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Real-time Data Input to a Common Operating Picture for Disaster Planning & Response

Dr Mike Osborne & John Pepper
OceanWise Ltd

Delivering and Teaching Marine SDI for over 20 Years

Contents

- Common Operating Picture
- Geospatial and Monitoring Datasets
- Data Management and Governance
- Resilience
- Key Messages

Common Operating Picture

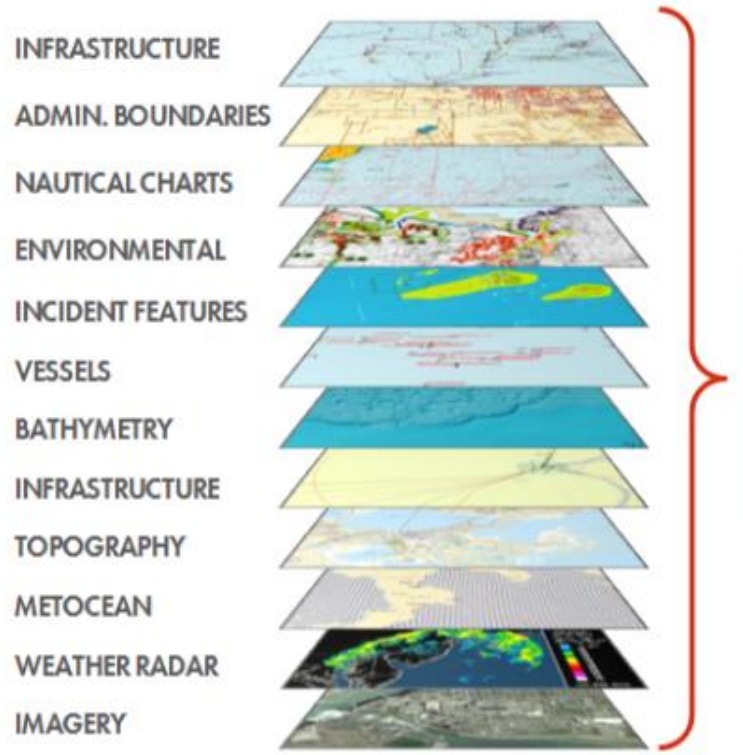
The data you need easily accessible in one place

Joint Industry Study Post Deep-Water Horizon

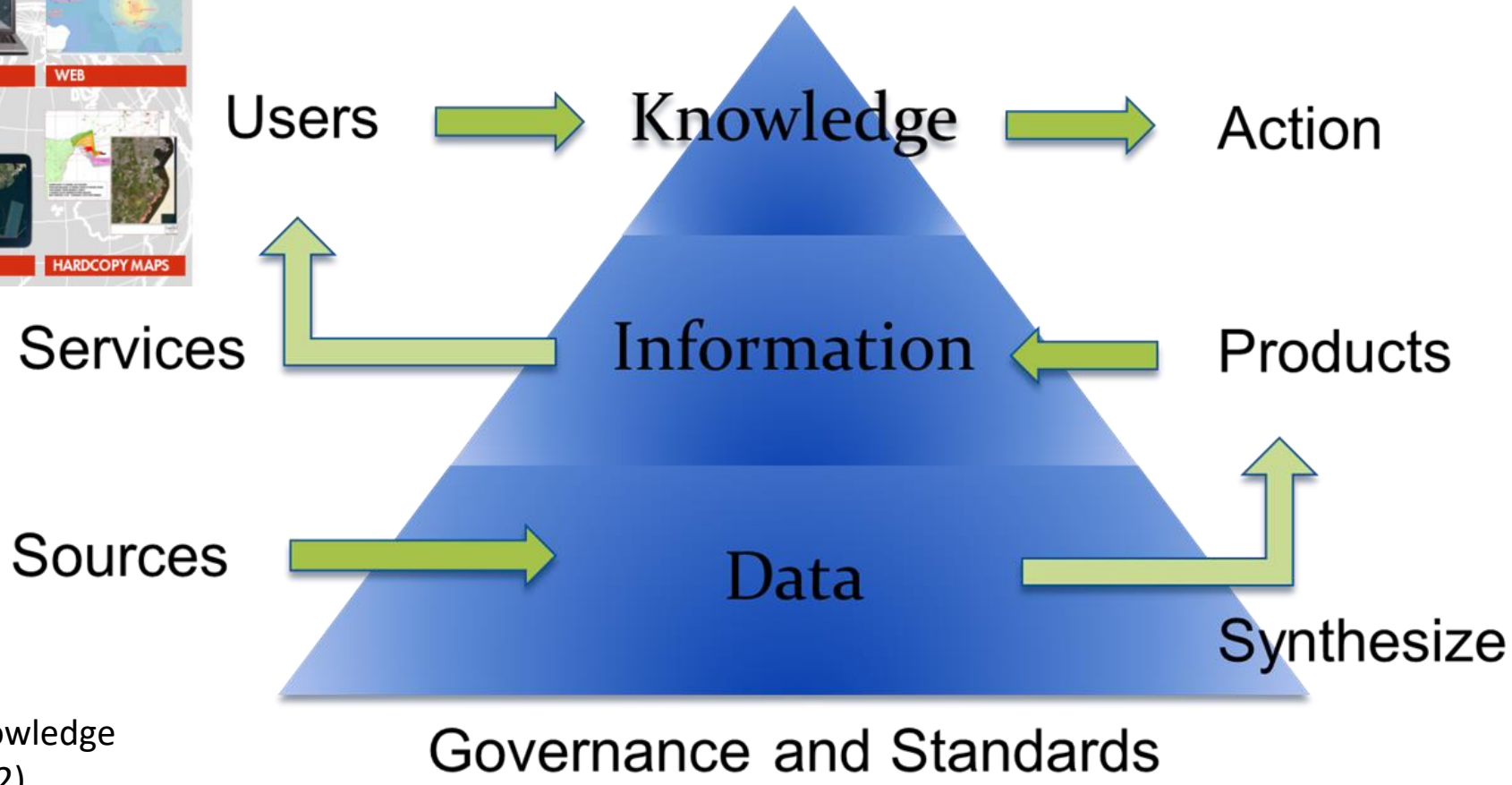
But Where is the Data coming from?

For every data layer:

- What is the source?
- Provenance?
- Data Quality?
- Update/Life Cycle?
- Pre-preparation?
- Plan for improvement?
- Requires ‘Data Governance’



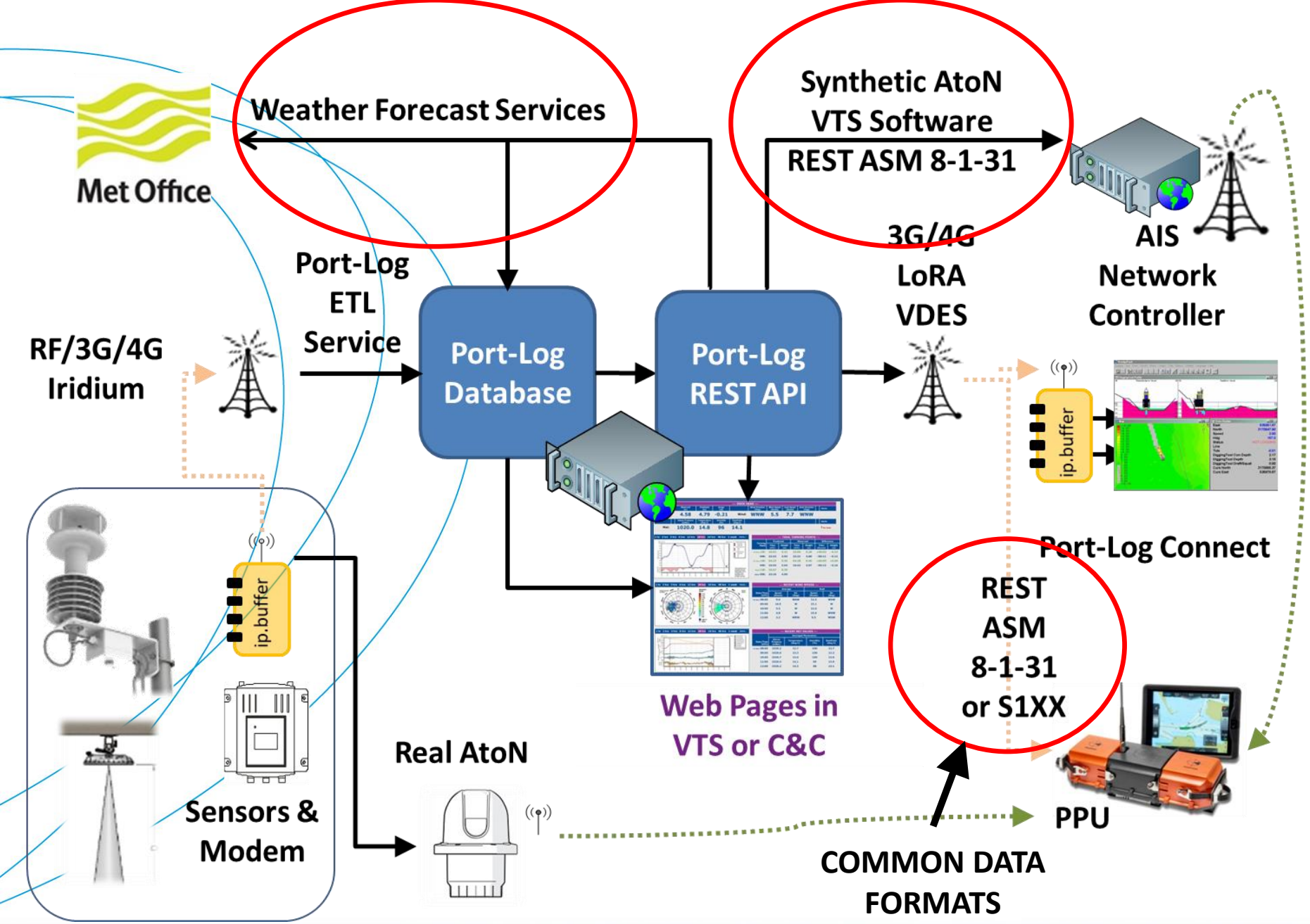
Common Operating Picture in Context



From the well known Data-Information-Knowledge Triangle, adapted by OceanWise (2012)

Principle of Data Sharing

Agree what data to share and how to do it!



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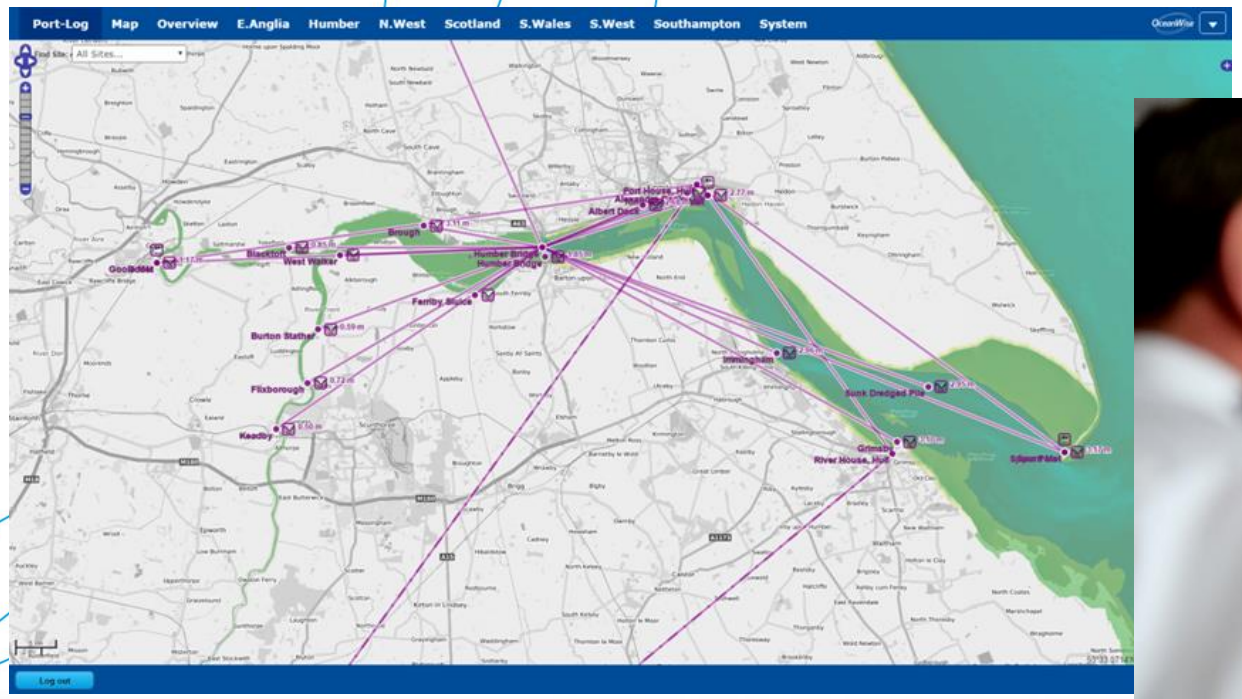
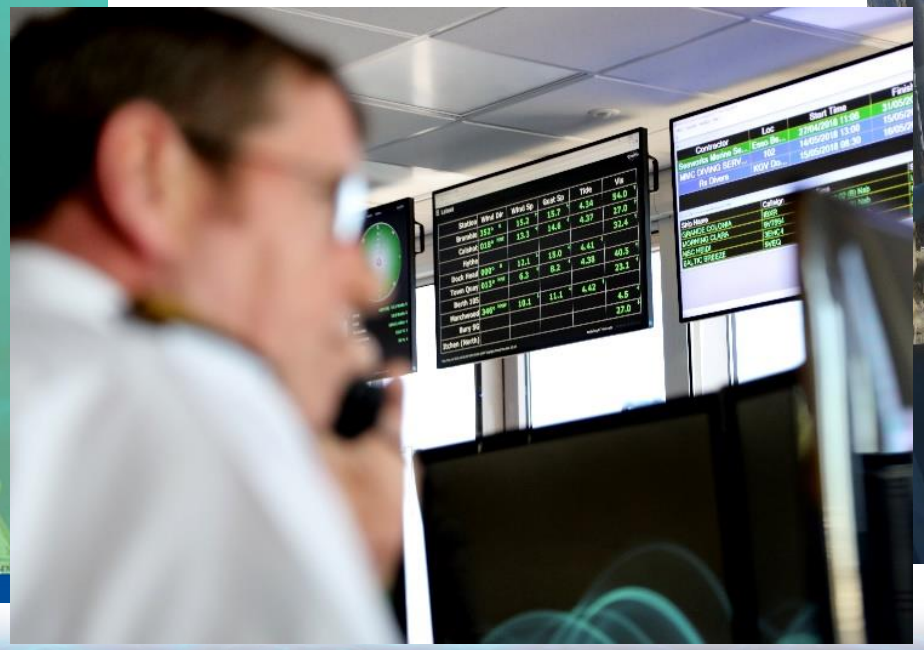
OceanWise Port-Log System

Data Architecture

ABP Ports Group Network

Deliver real-time environmental data from anywhere to anyone for 23 Ports





Wind Farm Management System

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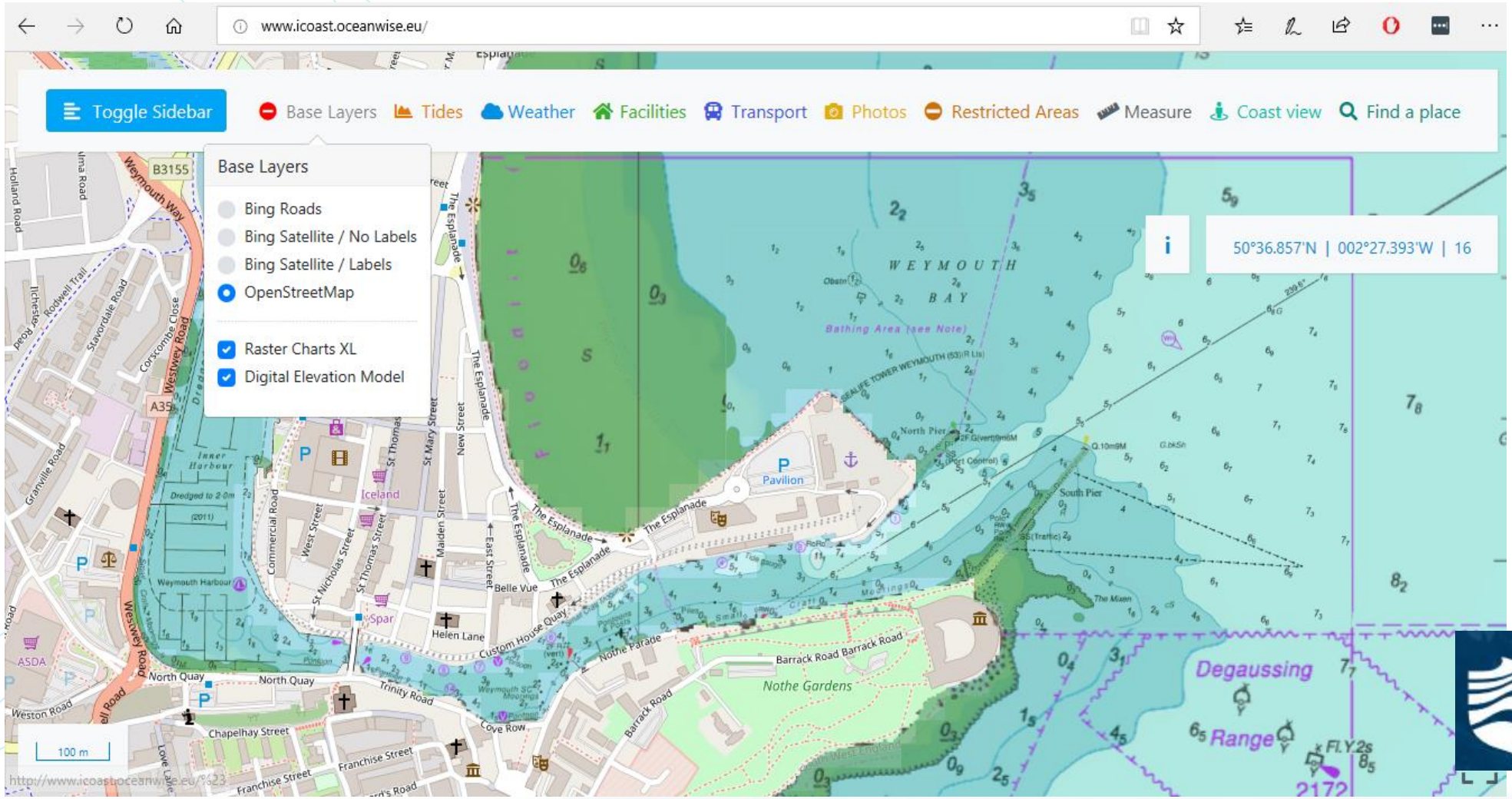
Marine data analysis service to assist with project and operational decision making and risk mitigation

BIG Marine Data Observatory



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Lifeboats

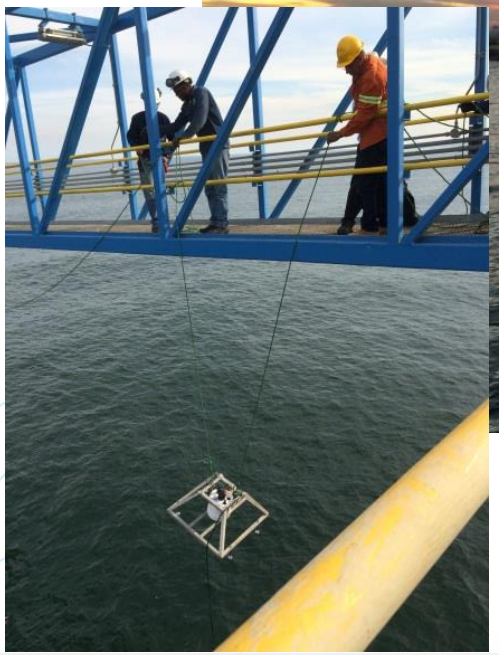
Dorset Council

UNIVERSITY OF Southampton

BLUE MARINE FOUNDATION

AES Itabo - Dominican Republic

Monitoring system supporting vessel movements at coal terminal



Wind, wave and current monitoring reliably using Port-Log since 2015

Resilience

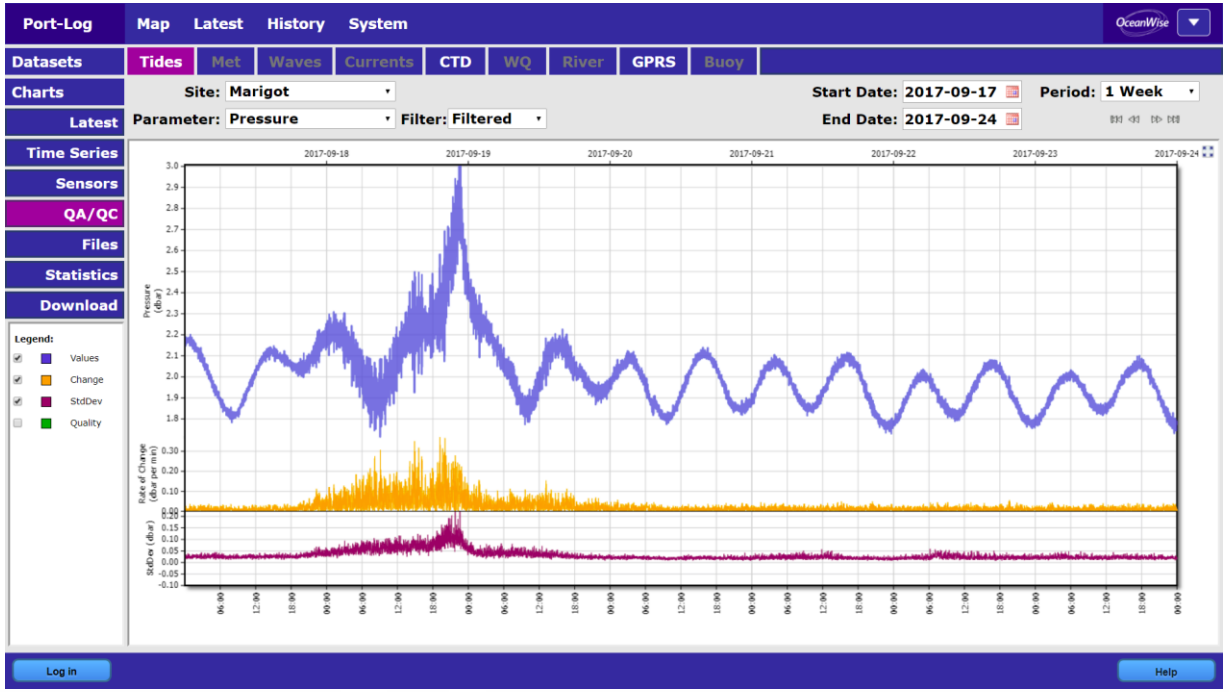
"We are extremely happy with the performance of the ip.buffer. We are not aware of any other modem being able to perform to this standard."

- ✓ Proven reliability - survived green water intrusion at Port of Dover
- ✓ Multiple transmission methods
- ✓ Remote instrument administration
- ✓ Safe and secure data transmission
- ✓ Acknowledges successful data receipt
- ✓ Instrument manufacturer independent

Marigot Fishing Harbour - Dominica

Monitoring system supporting vessel safety and climatology

System survived hurricane Maria and recorded data throughout the storm



International Standards

- Data Quality Management Framework (ISO 8000)
- Systems and Software Requirements and Evaluation (ISO 25001)
- Geographic Information — Data Quality (ISO 19157)
  - Part 1 General requirements
  - Part 2 XML schema implementation
  - Part 3 Quality assurance of data supply
- Quality Management (ISO 9001) – NOT data specific
- ISO Business Management High Level Structure (Annex SL)
  - Clause 8 Operating Procedures – including for data

ISO Generic Data Quality Model

Divides Data Quality into three categories:

- Inherent Quality

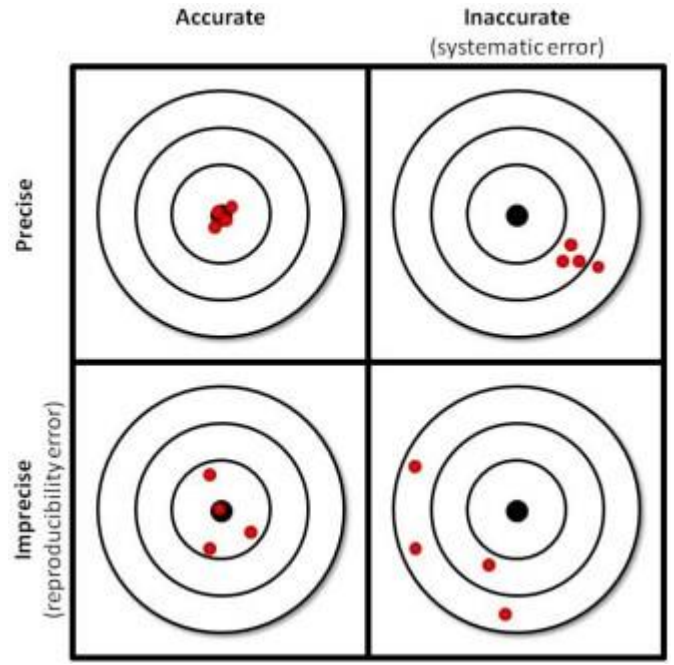
  e.g. Accuracy and Completeness

- Technology Dependent Quality

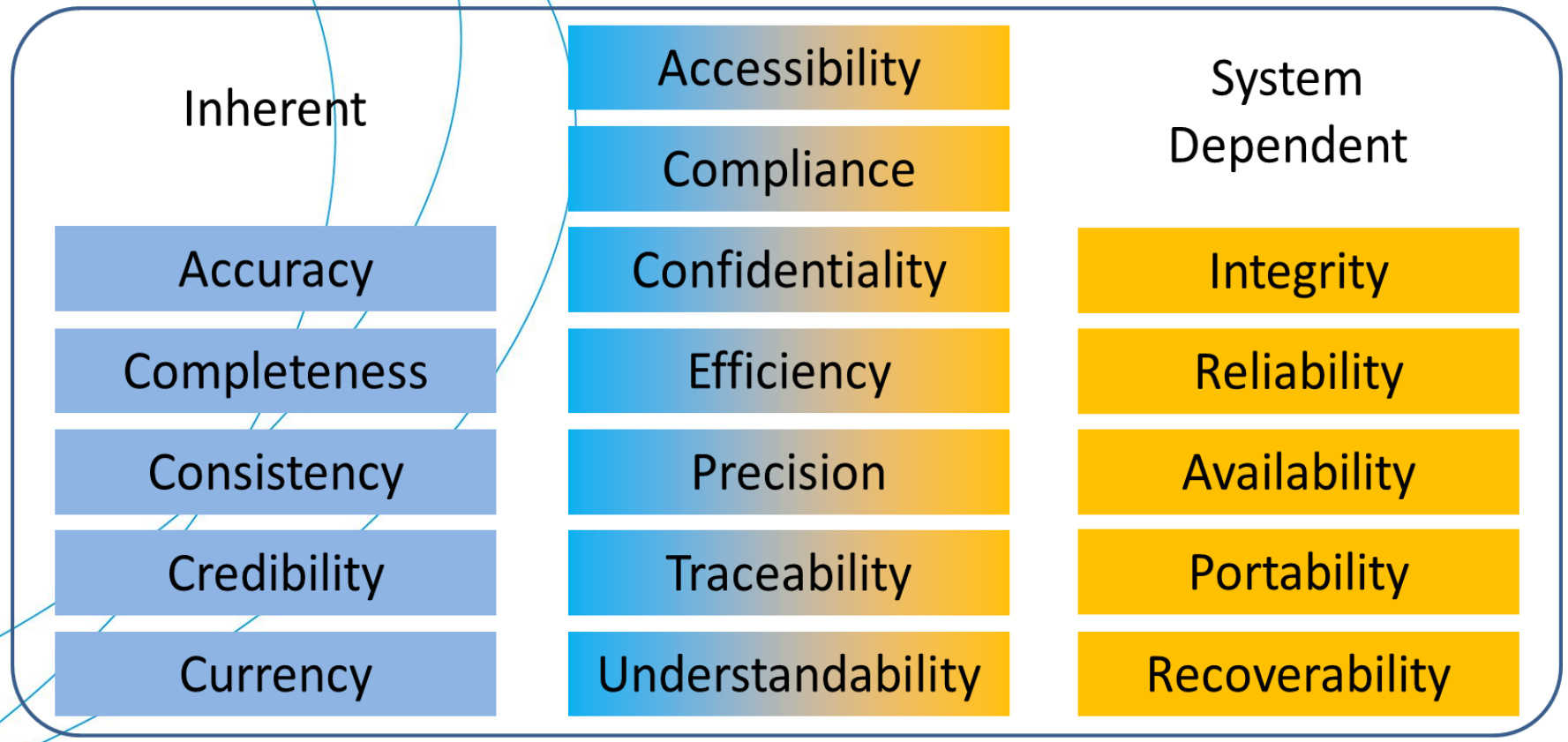
  e.g. Availability and Recoverability

- Inherent **and** Technology Dependent Quality

  e.g. Precision, Understandability and Traceability



ISO Generic Data Quality Model

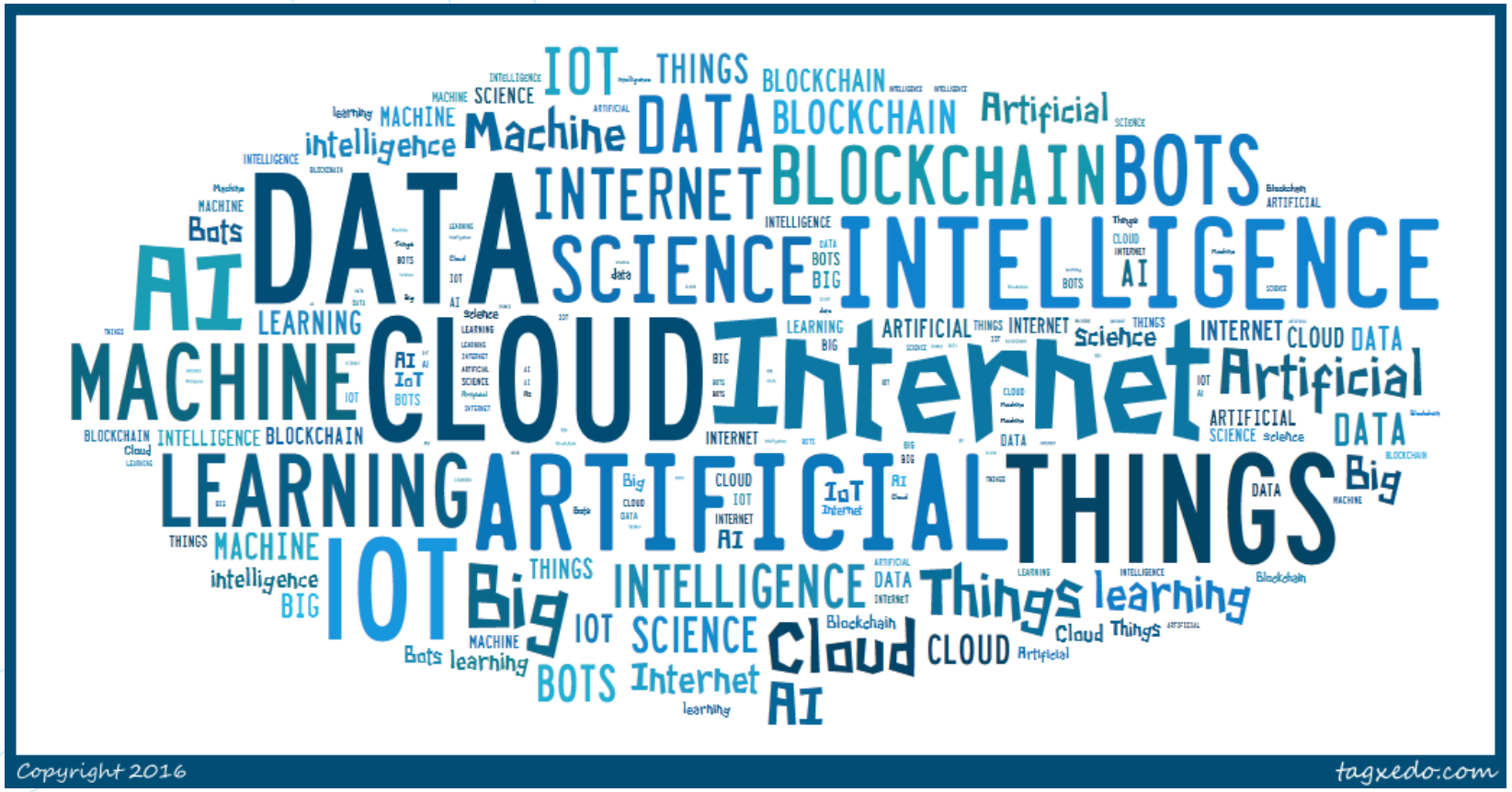


Objective versus Subjective Metrics

Subjectivity means 'Fitness for Purpose'

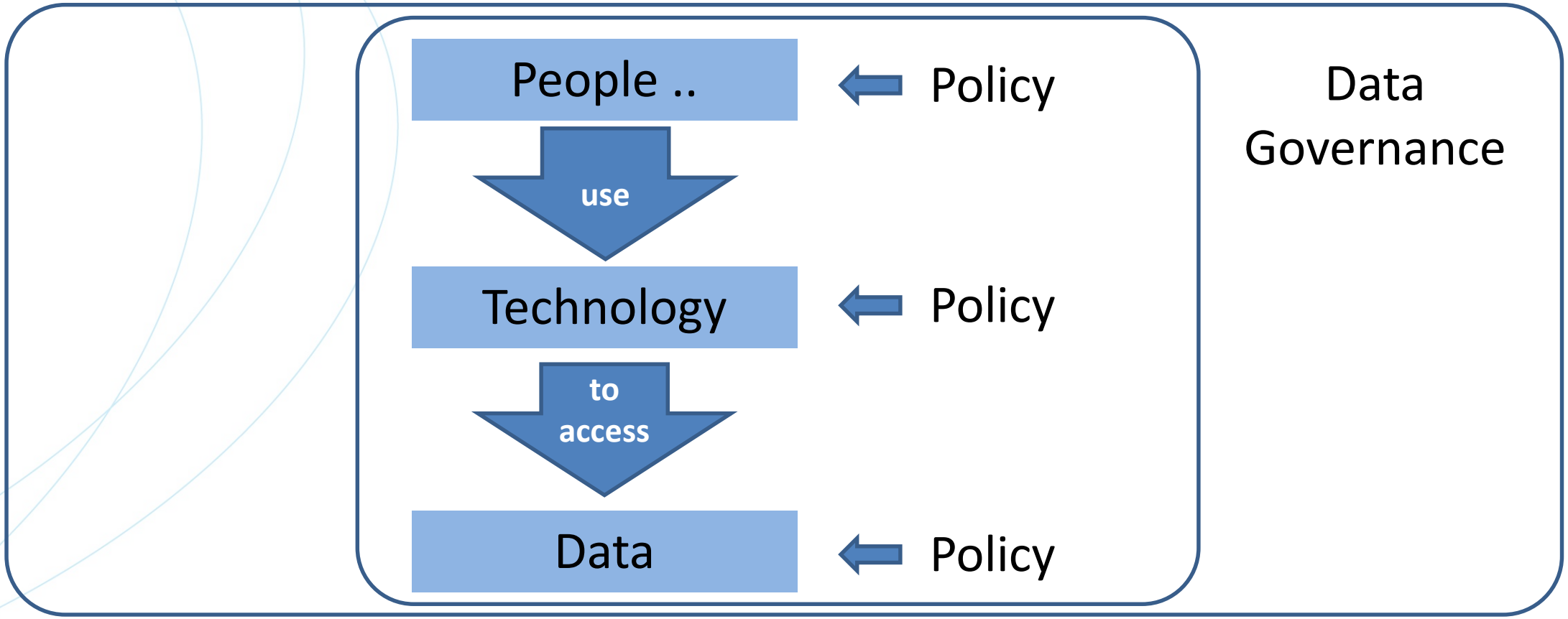
Purpose must be defined **and** communicated

Latest Technologies



All require understanding and addressing Data Quality issues

Data Quality Management



Data Governance

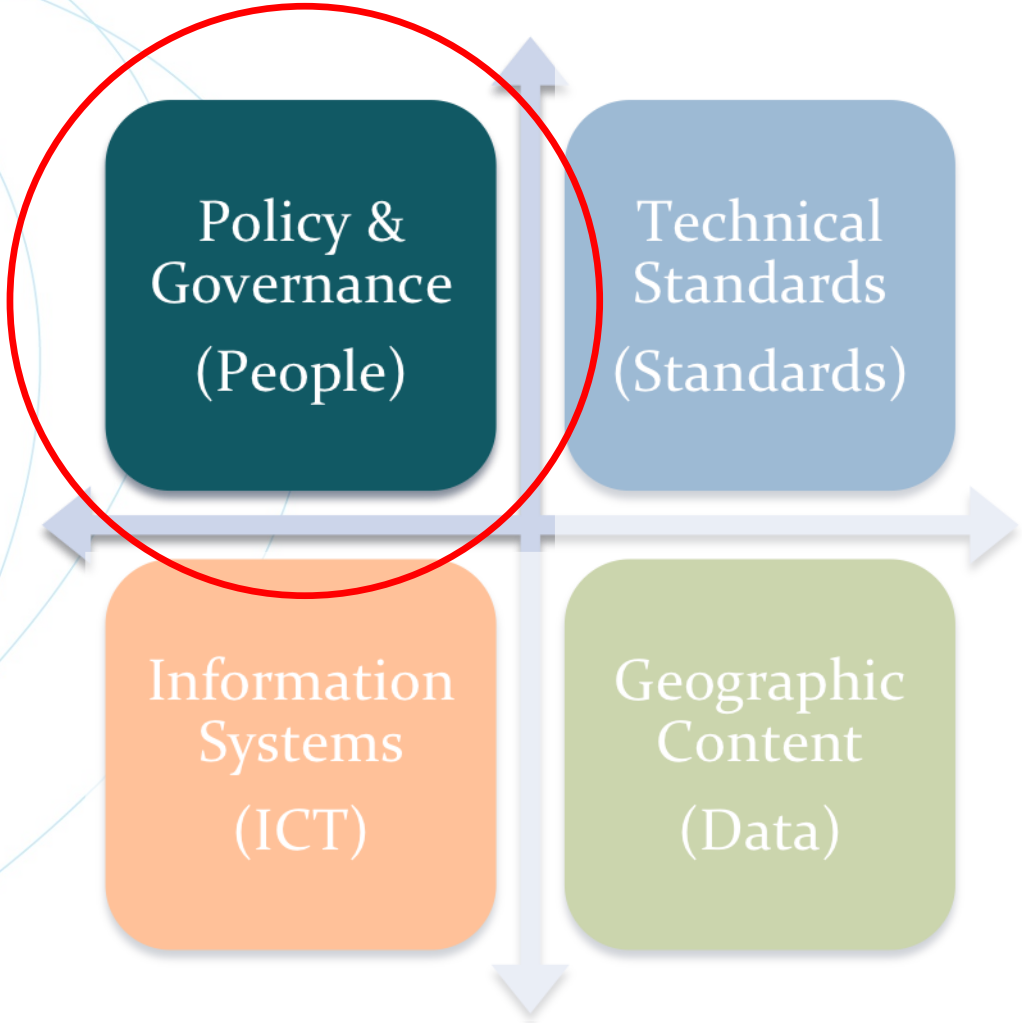
- Data Governance is the execution and enforcement of authority over the management of data-related resources
- No governance = Data anarchy
- Data Governance needs to be communicated and involves internal and external stakeholders

Source: sciphilos.info

Data Governance Concepts

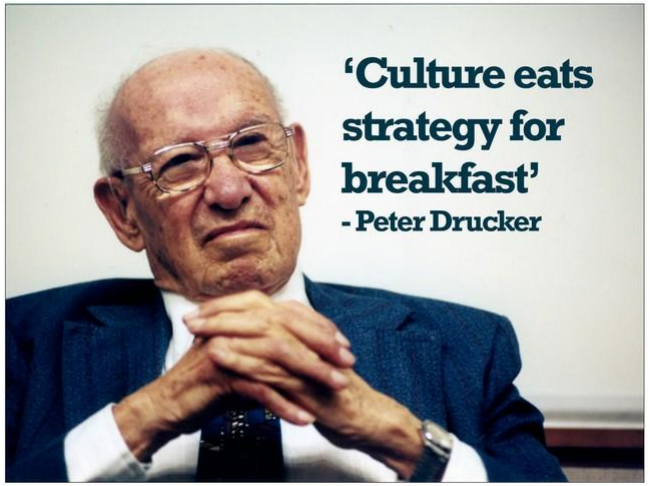
- Key data items and domains are identified and defined:
  - What are they? (Customer, Supplier, Finance etc.)
  - Where are they are held?
  - Who needs to access them and how?
- Individuals are made accountable for data within their domain –> **Data Stewards**
- Critical data is defined, indexed, measured regularly and reported on by Stewards –> **Master Data**
- As problems are identified (reported), initiatives are launched to address them –> **Data Improvement**

Making the Case



Four Pillars of Spatial Data Infrastructure (OceanWise, 2012)

Where's the biggest challenge?



Common Operating Picture Messages

- Combines many data sources into a single user interface
- Includes monitoring, geospatial and modelled datasets
- Based on sound data management i.e. SDI principles
- Data Quality Management and Governance is a key ingredient
- SDI feeds the COP and must have a purpose to be accepted
  e.g. disaster resilience planning, oil spill response, marine spatial planning
- Integrated information management system built on NATIONAL capability
- Guidance and capacity and capability development should be given priority
- Focus on data accessibility and availability for sustainable development

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Thank you for listening …

Talk to us about your Data Management Capacity Building requirements today

www.oceanwise.eu
mike.osborne@oceanwise.eu
John.pepper@oceanwise.eu