Session #6 - Towards an Integrated Ocean Observing System
Part 2 - Optimizing Ocean Monitoring and Data Sharing Capabilities

Information Interoperability: Building Interoperable Ocean Observing Systems with Sensor Web Technology

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Introduction

• NeXOS (FP7, Ocean of Tomorrow 2013)
  • New low-cost, compact and integrated sensors with multiple functionalities
  • Multiplatform integration
  • Sensor and data interoperability

• 52°North GmbH
  • Sensor Web architecture and interoperability
  • Develop open source Sensor Web implementations
Motivation
Motivation
Sensor Web

- O&M and SensorML
- request data
- subscribe to event notifications
- SMS
- alarm
- WNS
- data stream
- commands
- SOS
- SAS/SES/PubSub
- measurements
Marine Sensor Web Profiles

• Many projects and organizations in oceanology start to use OGC Sensor Web Enablement standards

• Common approach needed: How to apply these standards?
  • Which metadata elements are needed?
  • How to structure instrument/platform metadata?
  • Which observations types are needed?
  • Which functionality is required?
  • Which terms shall be used?
Marine Sensor Web Profiles

• Cooperation between different Ocean of Tomorrow Projects
• Work in progress
• Aim: Develop best practice guidance
• Provide implementations
• May serve as link to GEOSS → harvesting by GEOSS DAB
• Outlook: Cover further aspects, e.g. processing, event detection
Application in NeXOS

Source: UPC/NeXOS
Application in NeXOS
Application in NeXOS

http://nexos.demo.52north.org/client/#/?timespan=2016-05-01T09%3A23%3A18%2B02%3A00%2F2016-05-02T09%3A23%3A18%2B02%3A00&ts=esonet__1%2Ctrios__ts_831d2f1059cd99838009f7c304fc3ef4

http://europaeu.eu/IVN4G6Gn
Recommendations

• Re-usable implementations including client applications
• Best practices and guidance
• Profiles of standards
• Vocabularies
• Consider the whole chain from instrument to application
• Next step: interoperable data processing
Thank you for your attention!

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