NG911 in Minnesota Lessons Learned

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April 16, 2012

Public Safety Answering Points (PSAP) face new challenges with communications devices that do not use traditional means to access the 9-1-1 system. The residents are quickly utilizing new technologies with their computers and wireless devices with the expectation of being able to communicate with today's 9-1-1 systems.

The system must be:

:

- Scalable
- Affordable
- Reliable
- Capable of resolving the limitations of the current system.

NG9-1-1 infrastructure

- IP-enabled
- Network transport
- PSAP termination interfaces
- 9-1-1 trunk support
- Selective routing
- ALI interfaces.

PHASE 1 – ESTABLISH IP CONNECTIVITY BETWEEN SELECTIVE ROUTERS
PHASE 2 – ESTABLISH A FULLY-REDUNDANT IP NETWORK TO SELECT PSAPs
PHASE 3 – ESTABLISH A FULLY-REDUNDANT IP NETWORK TO ALL PSAPs

The MN NG9-1-1 emergency communications network, is a flexible, high-speed, multi-purpose solution that supports the evolving requirements of all public safety emergency communications.

History

Preparation

- We commissioned a study of the existing network and creation of RFP. ($500,000)
- Office of Enterprise Technology reviewed based on their expertise.
- Evaluated by a panel of 10 member advisory group
  - Two non-voting members—Dept of Admin and Consultant
  - 8 voting members made up of two sheriffs, two PSAP managers, Deaf and Hard of Hearing rep, 911 Program Manager, DPS CTO, Metropolitan Emergency Services Board
- Evaluation Criteria:
  - Meeting System Requirements-400 points
  - System Design and Implementation—150 points
  - Previous Experience and References—100 points
  - Cost—500 points

Project in Phases

Three Phases of Project to build statewide IP "backbone"

Phase 1- Interoperability amongst MN PSAPS

- ❑Any PSAP can transfer a 911 call to any other PSAP with telephone number and address
- ❑Over 60,000 transfers
- ❑Use IP to Selectively Route calls across two legacy 911 providers
- ❑Excellent Voice Clarity

Phase 2 – Migration and 90 day monitoring of first 2 PSAPS

- ❑CPE configuration
- ❑Changed Scope of project to keep two 911 databases

Phase 3 – Migration and 30 day monitoring of remaining 112 PSAPS

- ❑Diversity
- ❑CPE configuration

Phase 2 Objectives

Demonstrate the IP 911 network is a robust, reliable alternative to the existing Legacy 911 Network

Test methods and processes utilized to install and migrate a PSAP from the Legacy 911 Network to the NextGen 911 Network

Demonstrate adequate maintenance support for the PSAP Gateway Manager

- Converts IP back to CAMA

Demonstrate the ability for the CenturyLink and IES 911 databases to interface with each other

Demonstrate network monitoring and reporting methodologies used to measure the health and performance of all network elements

Identify and document PSAP migration strategy from beginning to end of project

Phase 3 Objectives

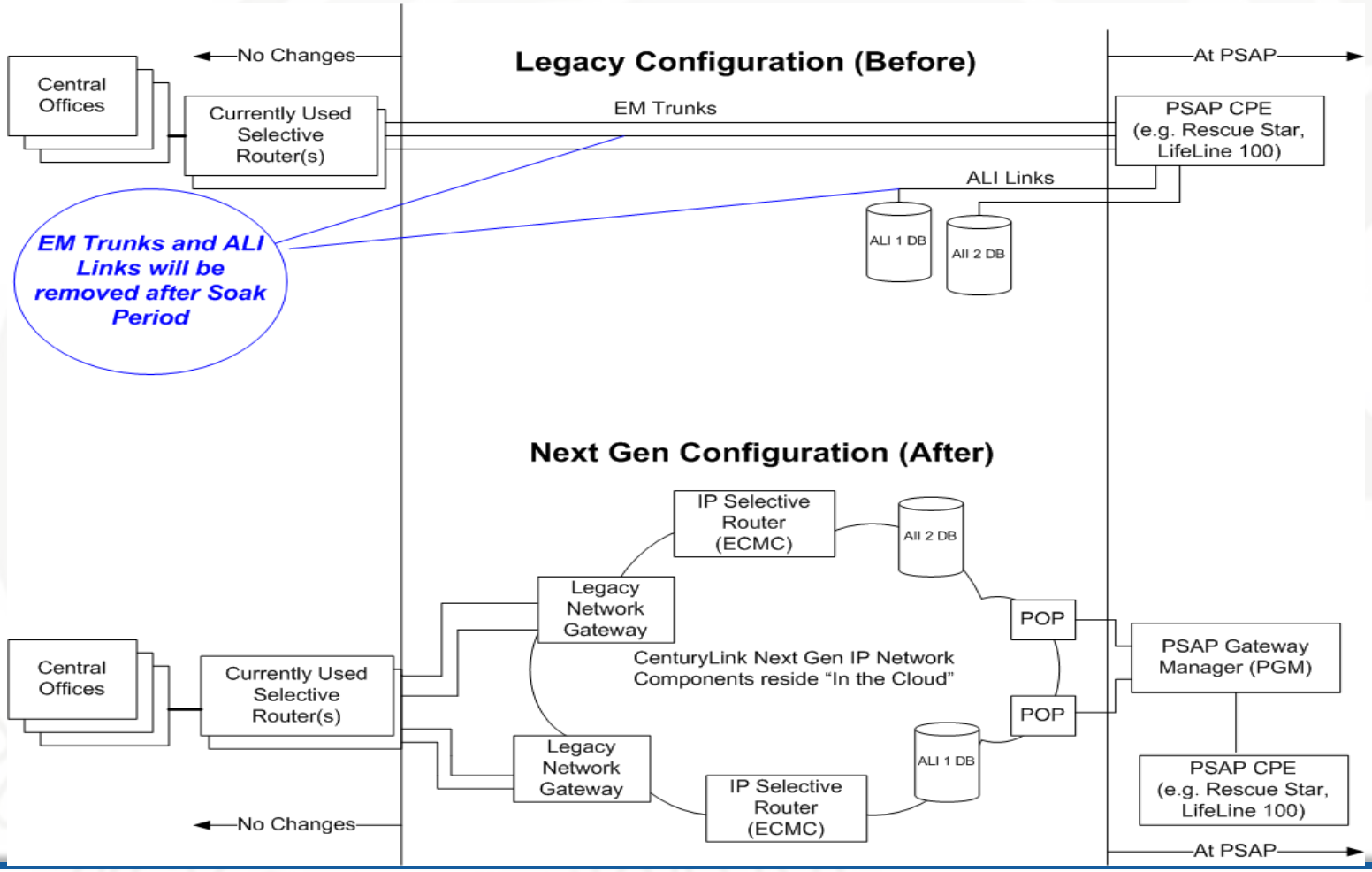
Migrate all remaining MN PSAPs to the IP network

Identify a strategy for removing the 12 Legacy Selective Routers from the network

Identify the requirements to connect to a secure statewide Emergency Services Internet Protocol Network - ESInet

Understand and document where diversity of the network ends to each PSAP and implement a thoroughly tested NextGen 911 solution utilizing NENA standards and open architecture to provide the ability to run other applications

Network


Legacy Configuration (Before)
No Changes
Central Offices
Currently Used Selective Router(s)
EM Trunks
At PSAP
PSAP CPE (e.g. Rescue Star, LifeLine 100)
ALI Links
ALI 1 DB
All 2 DB
EM Trunks and ALI Links will be removed after Soak Period
Next Gen Configuration (After)
IP Selective Router (ECMC)
All 2 DB
Legacy Network Gateway
POP
PSAP Gateway Manager (PGM)
Central Offices
Currently Used Selective Router(s)
CenturyLink Next Gen IP Network Components reside "In the Cloud"
POP
Legacy Network Gateway
ALI 1 DB
IP Selective Router (ECMC)
PSAP CPE (e.g. Rescue Star, LifeLine 100)
No Changes
At PSAP

Additional Objectives

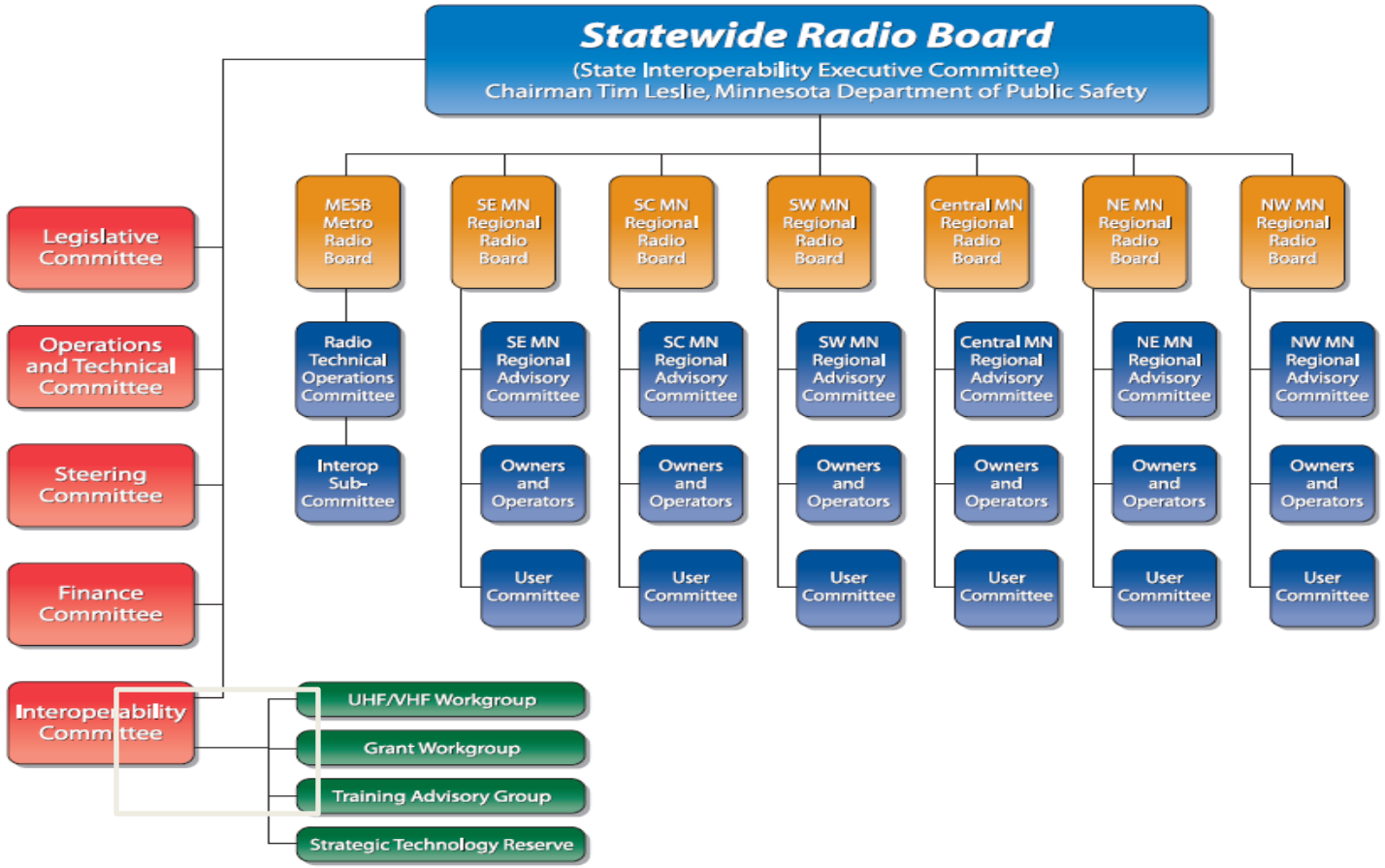
Examination of Next Gen applications and how they will work with core 911 voice services and ALI

CenturyLink's 911 system to be compatible with the State's GIS database as a source GIS data, should the State begin trialing a statewide GIS application

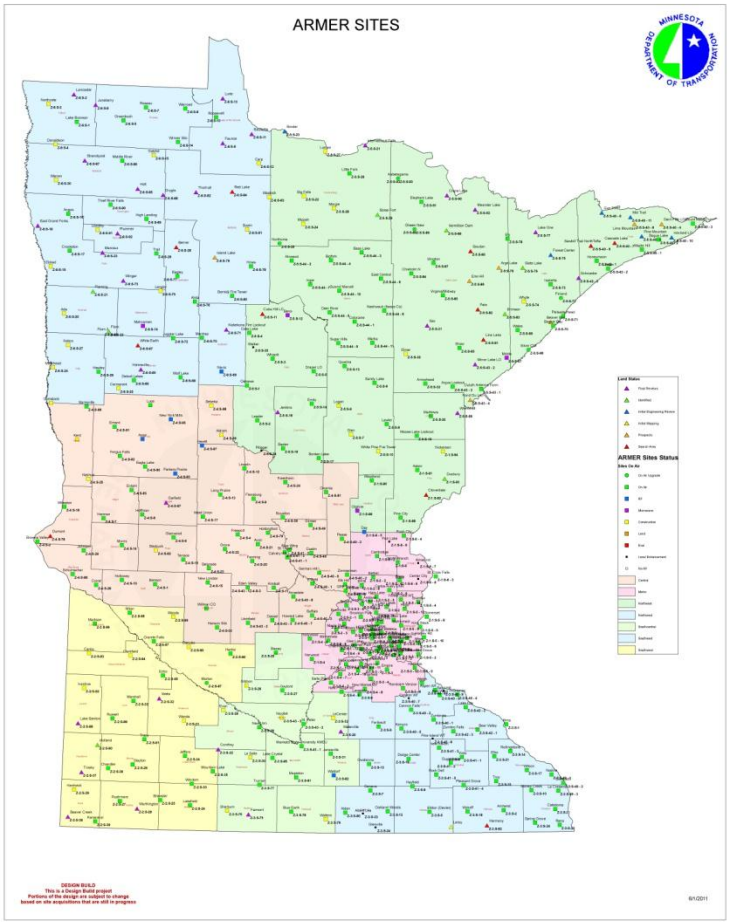
Expand the role of the Statewide Radio Board to include all Emergency Communication Networks

Modify State Statutes and Rules to address change in technology

Statewide Governance Structure



ARMER Project-Status



- 324 Base Radio Sites- Towers
  - Metro completed 2001
  - 81% Completed
  - Planned Completion Date: 6/30/2013
- Budget
  - $45 million- Phase 3
  - $186 million- Phase 4,5 &6
- State Agency Status
  - MnDOT
    - -Transition 12/31/2010
  - State Patrol other LE
    - -Transition 6/30/2011
  - DOC
    - -Transition 12/31/2011

Interoperable Communications- Major Accomplishments

- Governance Structure
- Assessments of Communication Infrastructure
  - Every County
  - Education of Local Officials
- Control Stations- PSAP's & EOC's
  - Border County PSAP's
- VHF Interoperable Frequency Plan
- Strategic Technology Reserve
  - Radio Cache
  - Transportable Tower/Repeaters (Pending Extension of PSIC)
  - SAT-COW (Henn County)
  - 3-NG Radio Communication Platforms
- Regionally Based Tactical Interoperable Communication Plans
- ARMER Subscriber Radios

Future Scope

Next Gen Applications
- Text Messaging
- Photos
- Streaming Video
- Telematics
- Building Plans

Host –Remote Solutions

Wireless and VoIP carriers to migrate from the 12 MN Legacy

Selective Routers to the Legacy Network Gateways

Questions?

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