PA Homeland Security/Public Safety Geospatial Portal Applications

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GTO Homeland Security Priorities

• Understanding of Agency Business Functions and Needs
• Statewide GT Data Assets
• Geospatial Enterprise Server Architecture
• GT Interoperability/Data Sharing
• Enterprise Strengthening
• Enterprise Capabilities
PA GTO HLS Functions

- Support for PEMA and other Public Safety agencies
- GT Governance Policy Board includes primary public safety/emergency response agencies (PEMA, OHS, PSP, DEP, DMVA, DGS, Health, Transportation)
- Definition of Geospatial Enterprise Architecture
- Review of DHS Grants related to geospatial
- Development of GT Interoperability standards, other GT standards and policies
PA GTO HLS Functions

• HLS IT Governance Workgroup Member
• Data Fusion (Intelligence) Steering Committee
• Working with PSP Crime Intelligence Center (PACIC) on geospatial support and products
• Defining Geospatial Components of State Homeland Security Assessment and Strategy (SHSAS) Update
• Regional Counter-Terrorism Task Force (RCTTF) collaboration and definition of minimum capabilities
DHS Information Technology Evaluation Program (ITEP) Project
DHS ITEP Grant Project

• 2004 Information Technology Evaluation Program (ITEP) Competitive Grant
• 13 awards nationally, 3 in geospatial cluster, others in data sharing and wireless
• PA project defined as Enterprise GT Data Architecture (EGTDA)
  – Evaluation of DHS GEA, start of PA GEA
  – Enterprise Geospatial Data Repository
  – Interoperable GT Data Sharing utilizing Open Geospatial Consortium (OGC) Mapping Services
  – Geospatial Mission Applications
  – Reusable GT Web Service Components
Geospatial Enterprise Server Architecture (GESA)

- Fault tolerant, high availability, 24x7 operational capabilities
- Consolidated Enterprise Geospatial Database
- Shared Services GT Application hosting environment – for BGT and other agencies
- OGC Mapping Services
- XML Web Services Reusable Components
- Geospatial Portal Deployments
EGTDA Project

• Enterprise Geospatial Technologies Data Architecture

• Leverage the IRRIS/Geospatial Emergency Alert and Readiness System (GEARS) framework for Pennsylvania
  – $15M Military Investment in Integrated Road and Rail Information System (IRRIS)
  – First IRRIS/GEARS state project deployed by VA DOT
  – 2nd in PA for EGTDA
  – 3rd in VA for DOH
EGTDA Concept of Operations

- Leverage the Geospatial Emergency Alert and Readiness System (GEARS) for Pennsylvania and build the Geospatial Analysis of Threats and Incident Reports (GATIR) Application Portal
- Augment PEMA’s PA Emergency Incident Response System (PEIRS) with robust geospatial capabilities
- Develop interoperable mapping services that can be accessed over the web and used by agencies, counties, first responders
- Develop interoperable and reusable XML web service geospatial application components
EGTDA Concept of Operations

Future Data Fusion Center

Geospatial Enterprise Database

Data Replication

DHS Advisories

Other Information

County 9-1-1 Incidents

Agency Information

DHS ITEP 2005
PA Enterprise Geospatial Technologies Data Architecture
PEIRS Geospatial Enhancements
Conceptual Design
EGTDA

• Phase I – Development of OGC compliant mapping services to share geospatial data via the Internet
  – Data Inventory/Data Loading
  – Requirements Definition
  – Mapping Services Development
    • WMS/WFS
    • OGC
  – Deployment
EGTDA

• Phase II – Developed a secure geospatial portal for information sharing, mapping, visualization, and analysis
  – GEARs Framework as Base Architecture
  – GATIR = Geospatial Analysis of Threats and Incident Reports
  – System Documentation
  – Integration with PEMA PEIRS
EGTDA

• Phase III – Developed lightweight, reusable XML web services components to standardize and facilitate faster development of future GIS and information sharing application initiatives
  – .NET XML Web Services
  – Application Programming Interfaces
  – Mapping Web Service
  – Routing Web Service
GATIR Functionality

• PEMA PEIRS Added Functionality
  – Replacing incident location ‘dots’ with HSWG symbology
  – Role based user security mechanism for incidents
  – Thematic Incident Detail Maps – type of incident determines symbology and displayed layers, 1-5 mile distance rings, key assets/critical infrastructure nearby highlighted
  – Federal Disaster Declaration Map Automation
  – EOC/Situational Awareness Wall Map
  – Mapping, analysis, geocoding, routing
  – PEMA maintains control for access and details, GATIR assists in mapping and analysis
  – Difficult part was that PEIRS was being rewritten in .NET as the same time as our GATIR project was being developed
### Search Results:
193 matches found

**Click + button to expand query results**

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- Abington Memorial Hospital (Montgomery County)
- Agnew Hospital (Allegheny County)
- Aliquippa Hospital (Beaver County)
- All Saints Hospital (Montgomery County)
- **Allegheny General Hospital (Allegheny County)**
- Allegheny Valley Hospital (Allegheny County)
- Allentown State Hospital (Lehigh County)
- Barnes Hospital (Susquehanna County)
- Beaver County Home and Hospital (Beaver County)
- Berks County Home and Hospital (Berks County)
- Berwick Hospital (Columbia County)
- Betts Hospital (Northampton County)
- Black Hospital (Mifflin County)
- Blair Memorial Hospital (Huntingdon County)
- Booth Memorial Hospital (Allegheny County)
- Booth Memorial Hospital (Philadelphia County)

[Build Map]
Future Functionality

• Implement CA/eTrust Security Model
• Expansion of enterprise GT database layers
• Additional XML Web Services
  – Gazetteer – location searches and routing stops
  – Spatial Search – designed but not implemented
  – Plume modeling
  – Print on Demand
  – Enhancements to mapping and routing services
• Mapping Collaboration Center/Web Context Services
• Secure OGC Mapping Services
Future Projects

• Severe Weather Alerting and Plume Modeling – SHSGP 2004 funding
• Health Geospatial Portal - $400K in SHSGP 2005 funding ("HATIR")
• Transportation Geospatial Portal – FHWA earmarks from 2004, 2005, 2006+? ("TATIR")
• ESRI Portal Toolkit – Catalog Services
• Regional Counter Terrorism Task Force (RCTTF) collaboration projects
Future Projects

• Enhancements to GATIR - $450K in SHSGP 2005 funding

• PENNNSafe – hazardous materials stored in PA business facilities – paid for by Labor and Industry, hosted by BGT

• Data Fusion Center (Intelligence)

• Federated GIS Data Pilot Project – use of ArcGIS Server to share state/local data transparently in a common mapping application
Weather/Plume Modeling

- GESA Architecture built, Weather data processing servers installed, weather data services procured and being deployed
- Load real-time weather data into Oracle/ArcSDE enterprise database, incorporate into OGC mapping services and applications
- Develop web-based plume modeling capabilities
- Develop location and temporal-aware severe weather alerting capabilities