

# Technology Service Corporation

## ENTERPRISE GIS

Technology Service Corporation designs, develops and deploys complex, dynamic geographic information systems that operate within the larger C4ISR enterprises and architectures supporting military commands and federal agencies. These enterprise GIS solutions include all major components of the enterprise from the servers, databases, geospatial data ingest, editing and publishing components, and client viewers that range from workstation applications to web browsers. TSC focuses on the commercial GIS and database products used by the National Geospatial Intelligence Agency (NGA) as implemented in the NGA Commercial Joint Mapping Toolkit (CJMTK) and also as the off-the-shelf commercial versions of the software used by nearly every defense, intelligence and federal agency in the United States.

### Applications

The solid geospatial underpinnings of the GIS team provide an immediate capability for TSC to support a wide variety of applications including:

- **Border, Port, and Perimeter Security**
- **Remote Sensor Netting**
- **Critical Infrastructure Protection**
- **Operations Centers Support**
- **Asset Tracking**
- **Chemical/Biological/Radiological/Nuclear Effects (CBRNE)**

These applications benefit from the common multi-user geospatial data infrastructure that provides:

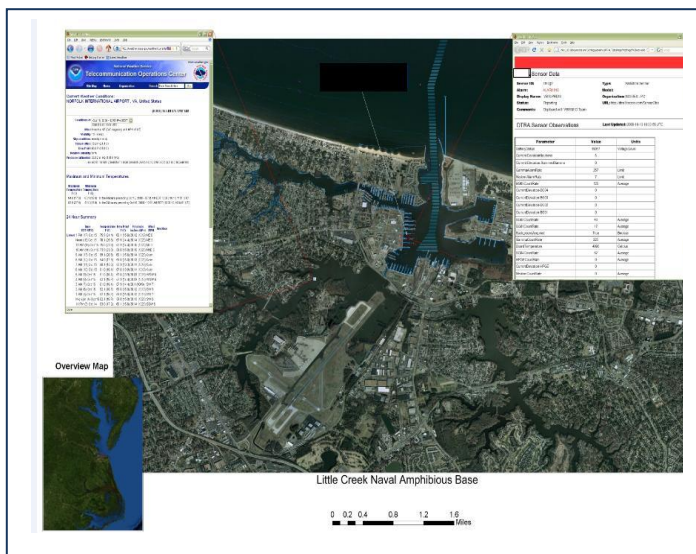
- **Situational Awareness**
- **Intelligence and Trend Analysis**
- **Geospatial Data Dissemination**
- **Distributed Web Based Input**

### The Enterprise GIS Team

TSC's GIS team is expert in geographic applications and geospatial data, relational databases, systems engineering, and software engineering and development. This team provides the rapid, operationally focused support required by demanding customers with unique requirements. In addition to total system solutions, the team has unique expertise with the National Imagery Transmission Format (NITF).

The team excels in integrating live sensor data into common operational pictures. They developed the TSC proprietary software Smart Points™ to quickly integrate new sensor protocols into existing GIS databases, saving design, development and implementation costs.

This operationally experienced team has deployed systems for exercises, demonstrations, and actual events in support of customers, including the National Security Special Events for the 2004 political conventions, 2005 Inauguration, State of the Union Address, and Super Bowl. TSC is currently supporting the Defense Threat Reduction Agency in integrating a wide array of live sensor data into exercises and trials.



**Sensor Integration in an ArcGIS Server Web Client**

## Smart Points™

TSC's development team pioneered the application of Java EE middleware components to provide an object based construct for the integration of sensors, responders, robotic vehicles and other dynamic objects operating within an enterprise.

Called **Smart Points™**, these objects can be managed, assigned behaviors, and persisted in the system. These **Smart Points™** are also connected to and displayed in the CJMTK geospatial architecture and can be independently managed by their owners while remaining viable objects within the system.

The value of this capability is that it handles many heterogeneous objects and networks within one geospatial enterprise without interfering with or taking ownership of the components, effectively cutting design and implementation time to a minimum.

In 2009, **Smart Points™** was ported to .NET.

## Capabilities Summary

**C4ISR GIS System Analysis** – End to end geospatial data processing and dissemination matched to the customer requirements and architectures.

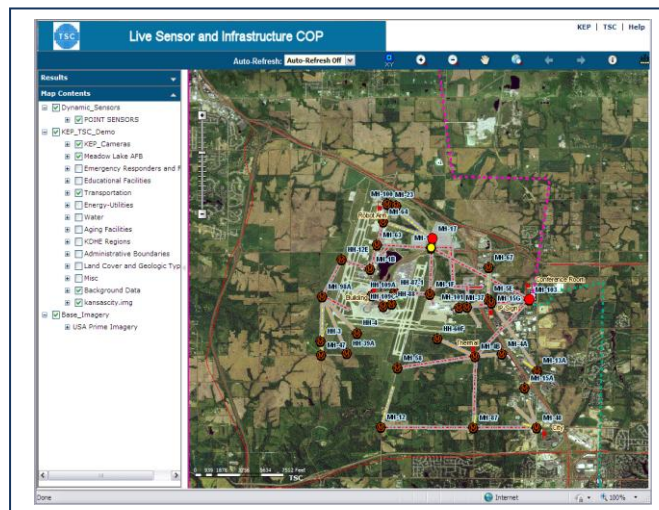
**CJMTK Expertise** – Full range support, configuration and application of all commercial components (ESRI, ERDAS, and Analytical Graphics).

**GIS Software Customization** – Spatial Data Engine, ArcObjects, and ArcGIS Server implementations. ArcInfo/ArcMap and ERDAS Imagine data geospatial implementation. Web enabled client customization and operations.

**Database Implementation** – Microsoft SQL Server.

**Dynamic Object Integration** – Sensors, Robots, Cameras, Responders, Hazard Plumes, Vehicles, and GPS enabled phones/computers, live updates.

**Java Enterprise Edition (Java EE) and .NET (IIS)** – Open source and Open Geospatial Consortium (OGC) compliant interfaces to accommodate Web Feature Services and Web Mapping Services.



## Remote Sensor Integration into a Web Enabled Common Operational Picture

### Operations and Exercise Experience

- CST, NWS Integration – DTRA Operations Center 2009.
- Trident Warrior, Ultra-Wide Band Test, NSWC Port Security, Vessel Boarding Inspection System (VBIS) DTRA 2008.
- Enterprise GIS – Center for Asymmetric Warfare –Jul 2006 to present.
- Domestic Nuclear Event Attribution/DTRA 2006.
- Enterprise GIS/WebCOP – DTRA Ops Center & DTRA Test Bed Integrated Technology Demonstration 4 – DTRA/Dept of Energy Jul 2005.
- National Security Special Event Support – Inauguration Jan 2005, State of the Union, Super Bowl XXXIX DTRA Ops Center.
- National Security Special Event Support – RNC/DNC – NORTHCOM/FEMA.
- Anti-Terror/Force Protection/DRS Incorporated (Live Video via the Web, Remote Sensor Van) 2004.
- Regional Maritime Security Initiative Demonstrations.
- Joint Warrior Interoperability Demonstration 2004 – **Top Rated Trial** (Critical Infrastructure Protection Product Integration).
- CBRNE Sensor Simulation Integration – DTRA 2003.
- Integrated Technology Demonstrations 1 & 2 – Combating Terrorism Task Force/DTRA (Robotic Vehicles, Wireless Comm & Video, Plume Integration) NSWC and DTRA 2003.

## CONTACT INFORMATION

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