EO4OG
KICK-OFF MEETING

March, 7 2014

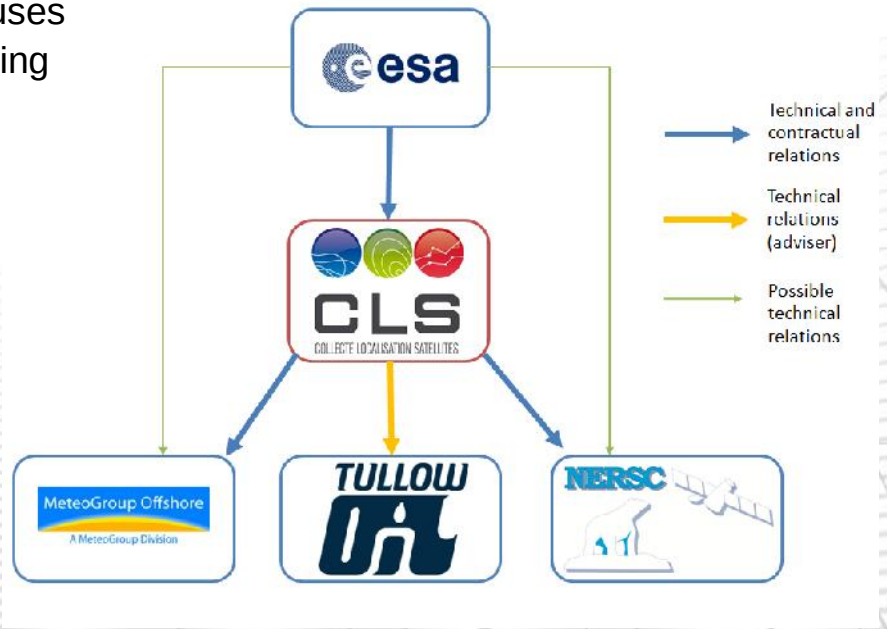
Frascati

SUMMARY

Context and partners

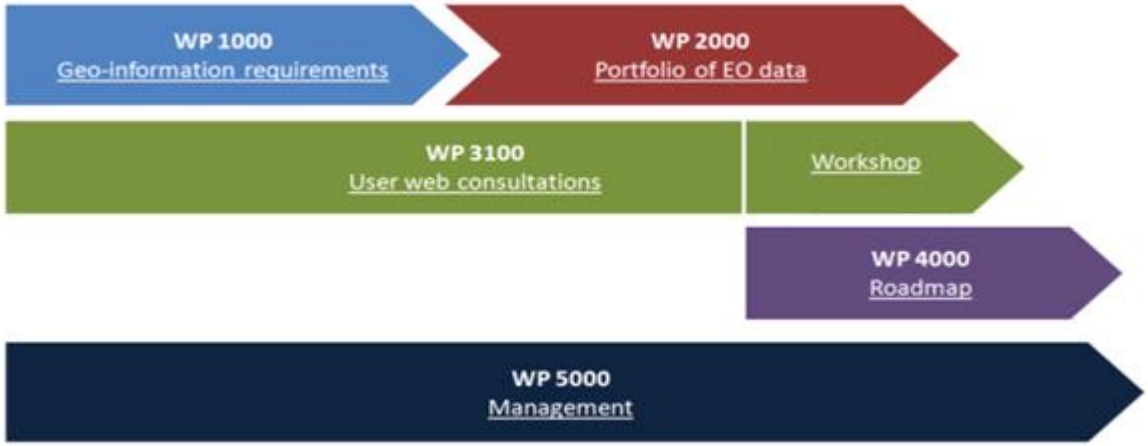
- Challenges :
  - Determination of the current and future need of the OGP in terms of variables and services
  - Provision of the inventory and description of the EO data and their added-value
  - Determination of the uncertainty on the EO data and their limitations for operational use regarding the way they are currently used
  - Analysis of the existing gaps between user requirements, available products and current uses
  - Determination of the added-value for forthcoming EO missions

- Schedule:
  - From 07/03/2014 to 07/01/2015

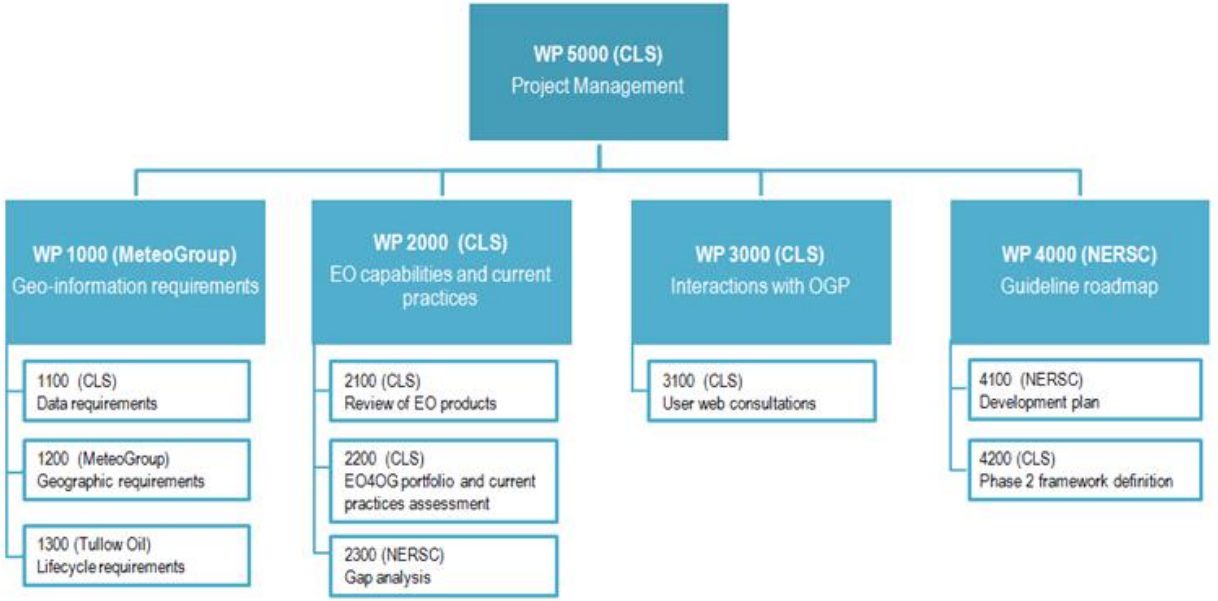


ORGANIZATION OF THE PROJECT

STUDY LOGIC AND WBS



March 7th 2014 January 7th 2015



GEO INFORMATION REQUIREMENTS

WP	Title	Company Responsible	Tasks	Outputs
WP1100	Definition of data requirements	CLS	Review of the data needs and specifications of the requirements for metocean data and environmental survey. This analysis will be enhanced after consultation and review by the OGP community (see WP 3100) in order to ensure a complete coverage of the requirements.	D.1 – Geo-information requirements (section on metocean and environmental data needs)
WP1200	Definition of geographic requirements	MeteoGroup	Review of the data needs and specifications of the requirements according to the 6 regions	Geo-information requirements (section on geographic specificities)
WP1300	Definition of lifecycle requirements	Tullow Oil	Review of the data needs and specifications of the requirements according to the lifecycle phases of an OGP project: (Pre-license acquisition,Exploration/ Appraisal, ,Development, Exploitation/ Production, De-commissioning)	Geo-information requirements (section on lifecycle phases specificities)

GEOGRAPHIC REQUIREMENTS EXAMPLE

Geographic Region	Oceanography	O&G Exposure (occurrence/impact)
Off Mozambique	strong currents, large eddies, meso-scale variability cyclones	current-sensitive region
Off NW Brazil/Fr. Guiana	strong tides, strong currents, large eddies, meso-scale variability Amazon River plume extent, fresh and turbid waters	current-sensitive region, waves
Offshore Angola	strong currents, large eddies, meso-scale variability Congo River plume extent, fresh and turbid waters Squalls, swell	current-shear region, waves, swell
Offshore Argentina	mesoscale variability, thermal front, storms, high sea state	Waves, current-sensitive region
Offshore South Africa	Strong Current (Agulhas Current), mesoscale variability, thermal front, storms, high sea state	Waves, strong current shear, current-sensitive region
Caspian Sea	Ice, wind driven current, River outflow, waves	Currents, ice concentration, waves

LIFECYCLE REQUIREMENTS EXAMPLE

Nature of data	Sea surface	Sea column	Sea floor	Coastline	Atmosphere
Pre-license acquisition	Detection of seepages Wave height statistics for design of the rig Water quality Monitoring of mammals habitats	Currents statistics/ climatology Current modelling In situ data collection	Sea bed bathymetry Benthic habitats (corals, fauna)	Cartography of access to the AOI, ports, roads, environmental baseline mapping classification and impact assessment Elevation mapping Monitoring sea turtles nesting habitats	Weather conditions, evaluation of risks (typhoons, floods)
Exploration/ Appraisal	Seismic survey vessels tracking, monitor the maritime traffic, monitor current affecting precision of seismic surveys. Sea state monitoring to avoid loss of seismic streamers	Metocean data needed for deployment of sea bottom instruments and ROVs. Sound speed linked to salinity Monitor environmental conditions (algae bloom, seaweed, fauna)	Tomography, seismic survey Near-shore bathymetric mapping (water depths less than 20 m)	Coastal mapping for base camp, jettys, port infrastructure. Tidal range Mapping kelp/sea grass environment ally sensitive fauna/flora Monitoring sea turtles nesting habitats	Weather conditions, evaluation of risks during navigation. Impact on GNSS accurate positioning systems Monitoring storm cells and weather fronts
Development	Tracking of rig elements from the ports of origin. Sea state monitoring	Current velocity Solitons, shear currents affecting installation and operation of rig	Detailed bathymetric survey Assessment of potential sea-bed hazards (pock marks, channels, slides)	Impact of constructions on coastal erosion; environmental	Weather conditions, evaluation of risks during navigation.
Exploitation/ Production	Monitoring of production operations; tracking of known and unknown vessels (fishing fleets and pirates); routing; monitoring currents during oil transfer operation; drill cuttings, hot water discharge,	Current velocity Solitons and other sea surface phenomena affecting riser operations, ocean water quality impact on operations		Impact of infrastructure development on coastal erosion Environmental impact and consequence of chemical release	Weather conditions affect rig operations, crew changes by helicopters or shuttles
De-commissioning	Monitoring to ensure restoration, mitigation and regeneration		Seabed survey	Monitoring to ensure restoration, mitigation and regeneration	

EO CAPABILITIES AND CURRENT PRACTICE

WP	Title	Company Responsible	Tasks	Outputs
WP2100	Review of EO products	CLS	Review of EO products. Inventory of the relevant variables: • Direct observations • Data from numerical models	Report including list of relevant EO products and analysis on suitability for OGP with respect to the 3 segments.
WP2200	EO4OG portfolio and assessment of current practices	CLS	Definition of the EO4OG portfolio and assessment of current practices: • Detailed description of sensors, content, availability and accuracy of products. • Mapping of these products with respect to 1) the OGP needs thorough a project lifecycle, 2) the requirement segments and 3) the geographical areas.	report including list of relevant EO products and analysis on suitability for OGP with respect to the 3 segments.
WP2300	User requirements gap analysis	NERSC	Gap analysis between current and forthcoming products w.r.t. the needs.	Summary of gap analysis actions based on SWOT table synthesis

PORTFOLIO EXAMPLE

Login Form

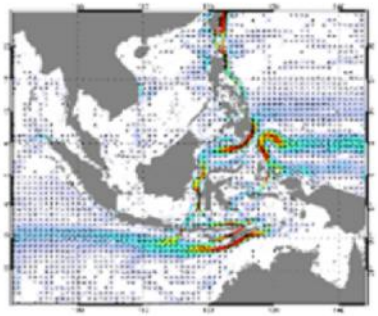
User Name

Password

Remember Me

Log in

Create an account >



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Physical models outputs

SHORT DESCRIPTION

The Operational INDESO physical Ocean analysis and forecast system, at 1/12° horizontal resolution, is providing 10 days of 3D ocean forecast and ocean analysis updated weekly. This product includes daily mean fields of atmospheric fluxes, physical parameters (temperature, salinity, currents, sea level...), hourly surface variables (SST, SSH, currents), as well as hourly values of all fields at selected mooring sites and validation metrics.

Full overview...

THEMATICAL INFORMATIONS	
PRODUCT TYPE	Physical ocean model analysis forecast
PURPOSE	Marine and costal environment, Ocean and climate monitoring
DESCRIPTIVE KEYWORDS	Ocean, Physics, Analysis, Forecast

TECHNICAL INFORMATIONS	
TEMPORAL COVERAGE	temporal coverage
VERTICAL COVERAGE	vertical coverage
SPATIAL RESOLUTION	1/12
TEMPORAL RESOLUTION	Daily
UPDATE FREQUENCY	Weekly
PLATFORM	Nemo-opa
SENSOR	Not available

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INTERACTIONS WITH OGP

WP	Title	Company Responsible	Tasks	Outputs
WP3100	User web consultations	CLS	The interactions with OGP will be made possible through web campaigns to: 1. collect their feedback on the user requirements defined in WP 1000 ; 2. complete the preliminary list of EO based products as defined in WP 2100 ; 3. present the EO4OG portfolio and the assessment of current practices carried out in WP 2200;	HTML files for the OGEO portail

A flyer has already been created to advertize the O&G actors about this project. Our aim is to distribute it to whom it may interest at Oceanology International. A link to OGEO portal has been added to make a first connexion between our products and the O&G actors.

GUIDELINES ROADMAP

WP	Title	Company Responsible	Tasks	Outputs
WP4100	Roadmap development plan	NERSC	Developement plan for the guidelines : • Documentation of mature EO services, • Documentation (by consensus) of oil and gas industry-wide EO requirements • Examples of industrial best practices highlighting EO usage • Facilitate ongoing communication between OGP and EO service providers, (e.g., OGEO workshops)	Guideline Roadmap (section on developement plan)
WP4200	Phase 2 framework definition	CLS	Provision of a Statement of Work, including the following items: • Document Requirement Description for all elements of the guidelines • Phase 2 project team profile, including a description of the skills required by the project team • Guideline review approach • Approach to Guideline training • Description of work including tasks, deliverables, milestones and estimated costs	Guideline Roadmap (section on framework definition)

CLS

Role	Name	Participation
Project Manager	Maureen Coat	**WP 5000 : Management** **WP 1100 : Data requirements** **WP 2100 : Review of EO products** **WP 2200 : Portfolio of EO products** **WP 4200 : Phase 2 framework definition**
Expert	Laurent Guerlou	Support in : **WP 1100 : Data requirements** **WP 2100 : Review of EO products** **WP 2200 : Portfolio of EO products** **WP 4200 : Phase 2 framework definition**
Technical Expert	Marc Lucas	**WP 1100 : Data requirements** **WP 2100 : Review of EO products** **WP 2200 : Portfolio of EO products** **WP 4200 : Phase 2 framework definition**
Communication & outreach Expert	Marianna Childress	WP Manager : **WP 3100 : User web consultations**
EO4OG contract Officer	Nadine Lucas	Contract Officer

Tullow Oil

Role	Name	Participation
OGP expert	Martin Insley	Support to : **WP1300 : Lifecycle requirements** **WP2000 : EO Capabilities**

NERSC

Role	Name	Participation
Expert on metocean and environmental studies	Johnny Johanessen	Contributor to : **WP 2100 : review of EO products assesment of current practices** **WP 2300 : gap analysis and WP 4100 development plan**
Expert on metocean and environmental studies	Rick Danielson	Contributor to : **WP 2100 : review of EO products assesment of current practices** **WP 2300 : gap analysis and WP 4100 development plan**

MeteoGroup

Role	Name	Participation
Expert on metocean and environmental studies	Jean François Bonnin	Coordination and participation to : **WP 1000 : Geographic requirements**
Expert on metocean and environmental studies	Maurits Jan Geutz	Coordination and participation to : **WP 1000 : Geographic requirements**
Expert on metocean and environmental studies	Rudy Magne	Coordination and participation to : **WP 1000 : Geographic requirements**

EXPERTS TEAM

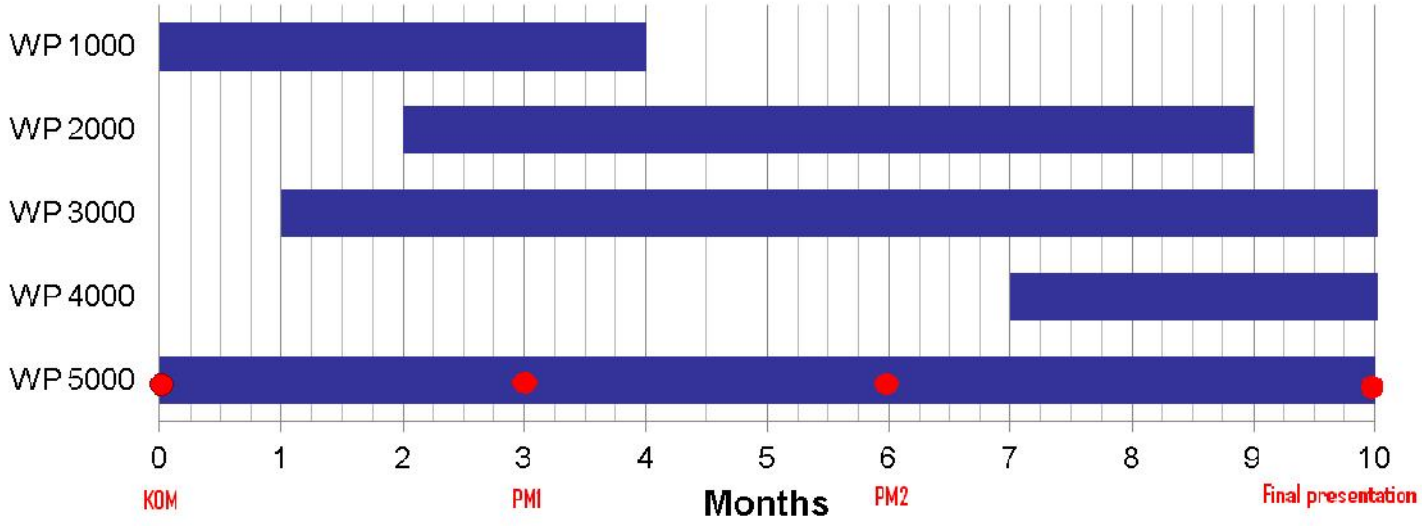
Name	Biography
Marco Venturi **Saipem SA** 	Present occupation (since 2013): **Manager of the Ocean and Coastal Engineering department of Saipem** SA (Montigny le Bretonneux, France) Former occupation (2004-2012): Manager of the Ocean and Seabed Enineering department of Saipem Spa (Fano, Italy) Fields of expertise: metocean design and operational criteria for Oil & Gas industry, seabed and coastline stability, pollutant dispersion at sea
Thomas Mensch **CGG** 	Thomas Mensch received his PhD in geophysics from Paris University and Institut de Physique du Globe de Paris in 2000. He has over fifteen years of experience in the Oil & Gas industry. He joined CGG in 2005 where he is currently **R&D advisor for the Marine Acquisition division**. His research interests include applied geophysics, computer science and application of operational oceanography for marine seismic acquisition. Thomas is member of European Association of Geoscientists and Engineers (EAGE) and Society of Exploration Geophysicists (SEG).
Mark Calverley **Fugro** 	Mark Calverley has over 20 years experience supporting the oil and gas sector in the delivery of Metocean services. He has worked in most of the world's oil and gas basins, and has extensive knowledge of regional meteorology and oceanography that impacts oil and gas operations. A key part of his knowledge is the synthesis of disparate data streams to create value added products to address particular regional issues. When based in Houston Mark was involved with the use of satellite data to delineate the Loop Current and associated eddies, combined with in-situ data collection. He has recently managed the WorldWide Internal Soliton Criteria (WISC) Joint Industry Project which increased awareness of the impact solitons through consideration of SAR and MODIS imagery, coupled with Integral Body Force modelling. Mark has also been involved in the **OGEO initiative** and presented examples of **the existing use of earth observing data at the Frascati meeting** in 2010.

EXPERTS TEAM

Name	Biography
Gus Jeans **Oceanalysis,** **Independent metocean consultancy** 	Dr Gus Jeans is an independent **metocean consultant and professional oceanographer** with over 20 years' experience, primarily in the offshore energy industry. His physics degree from Bristol was followed by an MSc then PhD in physical oceanography from the University of Wales, Bangor. He spent 15 years with Fugro GEOS, before starting Oceanalysis in 2012. His specialities include **current profiles, solitons and squalls**. He is **co-chair of the IMarEST Operational Oceanography Special Interest Group**.
Liam Harrington-Missin **OSRL** 	Mr. Liam Harrington-Missin CSci, CMarSci, MIMarEST, **leads the Metocean and Modelling group at Oil Spill Response Ltd. (OSRL).** Graduating Southampton in 2006 with an combined Masters degree in Oceanography, he was employed by Fugro GEOS Ltd. as an Oceanographer where he remained until 2012. It was during his time at Fugro GEOS that he developed skills in ocean data collection, analysis, interpretation and application authoring a number of well referenced papers on the application of oceanography to offshore engineering. In 2012 an opportunity within OSRL brought him back to Southampton to head up the development of their Metocean and Modelling capabilities. He now leads a rapidly expanding team of specialists dedicated to **providing Metocean and Modelling support to the Oil and Gas Industry** as well as sitting on a number of industry oceanographic committees.
Richard Wakefield **Atkins Ltd** 	Dr Richard Wakefield is a **Chartered Marine Scientist with over 14 years of experience of working in the marine / coastal environments**. He has extensive knowledge of fluvial environments, including knowledge of contamination pathways within fine-grained sediments (PhD on Ribble Estuary sediment dynamics). He has utilised both airborne and satellite based observations to assessment sediment plume and turbidity concentrations as part of his PhD and also a post doctoral position at the University of Bordeaux 1. This work combined ground truthing with the earth observation platforms to assess sediment dynamics in the near shore/coastal environments. Richard now works for Atkins Ltd, which is the UKs largest civil engineering consultancy as a specialist Senior Marine Scientist working in the coastal environment in the UK and internationally. He is also a member of the IMarEST Offshore Renewable Special Interest Group and the vice President of the IMarEST Scottish Branch.

PROJECT SCHEDULE

PLANNING



Planning details :

WP 1000
- WP1100 : T0 – T0+4
- WP1200 : T0 – T0+4
- WP1300 : T0 – T0+4

WP2000
- WP2100 : T0+2 – T0+4
- WP2200 : T0+4 – T0+10
- WP2300 : T0+4 – T0+10

WP3000
- WP3100 : T0 +1 – T0+10

WP4000
- WP4100 : T0+7 – T0+10
- WP4200 : T0+7 – T0+10

Milestones:

Time	Meeting	Place
7th March 2014	KO meeting	ESRIN/Frascati
7th June 2014	PM 1	CLS/Toulouse
7th September 2014	PM 2	ESRIN/Frascati
To be decided	Workshop	ESRIN/Frascati
7th January 2015	Final presentation	ESRIN/Frascati

DELIVERABLES

Work Package	Code	Deliverable Title	Responsible partner	Delivery date
1000	D1	Geo-Information requirements	MeteoGroup	7th July 2014
2200 + 3100	D2.1	Current EO capabilities and use on web pages	CLS	7th December 2014
2300	D2.2	Gap analysis	NERSC	7th December 2014
3200	D2.3	Workshop report	CLS	1 Month after the Workshop
4000	D3	Guideline roadmap	NERSC	7th January 2015
All	D4.1	Progress reports	CLS	Every month
All	D4.2	Meeting minutes	CLS	As appropriate
All	D4.3	Final presentation	CLS	7th January 2015

RISKS

No.	Risk	Risk scenario	Probability	Impact	Mitigation
1	Technical	Interactions with O&G companies may not be efficient enough to collect feedback from the review process.	Medium	High	An in-depth preparation of the content of the EO4OG pages to be published in the OGEO portal is planned, in particular on the definition and coordination of the on-line forums.
2	Planning	A bad coordination among the team partners (consortium and Tullow Oil's advising support) may imply a delay in the delivery of the EO4OG portfolio to the OGP members	Medium	Medium	Regular internal teleconferences (monthly basis) will be held to ensure resources availability and good phasing between the partners. We will increase the occurrence of theses progress meetings, when necessary.

Thank you for your attention