

An Astra Digital, Inc. White Paper



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GISMoE
A GIS Monitoring Application

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GISMoE typically provides the framework for one of three modules required for a GIS monitoring application.

The first module is the device. The device can typically send and receive information. The information sent from the device generally contains the device's identifier, the GPS coordinates of the device and usually some additional info. The method for sending the information from the device to a receiver is the messaging protocol.

The second module typically runs on an Internet server farm and monitors the inbound messages from the device. GISMoE provides a framework for building that server's software services.

The third module is typically a web portal that provides end users with

- a) the capability of configuring the system
- b) getting reports and status from the device
- c) adding additional devices

GISMoE is a set of software services that provide the following functionality to GIS or GPS applications:

1. Object Oriented. GISMoE is an object oriented platform. This allows GISMoE's base behaviors to be extended for a wide variety of platforms – devices, protocols, and applications.
2. Devices. GISMoE revolves around GPS or GIS devices that both send and receive messages containing their device identifier, current GPS location and other information. Devices can actively send these messages on a schedule or devices can send messages arbitrarily.
3. Incoming Messages. GISMoE uses a message preprocessor to receive and convert the device's message into a GISMoE standard message. Similarly, GISMoE can be used with any message protocol, TCP/IP, UDP, and others, because the mechanics of receiving and sending messages is handled in the pre-processor.
4. Device and Protocol Agnostic. Since GISMoE uses a custom pre-processor to receive and convert the inbound message into a standard GISMoE message, GISMoE is device and protocol agnostic. GISMoE can be tied to cellular phones and custom devices, even within the same application.
5. Rules. GISMoE allows an application to define rules that govern the location of a device. The location can be defined in both time and space. Rules can be dynamically updated at any time.



6. Global Rules. Within an application, rules can be created that govern all devices.
7. Actions and Alerts - Violations. As GISMoE processes incoming messages from a device, it reviews the location of the device against the rules that have been established for the device. If a device is found to be in violation of a rule, an action can occur. This action may include an alert. An alert can send an immediate message to another user in the system.
8. Actions and Alerts - Compliance. As GISMoE is processing messages, it can also monitor for compliance to rules. If a device is in compliance, it can also trigger an action and alert.
9. Outgoing Messages. When GISMoE determines that an alert is required, it uses a post-processor to send the message to the appropriate device. The message could be an email, text message or update to an application.

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