Geospatial **S**ervice **O**riented **A**rchitecture for **P**ublic **S**afety

SUMMARY	OVERVIEW	OBJECTIVES	BENEFITS
Timely access to accurate geospatial-related data can mean the difference between success and failure in critical incident and emergency response. GIS technology supports operational, planning and training capability to the public safety/first responder community, and location-based technologies facilitate the precise and timely delivery of essential public safety notifications. In addition, GIS tools can aid criminal investigation and intelligence analysis when deployed in combination with analytical tools, such as crime mapping applications. In recent years, GIS technology has experienced a paradigm shift from locally owned data and proprietary applications and solutions to shared data and services across the World Wide Web. Service Oriented Architecture and the Sensor Web now provide an enterprise-wide information infrastructure that enables discovery, invocation, and assembly and rendering of shared data. Data mining and analysis operations available as *web services* also enhance the ability to collect and analyze geospatial data.	The aftermath of terrorism, hurricanes, tornados, tsunamis and floods clearly demonstrate how vital the standardization and adoption of geospatial standards are to public safety. These standards literally have the potential to save lives on a tremendous scale. The integration of emergency alert systems and messages will significantly benefit from open data exchange standards, especially where secure and reliable exchange of such information is mission critical. A standardized interstate GIS transmission specification is needed to enable common consumption of increasingly ubiquitous geospatial data. Nlets is uniquely postured to develop the exchange models, transmission specifications, and serve as the network broker to enable geospatial-oriented messages that are faster, more accurate, and more consistent. The GeoSOAPS project will produce standard geospatial info services to support national LE objectives, including location-based incident reporting, crash data and alerts. Creating XML-based specifications will enable states to exchange GIS-based messages using web services.	Nlets and its member community offer the ideal proving ground for this nationally focused project. The policy and practice implications of this grant are pervasive, as the effort will improve the effectiveness of public safety professionals across the nation. ▪ Enhance, expand and accelerate the participation in the Nlets GIS enabled alert capability by leveraging prior geo-coding of the ORI Online (ORION) directory and archive messages with imple-mentation in additional pilot states; ▪ Using NIEM 2.0, Geography Markup Language, OpenGIS, and OGC standards, define an interstate GIS transmission spec for geo-spatial information exchange among local, state, federal, and regional systems using Nlets. ▪ Define a GeoSOAPS web services specification leveraging OGC Web Services (OWS) standards; ▪ Pilot a demonstration of geospatial information exchange that examines the suitability and performance of the GeoSOAPS GIS transmission specification.	▪ **Location-based alerts, including electronic images**—GeoSOAPS will build upon the underlying standards to expand the Nlets framework for location-based alert distribution. To support this, Nlets will modify its XML Message Router to interpret location geometry distribution requests based upon the geo-coded Nlets ORI Online (ORION) directory, which contains contact info for every recipient across the network. ▪ **Web Services Interoperability**—Nlets is establishing standards and specifications for next generation web services messaging, including Web Service Interoperability. Nlets will define and implement the appropriate use of EDXL, to include image transfer, within the broader framework of WS-I. ▪ **GIS tool compatibility in mobile operating environments**—A standard transmission spec will support the exchange and rendering of data via mobile/handheld computers, providing LE access to images and local data. Producing an open standards spec, with a focus on interoperability, will ensure correct display of geospatial data from legacy systems.

GEO SOAPS