



# ODIN: Diverless Hull Inspection

**Despite the effects of low oil prices, the continuing growth in the floating production sector shows the industry's strong preference for floating assets for deepwater exploration and production, EM&I Group writes**

**M**any operators expect to remain on station for extended periods up to 25 years, and this brings a number of integrity and compliance challenges particularly in a climate of cost reduction. A primary reason for coming off station is related to maintaining hull integrity.

Regulators and class societies require operators to demonstrate the integrity of these key components and traditionally this was achieved by drydocking.

More recently, alternative methods such as divers or work class ROVs have been used, but these solutions are costly and incur significant safety, commercial and technical risk.

The industry responded by forming the Hull Inspection Techniques and Strategy (HITS) joint industry project to look at ways of improving the approach to hull inspections and one of the key areas of focus was the inspection of the underwater hull.

The EM&I Group is a founder member of HITS and has been a market leader in asset integrity management services to the oil and gas industry for over 30 years.

"The last ten years have been spent developing new asset integrity strategies for floating offshore assets, based on a 'No Drydock... Safely' concept," says Danny Constantinis, CEO of the EM&I Group.

The development of ODIN, EM&I's

Diverless UWILD (underwater inspection in lieu of drydocking) methodology is an intrinsic part of this package.

ODIN was demonstrated to class societies, regulators and operators worldwide in 2014 which led to acceptance by the major class societies and Bahamas Flag. The ODIN methodology was proven and refined on two operating FPSOs in Brazil in 2014.

The drilling industry was quick to see the benefits of the ODIN approach and fleet-wide contracts were awarded by three major drilling companies in early 2015.

Drillships required the introduction of three innovations: remote laser cameras to inspect moonpool welds, maintenance/inspection-class ROVs (to both clean and inspect critical areas) and a method for installing class-approved ODIN inspection on internally coated and rubber-lined lines without affecting coatings.

ODIN is a complete hull structural integrity package that gives operators and regulators better information on hull condition. It allows a detailed inspection and functional test of critical isolation valves whilst the valves are in-situ, a job that would require divers to blank off the hull openings and a maintenance team to strip the valves down for inspection.

ODIN also enables the inspection of the outside of the hull from within, thus avoiding

removal of marine growth and avoiding damaging coatings.

The inspection programme can be periodic or spread over five years as part of the hull internal structural inspections thus benefiting operators by avoiding additional tank entries and reducing overall annual costs.

Cost reductions are around 20 per cent, even in the first year (which includes set-up costs), and overall cost reductions are greater than 30 per cent over a five-year period. ODIN is not weather sensitive and thus budgets are very accurate.

Drilling operators gain additional benefits because, unlike FPSO/FLNG operators, dynamically positioned MODUs cannot put divers in the water or the moonpool for safety reasons, the only option being to come off station and off-hire.

ODIN inspections can be carried out while the asset is on-hire and this makes drilling companies more competitive with their own clients by bringing in first hydrocarbons earlier. ■

#### Further information

EM&I

[www.emialliance.com](http://www.emialliance.com)

No Drydock .....Safely

**EM&I**

Delivering Integrity

# ODIN<sup>®</sup> EM&I's Diverless UWILD

**Safer - Lower Cost - Approved**

- ODIN is a new way of meeting the requirements of underwater hull inspections, without using divers or work class ROVs.
- ODIN is accepted by the major classification societies and flag states.
- ODIN can be used for UWILD on drill ships, semi subs and FPSOs while on station and operating.
- ODIN has been implemented on FPSOs and MODUs.
- ODIN reduces cost and safety risk, is not weather dependent, delivers high quality integrity information and reduces POB by around 70%.
- ODIN can be integrated into the Continuous Hull Survey programme, saving further costs and POB.

EM&I are world leaders in floating production integrity with over 30 years' experience in innovative services that keep your floating production asset On Station, Productive and Operating Safely.



## ODIN<sup>®</sup> delivers the following benefits;

- Increased on-hire & uptime
- Reduced cost
- Compliant (Class and Flag)
- Improved information quality
- Minimal weather dependency
- Minimal operational disruption
- Applies to all FOIs (FPSOs, MODUs, FLNGs, TLPs, Semi-Subs & Drill Ships)



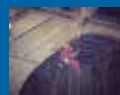
Corrosion Protection



HAE Management



Pressure System IRM



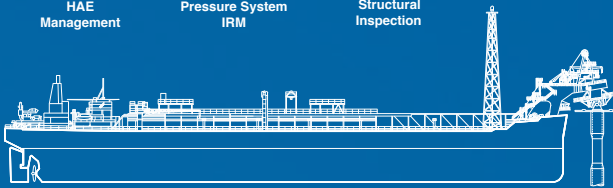
Structural Inspection



Flare IRM



Piping / Vessel R&M



Structural R&M



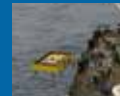
Integrity / Compliance System



In-Water Corrosion Protection



In-Water Inspection



In-Water Structural R&M



Moorings



Lifting Gear

Integrated Asset Integrity

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