State 911 Committee
Deployment Suggested Guide List

This document is intended to aid Michigan Public Safety Answering Point (PSAP) management with planning a deployment of IP-911 systems. This guide is intended to address items to consider in the process of selecting a Next Generation 911 (NG911) provider, the technical and operational processes in migrating to IP-911, and policy changes to evaluate while making these decisions. This document is meant to be a broad guide to assist PSAPs in migrating to IP-911 and each deployment may be different.

Pre-Migration Considerations

- Define project as a single countywide IP-911 deployment or if multiple agencies/jurisdictions (host/remote set up).
- Consider technical and maintenance needs and cost sharing.
- Consider Memorandum of Understandings and agreements with other agencies.
- Per Section 408(5)(b) of the Emergency 9-1-1 Service Enabling Act when selecting an IP-based 911 vendor, contracts must be the result of a competitively bid process as confirmed by supporting documentation.
- Make sure that your 911 plan is updated and reflects:
  - Your new 911 service provider(s).
  - Any changes in backup and secondary PSAPs.
  - New and emerging technology.
  - Any changes in governance.
  - Up-to-date and current information.
- Consider all costs and potential costs and all funding sources to cover these costs.
- Provide notice of your project to your legacy 911 provider(s).
- Gather existing known carrier lists that serve your area. Document them and work in cooperation with your IP-911 provider to communicate and track their progress and status with your project.
- Contact existing ALI providers to determine what is required on their end for switch over. This includes timeline, notifications, removal, etc.
- Discuss the possibility of using your selected IP-911 provider for ALI before carriers are actually moved from analog to IP-911. This is a discussion that must take place with both the IP-911 provider and your CPE vendor to determine the process and IF it can be done with multiple nodes.
- Network – Work with your IP-911 provider to determine network connectivity needs and existing/available resources and infrastructure. Consider using a secondary SIP vendor to provide a redundant backup. Work to ensure the backup does not share infrastructure with the primary vendor. Consider having the primary IP-911 provider be the single point of contact to work with the secondary provider when alarms, issues and outages occur.
- Inventory existing or future CPE equipment and connections to ensure you have enough switches, routers and firewall connections to add in SIP. Consider CPE, recorder, alarm monitoring, etc.
- Consider existing network drop availability, electrical, etc. at the workstations. Backup phones will need a network connection and power.
- Investigate the backup phone option as potential administrative phone or backup center phone in lieu of full CPE positions.
- Gather list of ESNs and determine what you want displayed.
- Create call routing preferences. There are two considerations:

  1) Where calls are routed during an overflow scenario.

  2) Where calls are routed to if the PSAP is abandoned and moved to a backup location.

  These should be a few layers deep. (See Policy Considerations for backup PSAP identification considerations.)

- Create a list of agencies/numbers that 911 calls will require a 911 transfer to. These include 911 center, poison control, language translation service, etc.
- Notify all neighboring PSAPs of the impending migration, impact on the various PSAPs, and work with CPE vendor to ensure call transferability.
- Discuss MSAG process with IP-911 provider. What is the process for conversion? Find out early in the process and establish a start date that gives you ample time.
- Discuss and document trouble ticket and emergency contact processes. You will have dual processes for a while and it's important to know how to determine if it's an IP-911 issue or an analog issue.
- IP-911 provider cutover is not an instant cutover. It takes months to migrate ALL carriers. There are also consideration needs in cutovers for exchanges that are shared between geographical boundaries such as county lines.
- Make a list of local providers in your jurisdiction and track their migration progress or ask your new provider to provide you with regular updates.
- Be familiar with the CAMA decommission testing period that occurs during the migration process which ensures that all carriers have moved their 911 calls off the legacy provider's system to the IP-911 system.
- During CAMA decommission testing period, let your IP-911 provider know if your PSAP receives any calls on the CAMA trunks. Document the details, carrier, time, date, etc.
- Operations – Inquire from the IP-911 provider what the differences are that the dispatchers will see. This can be a visual marker on the SIP naming that will be seen on the CPE and the recorder. This can be the different sounds the calls make upon ring, hold and transfer. The voice traffic can sound more digital as well and volume levels may need to be adjusted to accommodate. New fields may be added to the 911 screen such as confidence/certainty and originating PSAP if you have chosen to do so.
- Notify all affected vendors of cutover date. There will need to be adjustments to any system/technology receiving ALI information from the network provider and/or CPE (CAD, recorder, etc.). This may require a reconfiguration of the ALI parser prior to conversion.
- Consider the number of outgoing lines that are available. You may need to add some to accommodate the transfer process.
- Check to see if your PSAP's Internet service will be affected by the migration to IP-911.

Customer Premise Equipment (CPE) Considerations

- It is recommended that you contact your CPE provider or maintenance channel partner to confirm you are on a software version that will support Session Initiation Protocol (SIP).
- ALI – SIP providers can have a very large ALI stream. Verify the character limit that the CPE vendor can handle in an ALI stream and then work with the SIP provider to choose the fields that need to spill into CPE, CAD and recorder.
- It is important to contact your CPE provider or maintenance channel partner to determine if your equipment can directly accept SIP. If your CPE can only accept analog, it should be re-evaluated for an upgrade, Most CPE systems will need to be upgraded to install firewall components before accepting SIP.
- While old equipment will be removed in the future, there will most likely be the need to add an additional rack of equipment. Make sure you have the space to accommodate it.
- Test out all your speed dials and transfer keys.
- Seriously consider having the CPE vendor on site during initial cutover.

Recorder Considerations

- Confirm that your recorder can support SIP recording.
- Your PSAP will need enough channels licensed to record both the new SIP lines and old CAMA lines until the conversion is complete and the CAMA lines are disconnected.

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- Your vendor will need to know if you plan on recording the SIP line at the console.
- Consult with your recording vendor regarding methods that can capture the caller's audio prior to the line being answered.

Policy Considerations

- Identification of your back up and overflow PSAP(s):
  - It will be important to discuss with your neighboring PSAPs your call routing policy in case of a failure or in the event your PSAP becomes overwhelmed.
  - Have an internal policy in place for call routing.
  - Know what your backup PSAP(s) policies are regarding processing calls from your jurisdiction.
  - Check with your PSAP's legal counsel to see if you need an agreement in place with your backup. If you do need one, have it in place prior to the cutover.
- This is a good opportunity to review your 911 outage procedure and to ensure it aligns with the State 911 Committee (SNC) outage policy.
- Consider the fact that CAMA trunk providers generally do not roll calls over or automatically reroute calls to another provider. This means that if your center is a backup for a neighboring county that has CAMA trunks, once your CAMA trunks are disconnected you will not be able to serve as their back-up and arrangements should be made well in advance.

Redundancy Considerations

- While redundancy for the 'last mile' may be provided through different vendors, they may use common facilities or equipment that could be a single-point of failure.
- Clarify in your requirements to the vendor whether you desire the second path to be a fiber connection.
- Determine if the vendor will charge the PSAP additional for a geo-diverse path or fiber secondary connection.
- Document your redundant systems and maintain them in a secure, but accessible location.

Notification Systems / Internet Services

Consider an alarm monitoring system that allows for multiple notification options (pagers, email, phones, etc.). This may be something the network vendor provides but it may also be something that a third-party vendor provides. Once selected, set up notification processes, groups and contacts. Create a centralized contact list that can be shared with those that are tasked with reacting and responding to alarms.

Notify your selected provider if you utilize public notification systems through their existing telephone system. Provide your IP-911 provider with the type of system in place to ensure there are no disruptions during the conversion.

Texting

Your IP-911 provider may offer text-to-911 solutions. Please see the SNC's Text-to-911 FAQ and Best Practices document for further information. This can found at: https://www.michigan.gov/documents/msp/Text-to-911_Guidelines_4-30-14_454904_7.pdf) If your jurisdiction already provides text-to-911 services, establish a plan to make sure your PSAPs' text-to-911 services are not interrupted.

MLTS

Consult with the selected provider and CPE vendor to determine if the LOC (Location) line on your ALI will be affected (mainly the number of characters displayed and delivered). This could affect how MLTS and PS-ALI services provide supplemental location information.

Training

Prior to full conversion and deployment, request training of your staff from the provider regarding trouble ticketing, MSAG management, ALI corrections and call routing changes.

It is recommended you work with the selected IP-911 provider to have a project manager assigned early in the process to help facilitate the process.