# TrimbleMarine</

Highly-accurate, real-time positioning systems that enable marine contractors to dredge, construct and survey with precision.





### Accelerate marine construction

Trimble<sup>®</sup> Marine Construction Systems improve the efficiency and safety of your dredging, placement and hydrographic survey workflows — simple to use systems keep your operations working all day — and through the night.

Realize maximum productivity with highly-accurate systems that empower operators to work smarter, more accurately and avoid rework. Real-time 3D visualization provides accurate guidance and safer situational awareness, enabling marine contractors to work with greater precision.

Trimble's robust and reliable solutions include hardware, software and GNSS correction services, and can be integrated into third-party systems:

- Add sonar imaging for real-time as-building verification
- Add third-party sensors for non-vertical cable tracking and block orientation



# Machine guidance for dredging

Improve operational efficiency by dredging with more accuracy. Easily visualize the tool angle and position when using backhoe excavator, clamshell crane, cutter suction, bucket and trailing suction hopper dredges.

### **Customers report**







# Machine guidance for placement

Easily place material and blocks to deliver projects on time and with sub inch (centimeter-level) horizontal and vertical accuracy. Maximize productivity with faster spotting time and reduce the need for divers to check work in dangerous conditions.

### **Customers report**



# **Real-time visualization**

Empower operators with graphics they can rely on to understand their progress in real-time. 3D, plan and profile views enable at-a-glance comparison between surveyed and design surfaces along with a color-coded digital terrain model (DTM) view that highlights the high and low spots relative to design. A variety of visuals help the operator to avoid rework and track progress of the project.

# **Customizable interface**

Multiple monitors with independent layouts can be tailored to the needs of the operator.



# System benefits



Up/down indicators show the operator the exact distance to the seafloor and design depth continuously

3D, plan and profile views

Tolerance visualization provides guidance for accurate, efficient dredging and placement productivity

Create or import models from CAD software for realistic visuals

Highlight under and over dredging in real-time

Continuous data logging for as-building and volume reports

# Hydrographic surveying

Confidently conduct your own pre and post-construction single beam hydrographic surveys with precision and accuracy. Accelerate your surveying and reporting with simple data acquisition, editing, plotting and dredge volume calculations. Reduce rework, increase productivity and improve site safety with a better understanding of the underwater environment.

### **Customers report**





### **Trimble marine GNSS receivers**

Category	Feature	MPS566	R750	R780	BX992
Precision capability	Precise RTK Rover	0	0	0	0
	Precise RTK Base	0	0	0	
	Rover (30/30)	Y		Y	Y
	Rover (10/10)	0	0		Y
	Rover (10/2) (Precise vertical)	0	0		Y
	Precise tide and heave measurement	Y	Y	Y	Y
Precise heading	Dual antenna	Y			Υ
	Moving base	Y	Y	Y	Y
Frequency	Triple Frequency	Y	Y	Y	0
Constellations	GPS, GLONASS, QZSS, SBAS	Y	Y	Y	Y
	Galileo, BeiDou	Y	Y	Y	0
Correction services <sup>*</sup>	CenterPoint® RTX	Y	Y	Y	0
	VRS/IBSS/ NTRIP	Y	Y	Y	Y
	Fugro Marinestar	Y	Y	Y	0
	MSK Beacon	Y			
General features	Data logging	Y	Y	Y	0
	1PPS	Y	Y	Y	Y
	Max Data Rate	50 Hz 100 Hz (INS)	50 Hz	20 Hz	50 Hz
	Inertial (INS)	0			0
	Cellular	Y	Y		
	Wi-Fi, Bluetooth	Y	Y	Y	

\* Some correction services require a high precision capability and also may require a subscription. Ask your local Trimble Marine Dealer for more information.

### **Trimble Business Center**

Rapidly create optimized 3D surveying, dredging and placement plans with Trimble Business Center, then generate comprehensive quality and production reports.

### Marine software applications

Application	TMC for Construction	TMC for Hydrographic Surveying	Trimble Business Center
Cutter suction dredge	Y		
Trailing suction hopper dredge	Y		
Wire crane dredge	Y		
Backhoe excavator dredge	Υ		
Piling	Υ		
Rig/Barge positioning	Y	Y	
Anchor handling	Y	Y	
Volume calculations	Y	Y	Y
Navigation/survey		Y	
SBES editing		Y	
Chart plotting		Y	Y
Channel design		Y	Y
Single beam survey		Y	
Multibeam survey	Y*		

\*Real-time Inspection Sonar only

Y – Yes | O – Optional

### Trimble CenterPoint RTX Marine

Boost your on-site productivity and obtain the precision you need in marine construction and survey applications with Trimble's real-time GNSS correction service delivering centimeter-level accuracy via satellite or the internet.



Zephyr 3 Rugged | R780 GNSS Smart Antenna | TDL450B Radio | BX992 GNSS Receiver | MPS566 Modular GNSS Heading Receiver

Trimble Marine Construction

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