



MESB NG9-1-1 Transition Strategy Document

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Prepared by





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I. Executive Summary

Transition Strategy Context/Background

The Metropolitan Emergency Services Board (MESB) supports public safety for the residents of Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Sherburne, and Washington Counties, and the City of Minneapolis. This support includes oversight and management of the metropolitan portion of the ARMER radio system; oversight and management of the regional 9-1-1 system; and coordination of the regional EMS system.

This regional approach to planning and supporting Public Safety Answering Points (PSAPs), radio system users, and EMS providers ensures optimal response to emergencies and large-scale public safety events occurring within the metropolitan region.

The MESB provides regional leadership, planning, coordination, and support for public safety communications and EMS providers, resulting in efficiencies for local governments and consistent public safety response within the metropolitan region.

The MESB works closely with the Minnesota Department of Public Safety, Division of Emergency Communication Networks (ECN) to not only manage the current E9-1-1 system, but to plan and implement Next Generation 9-1-1 (NG9-1-1). NG9-1-1 is Internet protocol based and will provide increased functionality for 9-1-1 callers and Minnesota's public safety answering points, which answer 9-1-1 calls and dispatch public safety resources in response to those calls.

II. MESB NG9-1-1 Transition Goals and Objectives

1. The MESB desires a planned, diligent, and seamless transition from the current 9-1-1 system serving the MESB PSAPs to fully NG9-1-1 capable and compliant systems supporting the MESB PSAPs.
2. The MESB requires reliable and resilient NG9-1-1 service and will leverage NG9-1-1 standards-based technology to support the eighteen primary and six secondary PSAPs serving the citizens of and visitors to the Minneapolis/St. Paul metropolitan area.
3. The MESB, in cooperation with Minnesota PSAPs and ECN, seeks to leverage common Minnesota NG9-1-1 operational, technical, and functional requirements in the procurement of any future NG9-1-1 systems to continue the long history of public safety interoperability across Minnesota.
4. The MESB maintains a focus on offering PSAPs better continuity-of-operations (COOP) options as well as enabling resource sharing for the PSAPs that are interested in working together.
5. The MESB works with ECN to procure an NG9-1-1 network with enhanced support for the delivery of shared/hosted and cloud-based applications for PSAPs. (e.g. hosted call handling, CAD, CAD-to-CAD interoperability, logging/recording)



6. The MESB sees the local, authoritative data maintained by its counties as a strategic asset for its PSAPs and seeks to create data processes that allow the region to effectively use and maintain high-quality geospatial data to support NG9-1-1.
7. The MESB requires a single-point of contact for PSAPs to report 9-1-1 issues and problems to have resolution proficiently coordinated among vendors and providers.
8. The MESB works with the PSAPs in planning for the transition of their PSAP 9-1-1 technology to NG9-1-1 capable systems needed to operate on a fully standards compliant NG9-1-1 network.
9. The MESB, in partnership with Minnesota PSAPs and ECN, seeks to leverage common, statewide 9-1-1 funding and grant opportunities in the purchase and deployment of NG9-1-1 systems.

III. NG9-1-1 Transition Scope

Relevant Legislative Definitions

Proposed changes to Chapter 403 of the Minnesota Statute, 911 Emergency and Public Safety Communications, include updated terminology in 403.2 that is referred to throughout this plan. Although there are many additions to 403.02 Definitions, the list below reflects those pertinent to this document.

1. **911 network.** "911 network" means (1) a legacy telecommunications network that supports basic and enhanced 911 service, or (2) the ESInet that is used for 911 calls, that can be shared by all public safety answering points, and that provides the IP transport infrastructure upon which independent public safety application platforms and core functional processes can be deployed, including, but not limited to, those necessary for providing next generation 911 service capability. A network may be constructed from a mix of dedicated and shared facilities and may be interconnected at local, regional, state, national and international levels.
2. **911 system.** "911 system" means a coordinated system of technologies, networks, hardware, and software applications that a PSAP must procure and maintain in order to connect to the state 911 network and provide 911 services.
3. **911 service.** "911 service" means the emergency response service a public safety answering point provides as a result of processing 911 calls through their 911 system
4. **Emergency Communications Network Service Provider (ECNSP).** "Emergency Communications Network Service Provider (ECNSP)" means a service provider, determined by the commissioner to be capable of providing effective and efficient components of the 911 network or its management, that provides or manages all or portions of the statewide 911 emergency communications network. The ECNSP is the entity or entities that the state contracts with to provide facilities and services associated with operating and maintaining the Minnesota statewide 911 network.
5. **Emergency Services Internet (ESInet)** "ESInet" means a network which is Internet Protocol-based and multi-purpose in supporting local, regional, and national public safety communications services in addition to 911. The ESInet is comprised of 3 network components: ingress network, NGCS and egress network.



NG9-1-1 Transition Elements

There are three (3) primary points of transition that must be addressed in an NG9-1-1 transition strategy Ingress (getting the Legacy and IP 9-1-1 call traffic into the NG9-1-1 network and systems), Core (anchoring, manipulating, and distributing the NG9-1-1 call traffic) and Egress (getting the NG9-1-1 call traffic routed to the PSAP in a format the PSAP can use). These three areas each have technical, operational, and administrative considerations that will be addressed in an end-to-end NG9-1-1 strategy for a successful transition of the MESB.

Along with addressing Ingress, Core and Egress, the local PSAPs will need to take the responsibility for updating the current technologies used in their operations to be NG9-1-1 compliant.

The MESB has identified the following elements for transition to NG9-1-1:

- 9-1-1 call origination network (ingress)
 - The ingress network is currently being transitioned under contract with Inteliquent and requires the MESB and the MESB PSAPs to coordinate with Inteliquent Inc.
 - Additional ingress transition elements, not covered by the current contract with Inteliquent Inc., may need to be addressed with the transition to a NGCS core.
- 9-1-1 call routing functions (core)
- 9-1-1 call database functions (core)
- 9-1-1 call delivery network to the PSAPs (egress)
- 9-1-1 network support and monitoring (all)
- 9-1-1 network logging and reporting (all)
- 9-1-1 network disaster recovery and continuity of operations (all)
- 9-1-1 PSAP system technology migrations and updates (egress)

A visual representation adding additional elements for consideration in the transition to NG9-1-1 are provided in the diagram below.

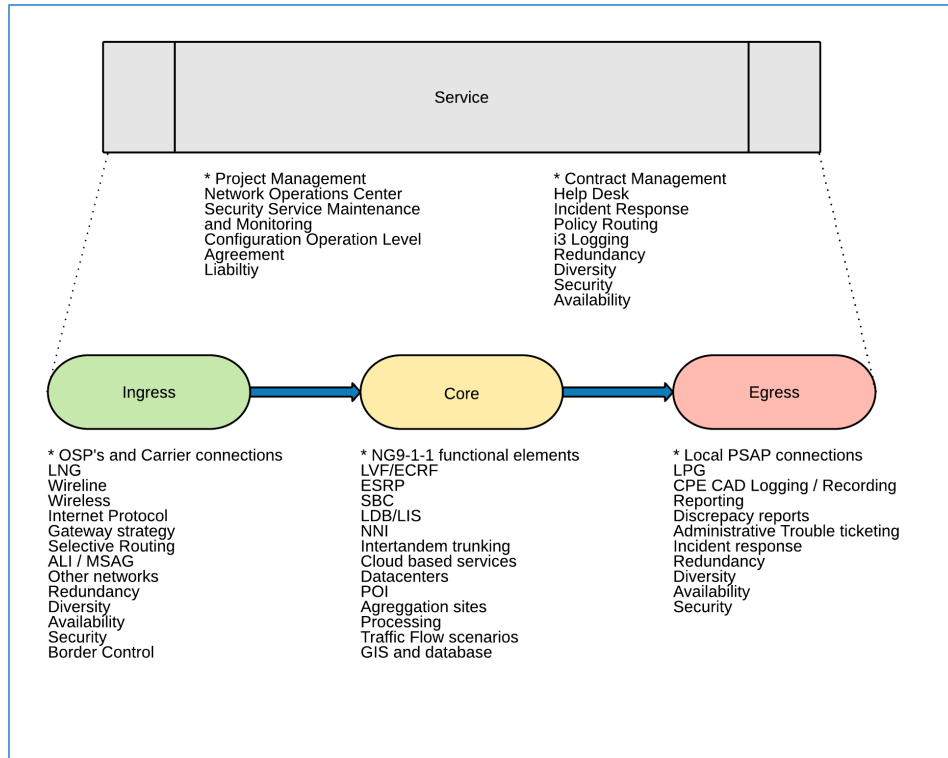


Figure 1 - NG9-1-1 Transitional Elements

NG9-1-1 Transition Milestones and Timelines

The milestones presented in this section are not always completed in a serial or consecutive manner. For example, once the ingress ESInet is implemented, the wireless transition and the database transition can begin, in a parallel path. Subsequently, the selective routing and wireline transition can begin, in a parallel path.

Transition Milestones	Definition
Milestone 1	NG9-1-1 Egress ESInet transition
Milestone 2	NG9-1-1 Core Services
Milestone 3	MESB PSAP network cutover and transition
Milestone 4	Legacy 9-1-1 ALI Database transition
Milestone 5	Originating Service Provider (ingress) transition – Wireless Carriers
Milestone 6	PSAP technology transition
Milestone 7	NG9-1-1 Database transition (location-based routing)
Milestone 8	Wireline carriers and Selective Router transition
Milestone 9	Monitoring, Support, and Reporting

The diagram below provides a description of the transition roadmap, along with the parallel migrations that will take place.

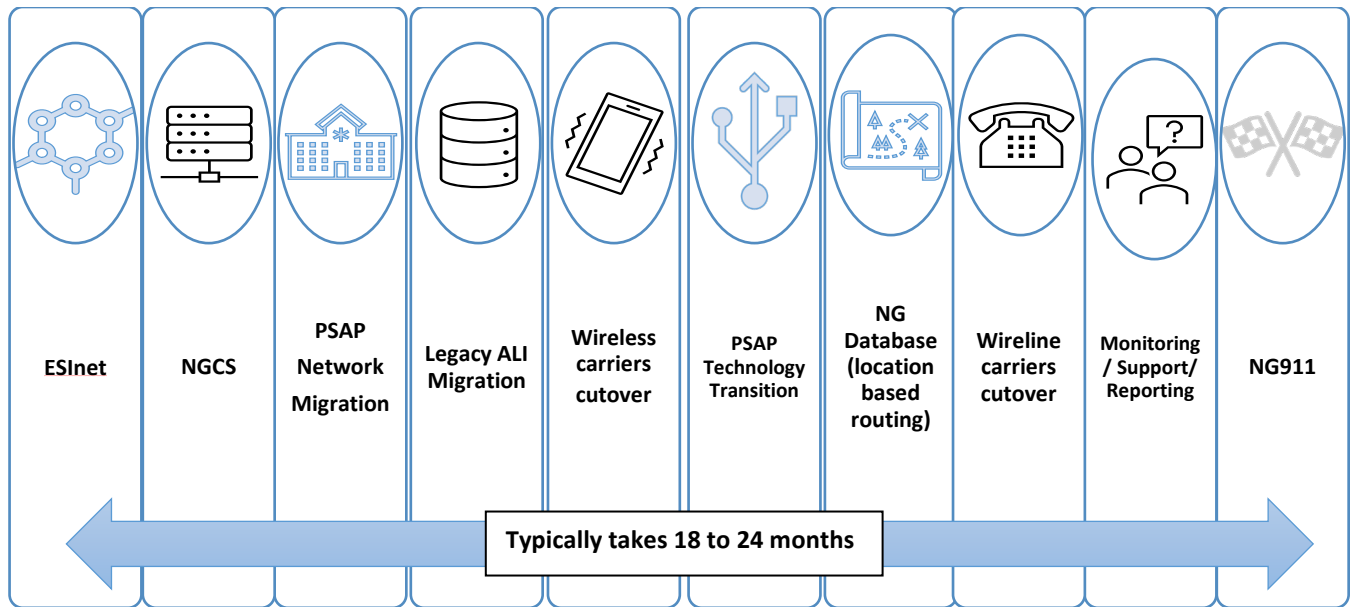


Figure 2 - NG9-1-1 Transition Milestones

The transition from Legacy 9-1-1 services to NG9-1-1 will be completed in a phased approach to allow PSAPs to use the ESInet and NG core services as they are implemented. The scope of transition is defined by the MESB to establish the strategic direction for migrating to NG9-1-1. The elements presented in the scope represent the goals for each item during migration. In the context presented here, the assumption is for the PSAPs to gain the benefit of NG9-1-1 by transitioning specific call types, e.g. wireless, onto the ESInet initially, then gradually continuing to add applications and services to the ESInet over time.

Transition Roles and Responsibilities in NG9-1-1

MESB

The MESB will provide the guidance and framework for ensuring that call delivery to each PSAP will meet operational requirements. In addition, the MESB will be instrumental in providing MESB PSAPs with implementation oversight and project management of the configuration and operation of ESInet and NG core services. In this capacity, the MESB will maintain a focus on call delivery to ensure that MESB PSAPs will be able to meet their requirements once the network is fully deployed.

The transition of MESB PSAPs to a new NG9-1-1 network will be managed through additional documented practices and procedures. During the transition, the MESB will:

- Support MESB PSAPs in coordinating the implementation of and transition to NG9-1-1.
- Assist PSAPs by coordinating with NG9-1-1 Emergency Communications Network Service Provider (ECNSP) to ensure that guidelines and best practices will be followed during all transition and implementation activities.
- Support MESB PSAPs as 9-1-1 system changes occur during the transition to NG9-1-1 by applying established change management process, practices and procedures in order to plan for and mitigate any operational disruption during the transition to NG9-1-1.
- Support the MESB 9-1-1 Technical Operations Committee (TOC) in the engagement of the MESB stakeholders in the planning and implementation of the transition to NG9-1-1.



- Assist PSAPs/counties in meeting NG9-1-1 core services data requirements and coordinating the transition of legacy MSAG/ALI to NG9-1-1 data management processes.
- Assist PSAPs in ensuring that quality assurance and quality control measures performed by the ECNSP are met for all components of the NG9-1-1 network and services.
- Establish a baseline for connectivity among PSAPs.

Metro Region PSAPs

The metro region PSAPs will be the end users of the NG9-1-1 network. In this user role, each PSAP will be a stakeholder and will collaborate with the MESB at various stages of transition. PSAPs will be responsible for ensuring that their requirements are communicated such that the NG9-1-1 network is operationally focused on their mission. PSAPs will be responsible for engaging with their county GIS support organization(s) to maintain quality geospatial data required for the operation of the NG9-1-1 network. PSAPs must coordinate with the MESB to configure changes to the NG9-1-1 network. PSAPs will be accountable to provide the information required by the ECNSP when they begin an upgrade or replacement of PSAP applications that affect call delivery or any other applications that are utilizing the NG9-1-1 network for connectivity. During the transition, and on an on-going basis, PSAPs must report issues with call delivery, routing, and location information.

During the transition Metro Region PSAPs will:

- Work individually and collectively with the MESB to plan, schedule and execute an orderly transition to NG9-1-1
- Be responsive to requests for information and input prior to and during the transition
- Be engaged stakeholders that participate in the transition planning process and are vested in the outcomes for the region
- Champion PSAP operational requirements to drive the technology decisions made in the transition to NG9-1-1
- Communicate plans and activities that could impact the operation of the PSAP NG9-1-1 systems or the NG9-1-1 network. Examples might include buying a new CAD system or moving into a new building



NG9-1-1 ECNSP(s)

The NG9-1-1 ECNSP(s) will be required to deliver a NG9-1-1 network that meets the technical specifications of the MESB, which will be developed in conjunction with the PSAPs. The ECNSP(s) will be required to support the transition of MESB PSAPs from legacy to NG9-1-1 and for maintaining the NG9-1-1 network to ensure that 9-1-1 service is available 99.999 percent of the time.

During the transition, the ECNSP(s) will:

- Coordinate with the MESB to plan, schedule and execute an orderly transition to NG9-1-1
- Work individually and collectively with MESB PSAPs throughout the transition
- Migrate and cutover individual MESB PSAPs from the current network to the new NG9-1-1 network
- Transition location data from current processes and platforms to those used for NG9-1-1, coordinating with originating service providers, as well as MESB and its PSAPs
- Coordinate and facilitate changes at the PSAP related to the operation of the NG9-1-1 network
- Provide 24x7x365 operational support to MESB PSAPs for the NG9-1-1 network

The diagram below provides a visual representation of the roles and responsibilities involved in the migration to NG9-1-1.

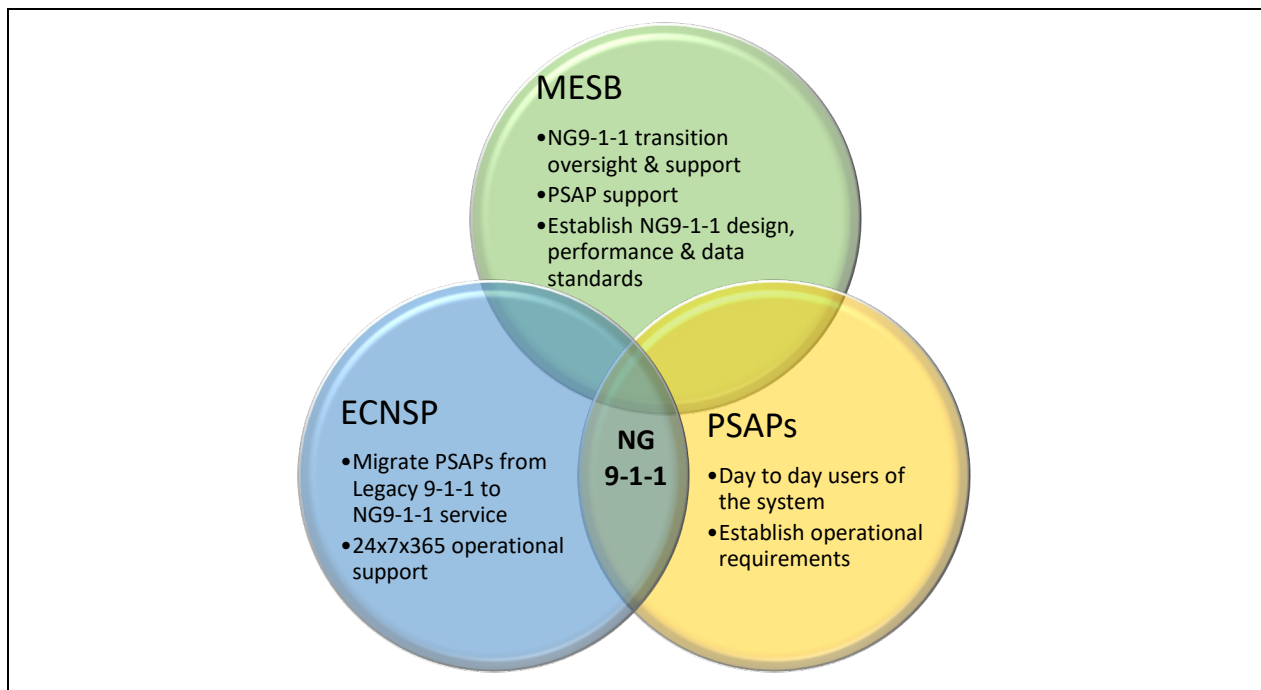


Figure 3 - NG9-1-1 Transition Roles and Responsibilities Diagram



Recommended Next Steps

The purpose of this document is to capture the vision of the MESB as it relates to the migration of the metro PSAPs to a fully operational NG9-1-1 network to the metro area. This document is a high-level communication document that requires additional action and activity to achieve the strategic vision provided here. The items listed below, some of which are in progress, are designed to step the MESB and the metro PSAPs from the vision and communication stage of the NG9-1-1 strategy to concrete plans and actions that support a sustainable program for years to come. The recommended next steps are:

1. Conduct a PSAP survey to gather current technical and operational data to inform future NG9-1-1 requirements of the metro PSAPs
2. Establish the technical NG9-1-1 readiness of each metro PSAP supported by the MESB
3. Coordinate with ECN on the procurement of 9-1-1 networks supporting the MESB PSAPs
4. Develop a detailed MESB NG9-1-1 Transition Plan to focus the resources of the MESB by defining critical sequencing and interdependencies during the migration to NG9-1-1 at the PSAPs over the next three to five years.

- Nothing Follows -