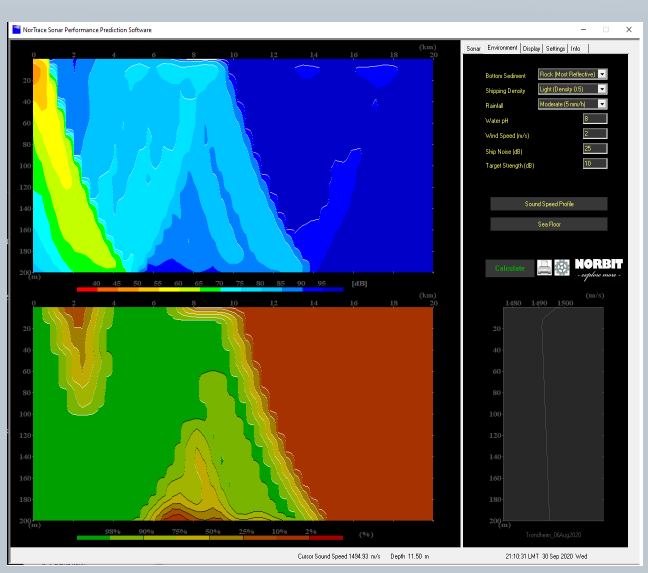
NORBIT
NORTrace

Sonar Performance Prediction Software

NORBIT's ultimate Sonar Performance Prediction tool for estimating sonar performance under changing acoustical, oceanographic and meteorological conditions.



NORTrace has been developed by NORBIT scientists and our models have been independently validated in a wide varity of projects. NORBIT has used NORTrace internally and have now made it available for the market.

Operators can input the physical description of the sonar together with a wide variety of environmental factors and target properties to determine instantly the performance of the sonar under changing conditions. NORTrace can be used for any type of sonar with a frequency between 1 kHz and 1 MHz. This frequency range includes surveillance systems, anti-submarine warfare sonars, mine warfare sonars, avoidance sonars, diver detection sonars and forward-looking sonars.

APPLICATIONS

- ✓ Parameter Optimization of Sonar Settings
- ✓ Performance Evaluation of Sonar Systems
- ✓ Sonar Coverage Analysis
- ✓ Tactical Training
- ✓ Tactical Decision Aid
- ✓ Research and Development

OPTIONS

- ✓ Integration to Tactical Information Displays
- ✓ Determination of The Optimal Sonar Settings for Maximization of Detection Range and Coverage
- ✓ Calculation Module to Integrate into Customer's Software Projects

GRAPHICAL OUTPUTS

- ✓ Sound Speed Profile (Operator's Entity, from File or from Probes)
- ✓ Raytrace (Reflected Rays, Direct Path, Eigen Rays)
- ✓ Transmission Loss
- ✓ Reverberation Curves (Bottom, Surface, Volume and Total Reverberation)
- ✓ Probability of Detection
- ✓ Signal Excess

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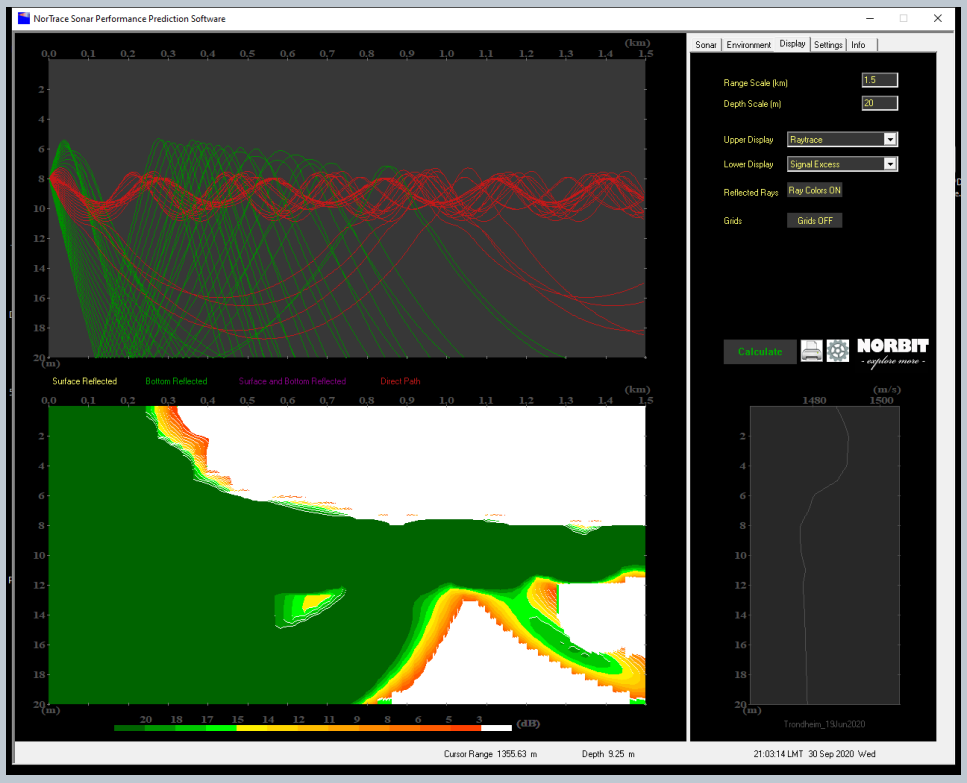
NORTrace gives the operator the ability to enhance the probability of detection with changing environmental parameters. It is also possible to monitor continuously the output of the acoustic modeling for example where underwater conditions differ on hourly or seasonal basis.



SONAR PARAMETERS

NORTrace can predict the sonar performance by altering parameters such as:

- ✓ Frequency
- ✓ Bandwidth
- ✓ Pulse Type
- ✓ Pulse Length
- ✓ Source Level
- ✓ Directivity Index
- ✓ Beam Width
- ✓ Tilt Angle
- ✓ Detection Threshold
- ✓ Sonar Noise Figure
- ✓ Deployment Depth

ENVIRONMENTAL PARAMETERS

NORTrace allows performance prediction based on a wide variety of oceanographic and meteorological conditions.
Parameters such as:

- ✓ Sound Speed Profile
- ✓ Bottom Sedimentation
- ✓ Sea Floor Topology
- ✓ Rainfall
- ✓ Wind Speed
- ✓ Vessel Noise
- ✓ Shipping Density
- ✓ Target Strength

can be altered to predict the performance in site's condition.

Sound speed or temperature profiles can be acquired from probes, stored in memory and re-used at later stages.

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