Iowa Statewide Interoperable Communications System (ISICS)
Standards, Protocols, Procedures

ISICS Standard:	**Standard #:**	2.13.0
Subscriber Radio Standards	Date Adopted:	07/12/2018
	Date Reviewed:	8/13/26
	Version:	2.0

1. Purpose or Objective

The purpose of this standard is to set minimum technical and performance standards for subscriber radios allowed to operate on the Iowa Statewide Interoperable Communications System (ISICS).

2. Technical Background

- **Capabilities**

  The ISICS platform uses the digital communications technology specified in the TIA-102 Series Standards, Interim Standards, and Telecommunications Systems Bulletins, commonly known as APCO Project 25 (P25). The P25 standards provide capability for full backward migration and limited forward migration along an evolving continuum of technologies and services assuming the radios operate on a common set of frequencies. P25 also permits different vendors of subscriber radios and infrastructure to provide value added vendor specific premium features and services. The ISICS Platform uses P25 Phase II Time Division Multiple Access (TDMA).

- **Constraints**

  Subscriber radios from vendors using different radio operating software will provide a variety of services, features, functionality, and performance to the users. Some radios will also interact differently with the infrastructure and could potentially exhibit undesirable operations.

It is possible that new, unproven radios and/or software may exhibit performance and functionality characteristics that are destructive to the overall performance, capacity and/or security of the ISICS platform.

This standard does not include paging equipment.

3. Operational Context

Participants using the system need access to radios that will meet their operational needs for a financially viable long-term investment. It is anticipated that radios capable of operation on the system will be available from multiple vendors over the life of the system. Users need the flexibility and knowledge to optimally choose from the radios available in the marketplace that would be operationally desirable and not cause complications for other ISICS users.

It is the responsibility of the user for ensuring any device placed on the ISICS platform is used according to its instruction and recommended capability. If the device causes interference, the user will be required to correct the problem, and devices may be disallowed on the system until such time as the problem has been rectified.

4. Recommended Protocol/Standard

All subscriber radios that meet the applicable P25 Standards and DO NOT exhibit operational, performance, or other characteristics that substantially and measurably negatively impact the system or its users will be approved for use on the system.

5. Recommended Procedure

5.1 Verification of functionality of subscriber radios for operation on the system:

- Identification of the radio proposed for use on the system. Radio equipment manufacturers should work closely with an authorized user who is considering purchasing the proposed radio.
- Review of technical specifications to determine basic compliance with the P25 Standards.
- Review the specified functionality outlined in Appendix A with the manufacturer of the radio. Functionality should be verified based on the underlying ISICS infrastructure. Acceptable documentation can include P25 Compliance Assessment Program (CAP) results or other inter-manufacturer interoperability testing.
- Equipment must meet the rules for Type Acceptance per FCC CFR 47 Part 2.
- ISICS approved users are responsible for ensuring equipment used on the ISICS network is purchased from a reputable vendor, is in proper working order, and meets P25 Standards.

5.2 Problems with Previously Approved Radios:

5.2.1 *New problem with previously approved radio*

If a problem arises and a subscriber radio type begins to exhibit characteristics that are harmful to the operation of other users on the system, users are required to cease use of the equipment and to coordinate with the manufacturer to solve the problem. Users are

required to provide documentation to the ISICS System Administrator when the problem is solved. The subscriber unit functionality outlined in Appendix A may be reviewed and updated by the Technology Committee to ensure proper testing of the characteristic exhibited.

If a problem is due to the use of a new feature in the radio, that feature will not be allowed to be used until satisfactorily repaired and tested by the manufacturer for proper operation.

5.3 Purchase of second-hand and/or used radio equipment:

Any purchase of second-hand or used radio equipment may require an inspection and software flash by the vendor to ensure that it is in proper working order. The purchaser is responsible for ensuring the radio is coming from a reputable vendor and in good working order.

6. Management

ISICS System Administrator will manage records of any equipment failures and/or feature problems. The Technology Committee may review and update Appendix A as needed.

Appendix A

List of Required Functionality on the ISICS Infrastructure:

1. Group Call Receive
2. Group Call Transmit
3. Intra-system Roaming
4. Registration & Affiliation
5. De-registration & De-affiliation
6. Emergency Call
7. AES-256 Multi-key Encryption
8. TDMA Time Division Multiple Access