

GENERAL SPECIFICATION

Geophysical Acquisition

GS EP GPA 001

Offshore seismic surveys - Requirements for vessels and marine operations
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General Specification		GS EP GPA 001
Offshore seismic surveys - Requirements for vessels and marine operations		
Rev.: 01	Effective date: 12/2018	Page: 2 of 24

Contents

1. Scope	4
2. Reference documents	4
3. Definitions and significance of expressions	5
3.1 Definition of acronyms.....	5
3.2 Vessel definitions	6
3.3 Other definitions	6
4. Vessel suitability	6
4.1 Age limitation	6
4.2 Endurance at sea	7
4.3 Remote survey areas	7
4.4 Vessel safe capacity	7
4.5 Shallow waters – Subsea obstructions	8
4.6 Watercrafts	8
5. Vessel acceptance	10
5.1 Vessel vetting.....	10
5.2 Streamers tangle.....	10
5.3 Emergency towing	11
5.4 Small boat operations	12
5.5 Offshore logistics	12
5.6 Simultaneous Operations (SIMOPS).....	14
5.7 MOB recovery	15
6. Vessel(s) mobilisation	15
6.1 Mobilisation audits	16
6.2 Mobilisation drills.....	16
6.3 Shallow water – Subsea obstructions.....	16
6.4 Vessel(s) safe capacity monitoring.....	17
Attachment.....	17
Bibliography.....	17
Appendix 1 List of supporting documents.....	18
Appendix 2 Fleet Information Summary	19



General Specification		GS EP GPA 001
Offshore seismic surveys - Requirements for vessels and marine operations		
Rev.: 01	Effective date: 12/2018	Page: 3 of 24

Appendix 3	Seismic vessel safe capacity assessment	20
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General Specification		GS EP GPA 001
Offshore seismic surveys - Requirements for vessels and marine operations		
Rev.: 01	Effective date: 12/2018	Page: 4 of 24

1. Scope

This document specifies minimum vessel and marine operations requirements for offshore seismic surveys carried out for the purposes of exploration or developpement. Offshore seismic surveys include towed-streamer, ocean-bottom-cable, and ocean-bottom-node systems.

These requirements are provided for vessels used to deploy seismic equipment and support vessels that do not directly handle the seismic equipment but that form an integral part of the seismic survey.

Geophysical surveys carried out for site-investigation purposes, non seismic surveys such as CSEM or gravimetry operations, and security vessels are outside the scope of this document.

2. Reference documents

The reference documents listed below form an integral part of this General Specification.

External Documents

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and addendums, is the latest revision published at the effective date of this document.

Reference	Title
OCIMF	Offshore Vessel Inspection Database (OVID)
IAGC guidelines	Guidelines for Marine Small Boat Operations
	Guidelines for Support Vessels

Total General Specifications

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and addendums, is the latest revision published.

Reference	Title
GS EP LSO 112	Training for HLO and HDA personnel
GS EP LSO 115	Helideck Specifications for Operations
GS EP LSO 201	Towing of Watercraft
GS EP LSO 202	Personnel transfer between watercrafts and between watercrafts and offshore structures
GS EP LSO 209	Life Jackets & Immersion Suits Specifications
GS EP LSO 306	Selection and Operation of Dynamically Positioned Vessels

3. Definitions and significance of expressions

3.1 Definition of acronyms

Definitions of terms used in this General Specification are:

ADCP	Acoustic Doppler Current meter Profiler
AIS	Automatic Identification System
ALARP	As Low As Reasonably Practical
CSEM	Controlled Source Electro-Magnetic
DP	Dynamic Positioning
FMEA	Failure Mode and Effects Analysis
FRC	Fast Rescue Craft
FIS	Fleet Information Summary
GRT	Gross Register Tonnage
HV	High Voltage
IAGC	International Association of Geophysical Contractors
IACS	International Association of Classification Societies
IMCA	International Marine Contractors Association
IMO	International Maritime Organisation
LV	Low Voltage
MOB	Man Over Board
MoC	Management of Change
MV	Medium Voltage
NAVAREA	NAVigation AREA
OBC	Ocean Bottom Cable
OBN	Ocean Bottom Node
OBS	Ocean Bottom Survey
OCIMF	Oil Companies International Marine Form
OVID	Offshore Vessel Information Database
RC	Rescue Craft
RGPS	Relative Global Positioning System
ROB	Remaining On Board
SAR	Search And Rescue
SIMOPS	Simultaneous Operations
UPS	Uninterruptible Power Supply

General Specification		GS EP GPA 001
Offshore seismic surveys - Requirements for vessels and marine operations		
Rev.: 01	Effective date: 12/2018	Page: 6 of 24

WAZ	Wide AZimut seismic survey
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3.2 Vessel definitions

3.2.1 Seismic vessels

When this document refers to seismic vessels, it covers the following:

- Streamer vessels
- Cable/Node handling vessels
- Source vessels

3.2.2 Support vessels

When this document refers to support vessels, it covers the following:

- Supply vessel (Type A vessel as defined by [IAGC guidelines](#) – Guidelines for support vessel)
- Chase/Escort vessel (Type B Vessel as defined by [IAGC guidelines](#) – Guidelines for support vessel)
- Crew vessel

3.2.3 Watercrafts

When this text refers to watercraft, it covers the following:

- Workboat
- Rescue craft

3.3 Other definitions

Close passes : A vessel is considered in “Close passes” situation whenever vessel or seismic spread enters into the 500 meters radius safety zone around an offshore installation or obstruction.

4. Vessel suitability

4.1 Age limitation

{Rule 1:

Vessels shall comply according to their type with age limitation described in the table 1.}

Vessel type	Maximum age	Remark
Purpose built Seismic vessel	None	Vessel(s) of more than 20 years of age require a full work history of the vessel
Vessel converted for seismic surveys	20 years	Maximum age not to exceed 20 years during the entire seismic survey.
Purpose built Support vessel for seismic surveys	None	Vessel(s) of more than 20 years of age require a full work history of the vessel.
Other support vessel	20 years	Maximum age not to exceed 20 years during the entire seismic Survey.

Table 1: Age limitation according to vessel types

Non compliance will require Company approval, based on the review of the documents listed in Appendix 1.

4.2 Endurance at sea

Vessel capabilities and endurance at sea should be appropriate for project specifications, taking into account in particular :

- Vessel minimum transit speed recommended to be at least 10 knots;
- Any vessel stability constraints having consequence on minimum ROB to be kept (Fuel, fresh water, ...);
- Storage capacities for fuel, fresh water, food, and spare parts;
- Behaviour at sea and on board living conditions under project-specific met-ocean conditions (harsh weather, extreme temperature,..).

4.3 Remote survey areas

Any requirement for a risk assessment related to a remote survey area will be addressed by Company in the contract specifications. In such cases, consideration should be given to endurance at sea, logistics, fatigue management, medical emergency resources, SAR external resources among other.

4.4 Vessel safe capacity

4.4.1 Redundancy & Propulsion

{Rule 2:

In order to prevent collision and keep control of her insea equipment, seismic vessel shall be capable of maintaining minimum 3 knots speed on the water in worst case failure mode.}

{Rule 3:

At 4.5 knots water speed, the propulsion power used shall not exceed 80% of the maximum propulsion power capacity.}

Seismic vessel redundancy & propulsion will be assessed according to documents and parameters provided by Contractors according to the list given in Appendix 3.

{Rule 4:

Seismic vessels shall comply with the minimum class requirements described in table 2.}

Vessel type	Minimum Vessel Classification
Streamer	RP
Source	RP
Cables/Nodes handling	DP2

Table 2: Classification requirements according to vessel type

4.4.2 Back deck

{Rule 5:

Streamer vessels shall meet the following requirements:

- Number of streamer winches (not including storage winches) to be equal or superior to the total number of towed cables;
- Total length of towed cables to be less than the vessel streamer winches capacity, (excluding on board storage winches);
- Number of available tow points to be equal or superior to the number of towed cables.}

4.5 Shallow waters – Subsea obstructions

Minimum safe water depth operating limit for a seismic vessel and her in-sea equipment will be defined by Company in seismic survey contract specifications based at least on:

- Initial debris/bathymetry survey performed in the survey area;
- Contractor work instruction including all safe distances from any type of obstructions and water depth operating limits;
- Hydrodynamic model of the towed equipment in operations;
- Elevation clearance from sea bed or subsea installations (minimum 5m is recommended) between the defined minimum safe water depth and expected maximum immersion of towed equipment in operations (streamer and source) including line changes areas.

Contractor will address this constraint in Contractor project risk assessment and will define the approved water depth operating limit for any type of obstructions in Contractor project plan.

4.6 Watercrafts

The following requirements supplement the [IAGC guidelines](#).