Industry Technical Advisory Committee

OSRL update

Who we are




- Largest international industry funded cooperative
- Owned by major oil and gas production / transportation companies
- Providing resources to prepare for and respond to oil spills efficiently and effectively on a global basis

Membership

42 Participant Members

And 100+ Associate Members

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for oil spill response

Our global footprint

12 locations worldwide

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Evolving response

2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017

1985 ---------- 2017

OSRL established

30 years of excellence (1985 -2015)

Pre-Macondo

Changing expectations

Decisive action

Restoring confidence

Implementation

Enhanced response capability

Cost efficiency while maintaining response capability

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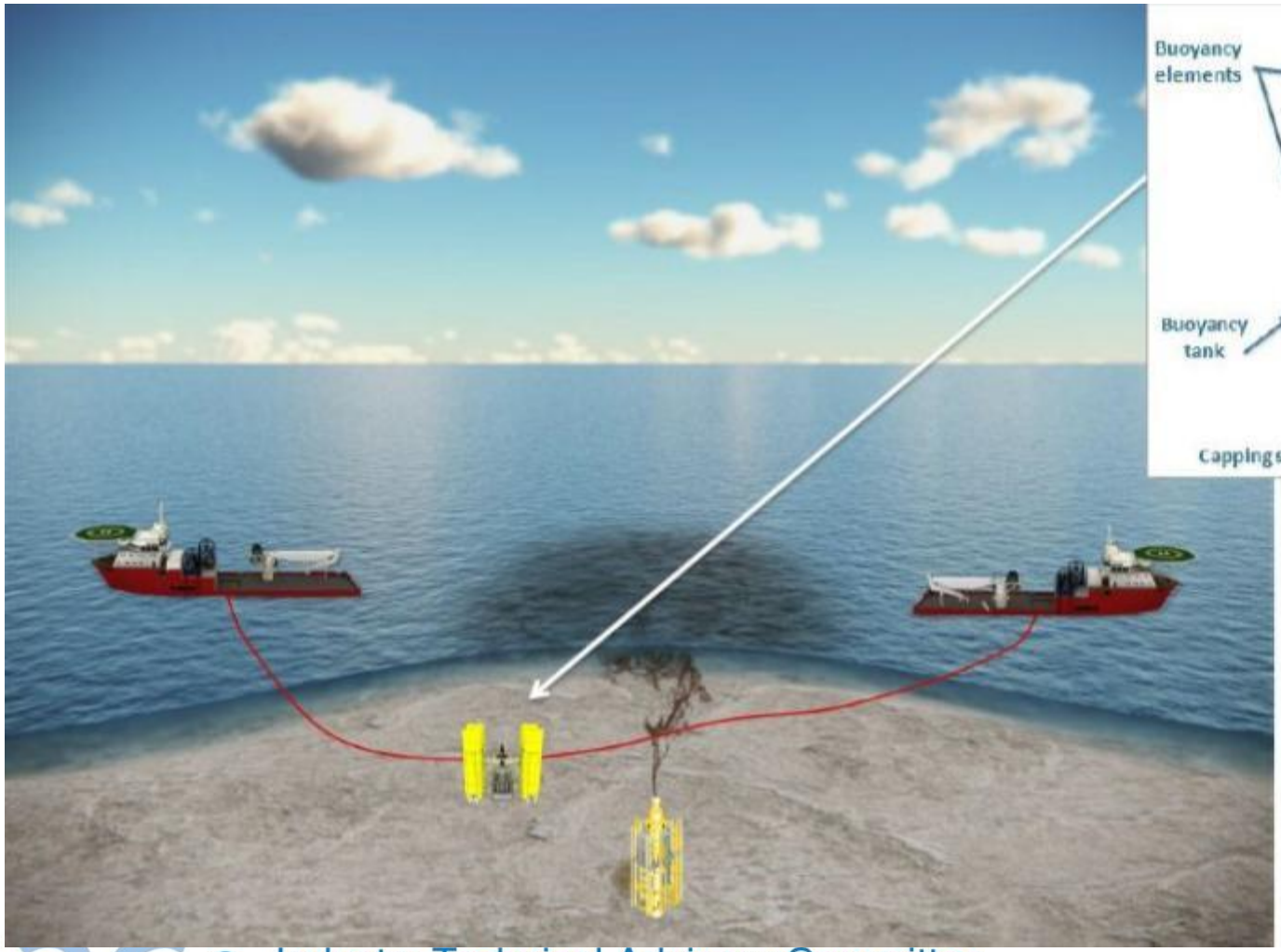
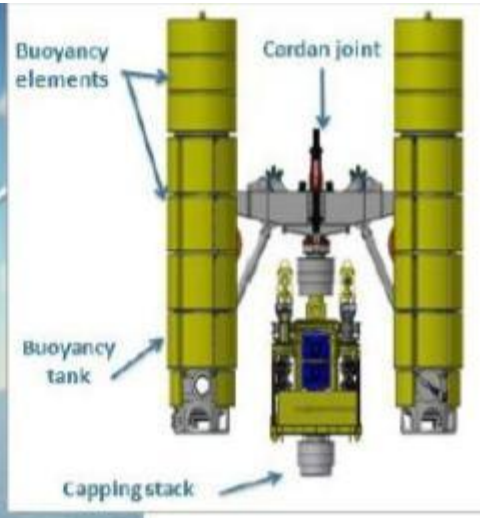
Offset Installation Equipment - OIE

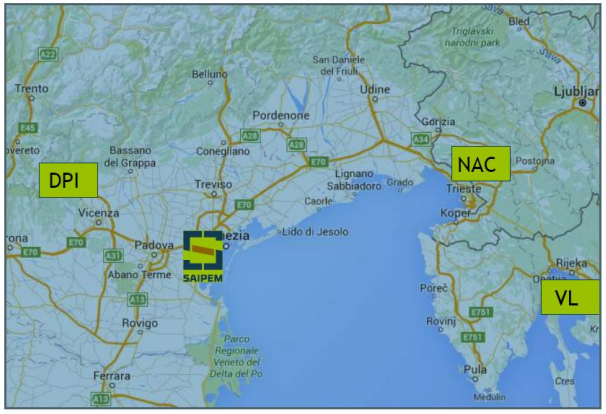




OIE – Assembly

OIE testing and commissioning

- Location – Viktor Lenac Shipyard, Rijeka (Croatia)
- Completed – 24th July after approximately 42 days



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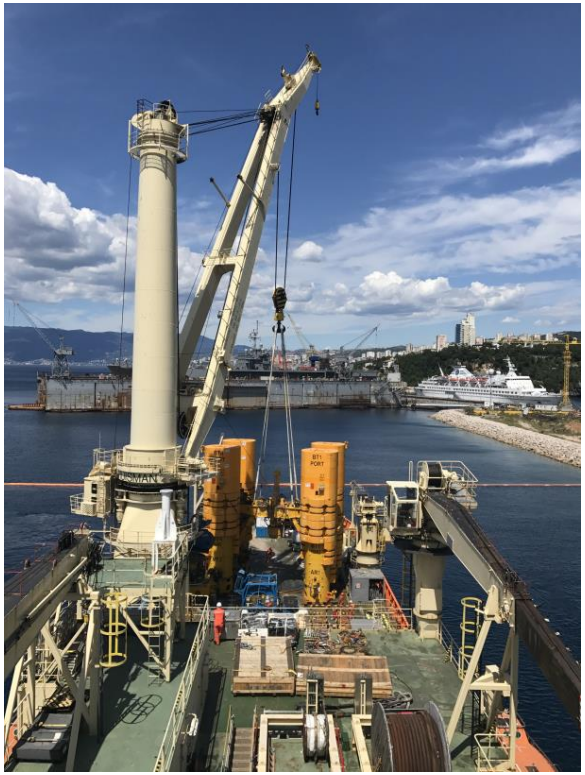
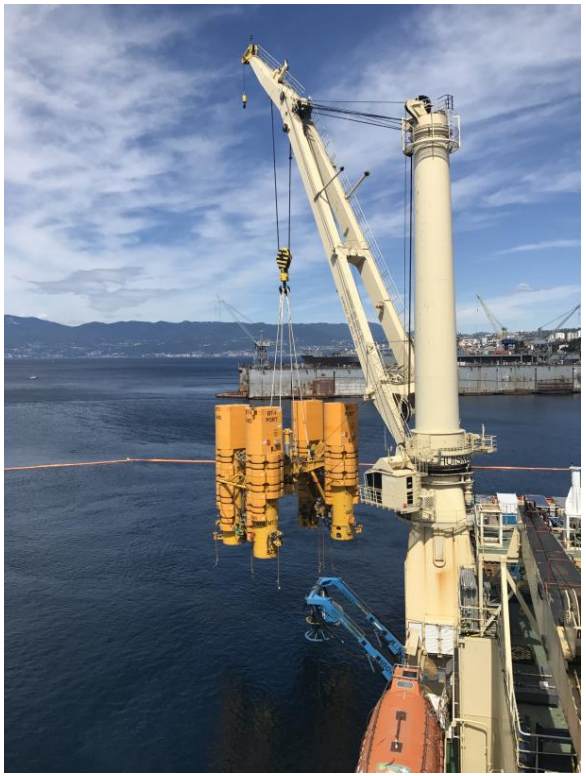
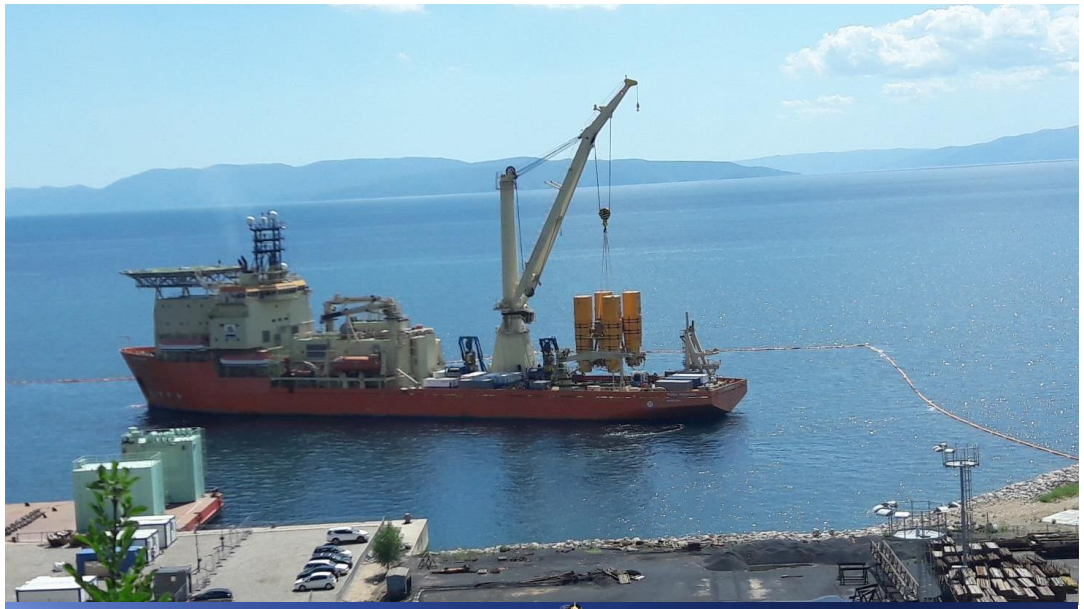
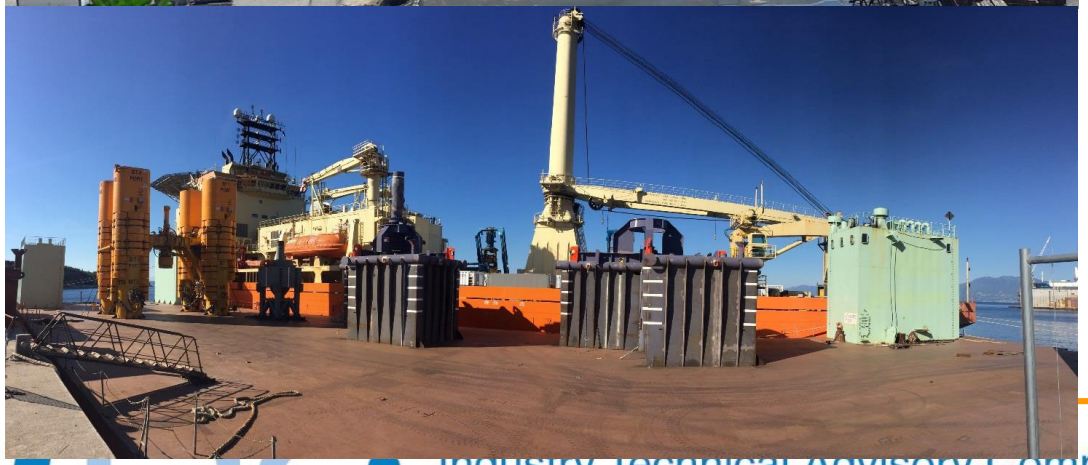
OIE Deployment

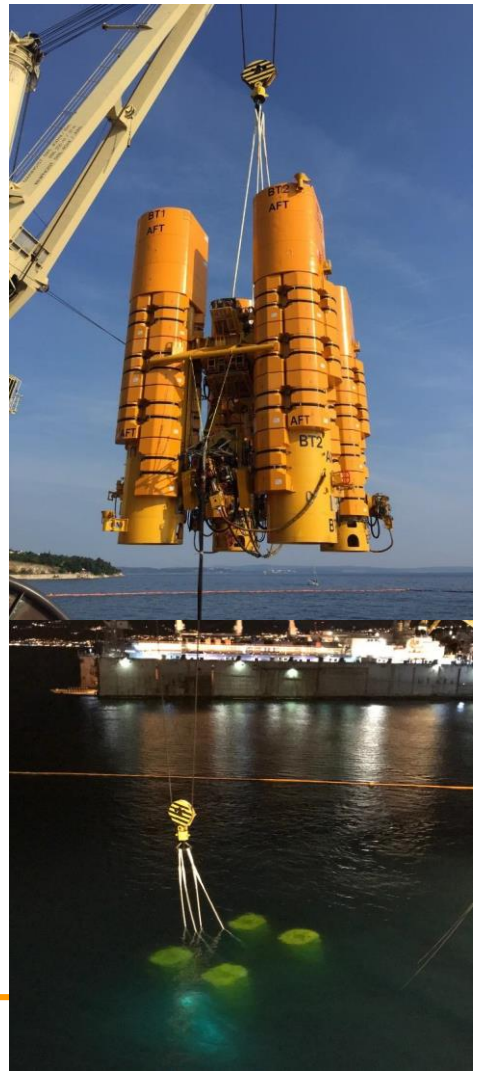




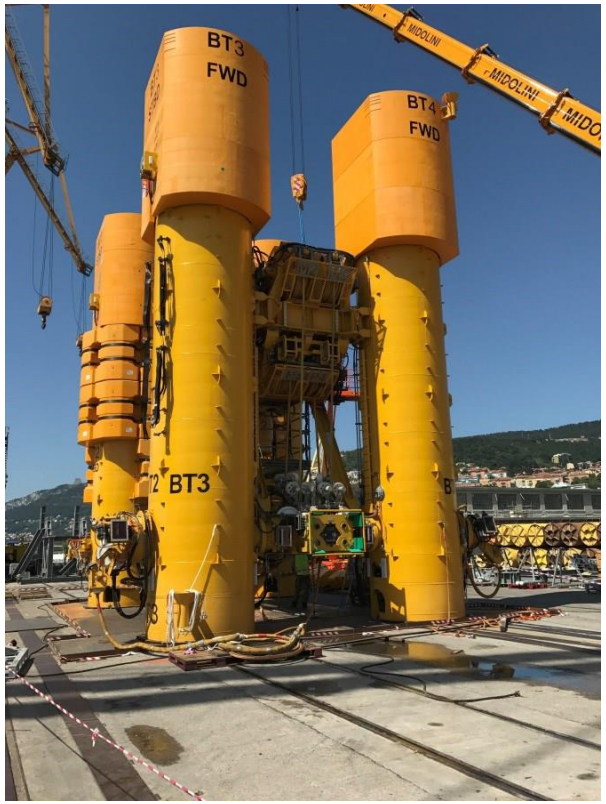
OIE Commissioning





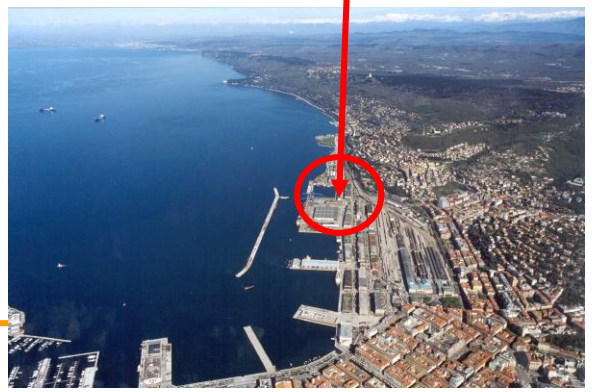


OIE Refurbishment

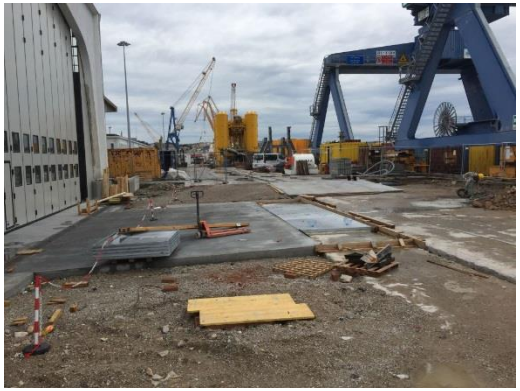


OIE update

- Storage and maintenance contract signed
  - Location will be Saipem supply base in Trieste, Italy
  - Equipment has been delivered to site at the end of the commissioning and testing
- Post SIT and commissioning upgrades and refurbishment work to the OIE carrier are in progress – some long lead items to be delivered
- Training materials and documentation being developed as these will be required for go live
- Service inception date now expected Q1,2018
- Italian base manager being recruited



Trieste Base Refurbishment



Water Column Monitoring

- Access to Water Column Monitoring equipment and expertise is now a regulatory requirement in many jurisdictions before subsea dispersant operations can commence.
- In 2016 it was decided we should purchase the BP system and establish a service available through OSRL.
- We are currently finalising the purchase agreement for the equipment with BP.
- Continental Shelf Associates (CSA) based in Boca Raton, FL will store and maintain the system at their Houston facility and provide operational support directly to the subscribers during an incident.

Equipment

What's in the Dispersant Monitoring Kit?

- Self-contained lab; LARS
- Oceanographic sensors
- Analytical equipment

Current global aviation capability

Base Location	Aircraft Type	Service
Doncaster, UK	2 x Boeing 727-2S2F	SLA response with dispersant system installed
Senai, Malaysia	Hercules C-130A	SLA response with dispersant system installed
Doncaster, UK	Cessna Navajo	UKCS Supplementary Service – Surveillance aircraft
Accra, Ghana	Embraer 110 Bandeirante	WACAF Supplementary Service - dispersant system installed upon mobilisation.

Project TERSUS

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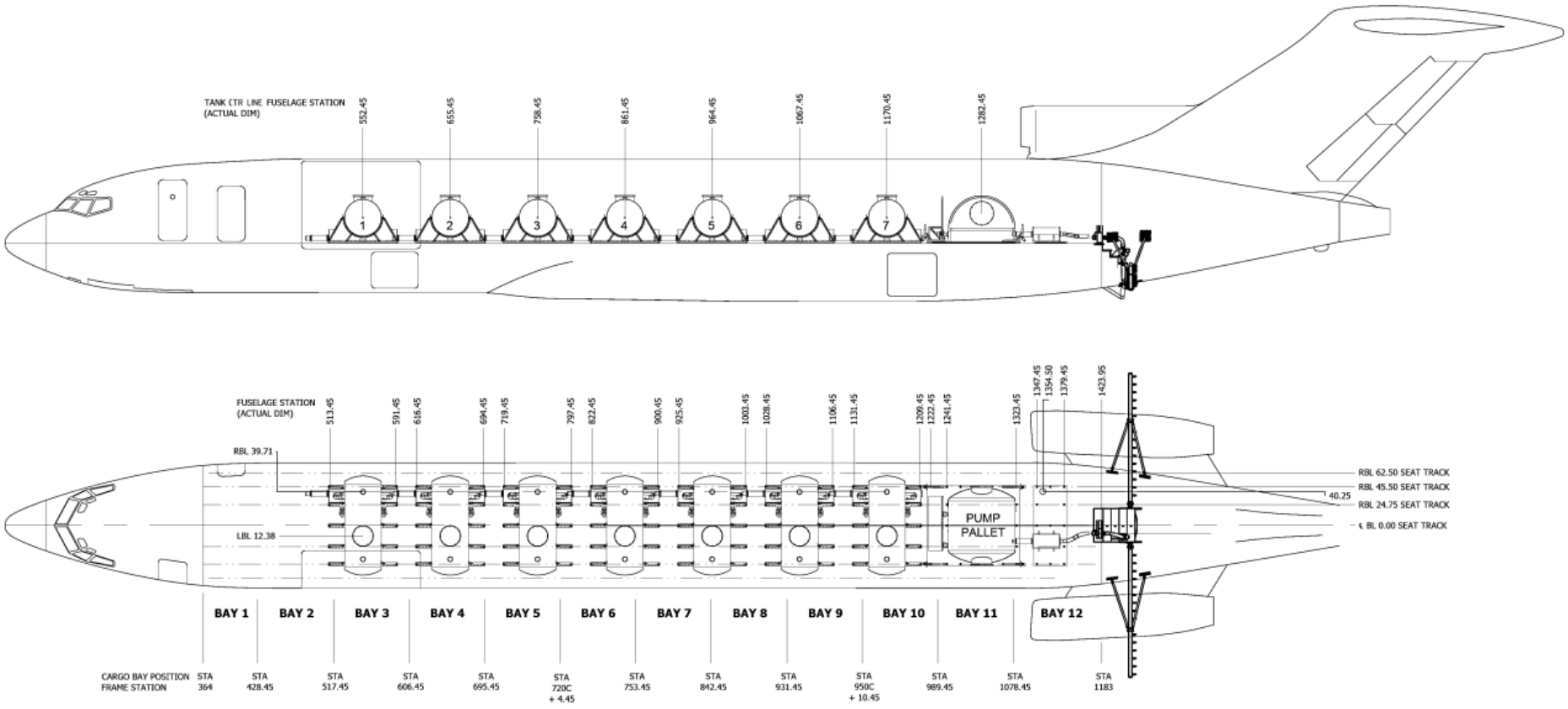
B727 with Tersus dispersant system



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EASA STC

EASA
European Aviation Safety Agency

SUPPLEMENTAL TYPE CERTIFICATE

10058044

This Supplemental Type Certificate is issued by EASA, acting in accordance with Regulation (EC) No. 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation and in accordance with Commission Regulation (EU) No. 748/2012 to:

2 EXCEL DESIGN LIMITED

72 FIELDING ROAD
LONDON
W4 1DB
UNITED KINGDOM

and certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified below:

Original Type Certificate Number: FAA A3WE
Type Certificate Holder: THE BOEING COMPANY
Type: B727
Model: B727-2S2F(RE)

Description of Design Change:
Introduction of an Oil Dispersant Fluid Storage and Delivery System (TERSUS), project JN491-005.

EASA Certification Basis:
The Certification Basis for the original product as amended by the following additional or alternative airworthiness requirements:
- for Special Condition(s):
CRI A-01, Certification Base for Significant STC
CRI F-01, HIRF Protection

See Continuation Sheet(s)

For the European Aviation Safety Agency

Date of Issue: 10 May 2016

Colin HANCOCK
Section Manager
Supplemental Type Certificates (STCs)
& Special Projects

EASA
European Aviation Safety Agency

- for the following paragraph(s) at a later amendment:
As defined in CRI A-01 and report JN491- 005 ADC14 (1) Compliance Checklist.

CRI D-01, Acceptable Means of Compliance, Use of AMC 25-8 Auxiliary Fuel Systems, for the Dispersant Fluid Tanks and Fluid Transfer System.

The requirements for environmental protection and the associated certified noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval.

Associated Technical Documentation:
Leading Edge Airplane Flight Manual Supplement - JN491-005 LEF71 (1) rev 2.

Leading Edge Instructions for Continued Airworthiness - JN491-005 LEF73 (1) issue 3

or later revisions of the above listed documents approved by EASA.

Leading Edge Modification Sheet JN491-005, report ref JN491-005 LEF79 (1) iss 1.

Leading Edge Master Data List for Modification JN491-005, report ref JN491-005 LEF78 (1) issue 1. This identifies all reports raised by the Applicant to demonstrate compliance.

Limitations/Conditions:
This modification is applicable to aircraft serial numbers 22938 and 22929.

The AFM Supplement introduces an airspeed limitation of 250KIAS/0.75M, an altitude limitation of FL360 and a MTOW reduction from 203,100lbs to 195,300lbs whenever the external boom is installed (referred to as Spray or Boom Only modes).

When the boom is not installed, but the tanks are used to transport dispersant fluid (referred to as storage or transport mode), there is an altitude limitation of FL360.

Compatibility with the dispersant fluids listed below has been established:

- Agma DR 379
- Corexit 9500
- Corexit 9527
- Finasol OSR 51
- Finasol OSR 52
- Inipo IP 80
- Slickgone LSTW
- Slickgone NS
- Superdispersant 25

Revised inspection intervals and life limitations for the new installation are detailed in the ICA document JN491-005 LEF73 (1).

See Continuation Sheet(s)

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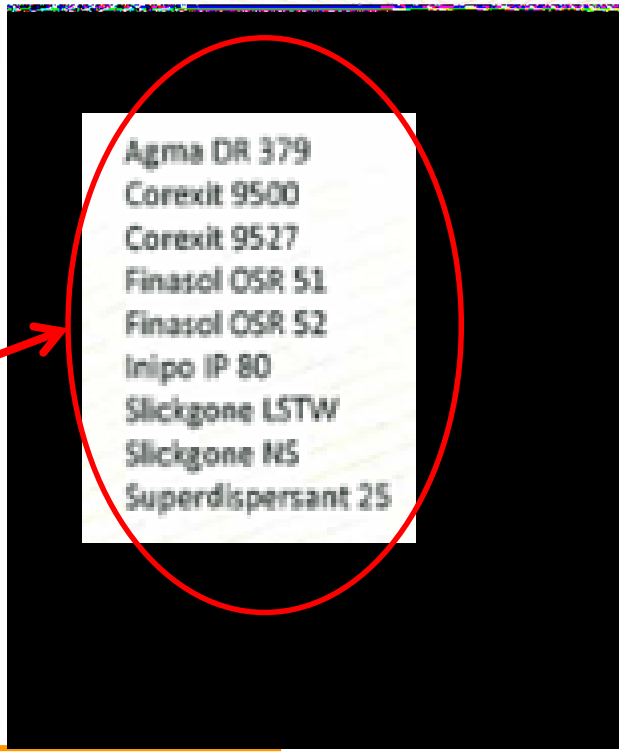
European Aviation Safety Agency

Prior to installation of this design change it must be determined that the interrelationship between this design change and any other previously installed design change and/ or repair will introduce no adverse effect upon the airworthiness of the product.



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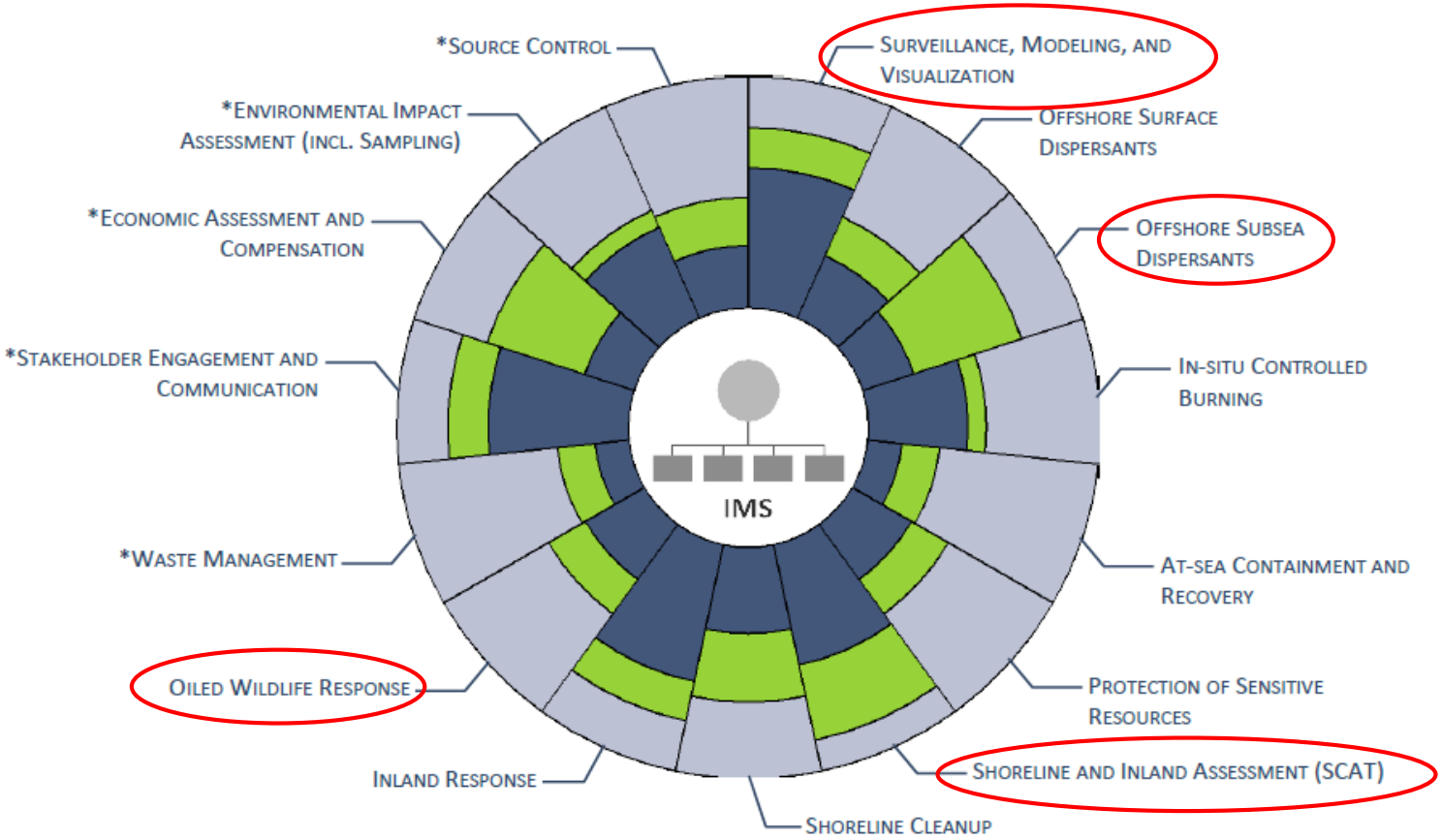
Aviation further developments

- B727 Tersus – developing improvement projects for the following:
  - FIKI (Flight into know Icing)
  - SprayEval light completed. Extended SprayEval planned for 2019 post FIKI re-engineering of boom and certification
  - Extend post-dispersant use rehabilitation requirements for system through Matcom testing
  - Minimum Equipment Levels (MEL)
- Developing an access plan for:
  - UAS's (Unmanned Aircraft Systems)
  - Other aircraft platforms for surveillance etc.

Tiered Preparedness Response Wheel

THE FOLLOWING 15 CAPABILITIES ESSENTIALLY REPRESENT THE SCOPE OF TIERED PREPAREDNESS AND RESPONSE:



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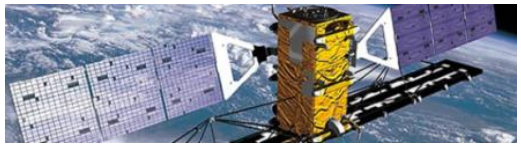
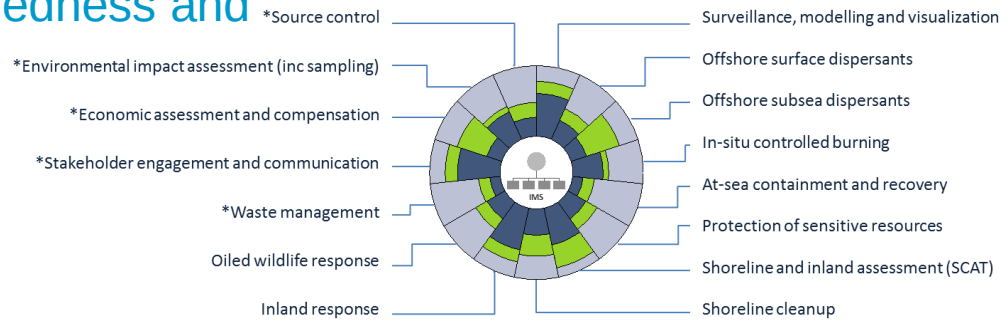
Developing Technical Competence

Subject Matter Expert Programme

- Competence Development
- Alignment with Tiered Preparedness and Response wheel
- 8 Core Groups
- Strategic plans in place
- Active industry engagement





2017 Oil on Water Exercise (UK) Programme

- June 13th Release date
- Integrating range of remote sensing and autonomous systems to develop practical experience of using these in a response.
- Exercise brings together OSRL, members, suppliers and academia

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Staying in touch

www.oilspillresponse.com

Subsea Well Intervention Service

- **www.swis-oilspillresponse.com**
  subseaservices@oilspillresponse.com

Training courses

- **www.oilspillresponsetraining.com**
  training_uk@oilspillresponse.com
  training_sg@oilspillresponse.com

Find us on

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- www.linkedin.com/company/oil-spill-response-ltd
- www.youtube.com/user/OilSpillResponseLtd
- www.twitter.com/oilspillexperts

Spill preparedness (Technical handbooks and other reference materials)

- **osrl.cotoco.com**
  preparedness@oilspillresponse.com

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