

MARINE-TERRESTRIAL BEACH MONITORING FACILITY



FIELDWORK CAMPAIGN DEFINITION

Issue:	SON BOU 2012
Date:	11.04.2012
Description:	This document summarizes the field campaign definition, preparation and development of the campaign SON BOU – MAY 2012
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A. SCIENTIFIC-TECHNOLOGICAL OBJECTIVES

The fieldwork campaign is prepared to address four major scientific-operational issues according to SOCIB implementation plan:

- (a) to provide a continuous dataset on beach topography-bathymetry evolution and sediment characteristics.
- (b) to improve georeference points for 1 SIRENA camera
- (c) to modify network external access to SIRENA station
- (d) to update the SIRENA software and timespan for images captures

B. PARTICIPANTS AND LOGISTICS

B.1 Participants

Name	Division	Filiation	Contact details
Casas Pérez, Benjamín (BCP)	Support division	IMEDEA SOCIB	bcasas@socib.es 629 006 192
Castilla Álvarez, Carlos (CCA)	Support division	SOCIB	carlos.castilla@uib.es 971 610 508
Orfila Fórster, Alejandro (AOF)	Beach monitoring	IMEDEA SOCIB	a.orfila@uib.es 971 611 834
Álvarez Ellacuría, Amaya (AAE)	Beach monitoring	SOCIB	a.alvarez@uib.es 649 626 039
Gómez-Pujol, Lluís (LGP)	Beach monitoring	SOCIB	lgomez-pujol@uib.es 661 728393
Lizarán Esperilla, Irene (ILE)	Support division	IMEDEA	ilizaran@imedea.uib-csic.es 971 610 508
Maxim Dupuy	Beach monitoring	Intership	

List of the people involved in fieldwork campaign by tasks

#	Task	People	Dates	Observations
1	Acquisition campaign material	LGP	17-19 apr 2012	
2	Sea equipment preliminary works	ILE CCA	21 may 2012	
3	Terrestrial and sediment sampling preliminary works	LGP AAE	21 may 2011	
4	Beach survey	MD AAE	29-30 may 2011	
5	Bathymetry	ILE CCA	29-30 may 2012	
6	Georeferencing works	MD AAE	31 may 2012	
7	Sediment sampling	MD CCA ILE	31 may 2012	
8	SIRENA software modifications	AAE	28 may 2012	
9	Dry beach sediment survey	AAE	31 may 2012	
10	Sea material cleaning and storage	CCA ILE	4 jun 2012	
11	Terrestrial material cleaning and storage	AAE LGP	4 jun 2012	
12	Sediment pre-treatment and labelling	LGP	5 jun 2012	
13	Bathymetry pre-postprocess	ILE	2 – 6 jun 2012	
14	Terrestrial survey pre-postprocess	AAE	2 – 6 jun 2012	
15	Bathymetry and beach DEM postprocess	LGP	21 – 25 jun 2012	
16	Sediment analysis	LGP	28–31 jun 2012	

B.2 Logistics

B.2.1. Dates

Monday	M21 Sea material preliminary works (CCA, ILE) Terrestrial material prel. works (LGP, AAE)	M28 T1: Software modification (AAE) T2: Weather station maintenance S1: boat works (CCA+ILE) S2: Sediment sampling (ILE+CCA+MD)	JN4 Terrestrial material cleaning and storage works (LGP, AAE)
Tuesday	M22	M29 S1: bathymetry (ILE+CCA) T1: Beach survey (AAE+MD)	JN5 Sediment pre-treatment and labelling (LGP) Terrestrial survey pre-process (AAE)
Wednesday	M23 Harbours needs and contact (LGP) Hotel reservations (LGP)	M30 S1: bathymetry (BCP+CCA) T1: Georeferencing works (AAE+MD)	JN6
Thursday	M24	M31 S1: sediment sampling (BCP+CCA+MD) T1: Dry sediment sampling (AAE)	JN7
Friday	M25	JN1 S1: boat works (CCA+ILE) S2: Sea material cleaning and storage works (CCA)	JN8
Saturday	M26	JN2	JN9

Sunday	M27	JN3	
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B.2.2. Material

ECHOSOUNDER	
Description	BioSonics Inc DT-X Scientific Echosounder
Configuration	
Responsible	BCP
Catalogue	TMOOS, IMEDEA (CSIC-UIB)
Location	IMEDEA, TMOOS warehouse, Floor -2

RTK SURVEY STATION	
Description	Leica Viva GS15
Configuration	
Responsible	AAE
Catalogue	ICTS SOCIB
Location	IMEDEA, TMOOS warehouse, Floor -2

ADCP PROFILER																																																					
Description	Nortek ACDCO profiler - AWAC																																																				
Configuration	<table> <tr> <td>Profile interval</td><td>1800 sec</td></tr> <tr> <td>Number of cells</td><td>7</td></tr> <tr> <td>Cell size</td><td>200 cm</td></tr> <tr> <td>Average interval</td><td>300 sec</td></tr> <tr> <td>Measurement load</td><td>50 %</td></tr> <tr> <td>Transmit pulse length</td><td>2.22 m</td></tr> <tr> <td>Blanking distance</td><td>0.50 m</td></tr> <tr> <td>Compass update rate</td><td>1800 sec</td></tr> <tr> <td>Wave measurements</td><td>ENABLED</td></tr> <tr> <td>Wave - Powerlevel</td><td>HIGH</td></tr> <tr> <td>Wave - Interval</td><td>3600 sec</td></tr> <tr> <td>Wave - Number of samples</td><td>1200</td></tr> <tr> <td>Wave - Sampling rate</td><td>1 Hz</td></tr> <tr> <td>Wave - Cell size</td><td>1.80 m</td></tr> <tr> <td>Wave - Cell position min pressure</td><td>90 %</td></tr> <tr> <td>Analog input 1</td><td>NONE</td></tr> <tr> <td>Analog input 2</td><td>NONE</td></tr> <tr> <td>Powerlevel</td><td>HIGH</td></tr> <tr> <td>Coordinate system</td><td>ENU</td></tr> <tr> <td>Sound speed</td><td>MEASURED</td></tr> <tr> <td>Salinity</td><td>37.0 ppt</td></tr> <tr> <td>Distance between pings</td><td>93.72 m</td></tr> <tr> <td>Number of beams</td><td>3</td></tr> <tr> <td>Number of pings per burst</td><td>2</td></tr> <tr> <td>Software version</td><td>1.41</td></tr> <tr> <td>Deployment name</td><td>BM-CM</td></tr> </table>	Profile interval	1800 sec	Number of cells	7	Cell size	200 cm	Average interval	300 sec	Measurement load	50 %	Transmit pulse length	2.22 m	Blanking distance	0.50 m	Compass update rate	1800 sec	Wave measurements	ENABLED	Wave - Powerlevel	HIGH	Wave - Interval	3600 sec	Wave - Number of samples	1200	Wave - Sampling rate	1 Hz	Wave - Cell size	1.80 m	Wave - Cell position min pressure	90 %	Analog input 1	NONE	Analog input 2	NONE	Powerlevel	HIGH	Coordinate system	ENU	Sound speed	MEASURED	Salinity	37.0 ppt	Distance between pings	93.72 m	Number of beams	3	Number of pings per burst	2	Software version	1.41	Deployment name	BM-CM
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Deployment name	BM-CM																																																				

	Wrap mode	OFF
Responsible	BCP	
Catalogue	ICTS SOCIB	
Location	IMEDEA, TMOOS warehouse, Floor -2	

SEDIMENT DRAG	
Description	Ekman drag
Configuration	20 x 20 x 40; 8 kg
Responsible	BCP
Catalogue	ICTS SOCIB
Location	IMEDEA, TMOOS warehouse, Floor -2

COASTAL SAMPLING RUBBER BOAT	
Description	Valiant DR650 (6m)
Configuration	
Responsible	BCP
Catalogue	TMOOS, IMEDEA (CSIC-UIB)
Location	IMEDEA, TMOOS warehouse, Floor -2

B.2.3. Harbour needs

For fieldwork campaign purposes the pneumatic boat should remain and operate few days at Cala Galdana Port. Contact details are:

Xec Riera Pons
 Associació Amics des Riu de Cala Galdana
 Telf. 971 374 231

B.2.4. TMOOS-IMEDEA resources

Material and equipment from TMOOS-IMEDEA used for fieldwork campaign:

- SOCIB van
- TMOOS Valiant DR650
- TMOOS diving equipment

B.2.3. Navigational warnings and sea-works authorization

Sea-works authorization application to:

Demarcación de Costas en Islas Baleares
c/ Ciudad de Queretaro s/n
07007 Palma
Telf. 971 774 949

C. FIELDWORK CAMPAIGN DEFINITION

C.1 Environmental properties

Son Bou is a 2,6 km lineal beach located in the southern coast of Menorca. It's a classical beach-longitudinal barrier that separates a lagoon of from the sea. From a morphodynamic point of view, Son Bou is an intermediate beach with a configuration of transverse and crescentic bars. The sediment consists of medium carbonate bioclastic sands, being the median sediment size (D_{50}) on the beach around 0.22 mm. *P. oceanica* meadows appears at 8 m in depth nearly a hundred meters from the shoreline. Beach rocks and other reef structures appear close to the coastline.



C.2 Fieldwork campaign specifications

The aim of the fieldwork campaign at Son Bou consists on providing the annual dataset described at SOCIB - MTBFM implementation plan. Main products would be:

- a high resolution bathymetry from 0 to 5 m depth and lower resolution bathymetry from 5 to 10 m depth.
- 12 subaerial - submerged beach profiles
- 53 sediment samples
- Cameras extrinsic geometric correction

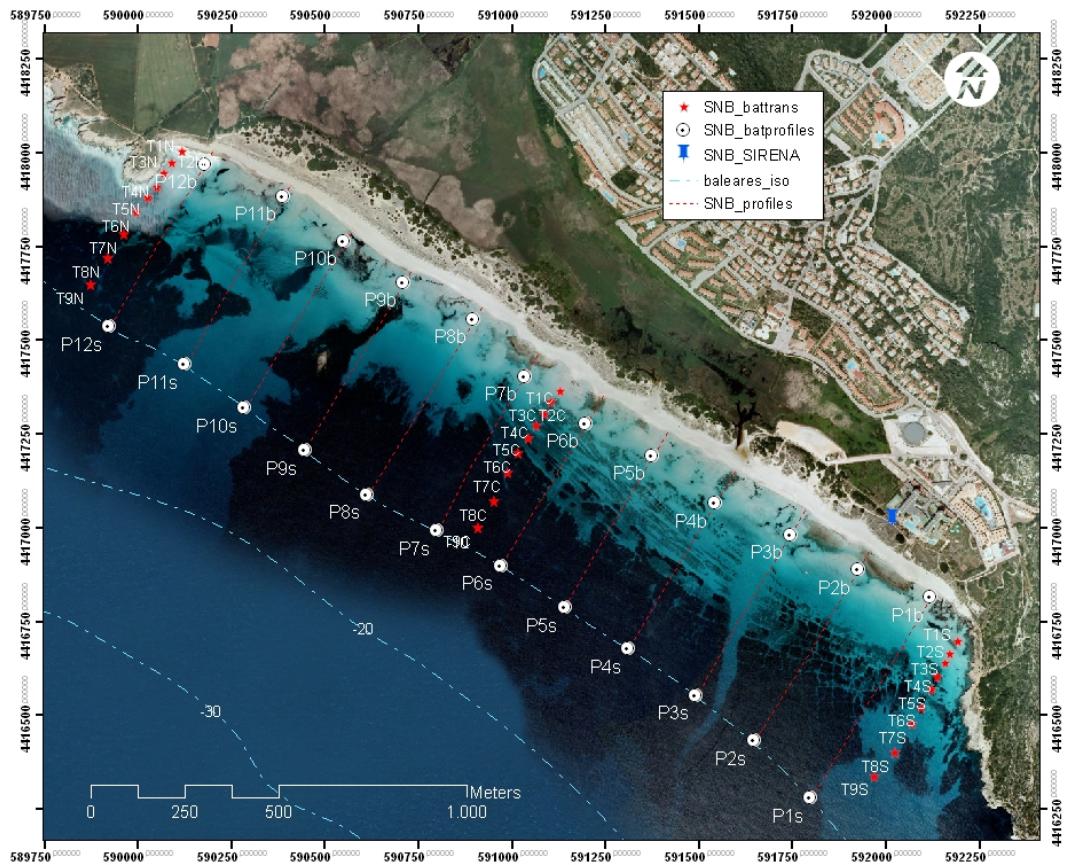
C.3 Data sampling

C.3.1. Profile surveys

Profile	Initial sea point		Final sea point		Initial land point	
	X (deg)	Y (deg)	X (deg)	Y (deg)	X (UTM)	Y (UTM)
1	4.05502	39.907	4.05199	39.9032		
2	4.05746	39.9062	4.05433	39.9022		
3	4.05936	39.9051	4.05618	39.9011		
4	4.0612	39.9041	4.05804	39.9001		
5	4.06337	39.9032	4.05998	39.899		
6	4.06494	39.9018	4.06215	39.8981		
7	4.06684	39.9007	4.06413	39.8973		
8	4.0689	39.8999	4.06611	39.8963		
9	4.07084	39.8987	4.06809	39.8952		
10	4.07318	39.8979	4.07019	39.8941		
11	4.07528	39.8971	4.07197	39.893		
12	4.07754	39.8964	4.07372	39.8916		

C.3.2. Bathymetric survey

Aprox. 40 km of bathymetric survey path



C.3.3. Sediment sampling

Sample #	X	Y	Z	Observations
SNB#6.1	4.06663000000	39.90220000000		
SNB#6.2	4.06637000000	39.90200000000		
SNB#6.3	4.06610000000	39.90170000000		
SNB#6.4	4.06583000000	39.90140000000		
SNB#6.5	4.06542000000	39.90100000000		
SNB#6.6	4.06506000000	39.90060000000		
SNB#4.1	4.07117000000	39.90010000000		
SNB#4.2	4.07098000000	39.89980000000		
SNB#4.3	4.07085000000	39.89960000000		
SNB#4.4	4.07060000000	39.89930000000		
SNB#4.5	4.07036000000	39.89900000000		
SNB#4.6	4.06986000000	39.89850000000		
SNB#4.7	4.06958000000	39.89810000000		
SNB#4.8	4.06924000000	39.89760000000		
SNB#1.1	4.07780000000	39.89670000000		
SNB#1.2	4.07762000000	39.89650000000		

SNB#1.3	4.07745000000	39.89630000000		
SNB#1.4	4.07719000000	39.89590000000		
SNB#1.5	4.07694000000	39.89560000000		
SNB#1.6	4.07670000000	39.89530000000		
SNB#1.7	4.07542000000	39.89350000000		
SNB#1.8	4.07420000000	39.89200000000		
SNB#3.9	4.07081000000	39.89380000000		
SNB#3.8	4.07122000000	39.89490000000		
SNB#3.7	4.07149000000	39.89590000000		
SNB#3.6	4.07168000000	39.89650000000		
SNB#3.5	4.07198000000	39.89720000000		
SNB#3.4	4.07243000000	39.89780000000		
SNB#3.3	4.07261000000	39.89850000000		
SNB#3.2	4.07300000000	39.89880000000		
SNB#3.1	4.07333000000	39.89910000000		
SNB#9.1	4.06241000000	39.90440000000		
SNB#9.2	4.06227000000	39.90410000000		
SNB#9.7	4.05958000000	39.90200000000		
SNB#9.6	4.06028000000	39.90270000000		
SNB#9.5	4.06108000000	39.90300000000		
SNB#9.4	4.06166000000	39.90350000000		
SNB#9.3	4.06189000000	39.90380000000		
SNB#11.1	4.05868000000	39.90620000000		
SNB#11.2	4.05850000000	39.90610000000		

Sample #	X	Y	Z	Observations
SNB#11.3	4.05819000000	39.90580000000		
SNB#11.4	4.05782000000	39.90550000000		
SNB#11.5	4.05743000000	39.90490000000		
SNB#11.6	4.05668000000	39.90420000000		
SNB#11.7	4.05686000000	39.90320000000		
SNB#11.8	4.05558000000	39.90290000000		
SNB#11.9	4.05472000000	39.90220000000		
SNB#12.1	4.05533000000	39.90750000000		
SNB#12.2	4.05514000000	39.90730000000		
SNB#12.3	4.05486000000	39.90700000000		
SNB#12.4	4.05446000000	39.90650000000		
SNB#12.5	4.05396000000	39.90590000000		
SNB#12.6	4.05456000000	39.90400000000		
SNB#11.10	4.05930000000	39.90380000000		
SNB#9.8	4.06244000000	39.90230000000		
SNB#2.1	4.07475000000	39.89650000000		
SNB#1.9	4.07605000000	39.89100000000		

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SNB#11.3	4.05819000000	39.90580000000		
SNB#11.4	4.05782000000	39.90550000000		
SNB#11.5	4.05743000000	39.90490000000		
SNB#11.6	4.05668000000	39.90420000000		
SNB#11.7	4.05686000000	39.90320000000		
SNB#11.8	4.05558000000	39.90290000000		

C.4 Contact information

Associació Amics d'Es Riu de Cala Galdana

Avda. Verge del Tori, 12. Ferreries

Telf. 971 37 42 31

Contacte: Francesc (Xec) Riera

E-mail: xec@ccriera.com

Mariner Cala Galdana: Joan, 650 58 57 37