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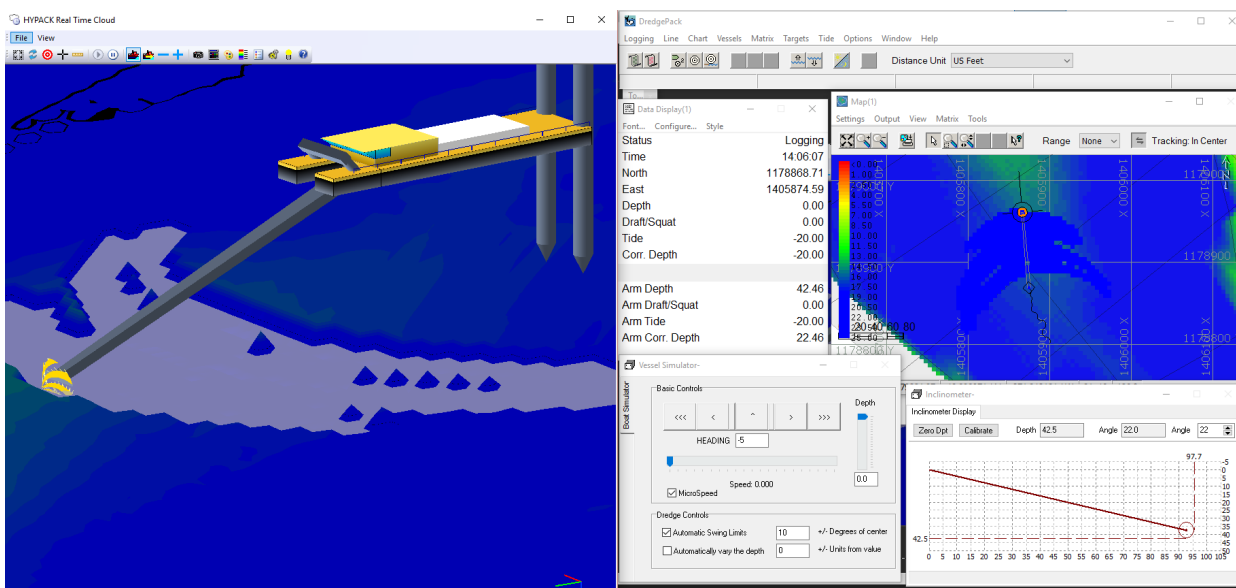
Sounding Better!

3D Dredging in HYPACK

By Ken Aiken

DREDGEPAK® projects can show a real-time, 3D display of your dredging project using the Real Time Cloud Shared Memory module. Used in conjunction with the SURVEY Map and Profile views, the 3D display improves the visualization of your dredge depth and coverage. Currently, we can display cutter suction dredges and excavators to show the location of the cutter head or the bucket teeth relative to the water surface and the channel template.

FIGURE 1. *Cutter Suction Dredge in Real Time Cloud Shows Missed Spots More Clearly Than in the Map Window.*



The 3D Real Time Cloud display is a great replacement (or addition, if you have the screen space) for the Map window. It enables you to, not only see where your dredge is, but provides increased detail in your dredge surface. Configure your channel template with some transparency and you can see the dredge surface and channel template together. This display, with your Profile window, provides a clearer view of any overdredging.

FIGURE 2. 3D Excavator in Real Time Cloud with the Survey Map and Profile WindowsReal Time Cloud enables you to see all other vessels you can see in DREDGEPACK® or SURVEY for improved situational awareness.

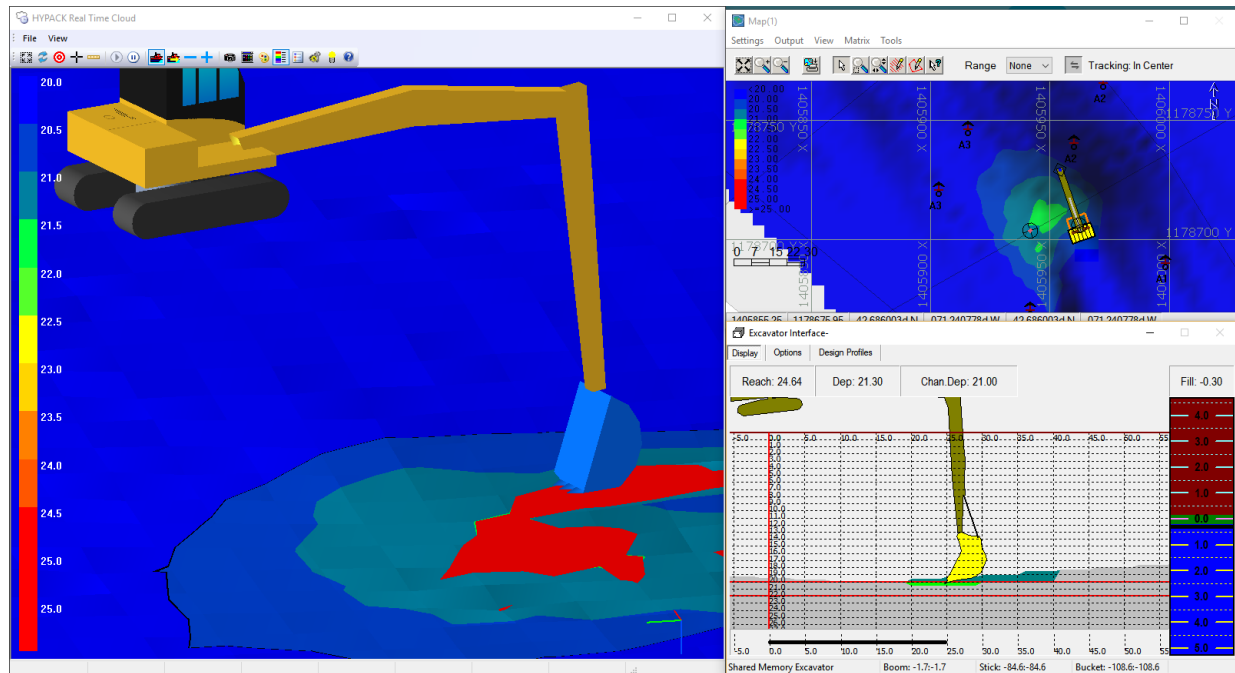


FIGURE 3. Multiple Vessel Displays Provide Improved Situational Awareness



CONFIGURING YOUR PROJECT FOR REAL TIME CLOUD IN DREDGEPACK®

A combination of settings, in Real Time Cloud and elsewhere, work together to provide an accurate display in the Real Time Cloud window.

PROJECT SETTINGS

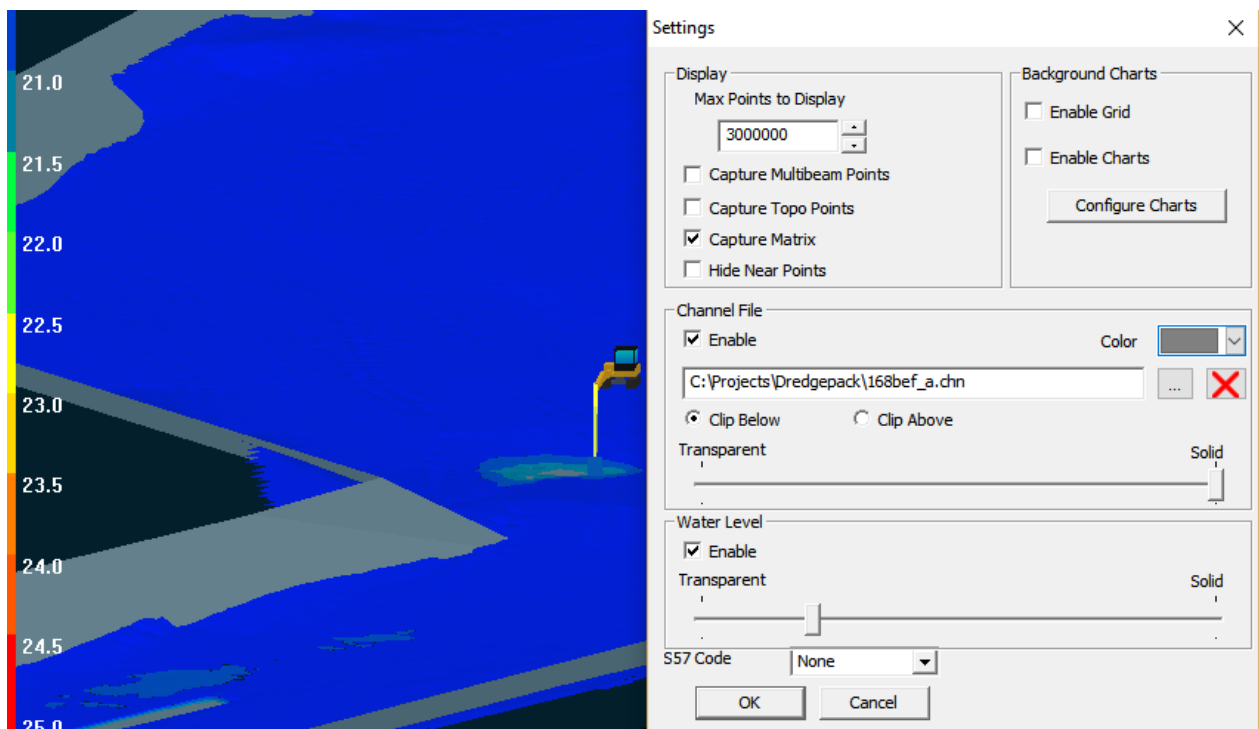
Painting a matrix with your dredge cutting tool in Real Time Cloud requires the following conditions:

- An **dredge matrix** enabled in your project and in DREDGEPACK®.
- Your **HARDWARE setup** must have at least two mobiles:
 - > Typically the first (dredge body) receives your positioning.
 - > The second, positioned relative to the first, calculates the position of the bucket or cutter head using the excavator or inclinometer driver, respectively.
 - Configure your cutting tool to log **depth** and **paint the matrix**.
 - On a cutter suction dredge, disable the **Draft** function for the inclinometer driver.
 - On the Offsets tab, set **Relative To** the dredge body.

REAL TIME CLOUD SETTINGS DIALOG

The Settings dialog enables you to customize the Real Time Cloud display. Most of the options in the Settings dialog are not applicable to dredge projects and should be deselected. The Capture Matrix option is required. Use the Channel File options to enable the channel file (*.CHN) and configure its color and transparency in the display. (Support for using a matrix as the channel is under consideration for future development.)

FIGURE 4. *Customize the Display with your Channel File and Water at the Tide Level*



BOAT SETTINGS

Use the Real Time Cloud Boat Settings dialog to configure the dredge in your display.

FIGURE 5. Boat Settings Dialog.

Active Mobile	Shape	Width	Length	Height
Boat				
☒ Active	☒ Default	22.0 ft	100.0 ft	10.0 ft
☐ Enabled	☐ From File			
Arm				
☐ Active	☒ Default	20.0 ft	20.0 ft	20.0 ft
☒ Enabled	☐ From File			
Mobile				
☐ Active	☐ Default	22.0 %	22.0 %	8.0 %
☐ Enabled	☒ From File	C:\HYPACK\Shapes\Barge.3ds		
Apply OK Cancel				

DREDGEPACK® draws the entire dredge based on the type of dredge (indicated by the driver) and the position of the cutter head or bucket. Select the **default boat shape** option to use the dredge shape built into DREDGEPACK®. Feel free to adjust the size.

The **Enable** options determine which mobiles appear in the Real Time Cloud display. Since the entire dredge is drawn based on the position of the cutting tool, that is the only mobile that you should enable. Make sure the Enabled option for the first mobile is unchecked to prevent a second, unnecessary boat shape at the dredge body position.

The **Active** options determine the mobile on which Real Time Cloud focuses the display. We typically choose the dredge body.