CEESCOPE Single Beam Surveys for Ongoing Belize City Cruise Port Dredging

Description

Coastal harbor view with wooden docks, blue umbrellas, and a row of houses along the shore on a sunny can we
The Belize River flows through Belize City and carries a high sediment load, easily visible on aerial images of the city. This sediment quickly accumulates in the small port home to a terminal receiving cruise ship tenders and water taxis running between nearby islands. The maintenance of the port is therefore for the local economy as thousands of cruise ship passengers may disembark each day on their way to local tours. A continuous dredging operation is running, managed by the cruise port with the dredge running every night to maintain unhindered navigation. Without in-house surveying capabilities, the dredge operators did not have the ability to monitor the dredging process and had to call in third party periodic surveys. To rectify this, and to allow calculation of dredge volumes for payment, the cruise port invested in a new CEESCOPE echo sounder system with Hydromagic software to be operated by their own staff. They opted for the CEESCOPE recognizing that it presented the easiest and most accessible user interface of available single beam survey systems. Multibeam was considered but ruled out owing to the very shallow water and high degree of operating complexity that would place an excessive burden on the port for staff training and skill maintenance.

The CEE heavy duty small boat transducer mount was installed on the available boat and CEE staff were on hand in Belize to conduct implementation training. Submeter positioning facilitated by the North American WAAS SBAS corrections was selected for this application, giving a simple operation for the users. The tidal variation was corrected from survey data using readily available tide curve data.

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While the small area and multiple berths did cause some challenges for driving the survey boat in order to provide coverage of the entire port, even the initial Hydromagic data processed from the training survey clearly highlighted the dredge progress and high spots that required further attention, as well as showing how shallow the entire port area had become.

Aerial map showing a coastal town with a large yellow-green highlighted area along the water, likely repre

The users at the Fort Street Tourism Village were happy to report that the CEESCOPE equipment and implementation training even surpassed their expectations about what was possible after

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doing plenty of research before making their selection. So everyone is happy with that.

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