Building an IT Infrastructure to support a marine SDI: IPMA Case Study

IPMA - Instituto Português do Mar e da Atmosfera

Valéria Pacheco& José Santos

28, May 2015

Contents

- IPMA Presentation
- SNIMar Project: Scope and Work Packages
- WP2 IPMA's responsabilities
- Focus on IPMA's Responsibility - DATA Provider
  - Collecting the data and transforming in products
- Case Study – normalize processes
  - Bivalve Product
  - Sea wave forecast according with SWAN's model
  - The necessity for a controlled environment
  - IT metadata profile
  - Towards a controlled environment
  - To monitor and control
- Normalize Process - Model to describe DATA's lifecycle
- Conclusions

SNIMar Project - Scope

- SNIMar – Sistema Nacional de Informação do Mar (National Information System of the Sea)

- General objectives:
  - Centralized platform to search for information about the sea
  - Design and implement a marine SDI which will culminate in a Geoportal

- A partnership agreement between IPMA and EMEPC.

- EMEPC - Portuguese Task Group for the Extension of the Continental Shelf

IPMA – Portuguese Institute for the Sea and Atmosphere

- MISSION:
  - Promote and coordinate scientific research, technological development, innovation and services on the sea and atmosphere.
  - Providing services, data and products to citizens such as weather forecasts , products of seismology , climatology, water analysis, fishery analysis, sediments, fishery pathologies and mollusks analysis.
- Hosts several interdisciplinary projects

- In SNIMar IPMA has the following responsibilities:
  - Data Provider
  - Conception of IT Architecture
  - Acquisition of IT equipment
  - Scholarships Management
  - Development of Controlled IT Environment
  - Web Development application for Geoportal issues and associated services
  - Management and Technical Support (after ending project)

# SNIMar Project - Working Packages

WP	WP Name	Description
0	Project Management	General project Management
1	Data Policies	Definition of policies for sharing data
2	Technical Framework	Software and Hardware Management
3	Metadata and geographic information	Contents and harmonization of the data in accordance with INSPIRE directive
4	Geoportal and Services	Service's Catalogue and technology for making data available
5	Advertisement	Projects promotion

IPMA Coordination

WP2 IPMA's responsibility - IT Architecture

- Design IT Solution for SNIMar

- IPMA will be:

  - Central Node – IT Management and Technical Support

  - Local Node – Data Provider
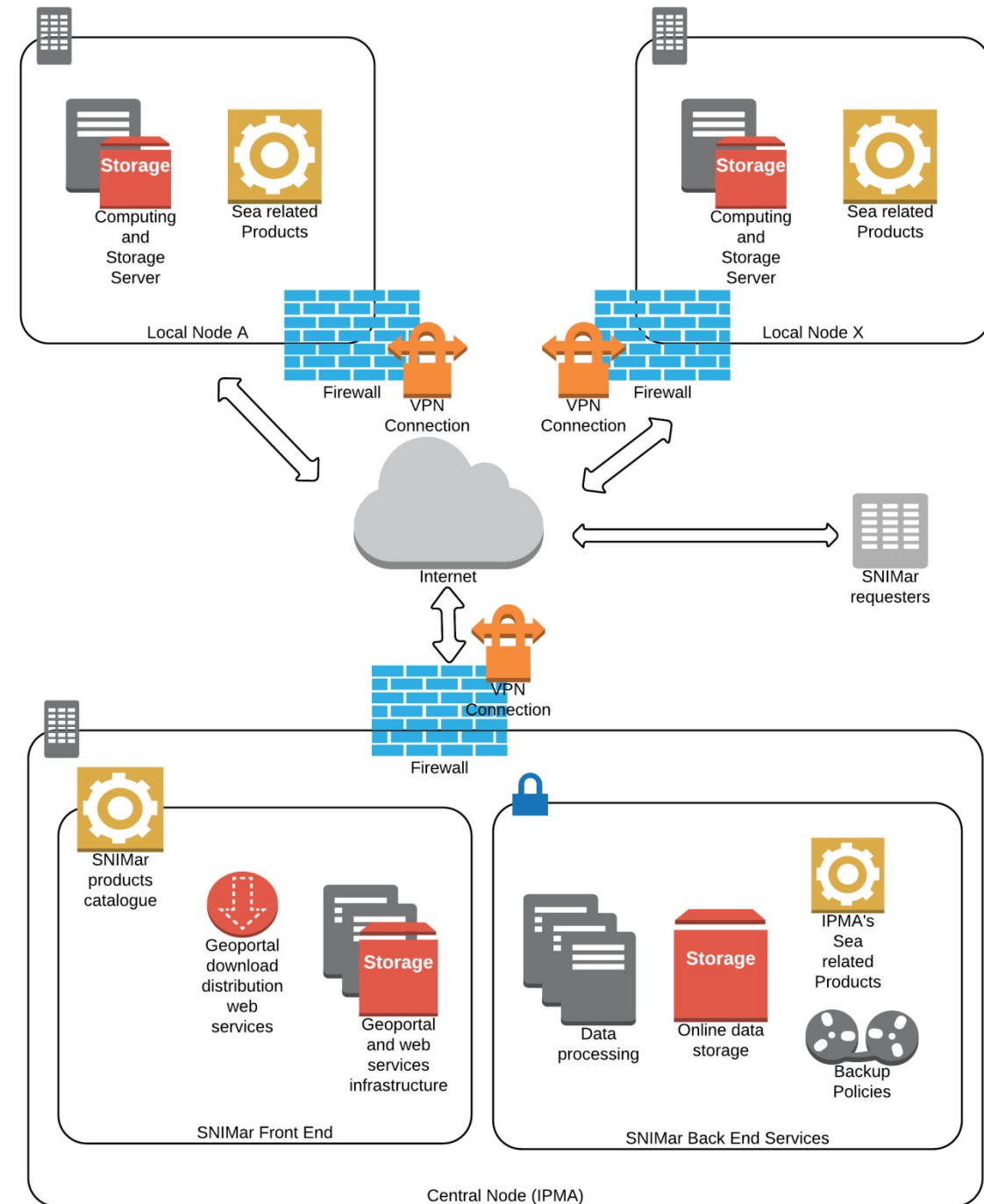
Focus on IPMA's responsibility - Data Provider

- IPMA needs to organize its data. Some constraints are:

  - Great amount of data dispersed within the departments
  - The products weren't completely defined
  - No unique identification of products
  - No harmonization in production of datasets
  - Multiple data formats and platforms
  - In some cases chain product process are knowledge of few people

Collecting the data and transforming in products

- Interviews were conducted to collect information about the datasets
  - A lot of effort conducting these interviews

- Collecting metadata aid in the definition of some products
  - Besides collecting metadata according INSPIRE profile, we use the interviews to collect IT metadata for products too

Case Study - normalize the processes

- 2 different products
  - Bivalvia Analysis to determine the zone's status for its capture
  - Sea wave forecast according with SWAN's model

- Specificity

- Complex process of production

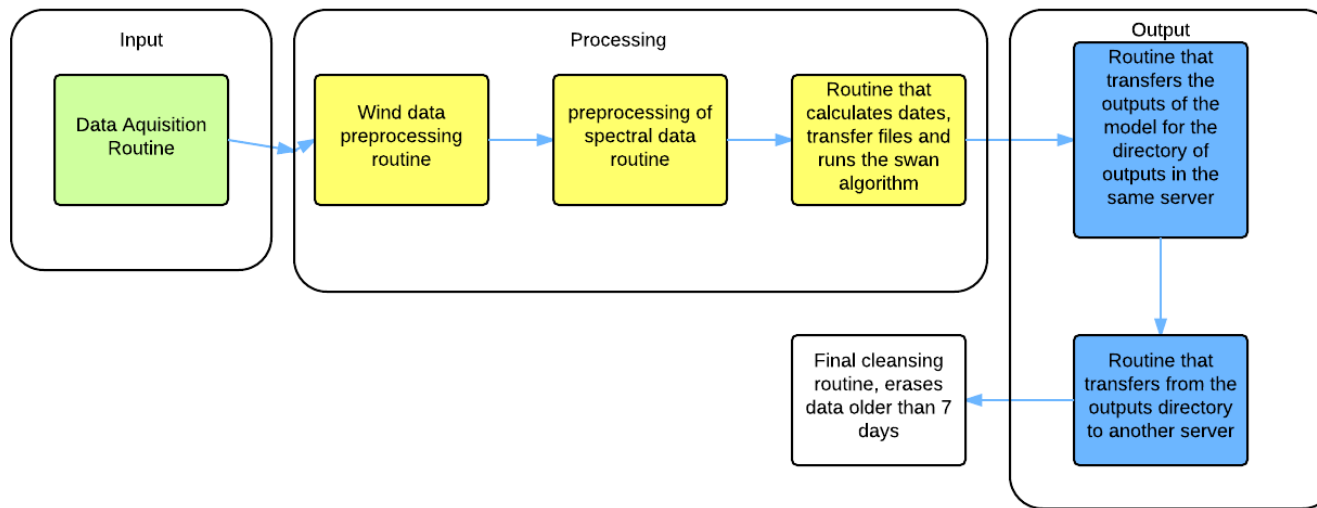- Identify the processes that enabled the production of the datasets

Bivalve Product

- Analysis to determine the zone's status for its capture

- Mapping the prohibited and permitted zones for bivalve's capture and consumption.
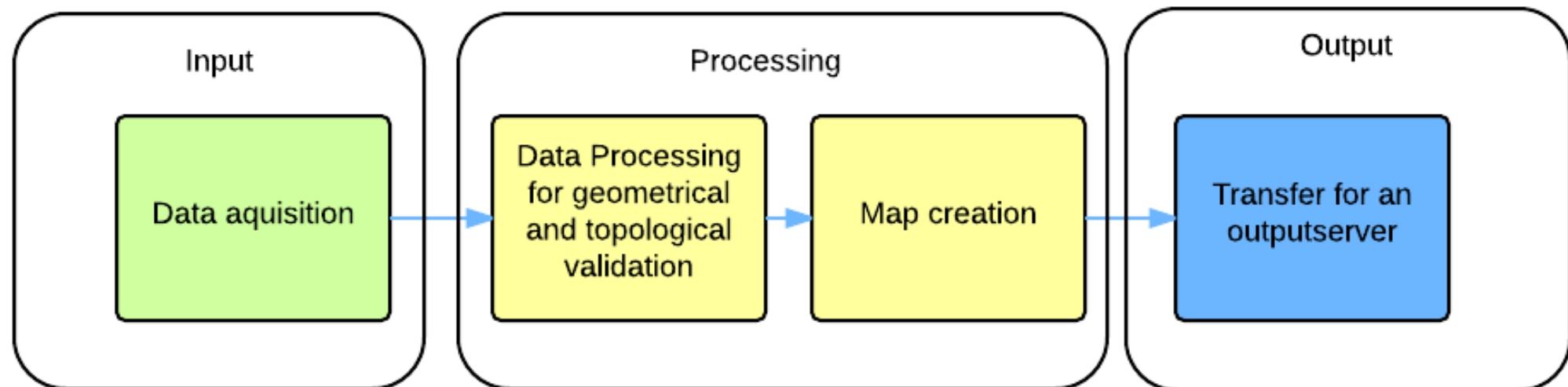
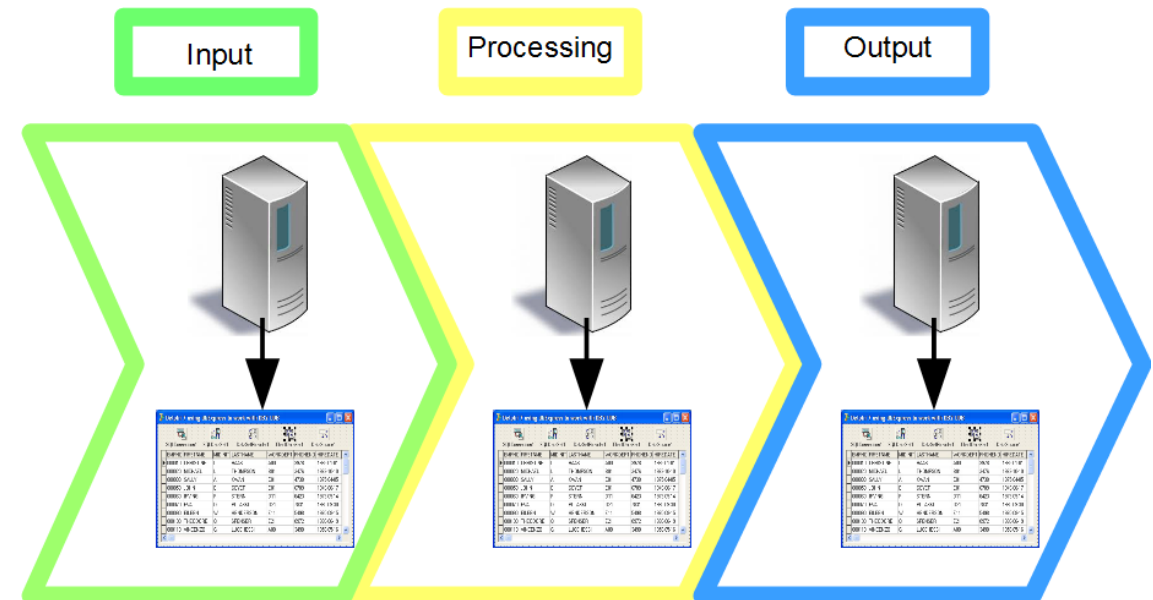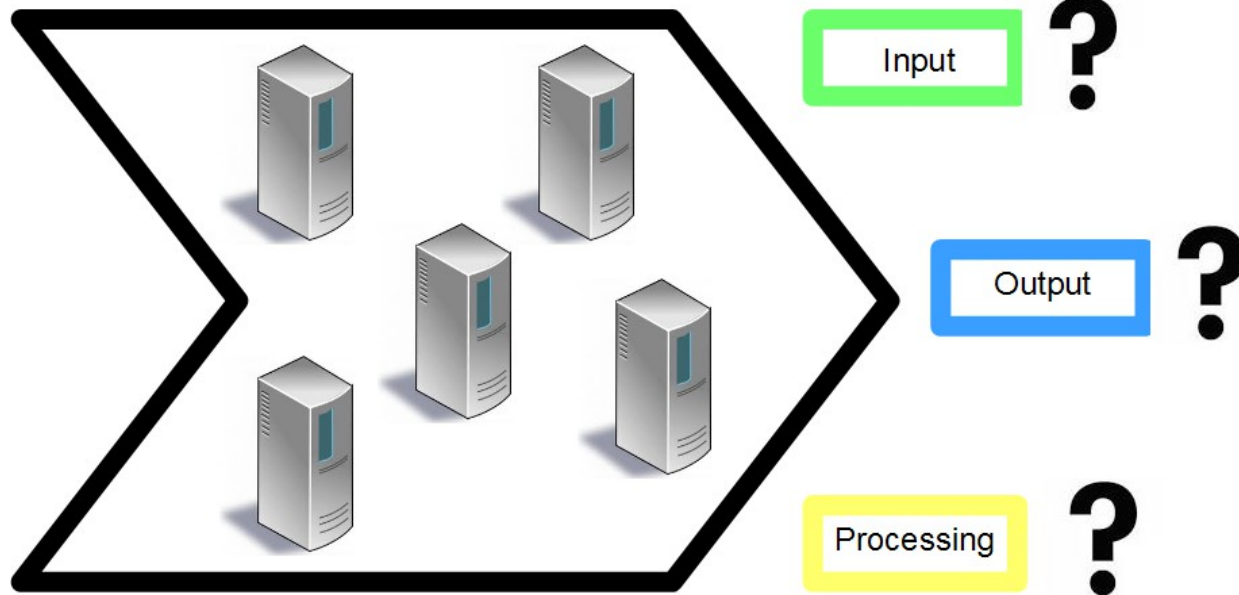# Sea wave forecast according with SWAN's model

- Forecast about the sea conditions in a determined zone

- Important product for civil protection and nautical tourism

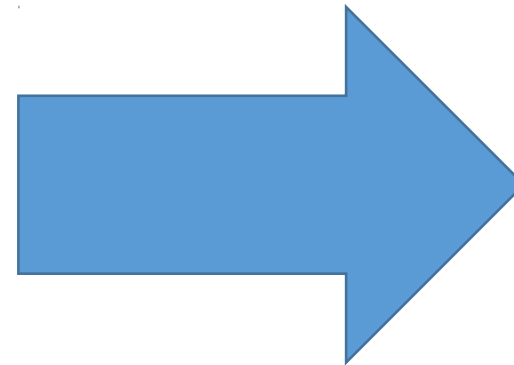- Sometimes its availability is compromised
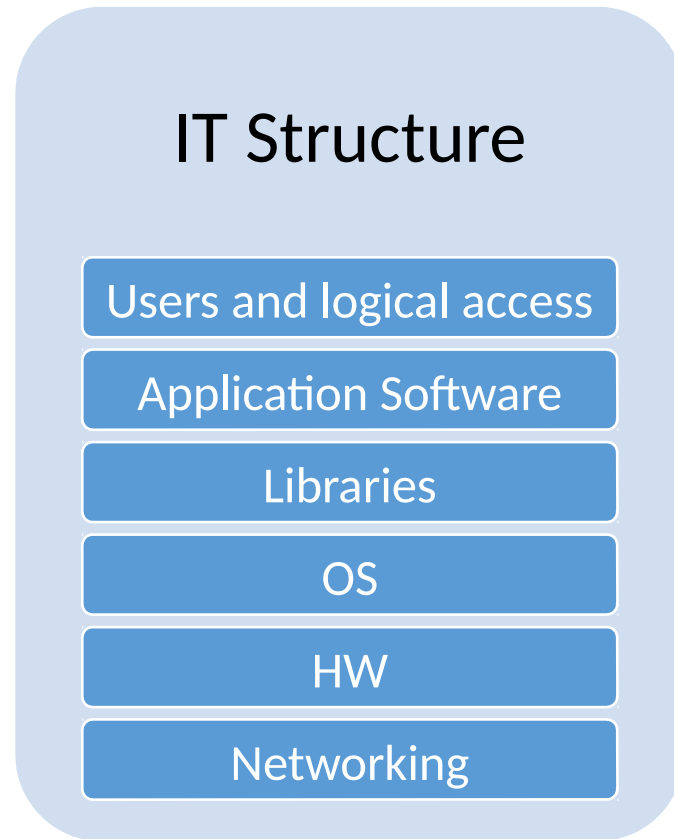
404
FILE NOT FOUND

Towards a controlled environment

IT Profile Metadata

IT Structure

Users and logical access

Application Software

Libraries

OS

HW

Networking

Configuration Management Database
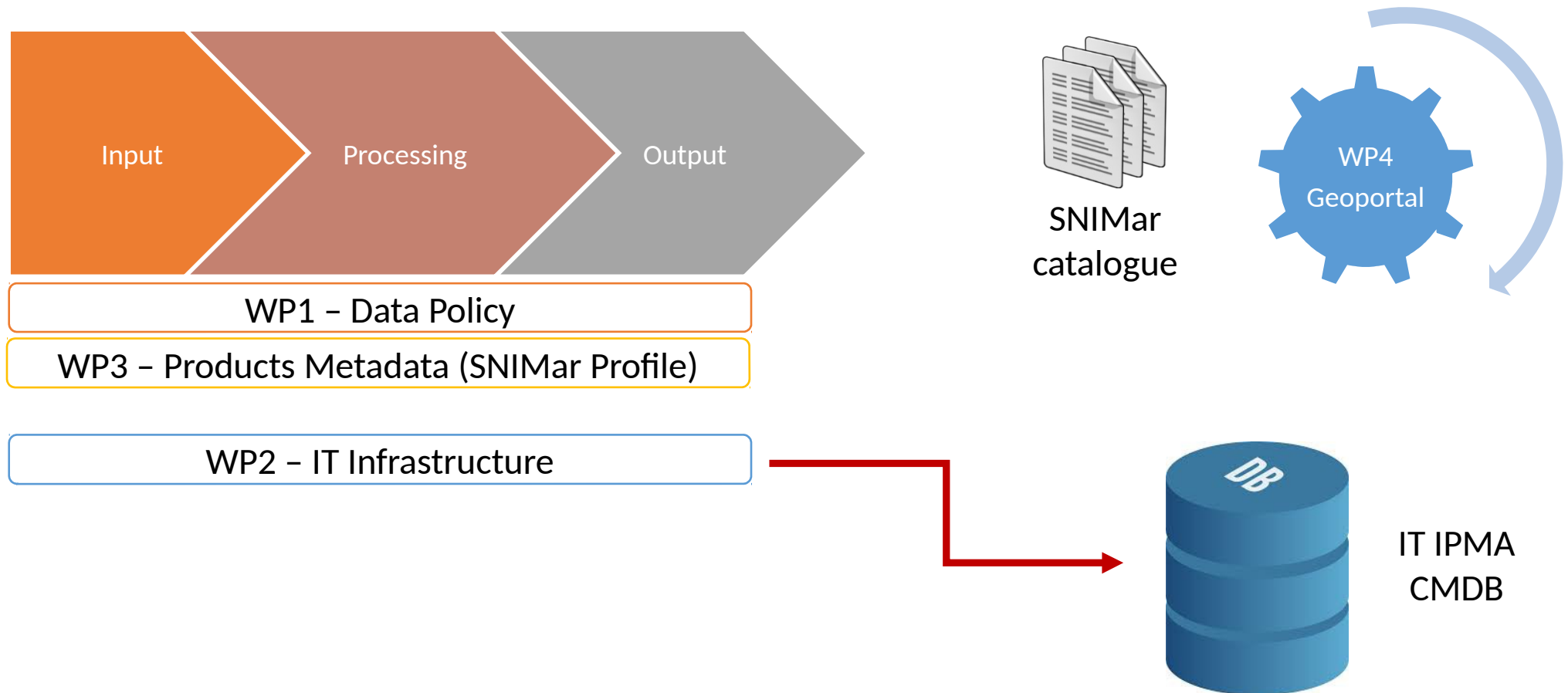
To monitor and control

- A CMDB - Configuration Management Database
  - Relate the product production phase to the assets involved in the process
  - Relate IPMA metadata at SNIMar DB Catalog with IT CMDB

- The integration of the CMDB in IPMA's information system (IS)

- The IS comprises a ticketing system
  - Every time a product is not available the system could include information about what went wrong

Normalize Process -
Model to describe Data's lifecycle inside IPMA

.. according to the SNIMar project
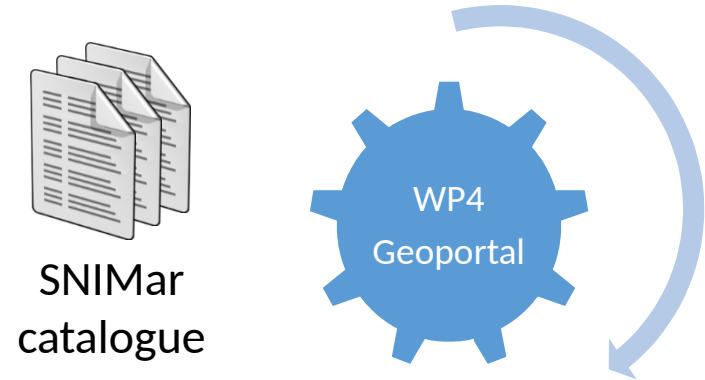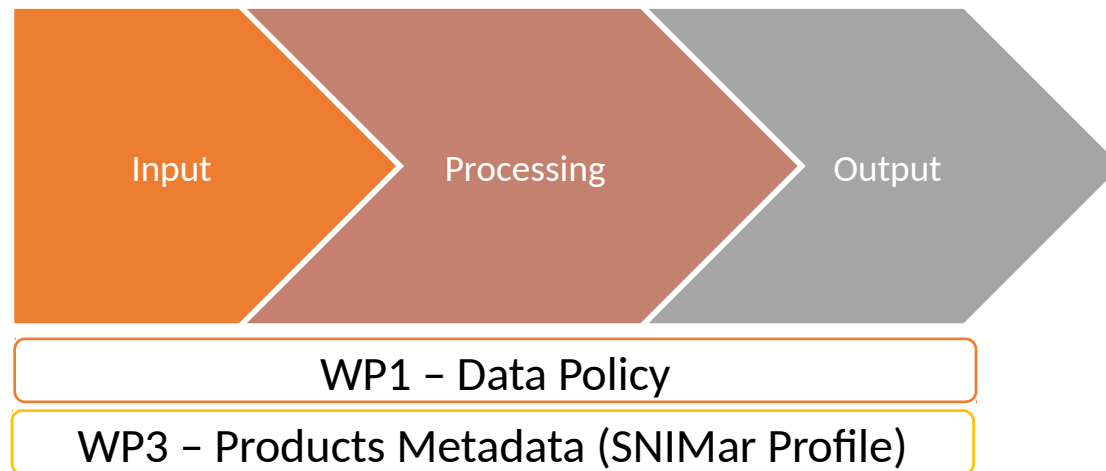
Normalize Process - Model to describe Data's lifecycle inside IPMA

.. Integrated infrastructure DATA (add IT Profile)

Conclusions

- With this system it will be possible:

  - Track every asset related to the product through a CMDB
  - Monitor and control the production chain
  - Respond in case of failure
  - Support IT managers in decision activities
  - Improve the quality of the service

  And of course, control and monitoring from IT view, products process from data which metadata belongs to the SNIMar Catalog at Geoportal!

If you have any questions please submit them to:

Valéria Pacheco

valeria.pacheco@ipma.pt

José Santos

zpsantos1@hotmail.com

Obrigado