Prepared by the Public Safety Advisory Committee and Submitted to

Public Safety Advisory Committee

Use Cases for Interfaces, Applications, and Capabilities for the Nationwide Public Safety Broadband Network

Public Safety Advisory Committee
7/21/2014

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Purpose

This document is the consolidated input from the Public Safety Advisory Committee (PSAC) and the National Public Safety Telecommunications Council (NPSTC) of envisioned use cases for interfaces, applications, and capabilities for the Nationwide Public Safety Broadband Network (NPSBN).

Approach and Document Structure

The successful development and deployment of the NPSBN is dependent upon the provision of detailed information about the desires, needs, and capability requirements of the network, its supported applications and access to various information sources. The PSAC seeks to provide FirstNet with the most descriptive information of existing and conceptual applications and capabilities and to define to the highest degree the features and functionalities of the envisioned solutions in the context of actual public safety usage. As such, the document is organized in the following categories:

- **Location Based Applications and Services**
- **Wearable Technology**
- **Video Applications and Services**
- **Mobile Computing Applications and Services**
- **Computer Aided Dispatch (CAD) Systems Application and Services**
- **Handheld Applications and Capabilities**
- **Miscellaneous Applications and Services**

For each use case, the following information is provided:

- **Source/Tracking Number** – Indicates where the information originated (i.e., PSAC, NPSTC, etc.) and assigns a tracking number to cross reference (XREF) use cases.
- **Similar or Related Criteria (XREF) –** Indicates which entry matched or provided similar discussion to another item. Compares each item to every other item in the entire list and where there is the potential that one supports the other, includes the other, facilitates the other or is an umbrella technology for the other, the numbers of corresponding items are recorded.
- **Discipline** – Describes in which primary discipline(s) the capability/application may be used.
- **Interface/Application/Capability** –Provides a short description of the application or capability.
- **Priority Level** – Indicates High, Medium, Low of when the contributor believes that this capability/application will need to be available for deployment and use on the NPSBN by the public safety community.
- **Existing Application or Conceptual Application** – Specifies if the application, capability, or proposed solution exists today or is conceptual. Note this may take both forms as it may exist but enhancements to provide additional features or functions may be conceptual. References to existing technology, applications, or capabilities are also referenced in this column.
- **Use of Network** – Indicates if the application/capability will require use, access, or support of the NPSBN to provide the required features or functionalities.
- **General Description** – Details the existing or proposed application or capability including what the capability is, what benefit it provides, and what are the expected or desired outcomes.
- **Use Case General Comments Working Group Feedback –** Captures the technology application/solution in the context of its use or intended use by public safety personnel. Includes context of the “who”, “what”, “when”, “where”, and “how” public safety personnel will incorporate and benefit from the existing or envisioned technology.

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Source Tracking Number	Similar or Related Criteria XREF	Discipline Fire EMS Law Enforcement All	Interface/ Application/ Capability	Priority Level **High** (Launch, Year 1) **Medium** (Year 2-3) **Low** (Year 3+)	Existing App or Conceptual	Use of Network (Yes or No)	General Description	Use Case/ General Comments/ Working Group Feedback
Location Based Applications and Services								
PSAC 1	**2,3, 4,5, 6,7, 8,9, 10,11, 15,16, 17,18, 20,26, 27,31, 35,49, 52,56, 58,60, 63,81, 82,85, 86,87, 88,92, 95**	All	Enhanced integration of location based data sources	HIGH	EXISTING & Enhanced integration and functionality is CONCEPTUAL	Yes	Capability integrates data from a variety of different information resources to provide a more cohesive and complete representation of an incident location. Capability would enhance situational awareness and firefighter safety.	Many current Computer-Aided Dispatching (CAD) systems provide a variety of data regarding locations including, hazards, warnings, or persons in need of special assistance, previous calls for services, occupancy information, etc. Information from SMART911 systems (entered by owners/managers) can also be transmitted/ accessed via wireless connectivity. On demand Fire Records Management Systems (RMS) and Geographic Information Systems (GIS) and as well as other government /commercial entities (e.g., Tax, Utilities, and Business Use systems) provide additional details in text and image formats. Upon dispatch to a call for services, the CAD systems would provide active alert & warning information about the incident location & indicate the presence of other data from other connected/integrated systems. RMS can provide more details about the firefighting preplans, building construction, hydrant/standpipe locations, status & capacity, storage of materials, chemical or substances that may create hazards for firefighting and previous fire inspection records. On demand access to GIS information can provide locations of utility pipelines, capacity, routes, shutoffs, floor plans, etc. If the building incorporates Smart Technology with active and passive sensors, the Incident Commander should be able to access the building systems to interrogate the various sensor systems and cameras for enhanced situational awareness.

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PSAC 2	**1,4, 10,11, 12,17, 27,29, 31,35, 38,40, 47,50, 51,52, 55,56, 57,58, 63,82, 85,92**	All	Mobile provision and access to GIS information and Real Time Environmental Sensors	MEDIUM	EXISITNG	Yes	Utilize NPSBN to transfer information with regards to pre-plans for fire, building schematics, blue-prints, geographical hazards, evacuation plans, property owner information, etc.	Current LMR technology and 3G wireless does not provide a robust enough network to transfer large amounts of GIS/Geographically relevant data to a wireless device/user with adequate speed and without significant burdens on data limits over LMR or Cellular carriers. Example: First responders arrive on scene of a Hazmat situation and need GIS data along with sensor information supplying current wind, water speed, temperature, humidity, barometric pressure, etc. in order to evaluate a potential evacuation zone. Currently, this information will have to be gathered via sensor devices deployed on-scene or relayed to the on-scene incident command as there is insufficient and non-secure and network capability to facilitate continued access and communications.
PSAC 3	**1,4, 6,8, 12,15, 17,35, 38,56, 59,60, 64,81, 82,87**	Fire	Location-Data Services Personnel Tracking for Wildland Firefighting	MEDIUM	CONCEPTUAL	Yes	Capability would allow tracking of personnel in the wildland firefighting environment	Currently wildland firefighting crews are assigned geographic areas and the precise location of the crew is not available to the command element. This use case would require the development of application(s) and hardware that integrates into First Net network. GPS sensors embedded in current prototypes could provide the location information required.

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PSAC 4	**1,2, 3,6, 7,9, 11,12, 15,17, 23,38, 47,56, 57,59, 60,63, 64,67, 82**	Fire	Location-Data Services Information Sharing and GIS Warning for Wildland Firefighting	MEDIUM	CONCEPTUAL	Yes	Capability would allow tracking of personnel in the wildland firefighting environment	Information Sharing and Warning systems: Integration of the location of crews with GIS information and Sensor information from airborne platforms could be used to create Red, Yellow and Green zones of operation based on the GIS data from the airborne platform (Infra-Red (IR) information), weather and location of the crews. In the event the fire were being wind driven in the direction of crew the status of the zone would change from green to red and give the users in the impacted area an audible warning.
PSAC 5	**1,7, 10,11, 19,31, 35,38, 39,49, 52,53, 54,55, 56,58, 59,60, 63,82**	All	PSAP Delayed Call for Services Geographic Information to Mobile Devices	LOW	CONCEPTUAL	Yes	Allow geographic information from PSAPs to be sent to mobile devices where foot searches are being conducted	During incidents that involve extreme weather or call volumes that do not allow responders to reach the callers the call information is cached so that when the weather passes responders can contact the callers. This situation occurs in hurricanes and flooding situations. The calls were stored and after the weather had passed searchers were assigned a search grid with all of the geographic information of 911 calls that had not been answered. In other instances floods and downed infrastructure prevented access to some that had called. The NPSBN would provide data connectivity to mobile tablets for the searchers. The app would integrate with the CAD to access the stored, unanswered calls for services in an area and the population and remote input of search grids with the known call information. The app would provide the ability to change the status of the unanswered call and clear it from the unanswered status.

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NPSTC 6	**1,3, 4,7, 9,11, 12,15, 16,17, 38,51, 52,55, 56,59, 60,64, 81,82, 87**	ALL	EMS Personnel Location	HIGH	EXISTING X/Y LOCATION PROVIDED BY SEVERAL: HTTP://APPCOMM.ORG/TAG/LOCATION-SHARING/; AND HTTP://WWW.TRXSYSTEMS.COM/PERSONNEL-TRACKING/ AND HTTP://URGENTCOMM.COM/PERSONNEL-TRACKING/NEW-TECHNOLOGY-IMPROVES-FIREFIGHTER-LOCATION	N	Ability to track individual EMS employees in X,Y,Z coordinates for personnel safety and accountability.	Rescue 1 arrives at an unknown medical emergency call at large apartment complex. A few minutes later, they radio for emergency help, indicating that someone has fired a gun at them. The dispatcher can see the location of their vehicle, but needs to know the actual physical location of the EMT's in the large building. The EMS Personnel Location system provides the dispatcher with X,Y,Z (altitude) information, allowing her to send law enforcement directly to the specific location of the crew. This same application would be critical for firefighters and other personnel working in a hazardous environment. John Smith, Paramedic, is deployed to a neighborhood devastated by a tornado as part of a Regional Response Team. During a search of the rubble, John finds a victim in need of extrication from the rubble. Unable to determine his own exact location due to the devastation, John notifies dispatch to send a technical rescue team to his location. Dispatch identifies his location and is able to provide coordinates to the technical rescue team, who responds and extricates the victim.

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NPSTC 7	**1,2, 4,5, 6,9, 10,11, 15,17, 18,19, 20,27, 31,35, 49,51, 52,55, 56,58, 59,60, 80,85, 87**	All	Geographic Information Systems (GIS) Data	HIGH	EXISTING SEVERAL DO AT LEAST SOME OF THIS. HTTP://APPCOMM.ORG/STREETWISE-CADLINK/	N	Application will allow access to various GIS layers including street layer (to coordinate emergency response) to live traffic layer (to coordinate emergency response); to hospital status layer (to coordinate patient destinations; and other layers (shelters, etc.)	Multiple units are on the scene of a tanker truck leaking gasoline into a street side storm drain. The Incident Commander is able to access a GIS map of the sewer system, overlaid with the street system to help determine where highly explosive gasoline fumes may be spreading. This information helps identify buildings that need to be evacuated and the placement of fire suppression units near critical targets. Rescue 1 is preparing to transport two patients from a vehicle crash on a rainy afternoon. They access a Hospital Status Layer on the GIS network and can see the relative availability of each ER and also determine how many other ambulances, including ambulances from other agencies, which are transporting to this same facility.
NPSTC 8	**1,3, 9,11, 29,35, 38,52, 55,56, 58,59, 81,82, 87**	All	EMS Vehicle Location	HIGH	EXISTING HTTP://WWW.DATA911.COM/WEB-AVL.HTML	N	Ability to track EMS vehicles and resources in real time, with a consolidated public safety view that will show location information for EMS, Fire and Law Enforcement for situational awareness and response coordination.	The local PSAP receives a call for a child who was found unresponsive in the swimming pool at home. After confirming the location information in the CAD system the Emergency Medical Dispatcher identifies that Ambulance 5 (the ambulance responsible to cover that area of town) is in quarters two miles from the home and Ambulance 10 is just three blocks from the home and available (returning to quarters after delivering another patient to the hospital) and dispatches Ambulance 10 to the scene.

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PSAC 9	**1,4, 6,7, 8,11, 15,16, 17,18, 19,27, 35,38, 51,52, 53,54, 55,56, 58,59, 60,63, 82,85, 87**	EMS	Location based situational awareness	MEDIUM	CONCEPTUAL /EXISTING (HOSPITAL STATUS APPLICATION EXIST TODAY)	Yes	Location of resource hospitals and the receiving status in disasters.	During an event, the physical location and resources status of receiving hospital for assisting agencies that may not be familiar with the geographic area would be posted in an application. Real time navigation could potential be provided from current point to the hospital. This application would maintain the real time receiving status (availability of resources/services availability e.g., trauma, pediatrics, neurosurgery, ER, etc.) of the hospital and the trauma level certification. Receiving hospitals could then enter patient's triage tag numbers, once received to aide in the tracking of patients which could be accessed by on-scene personnel, command staffs, and emergency management for reuniting victims of the event.
PSAC 10	**2,5, 7,11, 18,19, 20,27, 31,35, 40,52, 54,55, 56,58, 60,63, 85,95**	Public Works All	Geographic Information System (GIS) Mapping of Public Works Infrastructure	MEDIUM	EXISTING	Yes	Application that will query or provide GIS based infrastructure information about a response address. This GIS application will provide first responders with immediate infrastructure data that is either at the scene or provides support to the incident location or surrounding area.	Most major Public Works Departments have GIS mapping of their critical infrastructure. This information will be provide on-demand information to all first responders such as: • Location and size of water lines (for firefighting); • Location and size of storm water pipes (for chemical or biological spills); • Location of Traffic Management/control Devices (such as cameras, traffic control devices [signals, sensors]); • Location of above and below grade electric and telecommunications lines; • Building plans for infrastructure that is new enough to have plans submitted electronically or have had images scanned;

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PSAC 11	**1,2, 4,5, 6,7, 9,10, 17,18, 19,20, 21,22, 23,24, 23,27, 30,31, 35,37, 40,49, 51,52, 54,55, 55,56, 59,60, 63,65, 85,87**	Law Enforcement	Integrated In-Vehicle Navigation/ Mapping/Location Resources	MEDIUM	EXISTING/ Enhanced integration and functionality is CONCEPTUAL	Yes	Enhanced integration of Computer-Aided Dispatch (CAD), Global Positioning System (GPS) navigation, Geographic Information System (GIS) mapping and location rich database accessed via FirstNet and local networks will allow expedient, safer, and more informed responses for public safety personnel.	Currently, GIS and mapping enabled CAD systems offer location based data sources to dispatchers and in some cases these capabilities are present in mobile data devices used by field resources. In-vehicle navigation using rich data sources is the exception. Law enforcement vehicles would receive information from the CAD system containing mapping and navigation data via a wireless resource which would then be used to provide the best "real time" routing" for the law enforcement resource(s). The routing algorithms would gather real time information from local/state Traffic Management Systems (TMS) and provide turn-by-turn instructions (voice annunciation) and real time mapping in vehicle avoiding construction, traffic slowdowns, accidents, etc. The applications/interfaces would also integrate with the TMS's signalization systems to provide clear path (green lights) along the preferred route(s) and would provide collision avoidance warnings when two or more public safety vehicles operating in emergency mode approach the same intersection or roadway segment. Dispatchers and supervisors would be provided on demand tracking and status of responding vehicles. Upon reaching proximity of the response location, additional location based hazard information (e.g. known offenders, high risk locations, and special needs/circumstances); traffic/security camera feeds would become available for on-demand access. Automatic status updates would be processed by the CAD based upon GPS positioning of the responding vehicle.
Wearable Technology								

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PSAC 12	**2,3, 4,6, 13,14, 25,16, 17,21, 22,24, 25,26, 27,29, 30,42, 43,45, 47,52, 57,60, 61,62, 73,74, 76,77, 78,80, 85,88**	Fire	Support of wearable or integrated sensor technologies	MEDIUM	EXISTING	Yes	Emerging technology is incorporating various sensor technologies within firefighting personal protective equipment (PPE) or vests that can be worn under PPE. Additionally, video headset technology is emerging (e.g. Goggle Glass, Motorola, HC-1, Golden-I, etc.) that provides access to environmental navigation, Thermal Imaging Cameras (TIC) and video streaming as well as data access. Capability would enhance situational awareness and facilitate automated scene accountability for the IC, crews, and individual firefighter safety.	These sensors can provide a wealth of data regarding the health and status of the wearer including blood pressure, heart rate, respiration, temperature, blood oxygen, head orientation, external temperature and external environment indications. The technology can also provide information to the firefighter in the form of video, images, tracking, and monitoring as well as emergency alerting. Advanced integration of TIC capabilities would reduce the number of pieces of different gear that firefighters would be required to support and carry within a hazardous environment. Using FirstNet Nationwide Public Safety Broadband Network (NPSBN) or other networking connectivity could stream TIC and other firefighter video to the Incident Commander (IC).
PSAC 13	**12,14, 15,17, 30,38, 45,64**	Fire	Firefighter incident scene health and wellness Applications	LOW	CONCEPTUAL	Yes	Applications to document firefighter injuries, gather on scene biometric readings, and information relating to hazardous exposures to personnel need to be developed and implemented to improve firefighter safety and health.	Firefighters are dispatched to a chemical fire at an expansive chemical facility. All personnel are using SCBA and PPE to guard against exposure from a variety of hazardous materials. As a part of the on scene accountability application system as firefighters enter the fire ground various biometric sensors gather readings of the firefighter's physical health as well as sample the environment around the firefighter. The applications use various wireless connections, including the NPSBN to communicate these reading and alerts to the safety officer working alongside the Incident Commander.

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NPSTC 14	**12,13, 15,17, 30,38, 45,64**	Fire EMS	Paramedic/EMT Physiologic Monitoring	MEDIUM	EXISTING HTTP://WWW.FIREFIGHTERNATION.COM/ARTICLE/TECHNOLOGY/PHASER-ADVANCES-FIREFIGHTER-PHYSIOLOGICAL-MONITORING	No	Application which will monitor the EMS employee who is engaged in a hazardous environment and transmit vital signs, and environmental information back to the incident commander and to the dispatch center, with appropriate auto-monitor alarm levels.	Rescue 1 is handling rehab outside of the Warm Zone on a hazmat incident. When the rehab area becomes contaminated, an application running on a device that measures the crew's vital signs and environmental information automatically initiates an alarm and notifies the incident commander with biometric/environmental information and the location.
PSAC 15	**1,3, 4,6, 7,9, 12,13, 14,23 38,45, 59,64, 82,87**	Fire	Use NPSBN to wireless enable personnel Accountability Systems	MEDIUM	CONCEPTUAL	Yes	Accountability system to monitor real-time vitals and location of firefighters actively working in a hazard zone operations with Self Contained Breathing Apparatus (SCBA)	Firefighters working a multi-alarm fire are tracked both inside and outside of the structure by a wirelessly connected application that presents location (X,Y, and Z (altitude) to the IC/IC staff. The application also provides information about the firefighter's physical well-being.

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PSAC 16	**1,6, 9,25, 43,45, 61,62, 74,76, 77,78, 80,85, 88**	Law Enforcement	Sensor Array	MEDIUM	EXISTING	Yes	Officer in need of assistance alerting.	A sensor is placed on an officer's holster/weapon that notifies dispatch and fellow officers (in proximity) when the weapon is drawn/used, such that an officer who did not have the time to call for backup would receive an audible/visual indication that backup/cover is en-route, allowing them to focus on their safety and situation at hand, knowing that drawing the weapon triggered an alert.
NPSTC 17	**1,2, 3,4, 6,7, 9,11, 12,13, 14,29, 30,34, 38,52, 61,64, 73,76, 77,78, 80,84, 88**	EMS	MCI Patient Monitor	MEDIUM	EXISTING FIRST LINE TECH PRODUCT, HTTP://WWW.FIRSTLINETECH.COM/PRODUCTS/DPR/MPMS-MULTIPLE-PATIENT-MONITORING-SYSTEM/	Yes	Application/device is placed on the exposed skin of each patient at the scene of a Mass Casualty Incident (MCI). The device checks several physiological signs (BP, Heart rate, respiratory rate, blood oxygen) and sends the vital signs along with GPS coordinates via a local RF frequency to a laptop - which will display a color coded dot indicating the patient's condition and their relative position to other patient "dots" on the screen. This information can also be transmitted to local hospitals.	Rescue 1 arrives at the scene of an explosion with multiple patients. The paramedic and EMT quickly move through the patients conducting an initial check and placing the MCI monitor on each patient. Data from the MCI monitors then allows the Triage officer to direct arriving crews to the most seriously injured patients. Summary data on the total number of patients and summary severity scores are transmitted to the Dispatch Center, the EOC and local hospitals.
Video Applications and Services								

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PSAC 18	**1,7, 9,10, 11,19, 20,21, 22,23, 24,25, 26,27, 60,63, 65,67**	Law Enforcement	Real Time Directed Video from Commercial Sources	MEDIUM	CONCEPTUAL	Yes	Applications, interfaces and standardized Application Programming Interface (API) would allow standardized transmissions and the receipt of real time/almost real time video from commercial entities such as alarm company central stations, security agencies, large commercial entities etc., as these entities are reporting incidents to Public Safety Answering Point (PSAP). Enhanced video provision creates improved situational awareness and more effective responses and uses of resources while enhancing personnel safety.	PSAP call takers/telecommunicators would be able to accept streaming video feeds from reporting entities and then direct (switch) that streaming video to in- vehicle and/or handheld data devices in use by responding law enforcement personnel. Upon reaching the incident scene, responding officers would be able to match video with location floor plans/plan metrics (GIS layer data) to better locate suspects in or around the premises. If available, though the premises surveillance camera systems, officers on the scene should be able to take control and operate the pan, tilt, zoom and night vision capabilities of the locations surveillance cameras.
PSAC 19	**5,9, 10,11, 18,20, 21,22, 23,24, 26,27, 28,31, 34,35, 38,45, 51,52, 55,56, 59,60, 63,65, 75,81, 84,85**	Law Enforcement	Integrated In-Vehicle Situational Awareness/NG 911 Integration	MEDIUM	EXISTING/ CONCEPTUAL	Yes	Enhanced integration of live video streams, and context-rich multimedia data with the mobile environment via FirstNet's NPSBN, which will allow enhanced officer safety, as well as more effective decision-making by first responder personnel.	With the expected expanded bandwidth/capacity available from the NPSBN over the traditional limited data capacity offered by local Agency LMR data systems and commercial systems, Law Enforcement Agencies would now be able to leverage the availability of video streams, and other video rich content, including that from envisioned NG911 systems that could be switched from the reporting person(s)/entities, through a telecommunicator/dispatcher to a field resources providing vastly improved context and situational-awareness for Law Enforcement Officers prior to, and upon arriving on scene. This will provide better officer safety, as well as more effective decision-making by first responder personnel.

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PSAC 20	**1,7, 10,11, 18,19, 21,22, 23,24, 25,26, 27,34, 35,37, 40,52, 60,63, 54,67, 74,84, 89**	Fire Law Enforcement	Video Emergency Data System	HIGH	EXISTING/ Enhanced integration and functionality is CONCEPTUAL	Yes	Application will leverage standards for video systems used by emergency services for both Law Enforcement and Fire. The application would provide options for video recording, multiple camera viewing, zooming capability and integration with GPS / Mapping functionality for both video equipment and field units or personnel. Data feeds and control can be managed by individuals in the field as well as centralized command centers for large operations. The system will use wireless large bandwidth technology (i.e. NPSBN) for video capture, transmission, and viewing. Viewing can be conducted by remote hand held devices using Microsoft systems, Android, or IOS. Where require for large events, a command center can be utilized to control and push viewing as needed. The system will use the latest technology for data transmission security and will integrate with voice digital communications. The system should also be able to push video alerts and field unit video selection capabilities. High bandwidth transmissions and video capture capability should be available to airborne units. The system should be integrated with the latest technology available through un-manned drones. The application should allow for the administration and management of remote video feeds provided by commercial enterprises. Control and management would belong to the businesses.	Many emergency calls involve Fire and Law Enforcement units. Having the capability to share video feeds for injured suspects and victims along with unit locations is valuable to both Law Enforcement and Fire. Where situations require fast deployment of resources, a video and GPS coordination system can be used early in the staging of personnel and equipment. In addition, coordinating efforts through dispatch knowing the visual environment and coordinating through video and picture feeds leads to more accuracy in describing surroundings and hazards. With appropriate standards and administrative security, allowing video feeds from commercial enterprises would be valuable.

Source **Tracking Number**	**Similar or Related Criteria XREF**	**Discipline** Fire EMS Law Enforcement All	**Interface/ Application/ Capability**	**Priority Level** **High** (Launch, Year 1) **Medium** (Year 2-3) **Low** (Year 3+)	**Existing App or Conceptual**	**Use of Network** (Yes or No)	**General Description**	**Use Case/ General Comments/ Working Group Feedback**
PSAC 21	**11,12, 18,19, 20,23, 24,25, 26,27, 37,60, 63,65, 67,68**	All	Wireless Camera Access and Control	LOW	EXISTING	Yes	Access to cameras 1. Vehicle mounted 2. Personnel mounted Provides the Incident commander with alternate views.	When fire units respond to an incident they are often assigned geographic sides of a structure. If vehicles in the fleet were equipped with Pan, Tilt Zoom cameras that were remotely and wirelessly accessible by the Incident Commander (IC) or support staff, these cameras could be controlled in the areas not visible to the IC. Access could also be provided to the cameras being worn by personnel and could provide interior views of the incident. Access to these video sources gives the IC more and better situational awareness.
PSAC 22	**11,12, 18,19, 20,21, 23,24, 25,26, 27,28, 35,37, 52,60, 63,65, 67,69, 71,72, 74,84**	All	Secure Video Conferencing and Video Resources Sharing	LOW	EXISITING WITH NEED FOR SOME AUGMENTION	Yes	Utilize the NPSBN to provide for secure video conferencing capabilities incorporating both fixed and mobile participants	This could also be augmented to allow for secure video conferencing from mobile units to command, up to and including State and Federal responders to an incident(s). With the growing use of responder worn video and audio capturing devices, this could also lead to correspondence and interaction with local, County and State Officials such as the Medical Examiner/Coroner, Emergency Operations Centers, Site/Scene evaluation via remote video conference with Municipal, Structural and other Engineers in the event of a disaster affecting the physical structure of a location, waterway, etc. Streaming of video resources from airborne public safety vehicles (helicopters/planes), Unmanned Aerial Vehicles, (UAV) bomb robot, Remote Operated Vehicles, (ROV), to appropriate destinations could also be accomplished.

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Source **Tracking Number**	**Similar or Related Criteria XREF**	**Discipline** Fire EMS Law Enforcement All	**Interface/ Application/ Capability**	**Priority Level** **High** (Launch, Year 1) **Medium** (Year 2-3) **Low** (Year 3+)	**Existing App or Conceptual**	**Use of Network** (Yes or No)	**General Description**	**Use Case/ General Comments/ Working Group Feedback**
PSAC 23	**4,11, 12,15, 18,19, 20,21, 22,24, 25,26, 27,35, 60,63, 65,69, 81**	Fire Law Enforcement	Airborne platform Data (video) sharing	MEDIUM	CONCEPTUAL	Yes	The ability to share video data from an airborne platform over the network.	Today to get video from airborne platforms requires the purchase of expensive microwave systems which can be technically challenging to set up and operate. The systems have to be in Line of Sight of the platform to receive a consistent video feed. Development of an app to allow the airborne platform to be accessible from the ground and use the NPSBN wireless connectivity to allow multiple viewers to see the feed from distant locations. This is of value in several arenas areas such as damage Assessments after large disasters where the capability allows the video to be viewed by subject experts that may be very distant from the site. Surveillance of large venues. In some events where Unified Commands are established this capability would allow video feeds from many platforms without specialized microwave equipment.

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NPSTC 24	**11,18, 19,20, 21,22, 23,25, 26,27, 35,37, 60,63, 65,67, 68,74, 81**	ALL	Third Party Video Integration	HIGH	EXISTING HTTP://WWW.GENERAL-DEVICES.COM/E-BRIDGE	No	Application that will allow EMS personnel to access third party cameras for situational awareness of the incident severity. The ability to select a DOT traffic camera near the scene of a major crash, or the ability to access security video inside a shopping mall following a reporting mass shooting would increase the agency's ability to respond appropriately. This application should also allow video sharing from other public safety responders, (a video feed from a patrol car, or a video feed from a law enforcement or fire department helicopter). Likewise, allow EMS cameras to be used by other public safety	Medic 1 is in route to a reported major multi-car pileup on the interstate. Highway Patrol has not yet arrived to confirm number of injuries or resource needs. Dispatch takes video feeds from the nearest DOT camera and makes them available to responding HPD, EMS dispatch and Medic 1. Medic 1 selects their approach based on the video feed showing injured victims lying on the road at the north end. Once on scene, Medic 1's external Pan, Tilt, Zoom, (PTZ) camera video of their onboard telemedicine system is made available to dispatch and DOT, which gives a better view of needs for the responding units. Clips of the scene are messaged to the trauma center for documentation of mechanism of injury. Placards on a truck involved are observed and as a result, a HAZMAT team is dispatched.

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NPSTC 25	**12,16, 18,20, 21,22, 23,24, 26,29, 34,52, 60,61, 65,73, 74,76, 77,84, 89**	EMS	Video Assisted Patient Care	HIGH	EXISTING HTTP://WWW.GENERAL-DEVICES.COM/E-BRIDGE;	Yes	Application which integrates EMT helmet camera, camera built into mobile device, PTZ camera mounted in ambulance or standalone camera with voice, data and video feed to an Emergency Department physician or specialist physician. This application will assist with: - critical care patient assessment (cardiac arrest, Stroke, Burn, Trauma patient, pediatric and OB patients) - Physician guided advanced procedure, such as a cricothyrotomy or complicated child birth. - provide appropriate evaluation and documentation for patient refusal situations - Provide advanced practice care and community paramedicine opportunities - assist with patient severity scoring and helicopter, trauma center utilization - provide situational awareness of large scale incidents, including MCI, or extended extrication. - improve assembly/prep of hospital teams (trauma, stroke, burn) pre-arrival - QA and training mechanism - Additional video sources such a laryngoscope This application could also capture video and images for later display at the Emergency Department or for the EMS Patient Care report.	Rescue 1 arrives on scene of a major vehicle crash. There are four patients and one of them in trapped in the vehicle. The paramedic's helmet camera sends a video stream to the dispatcher and to the receiving hospital along with an initial size up/assessment of the scene. The paramedic later uses a higher resolution video image (or still shot) so the ED physician can see the injuries to the patient's chest and femur. A decision is made to clamp a torn artery in the patient's upper leg. The physician guides the paramedic through the procedure in real time through voice and video conferencing. Rescue 1 is on the scene of a patient fall in a rural canyon that does not have adequate LTE signal coverage. Rescue 1's paramedic documents the patient's body position after the fall using a helmet camera and also takes a picture to document the height of the fall. This video and still image data will be shown to the doctor enroute to the hospital or after arrival.

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PSAC 26	**1,11, 12,18, 19,20, 21,22, 23,24, 25,35, 37,40, 52,56, 60,62, 63,65, 66,67, 68,74, 81,84**	Fire Law Enforcement	Mobile information collection/switched video access, collection and storage	LOW	EXISITING WITH NEED FOR SOME AUGMENTION	Yes	Investigators could utilize NPSBN to backhaul Crime scene video, audio, recorded audio and video and attach that information to their incident information and reports and have it stored and readily available when they begin to process the case.	Investigators could utilize mobile devices to connect, record and playback audio and video from various shared sources at Banks, Stores, Schools, Residences, or other available video and/or audio recording solutions. This information could be streamed back to their department upon a secure NPSBN connection so that information would be readily available to other investigators, supervisors and command staff while the scene is still being processed. This capability may allow for a more rapid dissemination of suspect/subject information and may lead to quicker suspect detention/subject/victim rescue. The information could also be used to compile photo or video line-ups for victims and could also stream missing/endangered person's information to responders, the public and media which may provide quicker resolution of an incident.
PSAC 27	**1,2, 7,9, 10,11, 12,18, 19,20, 21,22, 23,24, 35,60, 65,85**	All	Dispatch Terminal, Handheld	LOW	CONCEPTUAL	Yes	Commercial Security System Video Integration	Alarm reporting from independent public and private security systems could include broadcast video and other information to dispatchers upon alarm trigger. Security system elements, such as cameras, could be accessible by police or fire handheld devices, providing responders intelligence before entering a building or facility.
Mobile Computing Applications and Services								

Source Tracking Number	**Similar or Related Criteria XREF**	**Discipline** Fire EMS Law Enforcement All	**Interface/ Application/ Capability**	**Priority Level High** (Launch, Year 1) **Medium** (Year 2-3) **Low** (Year 3+)	**Existing App or Conceptual**	**Use of Network** (Yes or No)	**General Description**	**Use Case/ General Comments/ Working Group Feedback**
PSAC 28	**19,22, 32,33, 35,36, 37,39, 40,44, 46,47, 53,54, 56,57, 58,60, 62,65, 66,68, 72,75, 80,82, 84,90, 94**	Law Enforcement	Mobile Field reporting/ Research	LOW	EXISITING	Yes	Utilizing the above (Video and Audio Virtual Private Network (VPN)/connectivity) School Resource Officers would have a high speed network for receiving and completing calls for service.	If the above pre-defined network access through defined VPN tunnels were facilitated via the NPSBN, this would allow School Resource Officers (SRO) to have real-time/almost real time access to information. The access would permit research without the need to utilize telephone, LMR or "Sneaker Net" connectivity to complete daily tasks such as research, report writing, surveillance, and other law enforcement related activities without having to travel, telephone or use radio resources to receive information about a student or situation. With the appropriate tools and equipment, this should serve to enhance responses and make more efficient use of finite SRO resources.
NPSTC 29	**2,8, 12,17, 25,32, 33,34, 38,40, 52,55, 61,72, 73,74, 76,78, 82,84, 89**	EMS	Patient Tracking System	MEDIUM	EXISTING GLOBAL EMERGENCY PROCEDURES, HTTP://WWW.GER911.COM/ ; ALSO EMSYSTEM.COM	No	Application that scans patient armband/MCI tag, snaps picture of patients face, allows for entry of basic information (sex, race, approximate age, medical/trauma, severity code, destination hospital). May also scan a patient's driver's license. Information is uploaded from hand held scanner to Dispatch Center, EOC and Receiving Hospitals. This device may be used for daily patient tracking and accountability or for large scale incidents/MCIs.	Rescue 1 arrives on scene and attaches an EMS arm band to the patient, which contains either a scan able bar code or an RFID tag. When the patient is ready to be transported, a hand held scanner reads the unique patient ID number from the EMS armband and allows the EMS worker to enter appropriate attributes: White Female, age 36, Incident Code: Medical, Incident Severity: Yellow, and Methodist Hospital West as the patient destination.

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NPSTC 30	**11,12, 13,14, 17,34, 42,52, 60,61, 62,66, 68,72, 73,76, 78,80, 84,89**	EMS	Specialized Monitoring	MEDIUM	EXISTING BREATHALYZER FOR SMARTPHONE INTEGRATION, ABBOTT ISTAT, HTTP://WWW.ABBOTTPOINTOFCARE.COM	Yes	Application which will scan blood, breath sample, or other genetic material and transmit the raw information to a central database or laboratory system which will analyze and interpret the results, which are then transmitted back to the EMS worker. Laboratory analysis of blood, poison detection through breath sample, etc. Application will also transmit Ultrasound pictures and data, along with other diagnostic information to the ED for interpretation.	Rescue 1 is on the scene of an unconscious person in a rural area with a projected one hour EMS transport time interval. The paramedic draws blood into a syringe and transfers it to a device, while also capturing a breath sample from the patient through a mask. Blood chemistry results are transmitted to the physician in the distant ED who uses data with information obtained from the paramedic (vital signs, history, etc.) to determine the appropriate treatment.
PSAC 31	**1,2, 5,7, 10,11, 19,33, 35,39, 40,46, 50,53, 54,56, 58,60**	Fire Law Enforcement	Use NPSBN wireless connectivity to provide large file updates from CAD	HIGH	EXISTING	Yes	CAD mobile computer software and mapping updates need bandwidth to allow over-the-air updates.	Public safety agencies utilize a CAD system with a mobile component that provided information and access to the agency's CAD system and connected resources. In order to effectively use the full capabilities of the mobile components a high bandwidth capacity wireless connection is required especially when making large file updates to the resident mobile data software components. The NPSBN could serve this connection need.

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PSAC 32	**28,29, 33,34, 35,40, 44,46, 52,53, 61,73, 83,89**	EMS/Fire	Use NPSBN wireless connectivity to facilitate access to Electronic Patient Care Recording (EPCR) applications	HIGH	CONCEPTUAL	Yes	EPCR documents need a transport mechanism to allow hospitals to access electronic reports from field personnel.	Fire and EMS agencies of a local municipality use a EPCR application to record patient detail and treatment information by field EMS providers. Sufficient wireless connective does not exist or is too expensive to allow the field captured information to be wirelessly communicated to the receiving Emergency Department of the local hospital. A robust, high bandwidth capacity wireless connection would permit the full use of capabilities of the application. The NPSBN could serve this connection need.
PSAC 33	**28,29, 31,32, 34,35, 40,44, 46,52, 53,61, 73**	EMS/Fire	Use NPSBN wireless connectivity to provide large file updates to/from EPCR applications	HIGH	CONCEPTUAL	Yes	Sansio / EPCR software updates need bandwidth to allow over-the-air updates.	A municipal Fire department uses an EPCR for EMS patient reporting. In order to effectively use the full capabilities of the application a high bandwidth capacity wireless connection is required especially when making large file updates to the resident mobile data software components. The NPSBN could serve this connection need.

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NPSTC 34	**17,19, 20,25, 29,30, 32,33, 34,40, 42,44, 51,52, 53,60, 72,73, 78,84,**	EMS	Interactive EMS Database	MEDIUM	EXISTING SIMILAR TO SMART911 AND THE VA'S BLUE BUTTON PROJECT, EMS POCKET DRUG GUIDE TR HTTPS://PLAY.GOOGLE.COM/STORE/APPS/DETAILS?ID=COM.MOBISYSTEMS.MSDICT.EMBEDDED.WIRELESS.MCGRAWHILL.EMS&HL=EN	No	Application will allow rapid access to a variety of EMS databases and information warehouses, including: - EMS protocols for patient care - Medication dictionary/reference guide for both patient meds and EMS medications - Street Drug dictionary - Ability to take an image of a drug pill or capsule and generate an automatic look up - Retrieve patient medical records from centralized repository - Retrieve "instant refresher" video for low frequency/high risk patient procedures, such as cricothyrotomy.	Rescue 1 arrives on scene of a drug overdose and needs assistance in determining what drugs have been ingested. The paramedic snaps a picture of the pill and the application does a visual look up of the medication and provides prescribing information and recommended treatment for overdose. The patient has a history of renal impairment and is on several medications which the paramedic believes may interact with the needed antidote. The paramedic accesses online EMS protocols and checks for an authorized variation of the drug dosage. Using the patients ID number on their medic alert bracelet, the paramedic is able to retrieve their medical records from a centralized database for the regional healthcare authority.

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PSAC 35	**1,2, 3,5, 7,8, 9,10, 11,19, 20,22, 23,24, 26,27, 28,31, 32,33, 37,39, 40,44, 46,47, 48,49, 51,52, 52,54, 55,56, 57,58, 59,60, 62,63, 65,67, 68,72, 75,79, 81,82, 85**	Law Enforcement	Integrated In-Vehicle Mobile Field Reporting/ Investigative Resources Access/ Navigation/ Mapping/ Location Resources	HIGH	EXISTING CONCEPTUAL	Yes	Access to Computer-Aided Dispatch (CAD), Mobile Field Reporting (MFR), Investigative systems, Global Positioning System (GPS) navigation, Geographic Information System (GIS) mapping via NPSBN and local networks will allow more predictable, safer, and more consistent responses for public safety personnel.	Currently, CAD systems offer location-based calls-for-service information to dispatchers and to Officers in the field via wireless mobile data devices. Presently, mobile data devices also provide Officers in the field the ability to create crime reports, accident reports, and issue citations for offenses. The increased capacity and bandwidth to be provided for the NPSBN by FirstNet should enable greater access to information resources and systems, containing suspect/location/vehicle investigative information, as well as incident based crime geo-spatial mapping for Officer's use in the field. In-vehicle geo-positional information for both active vehicle locations reporting, as well as tactical mapping for optimizing Officer real-time navigation could also be realized.
PSAC 36	**28,60, 68,76**	Law Enforcement	Enable Ticket writing application system to forward citation details using the NPSBN	MEDIUM	CONCEPTUAL	Yes	Ability to write e-tickets and the application system send the citation details through an interface in order to update the RMS.	Patrol uses the applications, a device and printer to write tickets but does to currently have the ability to send information from the field device to RMS or Court system.

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PSAC 37	**11,20, 21,22, 24,26, 28,35, 39,40, 41,46, 48,53, 54,56, 60,62, 63,65, 66,67, 68,71, 72,75, 76,79, 80,82**	Law Enforcement	Mobile Users	LOW	EXISITING	Yes	Mobile connectivity via NPSBN for Terrorism Investigators/Liaisons	Currently, most Federal Bureau of Investigation (FBI), Criminal Justice Information System (CJIS) and other law enforcement networks require a dedicated IP address of your agency for connectivity in addition to a VPN connection or other encrypted and secure authentication. This makes it very difficult for investigators to do any research, updating of information and notifications from the field. The dedicated NPSBN could potentially eliminate the requirement to be within the physical confines of the agency in order to process information. ***OEC Note***: there are stanch requirements for access to the various CJIS held at local, State and Federal levels, much of that is available, even today, thorough commercial sources and the establishment of secure access VPNs. This argument is more about the need or lack of robust network resources that exist downstream from an agency's connection to their State Control point which provides access to the FBI NCIC, NLETS or other State CJIS. High security and user/device authentication will continue to exist regardless of the connection whether it is supplied through the NPSBN, a local agency, or a commercial service. Concur that a higher speed, robust and larger bandwidth connection would likely promote better accessibility and use of various information resources from the field for access and updating.

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PSAC 38	**2,3, 4,5, 6,8, 9,13, 14,15, 17,19, 29,40, 45,47, 49,51, 54,55, 56,59, 60,61, 63,64, 65,71, 72,75, 80,81, 82,83, 84,86, 87,89, 92,93, 94,96, 97,98**	All	Incident command resource information and event mitigation	MEDIUM	CONCEPTUAL	Yes	Track the type of equipment and technical resources in staging areas are major incidents	During major incidents establishment of staging areas of large amounts of incoming resources can be challenging to monitor and track usage/assignment. A common staging program could be developed and distributed to track various elements available in staging areas and shared over the network for incident command to have a holistic overview of the various statuses of equipment/personnel that may be in staging. This would allow a pre-established common resource to effectively manage and distribute resources in wide area operations. In addition to vehicles, manpower and their specialty certifications can also be tracked for specialty needs during the mitigation of the event.

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PSAC 39	**5,28, 31,35, 37,46, 49,50, 51,52, 53,54, 55,56, 58,59, 60,75, 81,82**	All	Wireless Data Connections for field resources to CAD Systems	HIGH	EXISTING	YES	Provides CAD wireless data connections to mobile devices.	Currently fire vehicles receive CAD dispatch information through using commercial wireless data system connections. The systems are managed by commercial entities and Public Safety interests are not always their first priority. The commercial wireless data connections have no higher priority for public safety users than others. The wireless data connection provides the units in the field with dispatch information and sends unit status information to the CAD system as well as location information. Using the NPSBN as the wireless data connection will allow transitioning to a more reliable system where Public Safety will be the priority.
PSAC 40	**2,10, 11,20, 26,28, 29,31, 32,33, 34,35, 37,38, 44,46, 47,48, 51,53, 54,60, 62,63, 65,66, 67,68, 72,75, 79,80, 81,82, 85,89, 92**	Fire	Internet Access and other information resources access	MEDIUM	CONCEPTUAL AND EXISTING	Yes	Access to the Internet and other information repositories for Hazardous Materials research, real-time staffing information and incident related searches to support mitigating emergency incidents.	A county Fire Department is dispatched to a HAZMAT incident and requires Internet connectivity to research additional information regarding hazardous/dangerous materials found on scene. Additionally, the IC desires to query the department's personnel scheduling system to determine staffing levels as the incident will be elongated requiring the call-in of additional off-duty personnel.

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PSAC 41	**37,54, 58,60, 72,75, 85,89**	Fire Law Enforcement	Fire access to Vehicle License Information	LOW	CONCEPTUAL	No	Capability would allow a Fire vehicle to have information about the vehicle i.e. Year, Make & Model then automatically provide vehicle extrication instructions.	Upon dispatch if the fire dispatcher has vehicle license registration information the app would use this to provide information about the specifics about the vehicle manufacturer, model and type. This information would include airbag locations, hi pressure struts and where to make safe extrication entry cuts. This information could prevent inadvertent deployment of airbags and injuries to firefighters or victims. The Vehicle Information passed from the law enforcement data to the app would be stripped of any sensitive information. On dispatch the unit responds, license information is passed, manually entered or could be read by a license plate reader on the vehicle. When the fire company arrives on-scene the computer provides a diagram of airbag locations, cut points and the vehicle's electrical system information.
NPSTC 42	**12,30, 34,43, 52,60, 61,73, 78**	EMS 26	Narcotic Access Documentation	MEDIUM	EXISTING HTTP://WWW.METRO.COM/AUTOMATED-DISPENSING-EMS	No	Application which allows access to EMS narcotics based on RFID badge swipe, plus PIN number. Sensor will log date/time/identity of person accessing the system and will also send a data message to an appropriate EMS supervisor.	An EMS vehicle and crew are on scene, attending to the needs of a patient. The patient requires treatment with a narcotic or other tightly controlled drug. These substances are kept secured in the EMS vehicle until a correct combination of badge swipe and PIN are used for access. A log entry or supervisor notification of this access will be transmitted.

Source Tracking Number	Similar or Related Criteria XREF	Discipline Fire EMS Law Enforcement All	Interface/ Application/ Capability	Priority Level High (Launch, Year 1) Medium (Year 2-3) Low (Year 3+)	Existing App or Conceptual	Use of Network (Yes or No)	General Description	Use Case/ General Comments/ Working Group Feedback
NPSTC 43	**12,16, 42,45, 72,89**	EMS 27	EMS Vehicle Supply Inventory	MEDIUM	CONCEPTUAL HTTP://WWW.METRO.COM/AUTOMATED-DISPENSING-EMS	Yes	Application which scans RFID tags or other inventory control system to determine what shortages, if any, exist in the EMS vehicle patient care inventory.	Individual EMS treatment supplies, or pre-packaged kits of supplies, will be equipped with RFID tags. When used, the ID tag will be removed or otherwise disabled allowing a scanning device within the vehicle to accurately track the vehicle supply inventory and list needed additions. Used inventory can be transmitted to a central point for billing, re-supply, and other inventory control purposes.
PSAC 44	**28,32, 33,34, 35,40, 46,48, 60,72, 83**	EMS Fire	Use NPSBN connectivity to achieve greater integration of agency Email, Fire RMS, and EMS RMS	MEDIUM	EXISTING	Yes	Access to city email, fire records and EMS records systems to support mobile connectivity and data entry.	Public safety agencies that currently do not have wireless access to agency Email, Fire RMS, and EMS RMS or have insufficient speed and capacity of commercial offerings may benefit from the higher capacity, high bandwidth capabilities of the NPSBN.
NPSTC 45	**12,13, 14,15, 16,19, 38,43, 55,60, 64,73, 76**	EMS 29	EMS Vehicle Health Monitor	MEDIUM	EXISTING CALAMP, FUSION, HTTP://WWW.CALAMP.COM/PRODUCTS/CELLULAR-A-GPS/INDUSTRIAL-CONNECTIVITY/FUSION-LTE-BROADBAND	No	Application which monitors the health of the EMS vehicle, including fuel level, engine status, tire pressure and provides real time information to the EMS crew and also transmits a data message to the EMS Fleet Manager.	Rescue 1 is attending a pediatric patient in need of transport to a far-away specialty center. It has been a stormy night and the unit is parked in the street with lights, heaters/defrosters, and wipers on. The driver forgot to set the fast idle and the draw on the batteries at idle has dropped the voltage to a critical level. The onboard monitoring device sends a message to the crew to take action. When the crew loads the patient and inputs the destination, their device queries the monitor and determines sufficient fuel while recommending refueling locations after.

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PSAC 46	**28,31, 32,33, 35,37, 39,40, 44,54, 56,60, 72,84**	Law Enforcement	Wirelessly enable E-mail access using the NPSBN resources as the connective medium	HIGH	EXISTING	Yes	Officer ability to read and compose e-mails on the laptop in the car	Facilitate E-mail communications from officers to others.
PSAC 47	**2,4, 12,28, 35,38, 40,57, 60,82, 84**	Law Enforcement	Provision of or connection to real time or almost real time Weather information	MEDIUM	CONCEPTUAL	Yes	Obtain current weather information based upon the location of a field deployed device.	Officers and supervisors the ability to get up to the minute weather updates before and during the storms
PSAC 48	**35,37, 40,44, 53,60, 69**	Law Enforcement	Wirelessly enable Field Training Evaluation Software	HIGH	EXISTING	Yes	Allow Field Training Officers (FTO) the ability to write daily recruit assessment reports and conduct other training duties from the laptop in the car	FTO and trainees access to the software from a mobile environment.
Computer Aided Dispatch (CAD) Systems Applications and Services								

Source Tracking Number	Similar or Related Criteria XREF	Discipline Fire EMS Law Enforcement All	Interface/ Application/ Capability	Priority Level High (Launch, Year 1) Medium (Year 2-3) Low (Year 3+)	Existing App or Conceptual	Use of Network (Yes or No)	General Description	Use Case/ General Comments/ Working Group Feedback
PSAC 49A	**1,5, 7,11, 35,38, 39,49, 50,51, 52,53, 55,58, 59,81, 82,86, 87**	All	CAD System Mutual Aid	HIGH	CONCEPTUAL http://pdf.911dispatch.com.s3.amazonaws.com/tritech_cad_interop.pdf	No	This application would allow connection of CAD systems to share incident information and the status of available resources on each CAD system. The application will permit authorized interfaces between agency CAD systems and allow authorized mutual aid and automatic aid assigned personnel to view CAD system incident data for the call to which they are assigned. In some cases this may be an interim step prior to full CAD to CAD integration and data sharing. Sharing mobile data application client among agencies does not work well if multiple apps are present.	The application and connection would provide mutual aid/automatic aid partners the ability to maintain an awareness of the status of another CAD systems call volume, resources status and reserve capacity. When providing assistance to another jurisdiction this app would allow the jurisdiction sharing a resource to check the status of the units that were transferred. A mobile application of this provides the ability of large integrated operations that may impact a region. For instance during a Super Bowl a Unified Command might be established at an offsite location. If a large incident occurred the app would allow sharing of resources in a calculated manner maintaining a ready reserve for each jurisdiction while providing the appropriate response. Sharing of Law Enforcement call data would provide fire units with additional situational awareness. Knowledge of a LE call in an area where fire response may have to travel could cause the crew to alter their routing to remain safe and expedient. Rescue 61 from City #B is responding to assist Rescue 1 from City #A. The mobile data computer CAD clients are different between both agencies. Rescue 61 accesses a Mutual Aid Application and is able to see the dispatch and incident information for the specific call that Rescue 1 is handling, including the incident location, cross streets, updated information, status notes, etc. They do this by entering the Rescue 1 run number into the application - which they received at the time of dispatch from their own PSAP.

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PSAC 50	**31,39, 49,51, 52,54, 56,58, 59,84, 93**	Fire EMS	CAD Dispatch/Fire Station Alerting	MEDIUM	CONCEPTUAL	Yes	Data connection to CAD system for fire station alerting. This data connection provides the ability to dispatch in the absence of phone, fiber or microwave connections.	Use the NPSBN as a secondary data connection from the CAD system to fire station alerting system to alert personnel when they are assigned to an incident. This alert would turn on the appropriate lights, alarms and audio in the correct areas and other capabilities that are in current station alerting systems. Potentially, having a First Net connection provides a backup to the primary data connection. If the primary connection fails the system would failover to First Net wireless connection. Also when new stations are being built the Telco infrastructure in an area may have limited capabilities and in this case the First Net wireless connection would become the primary until appropriate facilities are available.
NPSTC 51	**1,2, 6,7, 9,11, 19,34, 35,38, 40,49, 50,52, 53,55, 58,59, 63,81, 82,87, 88,92**	EMS	Citizen Automated Electronic Defibrillator (AED) Location/Dispatch	MEDIUM	EXISTING PULSEPOINT (HTTP://APPCOMM.ORG/PULSEPOINT/)	No	Application will interface to the EMS agency CAD system and will correlate the EMS incident location to a database of known AED's and/or citizen first responders, including industrial and facility first responders. The application is then authorized by the dispatcher to broadcast a dispatch message requesting a response.	The PSAP processes a cardiac arrest call at a local shopping mall. The CAD system polls an AED database and determines that there is an AED in the Mall Security Office. An SMS/text message is sent to all Mall security officers alerting them to the location of the cardiac arrest and requesting that they respond with an AED.

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Source **Tracking Number**	**Similar or Related Criteria XREF**	**Discipline** Fire EMS Law Enforcement All	**Interface/ Application/ Capability**	**Priority Level** **High** (Launch, Year 1) **Medium** (Year 2-3) **Low** (Year 3+)	**Existing App or Conceptual**	**Use of Network** (Yes or No)	**General Description**	**Use Case/ General Comments/ Working Group Feedback**
PSAC 52	**1,2, 5,6, 7,8, 9,10, 11,12, 17,19, 22,25, 26,29, 30,31, 32,33, 34,35, 39,42, 49,50, 51,53, 55,56, 58,59, 61,78, 82,84, 87,88, 89**	EMS	CAD to EMS to Hospital	LOW	EXISITING WITH AUGMENTATION	Yes	Transmission of Patient/Situational data between Dispatch CAD to the EMS responder to the Medical Facility.	Patient information could be transmitted via the NPSBN to the Fire/Medical responders regarding Dispatch Life Support provide via an Emergency Medical Dispatcher to the responding EMS/Fire Units. Known on-scene conditions of the situation and the patient(s) would be relayed to responder mobile device. Once on scene, patient vital signs via telemetry, would be augmented by the responders regarding medications given, procedures undertaken Life saving measures applied, use of Automated Electronic Defibrillators (AED) etc. All of this information would be transmitted and available to the supervising medical staff and to the transport hospital once a decision is made to transport the patient. This allows the medical facility to have the most up-to-date information available regards to the transpiring events and could include and audio/ video capability between Fire/EMS responders and hospital personnel as needed for patient evaluation and treatment.

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PSAC 53	**5,9, 28,31, 32,33, 34,35, 37,39, 40,48, 49,50, 51,52, 55,58, 56,60, 61,68, 72,75, 80,81, 82,85, 86,87, 88,89**	All	CAD/RMS - Interoperability of Information Resources	LOW	EXISITING	Yes	True Sharing of Local, County, State and Federal information with regards to incidents.	Utilizing a NPSBN, any agency could experience real-time or near real-time data sharing between agencies. While there are numerous CAD/RMS etc. systems on the market that provide this, almost any data translation is possible now with the use of XML translation tables and an appropriate interface between agencies. As long as this data is shared via a dedicated and secure network between appropriate and authorized endpoints with good logging technologies, the possibilities for data misuse are significantly mitigated. This would significantly reduce the need for repeating phone calls, teletypes and other forms of communications requesting information on an incident, subject, and victim etc. who may be related to another incident in a surrounding or other jurisdiction. This then has the possibility to enhance conclusion times and solutions.
PSAC 54	**5,9, 10,11, 28,31, 35,37, 38,39, 40,41, 46,50, 56,57, 58,60, 61,62, 63,68**	Law Enforcement	Enable existing CAD software to use NPSBN to extend wireless accessibility to the field	HIGH	EXISTING	Yes	Provide ability to receive and clear calls for services, initiate queries of CCIC/NCIC systems. Receive RMS information on previous contacts and obtain Maps with directions.	General Patrol functions

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NPSTC 55	**1,2, 5,6, 7,8, 9,10, 11,19, 29,35, 38,39, 45,49, 51,52, 58,59, 61,81, 82,86, 87,88**	EMS	Shared EMS Dispatch Resource Tracking	LOW	EXISTING EMSYSTEM.COM	No	Application will collect EMS incident data, EMS unit response data and EMS unit transport data to create a virtual EMS system resource and deployment screen across multiple agencies.	PSAP 1 will dispatch EMS and enter unit being dispatched, dispatch time, address, EMD code, ETA, # of patients, other units dispatched (fire, extrication, airmed, etc.) transport destination and any other pertinent patient information. EMS dispatch information will be shared with other CAD systems in a geographically designated area. PSAPs and hospitals will know where the EMS unit is, what type of call they are on, what their status is (on scene, transporting, at hospital), and which resources are and are not available.
PSAC 56	**1,2, 3,4, 5,6, 7,8, 9,10, 11,19, 26,28, 31,35, 37,38, 39,40, 46,53, 54,58, 59,60, 82,86, 87,88**	Fire/ Law Enforcement	CAD integration to wireless data services	HIGH	EXISTING	Yes	Police and Fire utilize current CAD Systems connected to a third party wireless vendor. A robust wireless connection is required with redundancy to improve reliability of the connection between the CAD system and mobile apparatus.	County Public Safety agencies are using a Tier 1 CAD system with an existing connection through a third party wireless vendor. Using the NPSBN would provide a more robust higher capacity connection and potentially would allow the County to either discontinue or place the 3rd party wireless service into a backup status.
PSAC 57	**2,4, 12,28, 35,47, 54,58, 60**	All	Weather Service Feed to CAD systems and mobile field resources	Medium	Conceptual	Yes	Provides real time weather service feeds to units responding to specific incident locations.	Haz Mat units responding to an incident need weather information to determine plume modeling and dissipation of chemical agents. Responders dispatched to calls in areas of extreme weather (hurricanes, tornadoes) need to know the location of the extreme weather to respond safely.

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PSAC 58	**1,2, 5,7, 8,9, 10,28, 31,35, 39,41, 49,50, 51,52, 53,54, 55,56, 57,59, 60,71, 81,82, 86,87, 92**	All	Computer Aided Dispatch/ Silent Dispatch	HIGH	EXISITING	Yes	Utilize NPSBN to enhance all responder scene knowledge and safety with regards to potential or known safety concerns on-site without the need for voice transmission over unsecure/unencrypted voice radio channels. .	Currently, all responders must be informed by voice dispatch of known potential hazards on or around a given location due to network speed and bandwidth considerations. Due to inadequate speed on the existing Land Mobile Radio (LMR) data network, we have chosen not to implement State and National Crime Information Center (NCIC) queries from the vehicle/mobile unit. While this has been effective in the past and will still be used when responder safety would be jeopardized, the need for information security is becoming more and more prevalent every day. With regards to Health Insurance Portability and Accountability Act (HIPAA) standards and potential for identity theft, it is also becoming more problematic. Example: Officer A. stops Vehicle Driver for speeding. Officer A. calls out location, plate, vehicle description etc. Dispatcher X processes plate for wants and registration and then provides Officer A. the return information. Officer A. then calls for Drivers License check and wants on the registered owner/operator of the vehicle. Dispatcher provides return info on vehicle operator. Officer A. advises that the operator was en-route to the hospital, is a surgeon and was “speeding” due to a surgical emergency at the hospital. Identity thief now has a significant amount of information about the vehicle operator including the knowledge that the surgeon is not home and where that surgeon lives, making a situation ripe for home burglary/home invasion etc.

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NPSTC 59	**1,3, 4,5, 6,7, 8,9, 11,15, 19,35, 38,39, 49,50, 51,52, 53,55, 56,58, 61,81, 82,86, 87,92**	All	First Responder Location/ Dispatch	MEDIUM	EXISTING NOWFORCE (HTTP://APPCOMM.ORG/NOWFORCE-MOBILE-RESPONDER/)	No	Application will interface to the EMS agency CAD system and will correlate the EMS incident location to a database of government agency first responders. The application is then authorized by the dispatcher to broadcast a dispatch message requesting a response.	The PSAP processes a cardiac arrest call at a local restaurant. The CAD system determines that there is a fire inspector with an AED conducting a review in the building next door. An SMS/Text message is sent to the fire inspector alerting him to the incident.
Handheld Applications and Capabilities								

Source **Tracking Number**	**Similar or Related Criteria XREF**	**Discipline** Fire EMS Law Enforcement All	**Interface/ Application/ Capability**	**Priority Level** **High** (Launch, Year 1) **Medium** (Year 2-3) **Low** (Year 3+)	**Existing App or Conceptual**	**Use of Network** (Yes or No)	**General Description**	**Use Case/ General Comments/ Working Group Feedback**
PSAC 60	**1,2, 3,4, 5,6, 7,9, 10,11, 12,18, 19,20, 21,22, 23,24, 25,26, 27,28, 30,31, 34,35, 36,37, 38,39, 40,41, 42,44, 45,46, 47,48, 53,54, 56,57, 58,61, 62,63, 64,65, 66,67, 68,69, 72,75, 76,79, 80,81, 82,83, 84,85, 86,87, 90,94, 98**	Law Enforcement	Extension of in-vehicle access to various information resources to Handheld devices	MEDIUM	EXISTING	Yes	Extend the information access and display capabilities that are presently found on the in-vehicle computing devices to a Handheld form factor device providing at a minimum what is presently available on the version of the in car laptop.	A portable form factor device to provide law enforcement officers the access to various information resources that can be currently accessed to only via in-car computing devices. This hardware/software application would operate out of the vehicle, and put all of the available information in the officer's hands.

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PSAC 61	**12,16, 17,25, 29,30, 32,33, 38,42, 52,53, 54,55, 59,60, 72,73, 76,80, 81,82, 86**	EMS	Expand the use of Handheld devices to facilitate Maryland Institute for Emergency Medical Services Systems (MIEMSS) access and use	LOW	EXISTING	Yes	Incorporate NPSBN connectivity to allow access and use of the Maryland MIEMSS for Mass Care Cases and Mass Casualty Responses.	In Maryland, the MIEMSS "HC Standard" system provides emergency medical responders digital triage-tagging and patient tracking capabilities. There are currently HC Standard handhelds in the field, and HC Standard terminals at care facilities. These devices could benefit from FirstNet connectivity. With a reliable and secure network HC Standard devices could enjoy more widespread use and adoption, and the information collected by the system could be accessed by more, and more varied users. ***OEC Note***: Although this submission is "state specific" the item speaks to how one State envisions use of the capabilities/facilities of the NPSBN to support and extend the present capabilities of the State's EMS response/reporting system. There exists potential that the developed application, interface, or supporting technology may be used in similar fashion in other locales.
PSAC 62	**12,16, 26,28, 30,35, 37,40, 54,60, 66,68, 72,73**	Law Enforcement	Handheld Portable fingerprint scanners	LOW	EXISTING/ CONCEPTUAL	Yes	Portable Fingerprint Scanners	Enable connectivity to handheld, portable fingerprint scanners to support acquisition of biometric samples (fingerprints) in the field. These connected devices would facilitate positive identification with submission via NCIC/State/Local CJIS, Field arrested person booking, and on scene evidence collection.

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PSAC 63	**1,2, 4,5, 7,9, 10,11, 18,19, 20,21, 22,23, 24,26, 28,35, 37,38, 40,51, 54,65, 67,68, 75,80, 85**	All	Enable handheld devices to access and display various GIS and image information	HIGH	CONCEPTUAL	Yes	GIS w/ Street View Pictorial Images	Similar to Google maps Street View, emergency service personnel could access and display images of a location before arriving on scene. Building on previous E911 efforts, "Street View" could not only give first responders an address, but a photo of the location.
PSAC 64	**3,4, 6,13, 14,15, 17,38, 45,60, 82**	All	Enable handheld devices to support on scene accountability applications	HIGH	EXISTING CONCEPTUAL	Yes	Onsite Credentials	An incident "check-in" app, like foursquare for incidents, where a responder can check-in upon arrival to an incident scene. Arrival check-in would log their presence and display arrivals to the incident commander. Check-in could also provide an initial set of instructions, such as incident command role, duty station, required PPE, etc.
PSAC 65	**11,18, 19,20, 21,22, 23,24, 25,26, 27,28, 35,37, 38,40, 60,63, 74**	All	Handheld access, capture and transmission for on scene video	MEDIUM	EXISTING	Yes	Improved video capture capabilities similar to the commercial Vine application for on scene Onsite intelligence gathering and situational awareness.	Video capture in sub-ten-second format for quick, efficient sharing of on-scene video.

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PSAC 66	**26,28, 30,35, 37,40, 60,62, 72,76**	Law Enforcement	Handheld applications for arrest processing	LOW	CONCEPTUAL	Yes	Automated Arrest process Checklist	Due Process Checklist with some automation. Example, the app could present "*Miranda* rights" in various languages and formats (audio, textual screen-display) for non-English speakers or those unable to hear clearly. App could collect response in form of video clip to preserve forever the "Mirandizing" moment. Collected information could be downloaded to the incident/arrest/case file via NPSBN or docking of device.
PSAC 67	**4,18, 20,21, 22,23, 24,26, 35,37, 40,60, 63,72, 81,82**	All	Facilitate presentation of Drone accumulated information to a handheld	LOW	EXISTING	Yes/ Maybe	Use the NPSBN as a connectivity medium to transport Drone information collection for presentation to a handheld device.	Use of NPSBN to transport rapidly-deployable drone data feeds.
PSAC 68	**21,22, 24,26, 28,30, 35,36, 37,40, 53,54, 60,62, 63,72, 73,74, 76**	Law Enforcement	Handheld wireless access to digitize case and evidence information	MEDIUM	EXISTING	Yes	Case file access via NPSBN connectivity	Facilitate through NPSBN connectivity access to digitize case files and evidence lockers and making that information available on the law enforcement officer's portable/handheld devices during investigations.
PSAC 69	**48,60**	All	Handheld access to various periodic/incremental training information	MEDIUM	EXISTING	Yes	Use NPSBN connectivity to allow the presentation of various periodic/incremental Training applications and information.	Field deployed personnel can partake of various training classes and information through the use of wirelessly enable training application that support in field and portable devices.

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PSAC 70								**Subsequent to multiple reviews as not applicable - Submission Deleted**
Miscellaneous Applications and Services								
PSAC 71	**22,37, 38,58, 80,82, 84,94, 98**	All	Common air based secure messaging resource	MEDIUM	EXISTING	Yes	Use of a field based secure messaging resource	Utilizing a common messaging platform such as the existing EMNET program for secure messaging between field agencies and dispatch entities throughout the state, federal, and local agencies for the coordination of operations.
PSAC 72	**22,28, 29,30, 34,35, 37,38, 40,41, 44,46, 48,52, 53,60, 61,62, 66,67, 68,74, 76,78, 80,82, 84,89**	All	Public Safety VPN Access	MEDIUM	EXISTING	Yes	Backfill network access to create a filler network provide access where cellular based networks lack coverage.	Open public safety based internet access to provide additional coverage to supplement traditional cellular based networks where coverage is limited in rural areas. This would provide connectivity to public safety units via various VPN solutions in use by agencies such as NetMotion etc.

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NPSTC 73	**12,17, 25,29, 30,32, 34,42, 43,45, 52,61, 62,68, 74,75, 76,77, 78,80, 85,88, 90,91, 92**	EMS	Standard Applications Programming Interface (API) interface between EMS patient care equipment and FirstNet NPSBN	HIGH	CONCEPTUAL http://www.cs.harvard.edu/~mdw/papers/monitoring-embs05.pdf	No	Interface will allow existing EMS equipment to communicate across the FirstNet network to dispatch centers and receiving hospitals. This may leverage the use of an existing API or through the creation of a new one, based on FirstNet standards. This interface is required for many of the applications listed below.	Rescue 1's EMS equipment has wireless integration with its onboard FirstNet data radio to allow two way transmissions of voice, data and video. Many existing applications and devices would use this API to allow interconnectivity to the FirstNet "pipe".
NPSTC 74	**12,16, 20,22, 24,25, 26,29, 52,60, 65,68, 72,77, 78,84, 90,91**	EMS	Speech to Text, Integrated Patient Care Record	HIGH	CONCEPTUAL HTTP://WWW.ABOUTMEDICALTRANSCRIPTION.COM/DRAGON-MEDICAL/	Yes	Application allows the EMT to dictate patient care information using a headset. Information is recorded with a date/time stamp and also auto-populates into the appropriate data field on the EMS patient care record. The application will also allow voice activated commands which will let the EMT have hands free access to hospital radio communications, transmit EKGs, update vital signs from monitor, etc.	Rescue 1 in working a cardiac arrest. The paramedic is able to dictate patient care proceedings to create a real time log of events. The same headset is also integrated into the radio network and allows hands free access to other EMS units and to the Emergency Department Physician.

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NPSTC 75	**19,28, 35,37, 38,39, 40,41, 53,60, 63,73, 79,85**	Fire EMS	Vehicle Design and Extrication Guide	HIGH	EXISTING EXTRACTION ZONES (HTTP://APPCOMM.ORG/EXTRACTION-ZONES/) HYBRID AUTO EXTRICATION GUIDE (HTTP://APPCOMM.ORG/HYBRID-AUTO-EXTRICATION-GUIDE/)	Yes	Application which allows rapid access to pictures and descriptions for each make/model of vehicle, including high hazard vehicles that run on natural gas, electric and hybrid technologies. The ability to understand the vehicles wiring and the location of high pressure gas cylinders that connect to side curtain airbags is critical during extrication. The application may allow a picture to be taken of the vehicle to conduct a look up of the same or similar vehicle.	Use Case 1 Units respond to a multivehicle accident involving automobiles equipped with AACN technology (vehicle crash telemetry). Crews responding to the event are provided with patient injury information along with design/rescue information related to the specific make/model of the involved vehicles enabling responders to rapidly and safely stabilize the scene and extricate the patients. Use Case 2 Units respond to the scene of an MVA and are confronted with several vehicles needing stabilization with some patients entrapped. Crew access an online vehicle design/rescue data repository for the involved vehicles allowing responders to quickly identify safety systems and design components permitting responders to rapidly and safely stabilize the vehicles and extricate the patients

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NPSTC 76	**12,16, 17,25, 29,30, 36,37, 45,52, 60,61, 66,68, 72,73, 78,84, 88,89, 91**	EMS	Interface/ Application for automatic transmission of real time vital signs data to receiving hospital	MEDIUM	CONCEPTUAL PHILLIPS MRX MONITOR PCDT, HTTP://WWW.CS.HARVARD.EDU/~MDW/PAPERS/MONITORING-EMBS05.PDF	No	Application integrates information from a variety of patient monitoring devices to include blood pressure, pulse, respiratory rate, EKG rhythm, ETcO; uses intelligent processing to watch for abnormalities, critical trends while providing several levels of alert and alarm. Data stream is created for transmission to receiving hospital or specialty hospital for medical direction.	Rescue 1 arrives on scene of a patient with severe respiratory distress. The patient has a history of COPD and needs CPAP to prevent further deterioration. A critical care application collects and compares the patient's vital signs, including pulse oxygenation and carbon dioxide levels and alerts the paramedic that existing treatments are not working. The information helps the paramedic make an early decision to intubate the patient prior to a catastrophic event and consults with a ER physician who has been monitoring the patient's vital signs remotely.
NPSTC 77	**12,16, 17,25, 52,73, 74,84, 88,91**	EMS	12 Lead EKG helper app	MEDIUM	EXISTING EKG ACADEMY (HTTP://APPCOMM.ORG/EKG-ACADEMY/)	Yes	Provides information on lead placement for 12 lead EKG for Basic EMT.	Rescue 1 is at the scene of an unconscious patient. An application on their FirstNet device provides an audible and visual alert that it has detected the presence of critical health information. The paramedic checks the application and finds that the patient is being treated for a rare medical condition that requires a special drug.

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NPSTC 78	**12,16, 17,29, 30,34, 42,52, 72,73, 74,76, 84,88**	EMS	Pediatric Patient Assist Application	MEDIUM	CONCEPTUAL DONE IN PART BY SAFEDOSE (HTTP://APPCOMM.ORG/SAFEDOSE/), HTTP://ARTEMIS.PPAG.ORG/PHP/STATIC/HOME.PHP (BROSELOW)	Yes	Application allows EMS to enter known values of age, height and weight, or estimated values in order to immediately calculate pediatric drug dosages, determine percentage of burn area, and access specialized treatment information on infants and children.	Rescue 1 arrives on scene of a child having a severe asthma attack at a local playground. The day care center worker who is supervising the children is hysterical and does not have any useful information on the child. The paramedic uses the application to determine the approximate weight of the 5 year old and to immediately calculate the appropriate drug dosage. Information on key vital signs to monitor, including a review of normal blood pressure, pulse and respiratory rates for a five year old are displayed for comparison; along with a list of danger signs to watch for (flaring of nostrils, use of chest accessory muscles, etc.)

Source **Tracking Number**	**Similar or Related Criteria XREF**	**Discipline** Fire EMS Law Enforcement All	**Interface/ Application/ Capability**	**Priority Level** **High** (Launch, Year 1) **Medium** (Year 2-3) **Low** (Year 3+)	**Existing App or Conceptual**	**Use of Network** (Yes or No)	**General Description**	**Use Case/ General Comments/ Working Group Feedback**
NPSTC 79	**35,37, 40,60, 75,85**	All	Hazard Placard Decoder	MEDIUM	EXISTING, HAZARD MATERIAL PLACARD APP HTTP://PLACARDAPP.COM/	Yes	Application would allow the EMS crew to scan the hazard placard on the transport vehicle and conduct an automatic look up on the type of hazardous cargo being transported. The application would allow further research into the exact chemical or substance following confirmation from the shipping receipt.	Rescue 1 is at a traffic collision involving a stake side truck broadsided by a sedan. EMTs notice 3 occupants still in the car and the truck is placarded with a yellow diamond displaying 1461 and 5.1 at the bottom. There is an open container on the ground next the car with powder spread around. The saddle tank on the truck is spilling diesel that is running towards the powder. Using his LTE device, the EMT accesses cameochemicals.noaa.gov and inputs the number into the search area. He quickly determines the mixture of diesel and oxidizer may explode and directs personnel to divert or contain the fuel. He then scans the bill-of-laden to determine the presence of other hazards.
NPSTC 80	**7,9, 12,16, 17,28, 30,35, 37,38, 40,53, 60,61, 63,71, 72,73, 82,84, 96**	EMS	Mass Monitoring, Infectious Disease Profiles	LOW	EXISTING HTTP://WWW.CDC.GOV/MMWR/PDF/OTHER/SU6103.PDF	Yes	An integrated set of applications which are designed to effect infectious disease monitoring. Application is integrated with various sensors which will scan a crowd for fever or will collect air samples to check for infectious diseases or bio hazards. Information from multiple sites is consolidated into a single application which has alarms and other metrics to alert the operator.	EMS officials are working with the local health department to provide monitoring of 100,000 citizens who are attending a basketball game in the local arena. Heat sensing cameras are set up near in the ticket lines to scan guests for fever, while other sensors throughout the building scan for other indications of infectious disease or biological contamination.

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NPSTC 81	**1,3, 6,8, 9,19, 23,24, 26,35, 38,39, 40,49, 51,52, 53,55, 58,59, 60,61, 67,82, 84,86, 87**	EMS	Resource Management (Hospital, ED, Helicopter)	HIGH	EXISTING HELICOPTER FEATURE IN EMS FIELD PARTNER (HTTP://APPCOMM.ORG/EMS-FIELD-PARTNER/)	No	Ability for EMS dispatch centers, hospitals and pre-hospital providers to see the resource availability for Emergency Department (ED), Helicopters, etc. This application is a view only application and only the host agency can make changes for their particular resource.	Rescue 1 is on the scene of a major vehicle crash and is requesting a medical helicopter. The dispatcher checks the application and locates the closest helicopter which is currently available. The dispatcher also sends a message to the closest regional trauma center alerting them to the incident.

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NPSTC 82	**1,2, 3,4, 5,6, 8,9, 15,28, 29,35, 37,38, 39,40, 47,49, 51,52, 55,56, 58,59, 60,61, 64,67, 71,72, 80,81, 84,85, 86,87, 95**	All	Incident Command White Board	HIGH	EXISTING HTTP://APPCOMM.ORG/TAG/WHITEBOARD/; AND HTTP://WWW.FIRSTRESPONDER.GOV/LISTS/SUCCESS%20STORIES/ATTACHMENTS/24/NEXT%20GENERATION%20INCIDENT%20COMMAND%20SYSTEM%20FACTSHEET.PDF	Yes	Application which allows the incident commander to track assigned and on scene units, manages assignments, track benchmarks, share operational goals and objectives and status, and transmit video and data.	While on the scene of a tour bus vs. truck vehicle crash, the incident commander needs to keep track of which units are on scene, which units are in staging and which units are still responding. The units already on scene need to be tracked according to their assignment (patient care, extrication, patient transportation, etc.). The incident commander may need to also share this dynamic status information with the EMT who is functioning as the Staging Officer, or with remote personnel (including the PSAP and the EOC).

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NPSTC 83	**32,38, 44,60, 84,89, 95**	EMS	Automated Quality Assurance	HIGH	CONCEPTUAL	No	Application which scans patient care records and conducts a "first pass" automated assessment of the patient treatment based on patient condition and established practice parameters. This Quality Assurance review is then passed to an EMS supervisor for further review. Higher priority cases are moved to the front of the queue (cardiac arrest) as well as cases that are flagged as being a potential problem. A PCR app will not allow completion until all required data fields are entered.	County X regularly reviews EMS protocols and patient outcomes. An application scans call center run sheets and electronic patient care reports from both the EMS providers and receiving hospitals to identify deviations from protocols, unusual patient outcomes, event timing, and patient/hospital complaints. The application generates a prioritized report to County X EMS officials to guide remediation, optimize protocols, and increase dispatch efficiency.

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NPSTC 84	**17,19,20,22,25,26,28,29,30,38,46,47,50,52,60,71,72,74,76,77,78,80,81,82,83,85,88,98**	EMS	Multi-Media & System Messaging	HIGH	EXISTING EXAMPLE: GENERAL DEVICES' E-NET MESSENGER, HTTP://WWW.GENERAL-DEVICES.COM/E-BRIDGE (HTTP://APPCOMM.ORG/E-NET-MESSENGER/)	No	Provides for single or group broadcast messaging of voice, text, images, forms, and data.	Medic 1 is at the scene of a house fire with multiple burn victims. The closest burn center is 35 miles away. As part of the triage, the medics take pictures of the burn injuries with their secure messaging app on their mobile device. The images and basic form data is sent to the Burn ICU with an alert. Voice contact is made to the burn hotline. Consult with the nurse results in two of the four injured selected for transport to the center and the others referred to the local emergency department. Based on the received pictures, the nurse increases the pain med dosage. She also forwards the images to the Burn physician on call.

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NPSTC 85	**1,2, 7,9, 10,11, 12,16, 19,21, 35,40, 41,52, 53,60, 63,73, 75,79, 82,84**	EMS	Vehicle Crash Telemetry	HIGH	EXISTING (ONSTAR, AGERO)	No	Ability to receive vehicle crash data streams from multiple sources/providers (OnStar, Ford Sync, Agero, etc.); and to automatically route the data to the EMS responder while providing a hospital alerting function based on patient severity scoring matrix.	A multi-car pileup on the interstate occurs. Two of the vehicles involved have automatic crash notification systems that also transmit crash kinematic data. The data received at the call center is automatically analyzed by injury predication software and indicates a high probability for severe injury for one of the cars. This info is relayed to Dispatch who messages Medic 1 with the make/model and GPS location of the vehicle. The regional Trauma center is also sent a secure alert with event details and Medivac is put on stand-by.
NPSTC 86	**1,38, 39,49, 55,56, 58,59, 60,61, 81,82**	EMS	Helicopter Status & Dispatch	MEDIUM	EXISTING FLIGHT FOR LIFE CENTRAL (HTTP://APPCOMM.ORG/FLIGHT-FOR-LIFE/)	No	Application allows EMS units in the field to view helicopter status and availability and request a helicopter. App will send GPS coordinates of incident scene to the helicopter dispatcher. This application is different than the Resource Management application, in that this app sends a request for a helicopter, sends the GPS coordinators of the emergency scene, and allows for a confirmation message back from the aircraft dispatcher.	Rescue 1 is on the scene of a major vehicle crash in a rural area with minimal cross streets and landmarks. The application allows them to request a helicopter and transmits the Rescue 1 Unit and Agency ID, the GPS coordinates of the Rescue 1 vehicle at the crash scene. A confirmation message is received indicating that the message was received by the aeromedical service and that an aircraft is being dispatched.

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NPSTC 87	**1,3, 6,7, 8,9, 11,15, 38,39, 49,51, 52,55, 56,58, 59,60, 81,82, 85**	Fire/EMS	Volunteer Responder Location, Dispatch, Tracking	MEDIUM	EXISTING NOWFORCE (HTTP://APPCOMM.ORG/NOWFORCE-MOBILE-RESPONDER/)	No	Application will locate available volunteer EMS first responders, will alert them to a call geographically, will allow them to acknowledge the call, and will track their movement to the incident scene.	A patient has been injured while working on a tractor in rural Kansas. The EMS dispatcher sends out an alert to the designated volunteer ambulance agency. A GPS system "finds" the volunteer personnel closest to the scene of the emergency and alerts them to the call. The EMS volunteers can acknowledge acceptance of the call, and the application will track their movement to the emergency scene.
NPSTC 88	**1,12, 16,17, 51,52, 53,55, 56,73, 76,77, 78,84, 89,92**	EMS	Automatic Medical Emergency Detection	LOW	EXISTING HTTP://WWW.MEDPAGETODAY.COM/CARDIOLOGY/ARRHYTHMIAS/27873	No	Ability for the EMS system to receive automatic data alerts which indicate the occurrence of a life threatening emergency. This includes wrist watches and other personal medical devices that can detect cardiac arrest, critical blood sugar, and critical PO2 level and transmit patient location and identification to the PSAP.	The application will connect patient medical (vitals-history) information wirelessly through interface at private vendor and correct first responder PSAP/Dispatch center. This is in real-time with continues updates until EMS units arrive on the scene and deactivate.

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NPSTC 89	**20,25, 29,30, 32,34, 38,40, 41,43, 52,53, 72,76, 83,88**	EMS	Integrated Hospital/EMS Patient Information-Billing	LOW	CONCEPTUAL	No	Application is a functional interface between participating receiving hospitals, allowing the EMS crew, or EMS system to poll the hospital medical record for patient identification and insurance information. In some cases, a real time inquiry could be made by the paramedic while at the hospital to (a) upload their information into the hospital system as a preliminary/draft record requiring confirmation or (b) allow the paramedic to download from the hospital the patient care information that was entered by the staff - or from the system for a repeat patient visit.	Ambulance 10 responds to an unresponsive patient found in his car at a mall. Patient identification is made through the patient's driver's license. The patient's information is downloaded from the Patient's Electronic Medical Records and confirmed by a photo attached to the record. The information includes a history of headaches, the patient's current medical history, address and date of birth. Ambulance 10 also finds an insurance card in the patient's wallet and captures an image. Ambulance 10 treats and transports the patient to the closest hospital. On arrival, Ambulance 10 is able to upload the patient's information, including their assessment, treatment and the image of the insurance card to the receiving hospital's medical records system.
NPSTC 90	**28,60, 73,74,**	All	Universal Speech Translator	LOW	EXISTING HTTP://WWW.GIZMAG.COM/SIGMO-STAR-TREK-STYLE-UNIVERSAL-TRANSLATOR/28689/	Yes	A two way audio device that performs foreign language translation - through a native speech center in the device, allowing a conversation between the EMT and the patient who speaks a different language.	Rescue 6 is on the scene of an unconscious patient. The family only speaks Vietnamese and the paramedic needs to communicate with the family to determine the patient's medical history and other issues. Using a device in local mode, the application senses the family's speech and compares it to known foreign language wave forms in a stored database and then begins a real time translation for the paramedic.

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NPSTC 91	**73,74, 76,77**	Fire EMS	CPR Counter Assist	LOW	EXISTING CPR TEMPO (HTTP://APPCOMM.ORG/CPR-TEMPO/)	Yes	A device that helps a first responder (or citizen) perform CPR at the designated pace, through an audio tone that marks the speed of compressions.	A volunteer fire department EMS unit arrives at the scene of a cardiac arrest in a rural area. An application on the EMT's LTE device performs a "time stamp" when CPR is started and then tones out the appropriate pace for the chest compressions. The device performs updated time stamps until the patient is turned over to hospital personnel.
NPSTC 92	**1,2, 38,39, 40,51, 58,59, 73,88**	Fire EMS	EMS Pre-Plan Application	LOW	EXISTING STREETWISE CADLINK (HTTP://APPCOMM.ORG/STREETWISE-CADLINK/)	Yes	Application which will allow EMS personnel to retrieve 3 dimensional building plans for hospitals and health care facilities for use during a major incident at the facility; or to access pre planned incident worksheets for critical infrastructure and high hazard locations.	Rescue 1 is on scene at the Road's End Assisted Living where at small fire in the beauty parlor has produced smoke throughout the west end of the building. The outside air temperature is 42°F. The EMT uses his LTE device to access the most current floor plan and determine the residents can be moved past a fire door to the east side. He also is able to locate the HVAC control equipment to limit the smoke travel.

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PSAC 93	**38,50**	All	Radio System Interoperability, Radio System Coverage extension	MEDIUM	CONCEPTUAL	Yes	Capability would utilize the network as a link between radio systems to provide interoperability. Utilizes the network as the link back into a radio system to provide coverage extension.	Use of Radio over IP Technology (RoIP) would allow connection of disparate radio systems. Radio 1 VHF, Radio 2 UHF connected via RoIP to console software running on a laptop. The two radios could be patched together providing interoperability. Coverage Extension- A radio connected to First Net via a RoIP connection would provide extension of a radio system. Currently use of satellite data or other technologies are providing this capability. During Katrina FEMA utilizes a BGAN satellite to connect tactical repeaters that are separated by great distances. The connection creates a large communication system that may cover the entire eastern seaboard as an example.
PSAC 94	**28,38, 60,71**	All	First Net Access via Hot Spots	MEDIUM	CONCEPTUAL	Yes	Capability would use a single First Net device to create a hot spot to share access to data.	The idea of having all devices connect to First Net may be cost prohibitive for users. An alternative would be to create a local hot spot using standard 802.11x Wi-Fi connectivity that would allow the devices to connect to the hotspot. An example of this would be a municipal department fire company operating from a fire engine. Crews from these vehicles operate near the vehicle the majority of the time. On EMS calls the EPCR (Electronic Patient Care Recording) tablets would connect to the hotspot on the vehicle. 12 lead Electrocardiography EKG transmission could occur by connecting to the hotspot and transmitting the data. If the vehicle has a Mobile Data Computer for dispatch purpose the First Net Access from that device could be shared.

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PSAC 95	**1,10, 81,82, 83**	EMS Public Health	Geo-Info with Illness Cluster	LOW	CONCEPTUAL	Yes	Allow public health to identify clusters of illnesses.	Electronic Patient Care Reporting (EPCR) is becoming more common. As part of EPCR data sets that would correspond to flu or other illnesses could be used to filter information and identify clusters of illnesses. Identification of these clusters would help identify schools that should be shut down due to pandemic flu outbreaks or other diseases. ***OEC Note***: Interesting idea, and may work well, subsequent to human intervention, to provide this information as an "alert & warning" to response personnel should there be a higher incident of or an anomaly occur of a certain incident or illness. Not sure that this is an NPSBN/FirstNet endeavor or that FirstNet/NPSBN would facilitate the collection of the EPCR and the transmission of resulting warnings from that information.
PSAC 96	**38**	All	Use NPSBN as the connectivity medium to support remote console Interfaces to Radio Systems	MEDIUM	EXISTING	Yes	Mobile Dispatch Consoles to provide access to radio system resources.	Jurisdictions pay large sums of money to build dispatch centers. These centers are critical to the effective deployment of public safety resources and due to the high cost often have limited back-ups. Use NPSBN resources and development of a radio console emulation app would allow agencies to use laptops as virtual radio consoles and connectivity to the radio system resources through the NPSBN.

Use Cases for Interfaces, Applications, and Capabilities for the Nationwide Public Safety Broadband Network
07/21/2014

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PSAC 97	**38,82**	Fire	Incident Tracking Worksheet/ Software	MEDIUM	CONCEPTUAL	Yes	Command tactical worksheets need to be married up with Record Management Systems to improve documentation of emergency incidents.	Fire department units respond to a multi-alarm fire where the battalion chief acting as the IC documents a plan of attack, exceptions, injuries, casualties, etc. and personnel movements throughout the incident. These notations are made in either paper forms or electronic applications but do not become part of the Fire RMS' electronic record. The NPSBN could provide the connectivity for new applications to incorporate these completed worksheets.
PSAC 98	**60,71, 84**	All	Use NPSBN as the connective medium to support Wi-Fi phone use at an incident scene	MEDIUM	CONCEPTUAL	Yes	Connectivity to Wi-Fi phones for public safety use at emergency incidents, communications with Medical Direction Doctors and to improve non-incident, adjunct related communications.	Public safety responders at a large scale incident are afforded an additional conversational communications pathway through the use of WiFi enable telephones that are supported by the NPSBN.

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PSAC 99	**#100**	All	Inclusion of Scenarios developed by Federal DOT for NG911 efforts	HIGH		Yes		Please see document entitled, "NG911: What's Next Report" @ http://www.tsag-its.org/projects/nextgen911.php. This document is essentially a concept of operations developed by representatives of national professional organizations representing law enforcement, fire, EMS and transportation. The report contains multiple "scenarios" which are essentially use cases. These scenarios illustrate the kind of data that representatives deemed actionable, useful, and most likely to improve the effectiveness and efficiency of their current operation. Please feel free to use any and all scenarios. ***OEC Note***: Scenarios are generally brief and focus on incident notification opportunities but not necessarily to the degree or with the data elements requested. These may provide additional context for expansion to develop a more rich use cases for the disciplines impacted. Law Enforcement scenarios begin on document page 21, Fire – page 39, EMS – page 58 and Transportation – page 73.
PSAC 100	**#99**	All	Inclusion of Scenarios developed by Federal DOT for NG911 efforts	HIGH		Yes		Next Generation 911 for Leaders in Law Enforcement" also contains scenarios/use cases, and it can be found at: http://www.911.gov/ng911_law/cover.html.