Report to the Iowa Legislature on the Status of the
Iowa Statewide Interoperable Communications System Board (ISICSB)
Calendar Year 2021

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ISICSB 2021 Executive Summary

The Iowa Statewide Interoperable Communications System Board (ISICSB) again met the tasks outlined in Iowa Code 80.28 and 80.29 and advanced interoperability in Iowa again in calendar year 2021. This accomplishment was realized during the COVID-19 Pandemic and associated effects.

Many of these objectives are mundane in nature but are key to ensuring interoperable communications can be achieved by agencies. This includes the creation and maintenance of several dozen standards and policies that cover a wide range of topics, from how radio channels and talkgroups are named to how pursuit communications are executed on the Iowa Statewide Interoperable Communications System (ISICS).

While the COVID-19 Pandemic and associated mitigation strategies eliminated many opportunities for in-person meetings, the ISICSB and its committees followed guidance outlined by the Iowa Department of Public Health and was able to resume in-person meetings in the Fall of 2021. We continued to utilize past knowledge regarding working in a virtual environment and applied that to all meetings. As a result, the ISICSB was able to maintain operations and deliver training.

The ISICSB continued to approve new users to access ISICS. As of the publication of this report, there are 191 approved unique applications covering hundreds of agencies and nearly 27,000 radios that can access ISICS. These users span all levels of government (municipal, county, state and federal) and non-governmental organizations. This does not include updates to existing applications.

A key project came to completion with the distribution of consolettes/control stations to public safety answering points (PSAPs) that did not have a previous connection to ISICS. This project has greatly enhanced Iowa's interoperable capabilities. The StatusBoard program that was deployed in 2020 to assist agencies with communications coordination is undergoing some updates at the time of this report to enhance functionality in cooperation with State of Minnesota.

The deployment of ISICSB resources following the August 2020 derecho continued in 2021. DPS personnel and volunteers were able to help maintain a steady state deployment status in field to meet mission needs and objectives of agencies requesting the equipment in Atkins and Clinton. In addition, the ISICSB worked directly with the Homeland Security Emergency Management Department (HSEMD) to assist with any reimbursements from FEMA.

The ISICSB also continued work with the FirstNet Authority and AT&T on the build-out of FirstNet, a public safety broadband network, in Iowa. The collaboration among the three aforementioned entities benefited all agencies as information was able to be passed to local stakeholders, Iowa agencies were able to submit feedback, and problems that were discovered were addressed.

All that work led to hundreds of successful interoperable events in Iowa during 2021. Work will continue in 2022 to build on these successes. To facilitate this, the ISICSB started work on a Tactical Interoperable Communications Plan, Iowa Statewide Field Operations Guide (FOG), and eFOG.

The ISICSB continues to look to the future and is looking to create and deploy future programs and the associated funding needs.

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I.   <u>Overview</u>

During the first session of the 82nd General Assembly, the Iowa Legislature established the Iowa Statewide Interoperability Communications System Board (ISICSB)[1]. Section 80.28 was established by 2007 Iowa Acts House File 353, and Section 80.29 addresses the membership of the Board and its duties:

> A statewide interoperable communications system board is established, under the joint purview of the department and the state department of transportation. The board shall develop, implement, and oversee policy, operations, and fiscal components of communications interoperability efforts at the state and local level, and coordinate with similar efforts at the federal level, with the ultimate objective of developing and overseeing the operation of a statewide integrated public safety communications interoperability system.   For the purposes of this section and section 80.29, *"interoperability"* means the ability of public safety and public services personnel to communicate and to share data on an immediate basis, on   demand,   when   needed,   and when   authorized.

The Iowa Statewide Interoperable Communications System (ISICS), Iowa's new P25 Phase II 700/800 MHz interoperable radio network, is live and completed. Final system acceptance was completed in April 2021.

The ISICSB has been in existence for fifteen years, progressively improving policy and procedures for Iowa interoperability and advancing stakeholder involvement in decision making.
2020 - 2022 Chair and Vice-Chair are as follows:

Chair: Captain David Ness, Des Moines Police Department
(515) 283-4824, DMNess@dmgov.org

Vice-Chair: Peter Huffman, Department of Transportation
(515) 233-7808, Peter.Huffman@iowadot.us

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[1] ISICSB web site: https://isicsb.iowa.gov/

II.   Notable Events for 2021

- Maintenance of 65 standards regarding ISICS Access
- Adoption of two new policies regarding 700 MHz Air-to-Ground channels and Long Term Evolution (LTE) Deployable Vehicles
- Continued support of emergency deployments of strategic technology reserve (STR) trailers to support derecho disaster recovery efforts in Atkins and Clinton.
- Continued development of the StatusBoard program in coordination with State of Minnesota for local agency coordination on the use of the ISICS interoperable talkgroups and other resources.
- Continued outreach to interoperability stakeholders regarding ISICS and FirstNet through regional and local training sessions and informational meetings
- Restoration of governance meetings to in-person settings while utilizing virtual meeting to continue meetings and advancements during the COVID-19 pandemic
- Milestone of 191 unique application approvals (excludes numerous updates to existing applications) and hundreds of agencies using ISICS and nearly 27,000 radios.
  - All agencies of US Department of Justice signed up for ISICS access
    - Bureau of Alcohol Tobacco and Firearms (ATF)
    - Drug Enforcement Administration (DEA)
    - Federal Bureau of Investigation (FBI)
    - US Marshal Service (USMS)
  - Other federal agencies including but not limited to
    - 10th District Reserve Law Enforcement
    - Department of Homeland Security Investigations
    - Department of Veterans Affairs – Des Moines
    - FEMA Region 7
    - Office of Inspector General – Health and Human Services
    - US Capitol Police
  - State agencies using ISICS
    - Department of Correction (DOC) facilities
    - Department of Health and Human Services – Glenwood Resource Center
    - Department of Natural Resources (DNR)
    - Department of Public Health (IDPH)
    - Department of Public Safety (DPS)
    - Department of Transportation (DOT)
    - Homeland Security and Emergency Management Department (HSEMD)
    - Iowa State University
    - University of Iowa

- - University of Northern Iowa
- Numerous events using ISICS for interoperability in 2021[2]
- Continued contribution with P25 standards development with TIA/TR-8
- Continued work on interstate interoperability with neighboring states to formalize agreements and develop procedures.
- Began coordination with electrical cooperatives to enhance communications with local agencies during power restoration.

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[2] State Fair, ISU/Iowa Athletic events, MLB at Field of Dreams, 300+ pursuits, federal warrants

III. Key Definitions and Acronyms

Definitions
Interoperability: two or more agencies—independent of discipline—that must work with and communicate with each other during a collaborative response. An example would a local police department working with a local fire department during an emergency.

Operability: single agency handling day-to-day communications and associated activities such as emergency response without assistance from another agency or entity.

Acronyms
CIO	State of Iowa Chief Information Officer
CISA	Cybersecurity and Infrastructure Security Agency
COML	Communications Leader
COMT	Communications Technician
COMU	Communications Unit
DHS	Department of Homeland Security
DPS	Department of Public Safety
DNR	Department of Natural Resources
DOC	Department of Corrections
DOT	Department of Transportation
DSWIC	Deputy Statewide Interoperability Coordinator
ECD	Emergency Communications Division
FCC	Federal Communications Commission
FFY	Federal Fiscal Year
FPIC	Federal Partnership for Interoperable Communications
ICN	Iowa Communications Network
ICTAP	Interoperable Communications Technical Assistance Program
INTD	Incident Tactical Dispatch
ISICS	Iowa Statewide Interoperable Communications System
ISICSB	Iowa Statewide Interoperable Communications System Board
ISP	Iowa State Patrol
ISSI	Inter-RF Sub-System Interface
LMR	Land Mobile Radio
LTE	Long Term Evolution
NCSWIC	National Council of Statewide Interoperability Coordinators
NECP	National Emergency Communications Plan
NENA	National Emergency Number Association
NG9-1-1	Next Generation 9-1-1

NPSBN	National Public Safety Broadband Network
OEC	Office of Emergency Communications (legacy office)
P25	Project 25
PSAP	Public Safety Answering Point
RFP	Request for Proposal
RIC	Regional Interoperability Committee
SCIP	Statewide Communications Interoperability Plan
SFY	State Fiscal Year
SLIGP	State and Local Implementation Grant Program
SME	Subject Matter Expert
SPOC	State Point of Contact
SSSG	Shared Systems Study Group
SWG	Standards Working Group
SWIC	Statewide Interoperability Coordinator
TA	Technical Assistance
TIA	Telecommunications Industry Association
TR-8	Project 25 Steering Group
UGC	User Group Committee
VHF	Very High Frequency
WISE	Wi-Fi Internet for School Emergencies

IV.   <u>Membership</u>

December 2021 ISICSB Members
<u>Local Representatives</u>

Name	Position	City/Locale
David Ness	Municipal Police Department	Des Moines P.D.
Daniel Schaffer	Municipal Police Department	Denison P.D.
Curtis Woten	Fire Department (Volunteer)	Blakesburg F.D.
Michele Bischof	Fire Department (Career)	Des Moines F.D.
Wendi Hess	Communication Center Manager	Woodbury County
Jason Hoffman	Communication Center Manager	Carroll County
Dan Fank	County Sheriff	Worth County
Jason Schluttenhofer	County Sheriff	Wright County
Rhonda Braudis	Member-at-Large	Marshall County
Mindy Benson	Emergency Management	Tama County
Bridget Edson	Emergency Medical Services	Chickasaw County

<u>State Agency Representatives</u>

Blake DeRouchey	Department of Homeland Security and Emergency Management
Cindy Heick	Department of Public Health
Heath Hove	Department of Public Safety
Haley Nichols	Iowa Law Enforcement Academy
Michael Strauser	Department of Natural Resources
Patrick Updike	Department of Corrections
Jessica Turba	Office of the Chief Information Officer
Peter Huffman	Department of Transportation

<u>Legislative Ex-Officio Members</u>

Senator Jesse Green
Senator Kevin Kinney
Representative Kristin Sunde
Representative Jarad Klein

V.   2021 Communications Interoperability Efforts

The ISICSB holds monthly public meetings on the second Thursday of the month. The meetings are streamed live for public viewing in addition to a conference line being available for remote attendance. The ISICSB posts information such as meeting agendas, minutes, policies, standards, and a calendar of events on a website at www.isicsb.iowa.gov.

Since its inception, ISICSB has addressed legislative mandates as contained in Iowa Code 80.29. The following sections outline the accomplishments of the ISICSB in operating under Iowa Code 80.29.

Activities for calendar year 2021 are outlined in the following subsections. A complete history of ISICSB activities dating back to its inception are covered in Section VII. Historical Communications Interoperability Efforts by the ISICSB.

1. **Implement and maintain organizational and operational elements of the board, including staffing and program activity.**

   A. **ISICSB Members, Staff, Funding, and Activities**

   Activity for 2021 focused on maintaining staff levels, recruiting and on-boarding new members, and managing a wide array of program activity development.

   In addition, much work was dedicated to continuing operations during the COVID-19 pandemic. The ISICSB continued to hold meetings, deliver training, and create, edit, and publish documents.

   Chris Maiers continues to serve as the statewide interoperability coordinator (SWIC). A deputy SWIC (DSWIC) was added as a non-paid position in 2019 and continued to be utilized in 2021. Cedar Rapids Fire District Chief Curtis Walser assumed this position in spring of 2019 to assist with the deployment of ISICS-connected consolettes to local public safety answering points (PSAPs) and Iowa Regents Schools that did not have a previous connection to ISICS for interoperability along with other interoperable efforts.

   In 2021, the ISICSB continues to rely on a $115,661 appropriation in state funding. The State and Local Implementation Grant Program (SLIGP) 2.0 funds are no longer available due to the grant concluding in March 2021. The appropriations are used to sustain ISICSB activities, salaries, and benefits for the SWIC and ISICSB administrative assistant. With the lack of SLIGP 2.0 funds, additional funding is necessary to sustain the ISICSB activities.

   Each ISICSB member maintains a full-time professional position and performs ISICSB duties on a volunteer and part-time basis. Mileage continues to be a reimbursable expense.

B. Committees

The primary committees under the ISICSB all have goals, metrics, objectives, and action plans that are outlined in the *Statewide Communications Interoperability Plan (SCIP) 2020-2023*. Since the adoption of this plan in December of 2019, each committee has made progress towards achieving the goals laid out in the SCIP.

Despite numerous set-backs with the COVID-19 pandemic, the ISICS committees and work groups continued to meet to discuss interoperability needs and develop policy, procedure, standards, and other work products. Those various products are included in VIII. Attachments for 2021.

i. Governance Committee

The Governance Committee, in conjunction with other Board committees, continues to steer activities with local public safety community partners in a collaborative way to establish regional governance presence throughout Iowa.

The Governance Committee anticipates it will continue leveraging local public safety community partners for knowledge and advice in 2022 and beyond as the Board continues the task of maintaining the existing policies and drafting new policies, standards, and guidance that will make the statewide interoperable Project 25 (P25), Phase 2, 700/800 MHz land mobile radio (LMR) platform known as the Iowa Statewide Interoperable Communications System (ISICS) successful in the short- and long-term.

The Governance Committee continues to work with local public safety community partners to establish effective and appropriate governance practices and relationships creating a foundation for successful operation of both ISICS and Iowa's portion of a Federal Nationwide Public Safety Broadband Network (NPSBN).

ii. Finance Committee

The Finance Committee continues to meet routinely to evaluate the financials of the ISICSB and approve expenditures. Any future grant funding that is leveraged by the ISICSB to support programs is thoroughly vetted in compliance with all requirements.

If more funding becomes available for the ISICSB to support local programs with interoperable solutions via ISICS, processes will be developed accordingly. The SWIC is working with DPS to implement a long-term financial plan to help facilitate more ISICSB activities and staff development.

iii. Operations Committee

The Operations Committee has worked throughout 2021 to find effective ways to leverage ISICS for interoperable communications via coordination with the Standards Working Group, Technology Committee, and other committees as necessary.

Additional Operations Committee work included coordinating with the Technology Committee on the use of air-to-ground simplex channels for additional communication and coordination with public safety aircraft. That policy and the related ISICS standard was completed and went out for public comment and was fully adopted in 2021. Work will continue to update applicable ISICS standards and guidance to reflect the additional communications resources to ensure a thorough understanding among stakeholders exists regarding those additional channels.

In the 2021 the Operations Committee in coordination and collaboration with the Technology Committee began a thorough evaluation of the potential use of encrypted interoperable talkgroups on the ISICS. Work included updating an existing policy and working to draft several standards that are key to successful deployment of encrypted interoperable talkgroups.

iv.   Outreach Committee

The Outreach Committee continues to send the monthly ISICSB Newsletter to interoperability stakeholders in Iowa.

A regional outreach event was scheduled and held for ISICS and FirstNet in Northern Iowa. At these outreach events, presentations were given on the use of ISICS and the consolettes/ control stations that were given to PSAPs along with FirstNet.

v.   Technology Committee

The Technology Committee has continued its work in evaluating technological opportunities for the ISICSB to enhance interoperability via ISICS and NPSBN. Work in 2021 covered several technological solutions for interoperability stakeholders in Iowa. It included continued work with the 800 MHz Regional Planning Committee towards repurposing of some unused 800 MHz channels so they could be licensed as three 800 MHz Scene of Action simplex channels for public safety use in areas with limited radio system coverage. These would complement the existing 700 MHz Scene of Action Channels already in use.

The Technology Committee also worked with the Operations Committee on the work related to encrypted interoperable talkgroups. That work is expected to be completed in calendar year 2022.

The Technology Committee also completed work on a deployable LTE vehicle policy that would help enhance collaboration and cooperation among stakeholders within the State of Iowa and the various LTE carriers that would be looking to deploy a LTE vehicle during a planned event or disaster. This policy was adopted by the ISICSB and proved useful during some deployments for significant events in Iowa.

vi.   Training and Exercise Committee

The Training and Exercise Committee work in 2021 included the continuation of publishing guidance and training modules for the various ISICS standards. This work included taking in feedback from stakeholders on how the training modules and sessions should be done and

then creating them.   Once these modules are completed, they are posted online for on-demand viewing by stakeholders.

The Training and Exercise Committee worked closely with the SWIC and the Interoperable Communications Technical Assistance Program (ICTAP) to continue to deliver training to communications stakeholders in Iowa during the COVID-19 pandemic. In a year in which many training opportunities were still cut off, the ISICSB's Training and Exercise Committee was still able to deliver training to interoperability stakeholders. Offerings that were able to be delivered through ICTAP included:
- Communications Technician (in-person)
- Communications Unit Leader (virtual)

In working with the SWIC, DPS Interoperability Communications Bureau and DPS State Radio, one-on-one training was again provided to dozens of PSAPs and agencies on the use of the ISICS and the consolettes/control stations given to PSAPs.

vii.   User Group Committee

The User Group Committee (UGC) work in 2021 continued to further the development on the ISICS application process. Efficiencies implemented in past years have proven effective in reviewing and approving applications to ISICS. As of the publication of this document 191 unique applications have been approved for ISICS access. In numerous instances, agencies have revised their applications to increase their use of ISICS. Those updates are not reflected in this count.

Discussions for strategies to strengthen the Regional Interoperability Committees (RICs) continues.

viii.   FirstNet Broadband Committee

The FirstNet Broadband Subcommittee continued to meet in 2021 to begin the process of exploring and developing policies and standards on NPSBN. The Committee had active involvement from public safety, public service, and military subcommittee members based in Iowa. In addition, the federal FirstNet Authority and AT&T actively participated in meetings and presented on network build-out updates, user interfaces, and local management of FirstNet resources.

The FirstNet Broadband Subcommittee continued work related to the August derecho. Following several after-action sessions with the FirstNet Authority, AT&T, and its membership in 2020, which involved discussions on where improvements can be made in future disasters such as the derecho, improvements were made to the FirstNet infrastructure in Iowa. These improvements enhance the resiliency of FirstNet and go beyond the previous scope of the State of Iowa Opt-In Plan.

ix. Complete History
A complete history of the work done by the ISICSB and its committees is covered in
[Section](#) [VII, Part 1](#).

2. **Review and monitor communications interoperability performance and service levels on behalf of Agencies.**

The ISICSB and 911 Communications Council continue to coordinate their activities and scheduled meetings on the same dates and at the same locations. This has continued to promote information sharing between the ISICSB and the Council in public forums.

During 2021, SWIC Maiers and 911 Program Manager Blake DeRouchey continued to meet in person or virtually weekly to ensure alignment of objectives and coordination of efforts between ISICSB and the Council. Those meetings will continue to be held routinely in 2022 and beyond.

ISICSB management continued to monitor public safety interoperability responses in Iowa in 2021. In the past, there were incidents in Iowa where the response involved a number of agencies responding and interoperability issues identified. ISICS management contacted those involved in the response, examined interoperability issues, and offered solutions that could solve interoperability communication issues that evolved from the incident. Some of the findings were:
- Lack of training field personnel on how interoperability channels work.
- Improperly labeled radio channels.
- Other available options to achieve interoperability with the equipment they use on a day-to-day basis.
- Local or county policies in some instances were prohibiting responders from using interoperability channels because of their lack of updating the policy to reflect newer technology and the availability of more channels.
- In some cases, public safety communication centers were only operating on certain channels that other agencies could not monitor.
- In other cases, there was significant interference created by other states in interoperability channels.

In many instances these findings continue to be relevant today. However, with the introduction ISICS and FirstNet, several successes were noted in 2021. Successes include but are not limited to:
- 300+ successful pursuits using ISICS;
- Numerous planned high profile events that utilized the ISICS regional and/or statewide interoperable talkgroups;
- Numerous unplanned and emergent events using the ISICS regional interoperability talkgroups;
- Continuation of West STR trailer deployment to Clinton to provide locally enhanced ISICS coverage to assist in the sustainment of local operations.

Work projects for 2021 included the enhancement of interstate interoperability with Minnesota. Updates to state law were taken into account with meetings in 2021 to ensure that any cross-border responses were aligned with the updates.

The new work for this project included an audio gateway connection between the ISICS and Allied Radio Matrix for Emergency Response (ARMER) systems. This gateway connection will allow on-demand patching between ISICS and ARMER.

The ISICSB Technology and Operations Committees continues to work collaboratively with several local communities to identify solutions and implement resolution to the communication problems. Those challenges continue to hinder Iowa from having coordinated communications much of the time in the incidents examined.

The ISICSB continues to use technology to advance information sharing with the public through use of conference lines and now virtual meetings, which are open for all ISICSB meetings with the intent of gaining more one-on-one local input from a broader range of local users on interoperability issues.

Work will continue in 2022 to address persistent challenges to interoperability in Iowa.

Due to the COVID-19 pandemic and restrictions on in-person gatherings, virtual meeting platforms were used heavily. This allowed for the ISICSB to continue to conduct its business with minimal disruptions.

Virtual meeting rooms are utilized to allow for public viewing of documents that are up for review and for notetaking. This practice proved useful in keeping stakeholders engaged during document drafting and editing.

ISICSB continued its role as a voting member of the Telecommunications Industry Association (TIA) and Project 25 (P25) Steering Group known as TR-8 industry-wide standards setting group. SWIC Maiers has voted on several P25 standards that facilitate and expand interoperability on radio networks such as ISICS. Outgoing ISICSB Chair Thomas Lampe and SWIC Maiers are also a members of the P25 Steering Committee.

A complete history of the work done by the ISICSB in this area is covered in Section VII, Part 2.

3. **Establish, monitor, and maintain appropriate policies and protocols to ensure that interoperable communications systems function properly.**

The ISICSB continues to promote the national policy of using plain language and other recognized best practices in radio communications throughout Iowa. This is in addition to several dozen other standards to help guide users of the ISICS Platform. Those current standards are available at: https://isicsb.iowa.gov/resources/policies/isics-standards.

The ISICSB developed, published and maintains 'quick' one-page templates and instructions for ease of use and programming conventional channels into radio equipment. This is posted publicly on the ISICSB web site as an official ICS-217A form[3]. Discussions are also on-going regarding assisting agencies with radio programming for ISICS access. This form is currently in the process of being updated to reflect newly available conventional channels.

As a part of an expansion of interoperable capabilities, it was identified that the state of Iowa needs a tactical interoperable communications plan (TICP) that can be used to assist with communications planning for events of all types, scales and scopes.

As a part of the TICP project, a State of Iowa interoperable field operations guide (FOG) is also being developed. This FOG is a quick-reference booklet that will assist in-field personnel with understanding what communications resources are available in an all-hazards environment.

The development of the FOG will also have an electronic component. An application will be developed that will be downloadable from the application stores for major smartphone platforms.

The ISICSB has transitioned to a state of maintenance of various interoperable standards related to the ISICS Platform. In this state, the maintenance of various ISICS Standards are done routinely and based on user feedback. An example of this is the updated ISICS *Standard 1.4.0 – Statewide Pursuit Communications*. This updated standard was based upon user feedback from a local sheriff's office. ISICSB and DPS representatives worked closely with the agency that provided the initial feedback and broadly with its committees. In addition, the ISICSB also solicited a public comment period on the document. This updated standard and other policies, technical recommendations, and/or documents are included in Section VIII. Attachments for 2021.

Because ISICSB lacks enforcement authority of any policy, this limits achievement of interoperability as some county and local governments continue past practices using legacy channel naming conventions like "Mutual Aid" which continues to be inconsistent with new federal guidance. This non-compliance with ISICSB Policy and other federal directives contributes to user confusion within Iowa regarding communications assets and hinders radio interoperability best practices. SWIC Maiers continues to meet with local agency stakeholders to stress the importance of standardization of channel nomenclature.

With Iowa's local control focus and county patchwork of "silo" radio systems operating in different radio frequencies, statewide interoperability policies and protocols are challenging to establish. With disparate systems, what works for one county may not work for another. However a statewide platform like ISICS reduces this confusion since all users can be on a platform with a statewide system. Several additional successes with interoperability using the distributed consolettes/control stations to PSAPs were noted in 2021. The PSAPs and/or

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[3] ISICSB ICS-217A: https://isicsb.iowa.gov/sites/default/files/documents/2021/05/copy_of_2012-05_aka_isicsmc12-b_revised1_ics_217a_v2021_04_0.pdf

Regent's School that have received a consolette/control station are listed in the following list. The grant funding this program was closed out in 2021. Ownership of the equipment will be turned over to the local PSAPs in the future.

PSAP or Regent's School That Have or Will Receive a Consolette/Control Station
- Adair County Sheriff's Office
- Adams County Sheriff's Office
- Algona Police Dept
- Allamakee County Sheriff's Office
- Ames Police Department
- Appanoose County Sheriff
- Audubon County 911 Communications
- Benton Co Sheriff's Office
- Black Hawk Consolidated Communications Center
- Bremer Co- Waverly Law Center
- Buchanan County Sheriff
- Buena Vista County 9-1-1 Communications Center-Storm Lake
- Butler County Sheriff's Office
- Calhoun County Sheriff's Office
- Carroll County Communications
- Cass County Public Safety Communications Center
- Cedar County Sheriff's Office
- Cedar Rapids Joint Communications Agency
- Cerro Gordo County Sheriff
- Cherokee County Sheriff
- Chickasaw County
- Clarke County Sheriff's Office
- Clay County PSAP
- Clayton County Sheriff's Office
- Clear Lake Police Department
- Clinton County Communications
- Crawford County Communications Center
- Davis County Law Center
- Decatur County Sheriff's Office
- Decorah PD
- Delaware County Communication Center
- Des Moines Police Department
- DESCOM - Des Moines County
- Dickinson County Sheriff's Office
- Dubuque County Communications Center
- Emmet County E911
- Fayette County Sheriff's Office
- Floyd County Communications Center
- Franklin Co. Emergency Management Communications
- Fremont County Sheriff's Office

PSAP or Regent's School That Have or Will Receive a Consolette/Control Station

- Greene Co Sheriff's Office
- Grundy Co Sheriff's Office
- Guthrie County Sheriff's Office
- Hamilton County Sheriff's Office
- Hardin County Sheriff
- Henry County Sheriff's Office
- Howard Co Sheriff Office
- Humboldt Co Law Enforcement Center
- Ida Co Sheriff's Office
- Iowa County Sheriff's Office
- Iowa Falls Police Department
- Iowa School for the Deaf
- Iowa State University PD
- Jasper County
- Jefferson County Law Center
- Johnson County Joint Emergency Communications Services Association
- Jones County Sheriff
- Keokuk County Sheriff's Office
- Lee County PSAP (LeeComm)
- Linn County Sheriff's Office
- Louisa County Sheriff's Office
- Lucas County Sheriff's Office
- Lyon County Sheriff
- Madison County Sheriff's Office
- Mahaska County 911 Center
- Maquoketa Police Department
- Marion County Sheriff's Office
- Marion Police Department
- Marshalltown Police Department
- Mills County Communications Center
- Mitchell County Communications Center
- Monona County Sheriff's Office
- Monroe County Sheriff Office
- Montgomery Co Sheriff's Office
- MUSCOM
- O'Brien County Sheriff
- Oelwein Police Department
- Osceola County Sheriff's Office
- Ottumwa Police Department
- Page County Communications Center
- Palo Alto Communications Center
- Pella Police Department
- Plymouth County Sheriff Office
- Pocahontas Sheriff's Office

PSAP or Regent's School That Have or Will Receive a Consolette/Control Station

- Polk County Sheriff's Office
- Pottawattamie County Law Enforcement 911 Center
- Poweshiek County
- Ringgold County Sheriff Office
- Sac Co Sheriff's Office
- Scott Emergency Communications Center (SECC)
- Shelby County Communications
- Sioux County Sheriff's Office
- Story County Sheriff's Office
- Tama County 911 Communication Center
- Taylor County Sheriff's Office
- Union County Sheriff's Office
- University of Iowa PD
- Van Buren County
- Wapello County Sheriff's Office
- Washington County 911
- Wayne County
- Webster County Telecommunications
- Winnebago Co Sheriff's Office

As local agencies connect to ISICS for interoperability, it is expected that more of the hurdles relating to interoperable communications will be mitigated. Other challenges relating to training and equipment procurement may persist for years.

ISICSB has passed a number of policy statements. All policy statements and standards are posted on ISICSB web site in order of initial adoption. All policy statements, standards, technical recommendations, and documents adopted in 2021 are listed below for reference. A complete list of all past policy statements, standards, technical recommendations, and documents is available in Section VII. Historical Communications Interoperability Efforts by the ISICSB.

- **ISICS Platform Requires a complex set of standards, processes and procedures to this end ISICSB established a subcommittee to focus exclusively on policy and procedures for ISICS users as guidance for all users. The following standards were updated and/or adopted by ISICSB in 2021:**
  - **Standard 1.4.0 – Statewide Pursuit Communications**
  - **Standard 1.5.0 - Regional and Statewide Interoperability Talkgroups**
  - **Standard 1.5.2 – Air Ambulance Scene Flight Landing Zone Coordination**
  - **Standard 1.10.0 - Cross Spectrum Interoperability**
  - **Standard 4.2.0 - Agency Maintenance**
  - **Standard 4.8.0 - Notification for System Changes and Outages**

ISICSB will continue to promote interoperability policies and other documents to assist agencies comply with state and federal standards. Polices that were drafted in 2021 include:

- LTE Deployable Policy
- Air to Ground Policy
- ISICS MC-12B

Additional policy statements, standards, and technical recommendation documents are in various degrees of completion in committee work and positing for interested stakeholders.

A complete history of the work done by the ISICSB in this area is covered in Section VII, Part 3.

4. **Allocate and oversee state appropriations or other funding received for interoperable Communications.**

The ISICSB continues to operate on a budget comprised of a General Fund allocation of $115,661 in addition to SLIGP2.0 funds for salaries, benefits, and ISICSB activities. The ISICSB recognizes that in the long-term the General Fund allocation will become insufficient to sustain ISICSB staff and activities. The ISICSB plans to request increased General Fund appropriations for future fiscal years in order to help sustain and expand interoperable efforts in Iowa.

SLIGP2.0 was initially scheduled to close in 2020. However, many agencies that were granted SLIGP 2.0 monies were allowed to apply for an extension to use those funds for more FirstNet-related activities. The ISICSB applied for and received an extension that pushed the SLIGP2.0 grant closure to March 31, 2021. Funds to sustain activities and personnel currently paid for under SLIGP2.0 have been identified within the Department of Public Safety's budget.

The SLIGIP2.0 grant was closed out beginning on March 31, 2021.

The SLIGP2.0 grant funded approximately 50 percent of the SWIC position and administrative assistant through the grant's conclusion. SLIGP 2.0 activities[4] include:

- *Single officer (or governmental body) and staff to, at a minimum, provide for ongoing coordination with NTIA and implementation of grant funds.*
- *Existing governance body to provide input to the single officer and to contribute towards planning activities to further identify potential public safety users of the NPSBN and prepare for data sharing.*
- *Data collection in specific areas identified to be helpful as requested by FirstNet.*

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[4] SLIGP 2.0 Frequently Asked Questions

- *Development of policies and agreements to increase sharing of data between existing public safety systems across various agencies within the State or territory using the NPSBN.*
- *Individuals, such as the single officer and governing body members, to perform planning activities to help FirstNet and its partner further identify potential public safety users of the NPSBN.*
- *Planning efforts to help FirstNet gain inclusion on applicable statewide contract vehicles.*
- *Planning activities to prepare for emergency communications technology transitions.*
- *Activities to identify and plan for the transition of public safety applications, software, and databases.*
- *Identifying and documenting ongoing coverage needs/gaps within the state.*
- *Activities to convene stakeholder outreach events to continue planning for NPSBN implementation, as requested by FirstNet.*

Following the closure of the SLIGP2.0 grant, the SWIC's salary was moved to 75 percent ISICSB funds and 25 percent DPS. The ISICSB administrative assistant's salary was moved to a combination of ISICSB funds and a $40,000 grant provided by Iowa Department of Transportation.

Historically the ISICSB has been highly reliant upon grant funding to sustain activities. To strive towards fiscal solvency, SWIC Maiers continues to work in collaboration with ISICSB members, DPS, and interoperability stakeholders to identify potential long-term funding mechanisms to enhance interoperability in Iowa. A defined ten-year financial plan was drawn up by the ISICSB Finance Committee. This was recently updated to extend to 15 years and is ready for implementation within the next few fiscal years.

A complete history of the work done by the ISICSB in this area is covered in Section VII, Part 4.

5. **Identify sources for ongoing, sustainable, longer-term funding for communications interoperability projects, including available and future assets that will leverage resources and provide incentives for communications interoperability participation, and develop and obtain adequate funding in accordance with a communications interoperability sustainability plan.**

Many of these activities are also covered in Part 4 above. They include the previously listed grants.

With the passage of the Federal Nationwide Public Safety Broadband Network (NPSBN) legislation, Iowa will continue participating in planning for Iowa's portion of build-out of FirstNet, a nationwide broadband data network to supplement public safety's land mobile-radio communications networks with interoperable wireless data capabilities.

ISICSB continues to seek ways to identify sustainable, long-term funding and cost containment measures for communications interoperability. Continued state funding for ISICSB allows this board to continue to seek federal grant opportunities. Without this funding, ISICSB will be denied many grant opportunities due to inability to meet grant requirements specifying a match. The Finance Committee has put together a long-term financial plan that includes possible revenue sources and projects that would utilize new funding.

Local, county, and state funding is essential for sustainability of any interoperable communications system. State funds will continue to be used to train, educate, and, where possible, build and maintain infrastructure.

ISICSB will continue to seek grants and outside funding; however, federal grants specifically for interoperable communications are diminishing, making state support all the more crucial in receiving such funding due to match requirements.

After the ISICSB completed the final year of work under SLIGP Grants for the rollout of FirstNet, the ISICSB was awarded SLIGP 2.0 grants as Iowa was the fifth state to "Opt-In" to FirstNet. The SLIGP 2.0 grant was originally scheduled run from 2018 through 2020, but the ISICSB requested and received extension of the grant through March 31, 2021.

ISICSB will continue to develop ideas for potential funding streams that could be ready for legislative consideration in the 2023 session in addition to additional appropriations. If enacted, the funding streams would allow the ISICSB to maintain and expand ISICS infrastructure, and administer grants to local municipal and county public safety agencies to promote and expand interoperability. These grant monies could include allocations for training and educational opportunities, procurement of subscriber units and/or expansion of local LMR infrastructure.

Any new funding mechanisms and resulting programs would be structured to be consistent with all state and federal laws regarding grant awards, accounting, and distribution of funds.

A complete history of the work done by the ISICSB in this area is covered in Section VII, Part 5

6. **Develop and evaluate potential legislative solutions to address the funding and resource challenges of implementing statewide communications interoperability initiatives.**

Potential legislative items noted in Section 5 regarding the restoration of the appropriations and development of future funding streams would address costs associated with funding interoperability in Iowa by supporting ISICSB. New funding could be used to fund grants that local agencies could use to expand interoperable capabilities. These grants could be used by volunteer fire departments and emergency medical services, municipal police departments, schools, and other interoperability stakeholders. In addition, partnerships with local agencies could be facilitated and developed to further expand the ISICS coverage

footprint. This agreement could include joint efforts on ISICS site construction, additional channel capacity, and maintenance.

Work continues on further developing and maintaining a five-, ten-, and 15-year financial plan for the ISICSB. Implementation of those plans would require legislation to be put in to effect. The ISICSB is working towards getting this plan to the point that it can be presented to the Legislature.

A complete history of the work done by the ISICSB in this area is covered in Section VII, Part 6.

7. **Develop a statewide integrated public safety communications interoperability system that allows for shared communications systems and costs, takes into account infrastructure needs and requirements, improves reliability, and addresses liability concerns of the shared network.**

   Work on the buildout of ISICS was completed in 2020 as the final towers were constructed, coverage and audio quality were tested and verified by the system vendor, and features were proven to work. The process of Final System Acceptance concluded in 2021. The final steps, including inspection of all sites to verify build quality, contract specifications, and local requirements, are now complete.

   In March of 2020, the ISICSB, in partnership with DPS, Dallas County, and the State of Minnesota, deployed the StatusBoard program within Iowa and provided it at no cost to agencies that access it. Work commenced in 2021 to add feature and functionality updates to the program as part of a continued joint effort with DPS, Dallas County, and the State of Minnesota. The MOA to begin the updates was signed in December of 2021.

   StatusBoard is a situational awareness program that allows for users to see which interoperable resources are currently available or in use. It is a means to enhance local control and management of an event. Local agency personnel can log in, view the current status of interoperable talkgroups, and reserve resources in advance of an event or on-the-fly during a no-notice, unplanned event. Local agencies can also request that their local channels and/or talkgroups be listed in their agency profile for additional situational awareness for the local agencies.

   ISICSB has worked to expand and engage county and local membership on all seven committees--Finance, Governance, Operations, Outreach, Technology, Training and Exercise, and User Group--to make sure the Board's ongoing process to gather input from local users on is maintained and to ensure that the state-wide system operational protocols remain up to date. The various committees, subcommittees, and study/working groups have aided in investigation and expansion of interoperability in Iowa for LMR and broadband and will address future needs of the ISICSB and stakeholders across Iowa. The SWIC makes efforts to reach out to committee members that have not signed into a committee meeting to gain their feedback.

A list of the 191 applications comprising of hundreds of agencies that have completed the process to use ISICS as of December 2021 is below. Some counties have opted to build out infrastructure on the ISICS system but have not yet gone through the official approval process. As such, those counties are not listed here but are shown in Figure 1 if site locations have been identified. It is the expectation of the ISICSB and those agencies that their applications will be approved given the amount of time and effort expended to develop those local subsystems. This list does not include all of the PSAPs that received consolettes/control stations from the ISICSB in calendar years 2019 and 2020.

- 5th Judicial District
- 10th District Reserve Law Enforcement
- 185th Iowa Air National Guard
- Adair Guthrie EMA
- Adams County EMA
- Air Methods
- Allamakee County EMA
- Altoona FD
- Altoona PD
- Altoona PW
- Anamosa Fire (FD)
- Ankeny FD
- Ankeny PD
- Atkins, City of
- Audubon County SO
- Aurelia Fire
- Avera Health/Avera Careflight
- Baxter FD
- Benton County
- Blackhawk County EMA
- Blakesburg Fire & Rescue
- Bondurant FD
- Boone County
- Bremer County EMA
- Bremer County SO
- Buchanan County
- Buena Vista County SO
- Buena Vista EMA
- Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
- Butler County 911
- Burt County EMA (NE)
- Camp Township FD
- Calhoun County/Calhoun Co EMA
- Carlisle Fire Department
- Carroll County

- Cass County
- Cerro Gordo County Sheriff's Office
- Cherokee County
- Cherokee Regional Medical Center
- Chickasaw County 911
- Chickasaw County EMA
- Central Iowa Power Cooperative (CIPCO)
- City of Cedar Rapids
- Clarke County Emergency Management
- Clarke County Sheriff's Office
- Clay County
- Clayton County
- Clear Lake PD
- Coulter Fire Department
- Crawford County
- Dallas County
- Delaware County
- Delaware Township Fire Department
- Department of Homeland Security (DHS) Emergency Communications Division (ECD)
- Department of Veterans Affairs Central Iowa
- Des Moines International Airport
- Des Moines Police Department
- Des Moines Public Schools
- DHS Investigations
- Dickinson County Emergency Management
- Drug Enforcement Administration
- Dubuque E911
- Elkhart FD
- Emmett County SO
- Fayette County EMA
- Fayette County SO
- Federal Bureau of Investigation (FBI)
- FEMA Region 7
- Franklin County (Franklin County EMA)
- Freeborn County, Minnesota
- Fremont County
- Fonda PD
- Fulton PD (Illinois)
- Genesis Ambulance Services
- Granger FD
- Greene County
- Grundy County
- Hamilton County
- Hancock County

- Hardin County
- Harrison County
- Henry County
- Howard Co Emergency Management
- Humboldt County
- Ida County
- Iowa Association of Electric Cooperatives
- Iowa Association of Municipal Utilities
- Iowa County Sheriff's Office
- Iowa Department of Corrections - Clarinda
- Iowa Department of Corrections - Fort Madison
- Iowa Department of Corrections - Mount Pleasant
- Iowa Department of Human Services - Glenwood Resource Center (GRC)
- Iowa Department of Natural Resources
- Iowa Department of Public Health
- Iowa Department of Public Safety
- Iowa Department of Transportation
- Iowa Homeland Security and Emergency Mgmt.
- Iowa National Guard
- Jackson County EMA
- Jasper County
- Jefferson County LEC
- Jewell Fire Rescue
- Jo Daviess County SO (Illinois)
- Johnson County JECC
- Johnston Grimes Metro Fire Department
- Johnston PD
- Jones County
- Keokuk County EMA
- Keokuk County Sheriff's Office
- Kossuth County
- Lee Comm (Lee County Communications)
- Lee County EMA
- Linn County Sheriff's Office
- Madison County
- Mahaska County
- Mapleton, City of (Police)
- Maquoketa PD
- Marion County EMA
- Marion County Sheriff
- Marshall County EMA
- Medforce, Quad City Helicopter EMS
- MEDIC EMS (Davenport)
- Mercy Ambulance Des Moines

- Mercy Hospital - Iowa City
- Metropolitan Incident Command Radio Network (MICRN)
- Mills County
- Mitchell County EMA
- Mitchellville FD
- Mitchellville PD
- Monona County
- Montgomery County EMA
- Mower County (MN)
- Muscatine County
- Nebraska OCIO
- Northern Warren Fire
- O'Brien County EMA
- Osceola, City of
- Page County
- Palo Alto EMA
- Pella PD
- Pleasant Hill FD
- Pleasant Hill PD
- Plymouth County
- Pocahontas Police Department
- Polk City FD
- Polk City PD
- Polk County
- Pottawattamie County
- Poweshiek County EMA
- Region 6 Local Emergency Planning Committee (LEPC), Iowa
- Ringgold County
- Sac County
- Safeguard Iowa Partnership
- Saylor Township FD
- Scott County Health Dept.
- Scott County Emergency Communications Center
- Shelby County
- Southwest Iowa REC
- StoryComm Story County 911
- Taylor County
- TIP Rural Electric Cooperative
- Tipton Ambulance Service
- Urbandale Schools
- Union County Law Enforcement Center (LEC)
- United States Marshal's Service
- Unity Point Des Moines
- University of Iowa Public Safety

- University of Northern Iowa
- US Army Corps of Engineers (USACE) Red Rock
- US Capitol Police
- US Fish and Wildlife Service
- US Office of Inspector General (OIG) Health and Human Services (HHS)
- US Probation Office (USPO) Southern Iowa
- Van Buren County 911
- Virginia Township Fire Rescue
- Warren County
- Washington County Communications
- Waukee Schools
- Waukon PD
- Wayne County Sheriff's Office
- Webster City PD
- Webster County EMA
- West Branch PD/FD
- Westcom
- Windsor Heights, City of
- Woodbury County
- Worth County
- Wright County
- Wings Air Rescue
- Winnebago County
- Winneshiek County EMA

A map of the current ISICS buildout that includes state built and local enhancements as of December 2021 is attached as Figure 1.

A complete history of the work done by the ISICSB in this area is covered in .

8. **Investigate data and video interoperability systems.**

The FirstNet Broadband Committee reconvened in 2019 and continued to meet though 2021. This committee was able to achieve participation with stakeholders from the municipal, county, state and military factions of government. Work focused on data and video interoperability systems centered on FirstNet and capabilities brought by it. Discussions of how to leverage public safety broadband data networks that are now or will be available to address current operability and interoperability issues were also covered. This activity will help assist agencies in planning necessary for successfully adopting new technology.

Areas for improvement that were identified in calendar year 2020 following the onset of the COVID-19 pandemic and August derecho with the FirstNet Authority and AT&T were put

into motion in calendar year 2021. This includes additional resiliency of the FirstNet sites that goes beyond the original State Plan. These plans for improvement are expected to be continued through calendar year 2022 and beyond.

Other on-going topics included work on continuing to improve the communication and relationship with FirstNet and the vendor, AT&T, along with the agency user portal that allows FirstNet subscribers the ability to access the status of the network for event planning and other operations.

Iowa agencies were also able to submit network feedback to both AT&T and FirstNet. Some of this feedback included identifying a problem with how phones behaved on the network when switching tower sites during a phone call. With coordination with the AT&T network team and FirstNet, ISICSB members were able to assist in the identification of the problem and test out solutions.

A new project was begun in calendar year 2021 as a joint venture with the 911 Council, Iowa Homeland Security and Emergency Management Department (HSEMD), ISICSB, Cybersecurity and Infrastructure Security Agency (CISA), Warren County, Dallas County, Westcom, Des Moines PD, Polk County, StoryCom, and Boone County that delves into interoperability among computer aided dispatch (CAD) systems. CAD-to-CAD interoperability has been identified as an emerging need in public safety. As a part of this joint project, a template is expected to be a part of a final product that could outline the framework for faciliting CAD-to-CAD interoperability.

A complete history of data and video interoperability systems and the associated work in Iowa is covered in Section VII, Part 8.

9. **Expand, maintain, and fund consistent, periodic training programs for current communications systems and for the statewide integrated public safety communications interoperability system as it is implemented.**

The ISICSB has established and maintained a periodic training program for Iowa's public safety officials through a series of regional workshops annually funded by the Department of Homeland Security (DHS) Emergency Communications Division (ECD). These Technical Assistance grants can be presented throughout the state. The ISICSB has acquired several national DHS/ECD interoperability tools for these efforts.

In 2021, the ISICSB utilized these resources from DHS/ECD to hold sessions to learn about and understand national best practices related to communications, interoperability and continuation of operations/government. Courses for public safety entities in Iowa included:
- State-Sponsored, Communications Technician (COMT) – Johnston
- Communications Unit Leader (COML) Course (All-Hazards) – Virtual

The above efforts are those training initiatives which can help Iowa public safety improve interoperability in pre-planned or emergency situations where public safety uses many

disparate radio systems to communicate. ISICSB has credentialed a combined nearly 20 COMLs, COMTs, and INTDs since 2013.

ISICSB also assisted with the planning and deployment of ISICS training centered around use of ISICS and the consolettes/control stations given to PSAPs that did not have a previous connection to ISICS in 2021. PSAPs have also requested individual, one-on-one training, and those requests have been granted.

A complete history of the work done by the ISICSB in this area is covered in Section VII, Part 9.

10. **Expand, maintain, and fund stakeholder education, public education, and public official education programs to demonstrate the value of short-term communications Interoperability solutions, and to emphasize the importance of developing and funding long-term solutions, including implementation of the statewide integrated public safety communications interoperability system.**

Many of these activities are also covered in Part 9 above.

Besides the ISICSB's efforts regarding improving interoperability with traditional land-mobile radio (LMR) systems, the ISICSB has initiated stakeholder education regarding the Nationwide Public Safety Broadband Network (NPSBN) system called FirstNet being built in every state as part of a single nationwide high-speed wireless broadband network designed to supplement and complement public safety's LMR systems.

Iowa's SWIC and ISICSB Chair maintain contact with several industry and federal groups that focus on technical aspects of interoperability. These include subject matter experts from the Telecommunications Industry Association (TIA) and its P25 committees in TR-8 along with the Federal Partnership for Interoperable Communications (FPIC)[5] and P25 Steering Committee. These connections have allowed the ISICSB to remain at the forefront of interoperable technology with respect to P25 Standards, the Inter-RF Sub System Interface (ISSI) and encryption. Several past work products from the ISICSB have been included in recent standards and product development work related to the ISSI and encryption.

In 2021, the SWIC was asked to participate in a wide-ranging FPIC Security Subcommittee to evaluate the potential sunset of the outdated Digital Encryption Standard (DES) and future of encrypted interoperability on a national scale. The SWIC has been an active participant in those discussions.

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[5] FPIC serves as a coordination and advisory body to address technical and operational wireless issues relative to interoperability within the public safety emergency communications community, interfacing with voluntary representatives from federal, state, local, territorial and tribal organizations. FPIC is a technical advisory resource to Emergency Communications Preparedness Center (ECPC) Steering Committee, NCSWIC, and National Public Safety Telecommunications Council (NPSTC) and a collaborative partner with SAFECOM and NCSWIC. (taken from https://www.dhs.gov/safecom/fpic/)

Iowa's updated SCIP has helped set the benchmark for the various committees in furthering interoperability in Iowa. As an example, the Operations Committee has a new goal of getting more end-user subscriber radios connected to ISICS. This is an expansion of a previous goal listed in the 2017 SCIP which listed 95 percent of PSAPs having a connection. To date, all PSAPs have been provided a consolette/control station and have a basic connection to ISICS for interoperability. Those goal was expanded in the 2020 SCIP revision to include 95 percent of subscriber radios in the state of Iowa having a connection to ISICS.

SWIC Maiers routinely visits counties to listen to local needs and discuss interoperability challenges and explain the benefits of an interoperable radio network like ISICS provides. He plans to visit with as many county representatives and primary dispatch centers by the conclusion of calendar year 2022 as possible.

SWIC Maiers has also attended numerous county 911 service board meetings, several county level meetings and various state-level organizations comprised of local public safety personnel to discuss interoperable communications and answer questions regarding ISICS and FirstNet. In addition, SWIC Maiers provided technical assistance to counties regarding interoperability.

A complete history of the work done by the ISICSB in this area is covered in .

11. **Identify, promote, and provide incentives for appropriate collaborations and partnerships among government entities, agencies, businesses, organizations, and associations, both public and private, relating to communications interoperability.**

   Part 10 above regarding a single unified SCIP (strategic plan) for Iowa between the ISICSB, 911 Program, and 911 Communications Council addresses this requirement.

   Part 7 covers the collaboration and issuance of a statewide multi-state agency RFP for a land-mobile radio (LMR) system. The ISICS Platform is completely built out and completely fulfills this requirement.

   Board Management and the SWIC presented at events that were held in early 2020 before the COVID-19 pandemic. The goal of the presentations was to update stakeholders on the ISICS Platform and the FirstNet initiative and create new potential partnerships for the FirstNet network in Iowa.

   A complete history of the work done by the ISICSB in this area is covered in .

12. **Provide incentives to support maintenance and expansion of regional efforts to promote implementation of the statewide integrated public safety communications interoperability system.**

    Part 7 touches on the multi-state agency land-mobile radio RFP.

    The ISICSB is examining ways to expand the ISICS Platform to support regional efforts and bring to fruition the implementation of a statewide integrated public safety interoperable communications system. This may include work being done to identify long-term funding mechanisms outlined in previous sections.

    In addition, the ISICSB in cooperation with DPS and DPS personnel have been training local agencies on the use of the ISICS interoperable talkgroups, standards, and policies. This training is being provided to local agencies at no cost to them. Assistance has also been offered to agencies with respect to programming of equipment.

    In coordination with the ISICSB, DPS has been assisting local agencies with dispatch console connection costs to the ISICS cores using the Iowa Communications Network.

    A complete history of the work done by the ISICSB in this area is covered in Section VII, Part 12.

13. **In performing its duties, consult with representatives of private businesses, organizations, and associations on technical matters relating to data, video, and communications interoperability; technological developments in private industry; and potential collaboration and partnership opportunities.**

    ISICSB members and the SWIC continue to meet with all six Homeland Security regions that make up the six Regional Interoperability Committees (RICs) to advise ISICSB on issues of local concern, in addition to many county and city public safety groups regarding a statewide LMR system. The SWIC also made presentations to various organizations across Iowa on ISICSB activities and the FirstNet NPSBN initiatives. Participation in a few of the RICs declined during the COVID-19 Pandemic. Recruitment initiatives will begin again in calendar year 2022.

    These outreach efforts continue as non-traditional stakeholders are engaged to discuss interoperability needs and ISICS access. These entities include for-profit ambulance services, hospital groups, utility companies, and other non-traditional public safety and public service stakeholders.

    The expanded ISICSB meeting model utilizing conference lines and virtual meeting software platforms for all meetings continues to be standard practice. Both ISICSB and Committee information such as meetings times, dates, and locations are posted on the ISICSB website such that any interested party can listen into the meetings and comment under public comment periods. A virtual meeting room is used when necessary for document review

and note-taking. The virtual meeting room ensures that all stakeholders that have signed into the meeting can see exactly how documents are being edited.

SWIC Maiers maintains membership and actively participates in TIA/TR-8, the Federal Partnership for Interoperable Communications (FPIC), the P25 Steering Committee and the National Council of Statewide Interoperability Coordinators (NCSWIC). FPIC is a federal group that is under the Emergency Communications Division (ECD) that meets regularly to investigate and solve problems pertaining to interoperability on a national level.

Participation in and feedback from FPIC has been vital in committee research into complex issues such as whether to use the ISSI on the ISICS Platform. Members of FPIC have also offered assistance and guidance regarding encryption on interoperable talk groups on ISICS and associated subscriber unit features via conference calls and meetings.

NCSWIC is a partnership with SWICs from all 50 states and six territories that evaluate interoperability challenges and coordinate with stakeholders to solve problems. These can range from establishing training opportunities to approving grants. NCSWIC also was vital in providing a pathway towards the Enhanced SCIP process that Iowa completed in 2017 and again in 2019. The Enhanced SCIP process was viewed as an improvement over the previous methodology in developing an SCIP.

In 2019, SWIC Maiers was elected to the chair position of Region 7 NCSWIC. He also was appointed to a co-chair position for the Joint NCSWIC/SAFECOM Technology Policy Committee. SWIC Maiers continued to serve in these positions in 2021 and will again in 2022. As a result of SWIC Maiers' involvement with the federal committees, several issues, concerns, and perspectives of the ISICSB and Iowa stakeholders have been incorporated into documents and work products such as the 2019 revision to the National Emergency Communications Plan along with several FPIC and NCSWIC/SAFECOM documents.

A complete history of the work done by the ISICSB in this area is covered in Section VII, Part 13.

14. **Submit a report by January 1, annually, to the members of the general assembly regarding communications interoperability efforts, activities, and effectiveness at the local and regional level, and shall include a status report regarding the development of a statewide integrated public safety communications interoperability system, and funding requirements relating thereto.**

This report satisfies this requirement.

VI. ISICS Deployment

1. Request for Proposal, Construction and System Acceptance

The request for proposal (RFP) for the ISICS Platform was released in 2013. Three companies bid on the RFP. Motorola Solutions was awarded the bid in 2015.

The contract for the deployment of the ISICS Platform was finalized and went into effect on August 13, 2015. Within the contract language, specific deadlines were established for the buildout of the system and final system acceptance was completed in 2021.

Other stipulations of the contract included a 50% discount on all equipment using a statewide master purchasing contract. That same discount is accessible to local agencies that wish to purchase subscriber units or other LMR equipment.

The initial regulatory approval seeking process and construction commenced in spring of 2016. All regulatory processes are were completed in the summer of 2018. The status of the construction as of December 13, 2018 is shown in Figure 1 (larger map in Attachment 2). All state-built sites are radiating signal except for Rock Rapids which is under construction. The lines connecting the sites represent the microwave backhaul paths that connect all the tower sites to the individual cores. The microwave backhaul paths make it possible for communications on talkgroups to carry across the state.

The ISICSB previously commissioned a subcommittee to evaluate the effects of wind farms on the microwave backhaul paths. The subcommittee will develop a plan and policy to present to the Legislature regarding the protection of those paths to prevent interference on LMR networks in Iowa.

Legislation was introduced in 2019 to help prevent unintended obstruction of the microwave paths, but that bill did not make it out of committee. There is continued concern of microwave paths being obstructed by new wind farm deployments if coordination is not started early in the planning process of wind farms.

SWIC Maiers has since taken concerns to the Joint NCSWIC/SAFECOM Technology Policy Committee. The concerns were discussed and molded into a white paper that addresses non-traditional interference to LMR systems.

As the ISICS Platform sites were constructed and activated, the State of Iowa, local and federal agencies and stakeholders have been able to use the ISICS Platform as a result of a beneficial use clause in the contract since 2016. This has allowed state agencies like DPS, DOT, DNR and IPDH and dozens of other local users such as Dallas County, Page County, Woodbury County, Worth County, Westcom and other agencies to use the ISICS Platform before final system acceptance. The use of the ISICS Platform under the beneficial use clause has already produced several operational successes, and many agencies have already cut over to using the ISICS Platform for daily operability and interoperability.
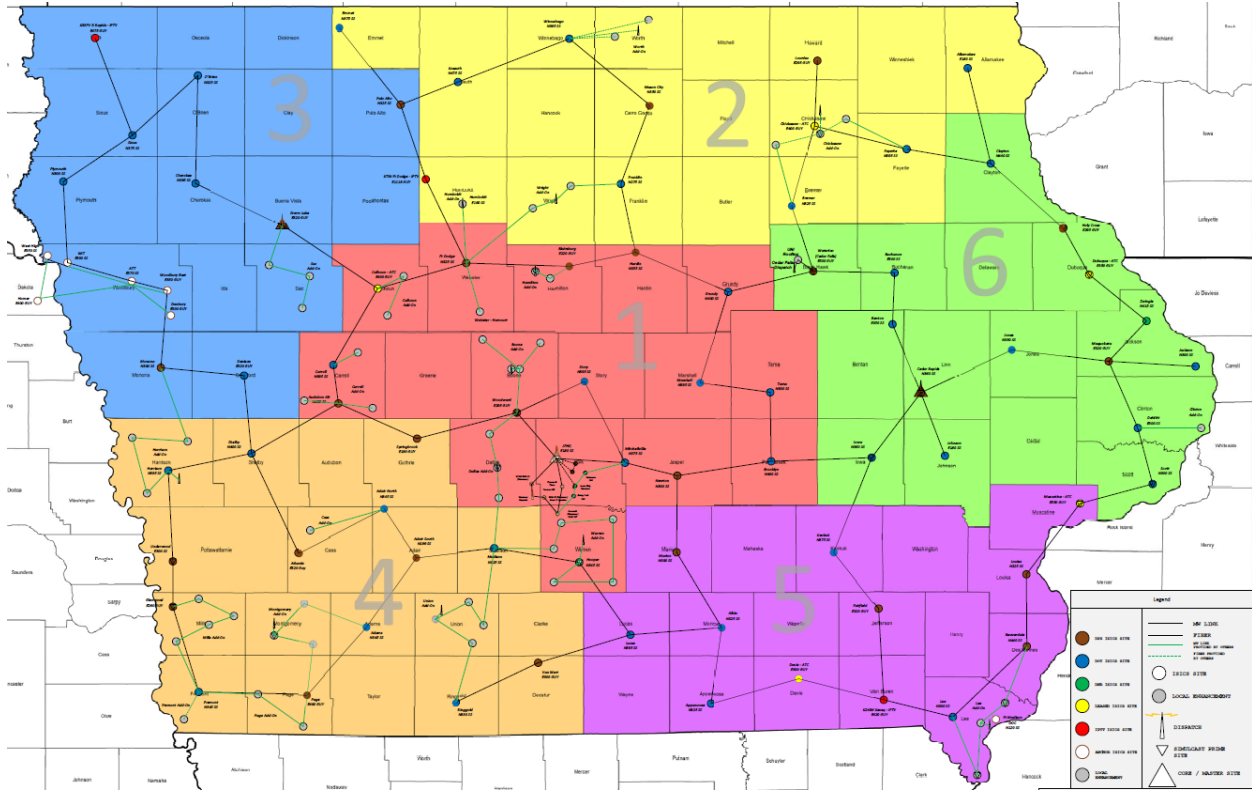
Figure 1. Current map of the ISICS Platform as of December 9, 2021. The brown, blue, red, yellow and green dots denote ISICS sites that were part of the default buildout. Gray dots denote local enhancements that have been sited and built or will be built. All sites are networked together—i.e. Black and green solid lines are microwave connections; black and green dotted lines are fiber optic connections.

Work to optimize the ISICS Platform along with various elements of acceptance testing commenced in 2019 and completed in late 2020. With the completion of the Rock Rapids site, coverage testing of Sioux and Lyon Counties was conducted. A map outlining the coverage testing, bit error rate (BER), is included in Attachment 3.

The rest of final acceptance was completed in April 2021. The ISICS Platform is officially accepted as a completed project and now serves as the interoperability platform for the entire state of Iowa and its 3.19 million residents.

2. **Governance, Standards and User Approval**

ISICSB and its committees are tasked with defining the governance structure and operation aspect of ISICS. In 2021 the discussion of several aspects commenced.

a. Governance

i. The ISICS Platform Requires a complex set of standards, processes and procedures. To this end, ISICSB maintained a working group to focus exclusively on policy and procedures for ISICS users as guidance for all users. While this working group continued to draft and push new standards through the approval process as needed, a shift to long-term evaluation and maintenance of those standards has begun. Robust evaluation cycles will ensure that the standards continue to be effective for end users.

b. Approval of Users

i. The User Group Committee (UGC) is tasked with reviewing an agency that applies for access to the ISICS Platform. The UGC reviews the agency's letter of intent, completed memorandum of agreement and Applicant Participation Plan documentation. Once those documents are reviewed, the UGC votes to recommend the approval of the agency's application to access ISICS. The ISICSB will review the UGC's recommendation and vote on application approval.

c. Operations

i. The Operations Committee is tasked with evaluating how the ISICS Platform should operate. The Operations Committee will pass policies to ensure that expected functionality is achieved.

3. **Agency Use of the ISICS Platform**

State agencies such as Iowa Department of Transportation (DOT), Iowa Department of Natural Resources (DNR), Iowa State Patrol (ISP), Iowa Department of Public Safety (DPS), Iowa Department of Corrections (DOC), Iowa Department of Public Health (DPH), and others are expected to use ISICS for operability as well as interoperability. Local entities such as Westcom in West Des Moines and the City of Des Moines along with counties of Adair, Boone, Calhoun, Carroll, Chickasaw, Dallas, Fremont, Hamilton, Harrison, Humboldt, Lee, Mills, Montgomery, Page, Union, Warren, Webster, Woodbury, Worth, Wright County along with the University of Northern Iowa and Iowa Department of Corrections in Fort Madison have also chosen to use ISICS for operability and add tower sites to locally enhance the network. Numerous other agencies at a local, county, and federal level have opted to use the ISICS infrastructure for some level of operability that does not include the addition of infrastructure. Several other counties have opted to join at increased levels for operability.

Local entities such as counties, sheriff offices, and others have free access to ISICS and many have signed on to use ISICS for interoperability. Basic use of ISICS for interoperability comprises a Level 1 User. This is exemplified by a local agency that may have their own LMR network, but still needs to have radio communications with an outside entity like a neighboring county or state agencies.

In the summer of 2018, all Public Safety Answering Points (PSAPs) were pre-approved as Level 1 Users of ISICS. This allowed for and helped facilitate the deployment of control stations to get them connected to ISICS for interoperability. In addition, in 2019, all PSAPs that border Iowa in neighboring states have also been approved for Level 1 access to ISICS. This will help facilitate the expansion of interstate interoperability.

A Level 2 User of ISICS consists of a local agency using basic free access and ability to interoperate with other agencies, but also wants an enhancement of features of ISICS system which would include custom talk groups for their local operations (operability). Dozens of local and state public safety entities and federal agencies have joined ISICS as a Level 2 user.

A Level 3 User brings all the features of Level 1 and Level 2, but adds in direct connection to the ISICS core computers via a hardline or hardwire connection to the system. This direct connection to the system requires significant engineering and coordination and allows for extra features for use by this local agency. In some cases additional capacity may be added by the local user to a site to support their additional traffic. Agencies that have opted to join as a Level 3 or higher user include: Adair County, Adams County, Boone County, Butler County, Carroll County, Cass County, Cerro Gordo County Sheriff's Office, Chickasaw County 911, Clear Lake PD, Dallas County, Des Moines Police Department, Dickinson County, Franklin County, Greene County, Hamilton County, Hancock County, Harrison County, Henry County, Humboldt County, Ida County, Iowa Department of Corrections - Fort Madison, Iowa Department of Public Safety, Lee Comm (Lee County), Madison County, Maquoketa PD, Monona County, Montgomery County, Sac County, Union County, Unity Point Des Moines, Warren County, Webster County, Westcom, Woodbury County, Worth County, Wright County, and Winnebago County.

Level 4 Users have chosen to add infrastructure to the network such as additional towers, at the local agency cost to enhance performance and/or expand the coverage offered by ISICS in their community. Enhancements may be needed to guarantee a feature like in-building coverage. Agencies or counties that have opted to use ISICS as Level 4 Users are Adair County, Boone County, Calhoun County, Carroll County, Chickasaw County, Dallas County, Des Moines Police Department, Fremont County, Hamilton County, Harrison County, Humboldt County, Iowa Department of Corrections - Fort Madison, Iowa Department of Public Safety, Iowa Department of Transportation, Lee County, Mills County, Montgomery County, Page County, Union County, University of Northern Iowa, Warren County, Webster County, Westcom, Woodbury County, Worth County, and Wright County.

4. Local Cost Savings

The ISICS Platform can present significant cost-saving opportunities to local counties if they currently need to update or replace their existing LMR infrastructure or improve interoperability. Many counties are still using very high frequency (VHF) networks that have been narrow banded by the FCC. Narrow banding greatly reduced the capability and coverage of VHF networks and caused most Iowa communities to reevaluate their public safety communications systems. Since ISICS provides an average mobile coverage of at least 95 percent across the state, ISICS could serve as a starting point for local agencies when considering options in replacing their current radio systems and improve statewide interoperability. As just one example, if an ISICS tower is located within their county, that existing tower has the potential to cut local costs of a local LMR project by $500,000 to $1,000,000 in many cases in addition to savings on long-term maintenance on those structures. Using ISICS for many communities could eliminate this need for additional communication towers and therefore reduces community tax burden.

The additional capabilities of the ISICS Platform may also save local agencies money with respect to establishing pathways for interoperability with their in- and out-of-state neighbors and encryption key management and updating.

Letters were sent to all public safety answering points (PSAP) in early 2018 that outlined preparatory steps that can be taken for ISICS access. This was intended to allow for long-term planning strategies that local entities can use for their interoperable communications plans. A follow-up letter was sent in the summer of 2018 with a survey. In the fall of 2018, a grant program that was run with partners from HSEMD and DPS to help provide equipment to PSAPs that did not already have a connection to ISICS for interoperability. That equipment was deployed in 2019. PSAPs have installed the equipment and completed test calls with State Radio as of 2020. There have been numerous success stories through the use of the consolettes and control stations given out to PSAPs as well.

There is a potential role for the Iowa Legislature to further promote interoperability in Iowa by financially empowering the ISICSB to assist counties, PSAPs, and other dispatch centers in identifying a pathway to ISICS access. This would align well with the long-term financial needs of the ISICSB.

VII.   <u>Historical Communications Interoperability Efforts by the ISICSB</u>

The ISICSB holds monthly public meetings on the second Thursday of the month. The meetings are streamed live for public viewing in addition to a conference line being available for remote attendance. The ISICSB posts information such as meeting agendas, minutes, policies, standards, and a calendar of events on a website at www.isicsb.iowa.gov.

Since its inception, ISICSB has addressed legislative mandates, as contained in Iowa Code 80.29. The following sections outline the accomplishments of the ISICSB in operating under Iowa Code 80.29.

1. **Historical actions to implement and maintain organizational and operational elements of the board, including staffing and program activity.**

   A. **ISICSB Members, Staff, Funding and Activities**

   From its inception in 2007 to present day, ISICSB has relied on Federal Interoperability Grants and State appropriations to support Board activities. In State Fiscal Years (SFYs) 2018 and 2019, $115,661 in state funding was appropriated to ISICSB.

   Each Board and committee member has a full-time professional position and performs Board duties on volunteer and part-time basis. Mileage is a reimbursable expense.

   As part of a national interoperability initiative from 2008, each state was to establish a Statewide Interoperability Coordinator (SWIC) position. This position is also consistent with this Iowa Code mandated element. This SWIC position has been critical to improving interoperability in Iowa, addressing these legislative mandates, and the resulting accomplishments of the Board. Chris Maiers serves as the Iowa SWIC.

   Until 2014, SWIC salary was paid for by Federal Interoperability grants. Starting in Federal Fiscal Year (FFY) 2015 and continuing through FFY 2017, State and Local Implementation Grant Program (SLIGP) pays half the SWIC's salary and expenses. This grant program creates a national public safety broadband network (NPSBN). In 2018, SLIGP 2.0 was implemented and covers approximately half of the SWIC's salary. It is essential that legislative funding continue to be appropriated to pay half of the SWIC's salary to continue to meet Iowa's various non-broadband radio interoperability needs.

   In 2014, the Board hired an administrative assistant. This position is funded by State and Local Implementation Grant Program (SLIGP) grant funds. The position is limited to duties to support FirstNet Broadband. In 2019, the ISICSB hired a new administrative assistant.

   During 2016, through a partnership with Iowa Communication Network (ICN), Helen Troyanovich, an electrical engineer, became Deputy SWIC. DSWIC Troyanovich was fully funded through SLIGP grant and focuses on broadband outreach, engineering,

interoperability, and regional interoperability committee (RIC) participation within ISICSB. Deputy SWIC Troyanovich returned to her ICN position in July 2017.

In 2019, a deputy SWIC (DSWIC) was added as a non-paid position in 2019 and continued to be utilized in 2020. Cedar Rapids Fire District Chief Curtis Walser assumed this position in spring of 2019 to assist with the deployment of ISICS-connected consolettes to local public safety answering points (PSAP) and Iowa Regents Schools that did not have a previous connection to ISICS for interoperability.

In 2012, Congress passed the Middle Class Relief Act which included NPSBN creating FirstNet Authority. A state and local broadband planning grant program known as SLIGP was included.

In 2013, SLIGP grant became available. Iowa applied for this grant in that year and in August was awarded funds for a three-year period with the restriction that this grant can only be used for broadband planning activities and not the SWIC's overall interoperability duties. NPSBN funds are used specifically to educate Iowa's public safety community about this new national broadband network and solicit feedback from our public safety community about their broadband communications needs.

While these efforts parallel many efforts related to improving interoperability, they are limited to broadband. NPSBNs like FirstNet are intended to supplement interoperable capabilities offered by public safety LMR networks like ISICS by providing information that may not be simple to communicate via voice communications.

In 2017, SLIGP 2.0 was announced as a means to continue to fund public safety broadband initiatives across the nation. Iowa applied for and was awarded this grant. The funds continue to support ISICSB efforts to expand broadband interoperability in Iowa in addition to funding the SWIC's activities.

SLIGP 2.0 has allowed the ISICSB and SWIC to devote time to engage with stakeholders and provide input to the State Point of Contact (SPOC), Thomas Lampe, and to identify potential public safety, public service, and other extended users of NPSBN and prepare for data sharing. The SPOC served as the primary information source for FirstNet related matters during the decision-making process of opting in or opting out of the FirstNet build-out. Work continues on the development of policies and agreements to increase data sharing among agencies.

As a part of those efforts, planning is ongoing to help agencies transition to incorporating more data into operations for daily activities and special events. This has been accomplished with individual stakeholder meetings and outreach events.

The ISICSB expanded their FirstNet Broadband Subcommittee to address planning, technology, and public/private partnership issues of NPSBN in Iowa. This FirstNet Broadband Sub Committee was co-chaired by Ric Lumbard, then Executive Director of the ICN, and State of Iowa Chief Information Officer (CIO) Bob von Wolffradt. SWICs Allen and

Maiers, DSWIC Troyanovich, two ISICSB Board members, and other state and local subject matter experts rounded out this committee. The subcommittee met monthly to become more informed about broadband technology, Iowa public safety needs, NPSBN public safety grade requirements, and identify potential private companies willing to engage in a public safety wireless broadband network.

NSPBN directed each state to identify a state point of contact (SPOC) for NPSBN interactions. Then Governor Branstad appointed ISICSB Chair Thomas Lampe as the SPOC for NPSBN planning and implementation in Iowa. During 2017 SPOC Lampe and other ISICSB members attended national and regional meetings advancing FirstNet's understanding of Iowa public safety needs for a NPSBN.

On November 18, 2014, Iowa became the eighth state to hold an Initial Consultation with seven senior representatives of FirstNet. Over 50 Iowa state and local representatives met with FirstNet to begin the multiphase process of determining if Iowa wishes to opt in, building NPSBN in conjunction with FirstNet, or opt out, requiring Iowa to shoulder the total expense to build out their portion of a NPSBN.

FirstNet met with Governor Branstad on December 3, 2015, to explain legal interpretations of enabling legislation regarding states options in selecting whether to opt in or opt out of partnering with FirstNet to build out Iowa's portion of the National Public Safety Broadband Network. SPOC Lampe and SWIC Allen also attended.

On July 18, 2017, Governor Reynolds made the decision for Iowa to become the fifth state to opt in with FirstNet. Following the "Opt-In" decision, Governor Reynolds reappointed Thomas Lampe as SPOC for Iowa On November 17, 2017.

B. Committees

The primary committees under the ISICSB all have had goals, metrics, objectives, and action plans that were outlined in the *2017 Statewide Communications Interoperability Plan (SCIP)*. Since the adoption of this plan, each committee has made progress towards achieving the goals laid out in the SCIP.

Following SWIC Maiers's request to the Emergency Communications Division (ECD) of the Cybersecurity and Infrastructure Security Agency (CISA) to help refresh the SCIP in 2019, work was undertaken by all ISICSB committees to evaluate the 2017 SCIP and provide updates to reflect an updated communications ecosystem in Iowa that includes ISICS and FirstNet. This updated SCIP was adopted in December of 2019.

The Governance Committee, in conjunction with other Board committees, has steered activities with local public safety community partners in a collaborative way to establish regional governance presence throughout Iowa.

The Governance Committee continued leveraging local public safety community partners for knowledge and advice as the Board continued the task of completing the deployment of

a new statewide interoperable Project 25 (P25), Phase 2, 700 MHz land mobile radio (LMR) platform in Iowa. This platform is known as the Iowa Statewide Interoperable Communications System (ISICS).

The Governance Committee worked with local public safety community partners to establish effective and appropriate governance practices and relationships creating a foundation for successful operation of both ISICS and Iowa's portion of a NPSBN.

The Finance Committee continued to meet routinely to evaluate the financials of the ISICSB and approve expenditures. Any grant funding that is leveraged by the ISICSB to support programs is thoroughly vetted in compliance with all requirements.

If more funding becomes available for the ISICSB to support local programs with interoperable solutions via ISICS, processes will be developed accordingly.

The Operations Committee has worked through the past several years to find effective ways to leverage ISICS for interoperable communications via coordination with the Standards Working Group and other committees as necessary.

The Operations Committee has also completed work to ensure that all PSAPs in Iowa will have access to ISICS for interoperability ahead of the goal outlined in the previous 2017 SCIP of 95 percent of all PSAPs having access by the end of calendar year 2020. This goal was exceeded through the deployment of consolettes/control stations to PSAPs. All PSAPs have at least a basic connection to ISICS.

The Outreach Committee has worked to send out a regular newsletter to interoperability stakeholders in Iowa. Regional outreach events were also scheduled for ISICS and FirstNet. At these outreach events, presentations were given on ISICS and FirstNet. Attendees had an opportunity to witness demonstrations of the networks and ask questions to program managers.

The Technology Committee has continued its work in evaluating technological opportunities for the ISICSB to enhance interoperability via ISICS and NPSBN. Work in 2018 included developing a program guide for agencies joining ISICS (*ISICSB TR-2018-001 – Programming Guide Technical Recommendation*), collaborating with the Encryption Subcommittee to publish a technical recommendation pertaining to multi-key subscriber radios (*ISICSB TR-2018-002 – Multi-Key Equipped Subscriber Units*), presenting a white paper (*Encryption Needs in Iowa*) at a recent national meeting of the P25 User Needs Subcommittee, and collaborating with the Standards Working Group (SWG) on standards that require more technical expertise.

A large project that the Technology Committee had a role in overseeing was the ad-hoc Shared Systems Study Group (SSSG) that was tasked with re-evaluating the potential use of the Inter-RF Sub-System Interface (ISSI) in 2020. The SSSG determined that the ISSI is not an initiative that should be pursued at this time due to a lack of functionality between radio systems in Iowa, and more potential positive impacts would be obtained by assisting

agencies using VHF networks in connected to the ISICS. The SSSG's report is included as an attachment at the end of this report for reference.

The Training and Exercise Committee developed and deployed several training sessions for interoperability training in 2018 that are outlined later in this report. These activities also align with SCIP goals. Most recently, the focus has been on identifying opportunities and individuals to get trained to serve as COMU specialists to fill roles of COML, COMT, and INTD.

In 2019, the Training and Exercise Committee also requested technical assistance from CISA ECD to update policies related to the Communications Unit (COMU) program in Iowa. This work produced an updated document that was approved by the ISICSB and went into practice in 2020.

The User Group Committee (UGC) strives to develop and enhance processes to get agencies connected to ISICS. New forms were developed in 2018 that greatly streamlined the process as well. Feedback from the UGC was also built in to the ISICSB web site that applicants can use to join the system. Work in 2019 is expected to include further development on the ISICS application process and to strengthen the Regional Interoperability Committees (RICs).

The FirstNet Broadband Subcommittee reconvened in January 2019 to begin the process of exploring and developing policies and standards on NPSBN.

An ad-hoc committee tasked with evaluating the future of the VHF Law Enforcement Assistance (LEA) network was commissioned by the ISICSB to evaluate the current status of LEA and the best course of action in 2019. The LEA Committee was comprised of communication center managers; law enforcement at the state, county and municipal level; ISICSB Operations Committee Chair; ISICS Assistant System Administrator; SWIC; and DSWIC. After reviewing the facts bearing on the problem, the LEA Committee concluded that support for LEA should be discontinued on October 31, 2020.

The LEA Committee also tracked the deployment, installation, and testing of consolettes/control stations to PSAP along with training for agencies.

Following the completion of its tasks, the LEA Committee was dissolved at the November 2020 ISICSB meeting.

2. **Historical actions to review and monitor communications interoperability performance and service levels on behalf of Agencies.**

The ISICSB and 911 Communications Council have coordinated their activities and scheduled meetings on the same dates and at the same locations for several years. This has helped promote information sharing between the ISICSB and the Council in public forums.

During 2018 SWIC Maiers and 911 Program Manager Blake DeRouchey continued to meet weekly to ensure alignment of objectives and coordination of efforts between ISICSB and the Council. Those meetings will continue in 2019 and beyond.

Since 2014, ISICSB has released a series of Policy Statements consistent with the National Emergency Communications Plan (NECP) and attempted to clarify the naming or re-naming of all public safety interoperability radio channels within all radio bands.   SWIC Maiers and 911 Program Manager Blake DeRouchey were active participants in the 2019 revision to the NECP.

ISICSB management has monitored public safety interoperability responses in Iowa. There were incidents in Iowa where the response involved a number of agencies responding and interoperability issues identified. ISICS management contacted those involved in the response, examined interoperability issues, and offered solutions that could solve interoperability communication issues that evolved from the incident. Some of the findings were:

- Lack of training field personnel on how interoperability channels work.
- Improperly labeled radio channels.
- Other available options to achieve interoperability with the equipment they use on a day-to-day basis.
- Local or county policies in some instances were prohibiting responders from using interoperability channels because of their lack of updating the policy to reflect newer technology and the availability of more channels.
- In some cases, communication centers were only broadcasting on certain channels that other agencies could not monitor.
- In other cases, there was significant interference created by other states in interoperability channels.

ISICSB Technology Committee continues to work collaboratively with several local communities to identify solutions and implement resolution to the communication problems.

Those challenges continue to prevent Iowa from having coordinated communications much of the time in the incidents examined.

Iowa's statewide communication platform called the Iowa Statewide Interoperable Communications System (ISICS) was awarded for construction in 2015 and became fully operational in 2020. It will go a long way in solving Iowa's public safety interoperability challenges. It is one of the fastest deployments of any statewide LMR system.

Absent a completed statewide interoperable system like ISICS, it is very difficult to solve communication issues that counties and cities have in Iowa. The ISICSB will continue to explore viable options and additional initiatives to improve interoperability in the coming year.

During 2018, ISICSB conducted a series of regional training workshops designed to improve interoperability, including a focus on delivery of the U.S. Department of Homeland Security's (DHS) Communications Leader (COML) and Communications Technician (COMT) courses.

- ISICS Regional Training (12 classes) in six cities across Iowa.
- ICS 300 in Cedar Rapids and Mason City
- Incident Tactical Dispatch (INTD) in Monticello
- Audio Gateway Training in Council Bluffs and Des Moines

During 2019, ISICSB conducted a series of regional training workshops designed to improve interoperability, including a focus on delivery of the U.S. Department of Homeland Security's (DHS) Communications Leader (COML) and Communications Technician (COMT) courses.

- ISICS Regional PSAP Training (two classes) in Ottumwa and Mason City
- COMT in Clarinda, IA
- COML in Burlington, IA
- PSAP Cybersecurity Webinar
- Communications Unit (COMU) Evaluation and Update

The ISICSB also sent Cedar Rapids Fire District Chief Curtis Walser, a credentialed COML and COMT, to a COML Bootcamp in Tennessee. COML Boot Camps are used to test and re-credential COMLs. Iowa currently does not have a re-credentialing process. By sending Chief Walser, the ISICSB was able to gain an insight on what may be best practices used by other states to keep their COMLs and COMTs up to date on training and credentialing. Further work on this was conducted in 2019.

In 2019 projects included working with neighboring states to facilitate interoperability between the agencies along the border. Agreements have been laid out with Minnesota, South Dakota, Missouri, and Illinois that will help guide further interoperable policy development with those states. Work with Wisconsin and Nebraska continues to be done to develop similar agreements.

The ISICSB continues to use technology to advance information sharing with the public through use of conference lines, which are open for all board meetings with the intent of gaining more one-on-one local input from a broader range of local users on interoperability issues. Virtual meeting rooms were utilized in 2018 to allow for public viewing of documents that are up for review and for notetaking.

ISICSB continued its role as a voting member of the Telecommunications Industry Association (TIA) and Project 25 (P25) Steering Group known as TR-8 industry-wide standards setting group. SWIC Maiers has voted on several P25 standards that facilitate and expand interoperability on radio networks such as ISICS. ISICSB Chair Thomas Lampe and SWIC Maiers were also a members of the P25 Steering Committee during this time.

3. **Historical actions to establish, monitor, and maintain appropriate policies and protocols to ensure that interoperable communications systems function properly.**

The ISICSB promoted the national policy of using plain language in radio communications throughout Iowa. A standard for plain language use on ISICS was adopted in 2018.

The ISICSB approved a policy in 2014 adopting the use of a minimum number of national interoperable channels in each radio as a statewide standard on January 1, 2014, and adopted the use of the national standard channel nomenclature. During 2016, this policy was revised to reflect contemporary changes occurring with new technologies and operational plans across Iowa. In 2018 an all-encompassing minimum program requirements standard was adopted for all ISICS users that includes the statewide and regional interoperability talkgroups and national interoperability channels. This helps ensure that regardless of where public safety personnel travel, they will have a means and method for interoperable communications.

The ISICSB developed and published 'quick' one page templates and instructions for ease of use and programming channels into radio equipment. This is posted publicly on the ISICSB web site as an official ICS-217A form[6].

Because ISICSB has historically lacked enforcement authority of any policy, this limits achievement of interoperability as some county and local governments continue past practices using legacy channel naming conventions like "Mutual Aid," which is inconsistent with new federal guidance. This non-compliance with ISICSB Policy and other federal directives contributes to user confusion within Iowa regarding communications assets and hinders radio interoperability best practices. SWIC Maiers continues to meet with local agency stakeholders to stress the importance of standardization of channel nomenclature.

With Iowa's local control focus and county patchwork of "silo" radio systems operating in different radio frequencies, statewide interoperability policies and protocols have been challenging to establish. With disparate systems, what works for one county may not work for another. However, a statewide platform like ISICS reduces this confusion since all users can be on a platform with a statewide system.

As local agencies connect to ISICS for interoperability, it is expected that some of the hurdles relating to interoperable communications will be mitigated. Other challenges relating to training and equipment procurement may persist for years.

ISICSB passed a number of policy statements beginning in July 2014. ISICSB worked closely with Attorney General Staff on a process for developing the statements, prominently posting them on ISICSB website to incentivize public comment, discussing them as a Board, and, if appropriate, voting by the Board to determine if a policy statement represented a best practice for Iowa public safety stakeholders.

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[6] ISICSB ICS-217A: https://isicsb.iowa.gov/sites/default/files/copy_of_2012-05_aka_isicsmc12-b_revised1_ics_217a_v2017_01_1.pdf

Lastly all policy statements are posted on ISICSB website in chronological order. All policy statements, standards, technical recommendations, and documents are listed below for reference.

- **Policy statements passed in 2014:**
  - **2014-1** *Support of Project 25 Standard.*
  - **2014-2** *Endorsement of Strategic Technology Reserve (STR) Trailers.*
  - **2014-3** *Support of No Encryption on Interoperability Channels.*
  - **2014-4** *Endorsement of Credentialing Process of COML/COMT.*
- **Policy statements passed in 2015:**
  - **2015-01** *Endorsement for support for procurement and state funding of P-25 700 MHz LMR platform* (which also created a standing committee User Group Committee (UGC) charged with managing collaboration on platform usage).
  - **2015-02** *Supporting government control of interoperability frequencies and channels.*
  - **2015-03** *Defining Public Safety Grade.*
  - **2015-04** *Iowa Statewide Interoperability Channels.*
  - **2015-05** *AES 256 Encryption SLN TEK KID*
- **Policy statements passed in 2016:**
  - **2016-01** *Supporting Funding of Local Procurement of Public Safety Grade Land Mobile Radio (LMR) Equipment Used on Statewide Interoperable Networks, and Platforms*
- **Policy statements passed in 2017:**
  - **2012-05** *Policy (aka ISICSMC12-B) Revised - Minimum Interoperable Radio Channels & Nomenclature*
  - **2017-07** *Policy Statement supporting the National Emergency Number Association (NENA) i3 Standard for Next Generation 9-1-1 (NG9-1-1)*
- **ISICS Platform Requires a complex set of standards, processes and procedures to this end ISICSB established a subcommittee to focus exclusively on policy and procedures for ISICS users as guidance for all users. The following standards were adopted by ISICSB in 2017:**
  - **1.1.0** - *Subscriber Security*
  - **2.1.0** - *Variance and Waivers*
  - **2.2.0** - *Maintenance of Alias List*
  - **2.3.0** - *System Login Naming Maintenance*
- **Documents published in 2017:**
  - **ICS Form 217A** - *Communications Resource Availability Worksheet*
  - **Staff Study** - *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection*
- **ISICSB's established a subcommittee focusing exclusively on policy and procedures for ISICS users as guidance for all users successfully drafted the following standards that were adopted by ISICSB in 2018:**
  - **1.2.0 -** *Talkgroup and Multigroup Ownership*

- **1.3.0 -** *Statewide Interoperable Plain Language Policy*
- **1.4.0 -** *Statewide Pursuit Communications*
- **1.5.0 -** *ISICS Regional & Statewide Interoperability Talkgroups*
- **1.5.1 -** *Transport Interoperability*
- **1.5.2 -** *Use of Statewide and-or Reg Interop Talkgroups-Air*
- **1.6.0 -** *Talkgroup and Multigroup Ownership*
- **1.7.0 -** *Minimum Programing Requirements*
- **1.8.0 -** *Event and Exercise Communications Planning*
- **1.10.0 -** *Cross Spectrum Interoperabity*
- **1.11.0 -** *Use of 700-800 MHz Scene of Action (SOA) Channel*
- **2.4.0 -** *Operational Management*
- **2.5.0 -** *Network Management*
- **2.6.0 -** *Database Management*
- **2.7.0 -** *Training Radio Telecommunicators*
- **2.8.0 -** *Requesting Access and Participation Plan Revisions*
- **2.9.0 -** *Requesting Participation by Non-Public Safety/Non-Public Service Organizations*
- **2.10.0 -** *Training Technical Staff*
- **2.11.0 -** *Training ISICS End Users*
- **2.12.1 -** *System Security Groups*
- **2.12.2 -** *Security System Keys*
- **2.12.3 -** *Encryption Key Security*
- **2.13.0 -** *Subscriber Radio Standards*
- **2.13.1 -** *Subscriber Surplus Radio Disposal*
- **3.1.0 -** *Radio Aliases*
- **3.2.0 -** *Talkgroup and Multigroup Names*
- **3.3.0 -** *Radio ID Talkgroup Allocation*
- **3.4.0 -** *Fleetmap Standards*
- **3.5.0 -** *Statewide Wide Area Talkgroup Access and Management*
- **3.6.0 -** *Radio Site Access Permission - Subsystem Roaming*
- **3.7.0 -** *Scanning*
- **3.8.0 -** *Emergency Button*
- **3.9.0 -** *Multigroup Announcement*
- **3.10.0 -** *Talkgroup and radio user priority*
- **3.11.0 -** *Talkgroup Site Access and Roaming*
- **3.12.0 -** *CAD and ATIA Connectivity*
- **4.1.0 -** *Outage Responsibility*
- **4.2.0 -** *Agency Maintenance*
- **4.3.0 -** *Preventative Maintenance*
- **4.4.0 -** *Record Keeping Requirements*
- **4.5.0 -** *Contact Information Procedures*
- **4.6.0 -** *System Maintenance Programming and Qualifications*
- **5.1.0 -** *Hospital Access*
- **7.1.0 -** *Standards Compliance Process*

- **Documents published and/or adopted in 2018:**
  - **ISICSB TR-2018-001** – *Programming Guide Technical Recommendation*
  - **ISICSB TR-2018-002** – *Multi-Key Equipped Subscriber Units*
  - **Whitepaper** – *Encryption Needs in Iowa*
- **ISICS Platform Requires a complex set of standards, processes and procedures to this end ISICSB established a subcommittee to focus exclusively on policy and procedures for ISICS users as guidance for all users. The following standards were adopted by ISICSB in 2019:**
  - **1.3.0** – *Statewide Interoperable Plain Language Policy (Update)*
  - **1.5.0** – *ISICS Regional and Statewide Interoperable Talkgroups (Update)*
  - **1.5.3** – *Travel Communications*
  - **1.12.0** – *Announcements*
  - **1.13.0** – *Public Safety Communication Center (PSCC) Interoperability*
  - **1.15.0** – *Emergency Management Talkgroups (Update)*
  - **1.16.0** – *Interoperable Control Station Access*
  - **2.8.0** – *Requesting Access and Participation*
  - **2.14.0** – *Security Equipment Sites*
  - **2.15.0** – *Change Management*
  - **3.12.0** – *CAD and ATIA Connectivity (Update)*
  - **3.15.0** – *Regional CALL Audio*
  - **4.7.0** – *Equipment Configuration Information*
  - **4.8.0** – *Notification for System Changes and Outages*
  - **4.9.0** – *Software Location*
  - **7.1.0** – *Standards Compliance Process*
  - **7.3.0** – *The Appeal Process for Decisions on Non-Compliance*
- **Documents published and/or adopted in 2020:**
  - **ISICSB Technology Committee Recommendation for VCALL10**
- **ISICS Platform Requires a complex set of standards, processes and procedures to this end ISICSB established a subcommittee to focus exclusively on policy and procedures for ISICS users as guidance for all users. The following standards were adopted by ISICSB in 2020:**
  - **1.12.1 -** *Audible Alert Tones*
  - **1.17.0 -** *StatusBoard*

ISICSB will continue to promote interoperability policies and other documents to assist agencies comply with state and federal standards.

Additional policy statements, standards, and technical recommendation documents are in various degrees of completion in committee work and positing for interested stakeholders.

4. **Historical actions to allocate and oversee state appropriations or other funding received for interoperable Communications.**

In August 2013, the ISICSB, on behalf of the State of Iowa, received a $1.67 Million federal grant to plan future build-out of the Nationwide Public Safety Broadband Network (NPSBN) in Iowa called SLIGP. NPSBN is being undertaken by a federal agency, FirstNet. NPSBN will be a national public-safety grade, wireless broadband data network. This grant was restricted to specifically this initiative and includes planning, outreach, education of public safety and elected officials, inventory of existing assets that could be leveraged for this broadband data network, and funding for any personnel costs directly related to this initiative (e.g., a percentage of the SWIC's salary directly attributable to his work on broadband). This grant expired on March 1, 2018.

In state fiscal years 2014 through 2017, ISICSB received $154,661 annually in state appropriations to conduct State of Iowa interoperability matters not covered by federal grants.

For state fiscal year 2018 and 2019, ISICSB's appropriation was reduced to $115,661 to conduct State of Iowa interoperability matters not covered by federal grants. The ISICSB plans to request increased appropriations for future fiscal years in order to help sustain and expand interoperable efforts in Iowa.

SWIC Maiers has worked in collaboration with ISICSB members and interoperability stakeholders to identify potential long term funding mechanisms to enhance interoperability in Iowa.

In 2018 SLIGP 2.0 was rolled out, awarded to Iowa and will run through 2020. Iowa was awarded funding to help sustain the SWIC and administrative assistant positions. This grant continues to fund approximately 50 percent of the SWIC position, administrative assistant, and FirstNet Outreach Specialist. SLIGP 2.0 activities[7] include:

- *Single officer (or governmental body) and staff to, at a minimum, provide for ongoing coordination with NTIA and implementation of grant funds.*
- *Existing governance body to provide input to the single officer and to contribute towards planning activities to further identify potential public safety users of the NPSBN and prepare for data sharing.*
- *Data collection in specific areas identified to be helpful as requested by FirstNet.*
- *Development of policies and agreements to increase sharing of data between existing public safety systems across various agencies within the State or territory using the NPSBN.*
- *Individuals, such as the single officer and governing body members, to perform planning activities to help FirstNet and its partner further identify potential public safety users of the NPSBN.*
- *Planning efforts to help FirstNet gain inclusion on applicable statewide contract vehicles.*

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[7] SLIGP 2.0 Frequently Asked Questions

- *Planning activities to prepare for emergency communications technology transitions.*
- *Activities to identify and plan for the transition of public safety applications, software, and databases.*
- *Identifying and documenting ongoing coverage needs/gaps within the State.*
- *Activities to convene stakeholder outreach events to continue planning for NPSBN implementation, as requested by FirstNet.*

5. **Historical actions to identify sources for ongoing, sustainable, longer-term funding for communications interoperability projects, including available and future assets that will leverage resources and provide incentives for communications interoperability participation, and develop and obtain adequate funding in accordance with a communications interoperability sustainability plan.**

Many of these activities are also covered in Part 4 above. They include the previously listed grants.

With the passage of the Federal Nationwide Public Safety Broadband Network (NPSBN) legislation, Iowa will continue participating in planning for Iowa's portion of build-out of FirstNet, a nationwide broadband data network to supplement public safety's land mobile-radio communications networks with interoperable wireless data capabilities.

ISICSB continues to seek ways to identify sustainable, long-term funding and cost containment measures for communications interoperability. Continued state funding for ISICSB allows this board to continue to seek federal grant opportunities. Without this funding, ISICSB will be denied many grant opportunities due to inability to meet grant requirements specifying a local match.

Local, county, and state funding is essential for sustainability of any interoperable communications system. State funds will continue to be used to train, educate, and, where possible, build and maintain infrastructure.

ISICSB will continue to seek grants and outside funding; however, federal grants specifically for interoperable communications are diminishing, making state support all the more crucial in receiving such funding.

ISICSB has completed the final year of SLIGP Grants for the rollout of FirstNet, a nationwide broadband data network. ISICSB was awarded SLIGP 2.0 grants as Iowa was the fifth state to "Opt In" to FirstNet. The SLIGP 2.0 grant will run from 2018 through 2020. (See more on SLIGP in section 6 below.)

ISICSB developed ideas for potential funding streams that could be ready for legislative consideration in future legislative sessions. If enacted, the funding streams would allow the ISICSB to maintain and expand ISICS infrastructure, and administer grants to local municipal and county public safety agencies to promote and expand interoperability. These grant

monies could include allocations for training and educational opportunities, procurement of subscriber units, and/or expansion of local LMR infrastructure.

Any new funding mechanisms and resulting programs would be structured to be consistent with all state and federal laws regarding grant awards, accounting, and distribution of funds.

6. **Historical actions to develop and evaluate potential legislative solutions to address the funding and resource challenges of implementing statewide communications interoperability initiatives.**

Potential legislative items noted in Part 5 above regarding the restoration of the appropriations and development of future funding streams would address costs associated with funding interoperability in Iowa by supporting ISICSB. New funding could be used to fund grants that local agencies could use to expand interoperable capabilities. These grants could be used by volunteer fire departments and emergency medical services, municipal police departments, schools and other interoperability stakeholders.

Work continues on developing a five and ten year financial plan for the ISICSB. Implementation of those plans would require legislation to be put in to effect.

7. **Historical actions to develop a statewide integrated public safety communications interoperability system that allows for shared communications systems and costs, takes into account infrastructure needs and requirements, improves reliability, and addresses liability concerns of the shared network.**

In 2012, the Department of Public Safety (DPS), Department of Transportation (DOT), and Department of Corrections (DOC), began working together with ISICSB to develop a plan and issue a Request for Proposal (RFP) for using state infrastructure and leveraging any other state resource that could be used to develop a communications interoperability radio system.

In 2013, ISICSB management monitored and assisted with an RFP for a statewide Project 25 700 MHz Phase 2 land-mobile radio (LMR) statewide platform tying together the seven existing countywide LMR systems. The winning vendor chose two of those county based systems as the basis for initial coverage. Those two systems selected were WESTCOM in the West Des Moines Metro which spans Polk, Warren and Dallas counties, and STARCOM, a multi-state communications system based in Woodbury County.

During 2016 a contract was signed and construction began of the Iowa Statewide Interoperable Communications System (ISICS) platform. ISICS is scheduled to be completed in early 2019. ISICSB members believe by working with state and local agencies to create a "shared interoperable" Project 25 (P25), 700 MHz, Phase 2 LMR statewide platform, both interoperability and a very significant cost savings for state and local governments can occur.

ISICSB has worked to expand and engage county and local membership on all seven committees--Finance, Governance, Operations, Outreach, Technology, Training and Exercise, and User Group--to make sure the Board's ongoing process to gather input from local users is maintained and to ensure that the state-wide system operational protocols remain up to date. To date, ISICSB has over 100 county and local committee member representatives. Various subcommittees have aided in investigation and expansion of interoperability in Iowa for LMR and broadband and will address future needs of the ISICSB and stakeholders across Iowa.

A list of agencies that have completed the process to use ISICS is in Attachment 6. Some counties have opted to build out infrastructure on the ISICS system but have not yet gone through the official approval process. As such, those counties are not listed here but are shown in Figure 1 if site locations have been identified.

8. **Historical actions to investigate data and video interoperability systems.**

In 2010, Iowa was one of 21 jurisdictions (one of seven states) to be granted an FCC license to build a public safety high-speed wireless network for data and video interoperability, the precursor to the NPSBN. The ISICSB applied for, but did not receive, a federal grant to initiate construction of this network. The grant was denied because the ISICSB lacked the 20 percent matching fund requirement and had no sustainable state appropriations.

With the passage of the Nationwide Public Safety Broadband Network (NPSBN) legislation by Congress in February of 2013, the ISICSB created a FirstNet Broadband Subcommittee to address Iowa's portion of planning and technology issues of this coming national network. This subcommittee was co-chaired by then ICN Executive Director and State of Iowa CIO. Members included SWIC Allen, SWIC Maiers, state and local subject matter experts, Department of Management, 911 Communications Council Chair, Connect Iowa, and representatives of police, fire, and emergency management.

The FirstNet Broadband Subcommittee reconvened in January 2019 to begin discussions of how to leverage public safety broadband data networks that are now or will be available to address current operability and interoperability issues. This activity will help assist agencies in planning necessary for successfully adopting new technology.

A FirstNet Multi-State Regional Forum was hosted by the ISICSB at Prairie Meadows on May 29-30, 2019. Over 100 attendees from Iowa and surrounding states were able to obtain information on the status of the FirstNet buildout, coverage expectations, and how FirstNet can fit into their operating pictures. Other state-level regional forums were also held in Mason City and Ottumwa.

In November 2015 ISICSB Chair Thomas Lampe, along with ICN staff met with Marshalltown School officials to launch the Wi-Fi Internet for School Emergencies pilot project at Marshalltown High School. Using existing high speed ICN fiber connections at the Marshalltown school and other schools across Iowa will provide public safety responders

with a dedicated, secure, and private broadband wireless connection through Wi-Fi for devices available during day-to-day operations and emergencies at the school. This pilot project is intended to serve as a model for Iowa demonstrating protection of our schools with existing technology. This also simulates a FirstNet broadband connection in that only public safety has access to it. This pilot project with Marshalltown schools expanded to two additional schools, Norwalk and Martensdale. Overall feedback from the program was positive. The pilot program was marked as complete in 2018.

9. **Historical actions to expand, maintain, and fund consistent, periodic training programs for current communications systems and for the statewide integrated public safety communications interoperability system as it is implemented.**

The ISICSB has established and maintained a periodic training program for Iowa's public safety officials through a series of regional workshops annually funded by the Department of Homeland Security (DHS) Emergency Communications Division (ECD). These Technical Assistance grants can be presented throughout the state. The ISICSB has acquired several national DHS/ECD interoperability tools for these efforts, such as:

- In previous years, ISICSB hosted a Communication Training Session in Des Moines and participated in one National Guard sponsored events where several COML and COMT participants were able to complete their task books to apply for credentialing through ISICSB.
- SWIC Maiers assisted with the planning for the next National Guard communications training events scheduled for 2018.
- ISICSB Training Committee in collaboration with DHS/ECD are actively planning more communication training opportunities scheduled for calendar year 2019. This follows Audio Gateway, ISICS Regional Training, ICS 300, and Incident Tactical Dispatch classes in calendar year 2018. Objectives for 2019 include an expansion of the COML and COMT classes and cybersecurity. These offerings in 2019 are expected to complement further ISICS interoperability training.
- In May 2013, a multi-state workshop was held in Des Moines to put together a standard recognition and credentialing process for the COML and COMT positions in Iowa, Missouri, and Kansas. This process ensures trainees take the relevant courses and then demonstrate their skills so that they are not only better prepared to use these skills in Iowa, but also regionally and nationally, if requested. So far, several individuals have successfully completed this COML or COMT process and received credentials from the ISICSB.

In 2019, the ISICSB utilized these resources from DHS/ECD to hold sessions to update their Communications Unit Policy and SCIP. Courses for public safety entities in Iowa included:

- PSAP Cybersecurity Webinar
- Communications Unit Leader (COML)
- Communications Unit Technician (COMT)

In 2020 ISICSB utilized these resources from DHS/ECD to hold sessions for the continued development of Communications Unit personnel and SOPs in Iowa, emergency PSAP re-location due to COVID-19, and developing encrypted interoperable talkgroups and plans.

- Incident Tactical Dispatching – Carroll
- Planning for Alternate PSAP Facilities – Virtual
- Encryption Planning and Usage for Administrators – Virtual
- Encryption Planning and Usage for Technical Staff – Virtual
- Standard Operating Procedures (SOP) / Communications Plan Review and Development – Virtual

The above efforts are those training initiatives which can help Iowa public safety improve interoperability in pre-planned or emergency situations where public safety uses many disparate radio systems to communicate. ISICSB has credentialed over 20 COMLs and COMTs since 2013.

ISICSB also assisted with the planning and deployment of ISICS training centered around use of ISICS and the consolettes/control stations given to PSAPs that did not have a previous connection to ISICS in 2019. Those ISICS Regional PSAP Training classes were held in Ottumwa and Mason City. PSAPs have also requested individual, one-on-one training, and those requests have been granted

10. **Historical actions to expand, maintain, and fund stakeholder education, public education, and public official education programs to demonstrate the value of short-term communications Interoperability solutions, and to emphasize the importance of developing and funding long-term solutions, including implementation of the statewide integrated public safety communications interoperability system.**

Many of these activities are also covered in Part 9 above.

Besides the ISICSB's efforts regarding improving interoperability with traditional land-mobile radio (LMR) systems, the ISICSB has initiated stakeholder education regarding the new Nationwide Public Safety Broadband Network (NPSBN) system called FirstNet being built in every state as part of a single nationwide high-speed wireless broadband network designed to supplement and complement public safety's LMR systems. A federal grant was obtained in 2013, which will fund stakeholder education and planning for this coming network through 2018. Another grant application for NPSBN has been submitted and accepted that provides additional funding sources through 2020-2021.

The educational opportunities did not just include local subject matter experts (SME). This included the Inter Sub System Interface (ISSI) Summit that was held in March of 2017 in which SMEs from TIA/TR-8, the Federal Partnership for Interoperable Communications (FPIC)[8] and vendors attended. This summit provided extremely valuable information

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[8] FPIC serves as a coordination and advisory body to address technical and operational wireless issues relative to interoperability within the public safety emergency communications community, interfacing with voluntary representatives from federal, state, local, territorial, and tribal organizations. FPIC is a technical advisory resource.

regarding the complexities, required time, expenses, and pitfalls associated with an ISSI connection between two LMR systems, and guided the ISICSB in the drafting of the *Staff Study - ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection*.

In 2020, the ISICSB convened the Shared Systems Study Group (SSSG) to re-evaluate the ISSI as a result of a request from the Iowa State Sheriffs and Deputies Association (ISSDA). This report is attached in Attachments for 2021.

Other projects include the efforts in 2018 to investigate encrypted interoperable communications pathways. These efforts defined current technological and procedural barriers to effectively deploying and managing encrypted interoperable talkgroups. The resulting work products were the ISICSB technical recommendation (TR-2018-002) *Multi-Key Equipped Subscriber Units* and a whitepaper *Encryption Needs in Iowa*. The whitepaper was presented at a recent P25 User Needs Subcommittee in San Antonio, Texas that was attended by LMR system administrators, users from other states along with federal partners and manufacturers. The presentation was well-received and expected to see further action in future meetings and working sessions.

A series of meetings were held in 2017 to develop a new and updated Statewide Communications Interoperability Plan (SCIP) using the Enhanced SCIP Process developed by the Office of Emergency Communication in the U.S. Department of Homeland Security. The process included representatives from DHS OEC who facilitated the events. Events were attended by members of the ISICSB including board members, committee members and the SWIC. Iowa's 911 program manager, Blake DeRouchey, also attended several of the meetings.

Planning aspects of the Enhanced SCIP included a strengths, weaknesses, opportunities, and threats assessment of interoperability in Iowa, several phone calls with OEC personnel, and several committee meetings. Some of those meetings were specific, such as the Iowa Funding Webinar held in May of 2017. Other meetings included outlining each committee's action plan that fits in with its goals, metrics, and objectives.

This new SCIP not only laid out a strategic plan for Iowa interoperable communications that outlines a vision, objectives, and goals for the ISICSB, but it also contains action plans to make results a reality. This SCIP will be updated with DHS annually and monitored and adjusted as necessary to adapt to changing communications environments.

In 2018, various meetings were held with ECD to check on Iowa's progress through its listed goals in the SCIP. Measured progress was observed for each committee, and a couple of the goals are now completed. Several perpetual goals are listed as well to ensure that the ISICSB committees remain active.

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to Emergency Communications Preparedness Center (ECPC) Steering Committee, NCSWIC and National Public Safety Telecommunications Council (NPSTC) and a collaborative partner with SAFECOM and NCSWIC (taken from https://www.dhs.gov/safecom/fpic/)

A SCIP refresh was undertaken in 2019 that updated the goals of the various committees to reflect the current interoperable status in Iowa. It also revisited the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis conducted in 2017. This refresh will also aid in aligning Iowa's SCIP with the 2019 update to the NECP which was also adopted at the national level in 2019. The work was conducted through committee meetings via webinar with ECD personnel and ISICSB committee members. A SCIP workshop was held in May of 2019 to review the work of the committees and adjudicate comments and suggested changes. The revised SCIP was adopted.

SWIC Maiers routinely visits counties to listen to local needs and discuss interoperability challenges and explain the benefits of an interoperable radio network like ISICS provides. He plans to visit all 99 counties and primary dispatch centers by the conclusion of calendar year 2021.

SWIC Maiers has also attended numerous county 911 service board meetings, several county level meetings and various state-level organizations comprised of local public safety personnel to discuss interoperable communications and answer questions regarding ISICS and FirstNet. In addition, SWIC Maiers provided technical assistance to counties regarding interoperability.

11. **Historical actions to identify, promote, and provide incentives for appropriate collaborations and partnerships among government entities, agencies, businesses, organizations, and associations, both public and private, relating to communications interoperability.**

    Part 10 above regarding a single unified SCIP (strategic plan) for Iowa between the ISICSB, 911 Program, and 911 Communications Council addresses this requirement.

    Part 7 covers the collaboration and issuance of a statewide multi-state agency RFP for a land-mobile radio (LMR) system. The ISICS Platform will be completed in 2019 and completely fulfill this requirement.

    Board Management and the SWIC presented at several events in 2018. The goal of the presentations was to update stakeholders on the ISICS Platform and the FirstNet initiative and create new potential partnerships for the FirstNet network in Iowa.

12. **Historical actions to provide incentives to support maintenance and expansion of regional efforts to promote implementation of the statewide integrated public safety communications interoperability system.**

    Part 7 touches on the multi-state agency land-mobile radio RFP.

The ISICSB has examined ways to expand the ISICS Platform to support regional efforts and bring to fruition the implementation of a statewide integrated public safety interoperable communications system. This has included work to identify long-term funding mechanisms.

13. **Historical actions related to performing its duties, consult with representatives of private businesses, organizations, and associations on technical matters relating to data, video, and communications interoperability; technological developments in private industry; and potential collaboration and partnership opportunities.**

In 2020 the ISICSB reopened the evaluation of the ISSI by commissioning the Shared Systems Study Group (SSSG) at the request of the Iowa State Sheriffs and Deputies Association (ISSDA). The SSSG conveyed in-person and virtual meetings through 2020 with local interoperability stakeholders and industry subject matter experts. These meetings led to a recommendation by the SSSG to not utilize the ISSI at this time due to gaps in functionality and a lack of benefit to primarily VHF agencies in Iowa. The SSSG report is included in Section VIII. Attachments for 2021.

In the past, ISICSB members and the SWIC met with all six Homeland Security regions creating six Regional Interoperability Committees (RICs) to advise ISICSB on issues of local concern, in addition to many county and city public safety groups regarding a statewide LMR system. The SWIC also made presentations to various organizations across Iowa on ISICSB activities and the FirstNet NPSBN initiatives.

These outreach efforts continue as non-traditional stakeholders are engaged to discuss interoperability needs and ISICS access. These entities include for-profit ambulatory services, utility companies, and other non-traditional public safety and public service stakeholders.

Another past accomplishment included the ISICSB Technology Committee and FirstNet Broadband subcommittee hosting a public private meeting inviting in telecommunications industry stakeholders to discuss options and concerns as FirstNet gets planned for Iowa. One outcome of that meeting was a letter to FirstNet recommending that the Iowa business community have an opportunity to compete for any business FirstNet may do in Iowa.

The ISICSB Operations Committee has maintained a Public/Private subcommittee that meets as necessary to bridge concerns of private businesses providing communication resources to Iowa public safety community. This group did not meet in 2018, but it reconvened in 2019 as the ISICS Platform is completed and FirstNet continues to be deployed at a federal level.

The ISICSB Chair and SWIC expanded the ISICSB meeting model to include use of a conference line for all meetings (both Board and Committee) and posting meetings times, dates, and locations on the ISICSB website such that any interested party can listen into the meetings and comment under public comment periods. A virtual meeting room is used when necessary for document review and note-taking.

Former SWIC Allen and SWIC Maiers in addition to being part of TIA/TR-8 also participated in and are members of the Federal Partnership for Interoperable Communications (FPIC) and the National Council of Statewide Interoperability Coordinators (NCSWIC). FPIC is a federal group that is under the Emergency Communications Division (ECD) that meets regularly to investigate and solve problems pertaining to interoperability on a national level.

Participation in and feedback from FPIC has been vital in committee research into complex issues such as whether to use the ISSI on the ISICS Platform. Members of FPIC have also offered assistance and guidance regarding encryption on interoperable talk groups on ISICS and associated subscriber unit features via conference calls and meetings.

NCSWIC is a partnership with SWICs from all 50 states and six territories that evaluate interoperability challenges and coordinate with stakeholders to solve problems. These can range from establishing training opportunities to approving grants. NCSWIC also was vital in providing a pathway towards the Enhanced SCIP process that Iowa completed in 2017. The Enhanced SCIP process was viewed as an improvement over the previous methodology in developing a SCIP.

14. **Submit a report by January 1, annually, to the members of the general assembly regarding communications interoperability efforts, activities, and effectiveness at the local and regional level, and shall include a status report regarding the development of a statewide integrated public safety communications interoperability system, and funding requirements relating thereto.**

The ISICSB has submitted annual reports for several years to satisfy this requirement.

VIII. Attachments for 2021

1. List of agencies and counties that have joined ISICS for interoperability and/or operability
2. Map of ISICS Network
3. Policies and/or other documents adopted in 2021
4. Standards adopted or updated in 2021
5. 2020 SCIP (Adopted December 12, 2019)
6. Shared Systems Study Group Report to the ISICSB

Attachment 1: List of agencies and counties that have joined ISICS for interoperability and/or operability as of December 9, 2021. (1 of 3)

5th Judicial District
10th District Reserve Law Enforcement
185th Iowa Air National Guard
Adair Guthrie EMA
Adams County EMA
Air Methods
Allamakee County EMA
Altoona FD
Altoona PD
Altoona PW
Anamosa Fire (FD)
Ankeny FD
Ankeny PD
Atkins, City of
Audubon County SO
Aurelia Fire
Avera Health/Avera Careflight
Baxter FD
Benton County
Blackhawk County EMA
Blakesburg Fire & Rescue
Bondurant FD
Boone County
Bremer County EMA
Bremer County SO
Buchanan County
Buena Vista County SO
Buena Vista EMA
Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Butler County 911
Burt County EMA (NE)
Camp Township FD
Calhoun County/Calhoun Co EMA
Carlisle Fire Department
Carroll County
Cass County
Cerro Gordo County Sheriff's Office
Cherokee County
Cherokee Regional Medical Center
Chickasaw County 911
Chickasaw County EMA
Central Iowa Power Cooperative (CIPCO)
City of Cedar Rapids
Clarke County Emergency Management
Clarke County Sheriff's Office

Clay County
Clayton County
Clear Lake PD
Coulter Fire Department
Crawford County
Dallas County
Delaware County
Delaware Township Fire Department
Department of Homeland Security (DHS)
Emergency Communications Division (ECD)
Department of Veterans Affairs Central Iowa
Des Moines International Airport
Des Moines Police Department
Des Moines Public Schools
DHS Investigations
Dickinson County Emergency Management
Drug Enforcement Administration
Dubuque E911
Elkhart FD
Emmett County SO
Fayette County EMA
Fayette County SO
Federal Bureau of Investigation (FBI)
FEMA Region 7
Franklin County (Franklin County EMA)
Freeborn County, Minnesota
Fremont County
Fonda PD
Fulton PD (Illinois)
Genesis Ambulance Services
Granger FD
Greene County
Grundy County
Hamilton County
Hancock County
Hardin County
Harrison County
Henry County
Howard Co Emergency Management
Humboldt County
Ida County
Iowa Association of Electric Cooperatives
Iowa Association of Municipal Utilities
Iowa County Sheriff's Office
Iowa Department of Corrections - Clarinda
Iowa Department of Corrections - Fort Madison

Iowa Department of Corrections - Mount Pleasant
Iowa Department of Human Services - Glenwood Resource Center (GRC)
Iowa Department of Natural Resources
Iowa Department of Public Health
Iowa Department of Public Safety
Iowa Department of Transportation
Iowa Homeland Security and Emergency Mgmt.
Iowa National Guard
Jackson County EMA
Jasper County
Jefferson County LEC
Jewell Fire Rescue
Jo Daviess County SO (Illinois)
Johnson County JECC
Johnston Grimes Metro Fire Department
Johnston PD
Jones County
Keokuk County EMA
Keokuk County Sheriff's Office
Kossuth County
Lee Comm (Lee County Communications)
Lee County EMA
Linn County Sheriff's Office
Madison County
Mahaska County
Mapleton, City of (Police)
Maquoketa PD
Marion County EMA
Marion County Sheriff
Marshall County EMA
Medforce, Quad City Helicopter EMS
MEDIC EMS (Davenport)
Mercy Ambulance Des Moines
Mercy Hospital - Iowa City
Metropolitan Incident Command Radio Network (MICRN)
Mills County
Mitchell County EMA
Mitchellville FD
Mitchellville PD
Monona County
Montgomery County EMA
Mower County (MN)
Muscatine County

Nebraska OCIO
Northern Warren Fire
O'Brien County EMA
Osceola, City of
Page County
Palo Alto EMA
Pella PD
Pleasant Hill FD
Pleasant Hill PD
Plymouth County
Pocahontas Police Department
Polk City FD
Polk City PD
Polk County
Pottawattamie County
Poweshiek County EMA
Region 6 Local Emergency Planning Committee (LEPC), Iowa
Ringgold County
Sac County
Safeguard Iowa Partnership
Saylor Township FD
Scott County Health Dept.
Scott County Emergency Communications Center
Shelby County
Southwest Iowa REC
StoryComm Story County 911
Taylor County
TIP Rural Electric Cooperative
Tipton Ambulance Service
Urbandale Schools
Union County Law Enforcement Center (LEC)
United States Marshal's Service
Unity Point Des Moines
University of Iowa Public Safety
University of Northern Iowa
US Army Corps of Engineers (USACE) Red Rock
US Capitol Police
US Fish and Wildlife Service
US Office of Inspector General (OIG) Health and Human Services (HHS)
US Probation Office (USPO) Southern Iowa
Van Buren County 911
Virginia Township Fire Rescue
Warren County

Attachment 1: List of agencies and counties that have joined ISICS for interoperability and/or operability as of December 9, 2021. (3 of 3)

Washington County Communications
Waukee Schools
Waukon PD
Wayne County Sheriff's Office
Webster City PD
Webster County EMA
West Branch PD/FD
Westcom

Windsor Heights, City of
Woodbury County
Worth County
Wright County
Wings Air Rescue
Winnebago County
Winneshiek County EMA
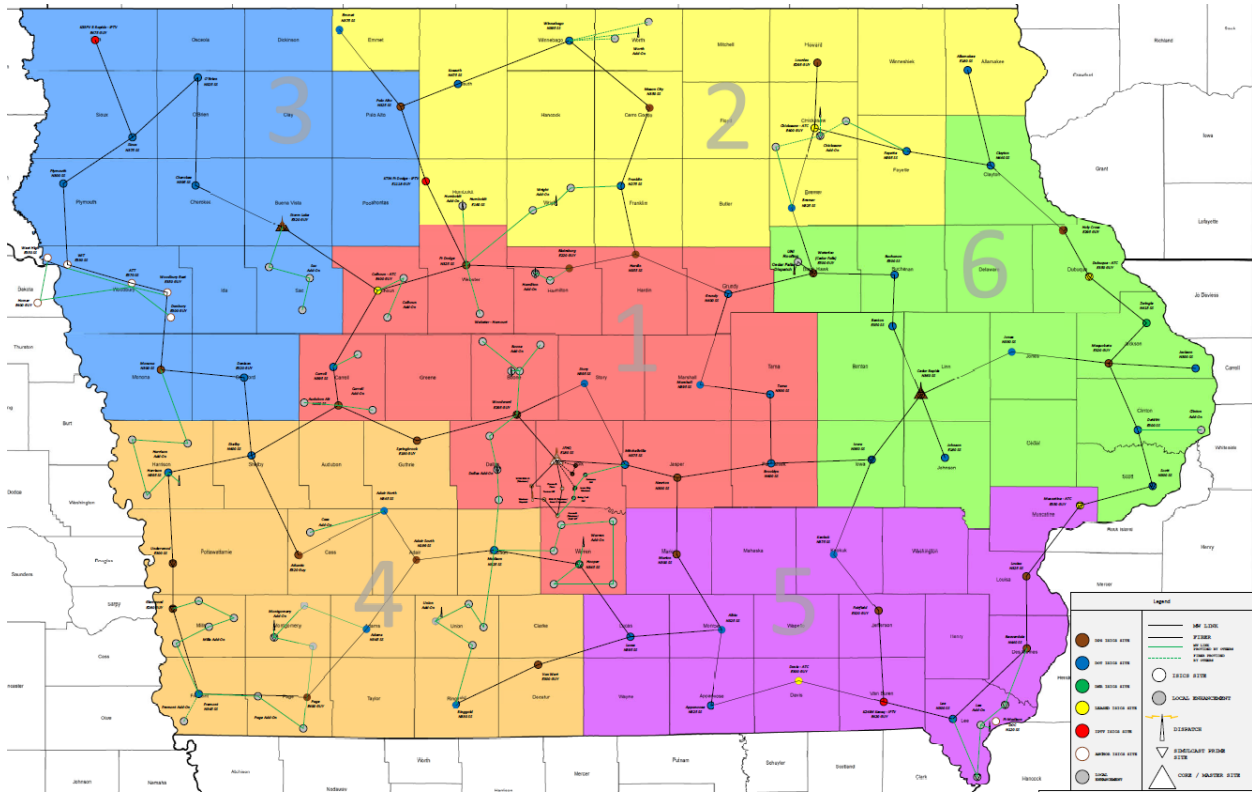
Attachment 2. Current map of the ISICS Platform as of December 9, 2021. The brown, blue, red, yellow and green dots denote ISICS sites that were part of the default buildout. Gray dots denote local enhancements that have been sited and built or will be built. All sites are networked together—i.e. Black and green solid lines are microwave connections; black and green dotted lines are fiber optic connections.

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Attachment 3: Policies and/or other documents adopted in 2021

Policy Statement

State of Iowa

Policy Release Number: **2012 – 05C (aka ISICSMC12-B) revised**

Date Revised: 2/22/2021
Date Revision Posted for Public Comment: 7/9/2021
Date Revision Adopted by ISICSB Meeting: 8/12/2021

Minimum Interoperable Radio Channels & Nomenclature – Effective Date: MON. DD, 20YY

WHEREAS: The Iowa Statewide Interoperable Communications System Board (ISICSB) is established in Code of Iowa sections 80.28 and 80.29. ISICSB is charged to develop, implement and oversee policy, operations, and fiscal components of communications interoperability efforts at the state and local levels, and to coordinate similar efforts at the federal level, with the objective of overseeing operation of statewide integrated public safety systems, and establish, monitor, and maintain appropriate polices and protocols, expand, maintain and fund stakeholder education, public education, and official education programs to demonstrate value of short-term communications interoperability solutions, and;

WHEREAS: ISICSB is tasked with establishing, monitoring and maintaining policies and protocols that ensure interoperable communications function properly by following applicable best practices and standards, and; Now therefore;

IT IS ISICSB POLICY: All Public Safety Radios Shall be programmed to include the channels as listed in the most current version ICS 217A (as applicable to your frequency band and as channel capacity allows) found on the https://isicsb.iowa.gov/policies website, effective as of January 1, 2018. ISICSB ICS217A versions will be represented by year and version number, for example, 20YY (year) - XX (version number).

This policy establishes the ICS217A document as the authoritative source for programming of conventional interoperable communication resources. Other documentation or sources, such as the NIFOG, should be consulted in the event of a channel not being listed in the ICS 217A. Programming practices should be consistent with those listed in the ICS 217A.

This Iowa Statewide minimum interoperability channel plan will improve multi-agency interoperability for communication by Land Mobile Radio (LMR) systems at times of a major incident and/or need.

The following radio channel names changed as of January 1, 2014 to the new nomenclature per APCO/NPSTC ANSI.104.3--2015 - Standard Channel Nomenclature for the Public Safety Interoperability Channels:

Policy Statement

Frequency	Old Name(s)[1]	New Name
154.2800 MHz	State Fire Aid, Fire Mutual Aid, Fire Aid, Aid	VFIRE21
155.4750 MHz	Law Aid, Mutual Aid Law, LE Aid, Aid	VLAW31
155.3400 MHz	State EMS, EMS Mutual Aid, EMS Aid, Aid	VMED28

In order to maintain consistency with current capabilities, agencies should discontinue use of old name(s) of these channels and begin using the updated names.

Users of the Iowa Statewide Interoperable Communications System (ISICS) should also have the minimum interoperable talkgroups referenced in ISICS Standards.

Additional information can be found from the Iowa Statewide Interoperable Communications Systems Board (ISICSB) at https://isicsb.iowa.gov/

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[1] List of Old Name(s) may not be all inclusive.

Policy Statement

State of Iowa

Policy Release Number: **2020 – 04**

Dates Posted for Public Comment: 02/12/2021
Date Adopted by ISICSB Meeting: 04/08/2021
Public Comment: None

Policy Statement adopting the conventional 700 MHz Air to Ground Channels for use in Iowa.

WHEREAS: The Iowa Statewide Interoperable Communications System Board (ISICSB) is established in Code of Iowa sections 80.28 and 80.29. ISICSB is charged to develop, implement and oversee policy, operations, and fiscal components of communications interoperability efforts at the state and local levels, and to coordinate similar efforts at the federal level, with the objective of overseeing operation of statewide integrated public safety systems, and establish, monitor, and maintain appropriate polices and protocols, expand, maintain and fund stakeholder education, public education, and official education programs to demonstrate value of short-term communications interoperability solutions, and;

WHEREAS: ISICSB supports federal and state law or regulations allowing government control and access for public safety, and public service, interoperability on interoperable frequencies and channels, using interoperable equipment on land mobile radio (LMR) and data sharing systems, and;

WHEREAS: ISICSB recognizes that use of the 700 MHz Air to Ground channels will be decided based on agency policies and practices, and;

WHEREAS: ISICSB is tasked with establishing, monitoring and maintaining policies and protocols that ensure interoperable communications function properly by following best practices and standards on the Iowa Statewide Interoperable Communications System (ISICS) and other conventional interoperability channels and; Now therefore;

IT IS ISICSB POLICY: **That the ISICSB adopts the 700 MHz Air to Ground channels as defined by FCC rules as is stated in FCC Rule 90.531(7)(i)-(iv).**

Channel Name	Channel Name
7AG58	7AG78
7AG58D	7AG78D
7AG60	7AG80
7AG60D	7AG80D
7AG67	7AG85
7AG67D	7AG85D
7AG68	7AG88
7AG68D	7AG88D

Policy Statement

IT IS FURTHER POLICY THAT:

These air to ground channels be listed on the ISICSB ICS-217A as required and should be programmed in radios within 18 months following this policy's adoption for agencies that have 700 MHz equipped subscriber radios.

IT IS FURTHER POLICY THAT:

7AG88D be utilized as the preferred channel for landing zone coordination if the air to ground channels are to be used. The rest of the air to ground channels shall be utilized on a first come, first serve basis. Further clarification on the use of these channels is outlined in ISICS Standard 1.5.2 for ISICS users.

IT IS FURTHER POLICY THAT:

These air to ground channels be listed on StatusBoard to maximize situational awareness of their use and resultant coordination among agencies. As agencies utilize these channels for planned or unplanned events, a reservation should be made in StatusBoard as soon as possible by the dispatcher with a comment on the location of use.

Policy Statement

State of Iowa

Policy Release Number: **2020 – 05A**

Date Initially Posted for Public Comment: April 10, 2020
Date Initially Adopted by ISICSB Meeting: May 14, 2020
Public Comment: None
Date Revised: 6/25/2021
Date Revision Posted for Public Comment: 2/12/2021
Date Revision Adopted by ISICSB Meeting: 6/10/2021

Policy Statement requiring frequency coordination by vendors or agencies deploying mobile LTE broadband vehicles.

WHEREAS: The Iowa Statewide Interoperable Communications System Board (ISICSB) is established in Code of Iowa sections 80.28 and 80.29. ISICSB is charged to develop, implement and oversee policy, operations, and fiscal components of communications interoperability efforts at the state and local levels, and to coordinate similar efforts at the federal level, with the objective of overseeing operation of statewide integrated public safety systems, and establish, monitor, and maintain appropriate polices and protocols, expand, maintain and fund stakeholder education, public education, and official education programs to demonstrate value of short-term communications interoperability solutions, and;

WHEREAS: ISICSB investigates data and video interoperability systems and applicable standards that support public safety and service such as FirstNet and other carriers, and;

WHEREAS: ISICSB is tasked with establishing, monitoring and maintaining policies and protocols that ensure interoperable communications function properly by following applicable best practices and standards related to the Iowa Statewide Interoperable Communications System (ISICS) and to some extent, other interoperable systems operating within Iowa, and;

WHEREAS: ISICSB supports the expansion of regional efforts to promote implementation of the ISICS, FirstNet and other carriers for planned and unplanned events, and;

WHEREAS: ISICSB recognizes the need to avoid duplicative requests and coordinate efforts while minimizing the potential for unintended consequences, and;

WHEREAS: ISICSB recognizes and understands that uncoordinated use of frequencies, absent continual coordination among system owners, can cause detrimental interference, desensitization of land mobile radio (LMR) subscriber units and other unintended and undesirable effects, and;

WHEREAS: ISICSB is aware of situations where local long term evolution (LTE) devices may desensitize susceptible mobile and portable LMR subscriber unit receivers. Additionally, ISICSB recognizes that there are currently mobile and portable LMR subscriber radios capable of transmitting and receiving broadband frequencies, and the expansion of these device offerings is likely. While there have been mobile LTE deployments in many other states that did not cause unintended or undesirable effects, due to limited deployments of mobile LTE units in Iowa there may be unknown or other unintended and undesirable effects, and; Now therefore;

Policy Statement

IT IS ISICSB POLICY: That any communication system provider that is deploying or plans to deploy a mobile long term evolution (LTE) broadband vehicle in the State of Iowa shall engage in pre-planning with the State of Iowa and its stakeholders to outline deployable assets, minimize potential for interference, and operational characteristics consistent with industry best practices for future deployments. This coordination should include periodic updates and the opportunity for the State of Iowa to identify areas of concern for potential interference to public safety LMR operations, and for mobile wireless providers to provide information about the types of deployable LTE vehicles commonly deployed and common deployment strategies. Such coordination should also address the timely exchange of accurate information between wireless providers and state and local LMR operators (including exchange and maintenance of contact information) and credentialing and restoration access policies for disaster or emergency affected areas is highly encouraged.

State of Iowa and its stakeholders shall protect wireless providers' sensitive information from bad actors and competitors consistent with Iowa Code 22.7(50)[1].

The local agency making the request should ensure that the Iowa Homeland Security and Emergency Management (HSEMD) State Duty Officer is informed of a request for LTE deployable asset(s) if it is an emergent short notice event.

The carrier deploying the mobile assets should contact the ISICS Network Operations Center and Statewide Interoperability Coordinator (SWIC) or other designee upon a deployment.

The SWIC or other designee shall then coordinate with the local public safety LMR system owner/operators in the area where such deployable will be stationed.

Such coordination should be consistent with the interference coordination and abatement requirements of the Federal Communications Commission, the practices contained in CTIA's [Wireless Network Resiliency Cooperative Framework – Best Practices for Enhancing Emergency and Disaster Preparedness and Restoration](#)[2]; and the responsibilities of the licensee of the local public safety agency's and/or State of Iowa's LMR system.

Mobile LTE deployments shall operate consistent with the FCC's requirements to not cause interference to existing lawfully operating fixed LMR network infrastructure. Additionally, carriers shall not deploy mobile LTE vehicles unless they comply with FCC's requirements to not cause interference to existing lawfully operating fixed LMR network infrastructure.

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[1] [Iowa Code 22.7](#)
[2] [Wireless Network Resiliency Cooperative Framework – Best Practices for Enhancing Emergency and Disaster Preparedness and Restoration](#)

Attachment 4: Standards adopted or updated in 2021

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

Standard Name:	**Statewide Pursuit Communications**		Date Created:		**4-18-2018**	
Standard Policy #	**1.4.0**	**Standard Title:**	**Interoperability Standards**		Status	**Draft**
Approval Authority:	**ISICSB**		Adopted:	**10-14-2021**	Reviewed:	**01-26-2021**

1. Purpose or Objective

The purpose of this standard is to establish the statewide interoperable guidelines and procedures for pursuit communications. For the purpose of this standard, "officer" refers to a peace officer as defined in Iowa Code 2020, Section 801.4.

2. Technical Background

Capabilities
The Iowa Statewide Interoperable Communications System Board (ISICSB) has established standards for use of the statewide interoperability talkgroups. The Iowa Statewide Interoperable Communications System (ISICS) is configured to allow for statewide, wide-area interoperable communications.

Constraints
Experience has shown that all agencies have used many different processes in the past. This standard strives for statewide consistency among all law enforcement agencies. Consistent communications guidelines among agencies during dynamic events, such as pursuits, which can involve multiple agencies and can span multiple jurisdictions are essential for the safety of officers and the general public.

Since a patch will not extend the coverage area of their home system, agency personnel need to have awareness of the coverage area of their home system if patches are used during a pursuit.

3. Operational Context

Statewide Pursuit Communications
State Standard 1.4.0
ISICSB Approval: 10-14-2021

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Pursuits are dynamic in nature and it is imperative to have a simplified communication strategy for mission success. It is also critical to alert near-by personnel of the potentially approaching pursuit.

It is understood that the officer initiating the pursuit may have limited ability to safely change the radio to a different channel/talkgroup. Therefore, it can be desirable and advantageous for the initially pursuing officer to be patched into a statewide tactical (TAC) talkgroup. Agencies initiating a pursuit have first rights to a patch into the statewide TAC being used for the pursuit. However, this does not preclude an agency from specifying that their officers will change directly to the statewide TAC being used for the pursuit if a patch will not be used. Switching in-field radios directly to a statewide TAC removes any geographic limitations of the agency's home system and local operational talkgroup coverage and is recommended when possible.

Other officers coming to assist should have time to safely change their radios to the statewide TAC used for the pursuit.

4. Recommended Protocol / Standard

All statewide interoperability talkgroups are required for public safety communication centers with full connectivity to ISICS, and statewide interoperability talkgroups are required for public safety communication centers using control stations to integrate with ISICS in a manner consistent with ISICS Standard 1.7.0 – Minimum Programming Requirements.

The agency that begins the pursuit has the first opportunity and right to patch into a statewide TAC. Any patches made by an agency that initiated a pursuit belong to the agency that initiated the pursuit and the patch. An agency may also opt not to patch into the statewide TAC being used for the pursuit and may opt instead to have their officers change immediately to a statewide TAC being used for the pursuit.

Officers assisting with the pursuit should change their radios to the statewide TAC being used for the pursuit. In some cases, an assisting agency may need to be patched into the pursuit if their subscriber radios are incapable of accessing the ISICS statewide interoperable TACs. This should generally only be done if there are few or no other patches currently active to preserve audio quality. For situations in which the in-field radios are incapable of accessing the ISICS statewide TAC being used for the pursuit, it may be preferable for the dispatcher to relay the pursuit on the local law channel(s)/talkgroup(s).

If the initial patch(es) are no longer needed or operationally effective, the patch(es) should be removed/broken/torn down. This would allow another agency to patch into the

pursuit if needed.

In the interest of officer safety, agencies participating in the pursuit should make efforts to ensure that non-pursuit related traffic does not go through the patch if one is used.

At the conclusion of the pursuit, all patches must be removed/broken/torn down.

5. Recommended Procedure

- Whenever a pursuit is initiated, the pursuing agency's emergency communication center (ECC) will assign the first available statewide interoperable TAC talkgroup in Table 1, and reserve it on StatusBoard. If the dispatcher is unable to make the StatusBoard reservation, another communication center with StatusBoard access may make the reservation on their behalf.

STATEWIDE TG				
Phantom TGID	**Alias**	**Comment**	**Region**	**Talkgroup**
Statewide				
2	IATAC2	Iowa Statewide Tactical 2	Statewide	Tactical
3	IATAC3	Iowa Statewide Tactical 3	Statewide	Tactical
4	IATAC4	Iowa Statewide Tactical 4	Statewide	Tactical
5	IATAC5	Iowa Statewide Tactical 5	Statewide	Tactical
6	IATAC6	Iowa Statewide Tactical 6	Statewide	Tactical

Table 1. List of statewide TAC talkgroups for pursuits.

- An announcement of the pursuit, including its location and direction of travel, should be made over the regional calling (CALL) talkgroup consistent with ISICS Standard 1.12.0. In some instances an additional announcement may be necessary if the pursuit crosses into a different region. If the dispatcher is unable to make the additional announcement on the adjacent regional CALL talkgroup, another communication center may make the announcement for them.
- The dispatcher should notify the pursuing officer of which statewide TAC will be used for the pursuit. When the initiating officer's current operable channel/talkgroup is patched to the assigned available statewide TAC talk group, the dispatcher will inform the officer of the patch. Lower priority, non-pursuit related traffic should be moved to another local channel/talkgroup or suspended to avoid interrupting or interfering with the higher priority pursuit transmissions.
- It is recommended that agencies that have the statewide interoperable TAC talkgroups in their mobile and/or portable subscriber radios should change directly to the statewide interoperable TAC talkgroup used for the pursuit when safe to do so.
- The pursuing agency's dispatcher may perform the patch and/or multi-select function so all audio is heard on the talkgroups as needed when a patch is necessary.

- If a patch is used, and the pursuit goes beyond the coverage area of the initially pursuing officer's home system, one of the following options should be considered within agency plans since the audio quality with the initially pursuing officer will decline and/or the officer will leave the coverage area of the home system:
    - The initially pursuing officer backs off the pursuit and either switches to the statewide TAC used for the pursuit or stops pursuing.
    - The initiating ECC coordinates with an ECC closest to the pursuit to hand off control of the pursuit and patch in VLAW31 or other conventional resources. In this instance, the initially pursuing officer will have to change to the statewide TAC used for the pursuit or VLAW31.
- Further procedures will be outlined as needed.

6. **Management**

The ISICSB Training and Exercise Committee will ensure that a training module is created for this ISICS Standard. The Operations Committee shall review this standard annually and as deemed necessary to ensure efficacy.

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

Standard Name:	ISICS Regional & Statewide Interoperability Talkgroups		Date Created:		**04-17-2018**	
Standard Policy #	**1.5.0**	**Section Title:**	**Interoperability Standards**		Status	ADOPTED
Approval Authority:	**ISICSB**		Adopted:	**03-11-2021**	Reviewed:	2/23/2021

1. Purpose or Objective

The purpose of this standard is to establish policy and procedures for use of ISICS regional and statewide interoperable talkgroups in all user radios. The regional and statewide interoperability talkgroups are a resource intended to facilitate communications among and between different agencies and service branches which need to coordinate their operations during major incidents, pre-planned events, and task force operations. These resources are not intended for localized day-to-day interoperability when a more appropriate resource may be available.

This policy will provide standardized incident response radio communications capabilities for all service branches and, most importantly, will support the redeployment of interoperable resources throughout the state. This policy will provide the radio communications structure necessary to enable effective situational awareness, command and control, and resource coordination in support of the incident command and management structure specified under the National Incident Management System (NIMS). This policy will also serve to minimize usage conflicts when regional and statewide interoperability talkgroups are needed for multiple incidents.

2. Technical Background

Capabilities

ISICS regional and statewide interoperability talkgroups provide a high level of interoperability for public safety and public service users respectively. Other effective levels of interoperability include switching to shared conventional frequencies, dispatch console patches, deployable

Regional and Statewide Interoperability Talkgroups
State Standard 1.5.0
ISICSB Approval: 03-11-2021

portable gateways, and radio caches (swap radios).

Constraints
The availability of and the use of the regional and statewide interoperability talkgroups must be easily understood by radio user personnel, who are primarily concerned with their mission and not with the operation of complex radios under stressful conditions. Standardization of capabilities will provide responding agencies with an assurance that they will have interoperable communications with any other agency with whom they need to work.

3. Operational Context

Universal access to the six (6) non-encrypted talkgroups for each region and statewide zone by all end-users and communication centers. Encryption is supported by the ISICS platform, however, implementation and use is under consideration. Any future encryption on interoperable talkgroups will be Advanced Encryption Standard (AES) 256. APCO Project 25 (P25) 700 / 800 MHz AES 256 equipped radios and communication centers guarantees fully compatible, interoperable communications among agencies and service branches for major incidents, pre- planned events, and task force operations.

The most current list of ISICS talkgroups is available at here. It is recommended that ISICS users get any updated talkgroups programmed into their subscriber radios as soon as possible or within 18 months of those talkgroups being added or adopted to that list.

4. Standardized Policy

ISICS INTEROPERABILITY TALKGROUPS

Talkgroup Requirements	For Whom?
Required	All ISICS Users – All Radios – All communication centers (All regional and statewide interoperable talkgroups)
Recommended	N/A
Optional	Site Access - Sub Regional
Not Allowed	N/A
Site Access - Statewide	System Wide – All Sites
Site Access - Regional	Regional Sites + One

Type of Patch	Approval Needed	To Talk Groups
Temporary/Soft Patch	No	As Needed
Permanent Patch	Yes	

A temporary/soft patch is defined as something a dispatcher can establish on-the-fly via the console user interface. A permanent patch is defined as a connection between resources that cannot be easily built or torn down without the assistance of a system technician or

Regional and Statewide Interoperability Talkgroups
State Standard 1.5.0
ISICSB Approval: 03-11-2021

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engineer.

Primary Intended Use
ISICS regional and statewide interoperability talkgroups, when feasible, should be considered as the primary resource for incidents involving joint response from multiple agencies and/or service branches that operate in different service areas, jurisdictions or levels of government. Some smaller or more localized incidents may warrant the use of a regional or statewide interoperability talkgroup if no other common or interoperable resources are available at the time of the incident.

Incident Scope and Geographic Area
The regional and statewide interoperability talkgroups are available for use in incidents anywhere ISICS provides geographic coverage, regardless of incident size or scale. Interoperability incidents may be localized or dispersed in area. Participating incident personnel and resources may be localized, regional, statewide, or national. Incidents may be pre-planned or emergent in nature.

Non-intended Use
The regional and/or statewide interoperable talkgroups are not to be used for daily routine operations within a single agency.

Priorities for Use and Multiple Incidents
In the event that multiple interoperability incidents occur simultaneously, exhausting the regional and statewide interoperability talkgroups, assignment of regional and statewide interoperability talkgroups in incident radio communications plans will be prioritized for: (1) multi-agency incidents, and (2) those incidents involving resources spanning multiple regions. Secondary use and localized or single region multi-agency incidents initially assigned to statewide interoperability talkgroups should be reassigned to regional talkgroups if it can be done safely. This reassignment will be coordinated between the affected incident commanders and dispatch centers controlling the incidents.

Console Resource Requirements and Patching
Integrated ISICS dispatch consoles shall have the regional and statewide interoperability talkgroups in the console configuration available for patching. Regional and statewide interoperability talkgroups should not be patched to other regional and statewide interoperability talkgroups. In order to meet the communications needs for an event, the regional and statewide interoperability talkgroups may be patched to:

- Conventional radio frequency (RF) resources, such as VHF, UHF, etc.
- Private agency talkgroups, such as dispatch mains, tactical talkgroups, pools, etc.
- Local/locally shared tactical talkgroups (TACs) or channels.

Assignment Tracking
Use of the NIMS/ ICS-205 Incident Radio Communications Plan format is highly recommended to assist with assignment tracking for pre-planned incidents, incidents utilizing more than one of the statewide talkgroups, and for incidents of long duration. It is also highly recommended and expected that the listed resources on the ICS-205 be reserved on StatusBoard to help prevent conflicts with other agencies who may be looking to utilize interoperable resources consistent with ISICS Standard Regional and Statewide Interoperability Talkgroups
State Standard 1.5.0
ISICSB Approval: 03-11-2021

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It is also highly recommended and expected that agencies utilize the StatusBoard program to assist tracking for emergent, no-notice events consistent with ISICS Standard 1.17.00 – StatusBoard.

ISICS Standard 1.17.00 – StatusBoard allows for agencies to request that agencies make requests on StatusBoard on their behalf. It is recommended that public safety communications centers that are unable for any reason to make any reservations of interoperable resources on StatusBoard request that another agency makes it on their behalf.

NOTE: Coordination of interoperable resources is vital to prevent another agency's personnel from interrupting vital communications on that interoperable resource.

Multi-Group Prohibition
Regional and statewide interoperability talkgroups shall not be part of any announcement or other pre-programmed multi-group. This prohibition does not apply to preset Multi/Simul-Select functions which are set up at dispatch consoles which are allowable.

NOTE: Multi/Simul-Selects that include the regional calling (CALL) talkgroups should be limited to broadcasts and/or announcements only.

5. Standardized Procedure

Notification
If the StatusBoard is unavailable, contact a communication center with access to the StatusBoard to reserve a talkgroup.

Any patches built or created during an event should be announced as soon as possible on the resources being patched together once it is established, and also include which agency is making the patch.

Order of Use
The usage of regional and statewide interoperability talkgroups for Preplanned Non- Emergency interoperability events should use the highest numbered talkgroup and descend.

The usage of regional and statewide interoperability talkgroups for Unplanned Emergency Incidents use the lowest numbered talkgroup and ascend.

Any use of the interoperable talkgroups should be noted on StatusBoard.

Training Exercises
Preplanned use of regional and statewide interoperability talkgroups for training should be encouraged. Any use of an interoperable talkgroup for training purposes should be noted on StatusBoard.

Regional and Statewide Interoperability Talkgroups
State Standard 1.5.0
ISICSB Approval: 03-11-2021

Unit Identification
When operating on the regional and statewide interoperability talkgroups, users should initially identify using plain English as described in ISICS Standard 1.3.0.

Use of 10-Codes and Acronyms
The use of 10-codes, signals, unique acronyms, and other codes should not be used on the regional and statewide interoperability talkgroups, because there is no standardized set of codes. Plain language should be used in all cases.

When a local operable channel/talkgroup is patched into a regional or statewide interoperable tactical talkgroup, local agencies should use plain English as described in ISICS Standard 1.3.0 to ensure that all participating agencies receive clear communication of the events.

Termination of Use
At the end of the event, the initiating dispatch center will remove any patches that were placed for the event, if any, and clear the StatusBoard so other communications centers will know this resource is available for use. Any patches that are removed should be announced on the talkgroup being used for that patch prior to breaking down the patch in order to allow an opportunity for objection from in-field personnel who may still be utilizing the patched resources.

6. **Management**

Communications Center Managers and Supervisors for agencies on the ISICS platform, Incident Commanders, Telecommunicators, and Communications Unit Leaders (COML) shall ensure that the policy and procedure for usage and assignment of the regional and statewide interoperability talkgroups is followed and shall receive initial training and periodic refresher training on the use of this procedure. Online training resources are available at https://isicsb.iowa.gov/education-training or by contacting the statewide interoperability coordinator or ISICSB Training and Education Committee Chair/Vice Chair.

The ISICSB, its committees and ISICS System Administrator are responsible for the maintenance of ISICS regional and statewide interoperable talkgroups. Any changes to those talkgroups will be done in accordance with ISICS Standard 2.15.0 - Change Management and disseminated to stakeholders consistent with ISICS Standard 4.8.0 – Notification for System Changes and Outages.

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

Standard Name:	Air Ambulance Scene Flight Landing Zone Coordination		Date Created:	**07-04-2018**	
Standard Policy #	**1.5.2**	**Section Title:**	**Interoperability Standards**	Status	Approved
Approval Authority:	**ISICSB**		Adopted:	**4/08/2021**	Reviewed: 12/14/2020

1. Purpose or Objective

The purpose of this standard is to specify the use of the ISICS statewide and regional interoperability talkgroups for establishing and maintaining scene flight air ambulance landing zones.

2. Technical Background

Capabilities

The Iowa Statewide Interoperable Communications System Board (ISICSB) has established a standard for use of the ISICS statewide and regional interoperability talkgroups in ISICS Standard 1.5.0. This standard encourages interoperable communications among first responders and establishes common ISICS statewide and regional interoperability talkgroups to facilitate interoperability.

The ISICSB has also chosen to adopt the 700 MHz Air to Ground Channels via policy 2021-04.

Constraints

Experience has shown that agencies have used many different processes in the past. Through best practices this standard strives for consistency among agencies that utilize ISICS.

Coverage limitations and/or constraints of various resources will have to be accounted for in any interoperable scenario.

Air Ambulance Scene Flight Landing Zone Coordination
State Standard 1.5.2
ISICSB Approval: 4/8/2021

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3. Operational Context

This standard works to facilitate successful air-to-ground communications in scene flight landing zones. Communications with aircraft on a trunked network can sometimes be problematic if the aircraft radio does not roam to an appropriate site or if there are other circumstances affecting air-to-ground communication. While the use of ISICS interoperable talkgroups can be highly effective in situations with adequate coverage, simplex (direct radio-to-radio) is the safest method of communication for landing an aircraft.

This standard does not preclude the use of the ISICS regional and statewide interoperable talkgroups during the flight path of the air ambulance. Agencies may find it advantageous to utilize the ISICS regional or statewide interoperable tactical (TAC) talkgroups to establish long-range communications with the air ambulance. However, for the process of landing the air ambulance, simplex (direct radio-to-radio) may need to be considered if coverage is not sufficient. Any use of the ISICS regional and statewide interoperability talkgroups should be focused around using as local of a resource as possible so it is geographically appropriate. A statewide interoperable talkgroup should only be used if no other regional interoperable talkgroups are available or there is some other extenuating circumstance associated with the event. As an example, if the air ambulance will be landing in the Homeland Security Region that it lifts off from, a regional interoperable TAC is the most appropriate geographical talkgroup. In addition, if the air ambulance will not switch to an ISICS interoperable talkgroup until it is in the Homeland Security Region of the landing, a regional interoperability TAC talkgroup would be most geographically appropriate.

Use of ISICS regional and statewide calling (CALL) talkgroups should be limited to only initial contact and coordination of a resource to use for landing zone operations. As soon as a geographically appropriate ISICS tactical (TAC) talkgroup or conventional resource is identified, all landing zone traffic should be switched to that tactical resource.

NOTE: Continued use of a calling (CALL) talkgroup may interfere with communication with the aircraft or prevent another public safety communications such as important announcements or broadcasts, other personnel from calling for assistance, and other instances where immediate contact must be established.

4. Recommended Protocol/ Standard

Coordination regarding talkgroup usage is vital to ensure successful communications. An authority having jurisdiction (i.e. public safety communication center, in-field public safety personnel or incident commander) should be in contact with any aircraft and coordinate with them to select the most geographically appropriate interoperability channel and/or ISICS regional or statewide tactical (TAC) interoperable talkgroup if possible for landing the aircraft. StatusBoard should be updated to reflect what is being used. With respect to the use of an ISICS interoperable talkgroup, the most geographically appropriate interoperable talkgroup in most situations will be a regional tactical (TAC) talkgroup. A statewide interoperable talkgroup should

only be used if no other regional interoperable talkgroups are available or there is some other extenuating circumstance associated with the event.

Though not preferred, in some situations, if the ISICS Platform will be used for a landing, on-scene personnel should be sure that there is sufficient coverage for the air ambulance to maintain contact during the landing. If an ISICS interoperable tactical (TAC) talkgroup will be utilized, it is recommended, depending on the scene, to assign a dedicated interoperable tactical talkgroup for the landing so the air ambulance can have a clear talkpath.

The list below outlines resources available for landing zone coordination. This assumes that specific resources are programmed into radios, coverage is sufficient and coordination has taken place among the communications center, air ambulance and in-field ground personnel.

- 700 MHz air-to-ground channels – highest probability of successful communication during landing zone coordination;
- First available geographically appropriate ISICS regional or statewide tactical (TAC) interoperable talkgroup if there is sufficient coverage. In most cases, this will be a regional interoperable TAC;
- Other available resources outlined in the ISICSB ICS-217A. Some channels such as VMED28 or VCALL10 should be given some preference in the event an ISICS interoperable talkgroup and the 700 MHz air-to-ground channels cannot be utilized.

5. Recommended Procedure

It is imperative to allow for communication between the responding aircraft and the designated person (law enforcement, fire personnel, first responder, etc.) on the ground that will be coordinating the landing zone (LZ) consistent with any ICS structures in place. The exact location of the LZ, any hazards, wind direction, and any other pertinent information needs to be communicated to the aircraft to allow for a safe scene landing. If it becomes necessary to abort the landing, the individual on the ground will need to be able to quickly communicate this information to the aircraft.

For Aircraft that are equipped with ISICS radios:

If the aircraft and personnel on scene coordinating the landing both have ISICS statewide and regional interoperability talkgroups, and they wish to utilize an ISICS regional and/or statewide interoperable tactical (TAC) talkgroup, they will use the geographically appropriate ISICS statewide or regional interoperability tactical (TAC) talkgroup that has been assigned to them by the appropriate, controlling public safety communication center, in-field public safety personnel or incident commander in coordination with the air ambulance. A statewide interoperable talkgroup should only be used if no other regional interoperable talkgroups are available or there is some other extenuating circumstance associated with the event. StatusBoard should be consulted to ensure an interoperable talkgroup is available. The dispatcher should note the talkgroup used via StatusBoard.

During the landing of the aircraft, personnel on scene should change to a simplex (direct radio-to-radio) during the landing if coverage is not sufficient.

In the event of a technical constraint, the incident may be switched over to other talkgroups or channels as appropriate.

For Aircraft that are NOT equipped with ISICS radios:

If the aircraft does not have ISICS radios, but personnel on scene coordinating the landing do, a simplex (radio-to-radio) channel would offer the highest probability of establishing communication if the radios had the simplex channel programmed into each set of agency radios. If this is not possible, the controlling, primary public safety communications center may assign a geographically appropriate ISICS regional or statewide interoperability tactical (TAC) talkgroup and patch the responding air ambulance operating to an appropriate channel outlined in the ISICSB ICS-217A in coordination with the air ambulance. A statewide interoperable talkgroup should only be used if no other regional interoperable talkgroups are available or there is some other extenuating circumstance associated with the event. Note: Public safety communications centers will patch to conventional resources according to their local protocol.

Note: An announcement on the patched resources will be made at the time of the patch origin AND just prior to the patch removal.

Any talkgroups or conventional resources used should be noted on StatusBoard.

For In-Field Personnel that are NOT equipped with ISICS radios:

If the in-field personnel do not have ISICS radios, conventional resources such as the 700 MHz Air-to-Ground or other interoperability channels as found in the ISICSB ICS-217A may need to be utilized for landing in coordination with the air ambulance.

In some instances the controlling, primary public safety communications center may assign a geographically appropriate ISICS regional or statewide tactical (TAC) interoperability talkgroup and patch the responding air ambulance operating on the regional or statewide interoperable talkgroup to local operational channel or other interoperable resource during the flight in coordination with the air ambulance. A statewide interoperable talkgroup should only be used if no other regional interoperable talkgroups are available or there is some other extenuating circumstance associated with the event. Note: Public safety communications centers will patch to conventional resources according to their local protocol.

Any talkgroups or conventional resources used should be noted on StatusBoard.

Order of Use of geographically appropriate ISICS statewide and regional interoperability tactical talkgroups (per ISICS Standard 1.5.0):

Air Ambulance Scene Flight Landing Zone Coordination
State Standard 1.5.2
ISICSB Approval: 4/8/2021

If a geographically appropriate ISICS regional or statewide interoperable tactical (TAC) talkgroup will be utilized, the use of ISICS statewide and regional interoperability tactical (TAC) talkgroups for PREPLANNED NON-EMERGENCY interoperability events involving LZ coordination use should be consistent with ISICS Standard 1.5.0.

The use of ISICS statewide and regional interoperability tactical (TAC) talkgroups for UNPLANNED EMERGENCY incidents involving LZ coordination should be consistent with ISICS Standard 1.5.0. A statewide interoperable talkgroup should only be used if no other regional interoperable talkgroups are available or there is some other extenuating circumstance associated with the event.

Any talkgroups or conventional resources used should be noted on StatusBoard.

6. Management

Nothing in this standard shall be construed as a limitation of use of the geographically appropriate ISICS statewide and regional tactical (TAC) interoperability talkgroups for incidents other than air ambulance scene flight and landing zone coordination.

Nothing in this standard shall be construed as a limitation of use of any appropriately assigned conventional resource for an air ambulance emergency landing zone coordination by non-ISICS users.

For Management, see ISICS Standard 1.5.0 (*ISICS Regional & Statewide Interoperability Talkgroups*) for additional information.

This standard will be reviewed periodically for efficacy by the ISICSB and its appropriate committees and/or working groups.

Standard Name:	**Cross Spectrum Interoperability**		Date Created:		**06-13-2018**	
Standard Policy #	**1.10.0**	**Section Title:**	**Interoperability Standards**		Status	**ADOPTED**
Approval Authority:	**ISICSB**		Adopted:	**1/14/2021**	Reviewed	12/14/2020

1. Purpose or Objective

The purpose of this standard is to establish procedures for use and patching of VHF/UHF/700/800 (V/U/7/8) MHz interoperability resources. Conventional resources (CR) include local operability resources and interoperability channels in this standard.

2. Technical Background

Capabilities

Conventional resources may include:
- Nonfederal national V/U/7/8 interoperability channels.
    - These are derived from FCC rules, ANSI standards and NTIA rules. These channels can be found in the NIFOG.
- Statewide V/U/7/8 interoperability channels.
    - LEA, Iowa Channel, Point-to-Point and other interoperability channels that are unique to Iowa.
    - Local V/U/7/8 interoperability channels.

Constraints

- Conventional radio users should have the capability to communicate on conventional V/U/7/8 radio channels—e.g., VCALL10, VLAW31, 8CALL90 or 8TAC91—as long as they are approved to transmit on those channels.
- An ISICS talkgroup should only be in one patch at a time.
- A patch between an ISICS talkgroup and a CR will result in the CR being able to reach ISICS users. However, users should not expect the footprint of the CR to expand.
- The coverage area when patching a simplex channel (e.g. VLAW31, UTAC42D, 7TAC52D, 8TAC92D) will have limited range when compared to a repeated

Cross Spectrum Interoperability
State Standard 1.10.0
ISICSB Approval: APPROVED

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conventional channel. Users of simplex channels and ISICS talkgroups may have to accept interference from other users on that simplex channel that are within range of their radios.

3. Operational Context

These communications pathways may be used for day-to-day coordination, urgent or emergency mutual aid situations, task forces, tactical teams, and for other purposes. While existing conventional subscriber radios can be used, additional equipment may be required for patches.

Patches between CR national interoperability resources, legacy state resources and the corresponding ISICS regional and statewide interoperability talkgroups should only be used when there is a need for communications between personnel that are on conventional radios and personnel that are users of the ISICS Platform. Use must be in compliance with the rules governing the selected frequency on the national mutual aid resource and be authorized by dispatch, the Incident Command (IC) or Unified Command (UC) structure at the scene of the incident or planned event.

A CR national interoperability resource and an associated patched ISICS talkgroup may be used for short-term high intensity events and for long-term extraordinary events.

4. Recommended Protocol/ Standard

Patches are generally allowed between ISICS talkgroups and CR. A soft patch is typically an ad-hoc patch done through a console that is temporary. A hard patch is typically fixed through hardware and is typically intended to be perpetual.   Hard patches are discouraged for interoperability talk groups. Audio gateway devices will pass audio from the CR to ISICS talkgroups and vise-versa and may be field deployed or in a public safety communications center. There may be instances where a hard patch is necessary on a local level. The System Administrator should be consulted before any hard patches are created.

Use of any interoperable resources should be noted on StatusBoard.

5. Recommended Procedure

The national interoperability resources and legacy state resources primarily provide interoperability for a conventional or disparate radio system user that cannot access ISICS trunked system resources. Conventional radio users may be moved onto a separate radio channel for a specific incident.

Once an incident using an ISICS regional or statewide interoperability talkgroup or conventional interoperability channel ends, the local dispatcher should also release this resource on the ISICS StatusBoard Application if available.

6. Management

Cross Spectrum Interoperability
State Standard 1.10.0
ISICSB Approval: APPROVED

The development and management of statewide rules for use of statewide interoperability channels are the responsibility of the Iowa Statewide Interoperable Communications System Board (ISICSB).

The System Administrator working with the ISICSB is responsible for managing this standard.

The agencies on the ISICS Platform and CR shall ensure that there is a procedure for use of a patch between CR and the ISICS regional and/or statewide interoperable talkgroups or local resource in the dispatch center for which they are responsible.

System users should receive initial and continuing training on the use of this procedure as part of their regular or routine training.

Cross Spectrum Interoperability
State Standard 1.10.0
ISICSB Approval: APPROVED

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

Standard Name:	**Agency Maintenance**		Date Created:		**11-03-2017**	
Standard Policy #	**4.2.0**	**Section Title:**	**Maintenance**		Status	ADOPTED
Approval Authority:	**ISICSB**		Adopted:	**2/11/21**	Reviewed:	1/26/2021

1. Purpose or Objective

The purpose of this standard is to define the maintenance responsibilities and roles of the ISICS system and sub-system administrators. The maintenance levels for the ISICS system and subsystems must be set to a standard to protect the overall functionality and integrity of the system for all users. A proper maintenance standard will also protect the warranties of the system and subsystems.

Proper maintenance practices will also ensure that in-field subscriber radios function as expected. Maintenance with respect to end user subscriber radios refers to repairs, updates to firmware, alignment of the transceiver and other preventative measures to ensure functionality.

2. Technical Background

Capabilities

Standards in maintenance protect the integrity of the system and protect the warranties of the sites and equipment. Coordinated maintenance is simplified by having one set of maintenance standards, especially at shared sites.

Maintenance of subscriber radios ensures proper functionality and use of system features.

Constraints

Improper maintenance not only poses a risk to the operational functionality of the ISICS system and subsystems, but it could also risk equipment warranties and potentially cause confusion at shared sites.

Agency Maintenance
State Standard 4.2.0
ISICSB Approval: APPROVED

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For the purpose of this standard in reference to subscriber radios, maintenance does not reference programming unless explicitly mentioned.

3. Operational Context

Each site and each piece of equipment shall be considered "owned" by one of the appropriate owners of the system or sub-system. The individual owners will then be responsible for the maintenance of the sites and equipment they own. Agreements between the owners and/or maintenance contractors are at each agency's discretion, but the owner is ultimately responsible for their portion of the system.

Maintenance of the system and subsystems falls under one of two categories:
- Day-to-day routine: For general day-to-day maintenance activities
- Emergency and urgent repairs: Serious system and subsystem impairment which may cause an unacceptable loss of service to the users of the system

4. Recommended Protocol/ Standard

N/A

5. Recommended Procedure

A. System and/or Infrastructure
   Any broad maintenance issues that affect multiple owner agencies should be discussed and resolved among System and Sub-System Administrators.

   For day-to-day maintenance, individual agencies or contractors will maintain equipment they are responsible for.

   For emergency and urgent repairs, the owning agency may request and expect reasonable cooperation in support resources (i.e., support staff and/or parts) from other System Administrators to restore equipment or the system to normal operation.

   Repair of any equipment not owned by an agency requires notification and consent of the responsible System and/or Sub-System Administrator of the owning agency.

   System and/or Subsystem Administrators/Owners or their contracted service providers will be responsible for:

   - Providing primary and alternate contact information for local ISICS support
   - Notifying the responsible agency of equipment and location issues that require attention.
   - Notification of impacting maintenance that will be taking place.
   - Managing the inventory of the equipment that they are responsible for, as defined by their internal department inventory processes.
   - Making sure equipment at shared sites is clearly labeled to indicate agency ownership.

Agency Maintenance
State Standard 4.2.0
ISICSB Approval: APPROVED

- Managing the equipment maintenance logs.
- Posting Federal Aviation Administration (FAA) and Federal Communications Commission (FCC) licenses or reference to the location of the licenses at the sites.
- Posting service technician information at the sites.
- Keeping routine equipment maintenance logs at the sites.

The Statewide System Administrator will be responsible for maintaining a system event log.

- All maintenance work being scheduled that may affect the system and/or subsystem's performance shall be preceded by reasonable notification to the other Local System Administrators.
- The Sub-System Administrators shall ensure that all technicians assigned to work on system equipment have successfully completed appropriate training on that equipment. The Statewide System Administrator may review training records as needed. Training requirements are referenced in the training section of the standards manual.
- Following a preventive maintenance plan, as defined in the Preventative Maintenance section of the standards manual.
- Each Sub-System Administrator will maintain a list of qualifications and contact information of their technical staff.
- Each System and Sub-System Administrator will maintain a list of the system and subsystem spare parts / equipment they have available. This provides other System and other Sub-System Administrators the option to request use of this spare equipment. The borrowing agency is responsible for returning the original spare parts / equipment, or, at the lending agency's discretion, the successfully tested replacement component.
- Any infrastructure hardware and software upgrades or changes that may have an impact on the system will need reasonable discussion and approval by the Statewide System Administrator.

The Sub-System Administrator for the impaired system and subsystem will determine how critical an equipment failure is operationally, determine the appropriate action, and escalate or de-escalate the repair process as needed. For example, a single failed channel on a main simulcast cell would not be a critical failure, but a simulcast cell failure would affect the other sites in the simulcast and many users.

B. In-field Subscriber Radios

Routine maintenance is critical to ensure subscriber radios are properly functioning and aligned to transmit and receive. Each agency is responsible for the maintenance of their equipment and developing a maintenance schedule that fits their needs. Generally, manufacturers will produce guidelines on maintaining their subscriber radios.

It is recommended that any necessary programming updates be completed at the time of routine, preventative maintenance on in-field subscriber radios.

6. Management

Agency Maintenance
State Standard 4.2.0
ISICSB Approval: APPROVED

The Sub-System Administrators are responsible for managing maintenance of the equipment and sites they are responsible for, as well as managing emergency repair situations.

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

Standard Name:	**Notification for System Changes and Outages**		Date Created:		12/20/2018	
Standard Policy #	**4.8.0**	Section Title:	**Maintenance**		Status	ADOPTED
Approval Authority:	**ISICSB**		Adopted:	**1/14/2021**	Reviewed:	12/14/2020

1. Purpose or Objective

The purpose of this standard is to define the policy and procedure for notifications of system changes and outages that can have an impact to users of the ISICS Platform.

2. Technical Background

- **Capabilities**

Notification of planned and unplanned events that may impact normal function of the system, such as maintenance activities or outages, will allow Subsystem Administrators and their subscribers to prepare and react as needed. Examples of such events are:

- Agency transitions
- Radio Frequency (RF) site commission or decommission
- Changes to talkgroups and resources
- System upgrades and version changes
- Feature changes
- Unplanned downtime
- Equipment failure

- **Constraints**

With the current size of the system and amount of equipment involved, system events are common. Most of these events do not affect users of the system, due to the redundant nature of the design.

If the notification process is unnecessarily lengthy, it will be a barrier to performing scheduled maintenance activities and may hinder emergency repair efforts. However, unnecessary disruption

in the operational use of the system due to a lack of notification will create confusion for system users.

In unplanned outages, it is difficult to know long it will take to resolve an issue, and the bulk of time elapsed in resolving an issue is spent identifying its root cause.

E-mail notification is not a "guaranteed" level of communication.

3. Operational Context

Subsystem Administrators will be notified of outage and change activities that may impact their represented subscribers of the system once they opt-in to these notifications. It is highly recommended that Subsystem Administrators opt-in to receive these notifications and designate an alternate by contacting the Statewide System Administrator. The primary means of sending notifications will be through e-mail lists, Status Board, IOWA/NCIC System and, if necessary, a phone call.

The ISICSB and Statewide System Administrator will maintain two separate lists for this purpose:
> 1. ISICS Platform Notification list
> 2. ISICS System Administration list

It is also recommended that at least two individuals per agency register for each service by contacting the Statewide System Administrator.

4. Recommended Protocol/ Standard

Minimum programming requirements in ISICS Standard 1.7.0 shall be adhered to. If a system change affects talkgroups that would be included in ISICS Standard 1.7.0, the message shall be sent to all subsystem administrators and other stakeholders. StatusBoard shall be updated as soon as possible.

Effort should be made to clearly communicate any system changes to affected subsystem administrators.

5. Recommended Procedure

For planned system outages, a reasonable advance notice will be sent to the ISICS Administration list. For unplanned outages, a notice will be sent to the distribution list and posted on the "Site Status" tab in StatusBoard as soon as is practical.

Notification content shall include, at a minimum, the following information:

- **Time:** When work is scheduled to occur, or when the issue started
- **Place:** Where the maintenance activity, or outage, is occurring
- **Description:** A short description of the event in plain English

- **Impact:** A short description of which functionalities are impacted by the event
- **Contact:** Full contact info for the message sender, such as an email signature

For extended outages, update notifications will be sent upon any significant change of status or discovery of additional information affecting operation of the system. For system administrative changes that may affect subscriber operation, a message will be sent to the ISICS System Administration list.

Administrative message content shall include, at a minimum, the following information:

- **Description:** A short description of the change in plain English
- **Impact:** A short description of which functionalities are impacted by the change
- **Contact:** Full contact info for the message sender, such as an email signature

These notifications will also be posted on the "Site Status" tab in StatusBoard.

SYS-TECH talkgroups shall be used as a communications resource for maintenance activities as described in Standard 1.14.0, "SYS-TECH Talkgroup."

6. Management

Additional costs associated with maintaining any notification services, such as costs associated with e-mail lists, will be paid by the ISICSB upon majority voting approval by its members.

ISICSB and the Statewide System Administrator will maintain opt-in mailing lists for the purpose of this standard.

This standard shall be maintained be the ISICSB.

Attachment 5: 2020 SCIP (Adopted December 12, 2019)

IOWA
STATEWIDE COMMUNICATION
INTEROPERABILITY PLAN
2020 - 2023

NOVEMBER 2019

DRAFT – INTERNAL WORKING DOCUMENT

LETTER FROM THE STATEWIDE INTEROPERABILITY COORDINATOR

Greetings,

I am pleased to provide to you the 2020 Iowa Statewide Communication Interoperability Plan (SCIP). This SCIP represents Iowa's continuous commitment to improving emergency communications interoperability and supporting our public safety practitioners throughout the state. Additionally, this is required by Department of Homeland Security (DHS) grant guidelines.

Members of the Iowa Statewide Interoperable Communications System Board (ISICSB) and public safety stakeholders from various disciplines, agencies, and jurisdictions within the State engaged in several webinars to review and revise the 2017-2020 SCIP. This collaborative effort culminated with an in-person SCIP Workshop on September 10-11, 2019. Participants of this effort worked to ensure the 2020 Enhanced SCIP includes governance, technology, and funding goals and objectives that support our state in planning for new technologies and navigating the ever-changing emergency communications ecosystem. These SCIP goals and objectives are intended to support the dissemination of best practices across Iowa and can be amended as relevant stakeholders see fit.

As we continue efforts to enhance interoperability, we must remain dedicated to improving our ability to communicate among disciplines and across jurisdictional boundaries. With help from public safety practitioners statewide, we will work to achieve the goals set forth in this SCIP and become a nationwide model for statewide interoperability.

Sincerely,

Chris Maiers
Statewide Interoperability Coordinator
Iowa Statewide Interoperable Communications System Board

TABLE OF CONTENTS

INTRODUCTION

Modernization of emergency communications components is facilitating the flow of information and communications among government agencies, the private sector, and the public, and in some cases, with entities from neighboring countries.

Vision

All emergency response entities in and around Iowa can access interoperable communications systems.

The deployment of statewide interoperable land mobile radio (LMR) networks such as the Iowa Statewide Interoperable Communications System (ISICS) FirstNet, wireless broadband networks, and applications will greatly influence incident operations as they become more prevalent and are more widely adopted by emergency responders. In addition to statewide radio networks and FirstNet, there are also efforts to update the Nation's 9-1-1 infrastructure to Next Generation 9-1-1 (NG9-1-1). The deployment of a nationwide public alerting system that uses traditional media, such as broadcast and cable, as well as Internet Protocol-based technologies to transmit alerts to mobile phones and other devices are nationwide efforts to update emergency communications infrastructure. When considering and preparing for these changes to the emergency communications landscape, Iowa has developed the Enhanced SCIP using a more holistic approach to strategic planning that incorporates the entire emergency communications ecosystem and the Interoperability Continuum.

The broader emergency communications ecosystem consists of many inter-related components and functions, including communications for incident response operations, notifications and alerts and warnings, requests for assistance and reporting, and public information exchange. The primary functions of the emergency communications ecosystem are depicted in the 2019 National Emergency Communications Plan.[1]

Mission

In accordance with the code of Iowa and established rules, develop and provide standardized interoperable public safety communications through existing governance structures to enhance and achieve the highest level of interoperable emergency communications statewide.

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[1] 2019 National Emergency Communications Plan

The Interoperability Continuum was developed by SAFECOM and serves as a framework to address challenges and continue improving operable/interoperable and emergency communications.[2] It is designed to assist emergency response agencies and policy makers with planning and implementing interoperability solutions for voice and data communications. In an effort to align the lanes of the continuum to Iowa's committees and their work, an updated interoperability continuum shown in Figure 1 was developed to include the Finance and Security lanes during the previous 2017 SCIP workshop. These new lanes include milestones to guide progress towards improving interoperability.
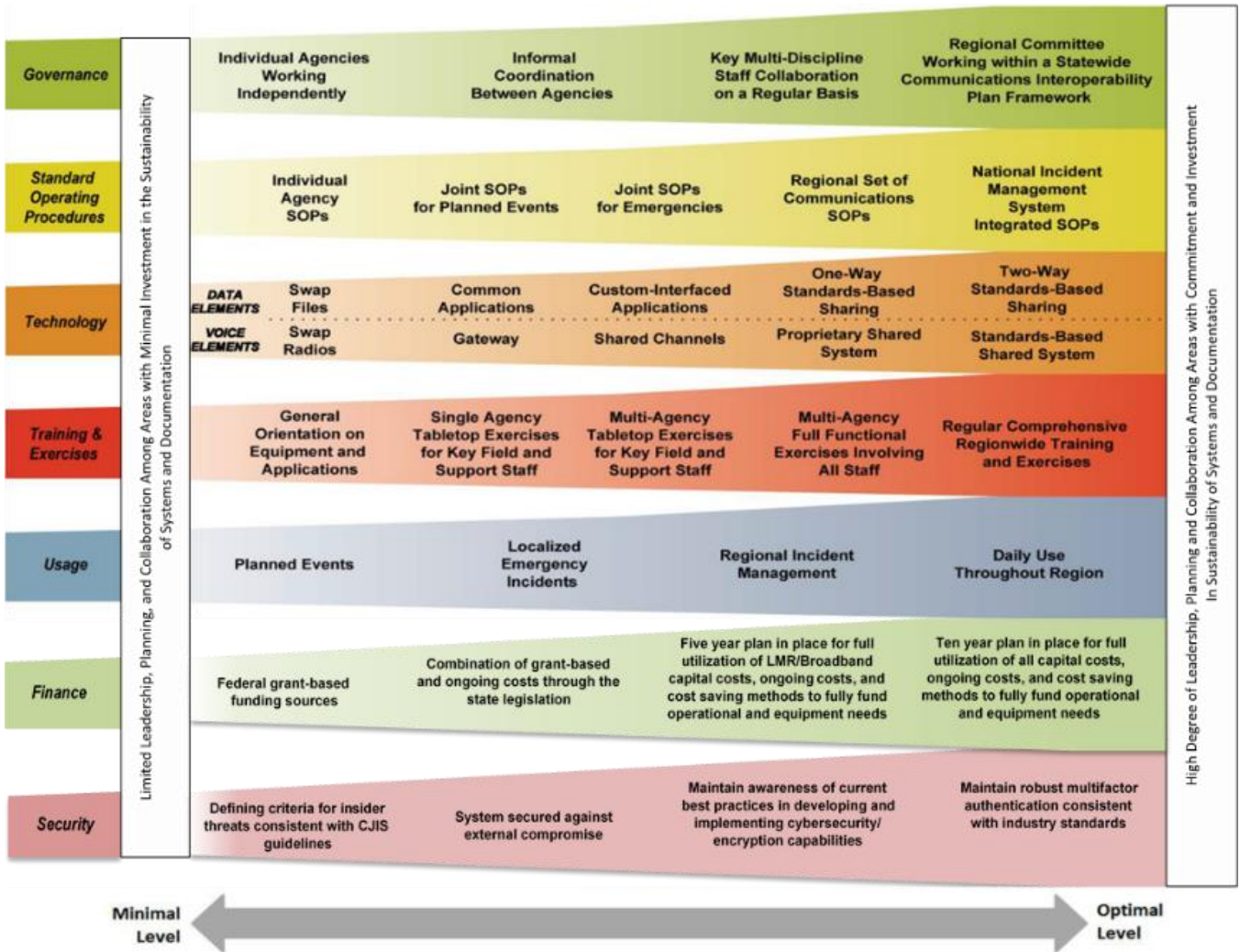
Figure 1: Iowa Interoperability Continuum

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[2] SAFECOM Interoperability Continuum brochure

Iowa SCIP Overview

- **Overview of Strategic Goals, Objectives and Benefits:** Provides an executive summary of the Iowa SCIP goals and objectives and their intended benefits.

- **Governance & Coordination:** Describes the current mechanisms for communications interoperability governance within the state along with successes, challenges, and priorities for improving governance within the evolving landscape.

- **Technology & Operations:** Describes the core systems used to support public safety communications within the state and the technological and operational enhancements needed to maintain and enhance interoperability across the emergency communications ecosystem.

- **Funding & Sustainment:** Describes the funding sources and allocations that support interoperable communications capabilities within the state along with methods and strategies for funding sustainment and enhancement of needed capabilities into the future.

- **ISICSB Committee Mission Statements and SCIP Goals & Objectives:** Provides each of the seven committee mission statements and their goals and objectives. Goals and objectives were leveraged by the successes and gaps that were previously identified in the Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis created in 2017, depicted in Appendix B. Discussions with the ISICSB Committees verified that the SWOT analysis is still relevant and representative of the current status of Iowa.

- **Implementation Plan:** Describes how Iowa plans to implement, maintain, and update the SCIP to enable continued evolution of and progress toward its interoperability goals.

OVERVIEW OF SCIP GOALS AND OBJECTIVES

Governance & Coordination

Develop appropriate governance through creation of mission statements and assigned goals for each ISICSB committee.

Technology & Operations

Maintain existing systems and adopt emerging technologies with a focus on statewide LMR, Broadband, NG9-1-1, and Alerts and Warnings systems.

Funding & Sustainment

Approve a 5-year financial plan for the operation of Iowa's statewide system and broadband planning.

GOVERNANCE AND COORDINATION

Iowa Statewide Interoperable Communications System Board

Iowa established the Iowa Statewide Interoperable Communications System Board (ISICSB) in 2007. Under Code of Iowa 80.28 and 80.29, ISICSB's purpose is to develop, implement, and oversee policy, operations, and fiscal components of communications interoperability at the state and local level, as well as coordinate similar efforts at the federal level. The ultimate objective of the Board is to develop and oversee the operation of a statewide integrated public safety communication interoperability system. See Appendix D for the Code of Iowa 80.28 and 80.29.

Desired State of Governance

- Develops, implements, and oversees policy, operations, and fiscal components of communications interoperability
- Coordinates with local, state, and federal stakeholders

The Governor has established an annual reporting requirement on the status of the ISICSB. The Board has 19 voting members, including eight state department representatives, 11 local public safety members (law enforcement, fire, emergency medical service, emergency management) and one at-large member, all of which are voting members. There are also non-voting four ex officio legislative members.
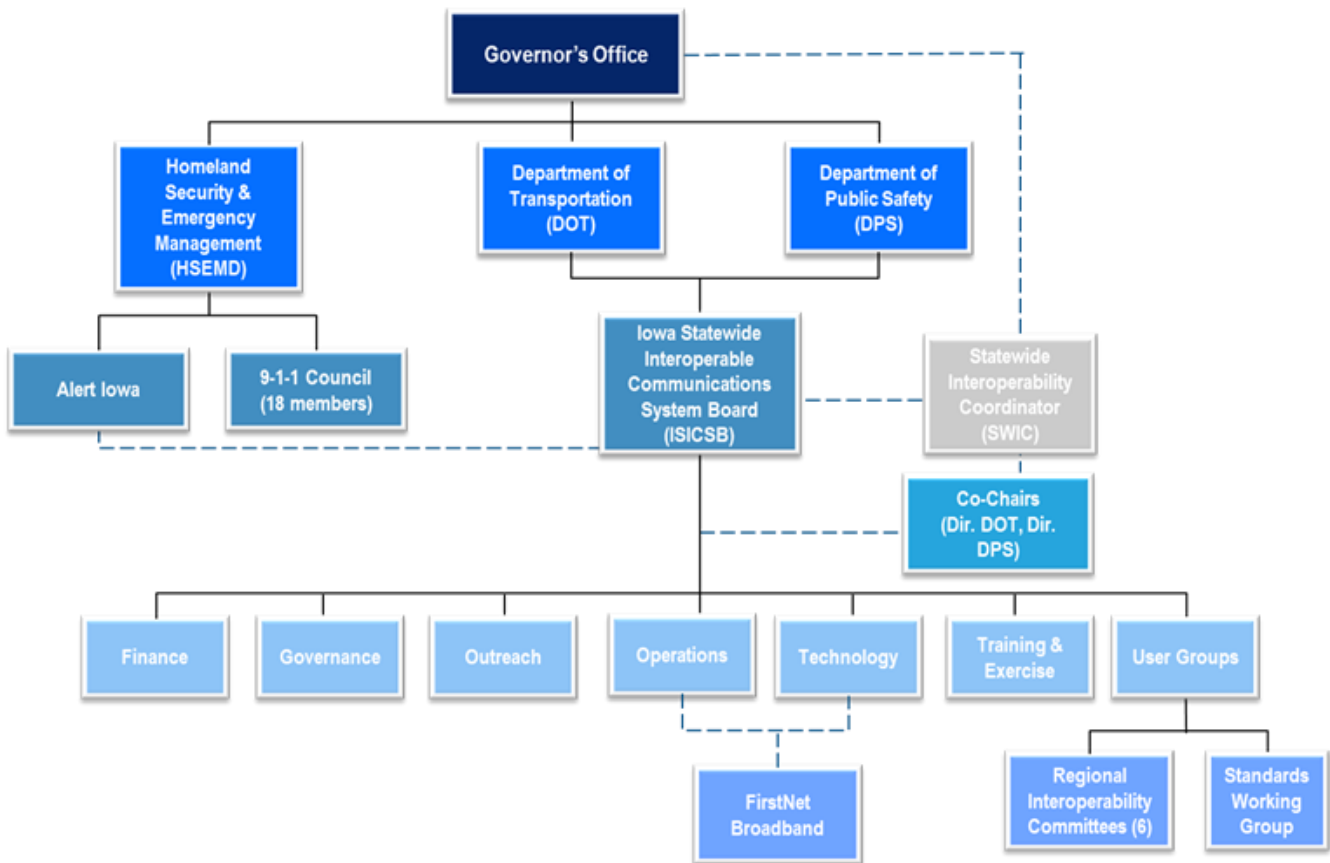
Figure 2: Emergency Communications Governance in Iowa

Creation of a Security Committee

During the previous SCIP Update in 2017, participants identified the need to establish a Security Committee. The creation of a new committee will require the Board to identify a Chair and Vice Chair. Since the ISICSB receives its direction from the Code of Iowa, they do not have a charter. Instead, the ISICSB has administrative rules that only require a simple vote of the Board to elect the positions of the Chair and Vice Chair.

General membership of the new committee, including the Chair and Vice Chair, will need to include people with cybersecurity expertise. The ISICSB will work to identify these members outside of its current structure because they may not have enough people with the specific technical skill sets required. This effort may pose the opportunity for the ISICSB's first public/private partnership. The Board will consider partnering with the Regents universities (University of Iowa, Iowa State University and University of Northern Iowa) to identify a mixed group of specialists who may not have any knowledge of public safety.

There is the possibility that this security committee will be a subcommittee, much like the Broadband subcommittee. Under the Technology Committee, the Security subcommittee's primary goal will be to assist the Regional Interoperability Committees (RICs), which are subcommittees of the User Group Committee.

TECHNOLOGY AND OPERATIONS

Land Mobile Radio

The State of Iowa has many different land mobile radio (LMR) systems in place. Many are stand-alone, some are connected to the State's ISICS platform or can connect to that system via other methods, and most have the ability to use the VHF conventional interoperability channels statewide.

- About 70% of the State of Iowa is on non-Project 25 VHF conventional systems with a few areas having VHF P25 systems.
- Most of the state has access to discipline specific VHF mutual aid channels including Fire Mutual Aid (VFIRE21), Law Enforcement Assistance (LEA), and Law Enforcement Mutual Aid (VLAW31)
- The state has many 700/800 MHz systems, some of them are FDMA (Frequency Division Multiple Access) while others are TDMA (Time Division Multiple Access).
- Some agencies use a private vendor to provide their radio system infrastructure.
- The state has recently constructed a new 700/800 MHz P25 Phase II interoperable statewide system—ISICS. Currently there are approximately 14,500 users at an interoperable or operable communications capacity as of November 2019.

Desired State of Technology

- 100% of radios interface with ISICS and use the same nomenclature
- Program all radios with a standard interoperability template
- Increase local knowledge to enhance independence from vendors across communications ecosystem
- Greater public safety use of FirstNet
- 98% or better coverage of both indoor and outdoor LMR and Broadband networks
- Convergence of the Wireline and Wireless networks
- Improve security of warnings systems
- Update alerts and warnings
- Coordinate with agencies to push out alerts and warnings to the public

Mobile Broadband

Iowa currently uses multiple commercial vendors along with FirstNet to support broadband use. Data for public safety is currently being used for:
- Mobile data in the field
- CAD (Computer Aided Dispatch)
- Live streaming video
- OTAP (Over the Air Programming) of radios that allows the ability to reprogram or update talk groups over the air via the P25 LMR network or WiFi vs. physically touching each radio and may be an option in the future over LTE.
- AVL (Automatic Vehicle Location), this is the ability to track vehicle movement which is one feature that is part of the State of Iowa's MACH (Mobile Architecture for Communications Handling) mobile data system for law enforcement.
- TraumaHawk App -This is a smartphone app designed by the University of Iowa that allows first responders in the field the ability to send pictures of an accident to the receiving hospital to give the hospital a greater awareness of the extent of injuries and/or vehicle damage.
- Iowa has completed a pilot called Wi-Fi for School Emergencies (WISE). The WISE Pilot is designed around increasing police presence at schools by establishing outdoor wireless access points that law enforcement can use to upload dash and body camera video. The network may also be used during a school emergency.

Desired State of Outreach

- Outreach materials reviewed and updated annually
- Ongoing coordination with other ISICSB committees to obtain information for distribution
- Active engagement with public safety agencies and ISICSB Outreach Committee members
- Monthly ISICSB Outreach Committee meetings to review and update outreach methods
- Regularly disseminate peer shared success stories

Desired State of User Group

- 100% of eligible users have access to the ISICS platform
- Standardized Regional Interoperability Committee (RIC) reporting processes in place

9-1-1

The 9-1-1 Communications Council was established to serve in a consultative role with the 9-1-1 Program Manager and the Director of the Homeland Security and Emergency Management Department (HSEMD). The goal of the Council is to advise and make recommendations to the Director and Program Manager regarding implementation and development of the 9-1-1 system in Iowa. The ISICSB and 9-1-1 Communications Council lead and support interoperable and emergency communications-related efforts in Iowa. These two groups exist as separate but as coordinated entities who share a common vision and mission. Several of the Council members sit on at least one of the ISICSB seven committees.

Desired State of Operations

- Legacy system plans are complete and align to the ISICS
- Leave no agency behind
- Procedures are regularly updated to reflect current communications ecosystem
- Operational plans are supported by communications infrastructure
- Collaborate with the Iowa 9-1-1 Council for standard operating procedure development for Next Generation 9-1-1 (NG9-1-1)

Alerts and Warnings

The Alert Iowa Notification System is the state's primary alert system but is not used by every agency. Other systems used include: Code RED, Reverse 9-1-1 and Everbridge. Iowa stakeholders have stated the value of incorporating alerts and warnings and National Weather Service's Forecast Offices on its statewide LMR system – ISICS.

Desired State of Training

- Standardized training across the state
- Joint COMMEX program organized by RICs on a rotating schedule
  - Yearly RAGBRAI exercise
  - Second exercise to be determined on a yearly basis by organizing RICs
  - Include non-traditional agency participation (ex. schools)

FUNDING SUSTAINABILITY

ISICSB, as well as other commissions in Iowa, are not given a stand-alone budget, rather funds are distributed through the state's Department of Public Safety (DPS). Currently, the Board receives annual appropriations to fund activities including training and travel. From 2007 to 2010, the Board also received a total of $12.1 million in grants, primarily from the Public Safety Interoperability Communications Grant (PSIC) and the Interoperable Emergency Communications Grant Program (IECGP). This platform will be under the joint purview of the DPS and the DOT. Iowa is currently using a State and Local Interoperability Grant Program's (SLIGP) grant to partially fund a full-time SWIC as well as a FirstNet Outreach Coordinator and support staff.

Desired State of Finance

- Sustainable funding across the communications ecosystem
- Establish and maintain five-year funding plan

9-1-1 Surcharges

Iowa operates off a one dollar per month per line 9-1-1 surcharge for both wireline and wireless numbers. The 9-1-1 surcharge is split between local 911 Service Boards and the State Homeland Security and Emergency Management Department (HSEMD). The HSEMD keeps 40% of the wireless surcharge, and the local service boards keep the remaining 60%, in addition to 100% of the wireline surcharge. HSEMD also receives $.51 for each prepaid use as a pass-through from the Department of Revenue.[3]

Maintenance Costs for the ISICS Platform

Maintenance has been built into a 10-year contract with Motorola for the ISICS platform. After the warranty ends following the third year after final system acceptance, the state will be responsible for the maintenance costs which are $1.6 million annually. Funding needs to be identified to pay for the maintenance when it arises. The estimated power costs for the platform will be $275,000 a year for all 90 sites. DPS is also responsible for the cost of the state-built sites.

Five-Year Funding Plan

The ISICSB Finance Committee has developed a five-year funding plan to establish processes and procedures involving expenditures on ISICS and FirstNet, which includes the following:

- Identifies ISISCB's role regarding the sustainability and maintenance of the system
- Identifies the $1.6 million needed for annual maintenance costs after 2023
- Funding of control stations and other equipment for local agencies to access ISICS

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[3] 2019 State 911 Assessment Report for Iowa

ISICSB COMMITTEE GOALS AND OBJECTIVES

Finance Committee			
Mission Statement: The Finance Committee identifies potential funding streams and coordinates existing funds for interoperable communications priorities.			
Goal #	**Goals**	**Objectives**	**Benefits**
1.	*Develop appropriate process and procedures for acquiring resources, administering processing payments using state and grant funds for enhancement, deployment, and operation of ISICS and a five-year financial plan to be reviewed every two years*	• Develop and maintain annual fiscal processes which meet GAAP/GAAS requirements for ISICS Project	• Process developed and implemented for acquiring resources, processing payments using state or grant funds promotes transparency • Development and administration of a 5-year financial plan promotes transparency
2.	*Develop and maintain appropriate process and procedures for acquiring resources, administering processing payments using state and grant funds for enhancement, deployment and operation of broadband data network and a five-year financial plan to be reviewed every two years*	• Develop annual fiscal processes which meet GAAP/GAAS requirements for statewide data network	• Process developed and implemented for acquiring resources, administering and processing payments of state or grant funds promotes transparency • Development and administration of a 5-year financial plan promotes transparency
3.	*Develop and maintain an appropriate process and procedure for administering all financial assets consistent with national best practices in accounting and auditing*	• Develop and maintain annual fiscal process which meet GAAP/GAAS and GASB for administering state and federal funds consistent with Code of Iowa and grant guidelines • Align with the grant process developed by the ISICSB	• Establishes known processes and procedures for budgeting, accounting, inventorying and auditing all financial assets of ISICSB whether state or grant funds

Governance Committee			
Mission Statement: The Governance Committee develops and coordinates the policy and procedural operations of the ISICSB and ensures it functions within the law in a public and transparent manner.			
Goal #	**Goals**	**Objectives**	**Benefits**
4.	*Develop and update appropriate governance through creation of policy and procedure statements for enhancement, deployment and operation of ISICS*	• Develop policies as requested • Disseminate policies as needed	• Promotes a shared understanding of governance involving the statewide system
5.	*Develop and update appropriate governance through creation of policy and procedure statements for enhancement, deployment and operation of a statewide broadband network*	• Develop policies as requested • Disseminate policies as needed	• Promotes a shared understanding of governance involving statewide broadband network
6.	*Establish and maintain a process to administer grant funds or communications assets*	• Develop policies as requested • Disseminate policies as needed	• Promotes awareness of how grant funds and communications assets are invested

Operations Committee			
Mission Statement: The Operations Committee collaborates and develops the operational protocols and procedures for interoperable communications.			
Goal #	**Goals**	**Objectives**	**Benefits**
7.	*At the end of five years 95% of all public safety radios have direct access to ISICS*	• Identify public safety agencies that need access • Define what direct access to ISICS means • Establish operational policies for ISICS access • Deliver recommendation/documentation to ISICSB	• Advances interoperability statewide by connecting dispatch centers to ISICS
8.	*Annually review existing ISICS policies and ISICS draft policies and make recommendations to Standards Working Group*	• Review and document recommendations to the Standards Working Group representative	• Creates an opportunity to update ISICS policies
9.	*Align and update legacy plans, including system failures*	• Identify, review and update existing communications plans and include a system failure plan • Deliver recommendation / documentation to ISICSB	• Creates an opportunity to address issues with existing communications plans

	Outreach Committee		
Mission Statement: The Outreach Committee builds coalitions to support and promote interoperable public safety and emergency communications by providing clear and pertinent information to stakeholders and decision makers.			
Goal #	**Goals**	**Objectives**	**Benefits**
10.	*To develop and deliver outreach materials for use in making decisions to become a user of ISICS*	• As needed, identify if a plan needs to be developed to respond to changes with ISICS • Develop outreach materials specific to elected officials and targeted audiences	• Promotes awareness of benefits of becoming an ISICS user
11.	To develop, update, and deliver outreach materials for use in making decisions to become a user of the public safety broadband network	• Leverage guidance and input from the Broadband sub-committee • As needed, identify if a plan needs to be developed to respond to changes with broadband • Develop Iowa-specific materials from broadband providers • Develop outreach materials specific to elected officials and targeted audiences	• Promotes awareness of benefits of becoming a broadband network user
12.	*Approach and educate elected officials and staff*	• Develop an outreach plan • Engage association partners • Identify most pertinent information to include in high-level one-pagers for elected officials	• Creates "interoperability champions" to advocate on behalf of ISICSB priorities involving funding and other needs to advance interoperability statewide

	Technology Committee		
Mission Statement: The Technology Committee researches emerging technologies and standards to develop technical recommendations and procedures to enhance interoperable public safety and emergency communications.			
Goal #	**Goals**	**Objectives**	**Benefits**
13.	*To lead technological solutions for voice interoperability*	• Publish standards for interoperable communications equipment • Publish interoperability programming guide	• Supports interoperability involving voice across communications equipment
14.	*To lead technological solutions for data interoperability*	• Create minimum standards for interoperable communications equipment • Make recommendation to ISICSB to adopt standards	• Supports interoperability involving data across communications equipment
15.	*Investigate voice and data convergence and differentiating the needs of public safety*	• Investigate technology • Choose best course of action • Make recommendations	• Identifies planning considerations for the convergence of voice and data

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Training & Exercises Committee			
Mission Statement: The Training and Exercise Committee provides training opportunities on interoperable communications and procedures for planned and unplanned events.			
Goal #	**Goals**	**Objectives**	**Benefits**
16.	*Develop and provide standard core training for interoperable communications across the various state regions*	• Maintain and update guidelines defining standard core training • Embed communications training within existing state training institutions	• Promotes consistent training across state regions
17.	*Expand the statewide core group of trainers who would be able to teach necessary COMU positions classes and increase COMU awareness*	• Create a COMU awareness outreach program for recruitment and dissemination of information through the Outreach Committee • Seek Train-the-Trainer classes	• Increases the number of trainers to promote more training and organization of statewide COMU program
18.	*Develop a cost analysis of training to augment future budgetary planning*	• Obtain training funding	• Identifies funding needs for training
19.	*Increase the number of credentialed COMU personnel*	• Increase opportunities to complete position task book • Increase regional training opportunities with the inclusion of an enhanced COMMEX program	• Maximizes support during planned and unplanned events

User Group Committee			
Mission Statement: The User Group Committee, comprised of authorized users, coordinates access and usage policies for use of or interfacing with the ISICS platform and public safety broadband systems.			
Goal #	**Goals**	**Objectives**	**Benefits**
20.	*Develop processes and vet the application process for access to the ISICS interoperable communications platform within state or grant resources.*	• Add efficiencies to application process • Determine resource needs for an objective evaluation of Level 3 and 4 resource users	• Decreases application process time relative to number of applications per user level • Encourages increased number of users
21.	*Develop processes for guidance on broadband data interoperable communications platform within state or grant resources.*	• Identify and deploy process to assist in the application for broadband access	• Decreases application process time relative to number of applications per user level • Encourages increased number of users
22.	*Strengthen all RICs*	• Travel to every county to conduct outreach to all stakeholders • Listen and accept feedback • Identify meeting frequency and appropriate tasks • Continue to solicit local input for consideration	• Increases RIC user attendance, participation, and investment

IMPLEMENTATION PLAN

Evaluation / Progress Measurement

Iowa's SCIP is owned and managed by the ISICSB. Through the Code of Iowa, the ISICSB has both authority to, and is responsible for, making decisions regarding the SCIP and is responsible for its implementation and maintenance. The SCIP goals align with the Code of Iowa in order to ensure compliance and tied to a budget funding stream to ensure their completion.

The ISICSB will add the goals assigned to the committees as a formal agenda item for its regular meetings. Appendix C outlines each committee's assigned SCIP goals and objectives, metrics of success and action plan based on the 2019 workshop. Committee members are expected to utilize developed action plans to implement their respective areas of the SCIP. All goals and objectives ownership will be led by their respective committee. During the 2019 SCIP workshop, goals were also given timelines and additional owners to support the leading efforts of each committee as seen fit.

Each Committee Chair or their designee will provide regular status updates to monitor work, or lack thereof, done by the Committee, subcommittee or working group to track progress and address as needed. These status updates will contribute to the state's Annual Report to the Governor and Legislature. The ISICSB will also conduct a thorough review of the SCIP on a biennial basis to update goals and objectives to address identified needs and advancements involving statewide emergency communications capabilities.

DHS Support

As of federal fiscal year 2019, the DHS Cybersecurity and Infrastructure Security Agency (CISA) Emergency Communications Division (ECD) is supporting states and territories in baselining progress against 25 State Interoperability Markers. This tool was developed by looking at best practices along the SAFECOM Interoperability Continuum to highlight emergency communications strengths and gaps, support measurement of 2019 NECP implementation, and provide a framework for developing and tracking SCIP goals. State Interoperability Markers help ECD provide targeted technical assistance in the form of training and resources offered through its Interoperable Communications Technical Assistance Program (ICTAP). Iowa's baseline 2019 Markers can be found in Appendix D.

ICTAP offerings of interest for Iowa include:
- Communications Unit Leader (COML)
- Communications Unit Technician (COMT)
- COML Train-the-Trainer
- State / Regional Tactical Interoperable Communications Plan (TICP)
- Electronic Tactical Interoperable Communications Field Operations Guide (eFOG) Development
- Leveraging Broadband Technologies and Data Operability / Interoperability in Support of Public Safety
- Encryption Planning and Usage
- Incident Tactical Dispatcher (INTD)

Requests for technical assistance are coordinated through the Iowa SWIC on an annual basis. For more information, states, tribes, and territories are encouraged to work with their SWIC and ECD sector coordinator. For more information, contact ECD coordinator Jim Lundsted: James.Lundsted@cisa.dhs.gov or ECD@cisa.dhs.gov

APPENDIX A: ACRONYMS

CISA	Cybersecurity and Infrastructure Security Agency
COML	Communications Unit Leader
COMT	Communications Unit Technician
COMU	Communications Unit
DHS	Department of Homeland Security
ECD	Emergency Communications Division
GAAP	Generally Accepted Accounting Practices
GAAS	Generally Accepted Auditing Standards
HSEMD	Homeland Security and Emergency Management Department
ISICS	Iowa Statewide Interoperable Communications System
ISICSB	Iowa Statewide Interoperable Communications System Board
LMR	Land Mobile Radio
MHz	Megahertz
NECP	National Emergency Communications Plan
NG9-1-1	Next Generation 9-1-1
P25	Project 25
PSAP	Public Safety Answering Point
RIC	Regional Interoperability Committee
SCIP	Statewide Communication Interoperability Plan
SWIC	Statewide Interoperability Coordinator
SWOT	Strengths, Weaknesses, Opportunities, Threats Analysis
VHF	Very High Frequency

APPENDIX B: SWOT ANALYSIS

	LMR	Broadband	Code of Iowa Duties	Alerts & Warnings
Strengths	• Deployed Iowa Statewide Interoperable Communications System (ISICS), P25 Statewide Radio System • Deploying LMR backbone across the state • Local participation • Procedures and policies address and prepare for conventional systems and new technologies (i.e., eliminating interference issues) • Public Safety Answering Points (PSAPs) are preparing for the ISCIS	• Established broadband committee • Collaborating with Governor's Office • State public safety uses data frequently • Dedicated broadband for public safety at school locations (WISE) • One of the first states to define public safety grade	• Guiding 700MHz network buildout • Dedicated funding stream • Current committee structure is responsive to planning needs • Established public/private partnerships (Motorola – LMR) • FirstNet Broadband subcommittee hosting fourth public/private partnerships summit • Strived to partner with local exchange carriers for FirstNet • Collaborating with local utility companies • Outreach and information sharing • Adopted FPIC encryption • Strong collaboration between 9-1-1 Board and state interoperability board	• Most counties use Alert Iowa--Statewide system for alerts and warnings, incorporates reverse 9-1-1, integrates IPAWS • Outdoor and indoor warning systems • Paging systems
Weaknesses	• Diversity of radio frequency use • Tactical Interoperability Communications Plan (TICP) not current • Funding • Outreach and education on ISCIS • CASM adoption • No master RFP to provide to local stakeholders • Legislature allocated surplus 9-1-1 funds to build and implement statewide radio • Unpredictability of long-term funding	• Stakeholders have limited broadband technical knowledge • Reliance on commercial carriers for information • No dedicated funding stream	• No authority to enforce decisions • No ability to administer grants • Interoperability continuum does not emphasize cybersecurity • Need additional subject matter expertise for new and evolving technology • Lack of succession planning	• Multiple points of contact for alerts and warnings • Lack of standards

		LMR	Broadband	Code of Iowa Duties	Alerts & Warnings
Opportunities		• Identifying funding to pay for 8-year commitment to Motorola • Clearly define interface • Inclusion of public service as users • Identifying overall funding stream/source of revenue for grants to continue expanding system • Access to ISCIS from every PSAP and department • Create buy in and involve local stakeholders with new and evolving technology • Adding a representative from each county (99) on subcommittees • Developing a regional governance system	• Expanding ICSIC • Adopting FirstNet • Development of applications • Sharing information with all stakeholders and decision makers	• Leveraging voting seat on Telecommunications Industry Association (TIA) • Create grant funding method to push grants to locals	• Some counties still have the opportunity to join Alert Iowa • Addressing Alerts & Warnings in the SCIP
Threats		• Funding • Not been strategic in the deployment of grant resources • Sensitivities between LMR and 9-1-1 due to allocation of surplus 9-1-1 funds • Other vendors pre-P25 system and subscribers' loyalty agencies rely on consultants to address technology • Lacking technical expertise • Local stakeholders listen to vendors rather than technical experts • Vendor recommendations may not serve vision for interoperability • Lacking enforcement of public safety grade • Cost of service and devices • General distrust of state and federal solutions			

APPENDIX C: SCIP GOAL IMPLEMENTATION & MEASUREMENT

FINANCE COMMITTEE					
Goals	**Metrics for Success**	**Objectives**	**Action Plan**	**Timeline**	**Owner(s)**
Develop appropriate process and procedures for acquiring resources, administering processing payments using state and grant funds for enhancement, deployment, and operation of ISICS and a five-year financial plan to be reviewed every two years	• Process developed and implemented for acquiring resources • Process in place for administering and processing payments of state or grant funds • Development and administration of a five-year financial plan	• Develop and maintain annual fiscal processes which meet GAAP/GAAS requirements for ISICS Project	• Identify costs of operation and sustainment • Identify more resources or efficiencies to ensure the budget aligns with the Board's goals • Each committee, at the direction of the Board, will submit priorities to the Finance Committee, making sure they align with the budget process, to decide whether it is within the budget • Compare last few years of expenditures to project the five-year plan and continue to revise it on a two-year basis	Annually (by end of state fiscal year – June 30)	**Finance Committee**, Governance Committee
Develop and maintain appropriate process and procedures for acquiring resources, administering processing payments using state and grant funds for enhancement, deployment and operation of broadband data network and a five-year financial plan to be reviewed every two years	• Process developed and implemented for acquiring resources • Process in place for administering and processing payments of state or grant funds • Development and administration of a five-year financial plan	• Develop annual fiscal processes which meet GAAP/GAAS requirements for statewide data network	• Identify costs of operation and sustainment • Identify more resources or efficiencies to ensure the budget aligns with the Board's goals • Each committee, at the direction of the Board, will submit priorities to the Finance Committee, making sure they align with the budget process, to decide whether it is within the budget • Compare last few years of expenditures to project the five-year plan and continue to revise it on a two-year basis	Annually (by end of state fiscal year – June 30)	**Finance Committee**, Governance Committee

Develop and maintain an appropriate process and procedure for administering all financial assets consistent with national best practices in accounting and auditing	• Coordinate with other committees to identify their on-going financial needs • Procedure in place and working for budgeting, accounting, inventorying and auditing all financial assets of ISICSB whether state or grant funds	• Develop and maintain annual fiscal process which meet GAAP/GAAS and GASB for administering state and federal funds consistent with Code of Iowa and grant guidelines • Align with the grant process developed by the ISICSB	• Compliance with state and grant policies • Ensuring records are available for audits/oversight	Annually (by end of state fiscal year – June 30)	**Finance Committee,** Governance Committee

GOVERNANCE COMMITTEE					
Goals	**Metrics for Success**	**Objectives**	**Action Plan**	**Timeline**	**Owner(s)**
Develop and update appropriate governance through creation of policy and procedure statements for enhancement, deployment and operation of ISICS	• Review ISICSB policies within 60 days	• Develop policies as requested • Disseminate policies as needed	• Actively communicate with other committee chairs • Identify the policies needed • Dissemination of policies	60 days upon receipt	**Governance Committee**
Develop and update appropriate governance through creation of policy and procedure statements for enhancement, deployment and operation of a statewide broadband network	• Review ISICSB policies within 60 days	• Develop policies as requested • Disseminate policies as needed	• Actively communicate with other committee chairs • Identify the policies needed • Dissemination of policies	60 days upon receipt	**Governance Committee**
Establish and maintain a process to administer grant funds or communications assets	• Process is adopted by ISICSB	• Develop policies as requested • Disseminate policies as needed	• Maintain knowledge of other states best practices and lessons learned while being mindful of the IA grant process • Work with and support the ISICSB and relevant committees • Develop a process for the planning, drafting, and execution of grants	90 days	**Governance Committee**, agencies with per view over grants, Finance Committee

OPERATIONS COMMITTEE					
Goals	**Metrics for Success**	**Objectives**	**Action Plan**	**Timeline**	**Owner(s)**
At the end of five years 95% of all public safety radios have direct access to ISICS	• The number of public safety radios connected to ISICS	• Identify public safety agencies that need access • Define what direct access to ISICS means • Establish operational policies for ISICS access • Deliver recommendation/documentation to ISICSB	• Promote the goal to public safety agencies with the Outreach Committee • Request potential opportunities for funding public safety agencies from the Finance Committee • Work with the Outreach Committee to provide information on how public safety agencies can join ISICS	January 2025	**Operations Committee**, ISICSB, SWIC, Outreach Committee, RICs
Annually review existing ISICS policies and ISICS draft policies and make recommendations to Standards Working Group	• The number the ISICSB received from the committee vs the number delivered • Complete annual review	• Review and document recommendations to the Standards Working Group representative	• Operations representative receives draft policies or updated existing policies and then provides them to the Operations committee members for feedback • Collaborate with other committees and provide initial feedback during the drafting of policies prior to being submitted for review	Ongoing	**Operations Committee**, RICs
Align and update legacy plans, including system failures	• Completion of plan	• Identify, review and update existing communications plans and include a system failure plan • Deliver recommendation/documentation to ISICSB	• Compile copies of all known legacy communications plans • Develop rubric for assessment • Identify the lines of authority for the plans • Make recommendations to the entity that has authority of the plan • Incorporating the RPCs in the ISICSB structure • Make a recommendation to the Governance Committee for the realignment of the plans	Ongoing	**Operations Committee**, responsible entities

OUTREACH COMMITTEE					
Goals	**Metrics for Success**	**Objectives**	**Action Plan**	**Timeline**	**Owner(s)**
To develop, update, and deliver outreach materials for use in making decisions to become a user of ISICS	• Final coverage mapping disseminated via social media messaging • Outreach process reviewed and updated by the end of the state fiscal year • Outreach materials routinely developed for ISICS to be distributed on a monthly basis	• As needed, identify if a plan needs to be developed to respond to changes with ISICS • Develop outreach materials specific to elected officials and targeted audiences	• Seek out feedback from various stakeholders and their respective agencies to determine if a plan needs to be developed • Identify key targeted audiences, tailor message for the specific groups • Monitor changes and progress and ensure our message is representative of the current status • Tailor messages specifically for state and local elected officials, boards and committees, containing statistics, cost-analysis, and benefits to public safety personnel	**Develop:** as needed, ongoing **Update:** Annually (initial update Jan. 2021)	**Outreach Committee**, User Group Committee, RICs
To develop, update, and deliver outreach materials for use in making decisions to become a user of the public safety broadband network	• Outreach process for the public safety broadband network reviewed and updated by the end of the state fiscal year • Outreach materials routinely developed for the public safety broadband network to be distributed on a monthly basis	• Leverage guidance and input from the Broadband sub-committee • As needed, identify if a plan needs to be developed to respond to changes with broadband • Develop Iowa-specific materials from broadband providers • Develop outreach materials specific to elected officials and targeted audiences	• Establish a communications process between the Outreach Committee and other committees to obtain more information for distribution • Seek board approval for any materials to be developed identifying public safety broadband connectivity in the State of Iowa • Tailor messages specifically for state and local elected officials, boards and committees, containing statistics, cost-analysis, and benefits to public safety personnel • Identify key legislators on funding committees and invite them to trainings and other communications-related events	**Develop:** as needed, ongoing **Update:** Annually (initial update Jan. 2023)	**Outreach Committee**, FirstNet/Broadband Subcommittee, FirstNet Vendors

| Approach and educate elected officials and staff | • Outreach program development complete
• Number of engagement/participants involved in outreach program
• High-level informational one-page documents developed | • Develop an outreach plan
• Engage association partners
• Identify most pertinent information to include in high-level one-pagers for elected officials | • Tailor messages specifically for state and local elected officials, boards and committees, containing statistics, cost-analysis, and benefits to public safety personnel
• Identify key legislators on funding committees and invite them to trainings and other communications-related events
• Maintain an information repository with current status of emergency communications ecosystem | **Materials developed and approved by** May 2020
Deliver: July 2020
+ Annually reviewed and updated | **Outreach Committee**, ISICSB, SWIC + Deputy SWIC, Finance Committee |

TECHNOLOGY COMMITTEE					
Goals	**Metrics for Success**	**Objectives**	**Action Plan**	**Timeline**	**Owner(s)**
To lead technological solutions for voice interoperability	• Publish state specific findings • Coordinate with Standards Working Group to develop technical standards related to voice interoperability	• Publish standards for interoperable communications equipment • Publish interoperability programming guide	• Determining minimum and optimal ISICS system capabilities when it is fully built out • Maintain the minimum standards for subscriber equipment to operate on system • Maintain programming and configuration standards to include current and legacy technologies • Maintaining awareness of new and emerging communications technologies	Initial List and Programming Guide Published: June 2020, Ongoing	**Technology Committee**
To lead technological solutions for data interoperability	• Publish state specific findings • Coordinate with Standards Working Group to develop technical standards related to data interoperability	• Create minimum standards for interoperable communications equipment • Make recommendation to ISICSB to adopt standards	• Identify minimum and optimal broadband capabilities • Establish minimum technical rules for operational conduct • Develop a policy for bring your own device • Identify which devices public safety will use • Evaluating applications, data interoperability, and application interaction • Maintaining awareness of new and emerging data technologies and applications	Target Minimum Standards: September 2021, Ongoing	**Technology Committee**
Investigate voice and data convergence and differentiating the needs of public safety	• Publish staff studies on findings	• Investigate technology • Choose best course of action • Make recommendations	• Attend conferences • Keeping up on trade publications • Networking with others • Develop best practices • Increase information sharing efforts in simplified terms • Participating in standards groups • Explore broadband PTT application options	Initial Report: End of 2021, Ongoing	**Technology Committee**, Operations Committee, Governance Committee

TRAINING AND EXERCISE COMMITTEE					
Goals	**Metrics for Success**	**Objectives**	**Action Plan**	**Timeline**	**Owner(s)**
Develop, review, update, and provide standard essential training for interoperable communications across the various state regions	• Development of training materials • Number of people trained • Standards and training tracker database established and maintained	• Maintain and update guidelines defining standard core training • Embed communications training within existing state training institutions	• Define what standard core training courses would be • Develop lesson plans for those courses that do not already have them • Divide classes across the state for easier access	Materials developed: January 2022	**Training Committee**, RICs, Outreach Committee
Expand the statewide core group of trainers who would be able to teach necessary COMU positions classes and increase COMU awareness	• Increase number of trainers so that at least two COML classes can be scheduled per year • Number of people trained	• Create a COMU awareness outreach program for recruitment and dissemination of information through the Outreach Committee • Seek Train-the-Trainer classes	• Continue the partnership with ECD and increase regional Train-the-Trainer opportunities to increase cadre of instructors • Identify trainers in strategic regions throughout the state	Identify Trainers: January 2023 Develop trainer experience: January 2026	**Training Committee**, Outreach Committee
Develop a cost analysis of training to augment future budgetary planning	• Delivery of a cost analysis document	• Obtain training funding	• Research and apply for grant opportunities • Reduce the cost of travel to attend trainings • Provide coverage of trainee backfill expenses for agencies	Annual updates	**Training Committee**, Finance Committee
Increase the number of credentialed COMU personnel	• Increase the number of people on the credentialing list	• Increase opportunities to complete position task book • Increase regional training opportunities with the inclusion of an enhanced COMMEX program	• Minimize the costs of the initial training • Increase the number of communications related full-scale and tabletop exercises/trainings • Cover the expenses of currently credentialed person to provide opportunities • Coordinate training with the Homeland Security and Emergency Management Department State Training Officer	January 2023	**Training Committee**, RICs, HSEMD

USER GROUP COMMITTEE					
Goals	**Metrics for Success**	**Objectives**	**Action Plan**	**Timeline**	**Owner(s)**
Develop processes and vet the application process for access to the ISICS interoperable communications platform within state or grant resources.	• In five-ten years, 100% of eligible users have access to the ISICS platform • Decrease application process time relative to number of applications per user level	• Add efficiencies to application process • Determine resource needs for an objective evaluation of Level 3 and 4 resource users	• Create single point of coordination for all applications and necessary paperwork • Develop electronic repository for paperwork and workflow for all the paperwork • Identifying who has expertise for coverage needs for Level 3 and 4 users. System administrator • Revisit applicant review panel concept	As needed, ongoing	**User Group Committee**, technical liaison
Develop processes for guidance on broadband data interoperable communications platform within state or grant resources.	• Process developed • Number of users assisted, applied for and approved	• Identify and deploy process to assist in the application for broadband access	• Develop a process or certification for applicants for PSBN to confirm they are a true Public Safety entity (as needed) • Provide options of vendors and vendor information to applicants (as requested)	January 2023	**User Group Committee**, Technology Committee
Strengthen all RICs	• Increase in RIC user attendance, participation, and investment	• Travel to every county to conduct outreach to all stakeholders • Listen and accept feedback • Identify meeting frequency and appropriate tasks • Continue to solicit local input for consideration	• SWIC to visit every county in State over the next two years to continue outreach, assist with PSBN issues, and assess interest level in joining RICs • Identification of role and benefit of a strong RIC- possibly a white paper showcasing successes in Iowa • Encourage Outreach Committee to push out useful information to relevant associations • Encourage those involved in RIC to provide some reporting mechanism back to the full board • Create place where RICs can post information, ask questions, share resources. Establish RIC reporting process • Promote RIC as conduit for locals into ISICS board; a place for information to be exchanged between the board and the end users/local agencies	Ongoing, January 2022	**User Group Committee**, SWIC and Deputy SWIC, ISICSB, RIC Chairs and Vice Chairs, Outreach Committee

APPENDIX D: STATE INTEROPERABILITY MARKERS

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
Governance	1	**State-level governing body established (e.g., SIEC, SIGB).** Governance framework is in place to sustain all emergency communications	Governing body does not exist, or exists and role has not been formalized by legislative or executive actions	Governing body role established through an executive order	Governing body role established through a state law	
	2	**SIGB/SIEC participation.** Statewide governance body is comprised of members who represent all components of the emergency communications ecosystem.	Initial (1-2) Governance body participation includes: ☐Communications Champion/SWIC ☐LMR ☐Broadband/LTE ☐9-1-1 ☐Alerts, Warnings and Notifications	Defined (3-4) Governance body participation includes: ☒Communications Champion/SWIC ☒LMR ☒Broadband/LTE ☒9-1-1 ☐Alerts, Warnings and Notifications	Optimized (5) Governance body participation includes: ☐Communications Champion/SWIC ☐LMR ☐Broadband/LTE ☐9-1-1 ☐Alerts, Warnings and Notifications	
	3	**SWIC established.** Full-time SWIC is in place to promote broad and sustained participation in emergency communications.	SWIC does not exist	Full-time SWIC with collateral duties	Full-time SWIC established through executive order or state law	
	4	**SWIC Duty Percentage.** SWIC spends 100% of time on SWIC-focused job duties	SWIC spends >1, <50% of time on SWIC-focused job duties	SWIC spends >50, <90% of time on SWIC-focused job duties	SWIC spends >90% of time on SWIC-focused job duties	
	5	**SCIP refresh.** SCIP is a living document that continues to be executed in a timely manner. Updated SCIPs are reviewed and approved by SIGB/SIEC.	No SCIP OR SCIP older than 3 years	SCIP updated within last 2 years	SCIP updated in last 2 years and progress made on >50% of goals	
	6	**SCIP strategic goal percentage.** SCIP goals are primarily strategic to improve long term emergency	<50% are strategic goals in SCIP	>50%<90% are strategic goals in SCIP	>90% are strategic goals in SCIP	

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
		communications ecosystem (LMR, LTE, 911, A&W) and future technology transitions (5G, IoT, UAS, etc.). (Strategic and non-strategic goals are completely different; strategy -- path from here to the destination; it is unlike tactics which you can "touch"; cannot "touch" strategy)				
	7	**Integrated emergency communication grant coordination.** Designed to ensure state / territory is tracking and optimizing grant proposals, and there is strategic visibility how grant money is being spent.	No explicit approach or only informal emergency communications grant coordination between localities, agencies, SAA and/or the SWIC within a state / territory	SWIC and/or SIGB provides guidance to agencies and localities for emergency communications grant funding but does not review proposals or make recommendations	SWIC and/or SIGB provides guidance to agencies and localities for emergency communications grant funding and reviews grant proposals for alignment with the SCIP. SWIC and/or SIGB provides recommendations to the SAA	
	8	**Communications Unit process.** Communications Unit process present in state / territory to facilitate emergency communications capabilities. Check the boxes of which Communications positions are currently covered within your process: ☒COML ☒COMT ☐ITSL ☐RADO ☒INCM ☐INTD	No Communications Unit process at present	Communications Unit process planned or designed (but not implemented)	Communications Unit process implemented and active	Add more credentialing INTD and ITSL

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
		☐AUXCOM ☐TERT				
SOP/SOGs	9	**Interagency communication.** Established and applied interagency communications policies, procedures and guidelines.	Some interoperable communications SOPs/SOGs exist within the area and steps have been taken to institute these interoperability procedures among some agencies	Interoperable communications SOPs/SOGs are formalized and in use by agencies within the area. Despite minor issues, SOPs/SOGs are successfully used during responses and/or exercises	Interoperable communications SOPs/SOGs within the area are formalized and regularly reviewed. Additionally, NIMS procedures are well established among agencies and disciplines. All needed procedures are effectively utilized during responses and/or exercises.	
	10	**TICP (or equivalent) developed.** Tactical Interoperable Communications Plans (TICPs) established and periodically updated to include all public safety communications systems available	Regional or statewide TICP in place	Statewide or Regional TICP(s) updated within past 2-5 years	Statewide or Regional TICP(s) updated within past 2 years	No Statewide TICP, regional TICPs in place
	11	**Field Operations Guides (FOGs) developed.** FOGs established for a state or territory and periodically updated to include all public safety communications systems available	Regional or statewide FOG in place	Statewide or Regional FOG(s) updated within past 2-5 years	Statewide or Regional FOG(s) updated within past 2 years	
	12	**Alerts & Warnings.** State or Territory has Implemented an effective A&W program to include Policy, Procedures and Protocol measured through the following characteristics:	<49% of originating authorities have all of the four A&W characteristics	>50%<74% of originating authorities have all of the four A&W characteristics	>75%<100% of originating authorities have all of the four A&W characteristics	Need to follow up, good process with Amber Alerts, will provide additional information

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
		(1) Effective documentation process to inform and control message origination and distribution (2) Coordination of alerting plans and procedures with neighboring jurisdictions (3) Operators and alert originators receive periodic training (4) Message origination, distribution, and correction procedures in place				
Technology	13	**Radio programming.** Radios programmed for National/Federal, SLTT interoperability channels and channel nomenclature consistency across a state / territory.	<49% of radios are programed for interoperability and consistency	>50%<74% of radios are programed for interoperability and consistency	>75%<100% of radios are programed for interoperability and consistency	Standard is not followed for naming
	14	**Cybersecurity Assessment Awareness.** Cybersecurity assessment awareness. (Public safety communications networks are defined as covering: LMR, LTE, 911, and A&W)	Public safety communications network owners are aware of cybersecurity assessment availability and value (check yes or no for each option) ☒LMR ☒LTE ☐9-1-1/CAD ☐A&W	Initial plus, conducted assessment, conducted risk assessment. (check yes or no for each option) ☐LMR ☐LTE ☐9-1-1/CAD ☐A&W	Defined plus, Availability of Cyber Incident Response Plan (check yes or no for each option) ☐LMR ☐LTE ☐9-1-1/CAD ☐A&W	
	15	**NG911 implementation.** NG911 implementation underway to serve state / territory population.	Working to establish NG911 governance through state/territorial plan. • Developing GIS to be	More than 75% of PSAPs and Population Served have: • NG911 governance established through	More than 90% of PSAPs and Population Served have: • NG911 governance established through	

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
			able to support NG911 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • Planning to or have updated PSAP equipment to handle basic NG911 service offerings.	state/territorial plan. • GIS developed and able to support NG911 call routing. • Planning or implementing ESInet and Next Generation Core Services (NGCS). • PSAP equipment updated to handle basic NG911 service offerings.	state/territorial plan. • GIS developed and supporting NG911 call routing. • Operational Emergency Services IP Network (ESInet)/Next Generation Core Services (NGCS). • PSAP equipment updated and handling basic NG911 service offerings.	
	16	**Data operability / interoperability.** Ability of agencies within a region to exchange data on demand, and needed, and as authorized. Examples of systems would be: - CAD to CAD - Chat - GIS - Critical Incident Management Tool (- Web EOC)	Agencies are able to share data only by email. Systems are not touching or talking.	Systems are able to touch but with limited capabilities. One-way information sharing.	Full system to system integration. Able to fully consume and manipulate data.	Can chat, have Web EOC, no CAD to CAD, working on deploying shared services
	17	**Future Technology/Organizational Learning.** SIEC/SIGB is tracking, evaluating, implementing future technology (checklist)	☒LMR to LTE Integration ☒5G ☐IoT (cameras) ☐UAV (Smart Vehicles) ☒UAS (Drones) ☒Body Cameras ☒Public Alerting Software ☐Sensors ☐Autonomous Vehicles ☒MCPTT Apps ☐Wearables			

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
			☐Machine Learning/Artificial Intelligence/Analytics ☒Geolocation ☒GIS ☐Situational Awareness Apps-common operating picture applications (i.e. Force Tracking, Chat Applications, Common Operations Applications) ☐HetNets/Mesh Networks/Software Defined Networks ☐Acoustic Signaling (Shot Spotter) ☒ESInet ☐'The Next Narrowbanding' ☐Smart Cities			
Training & Exercises	18	**Communications Exercise objectives.** Specific emergency communications objectives are incorporated into applicable exercises Federal / state / territory-wide	Regular engagement with State Training and Exercise coordinators	Promote addition of emergency communications objectives in state/county/regional level exercises (target Emergency Management community). Including providing tools, templates, etc.	Initial and Defined plus mechanism in place to incorporate and measure communications objectives into state/county/regional level exercises	
Training & Exercises	19	**Trained Communications Unit responders.** Communications Unit personnel are listed in a tracking database (e.g. NQS One Responder, CASM, etc.) and available for assignment/response.	<49% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	>50%<74% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	>75%<100% of public safety agencies within a state / territory have access to Communications Unit personnel who are listed in a tracking database and available for assignment/response	
Usage	20	**Communications Usage Best Practices/Lessons Learned.** Capability exists within jurisdiction to share best practices/lessons learned (positive and/or negative) across all lanes of the Interoperability Continuum	Best practices/lessons learned intake mechanism established. Create Communications AAR template to collect best practices	Initial plus review mechanism established	Defined plus distribution mechanism established	

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
		related to all components of the emergency communications ecosystem				
Outreach	21	**WPS subscription.** WPS penetration across state / territory compared to maximum potential	<9% subscription rate of potentially eligible participants who signed up WPS across a state / territory	>10%<49% subscription rate of potentially eligible participants who signed up for WPS a state / territory	>50%<100% subscription rate of potentially eligible participants who signed up for WPS across a state / territory	
	22	**Outreach.** Outreach mechanisms in place to share information across state	SWIC electronic communication (e.g. SWIC email, newsletter, social media, etc.) distributed to relevant stakeholders on regular basis	Initial plus web presence containing information about emergency communications interoperability, SCIP, trainings, etc.	Defined plus in-person/webinar conference/meeting attendance strategy and resources to execute	
Lifecycle	23	**Sustainment assessment.** Identify interoperable component system sustainment needs;(e.g. communications infrastructure, equipment, programs, management) that need sustainment funding. (Component systems are emergency communications elements that are necessary to enable communications, whether owned or leased - state systems only)	< 49% of component systems assessed to identify sustainment needs	>50%<74% of component systems assessed to identify sustainment needs	>75%<100% of component systems assessed to identify sustainment needs	

Interoperability Continuum	Marker #	Best Practices / Performance Markers	Initial	Defined	Optimized	Comment
	24	**Risk identification.** Identify risks for emergency communications components. (Component systems are emergency communications elements that are necessary to enable communications, whether owned or leased. Risk Identification and planning is in line with having a communications COOP Plan)	< 49% of component systems have risks assessed through a standard template for all technology components	>50%<74% of component systems have risks assessed through a standard template for all technology components	>75%<100% of component systems have risks assessed through a standard template for all technology components	No component risk assessment for LMR
All Lanes	25	**Cross Border / Interstate (State to State) Emergency Communications.** Established capabilities to enable emergency communications across all components of the ecosystem.	Initial: Little to no established: ☒Governance ☒SOPs/MOUs ☒Technology ☒Training/Exercises ☒Usage	Defined: Documented/established across some lanes of the Continuum: ☐Governance ☐SOPs/MOUs ☐Technology ☐Training/Exercises ☐Usage	Optimized: Documented/established across all lanes of the Continuum: ☐Governance ☐SOPs/MOUs ☐Technology ☐Training/Exercises ☐Usage	

Attachment 6: Shared Systems Study Group Report to the ISICSB:

Shared Systems Study Group

Report of Findings

September 2020

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Preface

The Iowa Statewide Interoperable Communications System Board (ISICSB) would like to thank the members of the Shared Systems Study Group (SSSG) for their time in researching and drafting this document. The ISICSB recognizes that the production of a document of this scale and scope requires a significant amount of time and effort and appreciates the participation of every member that was involved.

Study Group Type	Name	Agency	Disciplines Covered	ISICS User Level
Control Station User – Large Agency	Jason Study	Pottawattamie County Sheriff's Office	Law Enforcement; Communications Center	Level 1
Level 3 or 4 User of ISICS	Jason Hoffman	Carroll County Sheriff's Office	Law Enforcement; Communications Center	Level 4
	Brian Hamman	Montgomery County EMA	Emergency Management; Communications Center	Level 4
	Sheriff Chad Leonard	Dallas County Sheriff's Office	Law Enforcement	Level 4
Level 1 User	Chris Jasper	Muscatine County Sheriff's Office	Law Enforcement; Communications Center	Level 1
	Chief Dennis McDaniel	Johnston PD	Law Enforcement	Level 1
	Curt Woten	Blakesburg Fire Department	Volunteer Fire/EMS	Level 1
Control Station User - Small Agency	Sheriff Gary Anderson	Appanoose County Sheriff's Office	Law Enforcement; Communications Center	Level 1 (PSAP)
VHF User	Dan Rammelsberg	Benton County	Fire/EMS	Level 2
	Sgt. Corey Trucke	Ida County Sheriff's Office	Law Enforcement; EMS; Communications Center	Level 2
	Sheriff Keith Davis	Wayne County Sheriff's Office	Law Enforcement	Level 1 (PSAP)
ISICS System Administrator	Scott Richardson	Iowa Dept. of Public Safety	Communications	N/A
SARA User	Sheriff Rob Rotter	Iowa County Sheriff's Office	Law Enforcement	Level 1
SWIC	Chris Maiers	ISICSB	Communications	N/A
Deputy SWIC	Chief Curtis "Wally" Walser	Cedar Rapids Fire Department	Fire; EMS; Communications	Level 2

Executive Summary

The Iowa Statewide Interoperable Communications System Board (ISICSB) organized the ad-hoc formation of the Shared Systems Study Group (SSSG) in February 2020 to revisit the findings presented in the staff study *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection* that led to the ISICSB adopting a technical recommendation not to utilize an ISSI in August of 2017[1].

The SSSG met regularly beginning in March 2020 and discussed what possible achievable goals of an inter- radio frequency subsystem interface (ISSI) deployment could be, the benefactors, associated start-up and on-going costs, maintenance considerations, and operational characteristics. APCO Project 25 (P25) standards engineers from Motorola and Harris gave testimony on how an ISSI can work with respect to standards. Engineers from other states with similar deployments (e.g. Motorola statewide system to larger Harris system) presented their experiences on what did and did not work, and what aspects of ISSI technology still have issues. The SSSG recognized and concluded that the deployment of an ISSI is not plug-and-play.

Given the potentially large start-up and on-going costs associated with an ISSI and what Iowa public safety stakeholders could reasonably expect for functionality, the ISSI still appears to be an expensive proposition with a relatively small return on investment that will not uniformly benefit all public safety agencies in Iowa. The main concern of the group was voice interoperability, and other means undertaken can accomplish voice interoperability for substantially lower start-up and on-going costs.

In addition, the lack of various features such as automatic roaming for subscriber radios between Motorola and Harris infrastructure present no fundamental operational gain for end users since a manually channel/talkgroup change is necessary to access the other system.

Furthermore, the ISSI will not present benefit to any stakeholders utilizing conventional VHF networks. These VHF networks are prominent in Iowa.

The SSSG concludes and recommends that the ISICSB discontinue discussions of an ISSI deployment at this time in Iowa for LMR-to-LMR connections. The ISICSB and SWIC should maintain awareness of evolutions of the ISSI and make recommendations as necessary.

The SSSG also recommends that programs and new funding be developed to assist local agencies with procuring and deploying equipment capable of connecting to ISICS within the public safety communications center and in the field via mobile and portable subscriber radios. This would be a more prudent use of tax payer monies. The funding mechanisms should be new and not siphon monies from programs currently in existence. Any program should also include training for local agencies.

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[1] August 2017 ISICSB Meeting Minutes: https://isicsb.iowa.gov/sites/default/files/meetings/minutes/2017-08/20170810-boardmeetingminutes_final_draft_cm.pdf

Table of Contents

Glossary of Terms/Acronym List

APCO – Association of Public-Safety Communications Officials

ATIS – Alliance for Telecommunications Industry Solutions.

CAP – Compliance Assessment Program. A program run by the federal Department of Homeland Security that tests radios and other equipment for compliance with P25 standards.

Consolette/control station – A mobile radio with additional features that can be integrated into dispatch consoles for communication on a LMR network

CSSI – Console Subsystem Interface. A connection that allows for a console to connect to the P25 system core of a different system manufacturer.

DSR – Dynamic System Resiliency. A system feature of ISICS that allows the radio system to recover from a technical problem by rerouting specific functions such as radio traffic. The end users typically do not notice this.

FirstNet – A LTE network built by AT&T that is dedicated to public safety agencies' mobile broadband data needs.

FTE – Full-Time Employees

FPIC – Federal Partnership for Interoperable Communications. A federal group of "…more than 200 Federal, State, local, tribal and territorial public safety representatives from over 45 federal agencies, as well as representatives from state, tribal, territorial and local entities, focusing on improving interoperability among the public safety community at all levels of government and addressing common public safety related communications issues."[2]

ISICS – Iowa Statewide Interoperable Communications System. The statewide interoperable P25 Phase II LMR system in Iowa that operates in 700/800 MHz.

ISICSB – Iowa Statewide Interoperable Communications System Board. The board that creates and maintains interoperable policy in Iowa defined in Iowa Code sections 80.28 and 80.29. This board is also tasked with the maintenance of policy for the ISICSB.

ISSDA – Iowa State Sheriffs and Deputies Association

ISSI – Inter-Radio Frequency Subsystem Interface. A connection that allows for an interconnection between P25 LMR system cores that is highly configuration dependent.

JLMRLTE – Joint LMR/LTE standards group under ATIS. This group is drafting standards for future connections between LMR and LTE systems.

LMR – Land Mobile Radio

LTE – Long Term Evolution. A cellular data standard and protocol

NCSWIC – National Council of Statewide Interoperability Coordinators. A group that supports the statewide interoperability coordinators "…by developing products and services to assist them with leveraging their relationships, professional knowledge, and experience with public safety partners involved in interoperable communications at all levels of government."[3]

NY MTA – New York Metro Transit Authority

P25 – APCO Project 25. A set of standards for digital public safety LMR systems. These standards apply to conventional and trunked radio systems. The standards outline how some features and functions are configured in radios to enhance interoperability.[4]

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[2] https://www.cisa.gov/safecom/fpic-membership
[3] https://www.cisa.gov/safecom/NCSWIC
[4] https://www.apcointl.org/spectrum-management/spectrum-management-resources/interoperability/p25/

P25 Phase I Frequency Division Multiple Access (FDMA) – A type of operating parameters on a trunked radio system. Under this configuration, voice channel talkpaths are dynamically assigned to radio users when they activate a radio and the talkgroup they are using. The channel talkpath is automatically released when the transmission concludes.[5]

P25 Phase II Time Division Multiple Access (TDMA) – A type of operating parameters on a trunked radio system. Under this configuration, voice channel talkpaths are dynamically assigned to radio users when they activate a radio and the talkgroup they are using. Each voice channel can fit two talkpaths which doubles the capacity of FDMA. The channel talkpath is automatically released when the transmission concludes.[5]

PSAP – Public Safety Answering Point

RFI – Request for Information

RFP – Request for Proposal

SAFECOM – A federal group under the Cybersecurity and Infrastructure Security Agency that "…works to improve emergency response providers' inter-jurisdictional and interdisciplinary emergency communications interoperability across local, regional, tribal, state, territorial, international borders, and with federal government entities."[6]

SSSG – Shared Systems Study Group

SME – Subject matter experts

TIA – Telecommunications Industry Association

TR-8 – The set of engineering committees within TIA that draft and maintain standards for P25 radios and infrastructure

VHF – Very High Frequency. Falls in the range of 150 – 174 MHz and is non-contiguous.[7] Many of the local LMR systems in Iowa utilize VHF conventional configurations

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[5] https://www.cisa.gov/sites/default/files/publications/08-28-2020_P25-SPUN_FINAL_508c_0.pdf

[6] https://www.cisa.gov/safecom

[7] https://www.fcc.gov/public-safety/public-safety-and-homeland-security/policy-and-licensing-division/public-safety-spectrum

I. Introduction

The Iowa Statewide Interoperable Communications System (ISICS) was first laid out in the *Iowa Statewide Interoperable Communications System Master Plan[8]* published in September 2009. The Iowa Statewide Interoperable Communications System Board (ISICSB) released a Request for Information (RFI) in late-2011 and a Request for Proposal (RFP) in late-2013. Bids were received from L3-Harris, Motorola Solutions and RACOM. The contract for the Iowa Statewide Interoperable Communications System (ISICS) was signed in late-2015.

II. Past Action

Within the original contract for deployment of the ISICS platform a single inter radio frequency subsystem interface (ISSI) was included. However, concern grew about the feasibility of successfully deploying managing and maintaining an ISSI connection grew as reports from across the United States grew of failed deployments or those that did not meet user needs or expectations.

The ISICSB commissioned an ISSI Committee and hosted an ISSI Summit in March of 2017 that included participation from Iowa stakeholders and representatives from the Telecommunications Industry Association (TIA) TR-8, Project 25 (P25) Standards committee chairs. Several issues worthy of note emerged during this summit. These issues were summarized in a staff study memorandum entitled *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection* included in Appendix A.

This staff study was discussed within the Technology Committee of the ISICSB and brought to the ISICSB for discussion. The ISICSB adopted a technical recommendation to not use the ISSI in August 2017 during the regularly scheduled ISICSB meeting.

The resulting contract credit for the never delivered or installed ISSI was utilized for consolettes for local public safety answering points (PSAPs) that did not have connection to the ISICS platform for interoperability. In addition to contract credit, additional consolettes and control stations were purchased with pass-through grant money to get other PSAPs connected to the ISICS platform. This program has proven successful with mobile and stationary planned and unplanned events.

In late-2019, the Iowa State Sheriffs and Deputies Association (ISSDA) requested the ISICSB revisit the decision on a possible ISSI implementation and installation. At the January 2020 ISICSB meeting, ISICSB Chair Lt. Tom Lampe commissioned an ad-hoc Shared Systems Study Group (SSSG)[9]. Chair Lampe tasked the SSSG with several items outlined in the slides presented to the ISICSB[10]. The members of the SSSG had to fit several categories that spanned the LMR landscape in Iowa—trunked, conventional, analog, digital, 700/800 MHz, and VHF. They also had to represent several disciplines such as law enforcement, firefighting, emergency medical services, communications, emergency management, and LMR system administration.

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[8] https://isicsb.iowa.gov/sites/default/files/documents/2016/12/isics_master_plan_v1_11-08-2009.pdf
[9] https://isicsb.iowa.gov/sites/default/files/meetings/minutes/2020-02/2020-01-09_isicsb_meeting_minutes_final.pdf
[10] https://isicsb.iowa.gov/sites/default/files/documents/2020/01/shared_systems_study_group.pdf

The SSSG began meeting in March of 2020 and met regularly with the exception of April 2020 due to the response to the COVID-19 pandemic. During those proceedings, the group discussed the previously published *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection* staff study memo, ISSI technology, and heard testimony from subject matter experts (SMEs).

III.   Shared Systems Study Group Findings

A.   Meeting Proceedings

The SSSG met for the first time in March 2020. During the introductory meeting (see Appendix B for minutes), a brief history of the origins of the SSSG was given along with the purpose of the group. The group members then established additional goals for the SSSG. They included but were not limited to:
- Best practices and suggestions for VHF/700 MHz/800 MHz users
- Establishing affordability
- Bridging communications gaps
- Developing an understanding of LMR systems
- Technical considerations of an ISSI
- Looking into legal aspects related to ISSI
- Clarifying what interoperability entails from all lanes of the *SAFECOM Interoperability Continuum*[11]
- Training and education related to ISSI

A brief review of the SAFECOM Interoperability Continuum and *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection* staff study memo were also conducted. Group members also listed ideas that had been mentioned to them about what an ISSI can do.

While no meeting was held in April 2020 due to the COVID-19 pandemic, the SSSG was given materials related to the SAFECOM Interoperability Continuum to review.

At the May 2020 meeting Scott Wright, Engineer 2 from the State of Connecticut, presented their statewide P25 LMR system's ISSI deployments and integrations.   Mr. Wright outlined that Connecticut's statewide LMR system is built on Motorola infrastructure and operates in P25 Phase II, similar to ISICS. They have been able to successfully deploy an ISSI connection between Motorola-to-Motorola systems and experience some success in deploying an ISSI between Motorola and EF Johnson/Kenwood systems. The Motorola-to-EF Johnson/Kenwood deployment still has several features and functions that do not work appropriately. Mr. Wright went on to explain that their deployment between their statewide Motorola and the New York Metro Transit Authority (NY MTA) L3-Harris system has not yet been successful.

In in this meeting, Mr. Wright discussed some benefits that have been observed from a successful deployment such as the Motorola-to-Motorola integrations along the planning and technical complexities associated with any deployment. Mr. Wright also discussed the staff that is necessary for their deployments which includes three full-time Motorola system technicians (STs) and a Motorola

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[11] https://www.cisa.gov/sites/default/files/publications/interoperability_continuum_brochure_2_1.pdf

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system manager (SM). In addition, Connecticut also has a Motorola system technologist assigned to them for 60% of the week. The staff provided to Connecticut by the system manufacturer are in addition to State of Connecticut employees.

Mr. Wright discussed findings in Connecticut that included that not all subscriber radios purchased by agencies will work in an ISSI environment. During further discussion, it was revealed that several Iowa agencies had purchased radios that would not work in an ISSI environment.

The June 2020 SSSG meeting featured P25 Standards SMEs from L3-Harris (Tom Hengeveld and Jeremy Elder) and Motorola Solutions (Andy Davis). During the meeting, the SMEs discussed P25 as it relates to conventional and trunked LMR systems, and how those standards are incorporated into an ISSI deployment.

The P25 SMEs also discussed aspects of how standards are drafted and approved. They added that not all standards are required to be in product. In addition, there may be some P25 standards that are incorporated into products using different methodologies.

The P25 SMEs discussed the current status of P25 Phase II Time Division Multiple Access (TDMA) standards and P25 Compliance and Conformance testing. To date, any P25 conformance testing only pertains to P25 Phase I Frequency Division Multiple Access (FDMA). Compliance Assessment Program (CAP) testing for the ISSI is still not complete.

The P25 SMEs stated that with any ISSI deployment, defining goals is essential to understanding the scope of the project and desired outcomes. They also elaborated on several complexities related to system configuration and The ISICS platform is based on P25 Phase II TDMA technology, so there is a risk of degraded system capacity if talkgroup functionality is downgraded to P25 Phase I FDMA under an ISSI deployment. The SMEs also provided some clarification on licensing and costs and other functionality.

The deployment of the consolettes/control stations to PSAPs was discussed with the P25 SMEs. It was commented that getting a basic connection at the PSAP for patching to talkgroups can work well. The PSAPs that can perform a patch and remotely steer the consolette/control station to a different talkgroup have additional capability.

During member discussion, the SSSG members reviewed information that was conveyed to them and agreed that the main focal point for interoperability in Iowa should be voice-to-voice interoperability. The SSSG also agreed that end users need develop an understanding of interoperability and how products work from reliable, reputable and unbiased sources. In addition, there was discussion on information and guidance that needs to be conveyed to local agencies on how to achieve interoperability.

B. Discussion of Facts and Findings

The ISSI and to a lesser extent the CSSI have garnered significant interest among public safety users in Iowa dating back to the original ISICS RFI in 2012. Much of this was originally addressed in the *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection* staff study memo. In that document, several facts were outlined and discussed and are re-addressed in this section.

1.   ISICS a Project 25 (P25) platform was awarded with one Project 25 Inter Radio Frequency Subsystem Interface (ISSI) by Motorola in their contract proposal.

Upon the completion of the staff study and subsequent action by the ISICSB to adopt it as a technical recommendation, the ISSI was removed from the contracted deployment of ISICS via a change order. The State of Iowa was awarded a contract credit for the undelivered equipment that allowed for the procurement of consolettes that were then passed out to local PSAPs to establish a connection to ISICS. Most of these consolettes were given to PSAPs that would not have benefited from an ISSI installation.

2.   … Several issues worthy of note emerged during this summit including but not limited to: the training necessary for radio users, the perishable skills of system and platform administrators in deploying ISSI technology between systems, the challenges other states and counties have faced in correcting broken interfaces between disparate system manufacturers when one of the systems upgrades software and the burden of initial cost, significant costs of trouble shoot problems between system and platforms in both time and money, and lastly the significant maintenance cost of ISSI technology for day-to-day use.

There still appear to be instances of limited or a lack of functionality between disparate manufacturers in an ISSI deployment that would be comparable to configurations in Iowa—e.g. Motorola to L3-Harris—based on testimony from the State of Connecticut. Software updates also need to be conducted in such a way to ensure backwards compatibility. The P25 SMEs stated that while they test for backwards compatibility with software updates, they cannot test every combination and configuration.

Costs still appear to be high based on the initial installation of equipment, backhaul required to network the systems together and potential need for full-time employees (FTEs) to manage the network(s). This is in addition to any special contracted employees from the manufacturers.

3.   ISSI is a P25 standardized system interface between networks. Each network requires backup connections for each ISSI connection so communications is may be maintained during a primary system failure. Depending upon configuration of the backhaul and reliability requirements to achieve 99.999 percent reliability with 1 percent grade of service can require a direct connection between each primary and every backup core of each system such that there is a reliable transition in the event of a system failure of either system. Any system failure connected to ISICS would need to instantly rollover to backup cores of either system. If this auto rollover is not necessary, then it is questionable if the value-added proposition of ISSI serves any real value if its loss is not factored in the cost model.

While some modern system designs can assist with streamlining networking in a multiple connection environment like may be required in Iowa, relying on a single pathway to connect the systems together introduces a single point of failure which may not be desirable due to the introduction of a single point of failure. In addition, the

ISICS platform utilizes Dynamic System Resiliency (DSR) for primary to backup core transitions. This functionality is not currently supported in a Motorola-to-L3-Harris ISSI deployment. In a situation in which the ISICS backup cores may need to utilized, this could render ISSI dependent L3-Harris system users without a connection to ISICS for interoperable communications.

4.   ISSI backhaul connections between system, (e.g., capacity to each core) and the number of ISSI physical connections increase as the ISICS platform connects to more subsystems. This presents daily, weekly and monthly ongoing costs in labor and technical maintenance for both subsystems.

This is generally unchanged.

5.   In conversations with Iowa locals they assume the State will pick up any cost to create an ISSI interface between systems, at no cost to those locals. However, neither the State nor ISICSB has adequate budgeted funds to pay for any additional ISSI infrastructure or monthly cost backhaul which would require to be in place in perpetuity.

While perceptions on who would pay for equipment and services may have changed or evolved, there are no budgeted monies for additional ISSI equipment, expansion of channel capacity to support ISSI users, or costs associated with backhaul and FTEs.

6.   Exact costs for ISSI backhaul between ISICS and other systems (whether microwave or fiber connections) cannot be determined at this time. Even if these current costs could be determined, they would not be reliable, for the foreseeable future, as adding one more subsystem to the mix of ISSI interfaces would add to these integrated complexities and require additional backhaul driving up monthly costs. Additionally, the capacity of ISSI is limited to a finite number of system interfaces, and the cost of ISSI infrastructure is significant. Pricing can range into the millions of dollars to cover infrastructure and software on both ends of disparate systems. While bids would be required for exact pricing, conversations with vendors and current ISSI users, indicate costs exceeding a million dollars per system interface is not uncommon.

Expected costs to install an ISSI at the various ISICS cores, backhaul connectivity and necessary channel capacity upgrades at sites is expected to exceed several million dollars in start-up costs. In addition, the on-going maintenance and FTE costs to manage an ISSI deployment would continue to add additional costs.

7.   There is no reliable way to determine the number of push to talks that would be used for interoperability between ISICS and other county systems on a daily, weekly, monthly or yearly basis. Even if that number of push to talks could be determined when divided by a cost of over one million dollars per connection the cost of each push to talk is quite expensive.

As the ISICS platform and consolettes/control stations have been distributed to PSAPs, these numbers are starting to gain some clarity. However, until more in-field radios are connected directly to ISICS, some of these numbers may continue to be nebulous and

may not be representative of how an ISSI would be used in the field. Even then, those numbers would be representative of total number of push-to-talks on ISICS directly and may not correspond to how much an ISSI would be utilized.

Given that the consolettes/control stations have proven to be a robust and cost-effective solution during real-world events by providing pathways for creating as needed on-demand patches between systems, this creates a stark contrast in methodologies of connecting systems. The consolettes/control stations are not limited to licensing like an ISSI and give public safety telecommunicators much more flexibility in communicating with in-field public safety personnel. Given their low start-up and on-going costs, the consolettes/control station integrations into PSCCs present a cost-effective alternative to an ISSI in several regards.

In addition, the consolettes/control stations allow public safety telecommunicators an avenue to track personnel from their PSCCs even when those in-field personnel are far outside of their normal jurisdictional area.

8.   Federal Partnership for Interoperable Communications (FPIC), SAFECOM, and National Council of Statewide Interoperability Coordinators (NCSWIC) and other interested stakeholders have been examining existing ISSI usages looking at value added versus challenges to establish and maintain ISSI between disparate vendor equipment. The anecdotal evidence is not good. When one opens discussions about success they seem to be rare while concerns about persistent failures seem to be quite prevalent.

The FPIC, SAFECOM and NCSWIC groups have continued to meet and discuss ISSI/CSSI technology since the initial Staff Study was completed in 2017. Several in-person meetings with public safety stakeholders and representatives from the various infrastructure manufacturers have led to some improvements in successful deployment outcomes. However, most of the noted successes rely upon the ISSI connection to be between systems of the same manufacturer. Connections between disparate manufacturers continues to bring limited or no success.

When an agency is looking to potentially purchase and deploy an ISSI/CSSI, specific goals and performance metrics must be established in order to create a pathway for success. Those goals likely will parlay into the cost- and operational effectiveness of the ISSI/CSSI installation.

9.   Each radio manufacturer vendor which chose to implemented P25 standard for ISSI interpreted standard guidelines in a unique way consistent with their system design. System design between manufacturers and features which will pass through an ISSI were found to be maturing but not reliable. Unfortunately often fixing one problem often creates other problems.

This is still true. The TIA cannot mandate that manufacturers incorporate standards into product. In addition, the TIA cannot mandate that manufacturers incorporate common features and standards into products using uniform methodology. This discrepancy in feature sets and methods can lead to a failure in deployments if certain functionality is expected.

*10.	Department of Homeland Security (DHS) hosted a summit in Denver, Colorado in 2016 with manufacturers of ISSI, their user community and other interested stakeholders to examine possibilities of standardizing the ISSI feature. Thus far several meetings have produced no demonstrable progress in solving known interface issues.*

Additional summits have been held in numerous cities since then. The ISSI/CSSI continue to be a focal point of needed improvement within P25. Agencies attempting to implement or have already installed an ISSI have discussed numerous issues with their deployments. While many of the problems have been addressed in an ISSI/CSSI deployment between two P25 LMR systems of the same manufacturer, problems persist in deployments between P25 LMR systems of disparate manufacturers.

*11.	There are several public safety organizations attending DHS meetings claiming their ISSI solutions are not working as expected between disparate vendor radio systems.*

This is still true in situations in which the attempted deployment is between P25 systems of disparate manufacturers. As an example, many of the ISSI-related standards are focused on FDMA. This presents potential capacity issues if a system based on the more spectral efficient TDMA is forced to operate in FDMA mode. Additionally, radios are not able to seamlessly roam automatically between ISSI-connected P25 systems made by different manufacturers. The radio user must still physically touch the radio and change talkgroups. This presents no current operational advantages to in-field public safety personnel.

*12.	Most P25 radio subscriber units (mobiles and portables in 700/800 MHZ band) can be programmed to accommodate FDMA and TDMA by channel. So even if currently deployed FDMA radios on the various county FDMA systems are not equipped with TDMA capabilities, they can be upgraded unit by unit to provide TDMA on interoperability channels.*

This is true. Several agencies in Iowa have updated or upgraded to P25 radio subscriber units to TDMA capability or have procured new TDMA-equipped P25 radio subscriber units. Modern P25 radio subscriber units can also be programmed to handle multiple conventional and trunked radio systems. This is has been demonstrated with agencies residing and operating in Iowa along with neighboring state and federal partner agencies. This has also brought for several instances of successful interoperable communications among agencies spanning all levels of government (e.g. municipal, county, state, federal) that can be accomplished by changing the radio to a common talkgroup or channel.

*13.	ISICSB Issues Public Safety Interoperable Communications Grants (PSIC) in which each grant recipient agreed to connect to the state platform when built. The grantees did not specify how they would connect to the statewide system, just that they would connect.*

In utilizing the ISICSB-provided consolette/control stations, this essentially fulfills the PSIC Grant requirements.

The *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection* staff study memo also derived several conclusions that are re-addressed in this section.

1.   ISICSB does not have adequate funding to deploy ISSI and absorb the cost of the backhaul to all three ISICS core locations on a monthly basis. The current microwave network was not designed to accommodate this additional radio system loading.

The ISICSB has not received an additional funding in several years to assist with additional absorption of start-up and on-going costs presented with an ISSI deployment.

2.   The P25 ISSI technology as currently deployed by various vendors has not proven to be a reliable nor elegant interoperability solution. Various vendors' software and hardware solutions have proven to fall out of alignment when one upgrades software or hardware and the other system does not. Therefore, ISSI technology … needs to undergo further maturation.

While there have been improvements in ISSI deployments between P25 LMR systems made by the same manufacturer, there continue to be various struggles with ISSI deployments between P25 LMR systems made by different manufacturers. In addition, many of the standards associated with an ISSI deployment are built upon FDMA operation. With ISICS and other P25 LMR systems in Iowa operating under TDMA, significant questions arise with respect to functionality and capacity with respect to supported standards and features.

3.   ISSI may offer a future value when FirstNet deployed broadband data across Iowa is available.

Iowa is an active participate in the Alliance for Telecommunications Industry Solutions (ATIS) Joint-LMR LTE (JLMRLTE) group that is working on developing the interworking functions (IWF) and standards between P25 LMR and 3GPP LTE systems. Other states are currently investigating this type of connection as well.

4.   Most P25 radios are capable of being programmed to accommodate TDMA and FDMA by talkgroups. Therefore, all radios across Iowa should be programmed to TDMA on the ISICS interoperability talkgroups.

This ability among agencies has expanded since the original staff study was published in 2017. This continues to present an effective means of achieving interoperability and is consistent with practices in legacy conventional systems.

5.   PSIC Grantees need direction in how to connect users to ISICS to comply with grant obligations at time of grant award.

This statement now appears to have broader application today as agencies that did not receive PSIC Grants are seeking additional guidance and clarity on achieving

interoperable communications. Additionally, those agencies seeking guidance and clarity may also need funding assistance to procure necessary equipment within their PSCCs and end-user radio equipment.

The *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection* staff study memo made two recommendations that are re-addressed in this section.

> 1.   *Do not use the ISSI interface provided by Motorola at this time between any existing land mobile radio (LMR) systems and have all current and future LMR radio subscriber units programmed to include the ISICS statewide, regional and county interoperability talkgroups.*
>
> This recommendation is still valid given the aforementioned successes regarding use of the consolettes and control stations, and that the modern P25 subscriber radios can be programmed to handle multiple P25 conventional and trunked LMR systems.
>
> 2.   *Have all PSIC grant recipients upgrade their radios to TDMA where capable to satisfy their PSIC grant obligations.*
>
> Many of the PSIC grantees have opted to do this as they have replaced in-field P25 radio subscriber units. Others have able to accomplish this via the installation of the ISICSB-provided consolettes/control stations.

Additional information conveyed by the invited SMEs added further clarity to how specific configurations may preclude a successful ISSI deployment. As an example, the ISICS features DSR. This feature allows the ISICS to recover from infrastructure failure by routing transmissions through back-up cores and pathways. This functionality is vital to ensure proper operation for public safety personnel in the event of a hardware failure, routine maintenance or other instances that may necessitate the use of back-up infrastructure. The ISSI connections between Motorola and L3-Harris do not support this feature which essentially creates a single point of failure. This is inconsistent with equipment that is public safety grade as defined in ISICSB Policy 2015-03.[12]

Another potential configuration problem stems from how P25 radio subscriber units roam from tower to tower. In order for this functionality to occur, the P25 LMR system has to pass what is called a site adjacency list to the P25 radio. This list tells the radio what towers are nearby in the event the signal gets weak. This allows the P25 radio to affiliate with another site. The site adjacency lists do not currently pass through an ISSI connection between Motorola and L3-Harris systems.

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[12] ISICSB Policy 2015-03 Defining Public Safety Grade:
https://isicsb.iowa.gov/sites/default/files/2015_03_final_defining_public_safety_grade_10.14.15.pdf

The FPIC is also in the process of drafting best practices documents for the ISSI/CSSI[13, 14]. Those documents outline findings and provide recommendations for agencies wishing to potentially deploy an ISSI/CSSI. While some of these documents have been published, the set is not complete at the time of this report. Several conclusions of those documents are in this report.

Potentially the biggest pitfall of attempting to procure and deploy an ISSI in Iowa is that it would offer no benefit to agencies relying on conventional LMR systems. The agencies that may see a benefit already have a pathway for interoperability with programming their local system and the ISICS interoperable talkgroups in their P25 radios. Even for the agencies with P25 trunking capable radios, any obtainable benefits may be minimal at this point when compared to what is currently in place with consolettes/control stations in the PSAPs across Iowa.

The SMEs from L3-Harris and Motorola stated very clearly that stakeholders need to define what goals are for any ISSI deployment. In discussions among the members of the SSSG, voice interoperability was stated as the main goal. Given that this can be accomplished with already provided pathways with programming of ISICS regional and statewide interoperability talkgroups in to end user P25 radio subscriber units and connectivity available within the PSAPs with provided consolettes/control stations, the expended monies on an ISSI would seem duplicative.

Additionally, training is an issue that spans the use of technology and other aspects of emergency communications. It is probable that several components of interoperability could be addressed with proper training of personnel using technology and equipment that is currently available. While certain operational situations may be more complex or fast-paced than others, working to ensure public safety personnel are proficient with equipment is paramount to the success of any mission.

IV.   Recommendations

Given the information, updates and overview from the SMEs related to the ISSI, insights on configurations, standards, and the current technological landscape among public safety and public service personnel in Iowa, the SSSG recommends that the ISSI not be used for LMR-to-LMR system connections. The SSSG acknowledges that while conceptually an ISSI seems like a good piece of technology, it is not plug-and-play, and technical realities will continue to prevent a truly successful deployment at this time given that not enough features and functions have been developed and successfully implemented in a multi-manufacturer configuration. With the main concern of the group being voice interoperability, it was noted that other avenues to establish voice interoperability have already been undertaken by the ISICSB and proven successful on several occasions. There would also be

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[13] Best Practices for Planning and Implementation
of P25 Inter-RF Subsystem Interface (ISSI) and
Console Subsystem Interface (CSSI):
Volume I:
https://www.cisa.gov/sites/default/files/publications/issi_cssi_best_practices_vol_1_final_05132019_508c_v2.pdf
[14] Best Practices for Planning and
Implementation of P25 Inter-RF
Subsystem Interface (ISSI) and
Console Subsystem Interface (CSSI):
Volume II: https://www.cisa.gov/sites/default/files/publications/07-02-2020_P25-ISSI-CSSI-Best-Practices-Vol2_FINAL_508c.pdf

no benefit to the majority of Iowa counties or agencies which currently utilize conventional VHF LMR systems if an ISSI were implemented. It seems infeasible that an ISSI deployment would yield a positive return of investment of taxpayer money at this time.

Currently, radios that are capable of accessing ISICS are also capable of accessing other P25 trunked networks in Iowa. These radios can be dual programmed to include those systems. The SSSG recommends that radios be programmed for multiple systems as needed.

The SSSG acknowledges that this may require re-evaluation at some point in the future once specific feature sets are developed, implemented and proven successful, and there would be notable benefits to the majority of counties and agencies within Iowa.

The SSSG recommends that the ISICSB and SWIC be tasked with maintaining awareness of the progression of ISSI and bring recommendations forward as necessary. This includes continued participation within:
- TIA/TR-8
- FPIC
- P25 Steering Committee
- NCSWIC
- SAFECOM
- ATIS JLMRLTE

The SSSG recommends that funding and assistance be made available for agencies to access ISICS for interoperability given this would likely be a more prudent investment of taxpayer monies. This should include control stations, consolettes or dispatch consoles for the PSCCs, mobile and portable in-field subscriber radios, and possibly infrastructure where deemed appropriate. This funding stream should consist of a new revenue source and not siphon monies from other programs. Any funding program should respect home rule and avoid various mandates that may not be achievable. It would be preferable that this be given out to agencies as grants.

The SSSG also recommends that a figurative "playbook" be drafted by ISICSB committees and subcommittees to assist agencies establish a connection to ISICS based on several different known configurations and estimated expected costs. This playbook should focus on interoperability and include work to:
- Update subscriber standards with more examples
- Demonstrate how various PSAPs have integrated consolettes/control stations/consoles
- Demonstrate how various agencies have used mobile and portable radios along with scanners
- Showcase various policies on the use of ISICS with disparate system equipment.

Any "playbook" should include a robust training component to ensure that agencies and personnel are proficient with any procured equipment. Training should also include the use of interoperable talkgroups on ISICS and conventional channels and the associated situations that would necessitate their use.

Finally, the SSSG recognizes that there are several interoperable systems that Iowa agencies that border neighboring states may have to utilize and navigate. In addition to the work already being done, more

investigation on interstate interoperability should be undertaken to assist with the transition from one radio system to the next.

Appendix A. *ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection*

Thomas Lampe, Chair
Jason Leonard, Vice-Chair
Craig Allen, SWIC
Chris Maiers, SWIC

M E M O R A N D U M

TO: All ISICSB Board Members

FROM: SWIC Craig Allen

DATE: June 8, 2017

SUBJECT: ISSI Committee Recommendation for Iowa Statewide Interoperable Communication System (ISICS) use of ISSI connection.

PROBLEM STATEMENT

ISICS Platform was awarded with one ISSI connection asset with many potential interoperability partners from across Iowa expressing interest in using this technology. ISSI offers an expensive one time and sustaining costs as an interoperability solution.

FACTS BEARING ON THE PROBLEM:

1. ISICS a Project 25 (P25) platform was awarded with one Project 25 Inter Radio Frequency Subsystem Interface (ISSI) by Motorola in their contract proposal.

2. ISICSB hosted an ISSI Summit on March 13, 2017 at West Des Moines where representatives from Telecommunications Industry Association (TIA) TR-8, Project 25 Standards committee chairs participated in a three hour ISSI (recorded and broadcast) discussion specifically to discuss ISICS potential use of an ISSI in the Time Division Multiple Access (TDMA) 700 MHz Two Slot in an ISSI interface with multiple Frequency Division Multiple Access (FDMA) 800 MHz systems. The TIA TR-8 representatives included overall TIA TR-8 Chair Andy Davis, TR-8 Committee Wireline Interface Chair Jerry Drobka, TR-8 TDMA Two Slot Chair Roy McClellan and P25 User Group Committee Chair Jim Downes the discussion was led by Chief Information Officer Robert Von Wolffradt and SWIC Craig Allen. During this three hour summit it became clear from this panel of experts, use of an ISSI interface between a statewide platform in TDMA with coverage over laying a county or city subsystem using FDMA was not the most practical nor economical solution to interoperability. Several issues worthy of note emerged during this summit including but not limited to: the training necessary for radio users, the perishable skills of system and platform administrators in deploying ISSI technology between systems, the challenges other states and counties have faced in correcting broken interfaces between disparate system manufacturers when one of the systems upgrades software and the burden of initial cost, significant costs of trouble shoot problems between system and platforms in both time and money, and lastly the significant maintenance cost of ISSI technology for day-to-day use.

3. ISSI is a P25 standardized system interface between networks. Each network requires backup connections for each ISSI connection so communications is may be maintained during a primary system failure. Depending upon configuration of the backhaul and reliability requirements to achieve 99.999 percent reliability with 1 percent grade

of service can require a direct connection between each primary and every backup core of each system such that there is a reliable transition in the event of a system failure of either system. Any system failure connected to ISICS would need to instantly rollover to backup cores of either system. If this auto rollover is not necessary, then it is questionable if the value-added proposition of ISSI serves any real value if its loss is not factored in the cost model.

4. ISSI backhaul connections between system, (e.g., capacity to each core) and the number of ISSI physical connections increase as the ISICS platform connects to more subsystems. This presents daily, weekly and monthly ongoing costs in labor and technical maintenance for both subsystems.

5. In conversations with Iowa locals they assume the State will pick up any cost to create an ISSI interface between systems, at no cost to those locals. However, neither the State nor ISICSB has adequate budgeted funds to pay for any additional ISSI infrastructure or monthly cost backhaul which would require to be in place in perpetuity

6. Exact costs for ISSI backhaul between ISICS and other systems (whether microwave or fiber connections) cannot be determined at this time. Even if these current costs could be determined, they would not be reliable, for the foreseeable future, as adding one more subsystem to the mix of ISSI interfaces would add to these integrated complexities and require additional backhaul driving up monthly costs. Additionally, the capacity of ISSI is limited to a finite number of system interfaces, and the cost of ISSI infrastructure is significant. Pricing can range into the millions of dollars to cover infrastructure and software on both ends of disparate systems. While bids would be required for exact pricing, conversations with vendors and current ISSI users, indicate costs exceeding a million dollars per system interface is not uncommon.

7. There is no reliable way to determine the number of push to talks that would be used for interoperability between ISICS and other county systems on a daily, weekly, monthly or yearly basis. Even if that number of push to talks could be determined when divided by a cost of over one million dollars per connection the cost of each push to talk is quite expensive.

8. Federal Partnership for Interoperable Communications (FPIC), SAFECOM, and National Council of Statewide Interoperability Coordinators (NCSWIC) and other interested stakeholders have been examining existing ISSI usages looking at value added versus challenges to establish and maintain ISSI between disparate vendor equipment. The anecdotal evidence is not good. When one opens discussions about success they seem to be rare while concerns about persistent failures seem to be quite prevalent.

9. Each radio manufacturer vendor which chose to implemented P25 standard for ISSI interpreted standard guidelines in a unique way consistent with their system design. System design between manufacturers and features which will pass through an ISSI were found to be maturing but not reliable. Unfortunately often fixing one problem often creates other problems.

10. Department of Homeland Security (DHS) hosted a summit in Denver, Colorado in 2016 with manufacturers of ISSI, their user community and other interested stakeholders to examine possibilities of standardizing the ISSI feature. Thus far several meetings have produced no demonstrable progress in solving known interface issues.

11. There are several public safety organizations attending DHS meetings claiming their ISSI solutions are not working as expected between disparate vendor radio systems.

12. Most P25 radio subscriber units (mobiles and portables in 700/800 MHZ band) can be programmed to accommodate FDMA and TDMA by channel. So even if currently deployed FDMA radios on the various county FDMA systems are not equipped with TDMA capabilities, they can be upgraded unit by unit to provide TDMA on interoperability channels.

2

13. ISICSB Issues Public Safety Interoperable Communications Grants (PSIC) in which each grant recipient agreed to connect to the state platform when built. The grantees did not specify how they would connect to the statewide system, just that they would connect.

DISCUSSION OF THE ISSUES:

1. ISSI P25 feature may one day evolve into a workable solution for cross platform interfaces. However, today this solution does not appear a good value proposition for Iowa.

2. ISSI seems to offer the greatest value proposition to radio systems geographically situated side-by-side (county beside county) and not in one over the other circumstances like in Iowa ISICS statewide platform and the county subsystems within the same coverage footprint.

3. ISICS offers in building coverage within communities (cities) of over 30,000 populations. The Iowa county subsystems operating today are in these same population centers, therefore there does not appear to be a value proposition for ISSI in those areas of platform over system overlay.

4. ISICS is a free use platform. County users leaving their fee for service networks will not be required to pay a fee to use ISICS for interoperability. County fee for service systems have verbally indicated they expected to be compensated for outside users coming onto and using their networks. ISSI further loses value if outside ISICS users would be expected to pay for use of using a county system via ISSI interface where ISICS already provides radio coverage.

5. There may be a use for ISSI in the future as the process through which FirstNet is deployed across Iowa. FirstNet uses Long-Term Evolution (LTE) technology, and many expect LTE to allow a push to talk interface between P25 platforms and FirstNet LTE networks at some point in the future. If the ISSI technology advances and LTE interface is proven workable, this may be a viable future consideration for cross system push to talk.

6. The most obvious and easily manageable solution for statewide interoperability between existing FDMA 800 MHz users and ISICS TDMA 700 MHZ platform is to program every 700/800 MHz radio subscriber unit into ISICS and have all radios programmed with the same ISICSB approved bank of interoperability talk groups. The only cost is programming the talk groups in the radios and for those radios capable of being upgraded to TDMA on a talk group basis, having PSIC grantees pay that upgrade cost as part of their grant match and meeting the obligation to "connect to the statewide platform."

CONCLUSIONS:

1. ISICSB does not have adequate funding to deploy ISSI and absorb the cost of the backhaul to all three ISICS core locations on a monthly basis. The current microwave network was not designed to accommodate this additional radio system loading.

2. The P25 ISSI technology as currently deployed by various vendors has not proven to be a reliable nor elegant interoperability solution. Various vendors' software and hardware solutions have proven to fall out of alignment when one upgrades software or hardware and the other system does not. Therefore, ISSI technology … needs to undergo further maturation.

3. ISSI may offer a future value when FirstNet deployed broadband data across Iowa is available.

4. Most P25 radios are capable of being programmed to accommodate TDMA and FDMA by talkgroups. Therefore, all radios across Iowa should be programmed to TDMA on the ISICS interoperability talkgroups.

3

5. PSIC Grantees need direction in how to connect users to ISICS to comply with grant obligations at time of grant award.

RECOMMENDATION:

1. Do not use the ISSI interface provided by Motorola at this time between any existing land mobile radio (LMR) systems and have all current and future LMR radio subscriber units programmed to include the ISICS statewide, regional and county interoperability talkgroups
2. Have all PSIC grant recipients upgrade their radios to TDMA where capable to satisfy their PSIC grant obligations.

COSTS - None

4

Appendix B. Shared Systems Study Group Meeting Minutes

Shared Systems Study Group (SSSG)
Meeting Minutes
March 11, 2020 at 1300
Location: Iowa Department of Public Safety
Ole O Roe Training Room
215 E 7ᵗʰ St, Des Moines, IA 50319

Conference line opened up at 1250.

Present in person: Jason Hoffman, Chris Jasper, Curt Woten, Dan Rammelsberg, Corey Trucke, Keith Davis, Scott Richardson, Chris Maiers, Curtis "Wally" Walser

Present on the phone: Chad Leonard, Gary Anderson, Brian Hamman, Dennis McDaniel

Absent: Jason Study, Rob Rotter

Chris Maiers started the meeting at 1300 with introductions of members. Those in attendance introduced themselves, listed their agency and home land mobile radio (LMR) system type and frequency set used.

Mr. Maiers gave a brief history of the origins of the Shared Systems Study Group (SSSG), and the purpose of the group. Mr. Maiers listed the tasks given to the SSSG by the ISICSB.

Curtis "Wally" Walser and Mr. Maiers then proceeded to give an overview of the ISSI/CSSI technology. They conducted a poll of the group to find what goals consisted of. Common goals among members included:

- Best practices and suggestions for VHF users
- Best practices and suggestions for 700/800 users
- Affordability – Fully vetting
  - Deployment
  - Maintenance costs with technologies
  - Funding sources
- Is it realistic with costs and technological requirements?
- Capacity/Coverage
  - Will an ISSI help or hurt?
  - P25 Phase I vs P25 Phase II
  - Portable vs mobile
- Bridging communications gaps
  - Iowa to other states
  - PSAP to PSAP
- Legal aspects of ISSI/CSSI
- Clarifying what interoperability means between people
  - Cooperation w/ other agencies
  - Governance and agreements
- Understanding of technology and requirements in a practical sense
- Training and education needs
  - What they need to do vs level of comfort
- Ease of use
- Understanding balance between technology and governance
- Developing an understanding of differences between trunked and conventional LMR systems
- Figuring out where dual-programmed radios fit into the equation

Shared Systems Study Group (SSSG)
Meeting Minutes
March 11, 2020 at 1300
Location: Iowa Department of Public Safety
Ole O Roe Training Room
215 E 7th St, Des Moines, IA 50319

- Will ISSI/CSSI affect system integrity? Are there unintended consequences?
- What is lowest common denominator?
    o Concern with switching of radios
- If everything were tied together, would it be too much to listen to?

Mr. Walser noted that many of the items mentioned by SSSG members are a part of the SAFECOM Interoperability Continuum that fall outside of technology. The SSSG then proceeded to do a cursory review of the SAFECOM Interoperability Continuum as Mr. Maiers displayed it on the projection screen. Mr. Walser reviewed where various LMR systems in Iowa would fall on the Technology lane with the SSSG. Mr. Maiers discussed that there is a pamphlet and white paper that coincide with the SAFECOM Interoperability Continuum. Mr. Maiers also mentioned to the group that the SAFECOM Continuum is being updated, and that the SSSG would likely be able to get early access.

The SSSG decided they would like a review of the SAFECOM Interoperability Continuum.

Mr. Walser and Mr. Maiers then asked the group to give their thoughts on what they have heard an ISSI can do whether true or not. Common responses among members included:
- ISSI is a network-based solution to connect LMR systems
- Potential for inter-network roaming
- ISSI is not an end all/be all solution
- Only way for non-ISICS user to use ISICS
- Roaming between systems at-will, statewide
- Increase coverage footprint
- Problems with ID management
- Only certain talkgroups will pass through an ISSI
    o Licensing and additional costs
- Potential for loading issues.
- ISSI would not help VHF
- Two separate systems would act as one system

Mr. Maiers then gave an overview of the previous 2017 ISSI Staff Study that was adopted as a technical recommendation by the ISICSB.

The SSSG then decided on several action steps for the next several meetings. They include:
- Discussion with another state working on a multi-manufacturer deployment—New York and Connecticut
- Discussion with another state working on a single manufacturer deployment
- Decide if certain configurations would require multiple ISSIs depending on how subsystems are arranged
- Learn configuration topography from standards groups such as TR-8
- Learn which features pass across an ISSI
    o CAP Testing updates
- Where does a potential tie in with FirstNet fit

Shared Systems Study Group (SSSG)
Meeting Minutes
March 11, 2020 at 1300
Location: Iowa Department of Public Safety
Ole O Roe Training Room
215 E 7th St, Des Moines, IA 50319

Conference line opened up at 1255 CDT.
Meeting Commenced at 1302 CDT.
Present in person: N/A

Present on the phone: Sheriff Gary Anderson, Chief Dennis McDaniel, District Chief Curtis "Wally" Walser, Scott Richardson, Sheriff Keith Davis, Curt Woten, Dan Rammelsberg, Chris Maiers, Terry McClannahan (stand in for Sheriff Chad Leonard)

Absent: Jason Study, Sheriff Rob Rotter, Jason Hoffman, Chris Jasper, Sergeant Corey Trucke, Brian Hamman, Sheriff Chad Leonard

Chris Maiers started the meeting at 1300 with a role call and expression of thanks for those working to address COVID-19 related items in their areas introductions of members. Those in attendance introduced themselves, listed their agency.

Mr. Maiers presented the last meeting minutes from the Shared Systems Study Group (SSSG). He requested the members review them and to voice any concerns related to topics in the minutes related to the inter-RF subsystem interface (ISSI) and/or console subsystem interface (CSSI).

Mr. Maiers revisited some items presented by members of the SSSG that do not directly fall in the lane of technology on the SAFECOM Interoperability Continuum. Mr. Maiers asked if members had a chance to review the documents and if they were beneficial. Further work will be done within the SSSG to further develop an understanding of how technology can fit into the larger interoperable picture for agencies.

Mr. Maiers then introduced Scott Wright, engineer 2, State of Connecticut. Mr. Wright is the lead engineer for the Connecticut statewide P25 Phase II trunked land mobile radio (LMR) system. He is also active within the Motorola Trunked Users Group in the Northeast and is a member of the Federal Partnership for Interoperable Communication's (FPIC) ISSI/CSSI Focus Group.

The Connecticut statewide LMR system is built on Motorola infrastructure with a baseline of 98% mobile coverage and has 12 channels per site. Since the network is Phase II, it provides for 22 talk paths when the control channel is factored out. Network loading is not expected to be an issue give the large capacity of the Connecticut network. Local subsystems do not have that much capacity, so system loading concerns must always be addressed. There were exiting disparate trunked Motorola and EF Johnson LMR systems in Connecticut that utilized their own system cores.

Mr. Maiers then proceeded to ask Mr. Wright about the Connecticut radio system and their experiences with ISSI/CSSI. The responses are summarized in the following paragraphs.

Mr. Wright discussed an updated ISSI/CSSI project (first ISSI purchased in 2015) that started over two years ago (December 2017) in which work began to integrate separate, disparate systems within and around Connecticut together. The desire was to connect disparate Motorola (Connecticut-based), EF Johnson (Connecticut-based) and L3-Harris (State of New York Metro Transit Authority) systems to the

Connecticut statewide LMR system. They have also been able to integrate an AVTEC console via CSSI, and work will begin soon with a Zetron console.

They have found that an interface between two Motorola P25 trunked LMR systems can work well and is fully automatic. They have also found that an interface between a Motorola P25 trunked LMR system and an EF Johnson P25 trunked LMR system can work reasonably well in manual roaming (user has to manually switch talkgroups/systems on the radio), but some features will not work or pass across an ISSI. They have not yet had success in integrating a Motorola P25 trunked LMR system to a L3-Harris P25 trunked LMR system.

Mr. Wright went on to elaborate that as agencies connect with ISSI, it can add layers of complexity that must be addressed. He stated that ISSI connections are not "plug-and-play". Local radio shops may not have comfort or the ability be able to deploy ISSI effectively and program radios in an environment in which ISSI has been deployed. In addition, extra equipment had to be purchased to accommodate systematic differences between P25 Phase I (FDMA) and P25 Phase II (TDMA) trunked systems that are connected via ISSI. He also stated that the technically may be billed as being mature, but there are still issues to be overcome with development and deployment.

There is a significant amount of planning that has to go into an ISSI deployment that involves agreements among government agencies.

For the successful ISSI connections they use a combination of dark fiber and microwave backhaul which the State of Connecticut owns, so costs are mitigated. This is a part of their 911 program and minimizes the need for leased fiber.

Connecticut also has three full-time System Technicians (STs) and a System Manager assigned to them by Motorola under their most current maintenance agreement. They also have a Motorola System Technologist assigned to them 60% of the week. This assures Connecticut will have a high level of knowledge, skillsets and abilities that can be applied to their statewide LMR connection and associated ISSI connections. The STs have a lot of work to deploy and maintain an ISSI. Connecticut does not use a local shop for their work on ISSI/CSSI.

Connecticut has used the ISSI to extend coverage for local systems. Local agencies can use state infrastructure via the ISSI configuration to extend service area of local talkgroups, and state agencies are able to use local infrastructure with their operational talkgroups. In this set-up, care must be taken to not overload the local LMR systems.

Mr. Wright touched on the governance side of the technology deployment. Specifically that agencies need to agree on how to connect talkgroups and which talkgroups can roam from system to system to mitigate loading concerns on local systems. If done effectively, the state can get enhanced local coverage in some cases. Locals can also utilize the pre-existing state-built infrastructure.

They have uncovered some universal issues with what passes between LMR systems via an ISSI:
- Radio aliases will not pass from one manufacturer's system to another manufacturer's system.

- Not all manufacturers send/receive site adjacency tables across the ISSI.
    - This is especially an issue if a site has to use an alternative control channel.
- The L3-Harris XL200 had some roaming issues in some ISSI deployments and had to be specifically programmed to avoid certain sites/systems.
    - The specific Advanced Access Control key for the system that needs to be avoided has to be available to program this into a radio.
- Emergency clearing may not work effectively.
- Radios may not be able to automatically roam between unconnected systems—e.g. A radio may be able to roam to a larger state system via the ISSI from its local system, but will not be able to roam to another local system near-by via the ISSI unless another ISSI connection is present.
- Not all radios function in an ISSI environment
    - No Kenwood NX or BK-Realm radios to date have been shown to be able to operate under an ISSI

Mr. Maiers gave a summary on the general layout of the Iowa Statewide Interoperable Communications System (ISICS) and other LMR systems in Iowa along with previous work to deploy consolettes and control stations to PSAPs. Mr. Wright stated that work is being done with compatibility issues between Motorola and L3-Harris to address system redundancy—i.e. Motorola has a different method than L3-Harris, and the functions do not work across an ISSI—and would go through the process again.

Mr. Wright has not seen any early results of the Compliance Assessment Program (CAP) work since it is still preliminary, but is looking forward to that program's deployment and will be interested to see the results of those tests since there are different ways to implement P25 standards that may not be compatible across an ISSI.

Mr. Wright summarized that if an ISSI can be effectively deployed and be fully functional, an ISSI can save some money long-term, but there are caveats that need to be considered and addressed. It may not be possible to mitigate all the potential issues.

The meeting was then opened for group questions to Mr. Wright.

Chief Walser posed some application specific questions to Mr. Wright. Part of the project scope for the L3-Harris to Motorola ISSI for Connecticut and New York is to have automatic roaming work out of the box for officer safety on their routes. Chief Walser posed a question regarding how radios have to be programmed to operate in an ISSI environment. Mr. Wright elaborated that all the manufacturers handling radio roaming differently in an ISSI environment. With Motorola, the programming has to include a profile with inter-WACN roaming enabled with the properties of the home system. Site adjacency tables are necessary for this to work effectively with minimal programming and not adding other control channels. Some other radios have to be told where they cannot go in an ISSI environment.

Mr. Maiers asked a question about vehicular repeaters. Mr. Wright clarified that vehicular repeaters are not intelligent enough to handle some of the functions of ISSI. They have engaged Futurecom regarding issues and needs along with possible implementations.

Mr. Rammelsberg posed a question about a radio that may be powered up in an area the radio had not previously been in, and if that would cause an affiliation failure away from the home system. Mr. Wright stated that radios will have a memory of where they were when they were powered down. However, Connecticut had not yet tested the specific conditions that Mr. Rammelsberg outlined and would have to experiment to find out how the radios respond to that situation.

Mr. Maiers asked Mr. Wright clarify which environments will work with an ISSI. Mr. Wright clarified that an ISSI will only work in a trunked environment and will not operate in a conventional system such as the VHF conventional systems in Iowa.

Mr. Maiers also asked Mr. Wright to elaborate if they have any plans to utilize an ISSI to connect their statewide system to an LTE network such as FirstNet or Verizon. Mr. Wright explained that already have a small bit of that with the WAVE program since that utilizes an ISSI-like interface. They have not yet been approached by an LTE provider to integrate their LMR network into the LTE networks. They are also not looking to utilize other services like Critical Connect at this time until aspects of cybersecurity associated with cloud based applications are addressed and use cases are properly defined.

Sheriff Davis made a request that LEA support be investigated for extension due to the COVID-19 pandemic. Mr. Maiers stated that LEA support has some technology and support aspects associated with it, and LEA specifically is outside of the purview of the SSSG, but he would pass the request on to the LEA Committee.

Mr. Woten posed a question about some subscriber radios not being compatible in an ISSI environment, and Mr. Maiers and Chief Walser explained some manufacture specific details on a product line and a possible implementation strategy.

Mr. Maiers gave a brief update on the status of the P25 Compliance Assessment Program (CAP) for the ISSI/CSSI. The CAP testing has not yet been done an ISSI/CSSI, but there is a public document available for comment that outlines a process for ISSI/CSSI testing. Mr. Maiers also discussed a lab that could do the testing, Bureau of Land Management, and their progress through lab certification. Mr. Maiers stressed that the CAP testing would likely yield valuable information once testing is complete.

The meeting adjourned at approximately 1403 CDT.

Conference line opened up at 1245 CDT.
Meeting Commenced at 1304 CDT.
Present in person: N/A

Present on the phone: Sheriff Gary Anderson, District Chief Curtis "Wally" Walser, Scott Richardson, Sheriff Keith Davis, Curt Woten, Chris Maiers, Terry McClannahan (stand in for Sheriff Chad Leonard), Jason Hoffman, Chris Jasper

Absent: Jason Study, Sheriff Rob Rotter, Sergeant Corey Trucke, Brian Hamman, Sheriff Chad Leonard, Chief Dennis McDaniel, Dan Rammelsberg

Chris Maiers started the meeting at 1304 with a role call and expression of thanks for those able to virtually attend the meeting. Those in attendance introduced themselves, listed their agency and home system.

Mr. Maiers presented the last meeting minutes from the May Shared Systems Study Group (SSSG). He requested the members review them and to voice any concerns related to topics in the minutes related to the inter-RF subsystem interface (ISSI) and/or console subsystem interface (CSSI). No comments were offered.

Mr. Maiers then introduced Andy Davis from Motorola Solutions and chair of TIA/TR-8 (Telecommunications Industry Association TR-8), Tom Hengeveld of L3-Harris and a member of TIA/TR-8 and Jeremy Elder of L3-Harris and a member of TIA/TR-8. Mr. Davis, Mr. Hengeveld and Mr. Elder all work within the TIA/TR-8 group to develop standards for APCO Project 25 (P25) land mobile radio (LMR) and served as subject matter experts (SMEs) for this meeting. Mr. Davis is also the current chair of the TIA/TR-8 group that is developing standards for interoperability between LMR and long term evolution (LTE) cellular systems. Mr. Hengeveld is the director of standards at L3-Harris. Mr. Elder is also the director of products for P25 systems at L3-Harris.

Mr. Davis gave an overview of P25 in general. He discussed that P25 is a digital radio standard over the common air interface (CAI) and covers conventional LMR, Phase I frequency division multiple access (FDMA), and Phase II time divisions multiple access (TDMA). There are some components of analog in the P25 standards as well, but not many. He also discussed that P25 covers inter-subsystem connections for trunked FDMA and TDMA systems. There is also a section for inter-subsystem connections between trunked and conventional systems, but it is very complicated.

Mr. Davis also stated that P25 branches into some programming standards, console interfaces, multiple key management facility (KMF) interfaces, over the air rekeying (OTAR), and other items. Essentially P25 is a defined set of messages for radios and systems to interact with each other.

Mr. Hengeveld, Mr. Elder and Mr. Davis added that the P25 standards are derived from with input from users to establish user-driven capabilities designed for public safety, and P25 is mature overall. The manufacturers and users then draft the standards. Standards can also start from common features among the manufactures (the processes for these features may differ among the manufacturers). All

standards must be presented to the P25 Steering Committee (generally comprised of governmental LMR users) for final approval.

Mr. Davis added that TIA cannot mandate features/standards be incorporated into product, and that it is up to the manufacturers to implement features into products. This also allows for proprietary features.

Mr. Maiers requested that the guest speakers elaborate on the features and standards. Mr. Davis and Mr. Hengeveld explained that in many cases there is one way features/standards work. However, there are variations within the P25 standards that allow for two methods such as ICall, emergency cancel, and other sub-features (e.g. group call fast start vs all start; group call is the standard way a radio calls other radios on the same talkgroup). Additionally the manufacturers will work for customer base & try to figure out how to adapt methods. There are also some tests that are conducted for standards compliance and interoperability.

Mr. Davis, Mr. Hengeveld and Mr. Elder then discussed the P25 Compliance Assessment Program (CAP). Much of that information is on the P25 CAP web site (https://www.dhs.gov/science-and-technology/p25-cap). This type of testing on the ISSI is not done, and involves the manufacturers. The compliance assessment bulletins (CABs) are still being stood up and are the basis for the tests.

Mr. Maiers requested that Mr. Davis, Mr. Hengeveld, and Mr. Elder discuss standards related to TDMA since the Iowa Statewide Interoperable Communications System (ISICS) is a TDMA system. Mr. Davis, Mr. Hengeveld, and Mr. Elder discussed that the CAI standards for TDMA are complete except for a TDMA control channel, and there are currently no tests for a TDMA control channel.

Mr. Davis, Mr. Hengeveld, and Mr. Elder transitioned to discussing TDMA standards relative to the ISSI. They clarified that the ISSI is similar to a point-to-point protocol and attempts to handle both FDMA and TDMA functionality. However, the current conformance tests only address FDMA operation.

They added that standards are always evolving and are typically based on market demand since manufacturers tend to be the authors. Supported features are also constantly changing.

A question was posed to the SMEs about programming and system configuration. Mr. Davis responded that several aspects of LMR can be complicated by an ISSI especially programming. It is more complicated to program radios to behave properly when using that type of equipment. If a system is set up for automatic roaming, the system(s) have to figure out if a radio is allowed with that talkgroup on that site. It also has to figure out what to do across systems when something initiates a group call (pushes the Push-to-Talk button on the radio).

Mr. Hengeveld added that added complexities can come from the routing of a group call and gave an explanation of how this works in two scenarios—1) Group call from home system to serving/foreign system; and 2) Group call from serving/foreign system to home system. These scenarios are complicated further when sub-features such as group call fast start vs all start are factored in. Mr. Hengeveld added that different configurations complicate the connection between two systems, and

standards attempt to address these. Mr. Davis elaborated a bit more on the system configurations in that they can be set up to allow the home system to be the authority. Mr. Hengeveld added that there is a lot of flexibility in how group calls are routed.

Mr. Maiers requested that the SMEs cover any feature implementation differences that may exist between Motorola and L3-Harris LMR systems. The manufacturer SMEs discussed various feature differences that are and are not supported in the ISSI. They also discussed standards that are still being implemented and variations that may affect functionality. Mr. Hengeveld added that often they have an idea of what can work, but that functionality may not be static as market demand changes and associated features and standards are updated.

The SMEs then discussed software compatibilities across the manufacturers. While the manufacturers test with each other, full compatibility may not be achieved since not all combinations can be tested as software updates may add features.

Mr. Maiers requested the SMEs discuss current work on connecting LMR systems to LTE platforms such as FirstNet. Mr. Davis and Mr. Hengeveld stated that the ISSI has not changed tremendously with the introduction of LTE interfaces. There is a component of consumer grade vs mission critical components to be aware of. Products such as Kodiak can work from a LTE environment to LMR over an ISSI, and the process of architecting those standards is on-going. There is a group called the Joint LMR LTE (JLMRLTE) working group under the Alliance for Telecommunication Industry Solutions (ATIS) that is working to facilitate the develop of standards to addresses interworking functions between LMR and LTE. In these cases, the JLMRLTE group has worked to update the ISSI standards so that it can simulate the interworking between LMR and LTE networks.

The meeting the moved to a question and answer session among the Shared System Study Group (SSSG) and the SMEs.

Mr. Hoffman requested that the SMEs expand on how either system handles coverage footprint differences and whether radios will freely roam. Mr. Hengeveld stated that changing systems is harder since preference by the radios is often given to the home system and not all tower sites are treated the same by the radios. Mr. Elder added that much of the behavior of the radios in an ISSI environment can be complex and is determined by system configuration(s). There is also a need for various agreements for any type of roaming or coverage extension. Mr. Davis added that there are additional loading characteristics and other technical items to consider such as bit error rates. In addition, there are different aspects to manual roaming vs automatic roaming. Auto roaming may have restrictions, and manual roaming often has to be set up with predefined identities (e.g. radios have to be programmed for both systems, and both systems have to recognize the radios) on both systems.

The SMEs then added additional clarification for programming of radios. Typically manually roaming means that radios have a personality for each system they connect to. Mr. Elder added that manual roaming is the same with or without an ISSI. Mr. Davis then elaborated on several variations of manual roaming. They added that decisions for configurations on where talkgroups go in various roaming

situations. Typically the system must have some configuration set to decide which radios and talkgroups are allowed to roam from system to system.

Additionally, the SMEs stated the importance of defining how personnel use the interconnected systems/talkgroups. If it is done correctly, it can be leveraged as a way to enhance interoperability depending on the configuration.

Sheriff Davis requested the SMEs clarify if an ISSI would work in Iowa. Mr. Elder stated that there are a number of implementation configurations and goals that need to be defined. There are basic cases that can work. Mr. Davis added that manufacturers test often. Users can still run into problems if their system configuration will not allow them to meet expectations of the technology and restated that users must define what they want to accomplish.

Mr. Hoffman requested that the SMEs revisit the previously mentioned configuration of conventional LMR systems being connected to a trunked system via ISSI via a fixed station interface (FSI). Mr. Davis stated that it can exist, but in order for it to exist, users must pick a single channel to use. From there the use relies on a console patch to pass traffic from the trunked system to the conventional system. This can be done through a fixed station host such as a radio tied to the conventional system that is integrated into the dispatch console. Mr. Davis added that it may be easier to bring both the conventional and trunked system into a dispatch console so the dispatcher can patch the systems together on demand.

Mr. Richardson requested an explanation on patching between two trunked systems in an ISSI environment. Mr. Davis clarified that any patch over ISSI would only pass audio. Mr. Hengeveld added that ad hoc connections over an ISSI risk functionality loss.

Mr. Hoffman requested the SMEs discuss various additional characteristics of conventional analog with an ISSI. Mr. Davis mentioned that in this case, the use of talkgroups may be more infrequent, and it would be easier to bring the conventional channels into the infrastructure via something like a dispatch console or fixed system host. That would bring voice-to-voice functionality.

Mr. Hoffman requested the SMEs further elaborate on manual roaming and if the interface for end users is the same with or without an ISSI. The SMEs stated that manual roaming requires the users to physically change their radios to affiliate with the other system. They clarified that there is no radio ID to include for conventional radios. There is also no automatic roaming from a conventional to a trunked radio system. Control stations can fix this if they can be used to establish a path in common with an ISSI; however, this must be configured with care and well-understood.

Discussion progressed to what Iowa has done with providing PSAPs with consolettes/control stations that in many cases can be remotely steered to different talkgroups so a patch can be created from the dispatch console. The SMEs suggested that was a good approach and that it was a good solution to connect systems on-demand.

Mr. Hoffman then requested clarification on if multiple ISSIs would need to be purchased for multiple connections. The SMEs stated that configuration can be complicated. If a talkgroup is to be shared across an ISSI, it has to have a home system. Each home system has to have an ISSI, and routing for each talkgroup has to be established. Common management can help reduce the number of ISSIs required when systems with different system IDs but a common wide area controller network (WACN) ID is used.

Chief Walser requested clarification on licensing levels and costs. The SMEs stated that they are not in sales, so specific costs cannot be relayed. The added that this is all software-driven and licenses get added to the system. It includes application licenses for connections and software along with basic and additional functionality. Typically there is a connection fee for each talkpath and any necessary system capacity.

Chief Walser requested clarification on if talkpath licenses have to be predetermined. The SMEs stated that talkpaths connected over an ISSI are often considered pooled resources and can be configured in different ways.

Chief Walser requested clarification on the definition of a WACN to WACN connection between two systems and redundancy. The SMEs stated that this is done via IP interfaces, but starts branching away from what is in standards. They also added that redundancy typically comes with additional costs.

Mr. Hoffman requested further clarification on license costs and what occurs if all purchased licenses are used. The SMEs stated that this can get very complicated. However, once a user runs out of licenses, the additional talkgroups would likely get a rejected group call. In some instances the systems may wait for a path to become available. In some cases priority will allow some users to transmit before others. In any case, this capacity has to be thoroughly pre-planned.

Mr. Woten requested information on whether ISSIs could be used to connect to other statewide systems such as Missouri. The SMEs that ISSIs can connect external systems. This would be additional costs. For conventional users, this would require and additional conventional gateway such as a FSI.

At this point the meeting moved to open comments and discussion among attendees.

The discussion began with a statement by Mr. Hoffman that while an ISSI connection may be possible, the cost and complexity may outweigh any benefits. In addition, it was stated that the technology is geared towards trunked radio systems, and there are very few, if any, benefits for conventional systems.

Another point was made by Mr. Hoffman that Motorola and L3-Harris stated that in order to start an ISSI project, the agencies have to know exactly what the goals are with the project as there are several other ways to accomplish voice interoperability.

Mr. Maiers mentioned that if there are no real benefits for conventional users, the group may be better off recommending that any funding for communications be devoted to assisting local agencies updating their radio fleets for ISICS access.

Mr. Hoffman stated that while there may be a desire from interested parties to install an ISSI, but there have not been many efforts to define exactly what they want to accomplish. If it is just voice, the benefits of an ISSI connection are limited which makes the return on investment difficult to justify.

Mr. Maiers mentioned an aspect of the standards that L3-Harris and Motorola mentioned previously in the meeting that the standards for the ISSI are primarily focused on FDMA operation. Chief Walser then added to that with a question on how the ISSI allows for transcoding of the transmissions. If it downgrades to FDMA, that is a significant loading issue. In addition, Chief Walser mentioned information that Scott Wright from Connecticut shared with the group that not every radio is capable of utilizing an ISSI connection.

Sheriff Davis stated that the primary goal of interoperability is voice to voice.

Mr. Woten questioned if an ISSI connection between states may be a better alternative.

Sheriff Anderson mentioned that the main thing is voice to voice interoperability. Sheriff Anderson also questioned whether we have lost focus on what a LMR system is capable of, and if we should be focusing on how to connect to systems using equipment agencies already possess. Sheriff Anderson stated that giving LMR users pathways for voice interoperability is essential.

Chief Walser added that an ISSI is likely not a magic box that automatically solves interoperability issues since it is highly dependent on system configuration, and it may not be beneficial to make assumptions on what it is capable of.

Sheriff Anderson added that the group needs to focus on the direction for users, and simplicity in a complex issue is essential. Changing channels on radios or updating radios may be the simplest.

Chief Walser added that it is important to get information from the technicians and SMEs as opposed to other sources. Groups such as sales may not know much outside of their circle which can lead to incomplete information being relayed to users since brand-specific representatives may give general "advice" and guidance on their respective branded solution which may not be a holistic approach. It is recommended that agencies/end users seek professional guidance from communications consultants that can present the "big picture" and not a one-brand solution.

Sheriff Anderson that it may be best for the group to develop a list of items for local agencies to do in order to accomplish interoperability. This may help avoid complaints and give guidance on policy vs technology when it comes to interoperability. Sheriff Anderson also re-iterated that costs for local agencies need to be considered.

Mr. Maiers asked Sheriff Anderson if the ISICS Standard on subscriber radios should be updated to reflect his points since the Standards Working Group was concerned about being too specific with subscriber radio requirements. Sheriff Anderson summarized his thoughts by stated that efforts need to be made to help people figure out what they want before they buy equipment, and that the focus should be on voice.

Mr. Hoffman acknowledged that RICs are important in discussing interoperability and relaying information.

Mr. Maiers asked the group if it was time to being focusing on the final work products. The members requested a short summary of notes and a longer report.

The meeting adjourned at approximately 1535 CDT.

Conference line opened up at 1245 CDT.
Meeting Commenced at 1305 CDT.
Present in person: District Chief Curtis "Wally" Walser, Chris Maiers

Present on the phone: Curt Woten, Terry McClannahan, Sheriff Chad Leonard, Chris Jasper, Sergeant Corey Trucke, Dan Rammelsberg

Absent: Jason Study, Sheriff Rob Rotter, Brian Hamman, Sheriff Chad Leonard, Chief Dennis McDaniel, Sheriff Gary Anderson, Jason Hoffman, Scott Richardson, Sheriff Keith Davis

Chris Maiers started the meeting at 1305 with a role call and expression of thanks for those able to attend the meeting.

Mr. Maiers presented the last meeting minutes from the June Shared Systems Study Group (SSSG). He requested the members review them and to voice any concerns related to topics in the minutes related to the inter-RF subsystem interface (ISSI) and/or console subsystem interface (CSSI). No comments were offered.

Mr. Maiers then opened the meeting for discussion on what was previous presented to the SSSG by the various subject matter experts.

The SSSG then moved to a cursory review of the *SSSG Draft Final Report to the ISICSB*. Initial feedback on the document was generally positive, and that it was a good start.

At that point, the SSSG moved to looking at the various recommendations from the group that should be in the *SSSG Draft Final Report to the ISICSB*. The recommendations made by and agreed upon by the SSSG include:
- Do not use the ISSI at this time for connecting land mobile radio (LMR) systems
    - Not enough has changed at this time
    - Not all radios can utilize an ISSI
        - Several makes and models of radios that can access P25 trunked radio systems but not an ISSI are actively being used in Iowa
    - May require re-evaluation in the future once specific feature sets are working or a specific amount of time has passed
        - SWIC should maintain awareness of the progression of ISSI and bring recommendations forward as necessary
- Program subscriber radios to access multiple systems—trunked and conventional
- Find funding/assistance for agencies to access ISICS that don't already have access
    - Draw up a playbook to help agencies get a connection based on several different known configurations and expected costs
        - Update ISICS subscriber standards with more examples
        - Demonstrating how various PSAPs have integrated consolettes/control stations

Shared Systems Study Group (SSSG)
Meeting Minutes
July 30, 2020 at 1300
Location: Fire Marshall's Office, Conference
Line &
GoToMeeting

- ▪
    - ▪ Demonstrating how various agencies have used mobile and portable radios along with scanners
    - ▪ Showcasing various policies on the use of ISICS with disparate system equipment
- • Avoid specific mandates to respect home rule
- • More investigation and work on improving interstate interoperability
- • Discuss usage and training between agencies on the interoperable talkgroups on ISICS.
    - o ISICSB should facilitate more training

Mr. Maiers then opened the SSSG meeting for open comment. Chief Walser stated that it may be beneficial for the group to continue to meet after the document is submitted to the ISICSB to go over additional recommendations for locals to connect to ISICS for interoperability and answer questions related to:

- • Additional control stations for PSAPs
- • How to find and utilize a consultant vs vendor for advice
- • RFP advice or guidance.

Chief Walser acknowledged that the additional work may be a separate document.

The meeting adjourned at approximately 1440 CDT.

Shared Systems Study Group (SSSG)
Meeting Minutes
August 26, 2020 at 1300
Location: Fire Marshall's Office, Conference
Line &
GoToMeeting

Conference line opened up at approximately 1250 CDT.
Meeting Commenced at 1305 CDT.
Present in person: Curt Woten

Present on the phone: Terry McClannahan, Curtis Walser, Sheriff Anderson, Brian Hamman, Dan Rammelsburg, Curt Woten, Hollie Davidson, Chris Jasper, Scott Richardson, Jason Hoffman, Chief McDaniel

Absent: Jason Study, Sheriff Rob Rotter, Sheriff Chad Leonard, Sheriff Keith Davis, Sgt. Trucke

Chris Maiers started the meeting at 1305 with a role call and expression of thanks for those able to attend the meeting.

Mr. Maiers presented the last meeting minutes from the July Shared Systems Study Group (SSSG). He requested the members review them and to voice any concerns related to topics in the minutes related to the inter-RF subsystem interface (ISSI) and/or console subsystem interface (CSSI). No comments were offered, and the minutes were approved.

The SSSG then moved on to further editing the final report. The Executive Summary was edited first. Mr. Maiers discussed changes to the document and the group made additional edits and accepted the changes.

The SSSG began editing the main body of the document starting with the suggested edits from the July meeting. The editing then proceeded to the recommendations.

Once the editing was completed, Mr. Maiers asked the members present if they supported the document in its current form. All members present supported the document.

The meeting adjourned at approximately 1422 CDT.