Knowledge Display and Aggregation System (KDAS)

The Knowledge Display and Aggregation System (KDAS) is a tool set to provide capabilities that support DCIP missions and objectives of ensuring the availability of critical networked assets through the identification and assessment of resources essential for executing the national military strategy. This integrated, comprehensive system consists of an intuitive GIS-based graphic user interface (GUI) and toolset that allows for the collection, integration, analysis, visualization, and output of disparate data related to defense critical infrastructure worldwide.

These tools provide a means to assess the status as well as the adequacy of resources in the event of a loss or degradation of critical infrastructure elements through identification and prioritization of critical infrastructures, impact assessment on the military industrial complex, assessment of infrastructure interdependencies, resource location and allocation analysis, and facilitation of critical decision making. The system is also useful for efficiently disseminating information gleaned from the analysis results via digital and hardcopy maps, consequence analysis reports, and database visualizations, related to vulnerability, threat assessments, warnings, and mitigation options.

In addition to providing critical information at the time of a loss or degradation, this GIS application can also be used for pre-event planning to formulate mitigation, preparedness, and possible recovery scenario priorities through analysis of existing and real-time data.

Some of the geospatial tools that could be available within the KDAS environment include Palanterra, the Homeland Defense Mission Assurance Portal (HD-MAP) the Intelligent Road/Rail Information System (IRRIS), the DISDI Portal, and USACE CorpsMap.

Palanterra

The most prominent of these Web-based technologies is NGA's Palanterra portal. Palanterra is a Web-enabled capability that provides the Intelligence, Defense, and Homeland Security Communities the architecture for integrated geographic information and Web-based dissemination, visualization, and analysis. Palanterra incorporates over 300 data layers, comprised of the best available data acquired by NGA from Federal, state and local agencies, as well as commercial data providers. This data is stored in a GEOINT-centric object-relational (Oracle) database. Palanterra is currently available on the NIPRNET, SIPRNET, and Joint Worldwide Intelligence Communications System (JWICS) domains.

NGA is currently using Palanterra to support a number of DoD and Federal interagency entities, including the White House Situation Room, U.S. Northern Command (USNORTHCOM), other regional COCOMs, U.S. Joint Forces Command (USJFCOM), DHS, the Coast Guard, and the Federal Bureau of Investigation (FBI). Users can access Palanterra via commercially-available Web browsers. Palanterra is available in thin, medium, and thick client versions and is interoperable through common enterprise architecture features with the Mission Assurance Division's HD-MAP and the SDDC's

IRRIS applications. DHS has customized NGA's Palanterra to provide a unified geospatial platform in the DHS environment to provide a mission-specific operational picture called the Infrastructure Critical Asset Viewer (iCAV)/Geospatial Information Infrastructure (GII).

Palanterra can be accessed via commercially available web browsers, such as Internet Explorer and Netscape Navigator, in classified and unclassified forms. More information can be found at the the publically available website (http://palanterra.nga.mil).

HD-MAP

HD-MAP, a primarily SIPRNET-accessible, Web-based portal, is designed to be a comprehensive geospatial visualization and analysis portal for the DCIP Community, to include the Defense Sectors, COCOMs, and Services. The capability is based on a thin-client architecture that can be readily accessed using Internet Explorer. Current HD-MAP capabilities include custom baseline maps, analytical reports, remote data integration, SIPRNET chat within each information portal, shared data views, geocoding, and a file exchange feature for pushing/pulling large files. Although HD-MAP is primarily SIPRNET-based, an Unclassified-FOUO instance was developed and hosted in the aftermath of Hurricane Katrina. HD-MAP is capable of integrating enterprise data, including tracking data, from Palanterra and IRRIS.

Intelligent Road/Rail Information System (IRRIS)

IRRIS is the Web-based GIS tool used by Surface Deployment and Distribution Command Transportation Engineering Agency (SDDC TEA)—the arm of the U.S. Transportation Command (USTRANSCOM) that is responsible for all U.S. military surface cargo movement. IRRIS is used for providing transportation-related situational awareness as well as routing and tracking sensitive DoD road and rail shipments. The primary IRRIS portal is accessible via the NIPRNET. A SIPRNET-based version is also available, but this version lacks the real-time data feeds available via the NIPRNET version. Access within IRRIS is role-based and determined by the particular user's mission.

IRRIS' numerous live geospatial data feeds, including weather data updated every five minutes, traffic flow data, and traffic-cam feeds, give the user a high level of transportation-related situational awareness. SDDCC TEA has partnered with the DTRA to integrate hazard models within IRRIS and to build quick turn-around scenarios. IRRIS tracks military cargo movements at sea with updates every six hours. IRRIS also allows tracking of Arms, Ammunition and Explosives (AA&E) vehicle movements via GPS and rail via Radio Frequency ID (RFID) tags every 15 minutes. There are currently 180 geospatial data layers accessible within IRRIS, including select HSIP Gold data.

DISDI Portal

The DISDI Portal is a capability first available in 2006 through a partnership arrangement between DISDI and the USACE CorpsMap Project. The DISDI Portal is designed to support DoD through: (1) visualization of defense installations worldwide, (2) discovery of available installation geospatial data via a metadata search and query capability, and

(3) streamlined access to Service-specific installation data holdings, such as those of GeoBase, GeoReadiness, GEOFidelis, and GISR. The DISDI Portal is available to all .mil domain users via the NIPRNET and requires CAC/PKI authentication for access. The DISDI Portal will also re-host Web services for use by other DoD geospatial applications, such as Palanterra and HD-MAP. DISDI Portal is hosted by the USACE as part of their CorpsMap capability. The DISDI Portal will also be the platform by which DoD will publish non-sensitive DoD installation geospatial metadata to the NSDI Clearinghouse.

USACE CorpsMap

CorpsMap is the Corps of Engineers' national-level, Web-based GIS designed to provide a single geospatial interface for all nation-level databases, thus allowing any Federal agency to incorporate Corps data easily. The public CorpsMap site is accessible via the Internet and serves as the Corps' interface with the NSDI Clearinghouse. The NIPRNET version of CorpsMap will host more sensitive USACE data for Corps' use as well as other military customers.

The CorpsMap geospatial database contains more than 200 nationwide map themes from simple, useful datasets, such as the location of all USACE district and division offices, to large datasets, such as Inland Electronic Navigation Charts (IENC). Other available datasets include the complete National Inventory of Dams (NID), USACE flood control projects, Formerly Used Defense Sites (FUDS) database, and the USACE Port Facilities and Infrastructure Database. Base map data within CorpsMap include complete road networks for the U.S., flood plains data from FEMA, and a complete set of nationwide aerial photos. As with each of these Web-based tools, anyone operating in the proper domain with a Web browser, GIS software, or database application can access and use these tools with confidence that originator-hosted data will be consistent, complete, and current.