

3D Navigator™

6DOF Tracking
No Line-of-sight Restrictions

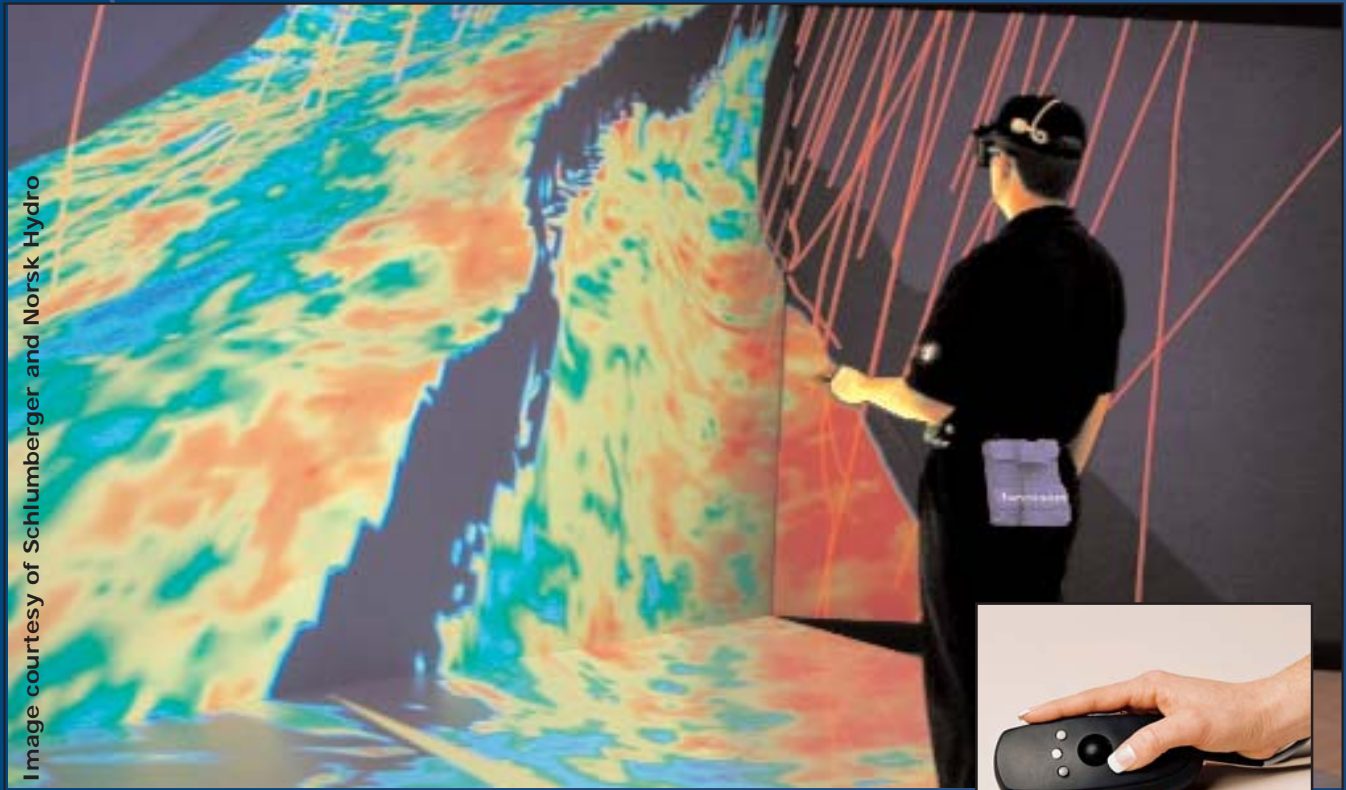


Image courtesy of Schlumberger and Norsk Hydro

3D Navigator lets you manipulate data and interact with virtual images such as the above graphical representation of an oilfield. WANDA hand-held 3D pointer (right) features programmable buttons.

Advanced Wireless Tracker for Immersive Environments

- Highly accurate six degrees-of-freedom tracking of a user's head and 3D pointer
- Full freedom of movement without trailing cables
- Wireless interface seamlessly integrated with visualization systems
- Quick set up, portable and easy to use

Economical. Precise. Ergonomic.

 **Ascension**
Technology Corporation

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Left to right: 3D Navigator includes an extended range transmitter, a wireless electronics unit with sensors for easy mounting on a user, a compact electronic unit, and a 42-inch high mounting pedestal for the magnetic field transmitter.

Specifications

TECHNICAL

Degrees of Freedom:	6 (Position and Orientation)
Number of sensors:	2 sensors: One embedded in Wanda and one for head. Additional sensor configurations available - contact Ascension
Translation Range:	<ul style="list-style-type: none"> Up to ± 3.05 m in any direction with one transmitter Up to 4 m x 4 m with dual transmitter option
Angular Range:	All Attitude: ± 180° Azimuth & Roll; ±90° Elevation
Static Accuracy Position:	0.8 cm RMS at 1.52 m range, 1.5 cm RMS at 3.05 m range
Static Accuracy Orientation:	0.5° RMS at 1.52 m range, 1.0° at 3.5 m range
Static Resolution Position:	0.08 cm at 1.52 m range, 0.2 cm at 3.05 m range
Static Resolution Orientation:	0.1° RMS at 1.52 m range, 0.2° RMS at 3.05 m range
Measurement Rate:	Up to 120 measurements/second
Outputs:	X,Y,Z positional coordinates and orientation angles, rotation matrix, or quaternions
Interface:	Ethernet
Line-of-sight Restrictions	None
Environment:	<ul style="list-style-type: none"> Operating Temperature: 10°C to 40°C (50°F to 104°F) Operating Humidity: 10% to 90% non-condensing Metal objects in tracking volume may degrade performance. To optimize tracking in your work space, use our Environmental Analyzer to detect stray sources of metallic distortion and adjust frequency to minimize noise interference.

PHYSICAL

HIP-MOUNTED COMPONENTS:

Sensors:	2.54 cm x 2.54 cm x 2.03 cm (attached via wires to electronics unit in back pack) Weight: 17 g (0.6 oz) per sensor without cable
Electronics Unit:	17.5 cm x 14 cm x 4.54 cm Weight: 0.99 kg (35 oz)
Battery:	15 cm x 6.6 cm x 2.29 cm Weight: 0.54 kg (19 oz) Operating time: 1 hr continuous; spares may be swapped without system power-down

BASE STATION COMPONENTS:

Chassis:	40.64 cm x 23.49 cm x 17.14 cm
Remote Receiver Unit:	16.5 cm x 10.7 cm x 6.4 cm Weight: 0.32 kg (0.7 lbs)
Extended Range Controller:	24.1 cm x 29.2 cm x 12.3 cm Weight: 2.95 kg (6.5 lbs)
Extended Range Transmitter:	30.5 cm x 30.5 cm x 30.5 cm Weight: 20.4 kg (45 lbs)

Applications

- Interactive 3D Visualization
- Collaborative 3D Visualization
- Immersive Environments
- Engineering Design Reviews
- Corporate Presentations
- Analyzation of Multi-dimensional Databases

Industries:

- Oil & Gas
- Nuclear Energy
- Chemical
- Military
- Government
- Research
- Education

FEATURES	BENEFITS
New Advanced DC Magnetic Technology	New electronics and improved algorithms provide excellent tracking stability. Metal detection and noise reduction tools make sure that environmental factors do not affect tracking.
Wireless Tracking	Move around without being hindered by trailing cables.
Extreme Portability	Set-up and start using 3D Navigator in minutes. When done, break down and stow it away just as easily. Its footprint is small enough to be self-contained on a wheeled cart. No permanent overhead grids required.
High Accuracy Data	The same high accuracy performance of tethered tracking devices, operational worldwide in immersive visualization environments.
No Occlusion or Line-of-Sight Issues	DC magnetic technology overcomes the occlusion and line-of-sight problems of optical and inertial/acoustic technologies.
Elegant Design	Repackaged for small footprint, attractiveness and high utility.

 **Ascension**
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