



THAILAND NSDI DEVELOPMENT PROGRAM: ThaiSDI

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Situation of GIS in Thailand

- Thailand: 314,000 sq.km. land surface
- More than 100 agencies working on GIS



...One Technology, Many Stakeholders





Situation of GIS in Thailand



- **Problems:**

- Many actors but **work isolately**
- **Duplication** on data production
- Cooperation and collaboration are **limited**
- **Poor sharing** of data / facilities / resources
- Big amount of **budget** but **scattered** and **unretrievable data**
- Data **standards?**
- Lack of expert / trained personnel
- **Unclear policy:** national policy? agency policy? Data policy?
- ...





National Spatial Data Infrastructure: NSDI

NSDI Elements

Institutional Framework

Technical Standards

Fundamental Datasets

Access Network/Clearinghouse

...To solve problems: introducing of NSDI





Thailand NSDI Development & Implementation Since 2002

Actors:

- National Commission on GIS
- Stakeholders
- End users

GIS Master Plan

- Vision
- Strategic Plan
- Identification of Key Actors / Stakeholders



Feasibility Study

- Functional requirements
- High-Level Architecture
- Implementation & Investment Plan



NSDI

Implementation

- Develop Best Practices
- Implement Standards and Policies
- Build Geospatial Portal
- Develop Data Maintenance Roadmaps

GISTDA-CU: 2002-4

GISTDA-ESRI-USTDA: 2003-4

National Commission: 2004...





NSDI : expectations

- **Elimination of redundant GIS data collection and management within Thailand**
- **Interoperability and data sharing through the establishment of data content and metadata standards**
- **Better decision-making through spatial analysis**
- **Reducing costs/budgets**





Organization of National GIS Commission

Cabinet

National GIS Commission

GIS Coordinator (GISTDA)

Members:

- **Deputy Prime Minister**
- **Minister of ICT**
- **Minister of ST**
- **CEOs of relevant agencies,**
- **experts, and representatives from academic institutes**

Subcommittees:

- **Mapping and Data Content Standard**
- **Usage of 1:50,000 Series L7018**
- **Usage of 1:25,000 MOAC Orthophotos**
- **GPS Monument Usage**
- **Administrative Boundary Standard**

Working Groups for Each Subcommittee

to establish and direct GIS national policies and to promote coordination/cooperation amongst stakeholders

Since 2003



NSDI Roadmap

Activities	2006	2007	2008	2009
	Immediate	Medium	Term	Long Term
● Standards				
> Develop/Publish	Metadata	Schema Profiles/Classifications/Data Quality		Certification Personnel
● Base Map				
> Aerial Photographs	1:4k Urban/City			
> [Redacted]	1:10k Rural			
> Ortho	Sharing Base map			
> Survey		Survey/Geodetic Control		
> Ortho+Update		Building/Update Orthophoto / Publishing		
> Vector Map			Building Vector Map / Base map	
● FGDS				
> Sharing Base map – FGDS custodians			Stakeholder, FGDS custodians. FGDS/Service/Update	
● GIS Portal/Clearinghouse				
> Metadata/GIS Portal/Clearinghouse			Metadata/Web services/Network	
● Training/Education				
> Education			Geo-Informatics Course	
> Training	Training	Training	Training	Training
● Policy / Legal /Copy right				





GIS Standards

- ISO/TC211 P-member (by TISI since 1993; TC904)
- Adopted ISO19115-2003 as National Metadata
- Some regulation / legislation existed (mandate standards)
- Subcommittees on GIS standards under National GIS Commission





Fundamental Geographic Data Set: FGDS

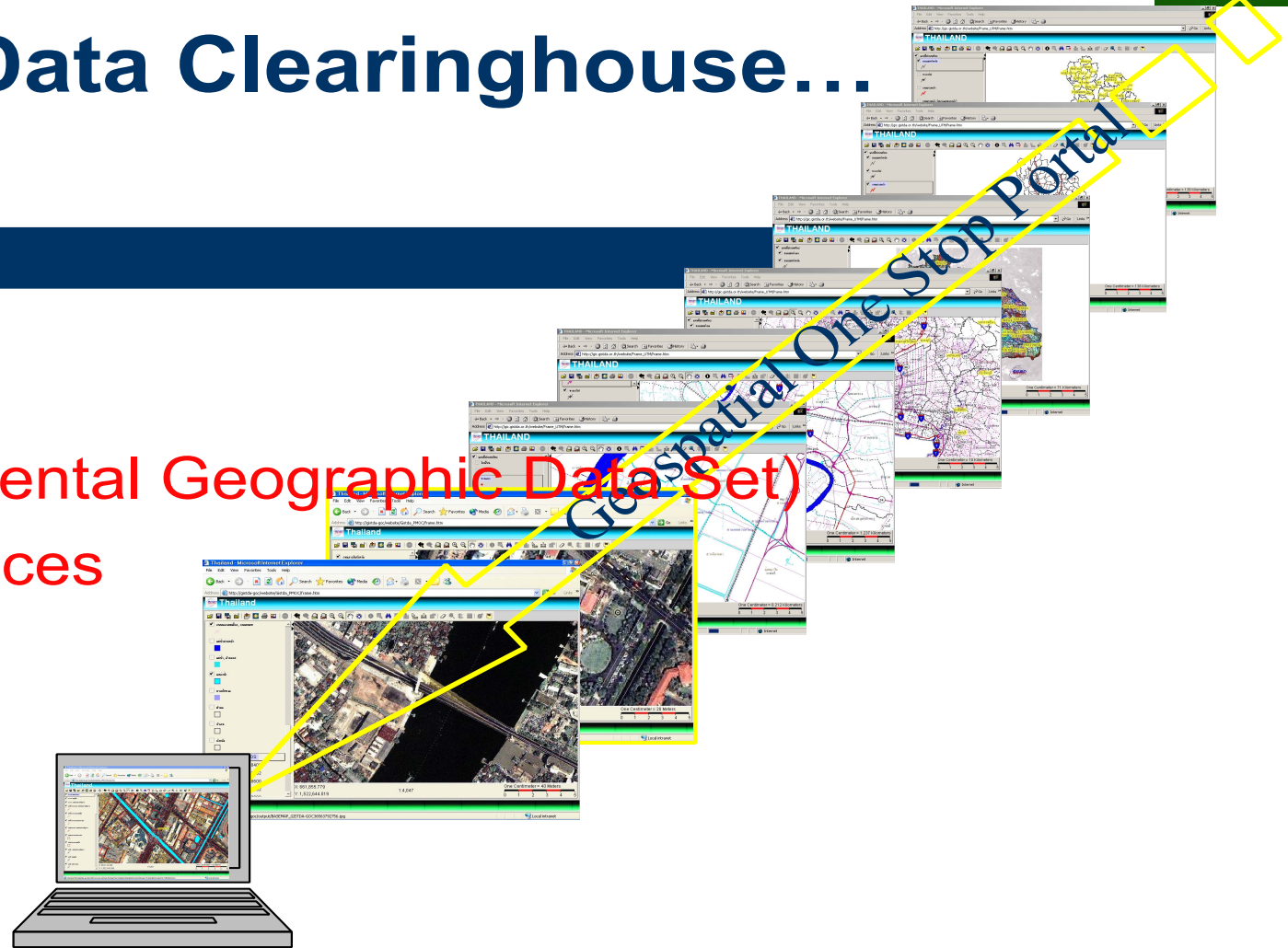
FGDS	Custodians (proposed)
1. Administrative Boundary	DOPA
2. Transportation	Min. Transport / DOH
3. Hydrology	DWR / RID
4. Urban	DPT
5. Forest boundaries	MNRE / DNP
6. Land use	LDD
7. Aerial Photographs	RTSD
8. Remote Sensing	GISTDA
9. Geodetic Control	RTSD
10. DEM	RTSD
11. Topographic Map	RTSD
12. Land Parcel	DOL





Geospatial Data Clearinghouse...

- Metadata
- FGDS (Fundamental Geographic Data Set)
- Online GIS services

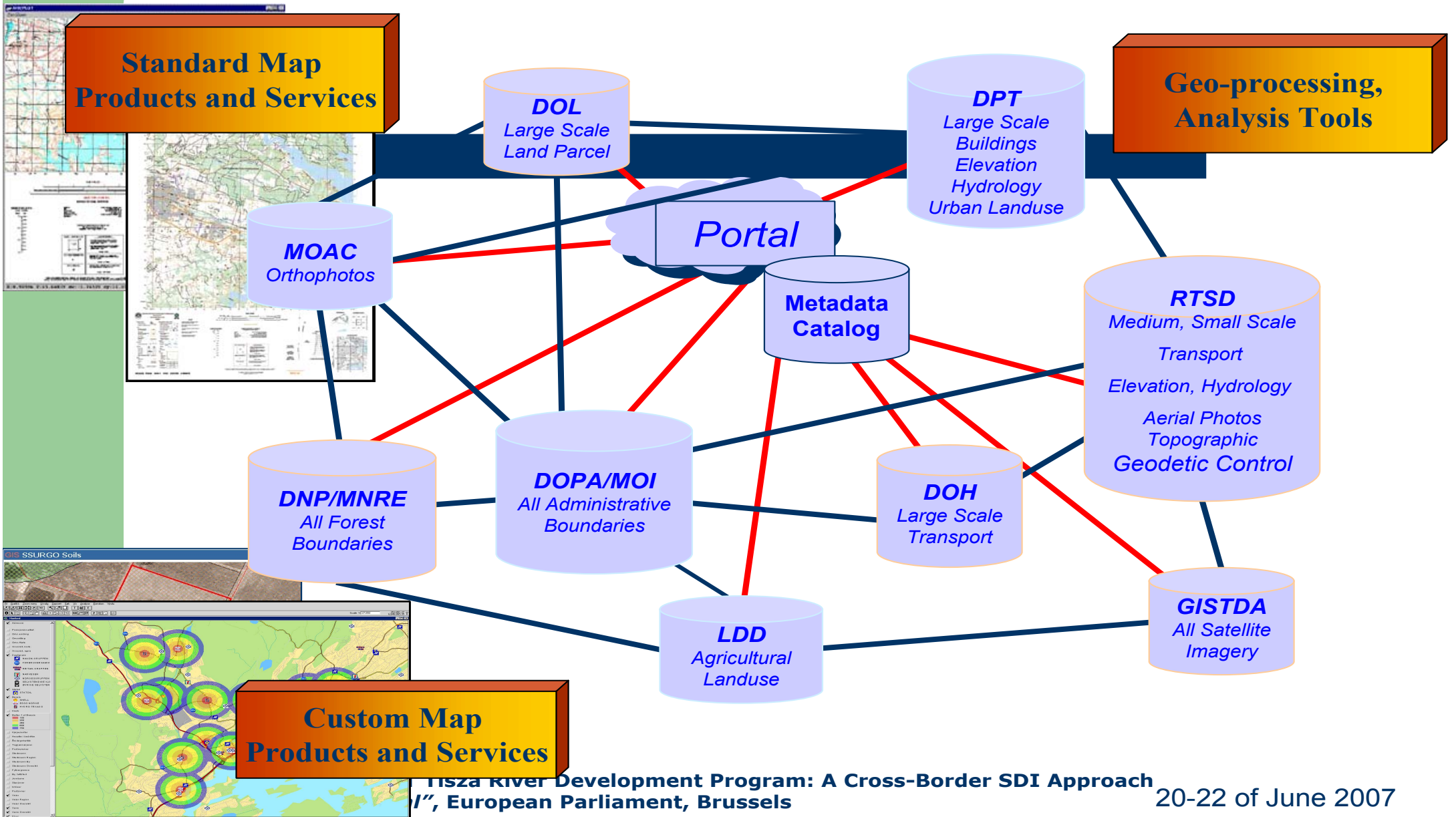




Thailand Geospatial Data Clearinghouse



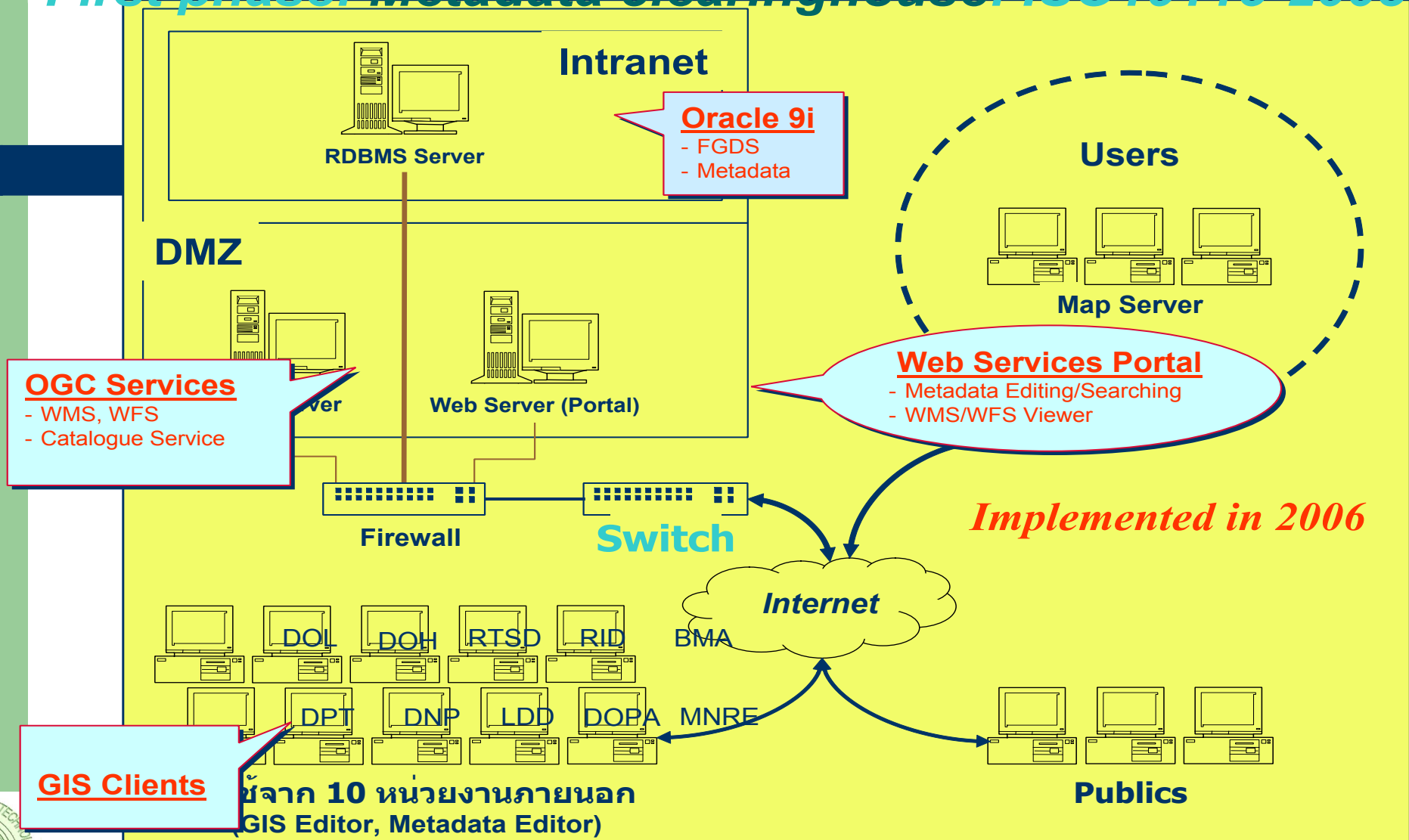
Architecture: ThaiSDI





ThaiSDI Clearinghouse

First phase: Metadata clearinghouse: ISO19115-2003





ThaiSDI Implementation: 1st Phase

www.thaisdi.gistda.or.th





Metadata Editor of ThaiSDI

Input Metadata

Search Metadata by keyword

Search Metadata by Map

Result/Display Metadata

Administrative Boundary

Metadata

- Identification Information
- Data Quality Information
- Spatial Representation Information
- Reference System Information
- Contents Information
- Distribution Information
- Metadata Entity Set Information

Identification Information

Citation:
 Title: Administrative Boundary
 Date:
 Creation Date: 1997-30-030
 Revision Date: 1997-30-030
 Presentation Form: 005

Abstract:
 ข้อมูลขอบเขตการปกครอง นำเข้าในมาตราส่วน 1:50,000 โดยอ้างอิงจากข้อมูลแผนที่ภูมิประเทศ ของกรมแผนที่ทหาร ชุด L7017 และแก้ไขด้วยข้อมูลดาวเทียม Landsat ใช้ระบบพิกัด UTM โซน 47 Indian 1975 datum เพื่อใช้เป็นข้อมูลแผนที่มาตราส่วน 1:50,000

Purpose:
 1. เพื่อจัดทำเป็นฐานข้อมูลแผนที่ 1:50,000 2. เพื่อใช้เป็นแผนที่ข้อมูลดาวเทียมเพิ่มเติม 3. เพื่อให้บริการแก่หน่วยงานใน สทอภ. และหน่วยงานภายนอกตามที่ได้รับคำร้องขอ

Credit:
 กรมแผนที่ทหาร

Status:
 001

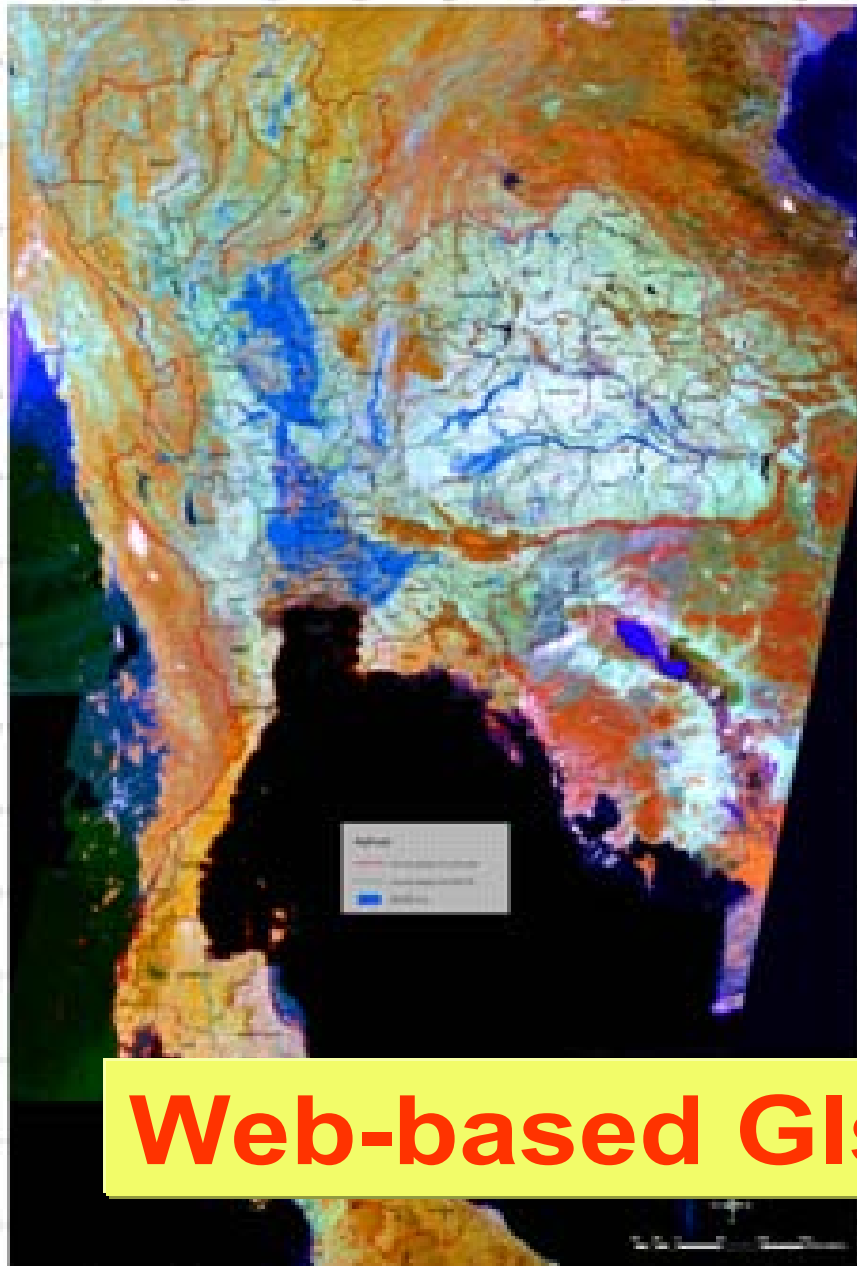
Point Of Contact:



2006 Floods



Geo-Information and Space Technology Development Agency
(Public Organization)



Satellite data based flooded area for the whole country

Data from **RADARSAT**,
LANDSAT, **SPOT** and
ALOS

*More than 400 images acquired
and distributed to at least 30
related agencies*

Web-based GIS service: example

2006 Floods

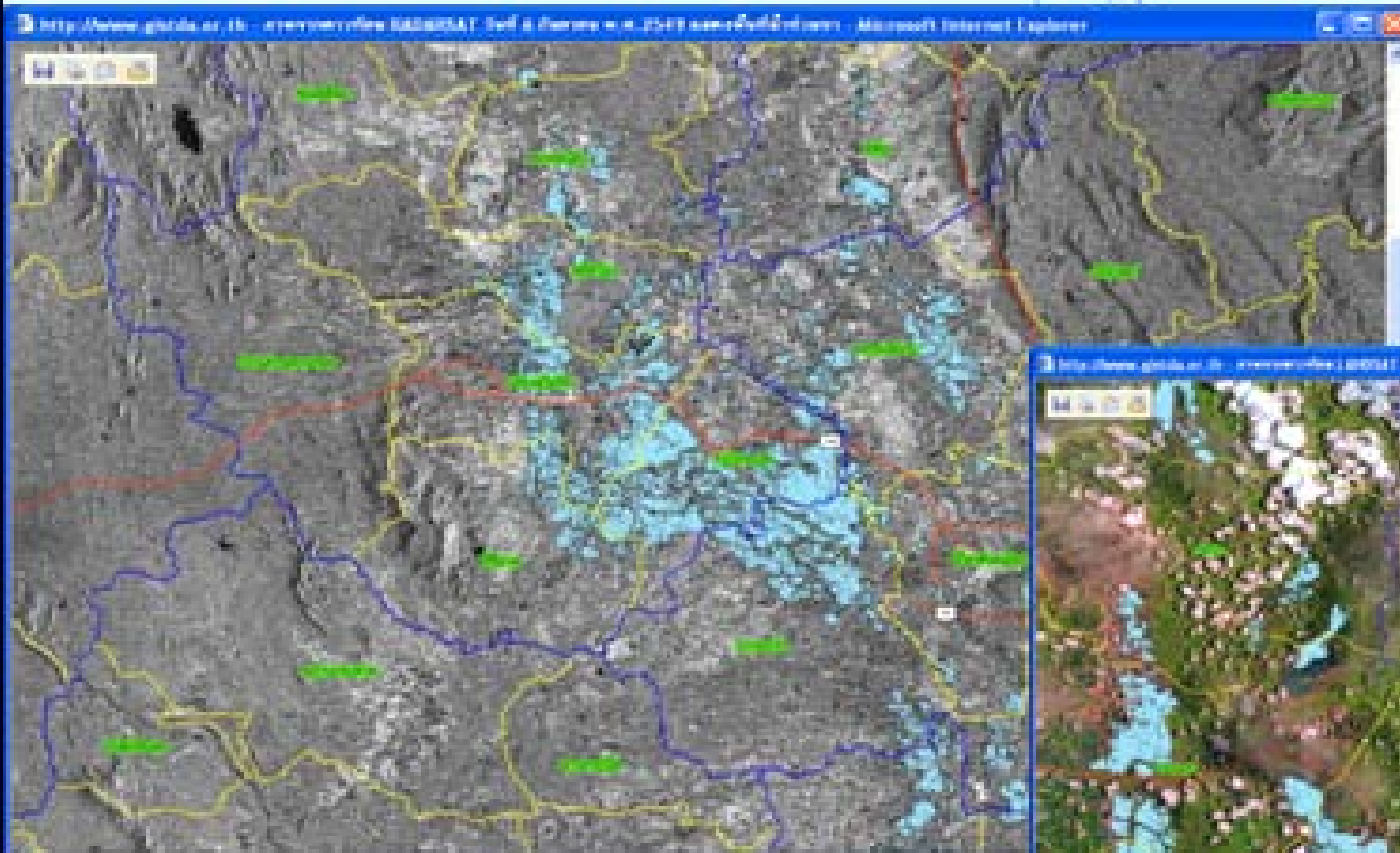
- Public awareness via GISTDA web page:
 - Disasters situation: view from satellite
 - Web map server



2006 Floods



Geomatics and Space Technology Development Agency
(Public Organization)



Rapid Flood Assessments

2006 Floods



Geo-Informatics and Space Technology Development Agency
(Public Organization)

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ข่าวประชาสัมพันธ์

ข่าวกิจกรรม

GISTDA MAP SERVER

ภาพดาวเทียมล่าสุด

Web map server



Inundated Area via Web map server

Address: <http://202.44.219.204/flood/>

Google Search 15 Blocked Check AutoLink Account Options

สำนักงานพัฒนาเทคโนโลยีอวกาศและภูมิสารสนเทศ (องค์การมหาชน)
 Ministry of Natural Resources and Environmental Conservation

แผนที่แผนที่
ประสบอุทกภัย น้ำท่วม

Projections: WGS 84 / Geographic Format: png 24bit

Copyright: GISTDA 2006

Village
 Province Boundary
 Amphoe Boundary
 Tambon Boundary
 20 August 2006
 21 August 2006
 27 August 2006
 14 August 2006
 12 August 2006

Mode = Pan
Map Position X=99.87 Y=16.94



Conclusion

- Initiative of NSDI of Thailand since 2003
- ThaiSDI; GIS clearinghouse in 2006
- Standards : ISO/TC211 and OGC
- Still long way to go





Expectation from IHLET Tiza

- Sharing experiences in development of SDI
 - Solution for NSDI (best practice)
- Guidance on extension from national to regional level
 - SDI for Mekhong river basin (concerns 5 nations)



Thank You for Your Attention



www.gistda.or.th

07.04.2007