

Fast geotechnical profiling system

The GraviProbe Soil is a free fall impact instrument, analyzing the underwater sediment layers during intrusion. Under its own weight it accelerates and penetrates fluid and consolidated mud layers.

The rheological conditions of the soil layers are determining the probe's dynamical behaviour. The data acquired from on-board accelerometers, inclinometers and pressure sensors are feeding a dynamical model which determines the rheological parameters (dynamic cone penetration resistance and dynamic undrained shear strength).

As a result, the GraviProbe Soil is able to distinguish the depth of the different sediment layers very accurately.

The high sensor data acquisition rates of up to 2 kHz in combination with a low drag housing results in the highest quality profiles.

The GraviProbe Soil can be dropped from above or below the water surface to alternate the impact speed. Even high drops from a crane are possible.

Developed to capture high quality geotechnical profiles of sediment layers



Applications

Dredging campaigns

Offshore construction

Subsea pipeline and cable installation

Complementary soil analysis during
CPT and core sampling

Mooring and anchor installations

Classification of mud and soil
structures

Benefits

Lightweight, compact and robust (no
external sensors)

Fast, continuous and autonomous
measurement

Accurate

Slim instrument, deep intrusion and
limited disturbance of the medium

Insensitive for gassy or disturbed
medium

Features

Simultaneous measurement of depth,
dynamic cone penetration resistance
and dynamic undrained shear strength

Fast sampling rate (2048 Hz)

Ethernet communication, wifi ready

Internal storage (microSD)

Long battery life (Li-Ion, 8 h autonomy)



Software

Import data

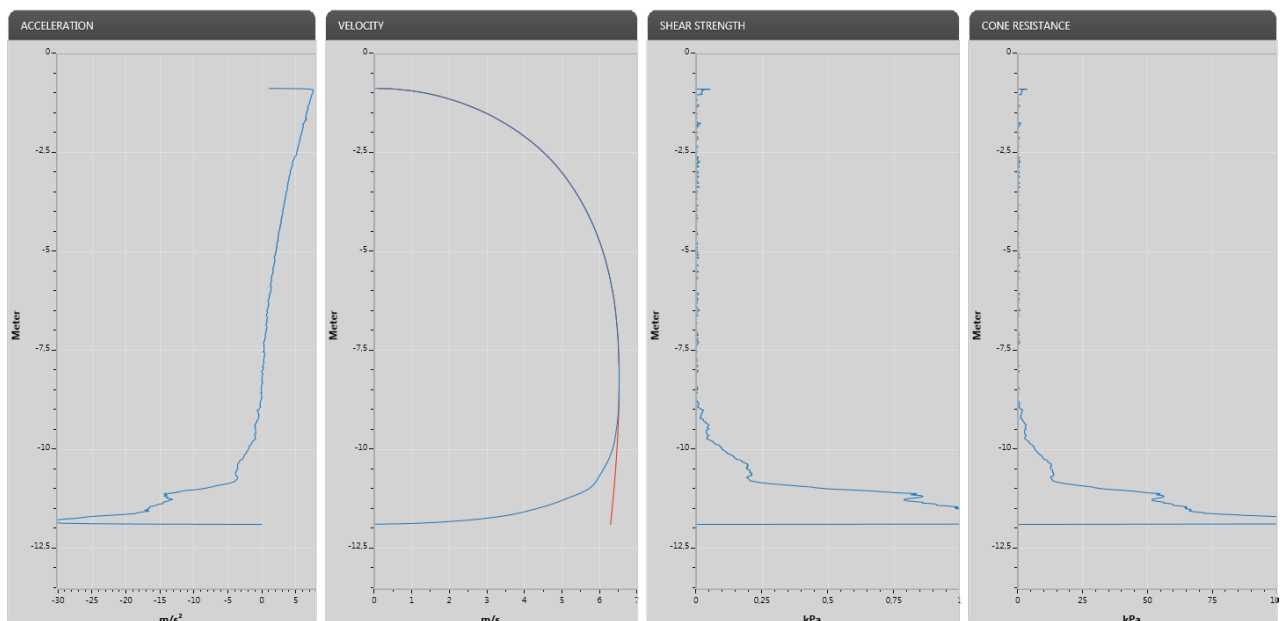
Process data

Visualise & export data

Configure GraviProbe

Configure & import GPS-data

Upload to dotOcean servers for
advanced reporting (optional)



Specifications	Depth	Range	0 - 3.5*	bar
		Accuracy	0.01	%
	Dynamic Cone Penetration Resistance	Range	0 - 2000	kPa
		Accuracy	1	%
	Dynamic Undrained Shear Strength	Range	0 - 200	kPa
		Accuracy	1	%
	Maximum Impact	Range	0 - 70	G
		Accuracy	1	%

Data	Acquisition	Sample Rate	2048	Hz
	Communication	Ethernet		
	Memory	Internal storage	Micro SDHC	FAT32
Electrical	Battery	Type	2x	Li-Ion
		Volt	3.75	V
		Ampere	2.2	Ah
	Autonomy	8		hour
	Charge Type	Power over Ethernet		

Physical	Material	Marine Grade 18/10 Stainless Steel (type 316) housing, polycarbonate & composite sensor components.		
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	Size	Diameter	50	mm
		Length	900	mm
Weight (dependent on used rods)		20	kg	

Software	Desktop software	supplied with Windows based software
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Ocean GraviProbe Client Software v2.0.0.28

FFP10042F synchronizing

SURVEY PROCESS

PROBES

FFP10042F GraviProbe 1 54

GraviProbe 1 FFP10042F 5% 100%

LAUNCH GRAVIPROBE

INFORMATION

SERIAL NUMBER	BATTERY	DISKSPACE
FFP10042F	5% charged	100% free
DROPS TAKEN	LAST USED	

SETTINGS

Name	GraviProbe 1
IP Address	192 46 111 199
IP Subnet Mask	255 255 255 0

ID	DATE	HOUR	LAT
3	2013-09-12	12:38	0.0000
2	2013-09-12	12:35	0.0000
1	2013-09-12	12:32	0.0000
3	2013-09-05	10:20	0.0000

Disconnected

FORMAT

UPLOAD

*depth range can be adjusted (default 3.5bar)



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