



INESCTEC
TECHNOLOGY & SCIENCE
ASSOCIATE LABORATORY



1985
**THIRTY
YEARS**
2015

**FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION**



Regional cooperation: building SDI for better governance

Artur Rocha (artur.rocha@inesctec.pt) | Senior Researcher

Centre for Information Systems and Computer Graphics

Research and Technological Development | Technology Transfer and Valorisation | Advanced Training | Consulting
Pre-incubation of Technology-based Companies



INSPIRE Conference 2016

Barcelona, 26th - 30th September



Summary of the Workshop

PART I:

- Rationale
- Motivation
- Common Reference Architecture
- Case Study 1: regional cooperation (NUTS 3) to build a Metropolitan SDI
- Case Study 2: trans-national cooperation to build a Marine SDI

PART II – discussion:

- Barriers
- Lessons Learned
- Future Steps

FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION

1985
THIRTY
YEARS
2015



INESCTEC
TECHNOLOGY & SCIENCE
| ASSOCIATE LABORATORY



26-September-2016

Regional cooperation: Rationale

- Drivers

- Better understanding of the current status: my own and my neighbours
- To define common policies
- To assess their implementation status and impact on society: even what I do not directly control
- To better plan the future

- Challenges

- How to obtain and maintain a consolidated view?
- How to deliver integrated tools to citizens and businesses?
- How to incorporate real time monitoring in the loop?
- How to deliver high-quality integrated forecasts?
- How do my plans affect my neighbour's plans and vice-versa?

Regional cooperation: Motivation

- Adequate legal framework:
 - INSPIRE directive requires remotely invocable services
 - Furthermore it requires harmonized services
- Adequate technical framework:
 - Mature reference architecture
 - Mature standards
 - Compliant implementations



FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION

1985
THIRTY
YEARS
2015



INESCTEC
TECHNOLOGY & SCIENCE
| ASSOCIATE LABORATORY

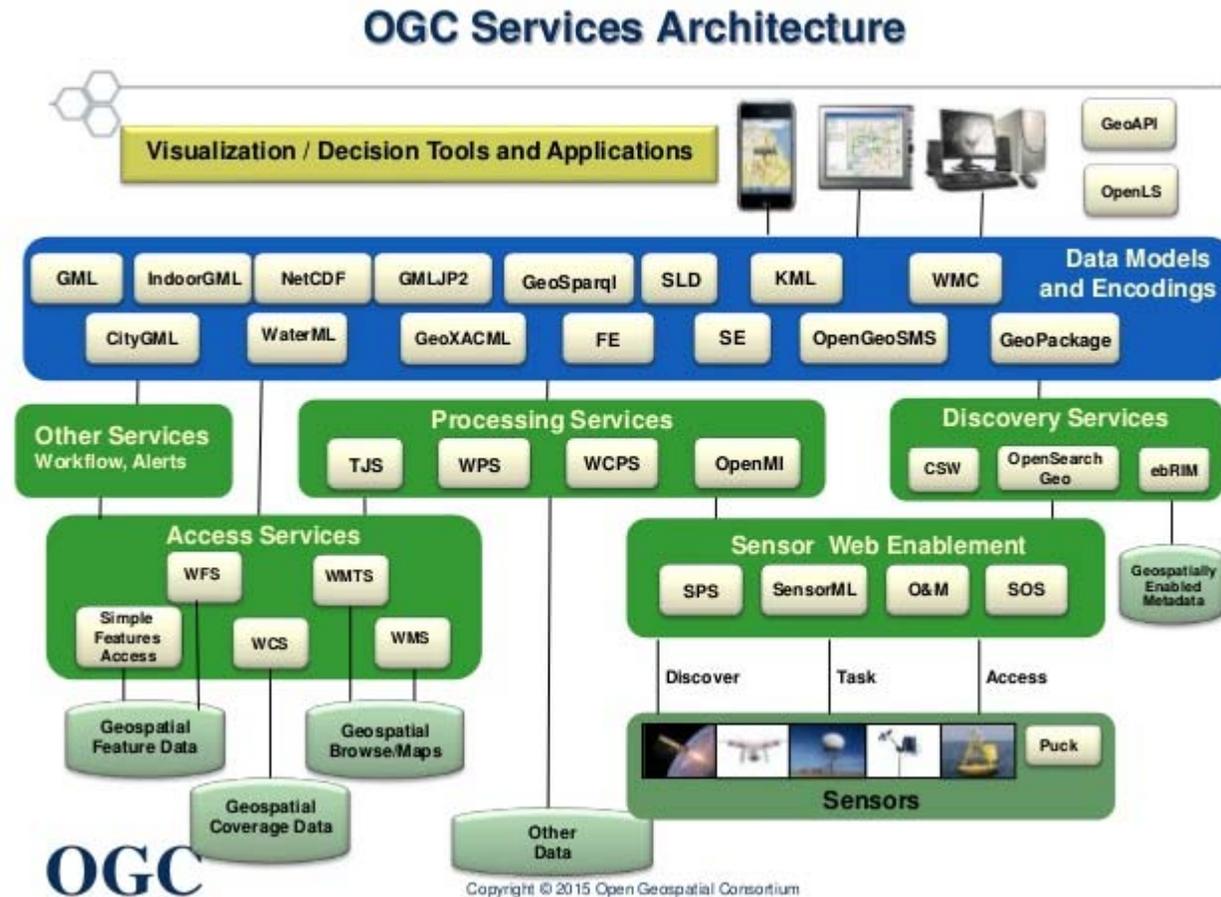


- What can go wrong?
- How to avoid it and overcome it?
- What outcomes do we have so far?
- What can still be improved?

26-September-2016

Common Reference Architecture - I

- INSPIReation:



FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION

1985
THIRTY
YEARS
2015



INESCTEC
TECHNOLOGY & SCIENCE
ASSOCIATE LABORATORY



Common Reference Architecture - II

- Presently used technologies and standards



FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION

1985
THIRTY
YEARS
2015



Client Applications

Discovery Services

CSW

Encodings

GML KML GeoJSON NetCDF O&M ... CSV

Data Access/Portrayal

WMS WFS WCS WMTS

SWE Services

SOS {P} 52n



Case Study 1: AMP SDI

- Develop a physical and logical architecture for a Regional Spatial Data Infrastructure (SDI)
 - in compliance with the principles of the EU INSPIRE Directive and with the OGC standards
 - based on free software
- Porto Metropolitan Area, at the NUT III North of Portugal
 - 17 Municipalities
 - approximately 1,900 km²
 - population around 1,700,000 inhabitants



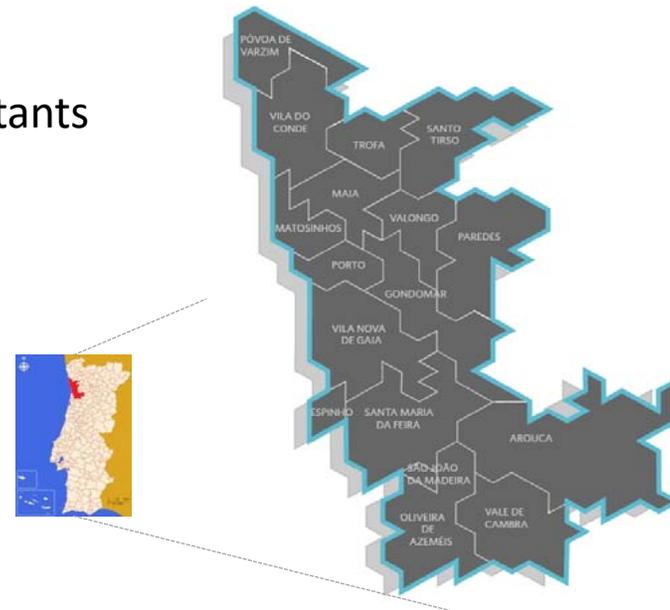
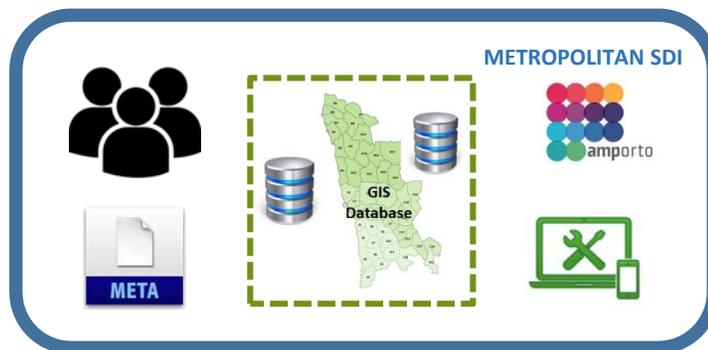
área metropolitana do porto

FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION

1985
THIRTY
YEARS
2015



INESCTEC
TECHNOLOGY & SCIENCE
ASSOCIATE LABORATORY



26-September-2016

Case Study 2: RAIA Coastal Observatory

- Cross-border cooperation project
 - North of Portugal, Galicia
 - INTERREG IV-A (2009-2011-2013)
 - <http://www.marnaraia.org>
- Improve the oceanic observation at the North Western Iberian coast (meteorological, oceanographical and water quality data)
- Establish a platform of cross-frontier interoperability for the management and distribution of the data
- [...]
- Prepare specific tools to end-users

FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION

1985
THIRTY
YEARS
2015



INESCTEC
TECHNOLOGY & SCIENCE
ASSOCIATE LABORATORY



26-September-2016



Building SDI for better governance – Part II

- Common challenges
 - Technical
 - Organizational
 - Lessons Learned
- Strategies
 - Global systems: “scale changes everything”
 - Short term agendas vs long-term sustainability
 - Early involvement of stakeholders
 - Ecosystem of interoperable services
 - How does it affect each stakeholder’s role
- What was achieved so far
 - What services do we currently provide?
- What else can be done
 - To what purpose?
 - With what means?
 - How can it persevere in the global context?

FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION

1985
THIRTY
YEARS
2015



26-September-2016



INSPIRE Conference 2016

Barcelona, 26th - 30th September



área metropolitana do porto

FROM KNOWLEDGE
GENERATION
TO SCIENCE-BASED
INNOVATION

1985
THIRTY
YEARS
2015



INESCTEC
TECHNOLOGY & SCIENCE
ASSOCIATE LABORATORY



26-September-2016