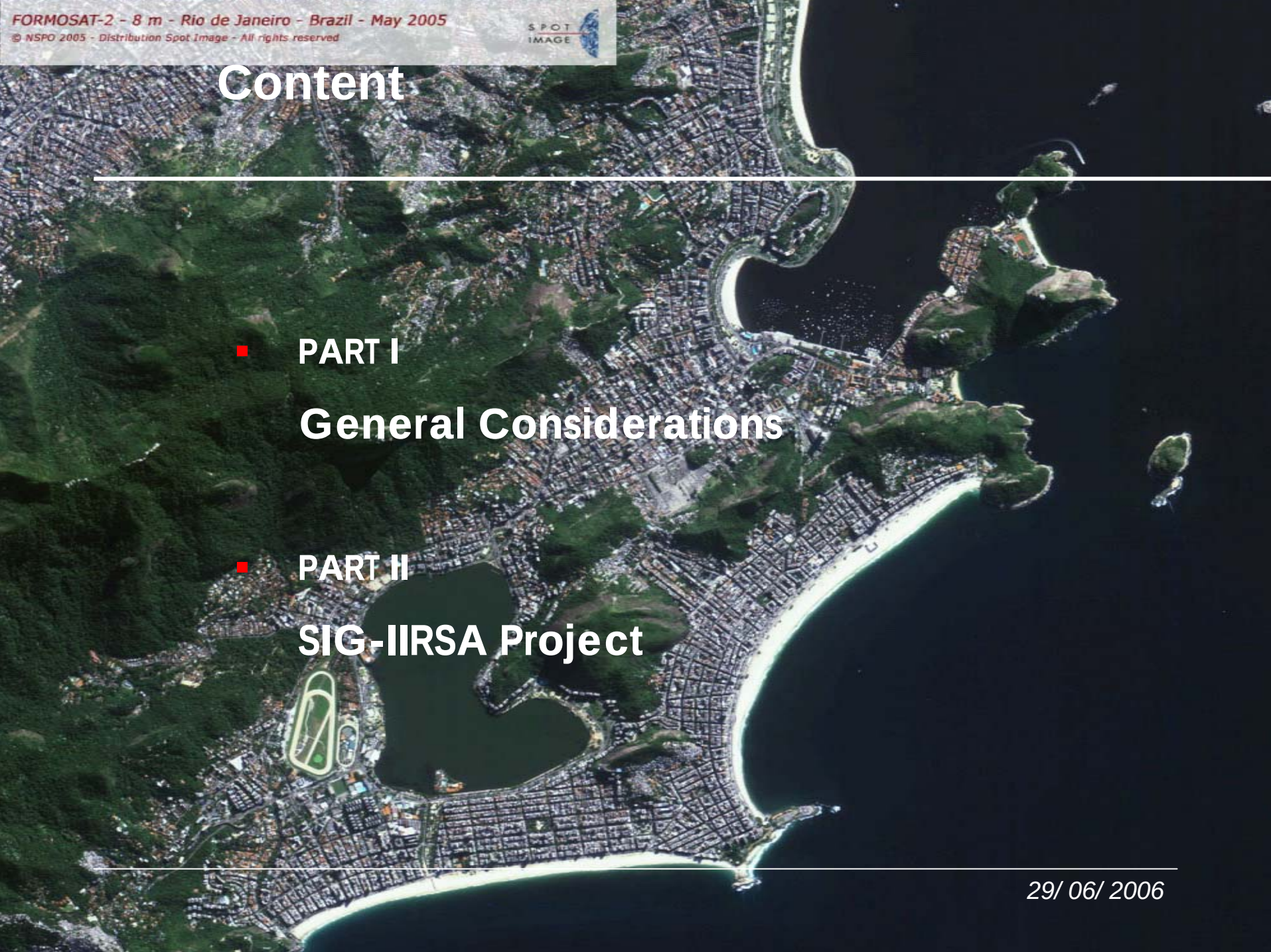
Proposal for a Geographic Information System SIG-IIRSA

June 29, 2006



Content

- PART I

  General Considerations

- PART II

  SIG-IIRSA Project

Part I General Considerations

The Incas' Empire

Territory – view of knowledge

Part I General Considerations

The Geographic Information Systems (SIG)

are “a powerful set of tools to collect, store, recover at will, transform and deploy special data on the real world for specific purposes” (Borrough, 1986)

and involve:

Human resources

Technological resources

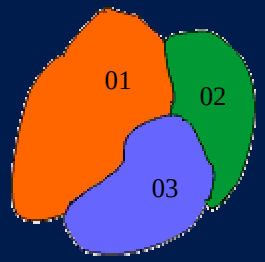
Organization

Part I General Considerations

Descriptive data

Name	Address	City	Street	Zip
xxx	cll	01	45	17
xyy	cr	02	45	18
yyyyy	dg	03	75	19

Spatial data



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Part I General Considerations

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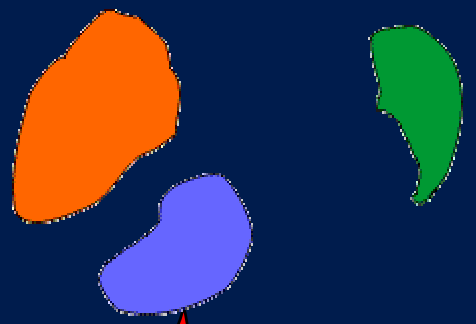

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Part I General Considerations

Descriptive data

Name	Address	City	Street	Zip
xxx	cll	01	45	17
xyy	cr	02	45	18
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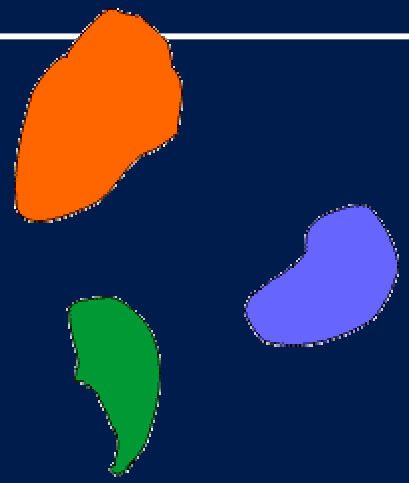

Spatial data

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Part I General Considerations

Descriptive data

Name	Address	Depart	Street	Zip	Shape
xxx	cll	01	45	17	
xyy	cr	02	45	18	
yyyyy	dg	03	75	19	

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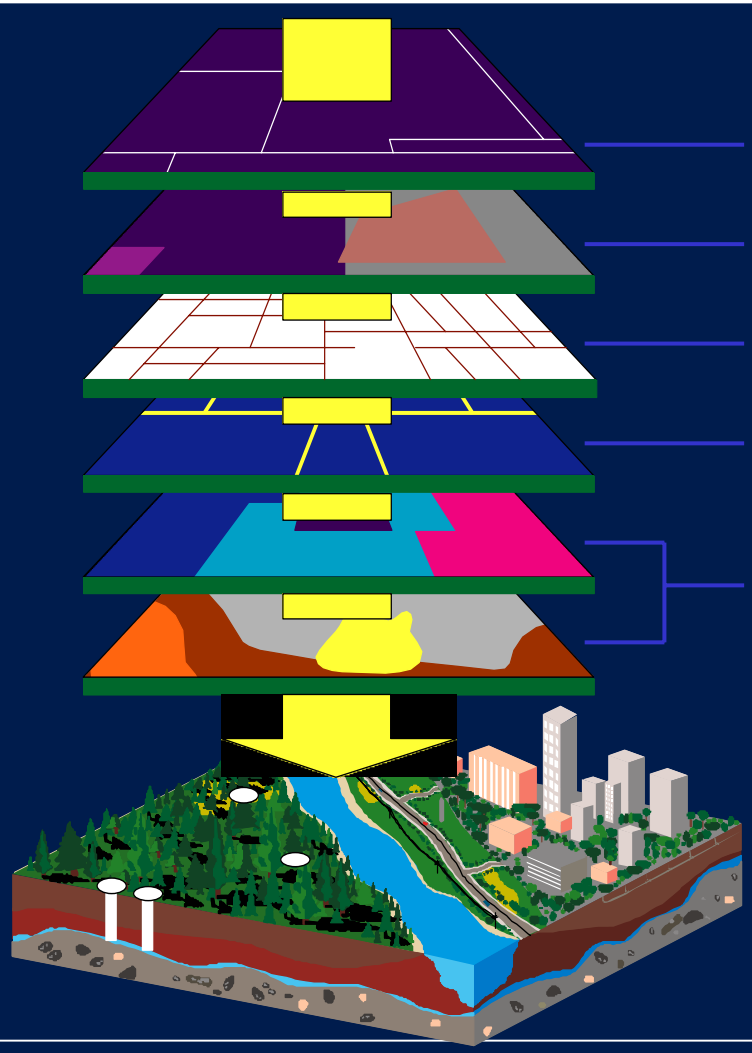
is

the integration of spatial and descriptive data

Part I General Considerations

Representing Reality



Social factors

Economic factors

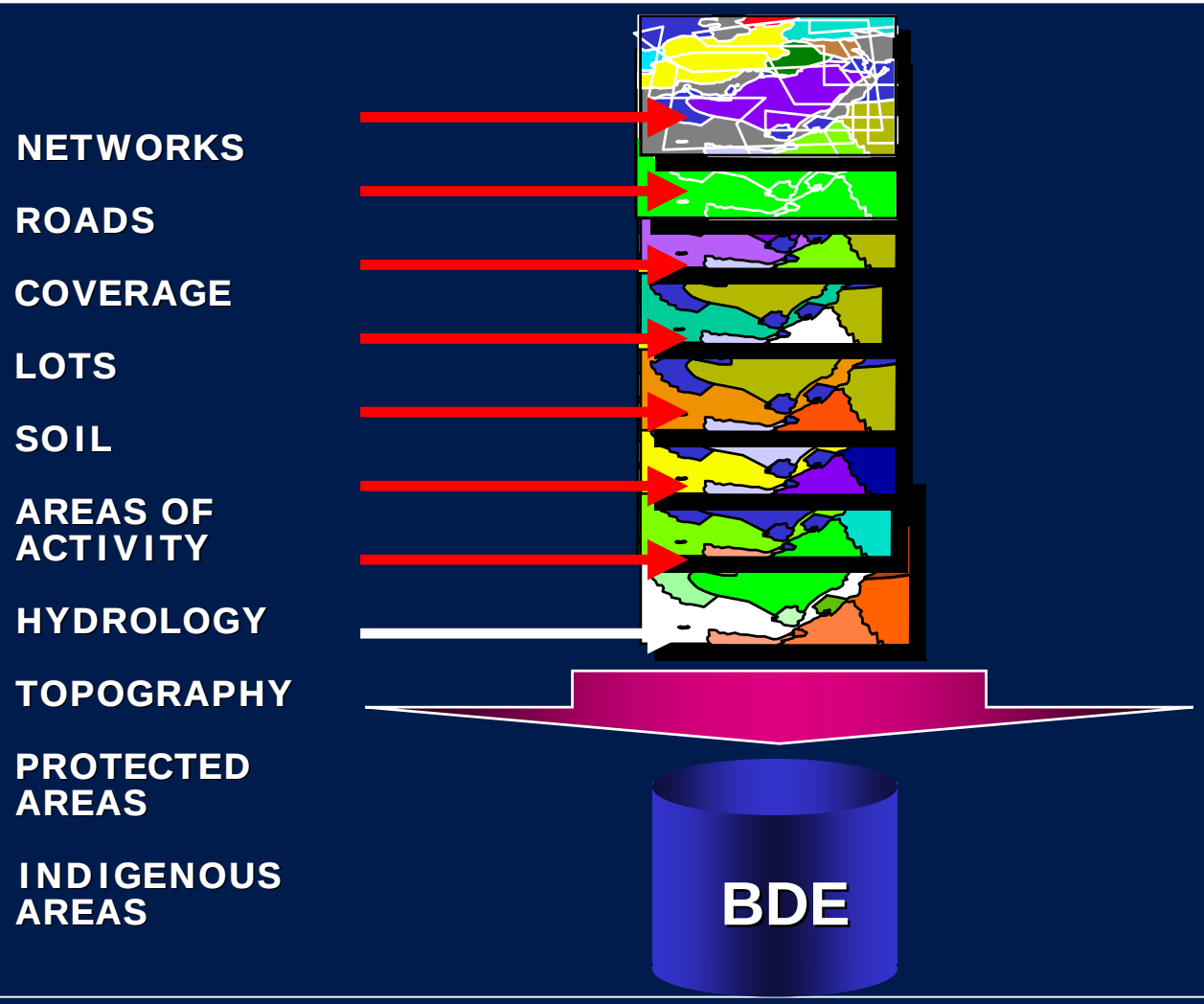
Infrastructure

Use of the soil

Environmental considerations

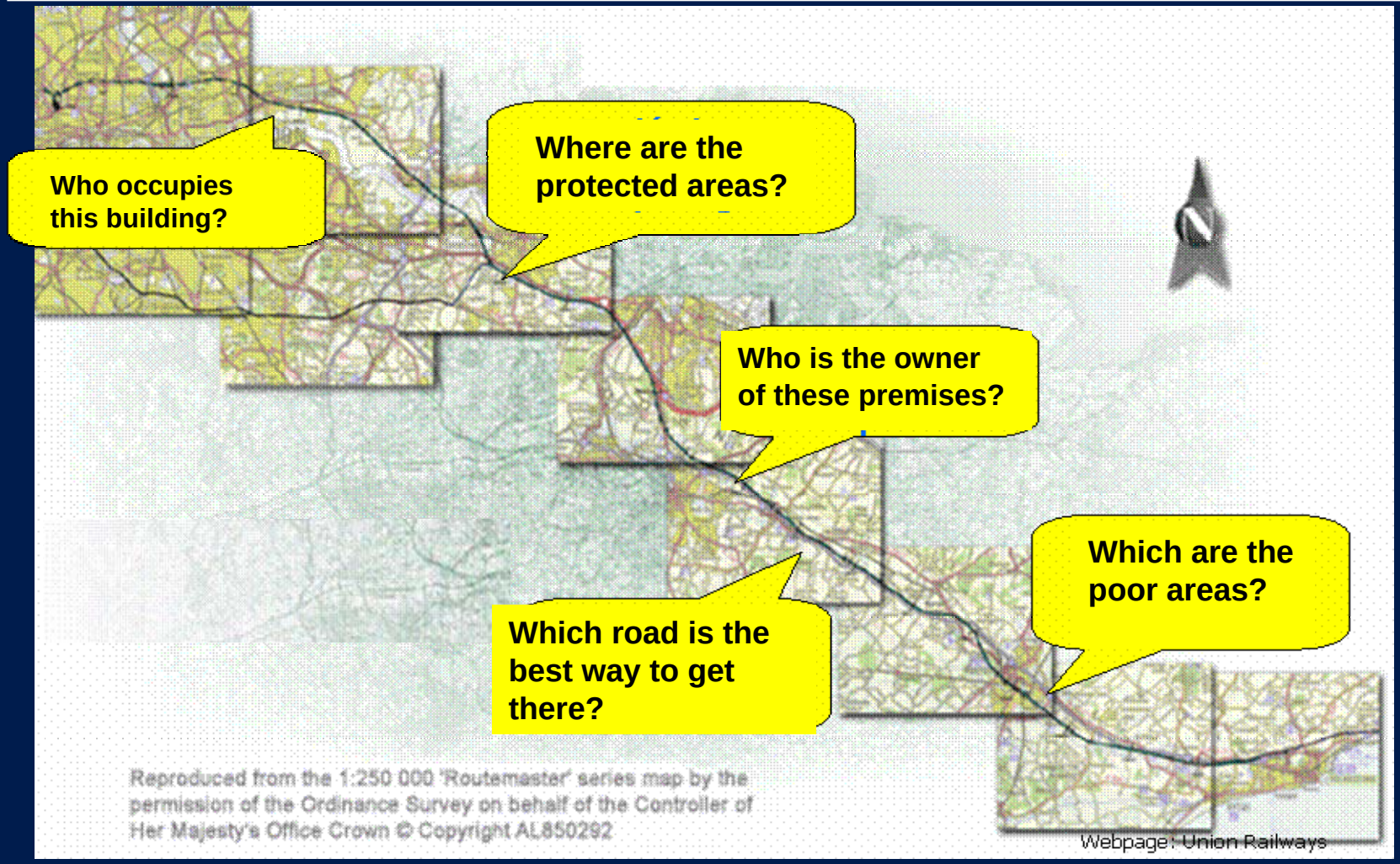
Part I General Considerations

Spatial database



Part I General Considerations

SIG enables us to find answers



Part II: SIG-IIRSA Project

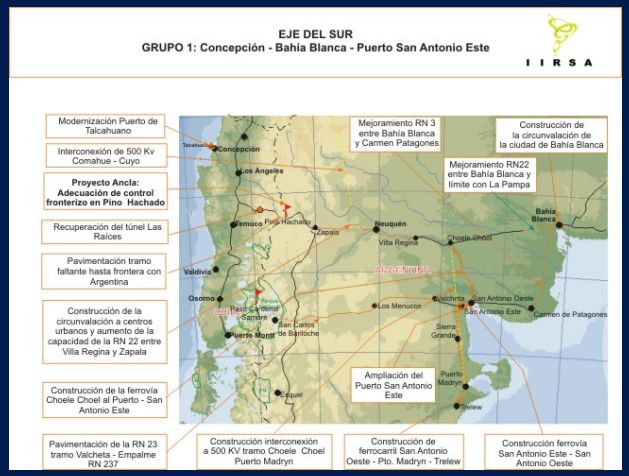
1) Why a SIG-IIRSA Project?
2) Background
3) Project definition
4) Participants
5) Implementation Plan

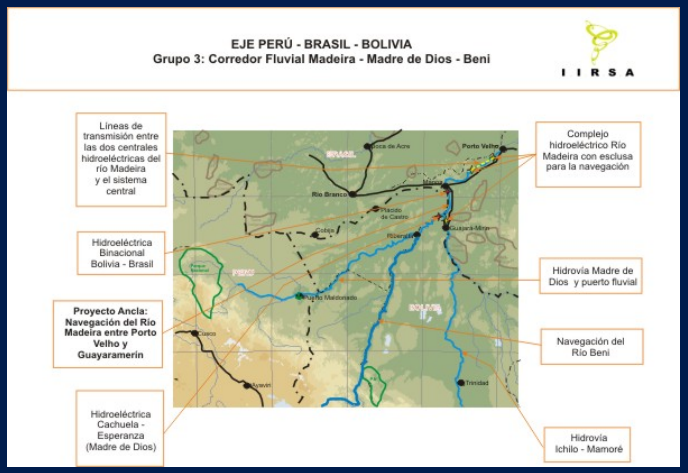
1) SIG-IIRSA: *Why is this also necessary?*

- **Strengthening IIRSA's territorial planning process is generating a great deal of fruitful geo-economic input, otherwise difficult to manage.**
- **IIRSA maps form part of a graphic system, so that their modification is a burdensome task.**
- **The graphic system does not allow for databases associated to specific projects and the different territorial information layers.**
- **SIGs provide a more adequate and flexible technological platform from where to conduct multiple analyses of complex information and make decisions.**
- **Most institutions and organizations in the region operate a SIG platform, so that inter-operability among stakeholders would be far easier if IIRSA adopts such platform as well.**

2) Background – IIRSA Maps

- **Publications illustrating with maps the advance and progress of IIRSA's projects (graphic information)**
- **A tool for technical and general reference**
- **Updates of information, as GTE progresses**

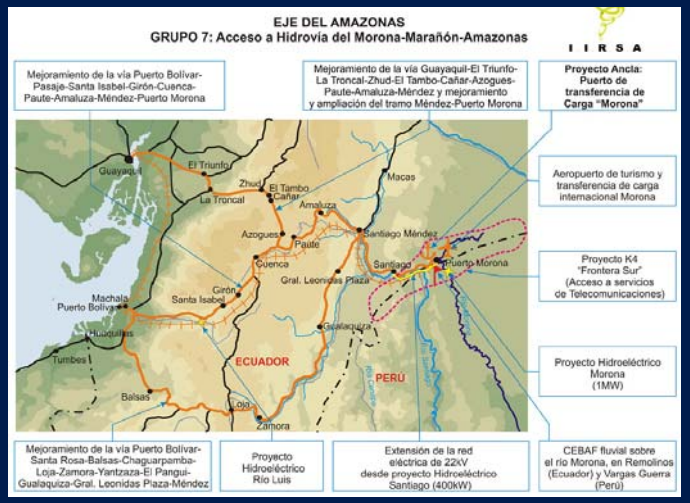




2) Background - IIRSA Maps

Aspects inherent to Core Information

- **It is the only geographic information database with a graphic format readily usable to illustrate projects.**
- **It has the territorial information adjusted to the context of the projects.**
- **Toponyms have been checked against the maps issued by geographic-related agencies.**
- **There is correspondence and consistency between the information in IIRSA's book and that on the Internet.**
- **Toponymic data have been checked and corrected during its editing.**



2) Background - IIRSA Maps

Aspects Inherent to Core Information

Information layers identified in IIRSA Maps

Information Layers	Geometry
Digital elevation model (DEM) of South America	raster
Hydrography	line
Water bodies	polygon
Populated centers	dots
National capitals	dots
Port projects	dots
Border passes	polygon
Areas of influence	polygon
Project groups' area of influence	polygon
Road projects (stretches)	line
Electrification projects	line
Hydroelectric power plants	dots
Projects in airports	dots
Logistics centers projects	dots
BBSC (Binational Border Service Centers) projects	dots
River projects	line
Country limits	polygon
Indigenous land	polygon
National parks	polygon
Protected areas	polygon

2) Background - IIRSA Maps

Aspects Inherent to Core Information

Sources of Validation for Toponyms

Country	Source of Verification	Map	Scale	Date
Ecuador	Instituto Geográfico Militar	Physical	1,000,000	2000
Peru	Editorial Lima 2000	Road	2,200,000	2000
Venezuela	IGVSB	Atlas		
Colombia	IGAC	Phys.-Polit.	Road atlas	2005
Suriname		Geog. Geomorph.	500,000	S/D
Guyana				
Argentina	Dirección Nacional de Vialidad		2,500,000	1998
Chile	Ministerio de Obras Públicas-Dir. Vialidad		1,500,000	2003
Uruguay	Firestone	Road atlas Road	Road atlas	2003
Paraguay	Firestone	Road atlas	Road atlas	2003
Bolivia	Servicio Nacional de Caminos	Road network	3,000,000	2003
	Instituto Geográfico Militar	Physical	1,000,000	1998
Brazil	IBGE		10,000,000	2005

3) SIG-IIRSA Project: *A Proposal*

SIG-IIRSA *wishes to*:

Become a system to collect, classify and analyze information related to transportation, energy and telecommunication infrastructure development projects as well as to production-oriented activities associated with such infrastructure.

Protected areas

Involve all geographic, statistical and socio-environmental information-generating agencies in the region in order to help the system grow in a shared and dynamic platform.

3) SIG-IIRSA Project: *Stages in the Project*

Stage 1

1. Preparing IIRSA Map System.
    1. Acquire the software required for the input, processing and management of geo-referenced information.
    2. Process and make information layers available to create the database (templates) for the generation of IIRSA book's maps.
    3. Build the geographic database.
    4. Create the layouts to publish IIRSA book's maps.

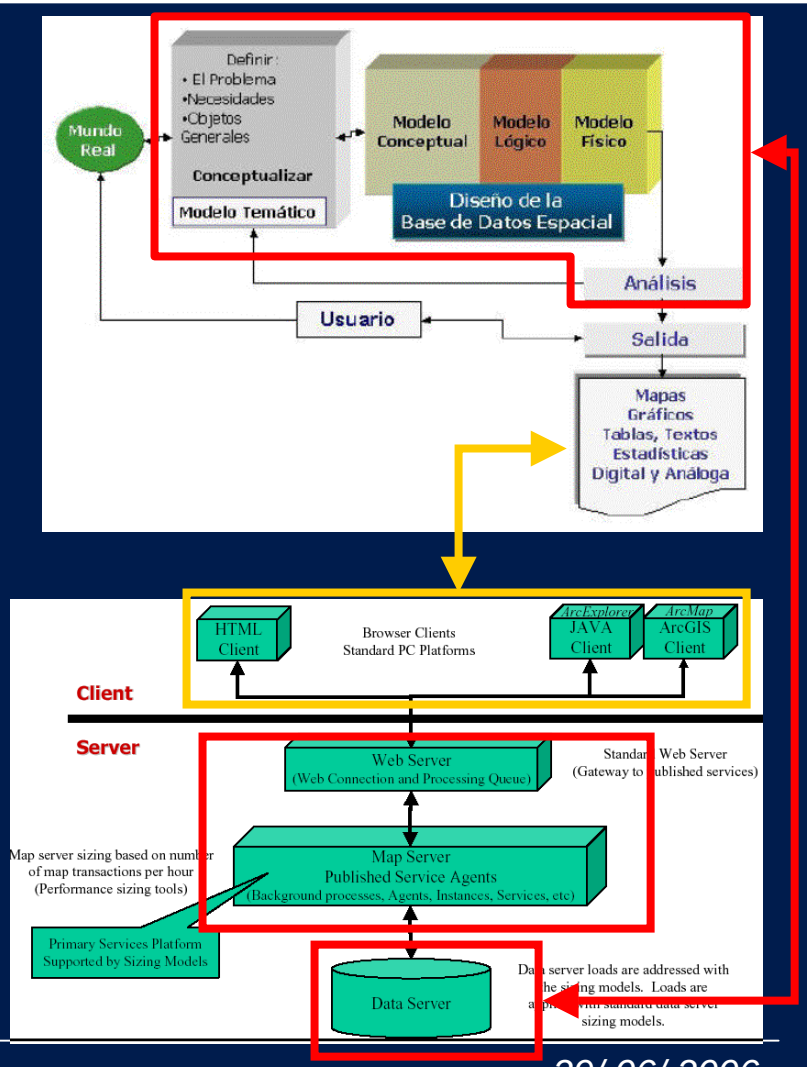
Contacting and incorporating information-generating agencies.

1. Incorporate information to feed the system and validate its data.

Stage 2

Placing IIRSA Map System on the Web.

1. Adjustment of technological platform.
2. Capacity building.
3. Constructing ArcIMS service
4. Launching the ArcIMS service



4) SIG-IIRSA: *Participants*

Prospective cooperative institutions

1. Geographic Institutes
2. Statistical Institutes
3. Road Services
4. Ministries of Energy and Environment

5. Regional agencies (ECLAC, Universities, IDEs, etc.)

6. NGOs and other organizations that should develop relevant geographic information
7. Specialized extra-regional organizations (UN, Umiacs)

5) SIG-IIRSA: *implementation Plan*

Join efforts in order to:

1. **Continue migrating IIRSA information layers to SIG database (3 months)**
2. **Create a network of associated institutions in each country (6 months)**
   - **Identify institutions and contacts**
   - **Survey the current status of their systems and data**
   - **Agreement on operational parameters for data generation and sharing purposes**
3. **Develop a comprehensive shared system to be accessed through the network (18 months)**

THANK YOU!

29/ 06/ 2006