



Statewide Interoperability Radio Network (SIRN)



Standards, Protocols, Procedures

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Standard Title	Foreign Radio System and Non-SIRN Radio Connections	
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1. Purpose and Objective

The purpose of this standard is to establish technical boundaries, operational boundaries, and expectations for connecting a foreign radio system and or a non-SIRN device to SIRN using a gateway device (GW).

This standard is applicable to all entities operating on SIRN, whether directly authorized or as a sub-entity operating under another entity's authority. This standard is applicable regardless if the foreign radio system or non-SIRN device interfaces with SIRN on locally-owned and managed SIRN infrastructure or on state-owned SIRN infrastructure. This standard applies to permanent or enduring applications and to temporary and field applications.

2. Technical/Operational Background

A "foreign" radio system is any radio system that is not SIRN. It may take many different forms, including conventional land mobile radio systems, trunked land mobile radio systems, cellular networks, Wi-Fi networks, and other systems or networks.

"Non-SIRN devices" may take many different forms. These include traditional two-way radios (e.g., base station, mobile, and portable), cellular telephone-style devices, tablet computer-style devices, any other device with a wireless capability, and other devices.

"Gateway devices" pass audio between two or more disparate devices affording voice communication capability. Gateway devices may connect Land Mobile Radio (LMR) systems/devices, cellular systems/devices, telephone systems/devices, and other voice communication systems/devices creating Radio over IP (RoIP) connections.

3. Operational Context

Foreign radio systems and non-SIRN radios may only be connected to SIRN using a gateway device. All connections to SIRN must be under the authority and/or supervision of the SIRN system administrator responsible for the technology at the SIRN point of entry. Gateway devices may connect with SIRN via one of three approved ways:

- Conventional channel gateway (CCGW) interface
- Permanent or enduring radio frequency (RF) interface
- Temporary or field radio frequency (RF) interface

A CCGW interface requires that the gateway device be connected to a SIRN network port. As a network connection, the audio from the gateway may be available as a dedicated dispatch resource and capable of being patched to SIRN talkgroups or other console resources.

A CCGW interface must meet the following conditions:

- A single LTE talkgroup must be connected to the CCGW as a resource.
- CCGW must be programmed for transmission Time-Out Timer of 30 seconds or less.
- The CCGW interface will adhere to an alias naming convention that easily identifies the resource as an LTE POC connection. A common naming convention (e.g., 08-BCSO-LTE1) should be used as the talkgroup alias on both the SIRN and LTE POC system. Radio aliases are subject to the *SIRN Standard 3.2.0 SIRN Radio ID Alias*.

An RF interface requires that the gateway device be connected to a SIRN “donor radio.” The donor radio then passes the audio from the gateway device to an assigned SIRN talkgroup.

4. Recommended Protocol/Standard

In the case of a permanent or enduring RF interface, the gateway and the donor radio must meet the following conditions:

- Radio must be on the SIRN Approved Radio List
- May only be programmed with talkgroups managed by the SIRN system administrator of the radio ID assigned to the donor radio
- Exempt from talkgroup programming requirements for user radios defined in *SIRN Standard 1.8.0 Minimum Programming*.
 - 1 talkgroup allowed per gateway radio.
- Must have Push-to-Talk timeout capability active and set to 30 seconds or less
- Programmed to prefer a specific repeater site that is selected after considering site ownership, site loading, and talkgroup ownership

- Programmed with an alias that includes “GW” to identify the donor radio as a gateway. Radio aliases are subject to the *SIRN Standard 3.2.0 SIRN Radio ID Alias*. (e.g., 08-BCSO-GW1, 08-BCSO-GW2).
- Programmed to accept an inhibit command.
- Programmed with a regroup channel with regroup and lock capability enabled.
- Programmed with page encoding functionality deactivated.
- Ensure operational security of encrypted talkgroup(s) that can be passed through a gateway as an audio connection.

In the case of a temporary or field RF interface, the gateway and the donor radio must meet the following conditions:

- The gateway device must be pre-approved by the SIRN Governance.
- Radio must be on the SIRN Approved Radio List.
- May only use a radio for which you have authorization.

This standard does not permit foreign radio systems and non-SIRN radios to be connected to SIRN by way of network-level connection (e.g., Inter-RF Subsystem Interface [ISSI] or Console Subsystem Interface [CSSI]).

Recommended Procedures

A Risk Assessment conducted by North Dakota Information Technology will be required of each vendor that is wanting to provide foreign radio system services to local stakeholders.

Requests to connect foreign radio system or non-SIRN devices to SIRN must be reviewed by all impacted local system administrator(s)/PSAP(s), as well as the impacted Coordinated Regional Interoperability Board (CRIB) governance structure. They must then be vetted by the Sub-Statewide Interoperability Executive Committee and the Statewide Interoperability Executive Committee (SIEC).

Special consideration must be given at large, preplanned or emergency events where multiple gateway devices could be connected to the same shared talkgroup(s) when multiple agencies are involved in the response. In these cases, coordination with the assigned COML for the event is required to ensure SIRN system resources are utilized in the most efficient manner, minimizing radio frequency (RF) resources and eliminating unnecessary cross patching.

Only entities with approved full SIRN participation plans are authorized to connect foreign radio systems and non-SIRN devices to SIRN.

SIRN system talkgroup authorizations may be sought and obtained through controlling authorities such as individual cities, counties, and other entities authorized to grant these permissions. These authorizations must be obtained from authorized SIRN System Administrators, SIRN network infrastructure owners, and SIRN talkgroup owners as prescribed in applicable SIRN Standards.

5. Management

While only entities with “Full SIRN Participation Plans” are authorized to connect foreign radio systems and non-SIRN radios to SIRN using a gateway device, this does not preclude a full participant from permitting a sub-entity to do so. In this circumstance, the sub-entity must have written consent from the SIRN system administrator of the full participant parent entity.

The owner of the CCGW port to which a gateway device is connected or the radio ID of a donor radio is responsible for all non-SIRN devices passing voice messages through the single donor radio.

Designated system administrator(s) have authority to audit foreign radio system usage.