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GEOSPATIAL

British Transport Police,United Kingdom
Securing The 2012 Olympic Games in London with Erdas Apollo

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The 2012 Summer Olympic Games took place in London, UK, from July 27 to August 12, 2012. In preparation for this event, the London 2012 Organizing Committee, the Olympic Security Directorate, and the Olympic Delivery Authority coordinated with a wide range of safety and security agencies across Great Britain. All parties involved had one overall goal in mind: to achieve a safe and secure Olympic Games.

Within the police service, a dedicated unit was established to ensure that critical information would be gathered and shared amongst all partners. With the Games rapidly approaching, security services had to quickly understand how to maximize the potential of available data and information that existed across a variety of independent agencies.

BRITISH TRANSPORT POLICE

British Transport Police (BTP) was one of the many police forces working together on Olympics security planning. BTP is the national police force for Britain's railways and provides policing service to rail operators, their staff and passengers throughout England, Wales, and Scotland. Its territory includes policing the London Underground system, Docklands Light Railway, the Glasgow Subway, the Midland Metro tram system, and Croydon Tramlink, among others.

The standard mission of BTP is to deliver a safe railway environment free from disruption and the fear of crime. During the Olympic Games, they knew the movement of people would be high volume and would utilize all aspects of Britain's transportation system, specifically railways and road networks. During the event, BTP had to prepare to address the significant rise in the amount of people that would be using the rail network.

To monitor and support activities throughout Britain, BTP had created and utilized a host of geographic data, including mapping, aerial imagery, CCTV, and video data. It would be crucial for BTP to effectively manage the geo-data held along the transportation routes both prior to and during the Olympics.

CROSS-AGENCY SPATIAL INFORMATION INFRASTRUCTURE (SII)

As an element of the intelligence operation that was organized to guarantee sharing of critical information between security partners, BTP developed a spatial information infrastructure (SII) environment for Olympic Games security planning suitable to support multiple agencies. The SII provided access for a wide range of requirements, including operational, strategic planning, event planning, crime analysis, and civil contingency planning. It had to make the geo-information held by different organizations involved in the security operation visible by centralizing geospatial data and information feeds. It was envisaged to include both dynamic and static geo-information data feeds with the security environment.
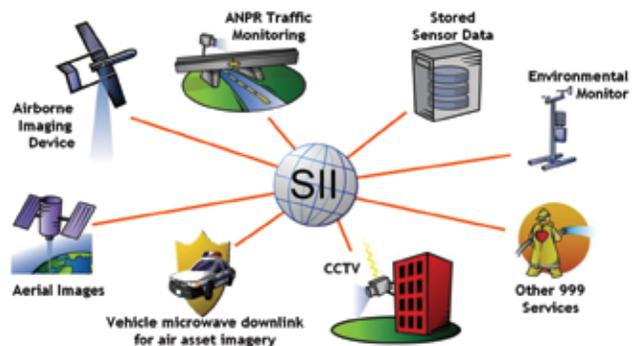
BTP has developed a spatial information infrastructure (SII) environment for Olympic security planning that must enable the ability to make visible the geo-information held by different organizations involved in the security operation by centralizing geospatial data and information feeds.

POTENTIAL INTEGRATION ISSUES ACROSS AGENCIES

Developing an effective SII does not come without its challenges. The primary objective of the SII was to ensure that assorted data and information feeds were shared securely, and made available near real-time and simultaneously, between organizations. The SII had to achieve interoperability between the varied systems in operation across the multitude of independent security agencies. The new system had to easily integrate well with existing GIS and other business systems in use at these agencies, with all data and technology seamlessly working together.

Differences in data standards, information systems and interfaces, IT infrastructures, contingency/back-up plans, and allowance for cost and timeframe were some of the interoperability issues BTP anticipated in the SSI project. BTP also decided to rely on industry standards, and declared that Open Geospatial Consortium (OGC®) compliance would be a requirement. "We said if it's not OGC compliant, then BTP is not interested," said Richard Smith, Force Information Manager at BTP.

BTP needed to understand how to effectively store and manage gigabytes of aerial imagery and raster mapping, and ultimately deliver that data in a timely fashion. BTP had also already invested in Oracle Spatial and proper data management tools were required. Regarding performance, BTP needed to upgrade bandwidth to remote sites. And finally, BTP wanted a better solution, and recognized the need for support and partnership from a respected industry leader in data management.

REVOLUTIONIZING DATA MANAGEMENT AT BTP

Searching for a solution, BTP invited Infoterra, the authorized distributor of ERDAS (now Hexagon Geospatial) products in the UK and Ireland, to present the capabilities of ERDAS APOLLO. Available in three tiers, ERDAS APOLLO is an enterprise-class data management system enabling an organization to describe, catalog, search, discover, and securely disseminate massive volumes of data. It seamlessly integrates with existing GIS environments, leveraging business systems and supporting almost any kind of data input. On top of handling extensive volumes of dynamic and static images, this interoperable OGC/ISO-based solution also easily delivers feature data, terrain, and virtually any digital object in an enterprise.

Ultimately for the 2012 Olympic Games in London, BTP implemented ERDAS APOLLO Advantage, the mid-tier APOLLO product with a unified enterprise platform for managing and serving large volumes of geospatial data located and distributed across multiple organizations.

ERDAS APOLLO was selected to store and share gridded data stores, and to support the requirements of the spatial information infrastructure (SII) for Olympic security management. Through OGC/ISO-compliant web services, ERDAS APOLLO enables rapid delivery of gigabytes of imagery by streaming data via the web and secure networks. This solution allowed BTP to securely organize and catalogue all geospatial data, imagery, and maps, for efficient delivery using open-standard web services.

"Previously, only 50 percent of BTP's imagery could be stored on a server. Additionally, retrieving these images was often problematic," said Smith. "As a National police force, we needed a solution to store and distribute imagery securely and in a timely way — ERDAS APOLLO provides such a solution."

ERDAS APOLLO is also backed with Oracle 11g technology, which was chosen by BTP for its ability to efficiently store and manage an exponentially growing volume of information within the security service. Oracle Spatial is primarily used for the storage of mapping and aerial imagery projects. Through ERDAS APOLLO, this data is made available via web services, including Web Map Services and the ECWP web delivery protocol.

By using ERDAS APOLLO, BTP was able to increase efficiency and enable interoperability with many national agencies. The system will provide access for a wide range of business requirements, including operational and strategic planning, crime analysis, and civil contingency planning. "For example," added Smith, "having all imagery and maps in one easily accessible location will increase the efficiency of event operation planning - when thousands travel/arrive for the London Marathon and when people travel to attend 2012 events."
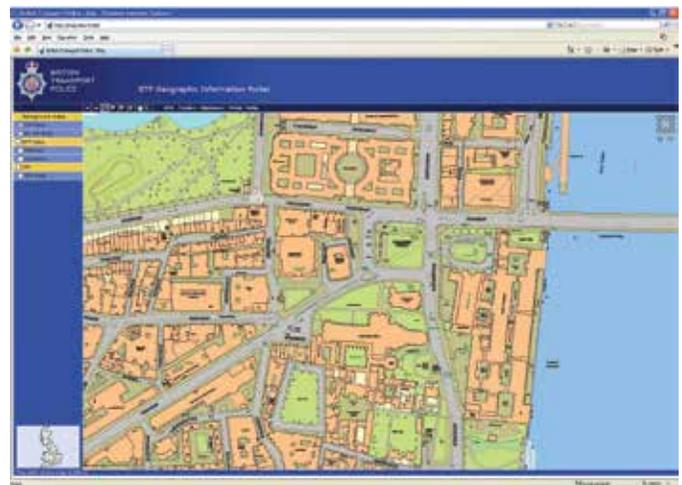
ERDAS APOLLO catalogs and delivers BTP enterprise geospatial data over the web, via BTP "Map View".

THE RIGHT FEATURES

BTP defined the following as key wins for ERDAS APOLLO to be the enterprise-class system supporting the SII:

- OGC compliance – important both now and in the future
- ECWP imagery delivery speed – the ability to see London imagery in seconds
- Support and integration into existing geospatial information and command/control applications (e.g. Memex, MetaCarta)
- GOOD client support

POST OLYMPICS

BTP continue to be supported in their use of ERDAS APOLLO by Hexagon Geospatial business partner Sterling GEO in the UK. Whilst the games are now over, the work goes on ensuring rapid data cataloguing and delivery.

The standard mission of BTP is to deliver a safe railway environment free from disruption and the fear of crime. Image source: British Transport Police.

HEXAGON GEOSPATIAL

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