## HERE Smart Client Conceptual Design



**Data Providers**
- NE DEQ
- IA DNR
- KS DHE
- MO DNR
- NE HHS
- EPA CDX

**Data Retrieval Tool**
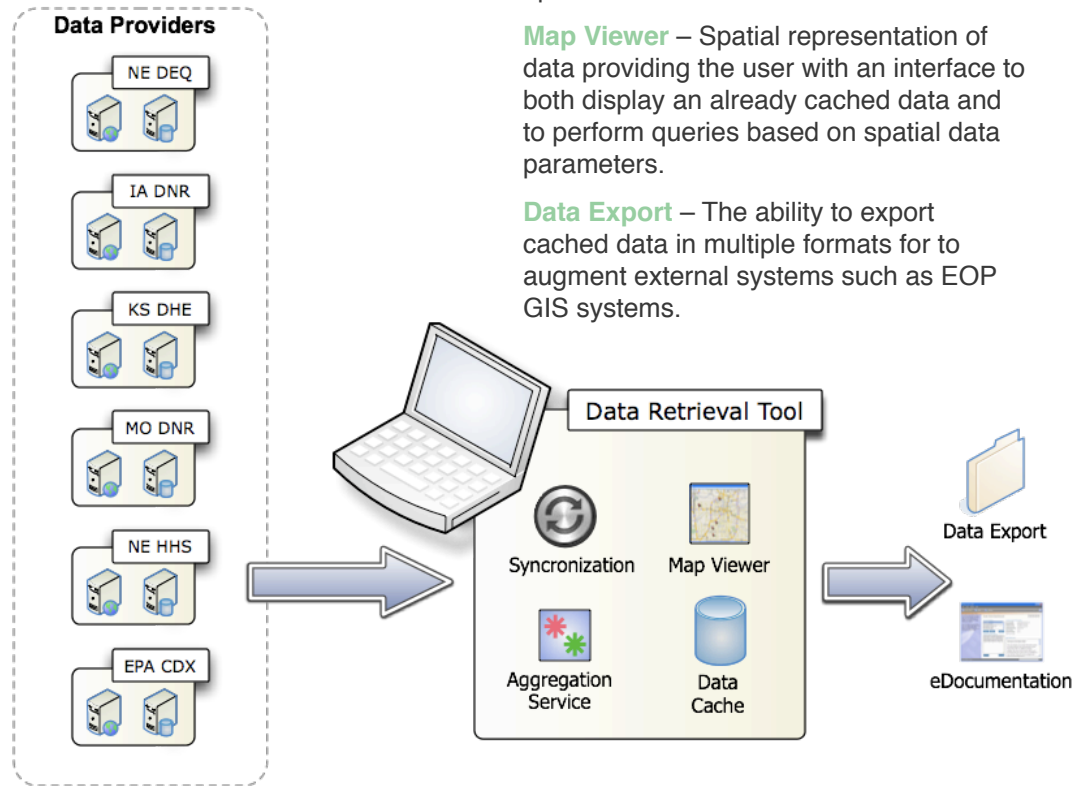- Syncronization
- Map Viewer
- Aggregation Service
- Data Cache
- Data Export
- eDocumentation

**Synchronization Engine** – Responsible for keeping up-to-date the locally cached data. This process is performed through reconciliation and incremental data update.

**Map Viewer** – Spatial representation of data providing the user with an interface to both display an already cached data and to perform queries based on spatial data parameters.

**Data Export** – The ability to export cached data in multiple formats for to augment external systems such as EOP GIS systems.

**Aggregation Service** – Combines data results from multiple sources into a single merged data view, which subsequently is used for queries, spatial views, maps, reports and documents.

**Offline Data Cache** – A locally cached replica of aggregated data to support off-line use.

**eDocumentation** – Aggregated data presented to the user in a form of report augmented with other available contextual information.

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# Heartland Emergency Response Exchange

In 1993, the Missouri River was in danger of flooding industrial sites on both sides of Kansas City. Emergency responders on both sides were aware of environmental concerns in their respective states. However, they were not aware of the facilities across the river, and consequently what environmental dangers these sites might represent.

Soon, thanks to joint cooperation at the state level from Iowa, Kansas, Missouri and Nebraska the HERE project will allow emergency responders from these states to have the necessary information to support their decisions during such environmental events.

## Fact Sheet
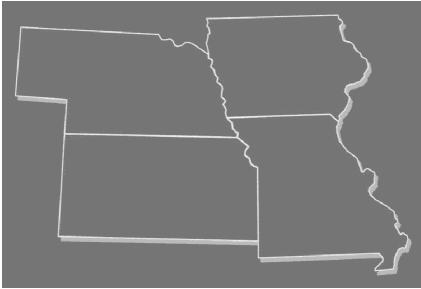
# Heartland Emergency Response Exchange

The results of this project will include a fully functional system for Emergency Operations Personnel (EOP) to access environmental data that originates from multiple organizations in a seamless, robust and intuitive manner.

The specific types of data served by each provider will be based on an assessment of availability, quality and completeness. Once balanced with the EOP access needs, these data elements will be implemented through a set of Web Services allowing the HERE client to provide a coherent view of this data to assist in response to emergency.

## The Purpose

The purpose of this project is to develop an Internet-based process among the four states in EPA Region VII to provide available environmental, health, and natural resource information to state agencies involved in homeland security/emergency response planning and implementation utilizing the Exchange Network's infrastructure. The project will implement exchanges of facility data as well as other environmental information among multiple partners, including integrating and sharing the data from five agencies in Iowa, Kansas, Missouri, and Nebraska. The resulting data will be used to enhance decision-making and risk assessment for Homeland Security and/or Emergency Response situations occurring within or across state boundaries. The primary users of the Internet-based process will be state emergency planning agencies and EPA. Secondary users of the exchanges may be other state agencies, other federal agencies, local emergency planners, and others involved in homeland security/emergency response planning. Once completed, this solution could easily be expanded to include other state partners and potentially serve as a national model.

## The Challenge

Effective homeland security and emergency management demands a combination of proactive preparation and reactive response. Much of this data is owned and managed by environmental agencies, and yet should be highly accessible by emergency responders, within State Emergency Operations Centers (EOC) and local authorities. Historically, EOPs have only had limited access to this data which has hindered their ability to prepare for and respond to emergency situations. These limitations include:

- ▶ Missing data
- ▶ Unreliable data
- ▶ Disintegrated data systems
- ▶ Jurisdictional data isolation
- ▶ Communication infrastructure fallibility

These issues limit the EOP's abilities; however all of these constraints can be addressed using an already available technology.

## The Solution

The advent of the Exchange Network (EN) has provided the necessary tools needed to support a robust and efficient exchange of data between environmental agencies and their partners. Many of the previously outlined challenges can now be addressed by the EN's ability to securely and reliably exchange data. Combined with a powerful data retrieval tool, the HERE project will incorporate a full life-cycle Internet-based data inquiry application based on the selected data flows at each agency with an intuitive, yet powerful data retrieval tool custom-developed to support the needs of the EOPs and many others.