

*GeoNetwork*  
&  
*Maps-On-Demand*

Suha Ülgen  
Technical Coordinator  
Field Information Support Unit  
Office for the Coordination of Humanitarian Affairs (OCHA)

GeoNetwork Workshop  
April 2006, Rome

# Outline

- *Maps-On-Demand and* geospatial information management and exchange
- OCHA's *GeoNetwork* deployment
- Emerging opportunities

# OCHA's Maps-On-Demand "Big Idea"

## Phase I: Geospatial Data and Map Repository

- Shared repository of maps and geospatial data catalogued for easy search, retrieval, update & distribution
- OCHA Field Offices, FIS, ReliefWeb, HICs, IRIN

## Phase II: Map-making Tool

- Easy online map creation with wizards
- CRD desk officers, The CAP units, APIS

## Phase III: Geospatial Services

- A variety of geospatial services (dynamic mapping, workspace hosting, geocoding, etc.) for communities of practice
- Humanitarian partners coordinated through GIST and UNGIWG

# Standardization Efforts

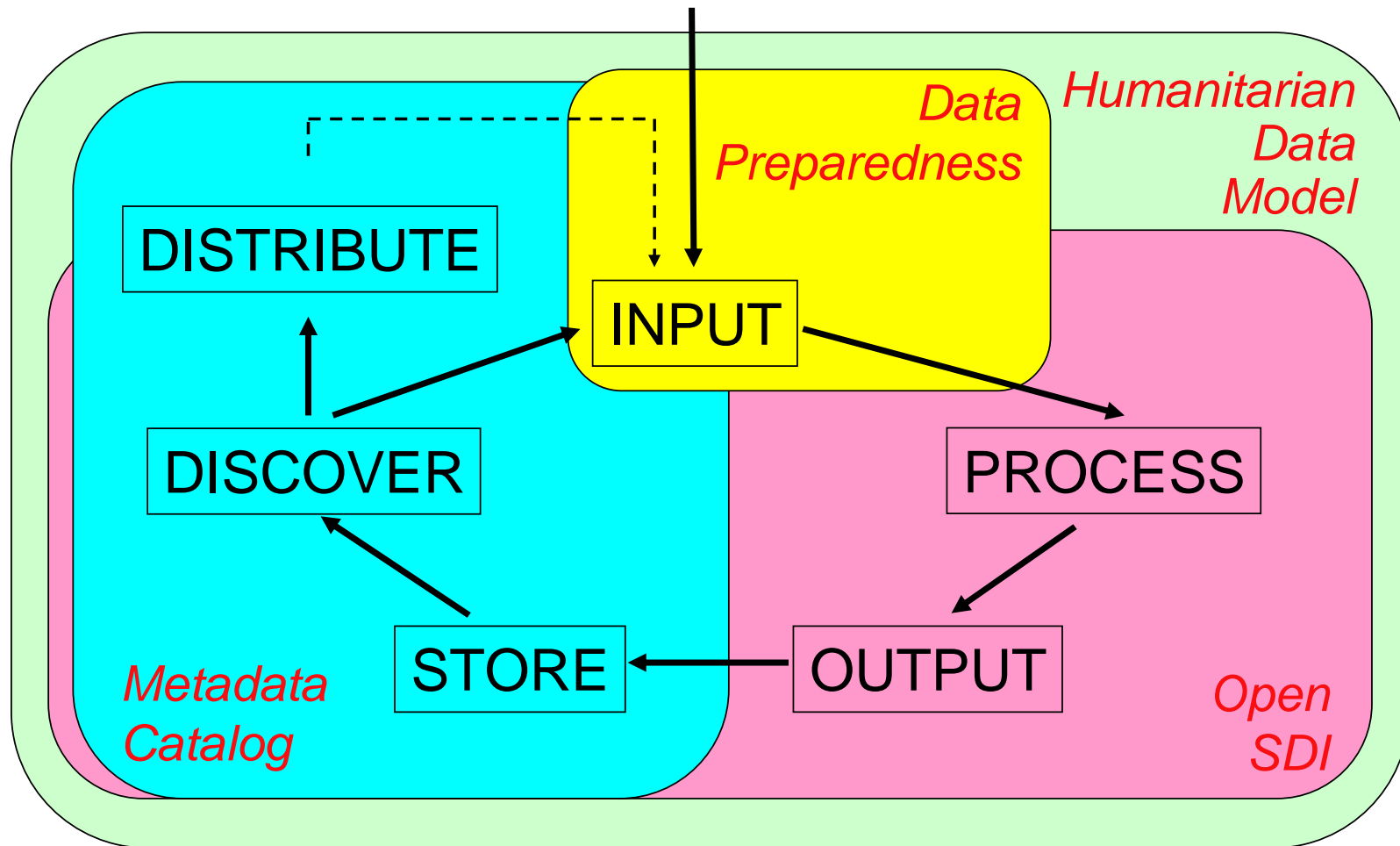
Element

Documentation

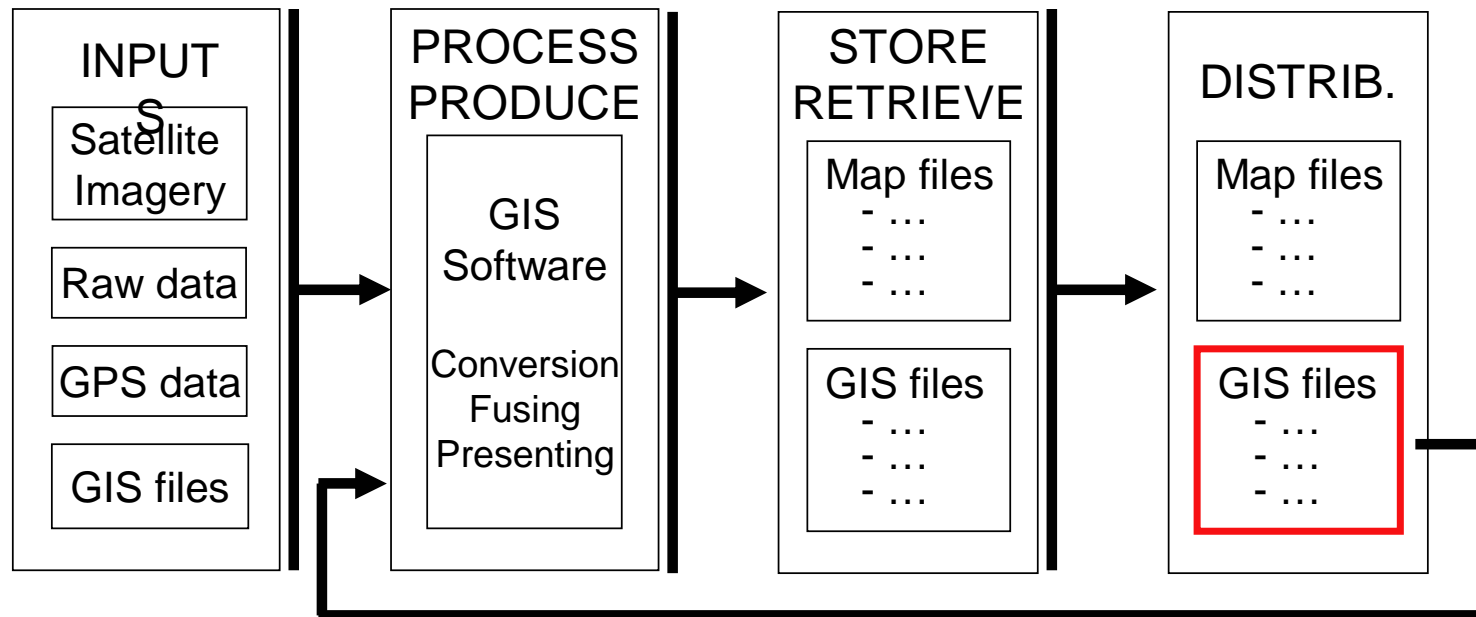
Standard

-	<ul style="list-style-type: none"> <li>Data value</li> </ul>		
SU04072303103	<p><i>Data dictionary</i></p>		
-	<ul style="list-style-type: none"> <li>Field (column)</li> </ul>		
P-Code	<p>Name, description, type, length, null, character set, accepted values (codes), default value</p>		
-	<ul style="list-style-type: none"> <li>Record</li> </ul>		
Village	<p>Layout (order of the fields), delimiter, end of record, length, etc.</p>		
		<b>HIN-wide</b>	
Settlements	<ul style="list-style-type: none"> <li>File (table)</li> </ul> <p>Structure Encoding (ASCII, binary)</p>		
	<p><i>Metadata</i></p>		
Gazetteer	<ul style="list-style-type: none"> <li>Database</li> </ul> <p>Schema</p>		
	<p><i>Data model</i></p>	<i>Humanitarian Data Model</i>	

# Geospatial Information Management Value Chain



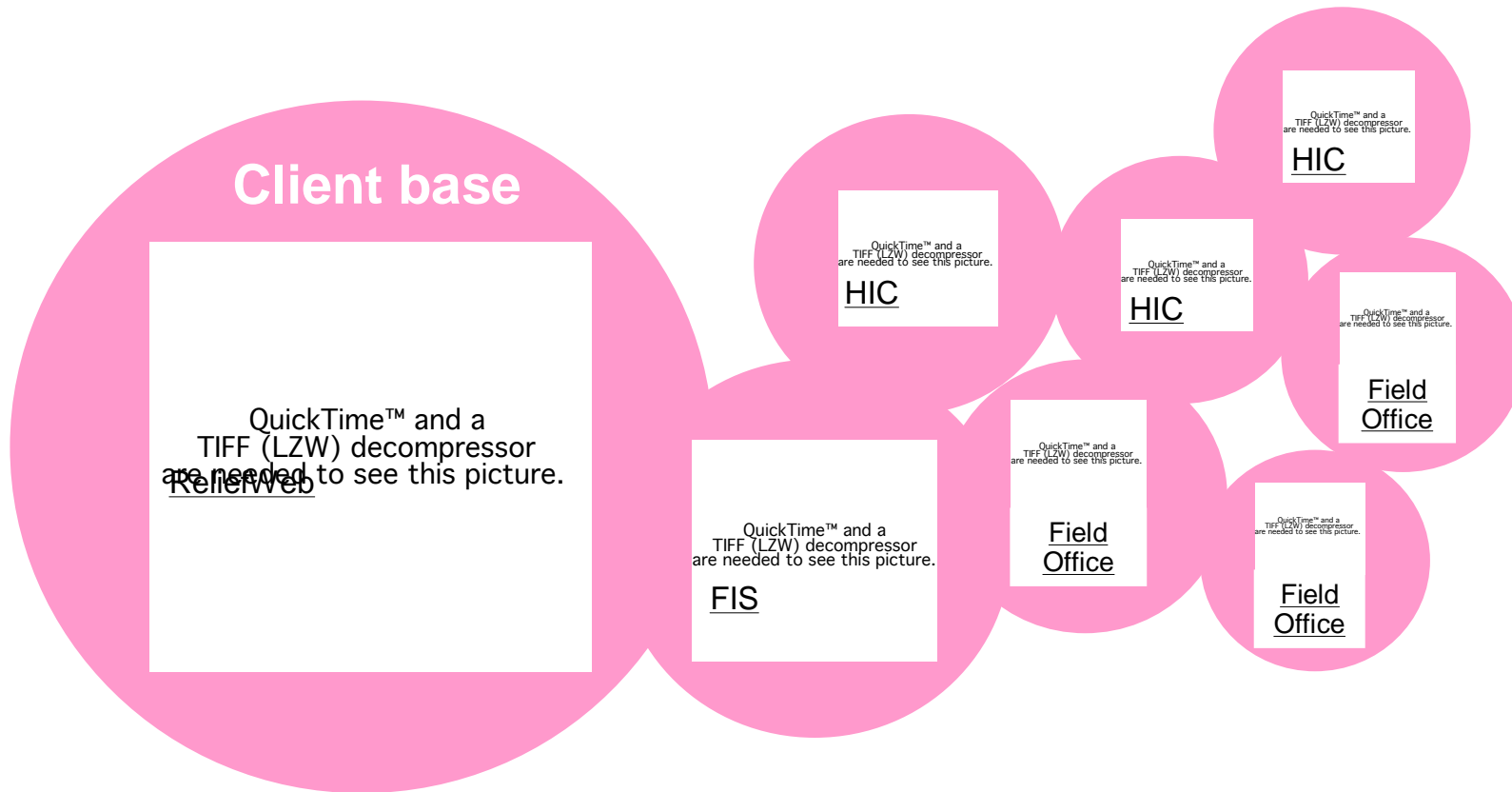
# Elements of Current GIM Practice



The GIS professional ensures the integrity of the value chain:

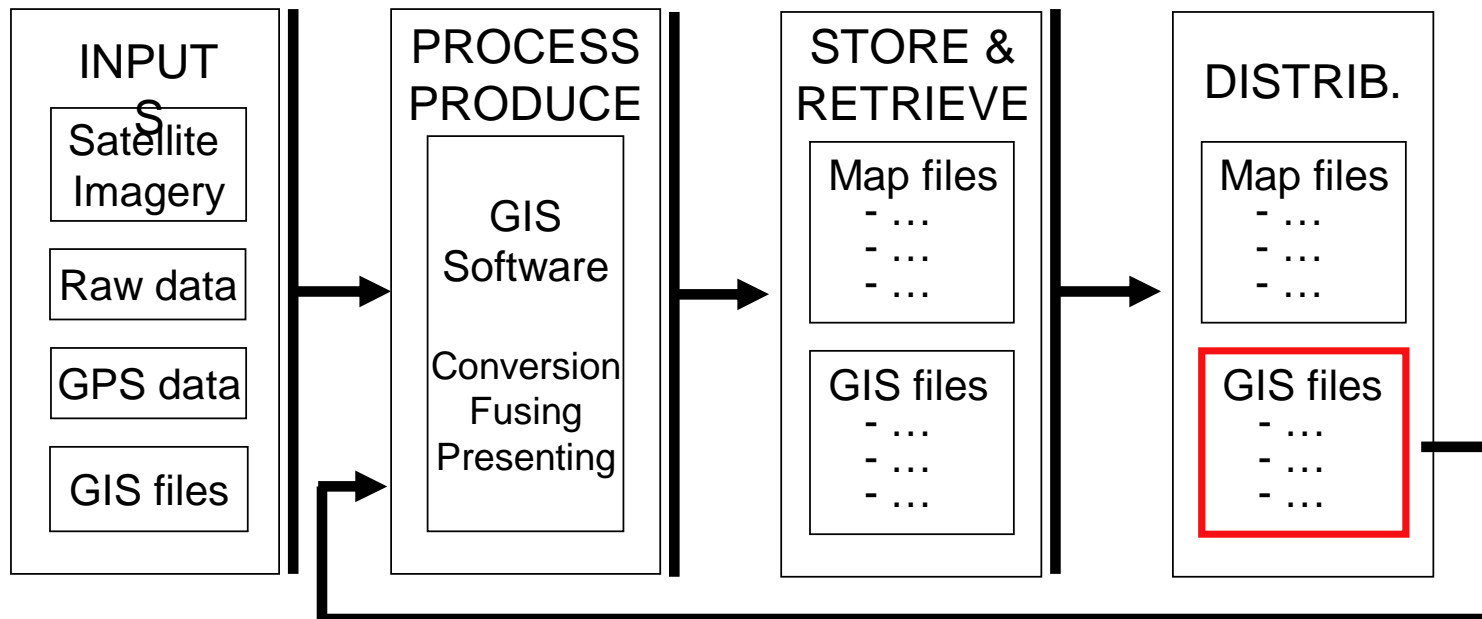
- Data completeness, currency, processing rigor, cartographic presentation
- Software and hardware functionality and performance
- Storage and retrieval of files in the workstation directory structure
- Access to and distribution of geospatial information assets

# Multiple GIM Entities

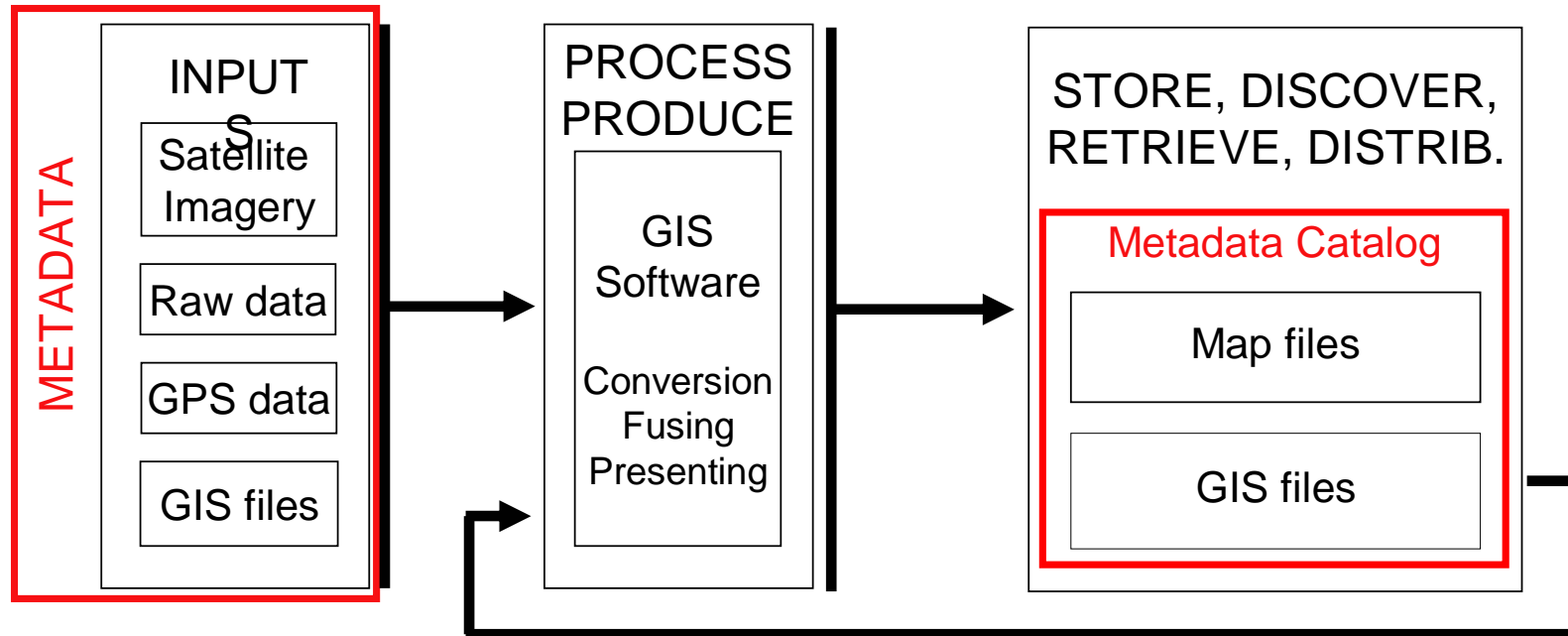


- High software, hardware, data maintenance & staffing costs
- Limited supply and surge capacity

# Elements of Current GIM Practice



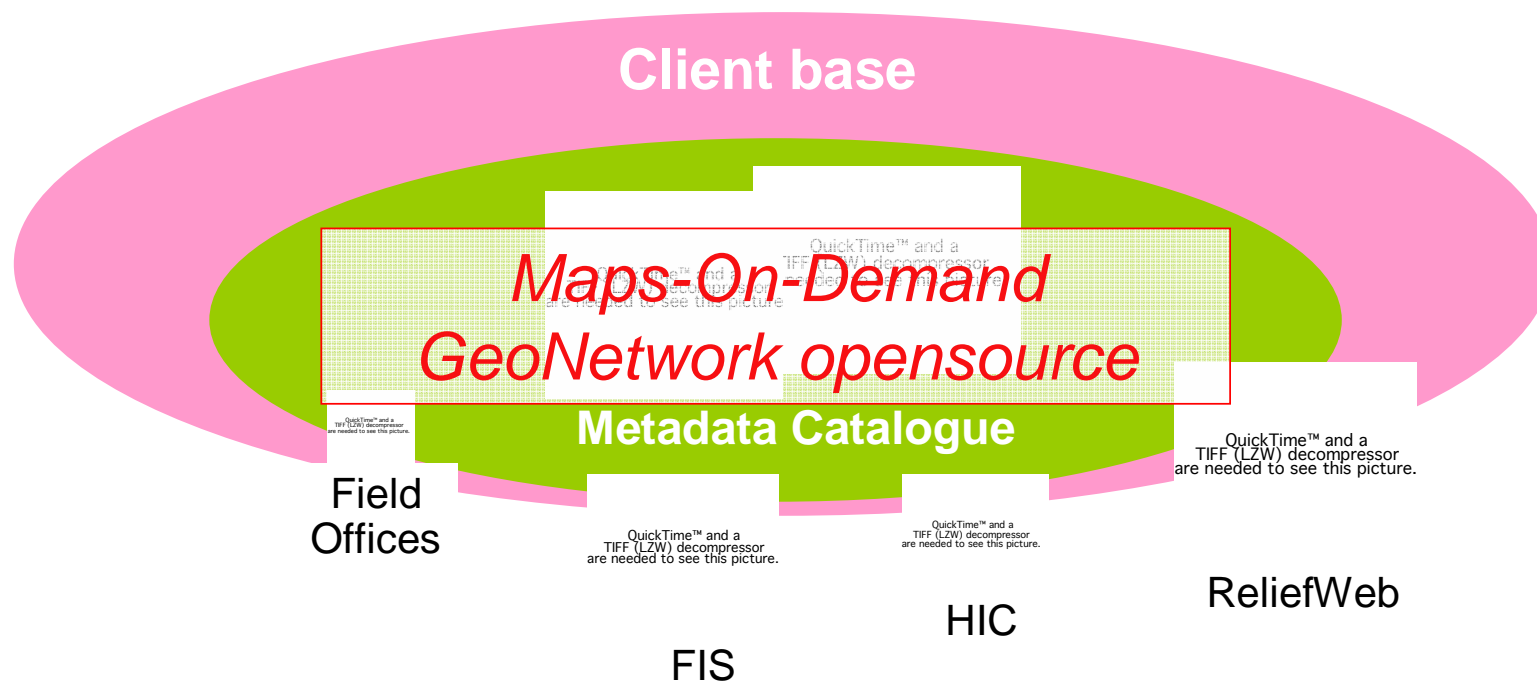
# Maps-On-Demand Phase I



## The *Maps-On-Demand* Metadata Catalog:

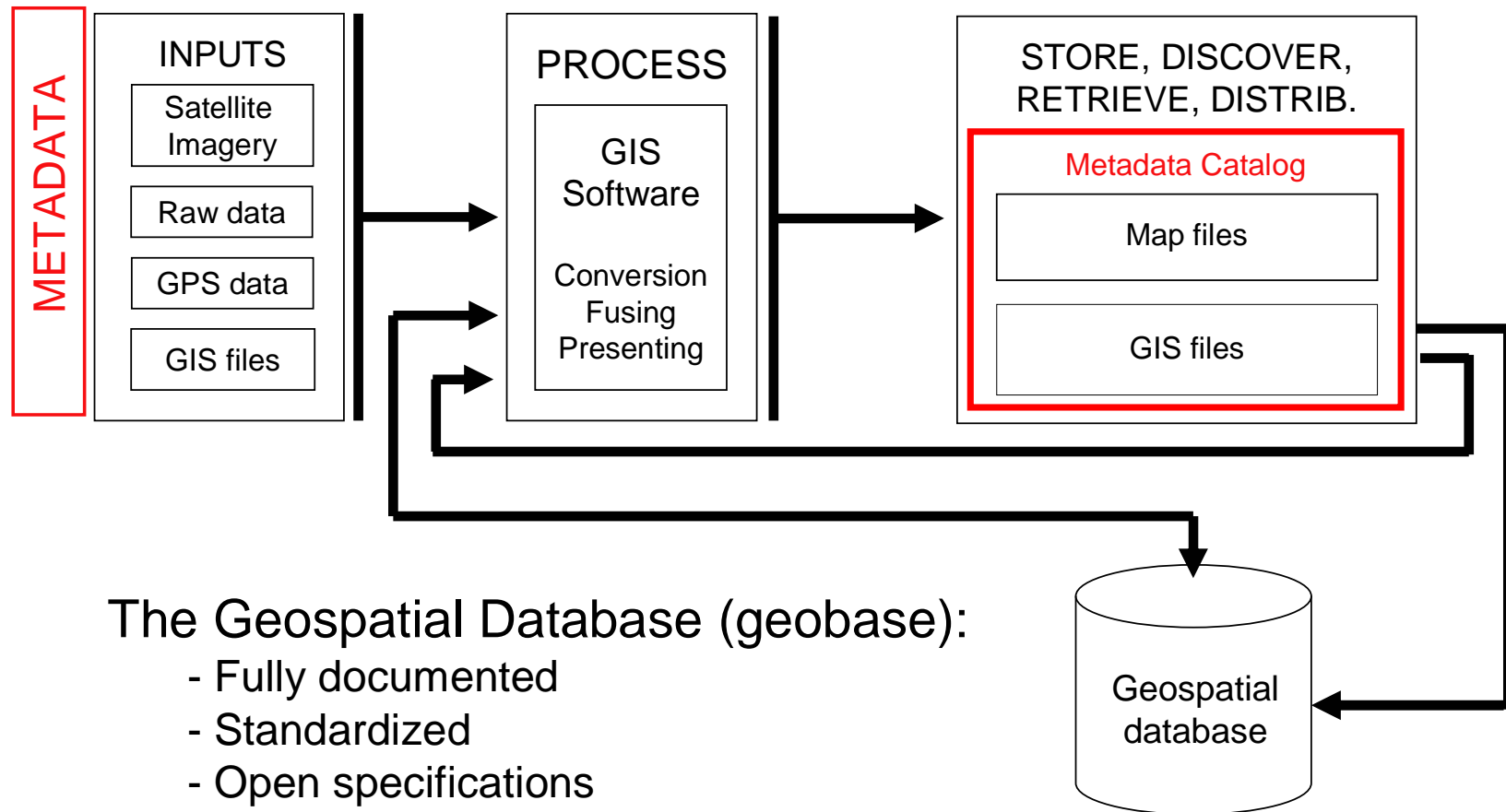
- Standardizes metadata creation process
- Eases data storage, discovery, access and distribution
- Builds momentum for information sharing
- Facilitates the development of a community of practices

# Networked GIM Nodes



- Consolidated hardware, software and geospatial data assets (maps and GIS files) for lower production and maintenance costs
- Easy discovery and retrieval of geospatial information through a robust search engine and a delivery mechanism to better service the GIS professional and the client base

# Phase II of *Maps-On-Demand*



The Geospatial Database (geobase):

- Fully documented
- Standardized
- Open specifications
- OGC compliant

# OCHA's GeoNetwork Deployment

United Nations Office for the Coordination of Humanitarian Affairs - Presence

- Regional offices which collate and disseminate geospatial data and maps produced internally and by partners
- HICs and Field Offices that produce maps and geospatial data
- HQ where HQ geospatial data assets (FIS, ReliefWeb, etc.) and all metadata records are consolidated



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Created by UN OCHA/ReliefWeb, December 2005

# Data Preparedness

- Maps-On-Demand GeoNetwork is an important tool in OCHA's Data Preparedness efforts
  - Assist the discovery of existing resources
  - Document our own geospatial data holdings in a systematic way
  - Improve the quality of our geospatial products and services
  - Facilitate the sharing of information between the field and the HQ
  - Help the building of seamless base map layers globally
  - Assist the development of a community of practice by providing value added services (storing, cataloging and sharing)

# Humanitarian Response Review

- Cluster Approach to Humanitarian Response
- Critical importance of information management (IM) and exchange
- OCHA to convene the June IASC workshop to discuss IM within the cluster framework
- Significant opportunity to highlight ongoing collaborative IM projects (GIST, UNGIWG, GN)
- GeoNetwork is architected to meet the challenge facing the humanitarian IM community

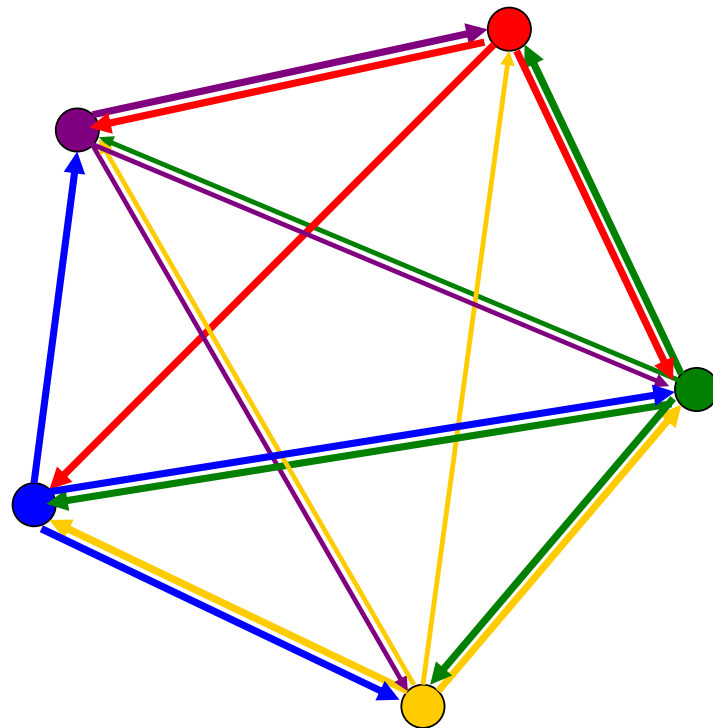
# Patterns of Information Exchange

- Bi-lateral (one-to-one)
  - Mostly unstructured and ad-hoc
- Gateway (many-to-one) [clearinghouse]
  - The clearinghouse model OCHA strives to approximate at HICs
- Information sharing (many-to-many)
  - The new pattern of information exchange enabled by Internet technologies

# Bi-lateral (One-to-One)

All parties **push** their own data with little standardization in terms of syntax, semantics or temporal regularity

This is the reality most HICs operate in especially at the initial stages of a disaster response episode

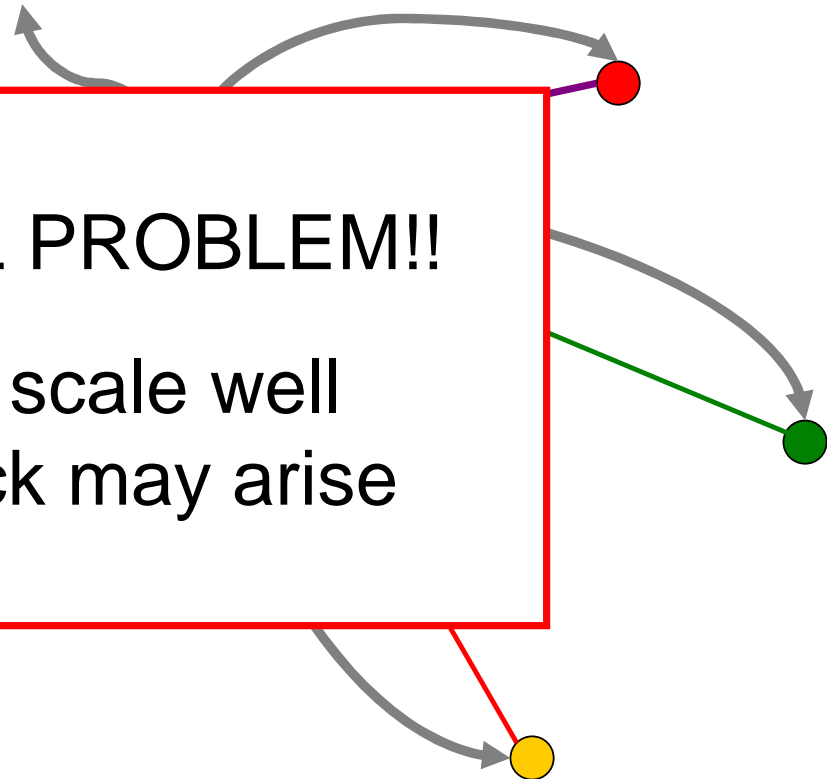


# Gateway (Many-to-One)

- Each partner **pushes** its own data when available
- The gateway fuses available data and provides cohesive information products
- The sooner created, the better the HIC:
  - **Many** are the humanitarian partners
  - **One** is the HIC

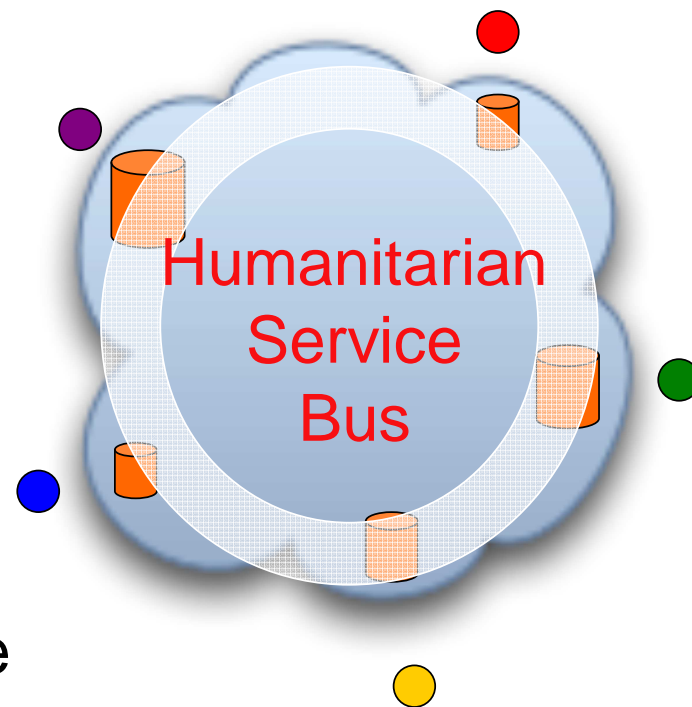
**POTENTIAL PROBLEM!!**

Does not scale well  
A bottleneck may arise



# Data Sharing (Many-to-Many)

- Each partner maintains its own data store fully documented (with standard metadata) with a registry accessible to all
- Any partner **pulls** data from as many data stores as necessary, if and when required to produce its value added service or product



# Implications for Information Systems Development

- **Data and functionality sharing** must be built into applications from the get go to support the *many-to-many* model of information exchange
- Service Oriented Architecture (SOA) is implemented for all IM applications (XML and Web services)
- Existing “stove-pipe” and stand-alone applications are “wrapped” to provide a SOA interface

# The Way Forward

## Development of

- Technical standards
- Content-oriented guides
- Freely available tools
  - Registries
  - References for technical standards and guides
  - Value added services (e.g. online mapping and visualization tools)

# UN-wide Work Already Underway

- GeoNetwork opensource
- SDMX (UN-adopted standard for statistical data exchange)

# GeoNetwork Steering Committee

OCHA reiterates its commitment to be an active participants of the GeoNetwork community in any capacity it can

**Thank You  
GeoNetwork Team!**