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Pre-Cut Trenching (2.0)

SCAR Seabed System

The SCAR Seabed System has been developed to deliver an all-in-one solution for route preparation prior to burial of subsea cables, pipelines, and umbilicals.

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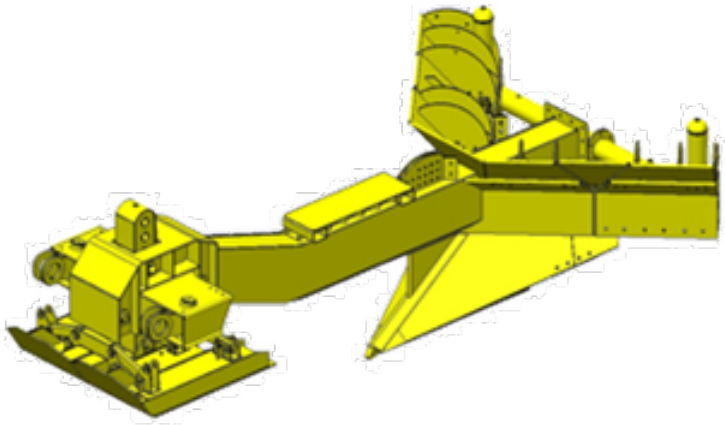
Capabilities

In its pre-cut trenching configuration, the SCAR system is designed to excavate trenches along a given product route in advance of the product lay campaign (separate to project critical path).

The SCAR Seabed System Large Pre-Cut Trenching Plough has been developed to operate in particularly harsh seabed conditions while delivering greater trench depths in a single pass. The SCAR Seabed System (Large) can excavate trenches ranging from 4.6 ft to 6.5 ft (1.4 m to 2.0 m) in a single pass (soil dependent) and can be pulled with a tow force significantly greater than any other trencher on the market, making it the world's most powerful pre-cut trenching plough.

Although primarily targeted at extremely arduous subsea conditions (e.g., Arctic trenching), the SCAR Seabed System (Large) also offers significant benefits for extensive route lengths where trench depth requirements exceed the single pass capabilities of smaller ploughs. The SCAR Seabed System (Large) therefore reflects the lowest-risk, highest-productivity option for extended product routes (e.g., export cables), deeper burial requirements, and/or medium-strength to extremely high-strength soil conditions.



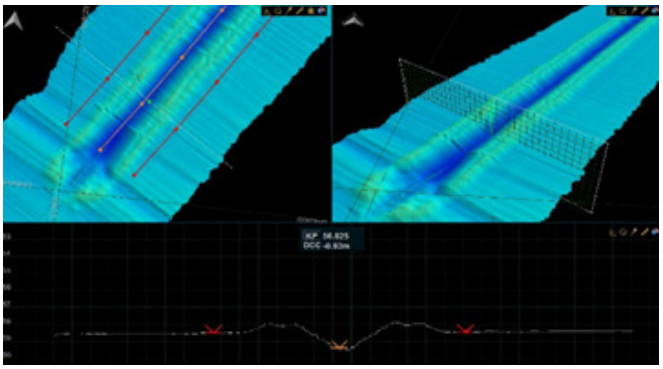
SCAR Seabed System key features and benefits

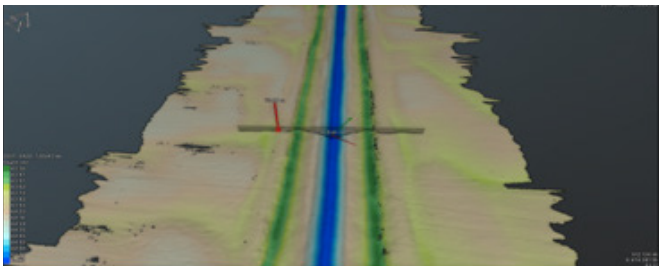
- Pre-cut trenching for cables, pipelines, and umbilicals
- Variable soils capacity—clays, sands, gravel, and silt
- Can be launched and recovered from a range of readily available anchor handling tug supply (AHTS) vessels (no crane or A-frame required)
- Rapid mobilization, deployment/recovery, and demobilization
- Proven ability to follow vessel route accurately, even on complex route tracks

System Specifications	
Operating depth	9,842.5 ft / 3000 m
Typical Speed range	820–1,968.5 ft/hr / 250–600 m/hr
Design tow force	300Te
Mass (in air)	95Te
Dimensions (WxLxH)	41 x 60 x 13 ft / 12.5 x 18.3x 4.0 m

Positioning and Monitoring	
Standard Equipment	
Vessel positioning equipment	Full independent DGPS positioning system with optional redundancy Onboard navigation suite, with option to display full seabed profile/ infrastructure where available
Tool mounted positioning equipment	2 x MT-832 beacons (for shallow water) Mini-tilt motion sensor 5 x c-node beacons
Optional Equipment	
SCAR Instrumentation Module (SIM)	The SIM unit can be fitted to any SCAR system. The sensors within the SIM unit are interfaced to a multiplexer unit (MUX) with power and data telemetry to/from the topside module by an umbilical cable on a constant tension winch, therefore allowing sensor selection to suit specific project requirements. A standard system setup is shown below:
iXBLUE RovINS	Tow forceAll-in-one, high-accuracy 3D positioning system, including heading, roll, and pitch measurements
Impact Subsea ISM3D	Highly accurate attitude and heading reference system
Valeport MiniIPS	Precision pressure sensor providing accurate real-time depth measurements
C-Node USBL Responder	Operating the Cymbal acoustic protocol for more accurate positioning
High-Resolution Scanning Sonar	BlueView or Gemini systems

Optional Equipment	
Taut Wire	For shallow-water applications, a SCAR-specific taut wire system can be utilized to provide highly accurate positioning without the requirement for USBL positioning, or as a secondary position reference system.





To complement route preparation, the SCARGrab System can be used to move isolated objects, if required.

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