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SOLE SOURCE JUSTIFICATION Sea Scan ARC Explorer Digital CHIRP side scan sonar

Marine Sonic Technology (MST) a brand of ATLAS NORTH AMERICA is pleased to provide you with the following "sole source" information regarding our Sea Scan° ARC Explorer Digital CHIRP side scan sonar system.

For "sole source" justification, MST holds two U.S. patens (5,142,502 and 5,142,503 of August 25, 1992), which cover the technology incorporated in the Sea Scan° ARC Explorer system. No other manufacture is authorized to employ a personal computer to control and operate side scan sonar. The towfish manufactured under the first patent listed incorporated medical technology to produce the **highest** resolution images in the industry

Sea Scan° ARC Explorer enjoys many advantages over the competition, which are:

1. The Sea Scan° ARC Explorer offers the highest frequency towfish on the market. We are the ONLY side scan sonar on the market that offers 900/1800kHz frequencies needed to conduct Law Enforcement and home Land Security searches underwater. The 1800kHz frequency is the highest side scan frequency available giving the greatest resolution by any side scan sonar system anywhere.
2. Any Lap Top computer that has windows operating system and meets some min requirements can be used to operate this system. The software can also be configured to run on Mac or Linux based computers using commercially available Windows Emulators.
3. Sea Scan° ARC Explorer collects and stores all raw data allowing for adjustment post operation. Having Raw data stored means that there is no bad data collected.
4. Sea Scan ARC Explorer uses the same software for collecting data as viewing.
5. Automatically saves in XTF format for easy transition to post processing software.
6. Generates a detailed in-depth report in HTML Format that can be used and certified as evidence in judicial proceedings for criminal or civil action.
7. Markers allow operator to jump to that location in the data and try directly with navigation plotter.
8. Navigation plotter shows thumbnails of marker and when selected jump to that location in data.
9. All sonar images created by the system are saved to the internal hard drive allowing for easy playback and review.

10. The Raw Data is protected from manipulation giving protection against accidental or intentional changes protecting the integrity of the data.
11. Using medical technology, rather than conventional sonar practices, The Sea Scan' ARC Explorer employs no high voltage in the towcable and poses no personal hazards to operating personnel either on the surface or in the water. The system operates on a voltage range of 10 to 36 VDC. A 12 volt DC car or marine battery is all that is needed to power the system.
12. Divers and marine mammals **CANNOT** hear the underwater transmission and are **NOT** exposed to any hazards or harm. The frequencies chosen are above the hearing and detection range of all marine mammals and conform to all U.S. and International standards for sound emission.
13. The Software is windows based and allows for docking, expanding and hiding control tabs as preferred by operator.
14. Sea Scan' ARC Explorer's integrated plotter provides continuous correlation of acoustic data to a geographic position allowing for easy marking and return to an identified target.

The following characteristics are attributes to the physical configuration of the Sea Scan' ARC Explorer:

1. The Sea Scan' ARC Explorer has field interchangeable transducers allowing the user to change the frequency transducers during the mission without complex tools or special training. This feature also allows for the easy replacement of the transducer should damage occur.
2. The Sea Scan' ARC Explorer has an integrated variable angle bracket allowing the user to manipulate the direction of coverage in the field without adding additional hardware or the need of specialized tools.
3. The Sea Scan' ARC Explorer uses WetMate connectors which do not need any physical maintenance besides cleaning. There are no O'rings to change or changing of parts. The WetMate connector is designed to be completely maintenance free.
4. The Sea Scan' ARC Explorer uses TWO integrated handles that are designed and placed for perfect ergonomically correct deployment and recovery of the system.
5. The Sea Scan' ARC Explorer uses a uniquely designed cable attachment system to the towfish that not only removes the need for special tools it requires no tools at all, speeding up the process of getting the system ready for deployment.
6. The Sea Scan' ARC Explorer Towfish uses a combination of stainless steal, high grade billet aluminum, and marine grade plastics to construct an extremely durable product designed for the harshest of environments.

As many organizations want to ensure that their respective purchasing departments are able to obtain a Marine Sonic system, the following bid specifications are provided to assist with the purchase.

Bid Specifications.

The Sea Scan* ARC Explorer features
- Up to 12 transducer frequencies in a single system
- Designed to be simple to operate
- Embedded and Towed systems have a shared architecture
- System auto-recognizes features of the current system
- Streaming data format

Data Collection
- Raw data collection (no TVG/TGC)
- Up to 60 samples per second
- 1024 Samples per side
- 12bit resolution
- Logarithmic compression for a total dynamic range of up to 92dB
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Telemetry System
- Digital data transmission using simple and robust high speed serial links
- Drive cables up to 1000m in length at full resolution and ping rates
- Up to 3Mbps@1000m cable lengths

Towfish Specifications
- Data acquisition integrated into tow body
- Upgradeable acquisition components
- Noise reduction and improved suppression due to digital telemetry

Simple Topside Unit
- USB 2.0 computer connection
- High speed Ethernet connection
- High speed digital telemetry, up to 2Mbps at 1000m.
- Wide 10-36VDC power input
- Clean, filtered power output
- Fuse protected power inputs/output
- Very simple operation.
- Small, rugged, splash proof design

Software:
- Simple yet capable operation
- Dockable, reconfigurable components

- Hotkey integration
- Variable width waterfall display
- Integrated XTF converter
- Integrated vector graphic charts
- Marker management system
- Auto and/or manual image adjustments
- GPS input via Garmin USB GPS or NMEA 0183 via a serial port
- Telemetry plugin support for different transmission protocols
  - Ethernet
  - High Speed Serial (STU)
  - Receive only
  - Simulator
- Survey management features
  - All data relevant to a "survey" is stored in a single folder. This includes:
    Sonar Data
    Markers
    Marker thumbnails
    Survey reports

If you have any questions or concerns please contact your representative at Marine Sonic Technology, a brand of ATLAS NORTH AMERICA.

Sincerely,

Mark Rios

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