

RIGHT NOW



WE ARE HELPING



PEOPLE BE



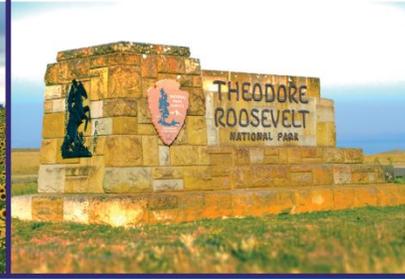
THEIR BEST IN



THESE MOMENTS



THAT MATTER



 **MOTOROLA SOLUTIONS**

State of North Dakota

SIRN 2020 Project Kickoff Phase 1

May 21, 2019



AGENDA



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- Team Introduction
- Project vision, background, purpose and objectives
- Management plans to control cost, schedule, scope, and quality
- Effective project communication
- Project governance structure and project roles and responsibilities
- Approach to creating the Project Plan
- Initial risk assessment
- Contractor Safety Plan
- Discussion Points
- Next Steps

MOTOROLA TEAM



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Program Management Team:

Nick Putman, SIRN 2020 Program Manager
Sharon Bogoff, Project Scheduler
Kirk Scouten, T5N Regional Manager

Technical Team:

Susie Wiegele, Engineering Manager
Dave Pieczynski, Lead Systems Engineer
Dan Nohr, Systems Engineer
Andrew Showers, System Technologist
Mark Ambrosy- System Technologist Manager T5

Sales Team:

Dave Eischens, Area Sales Director Strategic Project Team
Chris Meier, Senior Account Executive

Service:

Mike Rosonke, Customer Support Manager
Carol Rea, Regional Support Manager

Motorola Partners:

Electronic Communications Inc. (ECI)
Mid-State Communications
Stones Communication
Pyramid Network Services



Statewide Interoperable Radio Network (SIRN 20/20)

Reliable voice communications is the lifeline for the public safety community in North Dakota. Statewide studies and surveys showed many shortcomings with the current systems. Critical issues identified in these studies included:

- Coverage that does not meet the requirements of the community
- Interoperability challenges that limit communications between jurisdictions and between disciplines
- End of life (EOL) infrastructure impacting nearly 40% of existing solutions
- Dozens of fragmented, disparate radio systems across North Dakota
- Lack of features and functionality required by the public safety community

These issues greatly impact the safety of the public safety community and their ability to serve and protect the citizens of North Dakota.

A competitive RFP process was held with release of the RFP in November of 2017 and an intent to award to Motorola Solutions issued on January 10, 2019.

Information located at - <https://www.nd.gov/itd/statewide-alliances/siec/sirn-2020>

SYSTEM OVERVIEW



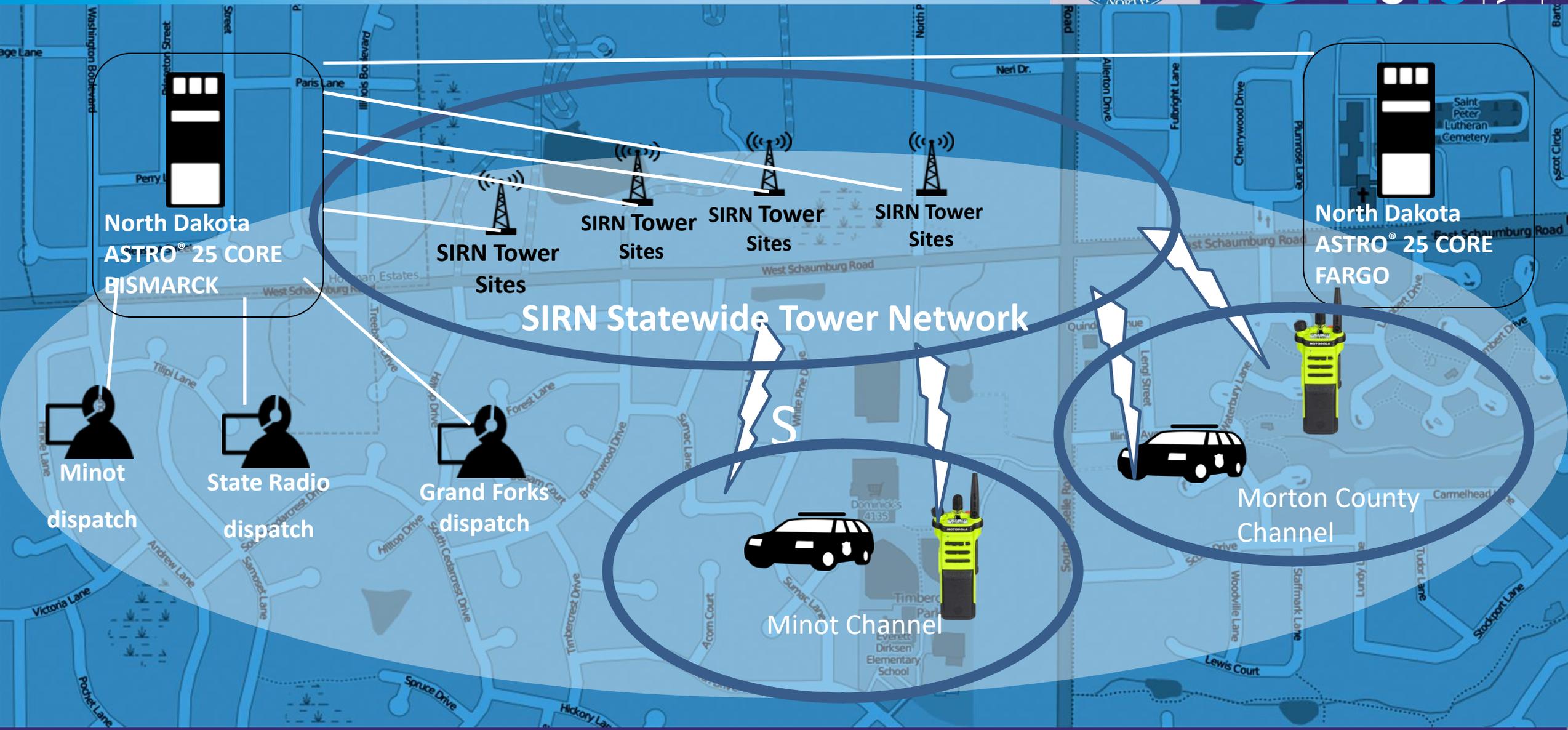
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- Public Safety Mission Critical Performance Standards
- 800MHz Frequency Band
- Highly Available Highly Reliable System (99.999)
- No Single Points of Failure
- Secure Closed System
- Excellent Coverage (Over 130 Sites When Complete)
- Interoperability
- LTE Integration

SIRN RADIO NETWORK



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WHY 800 MHZ



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- Better In Building Penetration
- No Congestion
- Spectrum Availability
- No Interference
- VHF Skip & Noise Floor Issues
 - Electrical Interference
- Consistent Predictable Coverage

DIGITAL TRUNKING TECHNOLOGY BENEFITS



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- Consistent Coverage
- Improved Audio
 - To Ensure Communications Get Through the First Time
- Minimal Operator Intervention
 - For Improved First Responder Safety
- System Redundancy
 - Superior System Availability
 - To Ensure Communications When Needed
- Wide Area Communications
 - Vehicle , Portable & Dispatch Can Communicate Statewide & Region Wide As Needed
- Seamless Interoperability On Demand
 - Between Agencies, First Responders, Other States

DIGITAL TRUNKING TECHNOLOGY BENEFITS CONT.



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- Advanced Feature Sets
 - Privacy For Group or One To One Communications
 - GPS Mobile Or Portable
 - Encryption
 - Remote Programming
 - Emergency Features
 - Man Down

SIRN INTEROPERABILITY



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“The Interoperability Hub For Radio Communications”

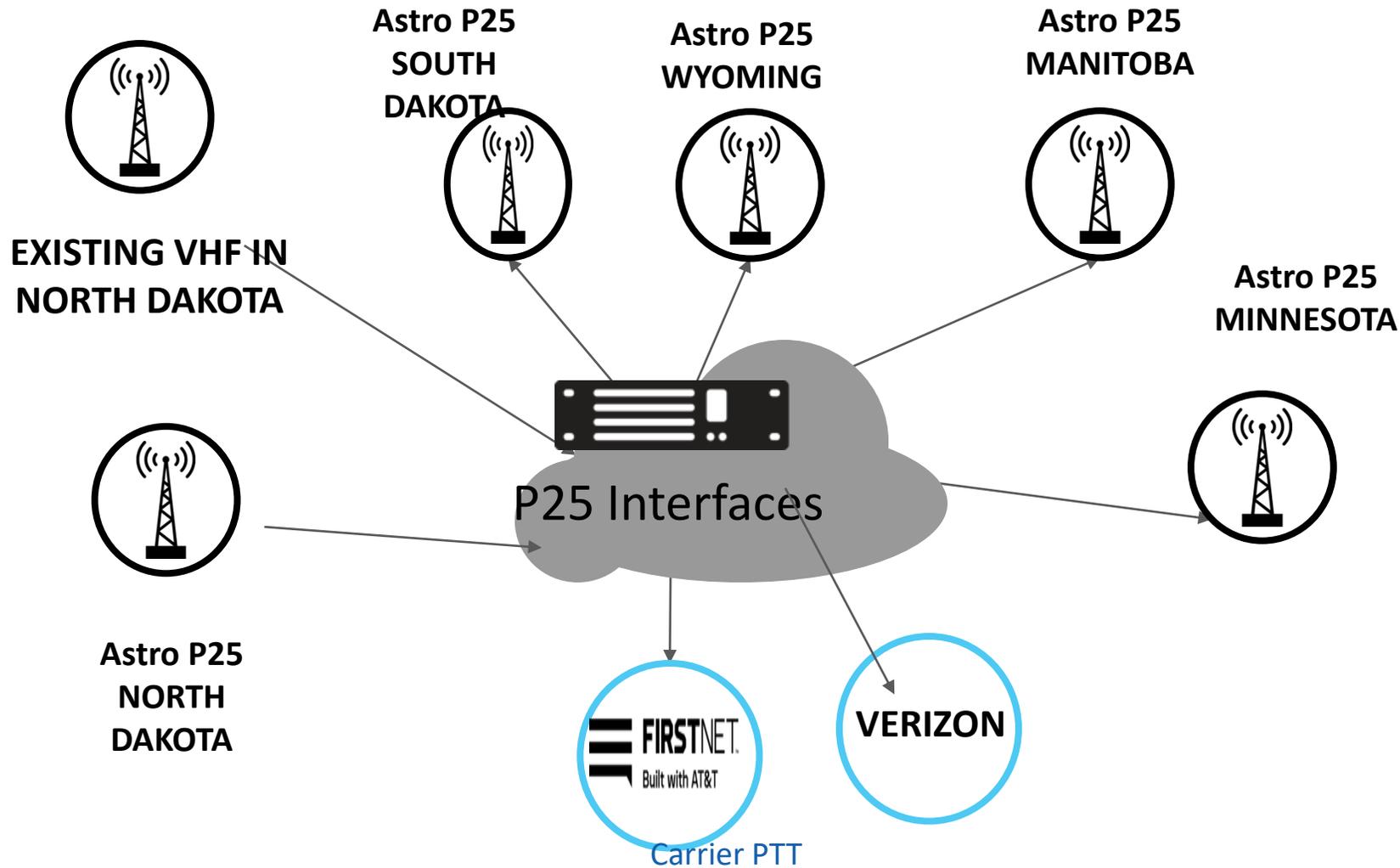
SIRN Can Provide

- Interoperability Between Existing VHF Systems In North Dakota & SIRN System
- Interoperability Between North Dakota & Surrounding States
 - South Dakota, Minnesota, Manitoba, Montana, Wyoming,
- Interoperability Between SIRN & Broadband Providers
 - Verizon, AT & T/FirstNet, Sprint

INTEROPERABILITY



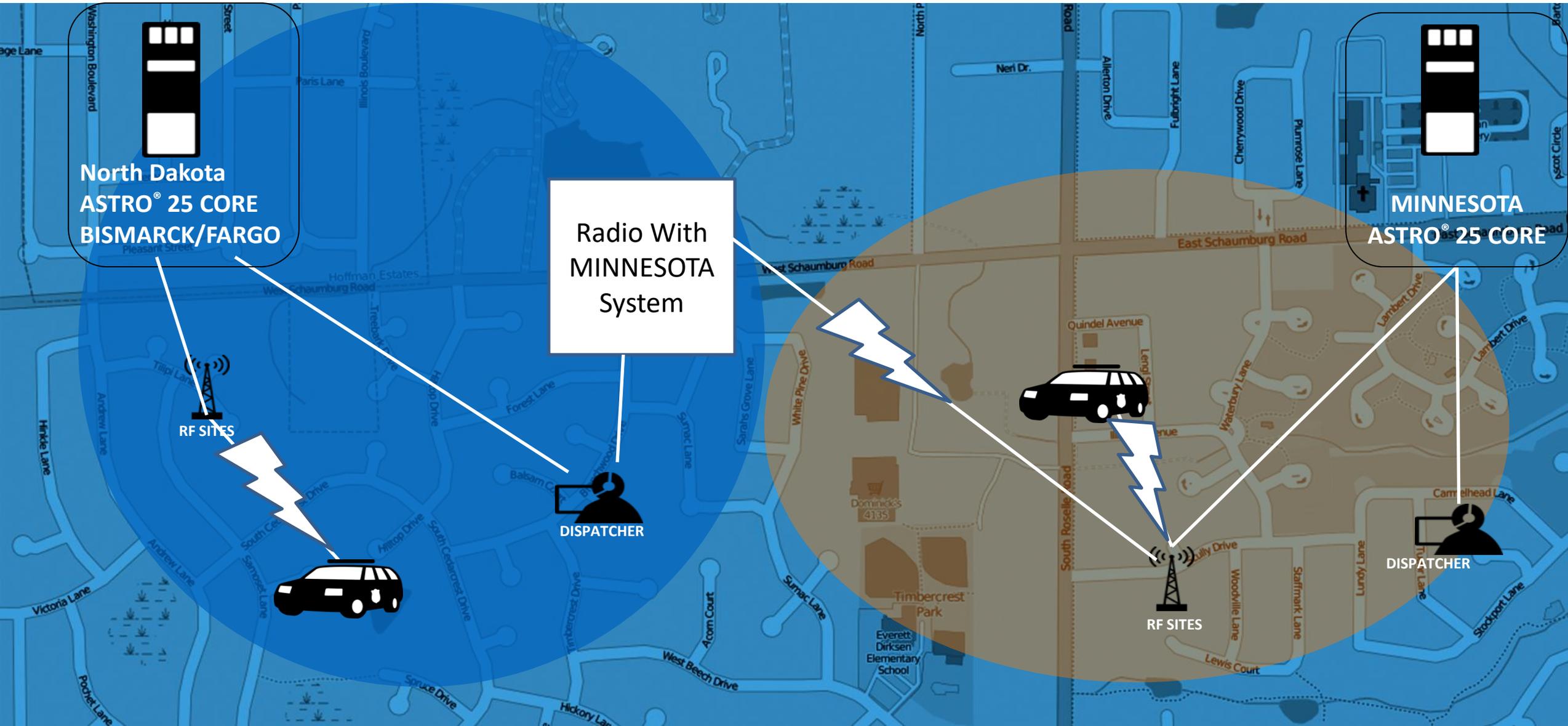
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INTEROPERABILITY CONSOLE PATCH



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INTEROPERABILITY THROUGH "MULTIBAND RADIO"



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DISPATCH CENTER OPTIONS



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- Implement New MCC7500 Console Dispatch Positions
- Utilize CSSI To Utilize Existing Dispatch Consoles
 - Upgrade Existing Consoles To Project 25 Trunking Capable
 - Install CSSI Per Position
- Utilize Wireless With Existing Console Dispatch Positions

PHASE 1: Overview Core / Dispatch



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- **Primary Fully Redundant Network Core and DSR**
 - Primary Core Located in Bismarck at DCN facility
 - DSR Core located in Fargo at DCN facility
 - Includes P25 TDMA Phase II technology
 - Core Dispatch Licenses
- **Network Management Client at Cores (Qty 2)**
- **Dispatch equipment at the locations:**
- MCC7500e Dispatch Op Positions across 20 PSAPs + 6 MCC7500 Upgrades at 2 PSAPs
 - (1) Deskset,
 - (1) Aux I/O
 - 800 Mhz Control Station (1 per Op) w/ 2 Antenna Systems / Combiner
 - (1) Conventional Site Controller
- CCGW's will be used at dispatch to interface to backup control stations and as needed existing co-located legacy equipment or interfaces.

PHASE 1: MCC7500e Dispatch Positions

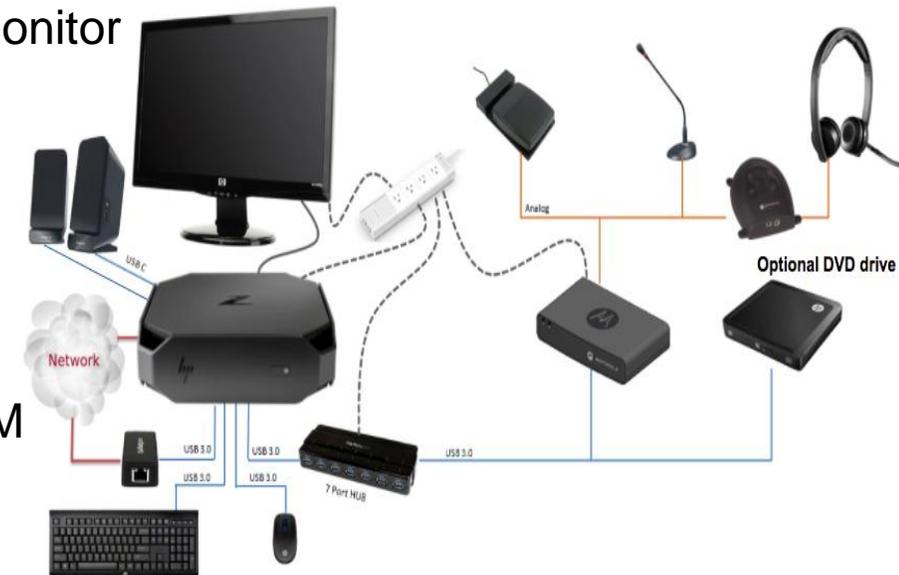


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Each new MCC 7500E operator position is equipped with the following:

- (1) HP Z2 Mini CPU w/ 24" Non-Touch Screen (Full HD,16:9 Ratio) Monitor
- (1) IRR, 2nd sound card, and pair of CPU speakers
- (1) Audio Interface Module (AIM).
- (2) Desktop Speakers.
- (1) Desktop Gooseneck Microphone.
- (2) Headset Jacks.
- (2) Headset Bases with PPT (15' Cables) (2) Monaural Tops with NCM
- (1) Dual Pedal Footswitch

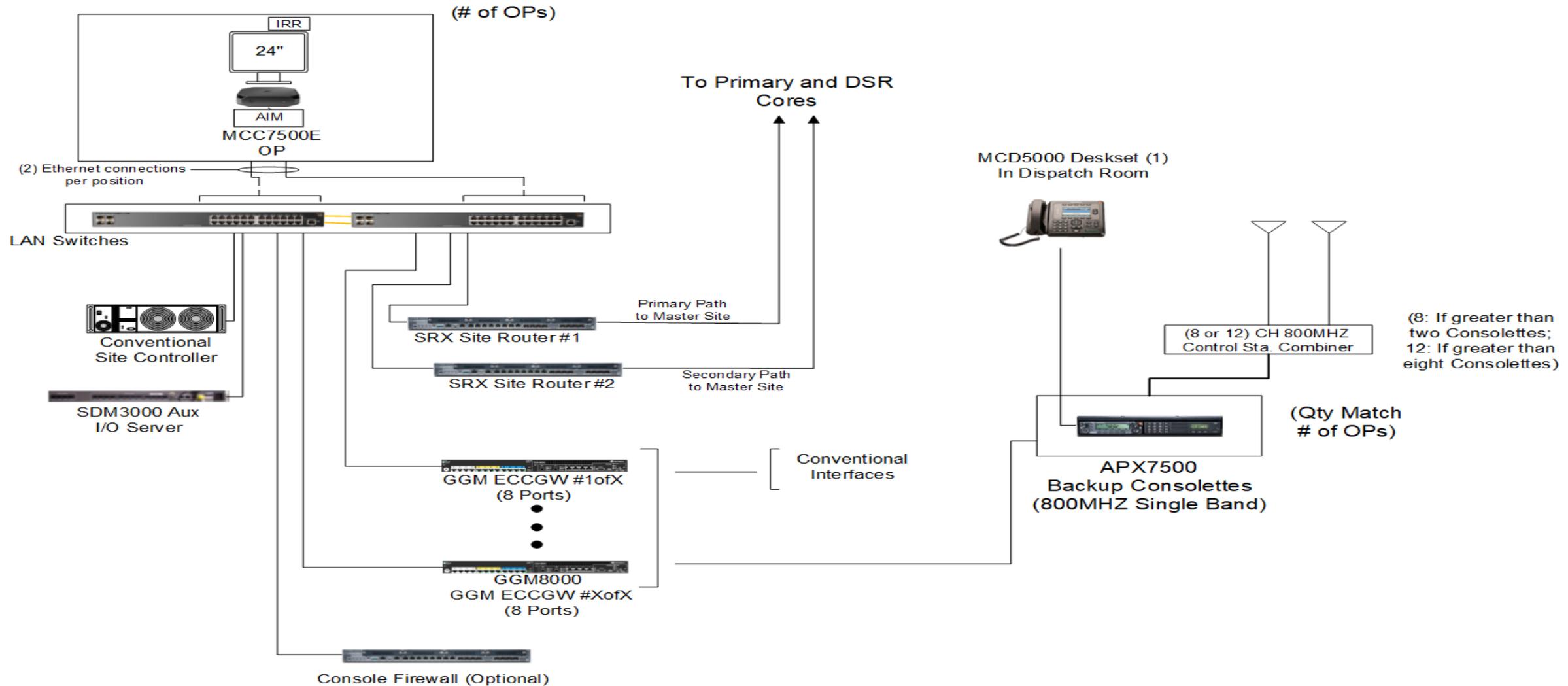
- Optional: Secure Operation AES, DES-OFB Encryption Algorithms, Advanced Digital Privacy (ADP) Software Encryption; Touch Screen Monitor



PHASE 1: Dispatch Network Diagram



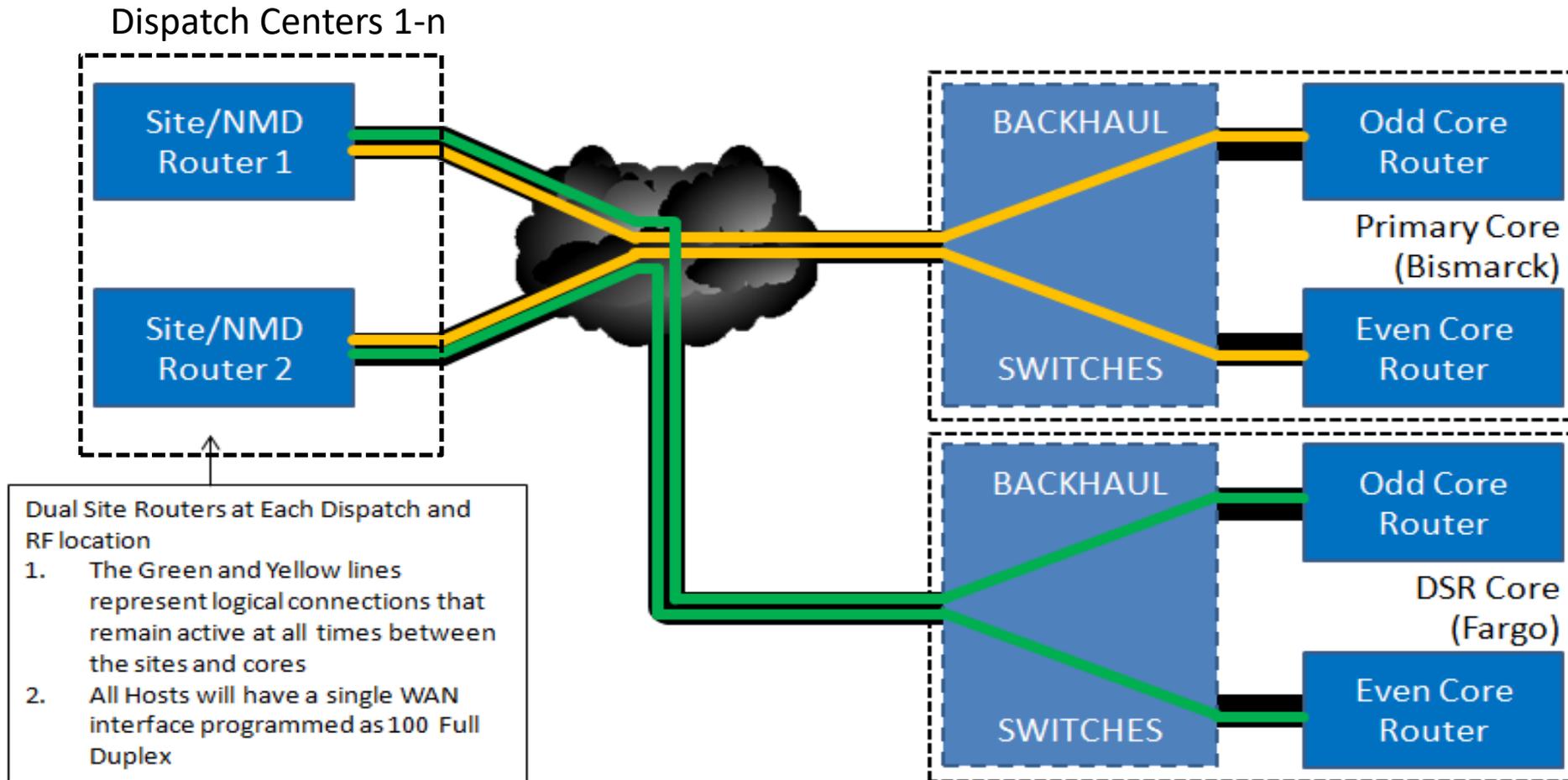
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PHASE 1: Network Backhaul



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MANAGEMENT PLANS- COST CONTROL, SCHEDULE, SCOPE, and QUALITY



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MOTOROLA Quality Control Plan (QCP)



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Deployment	System	Assurance
System Design	<ul style="list-style-type: none"> System Requirements Design Review Site Design 	<ul style="list-style-type: none"> Compliance to requirements Joint approval
Project Management	<ul style="list-style-type: none"> SI-Gates Status Reports Status Meetings Project Schedule Issue Tracking Log Risk Analysis 	<ul style="list-style-type: none"> Supervision Sample Inspection Audits Project reviews PMO governance Dedicated master schedule
Mobile/Portable Installation	<ul style="list-style-type: none"> Programming Templates Installation Guides 	<ul style="list-style-type: none"> Supervision Sample inspection Installation logs
Grounding/ Electrical/ Power Installation	<ul style="list-style-type: none"> Drawings/Electrical Plan National and Local Codes Motorola Solutions R56 Standards 	<ul style="list-style-type: none"> Supervision Sample inspection
Network/RF Equipment Installation	<ul style="list-style-type: none"> Motorola Solutions R56 Standards System Design Diagrams/Documentation Optimization Procedures 	<ul style="list-style-type: none"> Supervision Sample Inspection
System Acceptance	<ul style="list-style-type: none"> Equipment Verification Feature/Functionality Testing Coverage Testing 	<ul style="list-style-type: none"> Sample Inspection Contract Review

COST CONTROL



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Phase 1 Cost Control Steps Taken-

- Dispatch Sites have been walked to determine install needs
- R56 Enhancements have been identified
 - Currently working with MSI Partners to finalize scope and cost
- Any possible variables will be noted to allow for proper contingency planning

SCHEDULE



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Successful schedule management depends on these key approaches:

- Schedule development in collaboration with the State and subcontractors is further refined during the Design stage.
- Effective scope and change management plans
- Accurate and timely status reporting
- Phase 1 – Primary Core Sites and Dispatch Console System Deployment for Immediate Interoperability

EFFECTIVE PROJECT COMMUNICATION



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- Continuous communications
 - Subcontractors
 - Engineering/System Technologists
 - Local visits for coordination and quality assurance
 - Internal weekly calls
- Bi-weekly conference call core team
 - Small group
 - Focused on day to day operations
 - Document issues, project impact, decisions made
- Monthly update meeting
 - Monthly presentation to provide overall project status
 - General project direction
 - Issues that require further coordination

KEY PROJECT DELIVERABLES



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SIRN Deliverable	Technology Contract- SIRN Attachment 7 Exhibit A-SOW	MSI Radio Network SOW Overview
1-1	Project Kick Off Meeting	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: State of ND/MSI Phase 1 Core/Dispatch Kick Off Meeting
1-2	Project Plan	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: Phase 1 Core/Dispatch Project Plan
1-3	Data Conversion Plan	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: Dispatch Backhaul Plan, Equipment List, Install Plan, Power, Alarms, Civil Work Plan
1-4	Data Conversion Design	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: -Backhaul Design Specifications -Install Layout Drawings -Power Requirements -Alarm Requirements
1-6	Interface Design	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: CCGW Design, CEN Design as applicable
1-8	Gap Analysis	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: Review of System Design
1-10	Test Management Plan	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: System Acceptance Test Plan (including Staging test Plan, Backhaul Test Plan)

KEY PROJECT DELIVERABLES Cont.



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SIRN Deliverable	Technology Contract- SIRN Attachment 7 Exhibit A-SOW	MSI Radio Network SOW Overview
1-12	Training Management Plan	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: Develop Disptach Training Plan
1-15	Implementation & Transistion Plan	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: Develop Cutover Plan, Service Plan
1-CDR	Contract Design Review (CDR)	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: CDR Review and Approval of Design
1-SHIP	Order, Manufacture, Stage, Ship	PHASE 1 CORE/ DISPATCH PROJECT LEVEL: Order, Manufacture, Stage, Ship
1-9 through 23	System Configuration	PER DISPATCH SITE (as applicable for core license) Fleetmap, Site Development, Installation and Optimize: -Disptach Equipment -Core Licenses -Backhaul
1-7.1 through 23	Interface Development and Release	PER DISPATCH SITE (master as applicable): -Install CCGW per Site -CEN Interface Install
1-11.1 through 23	Acceptance Test	PER DISPATCH SITE (master as applicable): Complete Acceptance Testing
1-13.2, 3 and 5 through 23	Training	Per Dispatch Site: Dispatch Training
1-14.2, 3 and 5 through 23	Training	Per Dispatch Site: Dispatch Training

KEY PROJECT DELIVERABLES Cont..



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SIRN Deliverable	Technology Contract- SIRN Attachment 7 Exhibit A-SOW	MSI Radio Network SOW Overview
1-5.1 through 23	Data Conversion Validation	PER DISPATCH SITE (master as applicable): -Programming/Configuration validation/test -Backhaul Link Test -R56 Site Audit
1-16.1 through 23	Implementation	PER DISPATCH SITE (master as applicable): -Cutover, Punchlist Resolution
1-17.1 through 23	Post Implementation Report	PER DISPATCH SITE (master as applicable): Project Documentation, Service Warranty Transition
1-18.1 through 23	Phase 1 Project Close Out Meeting	Final Review - System Documentation, Reports, Service Warranty Transition
1-19.1 through 23	Phase 1 Final Acceptance	Final Radio Network Acceptance- Phase 1

KEY PROJECT ROLES & RESPONSIBILITIES

Motorola-



- Phase 1: Ship Equipment to ND provided warehouse.
- Pick up & deliver equipment to sites as needed.
- Install dispatch and FNE equipment in the equipment list based upon the agreed upon floor plans, at the sites where the physical facility improvement is complete & site is ready for installation.
- Bond the supplied equipment to the customer-provided site ground system in accordance with the Motorola R56 Standards and Guidelines for Communication Sites
- Phase 1: Proposed new equipment installation (see equipment list for further detail)
 - MASTER: Install 2 racks equipment + NM Client
 - DISPATCH: Install Backroom equipment.
 - DISPATCH: Install/cable Op positions and Backup consolettes with antenna/line
- Provide R56 audit for all sites with test results.
- Provide link test to validate customer provided test results compliance with Motorola specifications.
- Removals
 - Phase1: Motorola owns removals of Dispatch equipment from existing site locations to a central State-owned location

KEY PROJECT ROLES & RESPONSIBILITIES

Motorola Cont.-



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Phase 1 Core and Dispatch Cutover Plan:

Dispatch backroom equipment will be installed in parallel with existing equipment. Applicable dispatch testing will then be done. Upon completion of testing the remaining operator positions will be cutover.

1. Install the System Core
2. Install Core Dispatch Licenses
3. Install and Optimize Dispatch Site with Conventional Channel Gateway (CCGW) and /or Console(s), as applicable per dispatch site.
4. Test the Core, Dispatch Site and the interface to the Legacy System.
5. Complete Dispatch Functional Testing.
6. Complete Cutover.

KEY PROJECT ROLES & RESPONSIBILITIES

Motorola Cont..-



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Core and Dispatch Documents to be Completed:

- Functional Acceptance Test Plan test sheets and results
- Equipment Inventory List
- Console Programming Templates
- ATP Test Checklists
- System Block Diagram
- Site Floor Plan
- Site Rack Face
- Site Block Diagrams
- System Diagram

Full Project Requirements:

- Key project metrics per schedule, cost and quality
- Business metrics per project objectives defined in Project Charter
- Lessons learned
- Success Stories

KEY PROJECT ROLES & RESPONSIBILITIES

ITD / Dispatch Centers-



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- Project Manager / Site Contact assignment
- Meeting attendance with required State designated representatives
- Attend Staging and pay for travel expenses as applicable
- Provide office and warehouse space (Phase 1)
- Reviews/approvals within 5 days (contract Section 27c,2) for each deliverable as required
- Attend site surveys as needed
- Provide existing site documentation as required.
- Provide backhaul connectivity as needed per Motorola specification.
- Phase 1:
 - Provide space, desk/furniture and existing dispatch site.
 - R56 Site Compliance requirements if additional beyond circuits is required

CREATING THE PROJECT PLAN



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Work Breakdown Structure (WBS) and Schedule

- Contract Initiation and Kick-off
- Design Review
- Order Processing, Manufacturing and Staging
- Civil Work - Site Development and Construction
- Backhaul Requirements and Installation
- Infrastructure Installation
- Training
- Systems Integration and Optimization
- Documentation
- Acceptance Testing
- Cutover and User Migration
- Warranty Begins
- Project Completion

The final approved project schedule will be base-lined and become the basis for all reporting and status activities during the project following State Project Management Standard- STD009-05

INITIAL RISK ASSESSMENT



Our risk mitigation plan that follows includes a discussion of the risks and associated mitigation for:

- Transition with Legacy Support
 - Conventional gateways at each existing site to enable parallel operations between legacy VHF and the new SIRN system
- User Operational Benefit Aligned with Budget
 - By deploying the consoles first, users will gain immediate Statewide interoperability with legacy systems, familiarization with the new consoles and parallel operations during transition
- Site Construction and Development – (RF location build out)
 - SIRN design leverages assets that are currently owned or used by public safety, with 45 State sites
 - A tower remediation budget for the newer state sites is included in the separately bound cost proposal as required by the RFP specification
- Systems Integration Methodology
- Schedule
 - A realistic, feasible schedule with equipment available, feasible design and experienced project team resources has been proposed
 - We have mitigated equipment availability risk by having equipment shipping today, with proven Statewide implementations, which fulfills the RFP and design requirements for SIRN

INITIAL RISK ASSESSMENT Cont.



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- User Acceptance and Governance
 - This solution includes autonomy and control features to enable the governance the State desires
 - With our experience working with public safety agencies across the United States we will apply lessons learned to aid in the development of the operational fleetmap and system parameters
 - We will provide dispatch training during the console early deployment and additional refresh training after the trunking sites are available
 - We will develop custom cutover plans for every agency that transitions to the system
- Long Term Support and Operations
 - The solution includes a one-year System Warranty with a suite of system support services designed to maximize network uptime with on-site response, preventative maintenance, dispatch service, technical support, remote monitoring, security monitoring and security update service.
 - The warranty provides repair without charge of any new component of the proposed system that fails because of defective materials or workmanship, or becomes defective through normal use
 - The post-warranty operations and maintenance functions will be set up to leverage existing SIRN personnel for on-site response and we provided remote monitoring, security monitoring, technical support, dispatch, case management and infrastructure repair parts with a Motorola Solutions Customer Support Manager (CSM)

CONTRACTOR SAFETY PLAN



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General Safety Rules-

1. All accidents with or without injury shall be reported to the supervisor immediately.
2. Report unsafe conditions in the workplace, including defective tools or other equipment, to your supervisor immediately. It is the supervisor's responsibility to review and correct unsafe conditions.
3. Established safe job procedures shall be followed by all employees.
4. If unsure of how to operate machines/equipment or perform any assigned task, ask the supervisor before proceeding. Training shall be provided to individuals that are not proficient in the use of particular machines/equipment.
5. Do not alter machines or equipment. Mechanical safeguards shall be in place and kept in place at all times unless locked out and/or tagged out for maintenance or repair purposes.
6. Personal protective equipment, as directed by regulations, shall be worn or used to reduce the chance of injury.
7. Use only the proper tool for the job. Do not use defective tools or equipment if the proper tool is not available.
8. Get assistance in lifting any item too bulky, awkward, or heavy to lift safely. Employees should use material handling equipment, such as a cart or dolly before attempting to move any heavy item.

CONTRACTOR SAFETY PLAN Cont.



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9. If a repetitive task causes discomfort, or is unsafe or unhealthy, report it to the supervisor immediately.
10. In case of emergency, know: a. Whom to call. b. What to do. c. Where to go.
11. Observe safe and healthy housekeeping practices.
12. Do not use chemicals without a full understanding of their toxic properties and without the knowledge required in safe use.

MSI Sub Contractor Utilize the Browz Safety Plan that consist of the follow-

- Fall Protection
 - Hand and Power Tools
 - Hazard Communication (HAZCOM)
 - Lockout / Tag out
 - Personal Protective Equipment (PPE)
- Browz safety check list and requirements will b loaded the State of ND Share Point drive

Discussion Points



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Core / DSR / Dispatch Options-

- Integrated Voice & Data, Enhanced Data for up to 25,000 users
- ENCRYPTION - AES and DES-OFB - Infrastructure only and consoles, AIS (8), KVL
- OVER THE AIR RE-KEYING with KMF for 25,000 users - Infrastructure / Consoles Only (requires IV&D)
- Logging

PHASE 1: NEXT STEPS



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- Finalize Core / PSAP Backhaul Plan
- Project Plan Scheduling / WBS Review
 - Round 1 – Bismarck Core, Fargo DSR, Minot, Stutsman, Barnes, Richland and Grand Forks
 - Add back haul requirements
 - Add R56 requirements
- Base line Project Plan
- Detailed Design Review for Round 1
- Determine Target Schedule for Round 2 and 3 Dispatch Centers
- Set Up Status meeting Time and Date
 - Bi-Weekly Core team update
 - Monthly expanded team update