD	Willow Beach	Mohave County
			Christmas Tree Pass	Mohave County
			Hualapai Mountain	Mohave County
			Black Rock (pending)	Mohave County
			Lake Havasu City	Havasu PD
AIRS5	Greenlee Graham Cochise	Not Monitored	Heliograph Peak	Voted to DPS Tucson
			Mule Mountain	Voted to DPS Tucson
			Bernardino Peak	Voted to DPS Tucson
			Guthrie Peak	Voted to DPS Tucson
AIRS5	Yavapai	Sedona Fire	Juniper Mountain	
			Mingus Mountain	
			Squaw Peak	

A.14 AIRS Tower Locations and Assigned CTCSS (PL) Tones**

****Suite locations may also have the statewide AIRSAZ channel available with a CTCSS (PL) Tone of 156.7 Hz for VHF and 800 MHz radios, and 100.0 Hz for UHF radios. Availability of the AIRSAZ channel can be determined by accessing the repeater and verifying the return of a short squelch tail. Note that when both the regional and statewide channels are available, use of the regional channel is recommended.**

AIRS Channel	County Serviced	Suite Location(s)	CTCSS (PL) Tones
AIRS1	Maricopa	Towers Mountain Thompson Peak South Mountain White Tank Mountain (pending replacement)	141.3 Hz
AIRS2	Pima	Mt. Lemmon Keystone Peak Childs Mountain	131.8 Hz
AIRS2	Coconino	Navajo Mountain Mt. Elden Bill Williams Mountain Schnebly Hill Jacob Lake (pending)	131.8 Hz
AIRS3	Gila Pinal	Signal Peak Mt. Ord	110.9 Hz
AIRS3	La Paz	Cunningham Peak (pending)	110.9 Hz
AIRS3	Yuma	Telegraph Pass Oatman Mountain	110.9 Hz
AIRS4	Santa Cruz	Nogales Hill	123.0 Hz
AIRS4	Navajo Apache	Piney Hill Roberts Ranch Greens Peak Antelope Mesa Holbrook Brookbank Point	123.0 Hz
AIRS4	Mohave	Willow Beach Christmas Tree Pass Hualapai Mountain Black Rock (pending) Lake Havasu	123.0 Hz
AIRS5	Greenlee Graham Cochise	Heliograph Peak Mule Mountain Bernardino Peak Guthrie Peak	167.9 Hz
AIRS5	Yavapai	Juniper Mountain Mingus Mountain Squaw Peak	167.9 Hz

A.15 AIRS Suite Location Map



Legend

- az_repeaters
- az_countyseat
- az_AIRSRegions

AIRS1 - 141.3 HZ
AIRS2 - 131.8 HZ
AIRS3 - 110.9 HZ
AIRS4 - 123.0 HZ
AIRS5 - 167.9 HZ

AIRSAZ VHF – 156.7 Hz
AIRSAZ UHF – 100.0 Hz
AIRSAZ 800 MHz – 156.7 Hz

Created 13-Nov-2009

Glossary

AIRS	Arizona Interagency Radio System, formerly referred to as the Interagency Radio System (IARS) or as the Arizona Emergency Radio System (AERS)
AIRSAZ	Arizona Interagency Radio System - Arizona
ARRC	The 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) Arizona Regional Review Committee
CAD	Computer Aided Dispatch
COML	Communications Unit Leader
CTCSS	Continuous Tone-coded Squelch System, also known as “PL”, a sub-audible tone used in radio systems to control radio access
DPS	Department of Public Safety
EMS	Emergency Medical Services
FCC	Federal Communications Commission
Freq	Frequency
IC	Incident Command
ICS	Incident Command System
ID	Identification
MOU	Memorandum of Understanding
NCC	National Coordination Committee
NGO	Non-governmental Organization
NIMS	National Incident Management System
NOC	Arizona Department of Public Safety, Wireless Systems Bureau, Network Operations Center
NPSTC	National Public Safety Telecommunications Council
PL	Private Line
POC	Point of Contact
PSAP	Public Safety Answering Point
PSCC	The Public Safety Communications Advisory Commission provides recommendations to the PSIC Office on the development of standards based systems providing interoperability for public safety agencies' communications statewide
PSIC Office	Public Safety Interoperable Communications Office in the Arizona Government Information Technology Agency responsible for advancing interoperable communication in Arizona and supporting the PSCC and the SIEC in the performance of their missions.
SIEC	The Statewide Interoperability Executive Committee is the sub-committee of the PSCC responsible for technical and operational recommendations to the PSCC. The SIEC manages the 700 MHz, UHF and VHF spectrums, and has operational oversight of AIRS.
SOP	Standard Operating Procedure
Voter	A device that selects the best quality audio from a number of received signals and routes the selected “voted” audio to a dispatcher.
WSB	Arizona Department of Public Safety, Wireless Systems Bureau which has engineering and maintenance responsibility for AIRS.