

Optimising Multiple ADCP Access

EvoLogics, Germany, has upgraded its S2C/2/ADCP multiple access system to version 2.0, adding important features that optimise data retrieval from multiple ADCP instruments. The protocol for downloading files over the hydro-acoustic channel increases both speed and reliability of file transfers.

Back in the autumn of 2010, EvoLogics presented the S2C/2/ADCP space-saving and energy-efficient data retrieval system, where a single interface of the top-side EvoLogics S2C (Sweep Spread Carrier) acoustic modem provides access to two ADCPs, connected to another EvoLogics S2C acoustic modem on a surface buoy. The system allows addressing each ADCP individually to request status information or initiate a data download.

Relying on the S2C technology, this communication system was installed and tested by the IOCAS (Institute Of Oceanology, Chinese Academy Of Sciences) team during their West Pacific cruise in late 2010. ADCP data, collected over a 10-day period, was successfully downloaded from each instrument.

EvoLogics collected and analysed feedback information from the system's field tests. A few improvements were found to make the system significantly more flexible, resulting in version 2.0.

An important feature of resuming interrupted file downloads was added to the system's functionality. When operating in harsh underwater conditions, acoustic connection might break and the retrieval procedure now does not have to start from scratch whenever the transfer is interrupted. The new protocol also allows selecting individual ADCP files for download, achieving high-priority information can be transferred first.

The new version includes a custom PC client-software for remotely operating the ADCPs over an acoustic link. It enables remote ADCP selection, downloading files from the ADCP data storage, running scripts or manually operating the ADCP. It has a user-friendly interface and is easily modifiable.

Many applications may benefit from decreasing the number of communication devices, as accessing multiple sensors with a single pair of underwater acoustic modems saves both energy and space.

An S2C/2/ADCP Version 2.0 network can contain up to 255 modems, up to 5 ADCPs connected to each.