

PROJECT SHEET

WINTERSHALL RAVN & A6-A
UMBILICAL TIE-BACK

BOSKALIS

Royal Boskalis Westminster is a leading global marine contractor and services provider. With safety as our core value, we offer a wide variety of specialist activities to the oil & gas and renewables sectors. These activities include marine installation and decommissioning, seabed intervention, marine transport and services, subsea services and marine survey. In addition, Boskalis is a global dredging contractor, provides towage and terminal services across the globe and delivers marine salvage solutions.

By understanding what drives our clients we are able to provide the solutions that enable them to meet their specific business goals. For this reason we are constantly looking for new ways to broaden and optimize our offering and are committed to expanding our proposition, supported by our financial strength.

With our committed professionals in engineering, project management and operations, 900 specialized vessels and an unprecedented breadth of activities in 90 countries across six continents we help our clients in the offshore industry push boundaries and create new horizons.

INTRODUCTION

Wintershall Noordzee B.V. installed a new remote platform RAVN as a crude production tie-back to A6-A. RAVN is a remote and unmanned crude well unit. Utilising a dry-tree design, all control, power and metered injection for the well will be via the 18.2-km control umbilical between the new satellite platform RAVN in the Danish sector and the operational platform A6-A in the German sector.

The umbilical forms the entire link between the remote platform, supplying and controlling all functions and ensuring continual feedback and monitoring of RAVN. The umbilical supplies all the necessary input data, control and feedback to eliminate the usual day-to-day requirements of direct human contact.

The umbilical was installed from RAVN first end to second end pull-in at A6-A end. Platforms are located in the Danish territorial waters in the North Sea (RAVN) and German territorial waters in the North Sea (A6-A).

FEATURES

Client	Wintershall Noordzee B.V.
Location	North Sea, Danish & German sector
Period	Februari 2015 - August 2015
Contractor	Boskalis

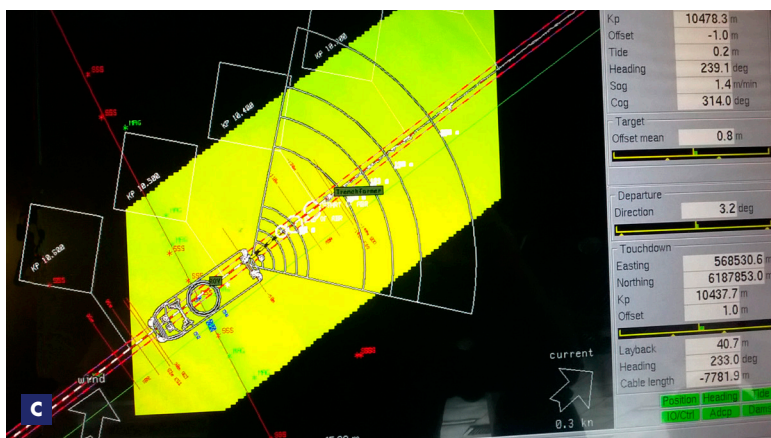


The umbilical was connected/pulled into RAVN via a J-tube and internal conductor to the RAVN topside -TUTA.

RAVN - first end with pull-in to topside deck via a J-tube - was laid in corridor separate from the 8-inch pipeline between RAVN and A6-A and second end pull-in using the quadrant method at the A6-A platform.

SCOPE OF WORK

- Prepare project planning for Boskalis' scope of work.
- Survey work, including post-burial survey.
- Perform route engineering and installation engineering to optimize the performance of the installation scope, including Orcaflex analysis for laying, pull-ins, loads and dynamics, as well as a detailed burial assessment study (BAS).
- Prepare platform on RAVN and A6-A.
- Define umbilical length together with the client.
- Umbilical load-out at Hartlepool (UK) onto the installation vessel Ndurance.
- Installation and hang-off of umbilical termination heads – topsides.
- Crossing 36- & 40-inch live gas pipelines.
- Pull-in at RAVN & A6-A platforms – direct from vessel as part of SIM-OPS.
- Umbilical lay and bury scope – minimize on seabed exposure.
- Mobilize and demobilize all installation spreads for Boskalis' scope.
- Provide engineering support during the offshore umbilical installation, including simultaneous burial.
- Provide QHSE management for Boskalis' scope.
- Process and deliver as-built data.
- Mobilize and demobilize all installation spreads for Boskalis' scope.



Boskalis
 PO Box 43
 3350 AA Papendrecht
 The Netherlands
 T +31 78 69 69 000
 offshore.energy@boskalis.com
 www.boskalis.com/offshore