

M/V Fugro Gemini

The survey vessel, M/V Fugro Gemini, is operated by Fugro Survey Private Limited of 35 Loyang Crescent, Singapore. Specifically designed as a multi purpose survey vessel, the Fugro Gemini is permanently mobilised and can be rapidly deployed to survey locations worldwide.

Instrumentation provided onboard the vessel consists of high resolution 2D digital seismic, sub-bottom profilers, multi beam and single beam echo sounders, side-scan sonars, USBL subsea positioning, marine magnetometer, vibro and gravity coring systems, along with comprehensive off-line processing, charting and reporting facilities. Fugro Starfix Positioning System provides state-of-the-art differential GPS positioning to the vessel survey activities; supported by in-house developed navigation packages. All survey acquisition, navigations, on-line and off-line processing, charting and reporting systems on-board the vessel are networked through industrial standard server computes providing seamless integration of all survey activities from data acquisition through final onboard results presentations.

The Fugro Gemini is further fitted with a Hugin 1000 AUV rated to 3000 m operating depth. The launch and recovery container is permanently mobilised on the vessel.

Clients within the oil and gas industry, the cable sector and government agencies utilise the Fugro Gemini to obtain high resolution data for permitting, planning, design activities and cable engineering within the offshore industry.

Fugro Survey operates in accordance with a Health, Safety and Environmental Management System which is integrated with its Quality Management System. Together these systems conform to all national and international legislation as well as industry guidelines, and provide mechanisms for integration with the company's management system. Fugro Survey is a member of the multi-national Fugro Group of companies with more than 13,000 employees stationed in over 50 countries. Clients can benefit from individual and collective experience of hundreds of survey professionals at Fugro Companies worldwide.

M/V Fugro Gemini complies to the following:

- Compliance with ISPS (International Ship & Port Facility Security) code and ISM
- Vessel life saving/ fire fighting appliances in compliance with SOLAS 74/78 and latest amendments
- Compliance with appropriate MARPOL requirements

Vessel Capabilities:

- Site Hazard Surveys
- High Resolution 2D Seismic
- Mineral Surveys
- Tow Route Surveys
- Cable Route Surveys
- Pipeline Route Surveys
- Pipeline Inspection Surveys
- Swathe Bathymetry Surveys (to water depths 3000m)
- AUV Surveys to 3000m depth.
- ROV Inspection Surveys
- CPT and 6m Vibro Coring Surveys
- Shipwreck and Air Accident Searches





M/V Fugro Gemini

VESSEL DETAILS:

Owner

Fugro NV

Ship Managers

Fugro Marine Services BV

Type

Geophysical Survey Vessel

Port of Registration

Panama

Classification

BV 1 special service

Call Sign

HP8127

Built

1987

Re-Furbished

2008

Material/Type

Catamaran steel Hull–Aluminium topsides

Tonnage

865 GT

259 NT

Length Overall

49.3 m / 44.5 m

Extreme Breadth

18.2 m

Draught, Loaded

2.3 m

Cruising Speed

7.0 knots

Main Engines

2 Sulzer cegielski – 6AL20 /

24419 kW each

Propulsion

Controllable / Variable pitch propellers

Fuel Capacity

137 m³

Fuel Consumption

4500 litres per 24 hours

Water Capacity

92 metric ton fresh water

Water Making

Reverse Osmosis 5T per day

Vessel Endurance

26 days

Electrical Power

3 of 160 kW

1 of 250 kW

Navigation Aids

Furuno GP 37 GPS

Standard Magnetic Compass KMO-T

Gyro Compass rKY-bere, c/w 6

Repeater

Sperry Marine Digital Gyro

PZL Auto Pilot

1 Racal Decca Radar BT501

1 JMA/ JMC Radar 2044 MII

Echo Sounder

NAVTEX JMC NT900

AIS Furuno FA-150

Communication Aids

Fleet 77 Satellite comm. System

Phone / Fax / e-mail

Raytheon Sat C STR1500

Furuno Mini -C Falcon 16

Deck Machinery

1 x 3 ton / 6 m reach Crane

1 x 10 T SWL hydraulic A frame

Windlass mooring winch KGW 1AVS

Accommodation

38 persons in total

Sick Bay

On the main deck next to Main Exit

2 single bunks

Air Conditioned

For tropical operations

Working Area

180 m² back deck area

1 x 12 m by 2.5 m Processing room

1 x 5 m by 7 m Instrument room

Recreational Areas

Mess Room

Gymnasium equipment

VESSEL SAFETY EQUIPMENT:

Rescue/MOB Boat

DSB 7 man overboard FRC

Mercury 25 kW outboard

Life Rafts

8 x 10 persons

Survival Suits

100%

Life Jackets

100%

Smoke Hoods

100%

Work Vest

Yes

Emergency Radios

Three GMDSS Navico SRH 150

Emergency Beacons

One EPIRB

One SART

Fire Pump

2 Electric Fire pumps

1 Diesel portable

Foam System

Portable system for streamer winches and reels

SURVEY EQUIPMENT:

Satellite Positioning

Starfix High Accuracy Positioning systems

On-Line Navigation System

Fugro Starfix.Seis real time positioning with QC facilities.

Off-Line Processing System

Fugro Starfix.Proc Software for positioning processing (single beam and swathe), digital terrain modelling and sonar mosaics production. Pentium PC's and Hewlett Packard Design jet plotters.

Heave, Pitch and Roll Sensor

F180+, DMS2-05.

Acoustic Positioning

HiPAP 500 USBL

Real Time Clock

GPS (1PPS)

Single Beam Echosounders

Simrad EA series: 12 kHz, 38 kHz and 200 kHz.

Multi Beam Echosounder

Kongsberg EM300 – 3000 m depth capability.

Reson 8101 – 200 m depth capability

Sound Velocity Probe

2 x Valeport or AML



M/V Fugro Gemini

Side Scan Sonar

GeoAcoustics 159D and deep water 136 system.

Sub-bottom Profiling

Hull mounted 4 x 4 transducer array
GeoAcoustics Surface-tow boomer

Mini Sleeve Gun

10 cu. in. sleeve air gun with wave shape kit

Hydrophone Streamer

Benthos model MESH 50/24P
Benthos model MESH 15/10P

Graphic Recorders

3 x Alden 9315 CTP Plotters

Data Logging and Processing

Starfix GLOG/GPLOT
Compaq storage unit

Swell Filter

Starfix GPLOT
GeoAcoustics 5210A

TVG Amplifier

Starfix FEAM/GPLOT

Bandpass Filter/TVF Filter

Starfix FEAM/GPLOT

Marine Magnetometer

Seaspy overhauser type
Geometrics G880 (optional)

Record Annotator

Starfix GPLOT

Seabed Sampling

Free fall 450 kg gravity corer: 2 and 3 m barrel. Core diameter 83 mm.
Max. 1500 m cable length.
Grab sampler.
3 m and 6 m vibrocorer for maximum 150 m water depth.

Hi-res 2D Seismic System:

Hti Seamux digital

No. of Channels

120

Sample Rate

0.25 – 4.00 ms

Filters

High Cut - Variable DSP
Low Cut - Variable DSP

Tape Format

SEG D

Recording Medium

3490 cartridge tape

Streamer

HTI SEAMUX digital streamer with in water multiplexer cans – 12.5 m group length. 1 x Digicourse 5010/ 5011 per 150 m active

QC System

Pro Max, and
UniSeis

Online Display

GS 612 Plotter

Streamer Testing Unit

HTI Test unit

Firing Control

SC2000 gun control unit

Channels Display

Oscilloscope
HTI SEAMUX

Far Field

Recorded on tape as well as displayed on camera

Depth Controllers

Digicourse model 5010 and 5011

Source

Up to 160 cu. in. Sleeve Gun
4 x 20 cu. in. array or
2 x 40 and 2 x 20 cu. in. array or
4 x 40 cu. in. array

Compressor

2 x Hamworthy 4TH190W70
Delivery each compressor 166 SCFM
Pressure 138 bar
4 x Russian built SK electric compressors

Camera

OYO GS-624 plotter

Near Trace Analogue Recording

Waverley 3710

Charting

Microstation SE/ AutoCAD
Hewlett Packard A0 Design Jet plotters

Network

6TB server – survey, Processing, Bridge, cabins networked

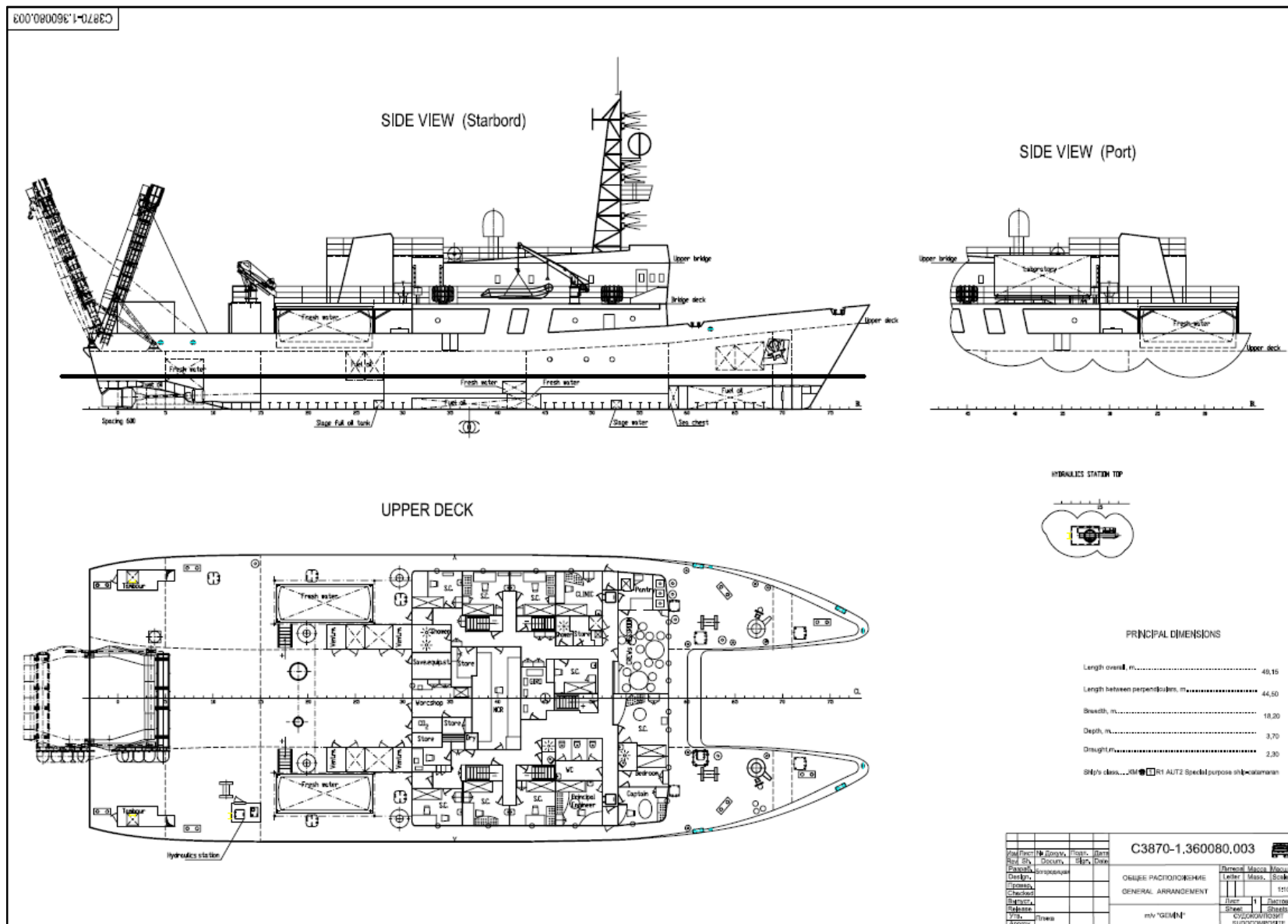
Hugin 1000 AUV:

3000 m depth capability fitted with

- EM2000 MBES,
- 105/ 410 kHz Side Scan Sonar,
- 2 - 16 kHz Full spectrum Sub bottom Profiler

AUV is permanently fitted inside its launch and recovery container (LARS).

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PRINCIPAL DIMENSIONS

Length overall, m	48.15
Length between perpendiculars, m	44.50
Breadth, m	18.20
Depth, m	3.70
Draught (m)	2.30
Ship's class	ABS RT AHTZ Special purpose oil tanker

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