



Underwater Solutions

MKS Newsletter Issue 6a UUVS 2006



MARINE SURVEY EQUIPMENT SPECIALISTS

MK Services provides :

- Acoustics
- Oceanographic Systems
- Mooring Systems
- CTD's
- Flotation
- Cameras
- Geophysical Systems
- Coring Systems
- Subsea Tracking
- Emergency Location Equipment
- Hydrophones
- AUV's
- ROV's
- Consumables
- Software Packages

MKS at UUVS

Thank you for taking the time to read this short edition of the MKS newsletter, which has been produced specifically with UUVS in mind.

For the leisure sailor, September is inextricably linked with Southampton and it's Boat Show. For those of us interested in what is

happening beneath the surface, September is certainly linked with Southampton, but it is UUVS that is firmly marked in our diaries.

So having found ourselves all here again, we trust that you will find the conference both informative and interesting,

and hope that you will make time to stop by and visit us on our stand (427), where will be joined by personnel from Hydroid and Teledyne Benthos.

Best Regards

Malcolm Kirby
Managing Director

AUV for Heriot-Watt's Ocean Systems Laboratory

MK Services has recently received a contract to deliver a REMUS 100 Autonomous Underwater Vehicle, and its associated ancillary equipment, to the Ocean Systems Laboratory, at Heriot-Watt University in Edinburgh.



The Ocean Systems Laboratory at Heriot-Watt University aims to raise the technology readiness levels of its research portfolios in computer aided detection and classification, adaptive broadband sonar design, advanced navigation/motion control and onboard autonomy. The REMUS 100 will be used as a

demonstration platform in planned trials with offshore, scientific and military partners across the world.

The REMUS 100 will be manufactured by Hydroid LLC, who hold the exclusive license from the Woods Hole Oceanographic Institution for the manufacture and further development of the REMUS Autonomous Underwater Vehicle (AUV) technology.



MK Services prides itself on providing innovative marine survey products and solutions, and is delighted to be able to support Heriot-Watt University in it's efforts to use the REMUS 100 platform to develop it's own leading edge technology.

Companies Represented by MK Services at UUVS





New Lightweight C3D

Teledyne Benthos have now launched a new lightweight version of their very successful C3D seafloor imaging system.



C3D-LPM
Small vessel, over-side-mount, configuration

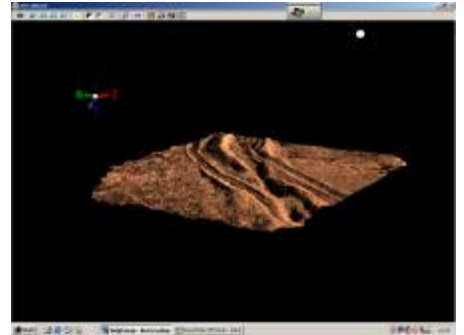
Designed for shallow water, small vessel operation, the C3D-LPM system compliments the standard, and AUV configuration versions of the C3D already offered by Teledyne Benthos.

The low power requirements make the C3D ideally suited to AUV applications. But more importantly, unlike when using two distinct side scan and multi-beam systems, the side scan imagery and the bathymetry information are both derived from the same raw dataset. This means

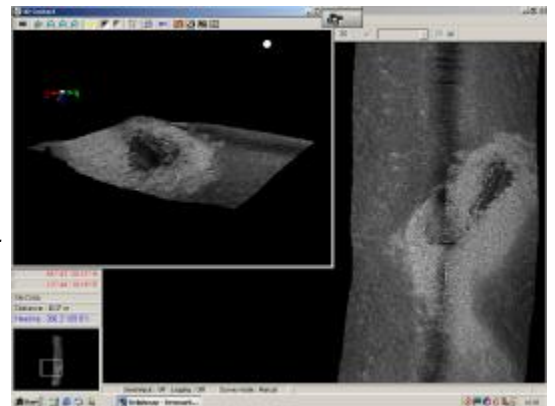
that there is no compromise needed in the preferred height above the seabed the AUV needs to maintain for optimum data quality.

Advantages of the C3D include:

- ◆ CAATI technology's advanced ability to resolve vertical features – *algorithm specifically designed to handle multiple simultaneous returns, which provides superior performance in areas with vertical features.*
- ◆ The use of both phase and amplitude for sounding solutions.
- ◆ High along track angular resolution - *provides high resolution imagery at 200kHz.*
- ◆ Simultaneous port/starboard ping - *yields higher along track data density than alternating ping.*
- ◆ The use of six receive elements - *large number of elements increases accuracy and reliability of depth solutions.*
- ◆ 600m swathe width capability – *again the large number of elements improves signal-to-noise ratio.*



- ◆ Data acquisition with Isis software producing data in .xtf Format.
- ◆ Full import and data processing functionality within Caris HIPS/SIPS post-processing software.



MK Services are specialists in the provision of marine survey equipment to meet the precise needs of geophysical, hydrographic surveying, underwater positioning and subsea inspection applications.

Representing some of the worlds leading manufacturers, MK Services is uniquely placed to provide a wide range of proven systems and services.



For more details on any of the items listed in this newsletter, or for any general enquiries, please contact Nick Lawrence or Malcolm Kirby and we will be happy to provide you with all the information you require.

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