

Geospatial Collaboration and Information Sharing Infrastructure for GEOSS in the GEO Architecture Implementation Pilot – Phase 2 (AIP-2)

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Overview

The proposed contribution to the GEOSS Architecture Implementation Pilot described in this document is a geospatial collaboration and information sharing infrastructure built upon the ERDAS TITAN service which offers a freely downloadable rich application that allows users to rapidly establish ad hoc, spatially-enabled data sharing networks for use by emergency management and response professionals. This application leverages the power of OGC web services, allowing users to build mash-ups across local files and remote OGC web service data, as well as dynamically publishing local desktop data as OGC web services that anyone else can consume. This geospatial social networking solution offers a turnkey enrollment capability that will allow the GEOSS community to operate as a dynamic social network of global citizens concerned about particular societal benefit areas, such as emergency management and response.

Proposed Contributions

Disasters and emergencies lead to the assembly of ad hoc networks first responders, managers and decision makers that have likely never worked together. How to rapidly achieve information sharing and geospatial collaboration during evolving disaster/emergency situations is one of the biggest challenges facing us today. Often, it is people “on the ground” taking the initiative that generate some of the most valuable data for emergency/disaster response and recovery personnel at all levels.

ERDAS has launched a powerful geospatial social-networking infrastructure named TITAN, which enables all users to share their data and observations to anyone else across the network, without shipping gigabytes of data in a bandwidth intensive manner. The ability to quickly discover and visualize what mission partners and collaborators within a community of interest are doing is critical if your disaster and emergency management enterprise is to be nimble and address mission critical issues in a time dominant manner. ERDAS TITAN is designed to enable each user to construct his or her own “MyWorld” (view) and set security on each particular data element, while enabling anyone within his/her network to get a glimpse into this world, or even leverage someone else’s data in their own User Defined Operational Picture (UDOP).

The ability to connect data to the originator of that data, and to reach that person at the click of a button offers a revolution in how emergency/disaster planning, response and recovery can be conducted.

Societal Benefit Area Alignment and Support

The work described in this document will contribute principally to the Societal Benefit Area of “Disasters” and specifically to one task defined in the 2007-2009 GEOSS Work plan and maintained in the 2009-2011 Work plan.

Component and Service Contributions

The proposed contribution will provide the GEOSS community with 4 major capabilities within which OGC compliance plays a role:

- Uses a secure instant messenger network as a vehicle for communicating, sharing and downloading geospatial data
- Offers users the ability to create and publish their own interactive 3D presentation (MyWorld) within ERDAS TITAN, allowing them to retain digital ownership rights
- Variety of way to visualize data from a user's MyWorld including delivering this data to desktop, webmapping and 3D virtual globe clients (including Google Earth, ArcGIS Explorer and Microsoft Virtual Earth).
- Provides local geospatial server capability within a desktop application enabling geospatial users to become servers of geospatial data and publishers of geospatial web services. All other solutions require the investment of high end back office server applications.

The components underpinning this proposed solution are 3: 1) Master Server, for enrolling users into the ERDAS TITAN geospatial social network; 2) TITAN Client, enabling users to instant message one another, share their geospatial data with others (as OGC web services), and to mash-up this data with OGC web services from others; and 3) GeoHub, providing the secure proxy infrastructure that allows geospatial collaboration without losing control of one's data.



ERDAS TITAN, a geospatial data bridge providing access to multiple public and private data resources, and enabling that data to be accessed in a variety of desktop applications. ERDAS TITAN enables users to share, discover and consume geospatial data in an online, dynamic, collaborative network. Organizations that implement ERDAS TITAN ensure secure, permission-based data distribution, both internally and externally.

Beyond the users' ability to consume and publish OGC web services, the TITAN Network offers a variety of functional capabilities that will support geospatial collaboration and information sharing across the GEOSS community.



The ERDAS TITAN Network is a dynamic online solution for sharing geospatial content in a single, secure environment. Empowered by a 3D virtual globe, the ERDAS TITAN Network allows users to discover, visualize, share and retrieve information.

[\(view larger image\)](#)



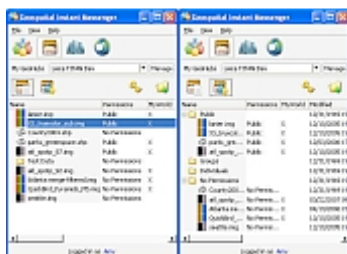
The ERDAS TITAN Viewer enables a global network of users to interactively visualize and share data for the purpose of contributing to the creation of an online and information-rich 3D virtual globe.

[\(view larger image\)](#)



With the Geospatial Instant Messenger, chat, share, find, and retrieve geospatial data and web services from other ERDAS TITAN Network participants.

[\(view larger image\)](#)



Drag and Drop geospatial data into the Geospatial Instant Messenger to share within the ERDAS TITAN Network. View local shares by file or by user.

[\(view larger image\)](#) [A](#) [B](#)



Create, publish and share a geospatial MyWorld with other network participants.

[\(view larger image\)](#)



Switch worlds and view geographic data and location-based content in another user's MyWorld within the ERDAS TITAN Network.

[\(view larger image\)](#)



Find a specific location by place name, address or geographic Latitude/Longitude.

[\(view larger image\)](#)



Create points, lines and polygons, adjust viewing properties, and Save to KML.

[\(view larger image\)](#)



Utilize Work View in the Viewer, which moves often-utilized tools from the button bar, into an organized panel on the left side of the screen.

[\(view larger image\)](#)



Access other users' data and public catalogs via the Geospatial Instant Messenger.

[\(view larger image\)](#)



Set permissions for public or private access to your shared data.

[\(view larger image\)](#)



Save a MyWorld and set permissions for data shared within it.

[\(view larger image\)](#)

Master Server

With the TITAN Master Server, currently anyone can register to a network - meaning anyone can create a unique username and password on the Network (at the Master Server). It can also be configured to only allow users who are enrolled in a central repository such as an LDAP/AD. For the purposes of this pilot, there will need to be an integration with the authentication infrastructure provided by the OGC pilot. If none is provided, the existing enrollment infrastructure will prevail.

GeoHub

In lieu of the public service, a TITAN GeoHub can be provisioned for use by only GEOSS pilot participants, for assessment and demonstration purposes. Users will obtain IDs from their GeoHub administrators to log into their community GeoHub (See Master Server above).

This Societal Benefits Area (SBA) TITAN Server would connect with a community central record (LDAP, AD, Certificate...) for security management. The public TITAN GeoHub is monitored 24x7, maximizing uptime and guaranteeing a Quality of Service for users of the public TITAN network.

Catalog Connectivity

ERDAS TITAN is planned to integrate with CS-W within the period of this GEOSS pilot. As such, we propose to enable users to discover services within a GEOSS OGC compliant CS-W (particularly ebRIM) and dynamically add them to their **MyWorld**, as well as the ability to publish desktop data as OGC web services to the Catalog.

Architecture and Interoperability Arrangement Development

ERDAS is a Strategic Member of the Open Geospatial Consortium (OGC). ERDAS is heavily involved in OGC Web Map Service, Web Feature Service, Web Coverage Service, and Catalog specification activities and would view this pilot as an opportunity to engage in Technical Integration Experiments (TIEs) with all vendor and open source implementations of OGC web services.

Description of Responding Organization

ERDAS – The Earth to Business Company – helps organizations harness the information of the changing earth for greater advantage. We create geospatial business systems that transform our earth's data into business information, enabling individuals, businesses and public agencies to quickly access, manage, process and share that information from anywhere. Using secure geospatial information, ERDAS solutions improves employee, customer and partner visibility to information, enabling them to respond faster and collaborate better. It also means better decision making, increased productivity and new revenue streams. ERDAS is a strategic member of the Open Geospatial Consortium.