UNIVERSITY OF TWENTE.

OSS AS A BACKBONE FOR EDUCATION IN GEO-INFORMATICS

GEOSPATIAL WORLD FORUM 2012

JAVIER MORALES

ITC FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

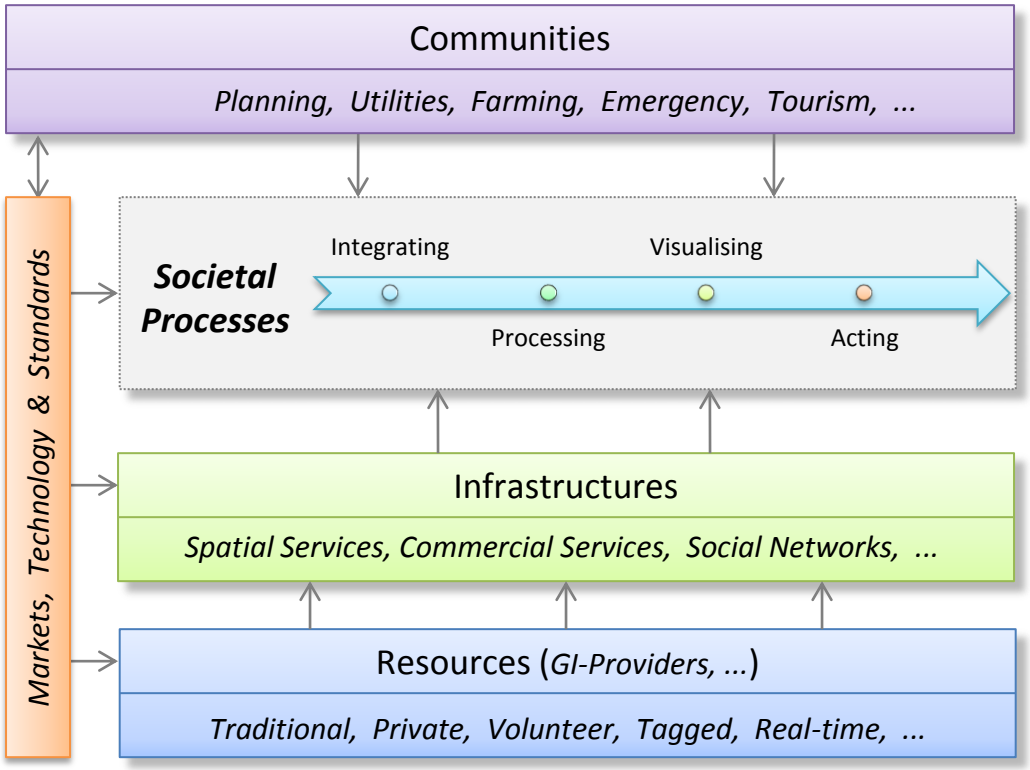
AFFILIATION

- SDIT is a research group on SDI Technology at ITC, University of Twente, The Netherlands.

- We partner with governments, NGOs, and private sector worldwide, on technical SDI development.
- Partners in:
  - capacity building
  - joint research
  - joint development
  - www.itc.nl/research/themes/sdit/default.asp

GEO-INFORMATION: *THE VALUE CHAIN*

OPERATING ENVIRONMENT



GI & SOCIETY

LARGE SCALE

GI & SOCIETY

SMALL SCALE

GI-SYSTEMS TECHNOLOGICALLY DEFINED

- A community of actors working in an IT environment
- With a special interest in geospatial resources
- Wanting to take part in a communication process
- With well-understood responsibilities
- Involving service offerings & service consumptions

GEO-INFORMATION: *EDUCATION*

- Focus

  on the thorough understanding and methodical construction of GI systems

- GI systems

  Encompass a network of collaborating ‘nodes’ that offer services to each other

- GI nodes

  Are based on a stacked architecture of software components

- GI value chain

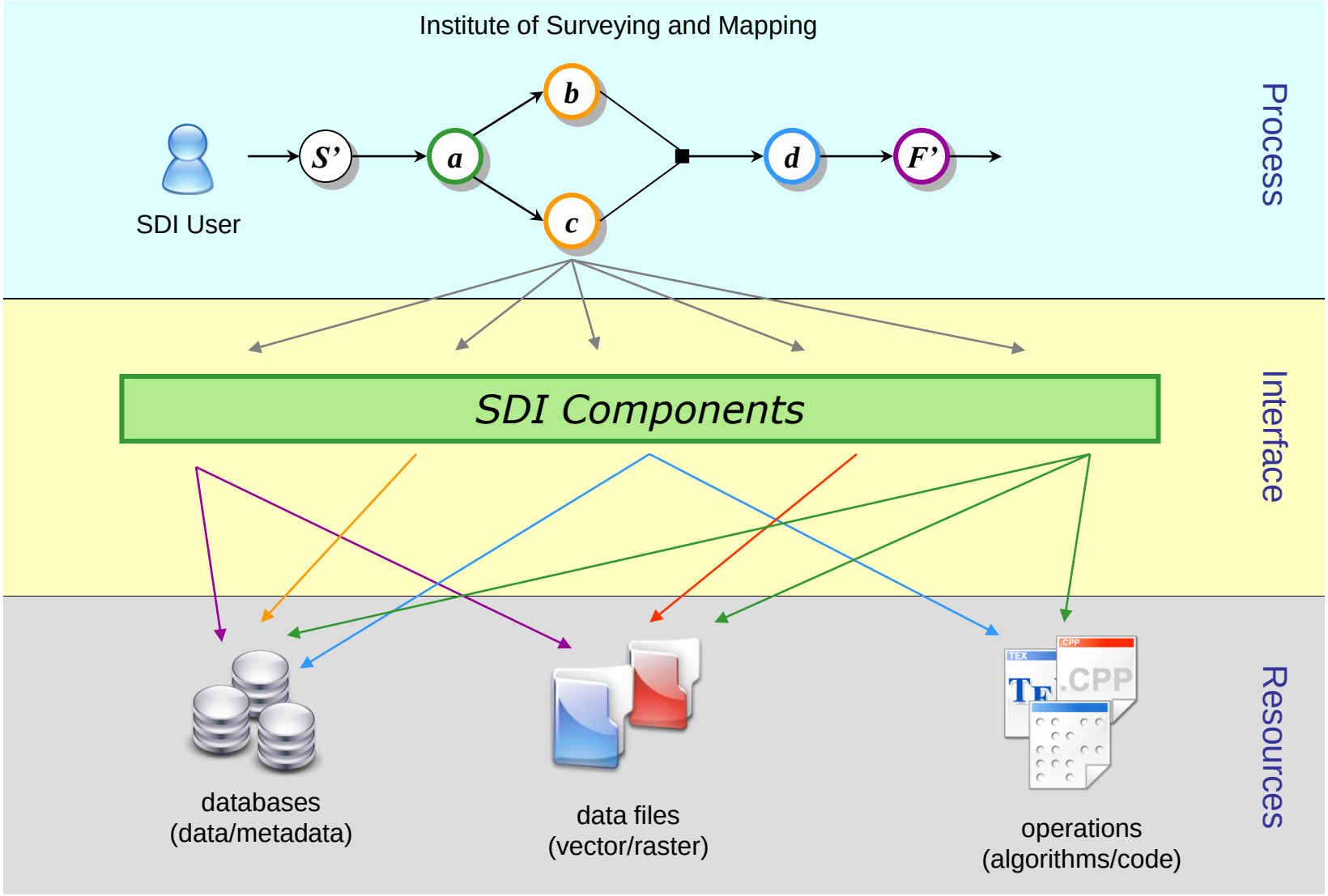
  Follows a well define set of communication patterns between Nodes

GI-SYSTEMS DESIGN

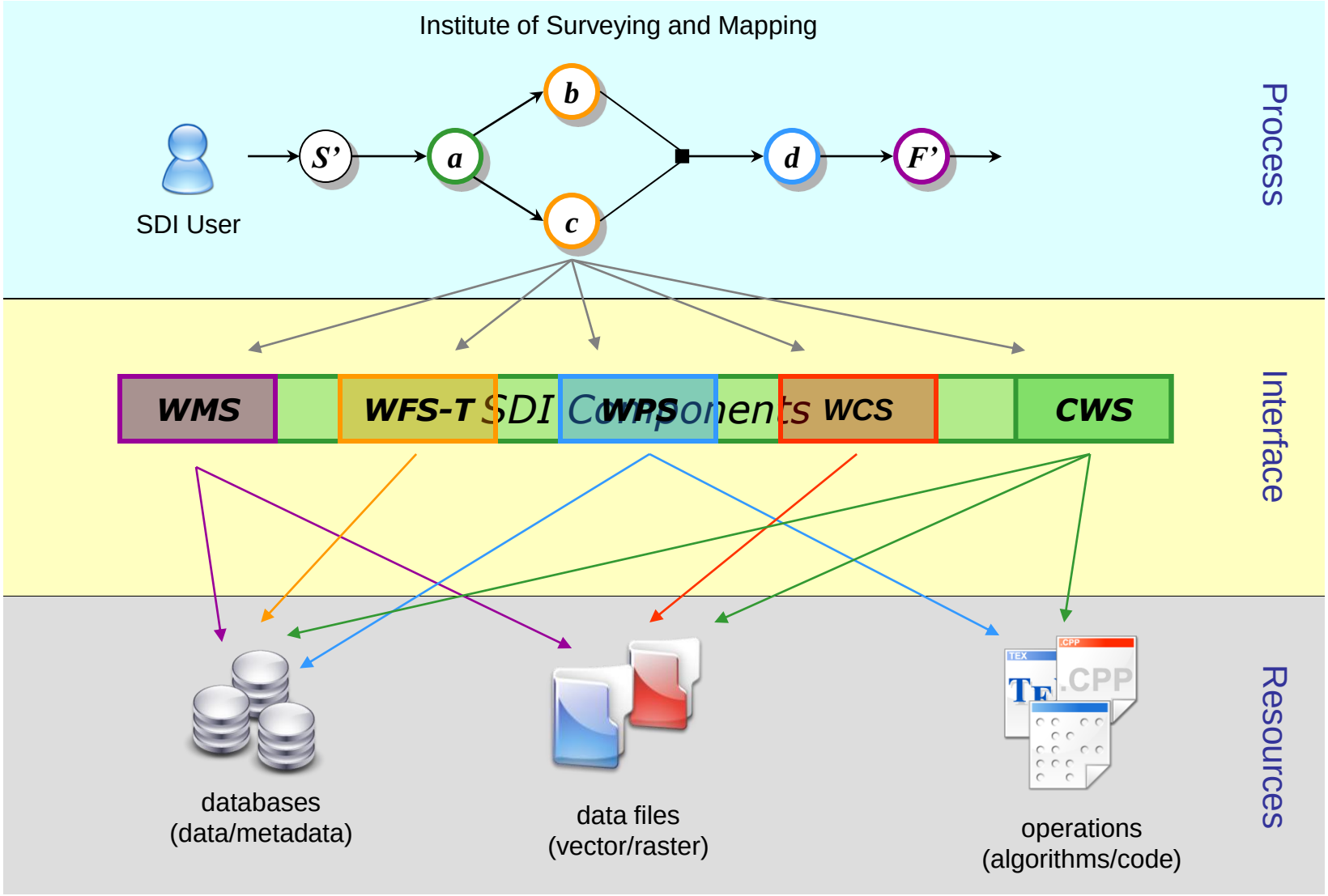
SEPARATION OF CONCERNS

- Complex, data-intensive GI systems need to be methodically designed in phases, where each phase addresses only a single concern.
  - What is the required information content?
  - What is the most appropriate data structure?
  - How is it manipulated?
  - What is the most suitable dissemination method?

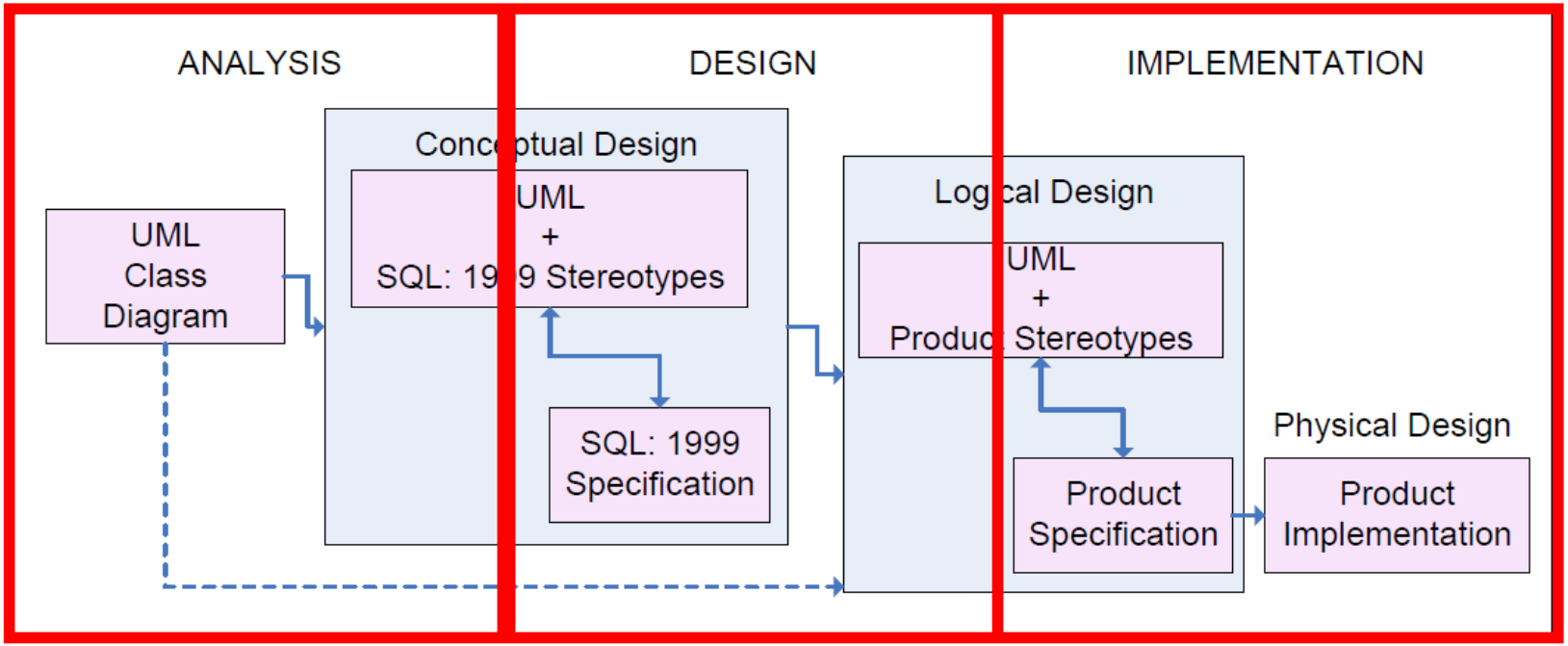
GI – EXPLOITATION



GI – EXPLOITATION



TRANSFORMATIONAL DESIGN



THE SDI-LIGHT APPROACH

AN SDI NODE ARCHITECTURE

- A spatial database back–end

  that stores the spatial data using the OGC Simple Features

- A set of interoperable middleware applications

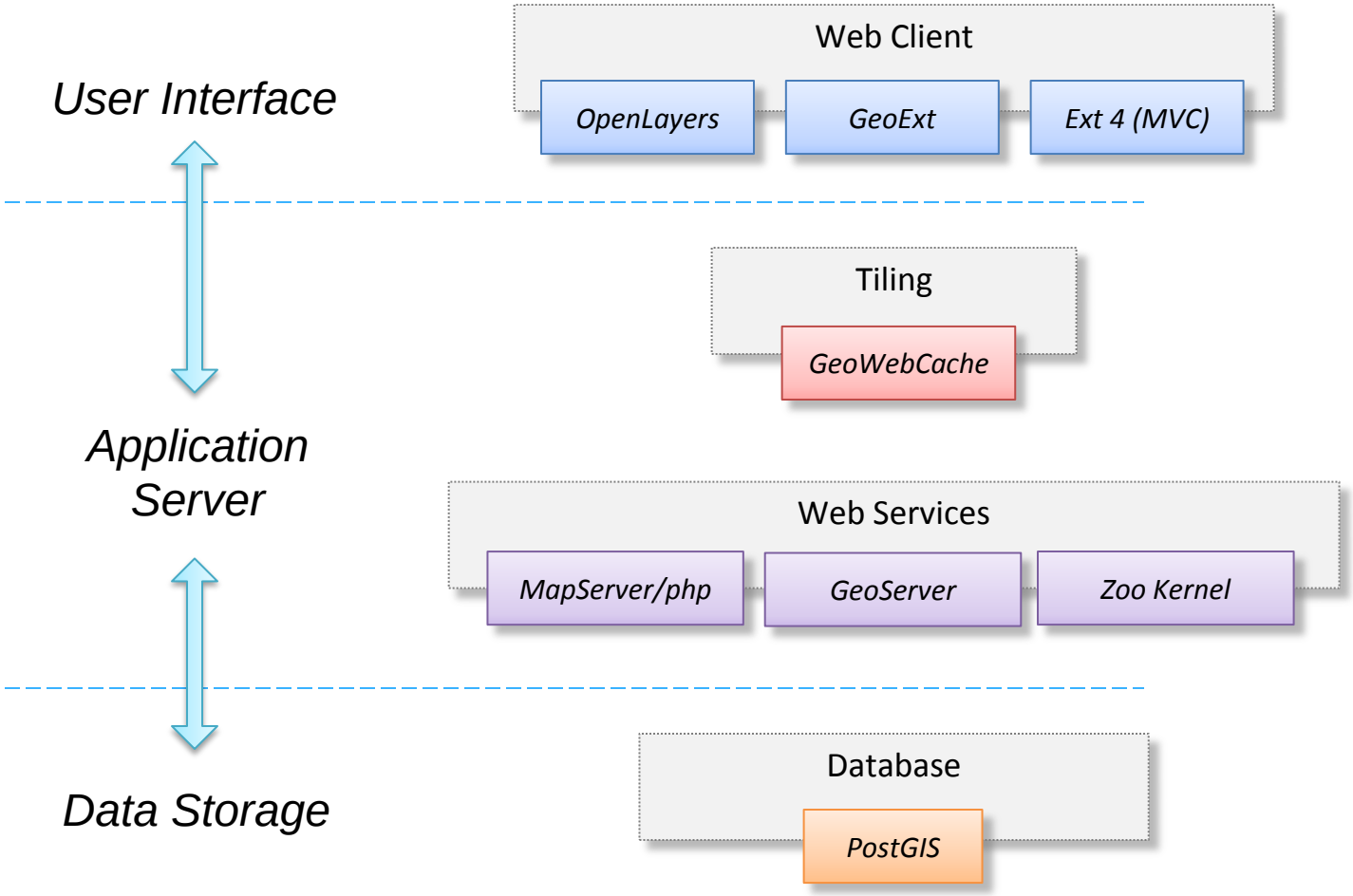
  they interface with the database back–end and with each other, via open service interfaces

- Dynamic browser-based clients

  Exploiting REST/SOAP services via AJAX requests

THE SDI-LIGHT STACK

AN SDI NODE ARCHITECTURE



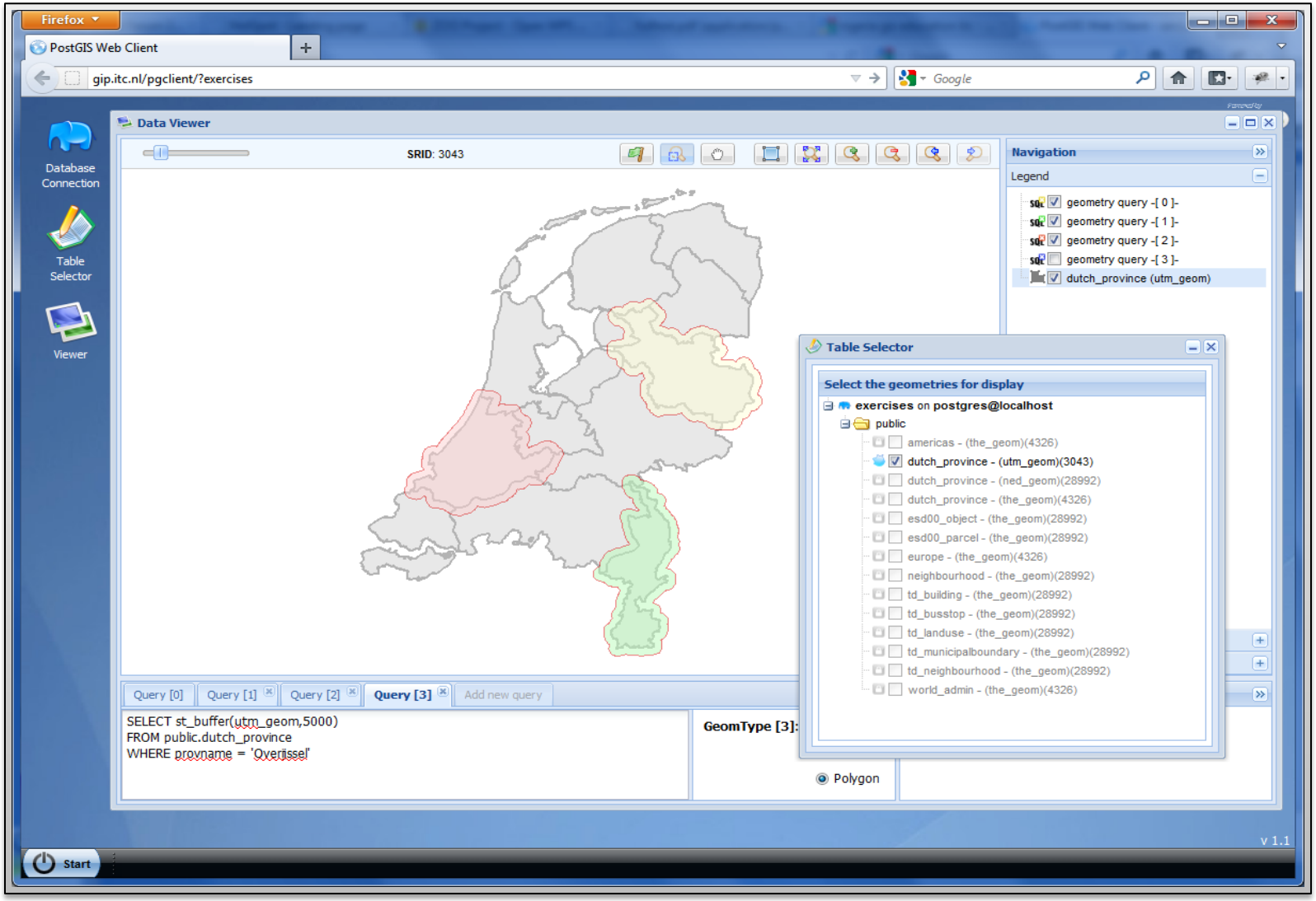
THE SDI-LIGHT IN EDUCATION

EXPLOITATION – IN HOUSE

Weeks	Modules	SDI-Light In parallel
1-12: Core Modules	1: Principles of Databases	Programming Skills
	2: Principles of Remote Sensing	
	3: Principles of Geographic Information Systems	
	4: Mathematics and Programming	
13-30: Master Modules	5: Sensor orientation & 3D data acquisition	Case Study Application Building & Programming
	6: Spatial Data Modelling	
	7: Base mapping from images	
	8: SDI Engineering	
	9: Process modelling & spatial analysis	
	10: Dissemination & visualization of geospatial data	
31-34	11: Advanced Topics and Master Skills	
35-37	12: IFA preparation, Excursion	
38-47	Individual Final Assignment	

SDI-LIGHT BASED EDUCATIONAL TOOLS

POSTGIS QUERY BUILDER



THE SDI LIGHT IN PARTNERSHIPS

EXPLOITATION

- Firstly,

  the strengthening of the capacity of the agencies responsible for the deployment Geo-informatics curriculum.

- Secondly,

  together with the agencies, implementing geo–services for their users.

- Thirdly,

  developing tailor-made applications to address pressing user needs

- Finally,

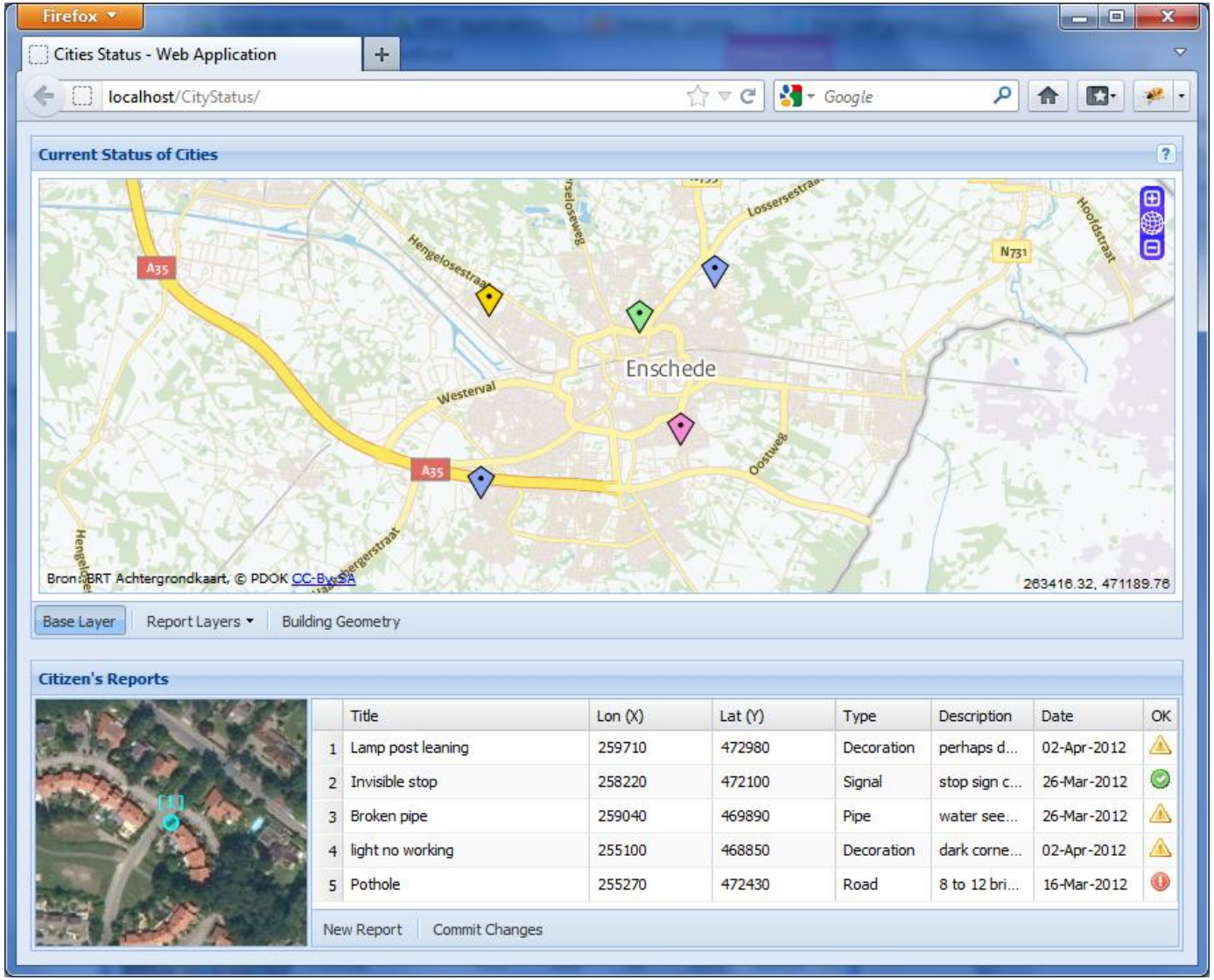
  participate actively in a coordinated development of software components, in the framework of 52°North,

1 – SUPPORTING GI EDUCATION

NETWORKING

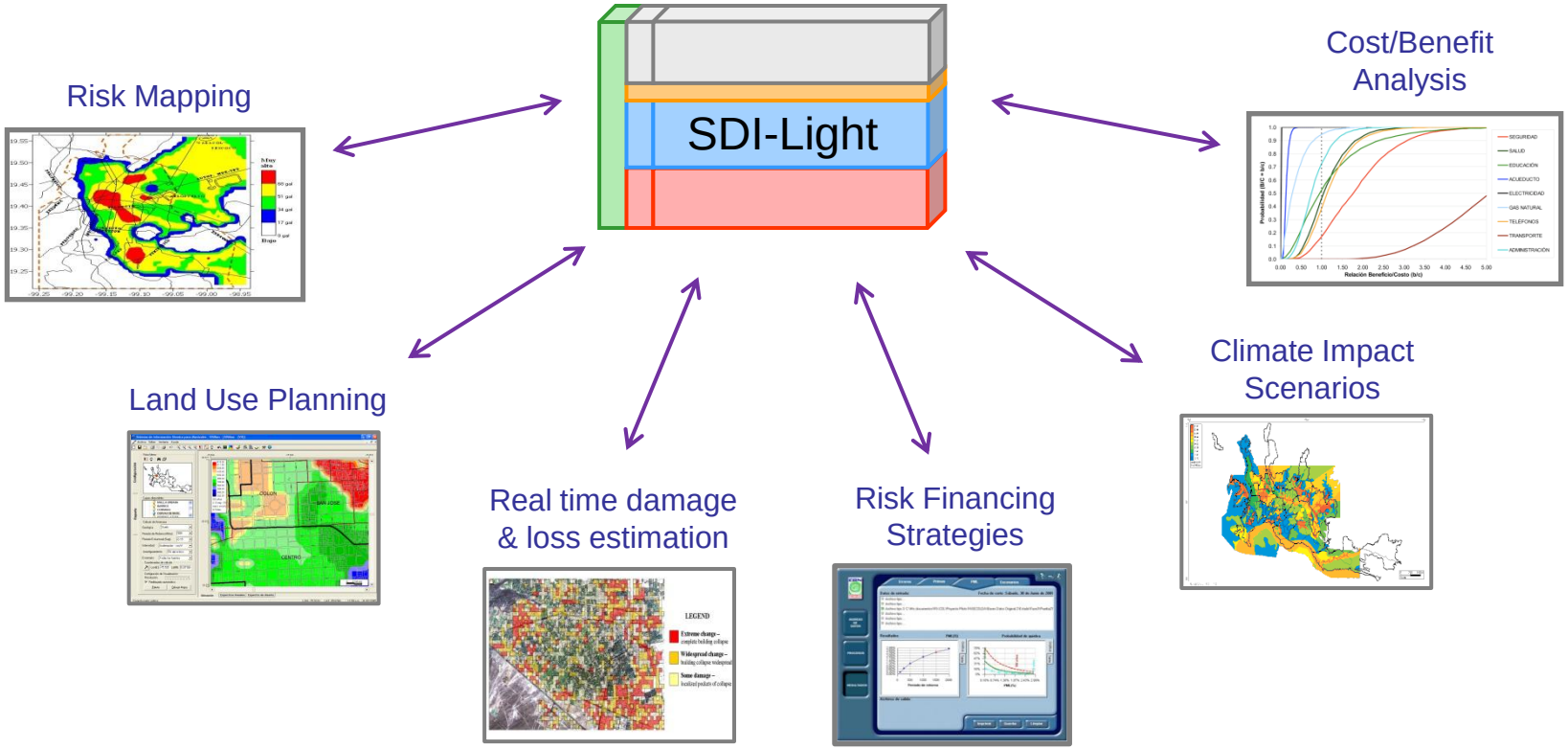
Already established Under development

3 - APPLICATION DEVELOPMENT



	Title	Lon (X)	Lat (Y)	Type	Description	Date	OK
1	Lamp post leaning	259710	472980	Decoration	perhaps d...	02-Apr-2012	
2	Invisible stop	258220	472100	Signal	stop sign c...	26-Mar-2012	
3	Broken pipe	259040	469890	Pipe	water see...	26-Mar-2012	
4	light no working	255100	468850	Decoration	dark corne...	02-Apr-2012	
5	Pothole	255270	472430	Road	8 to 12 bri...	16-Mar-2012	

SDI-LIGHT – SOCIETAL PROCESSES



THANK YOU FOR THE ATTENTION

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DR. JAVIER MORALES
Assistant Professor
Faculty of Geo-Information Science and Earth Observation
Department of Geo-information Processing

P +31 (0)53 4874 229
F +31 (0)53 4874 335

jmorales@itc.nl
www.utwente.nl
www.itc.nl

PO Box 217
7500 AE Enschede
The Netherlands

Building ITC
Hengelosestraat 99
7514 AE Enschede