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Presentation of SAIPEM S.A. DEN/STR-NAV Division

SAB meeting – 13 Feb 2012

SAIPEM Group: Global Business Units

Engineering and Construction



Leader in Deepwater Large EPIC Projects

- Sealines
- Subsea Field Development
- Fixed Facilities
- Floaters
- Subsea Services via Remote Technologies



Leader in EPC, Mega Projects Onshore

- Oil & Gas Production
- Gas Processing, LNG, GTL, GTS
- Import/Export Terminals
- Pipelines and Oil & Gas Transportation Systems
- Refineries, Heavy Oils Conversion, Chemical Plants

Drilling



Offshore high quality niche player & Onshore frontier focus

Offshore Drilling

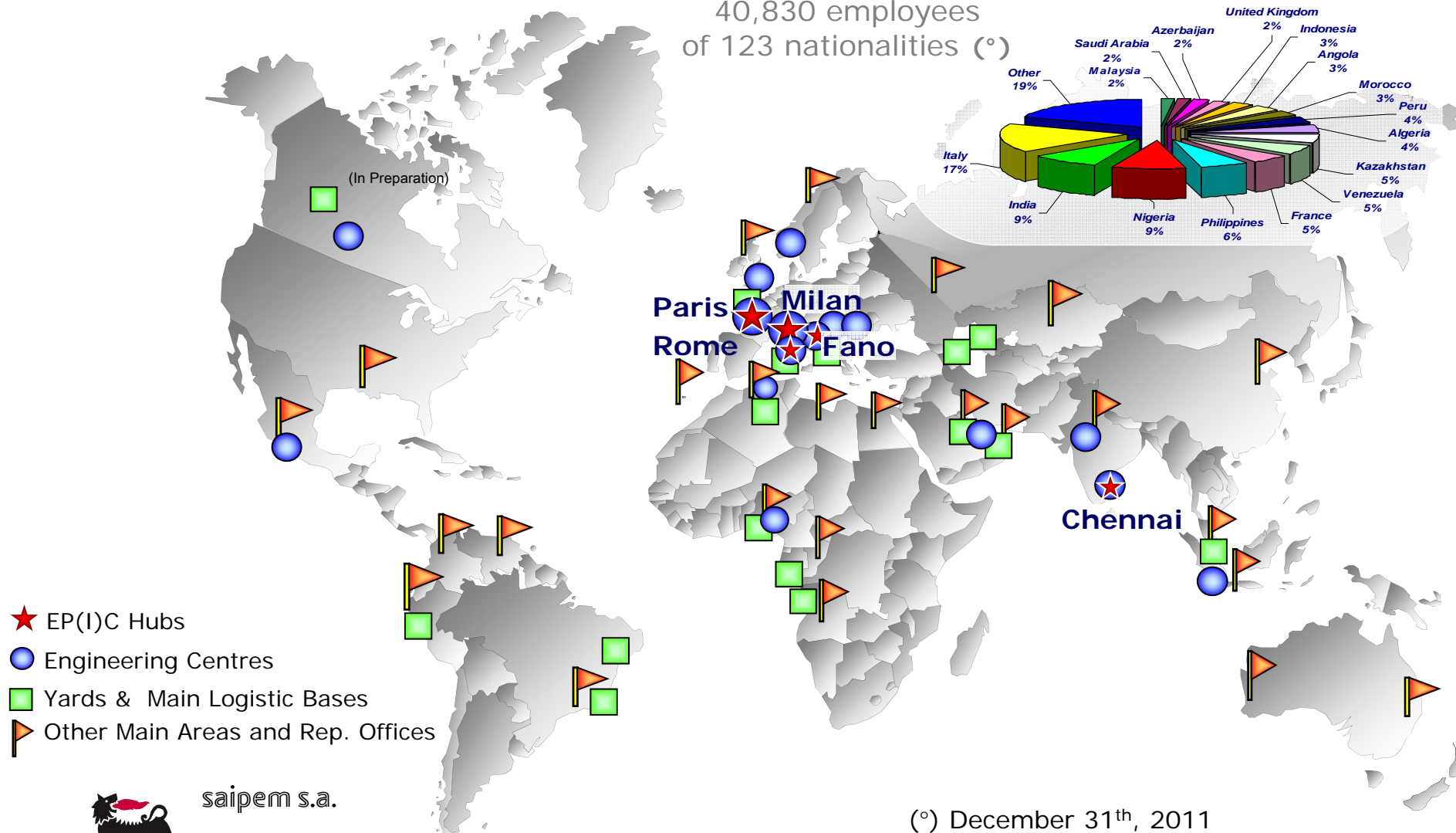
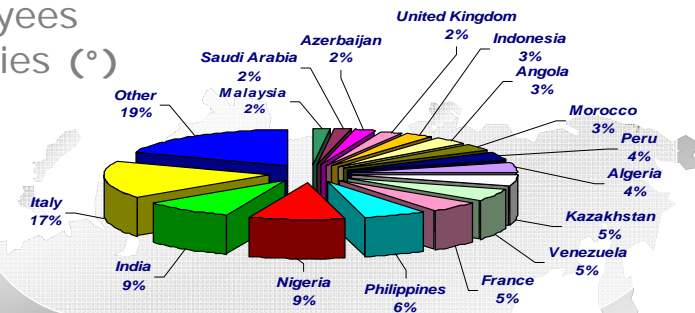


Onshore Drilling



SAIPEM Group: Global Presence with a Multilocal Emphasis

Human Resources
40,830 employees
of 123 nationalities (°)



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(°) December 31th, 2011

Saipem Assets: Offshore Construction Vessels

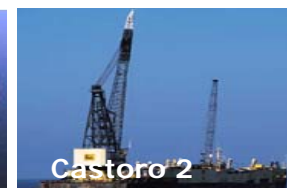
Ultra-Heavy Lifting & deepwater pipelaying



Field Development / SURF Lifting and DLB



Pipelaying



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SAIPEM S.A. DEN/STR/NAV Activities

The Naval Division is composed of 12 engineers totally dedicated to Naval studies divided into three main activities:

| | Studies: | Softwares: |
|---|--|------------------------------------|
| Floater design | Hull lines and Capacity Plan development | Autocad |
| | Stability | Moses, SeaSafe |
| | Sea Keeping | Diodore, Moses |
| | Hull Scantling | Mars (BV), Femap/Nastran |
| | Model Tests | N.A. |
| | Mooring System design | Moses, Ariane, Deeplines, Orcaflex |
| Naval Studies to assist SAIPEM T&I operations | Loadout, Transportation analyses, Lifting analysis with multibodies behavior, Launching, free-floating and Upending, Floatover, Temporary mooring... | Moses |
| | Barge strength verification | Femap/Nastran |
| Naval Studies for SAIPEM Fleet | Trim & Stability Booklet & Inclining Experiment | Seasafe |
| | Water Ballast Management Plan | Moses |
| | Wave Hull girder Loads Computation | Moses |



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SAIPEM S.A. DEN/STR/NAV: Example of Floater Design Project

Project phases:

- Conceptual studies (R&D)
- Basic design
- Design competition
- Projects in execution

Clients:

Major oil companies (TOTAL, Eni, Shell, BP, Exxon, ...)

Floater types:

- Permanently moored

- Barges
- FPSO, FPU, FLNG
- Conversion of tankers, LNG carriers into moored platforms

- Sea going ships

- Transportation barges
- Installation vessels (lifting barges, pipelaying vessel) with dynamic positioning or temporary moored.

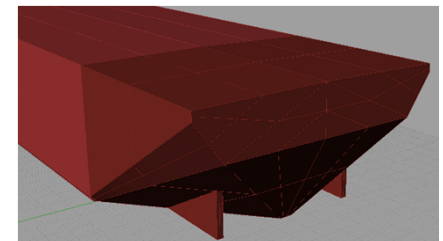
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SAIPEM S.A. DEN/STR/NAV: Examples of Floater Design Project

Example: Floating Production Storage Offloading Unit (FPSO)

- HULL design with CO tanks (typical storage capacity: 1,8Mbbbls)
- Hull size (L x I x h): 325m x 61m x 32m
- draft: 24m; displacement: 475.000 T
- Spread moored by 1200 m water depth
- Class Notation for “Unrestricted Navigation” (towing) and permanent mooring

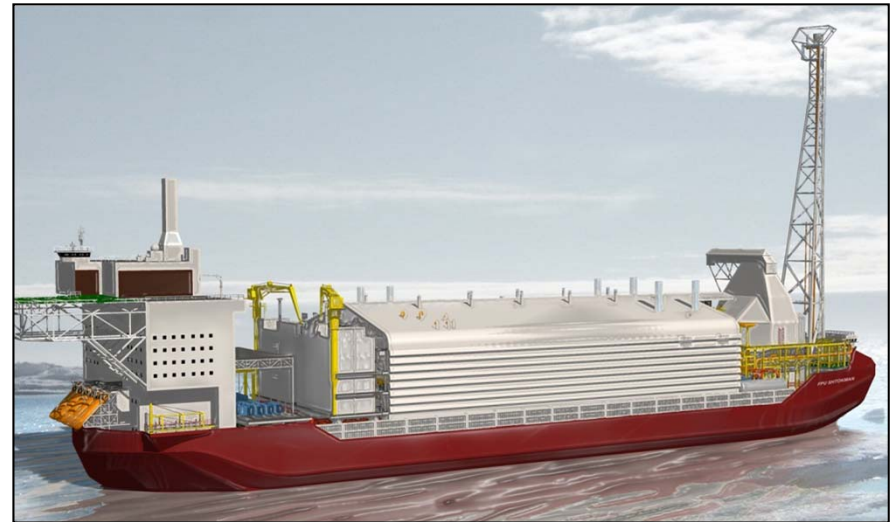
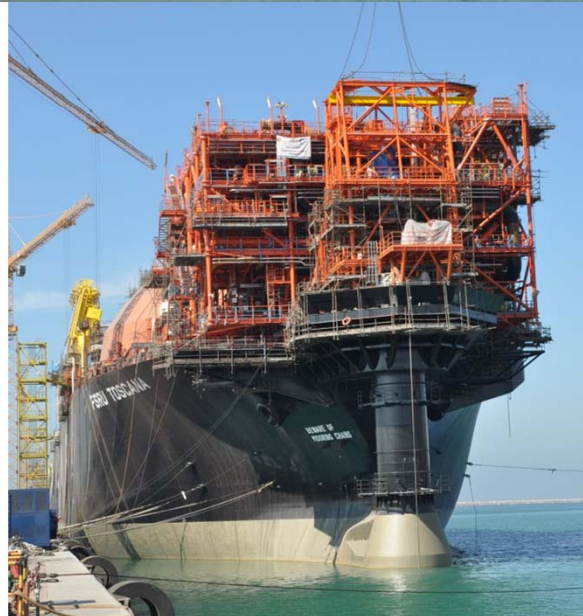


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SAIPEM S.A. DEN/STR/NAV: Examples of Floater Design Project



LNG Carrier
converted into
a regasification
and offloading
platform



Icebreaker Gaz Production Unit in Arctic
Sea (concept)



FPSO and with tanker during oil offloading

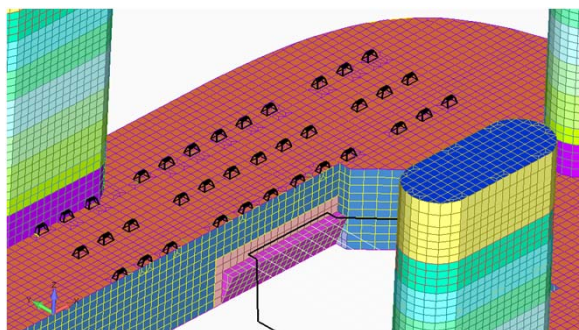
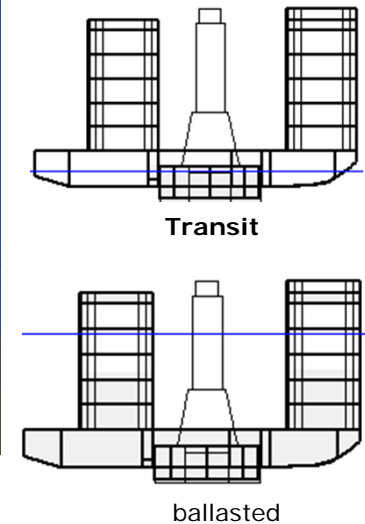
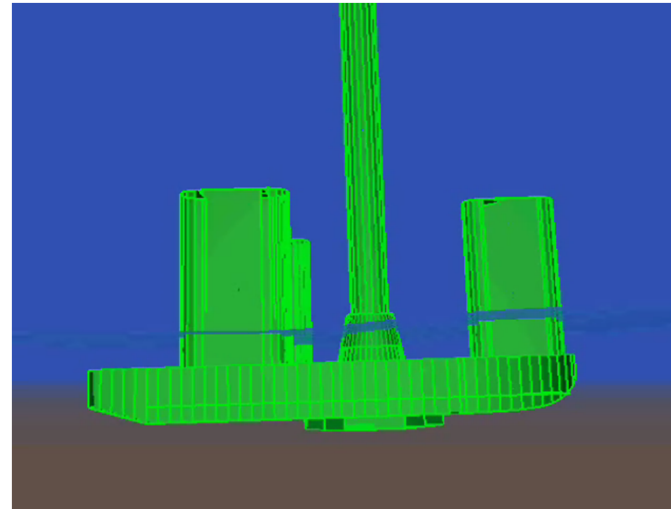


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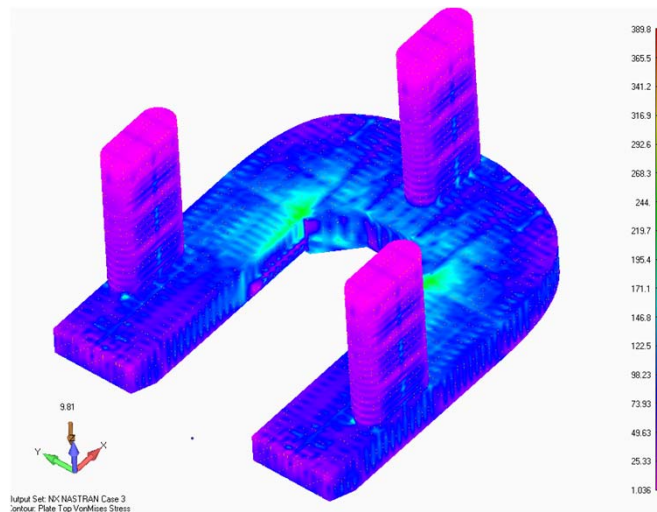
SAIPEM S.A. DEN/STR/NAV: Example of Floater Design Project

Design activities:

- Hull Lines Plan & Capacity Plan
- Installation Sequences Definition
- Stability Analyses
- Operability & Wave Conditions (max Hs for transit conditions and for installation)
- Basin Model Test Campaign
- Hull Advance Resistance
- Sea keeping analysis
- Hydro-structural analysis (Wave Hull girder loads)
- Hull Scantling (FEM analysis)
- Propulsion and Power Supply Equipments
- Ballasting Equipments Definition



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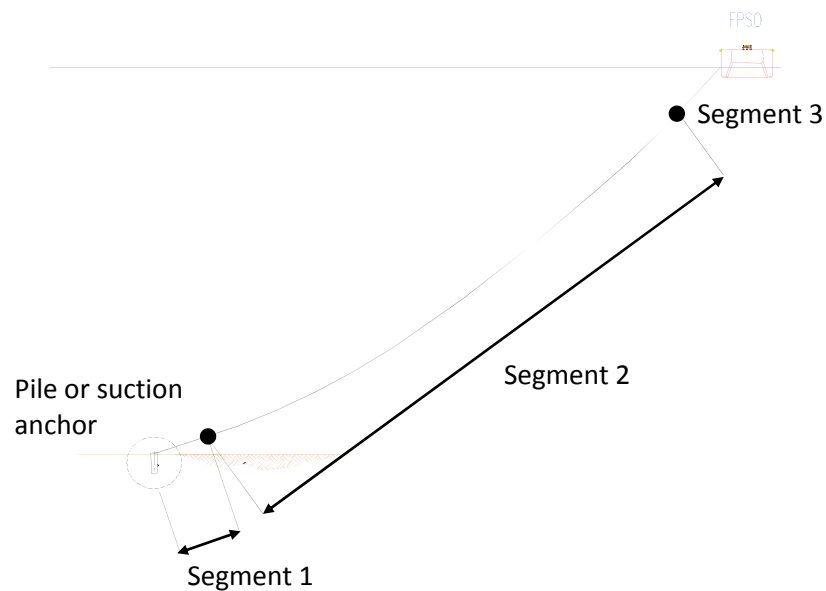


Model tests

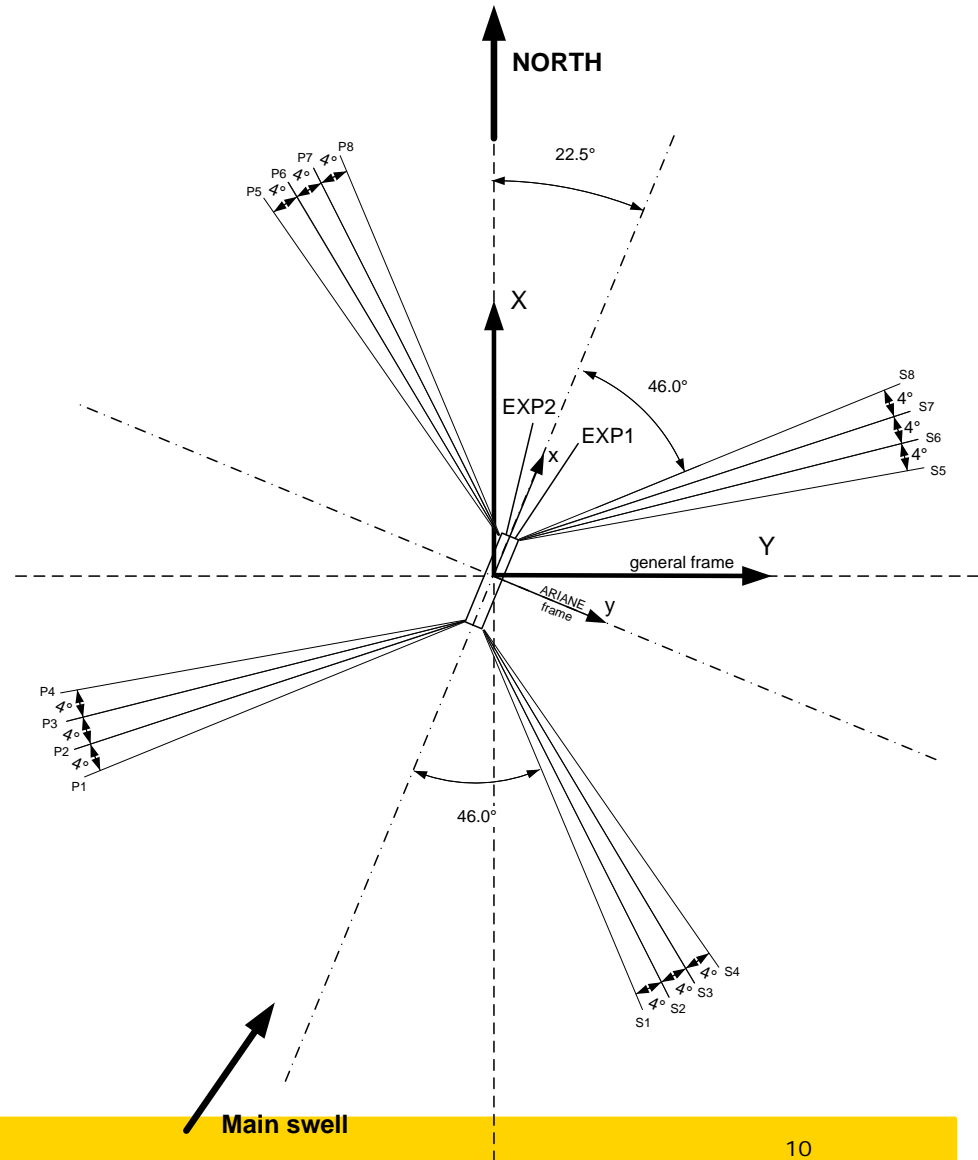
SAIPEM S.A. DEN/STR/NAV: Examples of Mooring design

Mooring type:

- Spread mooring
- Turrets
- Side by side, tandem mooring



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SAIPEM S.A. DEN/STR/NAV: Examples of Mooring design



Turret mooring

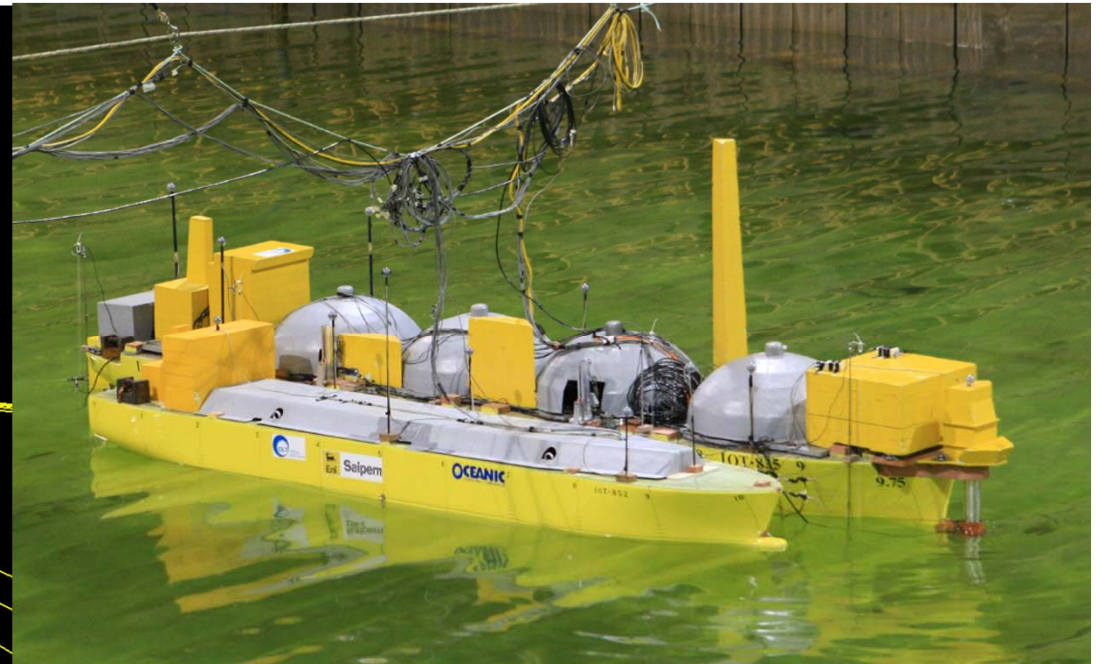
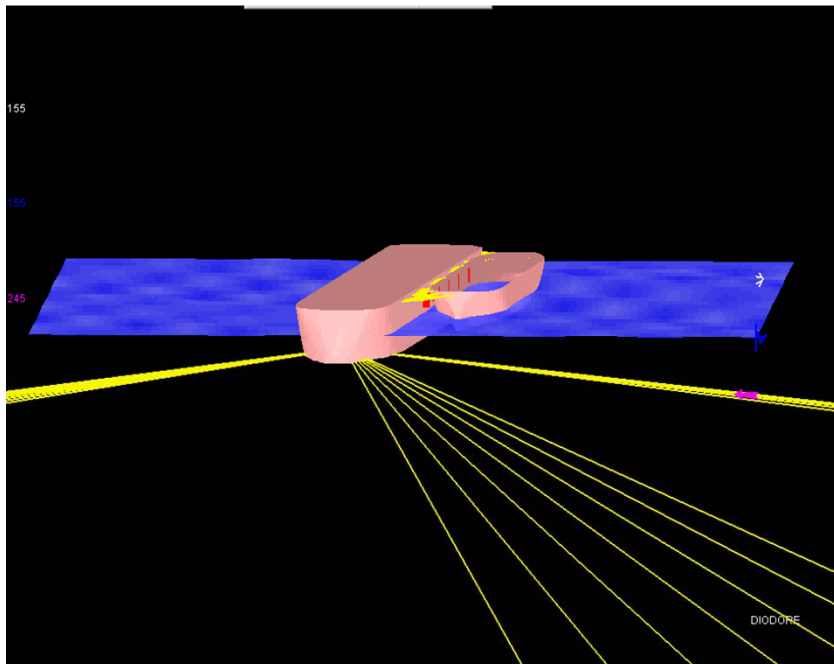
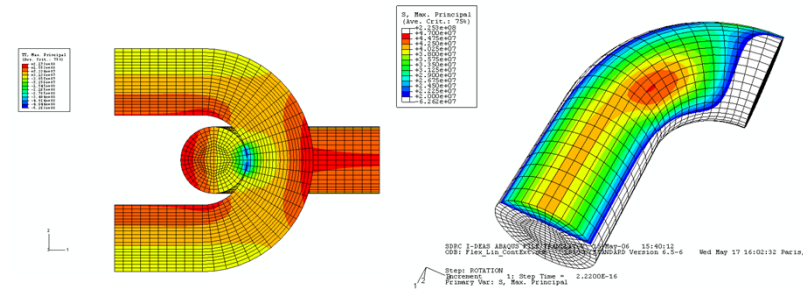


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SAIPEM S.A. DEN/STR/NAV: Examples of mooring design

Analysis activities:

- Extreme loading
- Fatigue
- Thruster assistance



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Thank you for your attention !



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