

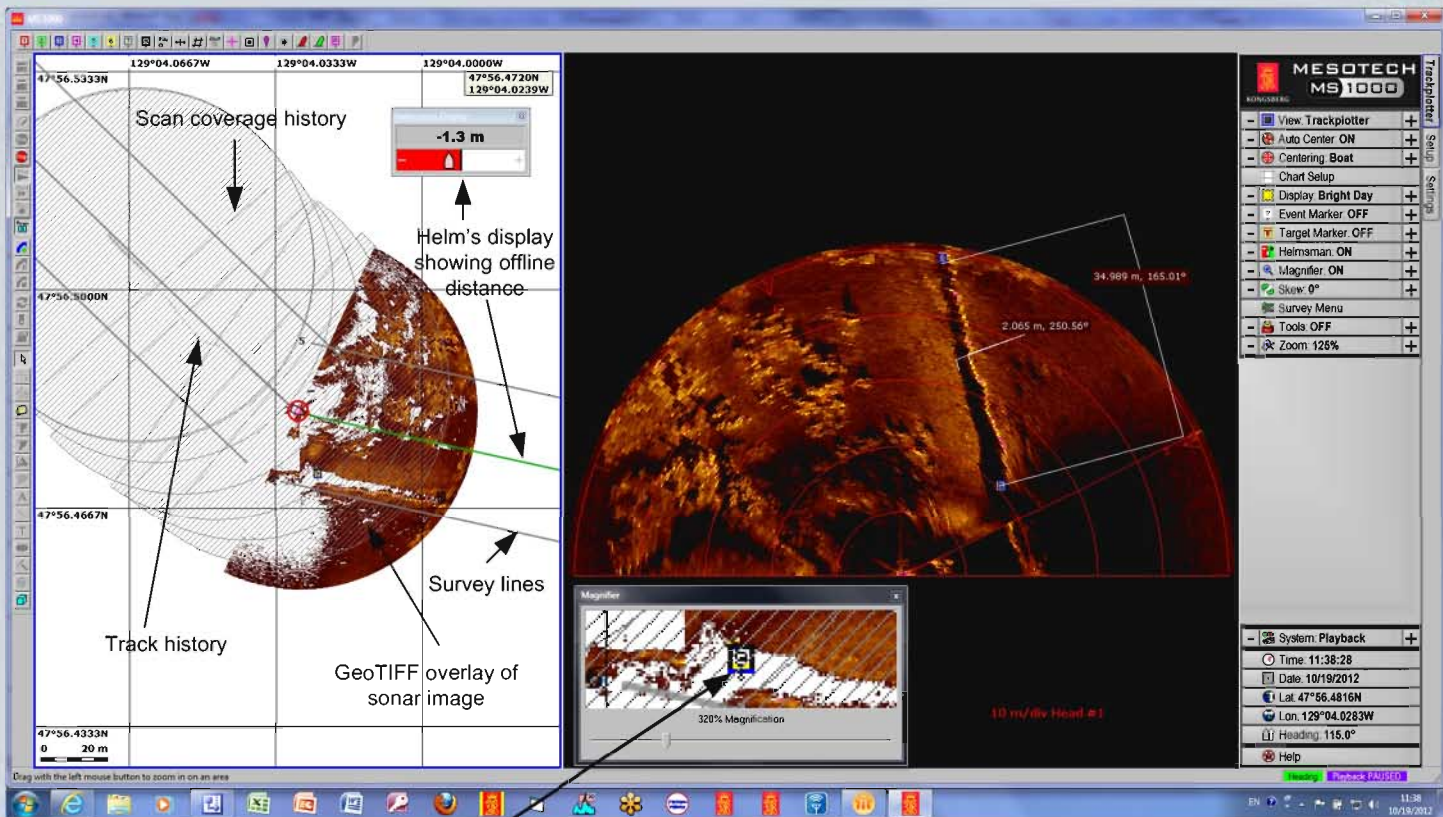


## MS 1000 *Trackplotter* Navigation Module

The MS 1000 *Trackplotter* navigation module provides a complete sonar and survey package within a single operating program.

This *Trackplotter* module allows the operator to input survey line files, create search or survey grids, geo-reference sonar targets, show sonar coverage and overlay a GeoTIFF of the sonar image “on the fly” or during data playback.

The ROV survey data below shows a 40m wide, pre-plotted survey corridor with a dogleg. The ROV has just turned onto the centerline of the dogleg (green line indicates it is active) and is 1.3 metres offline to port. A ‘hot key’ lets the operator overlay the sonar data onto the *Trackplotter* window to ensure the corridor has been ensouffied.



Marker Properties

General	Description
Name:	<input type="checkbox"/> Show Name
Latitude:	47°56.4713N <input type="checkbox"/> Show Description
Longitude:	129°04.0239W <input type="checkbox"/> Lock Position
Northing:	
Easting:	

OK Cancel Apply Help

Chart Setup

General	Projection / Survey	Covered Area
<input checked="" type="checkbox"/> Solid Lines	<input checked="" type="checkbox"/> Plot	<input checked="" type="checkbox"/> Time Update
<input checked="" type="checkbox"/> Tick Marks		
Plotted Items	<input checked="" type="checkbox"/> Boat Position	<input checked="" type="checkbox"/> GPS Antenna
<input checked="" type="checkbox"/> Helmsman	<input checked="" type="checkbox"/> Scale Legend	<input checked="" type="checkbox"/> Helmsman ON
<input checked="" type="checkbox"/> Planned Lines	<input checked="" type="checkbox"/> Planner Position	<input checked="" type="checkbox"/> Grid Labels
<input checked="" type="checkbox"/> Plot to scale		

OK Cancel Help

Chart Setup

General	Projection / Survey
Date:	WGS84
Latitude / Longitude:	WGS84 UTM
Zone:	9 (112°W ~ 128°W Northern Hemisphere)
Display Coords to:	Nothing / Easting
Latitude / Longitude Format:	DM
Latitude / Longitude ↔ Nothing / Easting Calculator	
Latitude: <input type="text"/> N/S	<input type="text"/> N/S
Longitude: <input type="text"/> W/E	<input type="text"/> W/E
Convert →	← Convert
WGS84 (Latitude/Longitude)	WGS84 UTM (9, 112°W ~ 128°W Northern Hemisphere)

OK Cancel Help

When target markers are placed on the sonar image when the data is recorded they are embedded into the file and appear on playback. When the computer mouse is placed over the marker and right clicked, a marker properties window appears showing the marker coordinates.

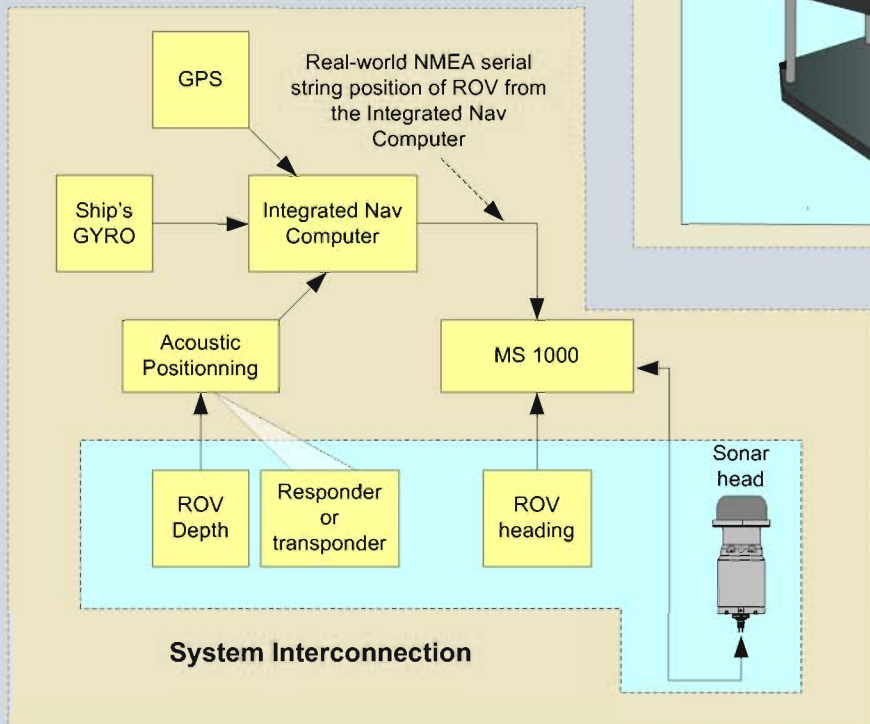
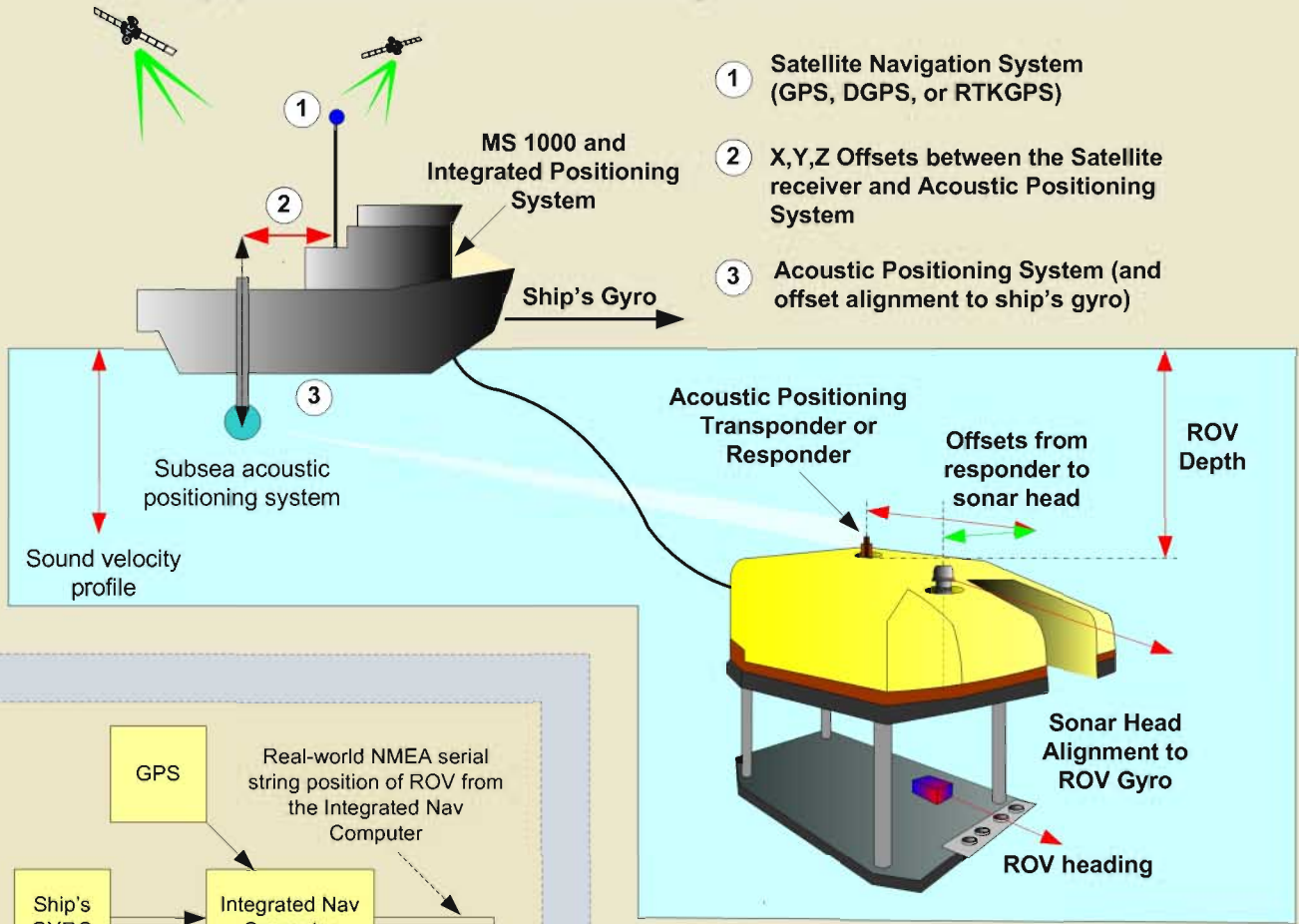
The *Trackplotter* allows the operator to display coordinates in Latitude/ Longitude or UTM formats convert from one to the other. Survey lines can be pre-plotted and stored for recall or created in real time. When a single survey line is drawn the operator has the option of plotting any number of parallel lines at whatever distance apart the operator enters.



# Geographically Referencing an ROV Scanning Sonar Target

The MS 1000 *Trackplotter* navigation module allows the sonar operator to geo-reference a sonar target in real-world coordinates. The equipment needed and interconnections are shown below. If the ROV is currently being tracked, it is a simple matter of taking the NMEA serial position and ROV heading strings from the survey system and connecting them via a USB or serial port into the MS 1000 computer. Scan coverage is shown on the *Trackplotter* display and targets can be marked in real time or during playback of the recorded sonar data to determine their real-world position.

## Equipment requirements, mounting, and other considerations



It is the integrated surface/subsea navigation computer that calculates the ROV position and outputs that NMEA data string to the MS 1000. The *Trackplotter* program combines that information with the ROV heading, sonar range and azimuth of selected targets and determines their absolute coordinates