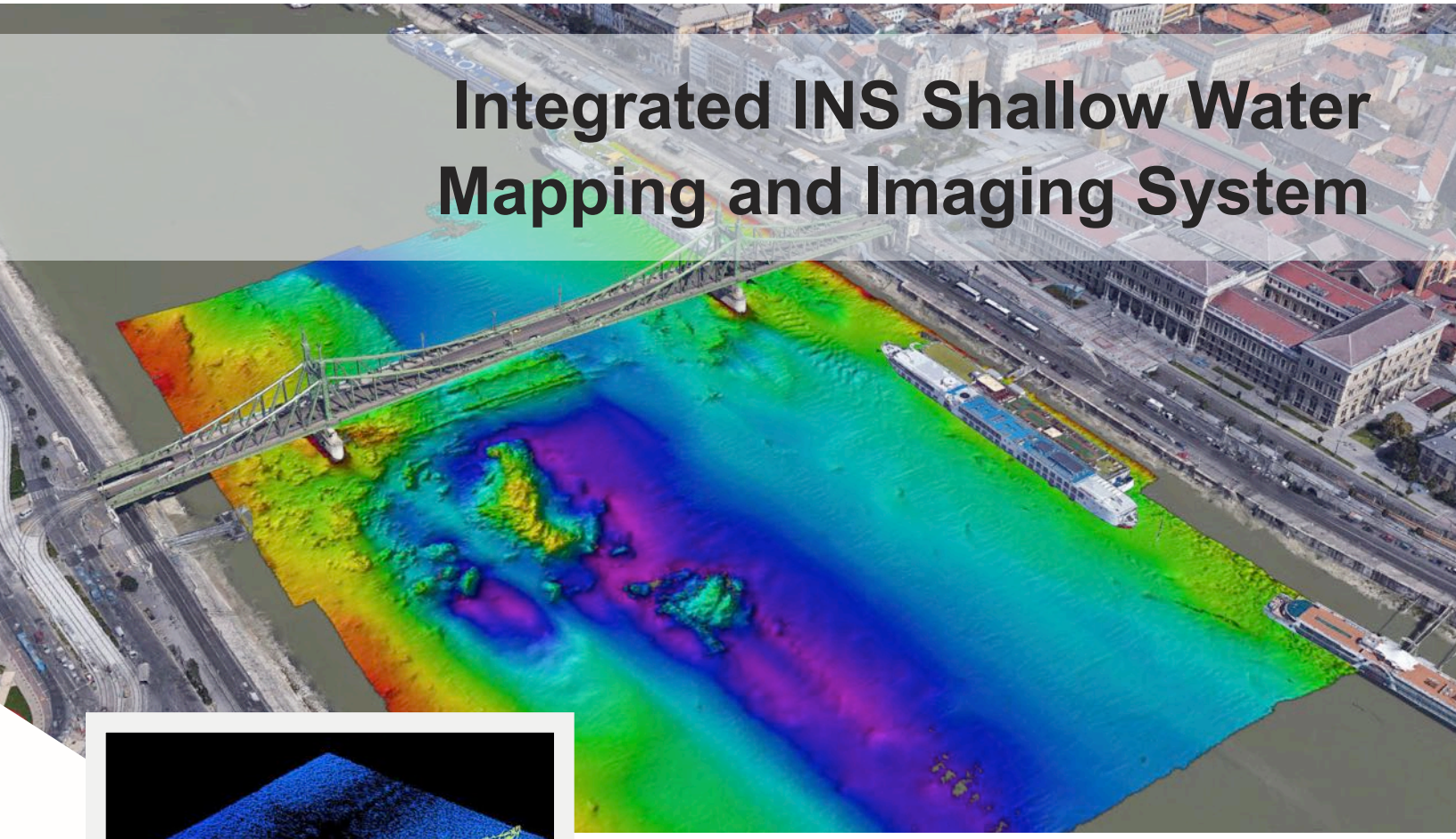
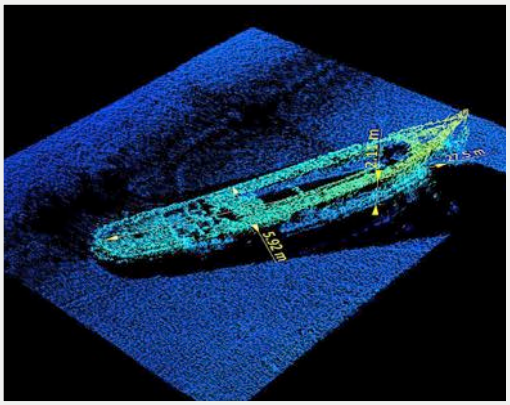
MFE OFFSHORE
+1 (832) 446-2061 | wpost@mfe-is.com

Ping DSP
A NORBIT Company

# PingDSP - 3DSS-iDX

## Integrated INS Shallow Water Mapping and Imaging System





**Superior Shallow Water Hydrography**

High-resolution, ultra-wide swath echo-sounding and 2D/3D imaging, combined with real-time surface sound velocity, high-accuracy positioning and attitude from an integrated INS, and optional RTK, PPK, or PPP corrections, deliver top-tier hydrographic survey and imaging performance in shallow water

**Simultaneous Real-Time 3D Imagery**

Geometrically accurate, co-located 3D sidescan imagery enhances bathymetry by complementing traditional 2D sidescan data with detailed 3D views. The 3DSS real-time software displays, captures, and enables precise 3D measurements of seabed and water-column features, such as pipes, cables, pilings, shipwrecks, subsea structures, hazards, and ecological habitats—seabed and water column features that are not well-defined in MBES-style bathymetry or 2D sidescan imaging.

**Compact, Ultra-Portable, Versatile**

A versatile Sonar Interface Unit provides ultra-portable, easy turnkey operation with just a laptop and a battery on small boats, USV's, and dedicated survey launches.

# 3DSS-iDX Sonar

**Integrated AML Sound Velocity Sensor - Integrated INS (SBG IMU & Septentrio GNSS) - Ultra Compact and Portable**

## Applications

- Coastal hydrographic survey
- River and lake survey
- Dredge survey
- Tailing pond survey
- Subsea structure survey
- 6th bullet: Search and localization
- Benthic habitat mapping
- Underwater archaeology

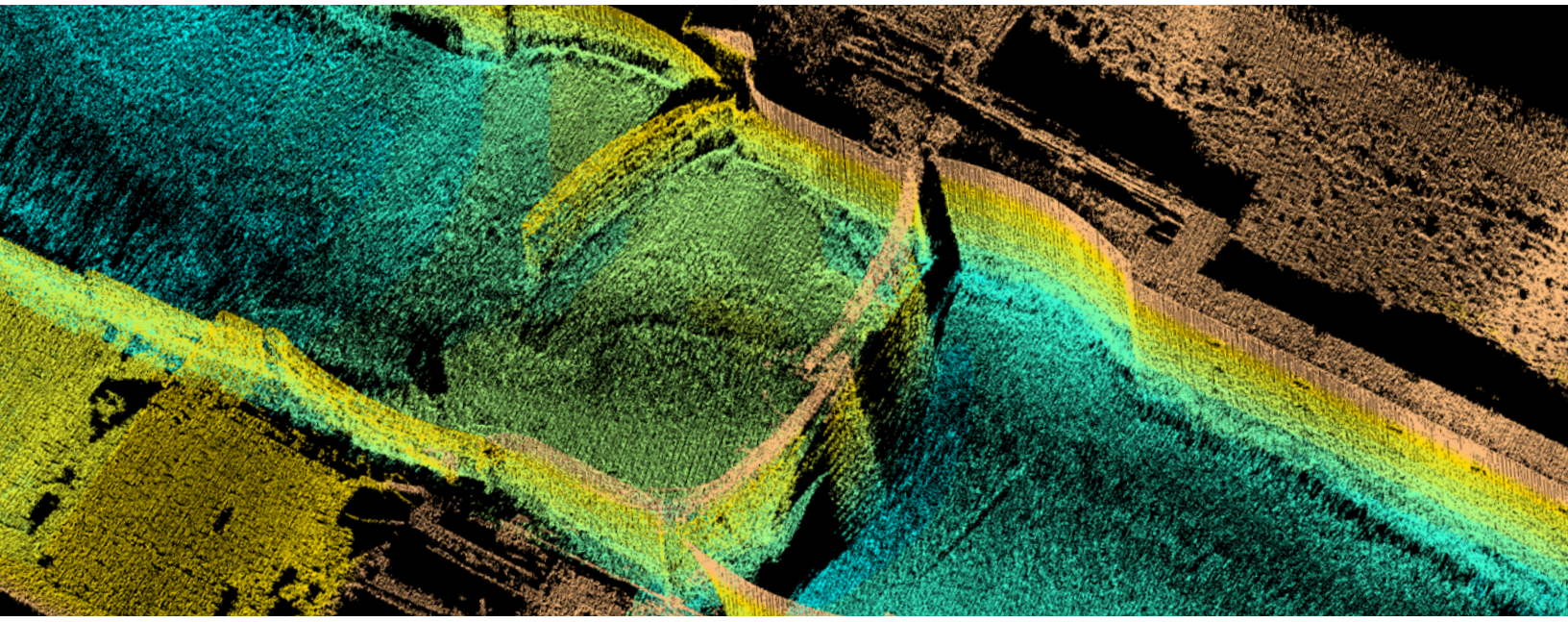
## Features

- Accurate, ultra-wide swath bathymetry
- Unmatched performance in depths <30m
- Seabed-to-sea surface coverage, no blind spots
- Versatile Sonar Interface Unit (SIU)
- Compact, low power, ultra -portable
- Extensive 3rd Party Hardware/ Software Support
- Pipe and cable survey
- Water-column imaging
- Canal and aqueduct survey

## Softsonar™ Technology

At the heart of the 3DSS-iDX sonar is Ping DSP's state-of-the-art SoftSonar™ electronics technology with:

- Ultra-low noise electronics
- Wide dynamic range receivers
- State-of-the-art acoustic transducer array
- Gigabit Ethernet
- Easy-to-use software interface
- Integrated support for a wide range of 3rd party software and hardware



## PATENTED ARRAY SIGNAL PROCESSING TECHNOLOGY

3DSS-iDX incorporates a patented signal processing methodology that extends the single angle-of-arrival principle used in interferometric systems to accommodate multiple simultaneous backscatter arrivals. When combined with the 3DSS-iDX Multibeam Echo-Sounder Signal Processing Engine, the result is unsurpassed resolution and bathymetric accuracy over swath widths that can exceed 14 times water depth.

**For more information please contact Ping DSP Inc. at: info@pingdsp.com**

# 3DSS-iDX Sonar Specifications*

| Sonar Configurations | | | | |
|---|---|---|---|---|
| **Model** | **Application** | **SVS** | **IMU** | **GNSS** |
| **3DSS-iDX-BASE** | Hydrography + 3D/2D Sidescan - 0.05° IMU, ext GNSS | AML Micro-X | SBG Ellipse3 | External Input Required |
| **3DSS-iDX-FULL** | Turnkey Hydrography + 3D/2D Sidescan - 0.05° IMU | AML Micro-X | SBG Ellipse3 | Septentrio AsteRx-m3 Fg |
| **3DSS-iDX-PRO** | Turnkey Hydrography + 3D/2D Sidescan - 0.02° IMU | AML Micro-X | SBG Navsight Ekinox | Septentrio AsteRx-m3 Fg |

| Sonar Specifications | | | |
|---|---|---|---|
| **Operating Frequency** | 450 kHz | **Mech. Transducer Tilt (fixed)** | 20° |
| **Transmit Waveforms** | CW, Broadband | **Electronic Transmit Tilt** | -45° to 45° |
| **Pulse Lengths** | 10 – 200 cycles | **Max. Ping Rep. Rate** | ~45 Hz |
| **Horizontal Beamwidth (2 way)** | 0.4° | **Vertical Beamwidth (selectable)** | 19° - 125° |

| 2D and 3D Sidescan (2D and 3D Imagery) Specifications | | | |
|---|---|---|---|
| **2D Sidescan (2D Imagery)** | | **3D Sidescan (3D Imagery)** | |
| **Data Output** | Range and Amplitude | **Data Output** | Range, Angle, and Amplitude |
| **Imaging Swath Width** | 10 to 20 times sonar altitude, varies with sound velocity profile, geometry and seabed type | **3D Imaging Swath Width** | 8 to 14 times sonar altitude, varies with sound velocity profile, geometry and seabed type |
| **Max Range** | 200m per side | **Max 3D Imaging Range** | 120m per side |
| **Max Range Resolution** | 1.67cm | **Max Resolution** | 1.67cm |

| Bathymetry Specifications | |
|---|---|
| **Data Output** | Sounding Range, Angle, and Amplitude |
| **Bathymetry Swath Width** | 8 to 16 times sonar altitude, varies with sound velocity profile, geometry and seabed type |
| **Max Bathymetry Range** | 120m per side |
| **Min. Sounding Depth** | 0.5m |
| **Max. Sounding Depth** | 75m (reduced swath width) |
| **Sounding Accuracy** | Exceeds IHO Special Order, meets or exceeds Dutch Norm 1A and Canadian Exclusive Order |
| **Multibeam Eq. Mode Settings** | Beamwidth (0.25°-5°), Sector (90°-220°), Beams (3-1024), Mode (Equidistant, Equiangle, Hybrid) |
| **Legacy Mode Settings** | Bin Count (3-1440), Bin Width (5cm – 200cm) |

| Integrated Sensor Specifications | |
|---|---|
| **Data Output** | Sounding Range, Angle, and Amplitude |
| **Bathymetry Swath Width** | 8 to 16 times sonar altitude, varies with sound velocity profile, geometry and seabed type |
| **Max Bathymetry Range** | 120m per side |
| **Min. Sounding Depth** | 0.5m |

| Interface Specifications | | Physical Specifications | |
|---|---|---|---|
| **Control Input / Data Output** | Gigabit Ethernet, sonar software provides control GUI/Ethernet command interface and TCP data server | **Voltage Requirements/ Power Consumption** | 12-28 VDC/ 25W (-BASE), 28W (-FULL, -PRO) |
| **Time Reference** | Time aligned to GNSS time | **Sonar Head Dimensions/ Weight in Air, Water** | 61 cm (24”) long x 9.8cm (3.88”) diameter/ 8.5 kg (18.7 lbs), 5 kg (11 lbs) |
| **Additional Communication Ports** | RS-232 or Ethernet, for external MRU, GNSS or INS, | **Sonar Interface Unit Dimensions** | 25.5cm (10.04”) wide x 15.5cm (6.10”) deep x 5.8cm (2.28”) tall |
| **Computer Requirements** | PC (Quad Core, 16GB, Discrete GPU (e.g. Nvidia), MS Windows 7,8,10,11 (64 bit) | **Pole Mount Adapter Options** | Electrically isolated flange mount adapter. (1.49” diameter pole mount for 1.5”ID pipe also included) |
| **Additional Inputs** | PPS (SMA), Ext.Trigger (SMA) | **Ambient Operating Temp** | -5° C – 45° C |
| **3rd Party Software Support** | Hypack, SonarWiz, QINSy, PDS, BeamWorx, EIVA, Caris HIPS/SIPS | **Depth Rating** | 10 m |

*Notes:
Specifications subject to change without notice.
See www.amloceanographic.com for complete specifications.
Specifications given for integrated 3DSS-INS operation and RTK corrections, see www.sbg-systems.com for full specifications.
See www.septentrio.com for complete specifications.