

### CARTOGRAPHIC SYMBOLS

	Post Survey Route with kilometre post and reverse kilometre post		Telecommunications cable position, in Service/Out of Service/Planned (As found in magenta)
	Beach Mark		Pipeline position, in Service/Out of Service/Planned (As found in magenta)
	Alter Course		Power cable position, in Service/Out of Service (As found in magenta)
	Survey Route		Chart Matchline
	Coastline (from Admiralty Charts)		Territorial Sea / EEZ limit

### BATHYMETRY

	Bathymetric contours in metres. Contour interval may be reduced to aid in clarity. All bathymetry reduced to Lowest Astronomical Tide (LAT)		Approximate limit of swath bathymetry coverage (shown only in areas of flat seabed)
	Downslope gradient in degrees (°) as measured over the shortest significant distance		

### SEABED FEATURES AND SHALLOW GEOLOGY

	Coral		Isolated sonar contact with reference number (length x width x height in metres where measurable; n/m = no measurable height)
	Gas seepage area with predominant sediment classification		Linear sonar contact, dashed where partially buried
	Boulders with predominant sediment classification		Unidentified magnetic anomaly with reference number and amplitude
	Fine sediment (predominantly CLAY/SILT)		Cable/Pipeline position, as determined by magnetometer, with reference number and amplitude
	Coarse sediment (SAND and GRAVEL)		Seabed sample location with reference number: CC (Piston Core), GS (Grab Sample), DS (Diver Sample), DP (Diver Probe), SP (Spear Probing)
	Very coarse sediment (COBBLES and BOULDERS)		Mn/CPT (CP), Location with reference number
	Subsiding ROCK with predominant sediment classification (sediment thickness = target burial depth)		Small outcrop of rock with height in metres if discernible
	ROCK outcrop		Seabed DEPRESSION or POCKMARK with diameter (d) and depth (D) in metres, where discernible
	HARDGROUND (Very dense/consolidated sediment)		Orientation of SAND/WAVE crest (with wavelength and height in metres)
	Sediment or feature boundary		Orientation of MEGARIPPLE crest (with wavelength and height in metres)
	Inferred Sediment or Feature Boundary		Orientation of sediment ribbon
	Approximate limit of side scan sonar coverage and survey swath		Fault with depth below seafloor (fluctures on down side)
	Seabed scar (trail or anchor)		Charted or reported wreck
	Dumping ground database position		Isobath Contours shown at 1m interval with labels every 1m
	Well / Platform		Located wreck with reference no. (length x width x height in metres where measurable)
	Oil Concession Block		Anchorage Area / Fishing Area (Admiralty chart position)
			Anchorage / Fishing Prohibited (Admiralty chart position)

### CHART COMMENT:

### GENERAL NOTES:

<b>SURVEY VESSEL:</b> Fugro Starline WIP 150455	M.V. Ocean Endeavour Fugro Starline WIP 150455	M.V. Capito Eng III Apollon POSBY Watermaster, Verpos LDS
<b>Underwater positioning System:</b> Kongsberg Ranger 1 USBL	Kongsberg Ranger 1 USBL	Reson Seabat T-20
<b>Bathymetry:</b> Kongsberg EM100, Kongsberg EM600, Kongsberg EM300	Kongsberg EM100, Kongsberg EM600, Kongsberg EM300	
<b>Morphology and stratigraphy:</b> Edgetech 4200-FS, Kongsberg Chirp and pinger, SEB Seaprobe SSS/SBP	Edgetech 4200-FS, Kongsberg Chirp and pinger, SEB Seaprobe SSS/SBP	Edgetech 4200 MP, Kongsberg Geosounders, Chirp/Chirp
<b>Magnetometer survey:</b> Geomatrix M82	Geomatrix M82	Marine Magnetics Seagrey
<b>Geotechnical:</b> Kullenberg Piston Core, Neptune 3000 CPT	Kullenberg Piston Core, Neptune 3000 CPT	Van Veen Grab Sampler

**Target burial depth:**  
1.2m below seabed

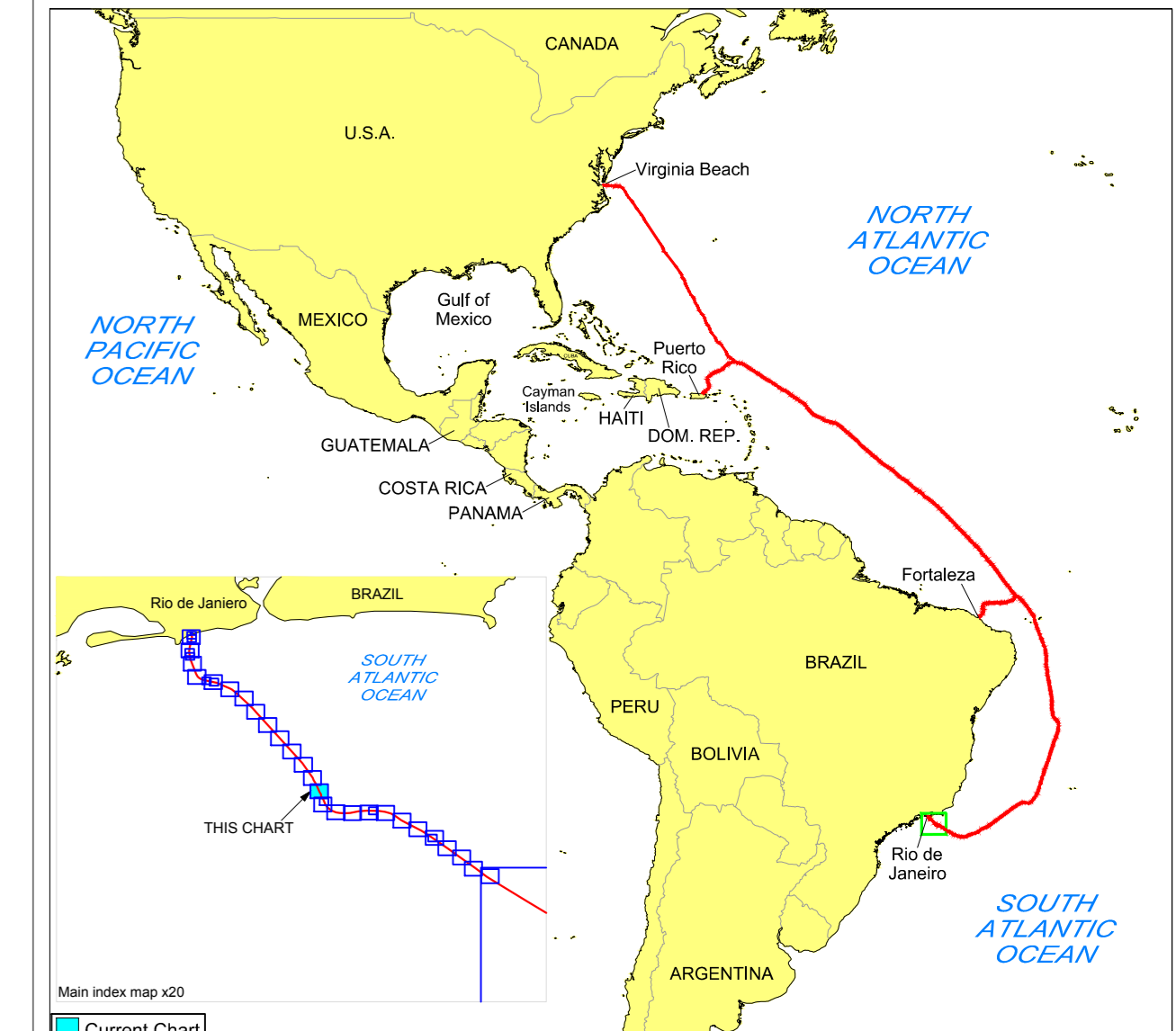
**Descriptive Terms and Definitions:**  
The criteria used for interpretation and descriptions are presented in the Survey Results

**Multibeam Processing Parameters:** Depths in metres, reduced to LAT

**Predictions used from tide stations:** Rio de Janeiro, Brazil

### GEODETIC PARAMETERS:

Projection: MERCATOR	Scale Factor: 1
Longitude of Origin: 53°W	Datum: WGS84
Standard Parallel: 7°N	False Easting: 3 000 000
Semi-Major Axis (a) (metres): 6378137.000	False Northing: 5 000 000
Reciprocal Flattening (1/f): 298.257222563	



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Survey Date: MAY to AUGUST 2016

Scale: **NATURAL SCALE 1 : 10,000 at 7°N**

(At Mid-Latitude of Chart)  
TRUE SCALE: 1 : 9226.46 km

Purchase: **TELXIUS** (Enabling Connectivity)

Contractor: **Alcatel-Lucent**

Surveyor: **Gardline**

Project Name: **BRUSA CABLE ROUTE SURVEY**

Document Title: **SEGMENT 7 NORTH-UP CHART CHART NO. 056 OF 071 (KP 3547.308 - KP 3555.236)**

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ROUTE BASED UPON: BRUSA PSR02 File Name: BRUSA.S7.NU056

**REVISION 01**