MARINE-TERRESTRIAL BEACH MONITORING FACILITY

SOCIB Balearic Islands Coastal Observing and Forecasting System

FIELDWORK CAMPAIGN DEFINITION

Issue:	CALA MILLOR, MAY 2011
Date:	17.05.2011
Description:	This document summarizes the field campaign definition, preparation and development of the campaign CALA MILLOR - MAY2010
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Involved personnel:	Alejandro Orfila, Carlos Castilla

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CHANGE RECORD

#	Date	Description	Author	Checked by
0	17.05.11	Creation of report	LGP	

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A. SCIENTIFIC-TECHNOLOGICAL OBJECTIVES

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

(a) to deploy the mooring for wave and currents monitoring,

(b) to contribute to the geometric correction of coastal images, and

(b) to provide a continuous dataset on beach topography-bathymetry evolution and sediment characteristics.

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

List of the people involved in fieldwork campaign by tasks

#	Task	People	Dates	Observations
1	Sea equipment preliminary works	BCP CCA	18 may 2011	
2	ADCP deployment	BCP CCA	19 may 2011	
3	Terrestrial and sediment sampling preliminary works	LGP AAE	18 may 2011	
4	Bathymetry	BCP CCA	23-25 may 2001	
5	Profiles	CCA LGP AAE	23-25 may 2011	
6	Sediment sampling	BCP AAE LGP	24 may 2011	
7	Initial geometric correction, sea points	BCP CCA AAE	23 may 2011	
8	Initial geometric correction, terrestrial pts.	AAE LGP	23 may 2011	
9	Beach survey	AAE LGP	25 may 2011	
10	Sea material cleaning and storage	CCA	26 may 2011	
11	Terrestrial material cleaning and storage	AAE	26 may 2011	
12	Sediments pre-treatment and cleaning	LGP	26 may 2011	
12	Terrestrial survey and calibration points post-process	AAE	27 may 2011	
13	Profiles and bathymetry post-process	BCP	27 may 2011	

B.2 Logistics

B.2.1. Dates

Monday	16	23 S1: bathymetry & profiles (BCP+CCA) T1: corr. lans points (AAE+LGP) S2: corr. sea points (BCP+CCA+AAE) S3: bathymetry & profiles (BCP+CCA)
Tuesday	17	24 S1: bathymetry & profiles (BCP+CCA) S2: sediment sampling (BCP+AAE+LGP) S3: bathymetry & profiles (BCP+AAE)
Wednesday	18 Harbours needs and contact (LGP) Hotel reservations (LGP)	25 S1: bathymetry & profiles (BCP+CCA) T1: beach survey (AAE+LGP)
Thursday	19 Sea material preliminary works (CCA) Terrestrial material prel. works (AAE)	26 Sea material cleaning and storage (CCA) Terrestrial material cleaning & st. (AAE) Sediment pre-treatment & cleaning (LGP)
Friday	20 S1: ADCP deployment (CCA+BCP+AAE)	27 Terrestrial survey post-process (AAE) Bathymetry post-process (BCP)
Saturday	21	28
Sunday	22	29

B.2.2. Material

ECHOSOUNDER	
Description	BioSonics Inc DT-X Scientific Echosounder
Configuration	BENJA PUEDES AÑADIR DETALLES, LA FREQ. PULSO, RESOLUCIÓN ETC...
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 - Aquadopp
Configuration	BENJA PUEDES AÑADIR LA CONFIGURACIÓN QUE ACORDAMOS...
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 Bona Port. Contact details are:

Port Cala Bona
c/ Explanada port s/n
Telf. 971 586 256
Fax. 971 586 256
E-mail: port.calabona@portsib.es

Contact people:

Rafi Ros (administrative; p0600@portsib.es) and Pedro Fiol (administrator)

B.2.4. TMOOS-IMEDEA resources

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

- TMOOS Nissan Pick-up
- TMOOS Valiant DR650
- TMOOS diving equipment

B.2.3. Navigational warnings and sea-works authorization

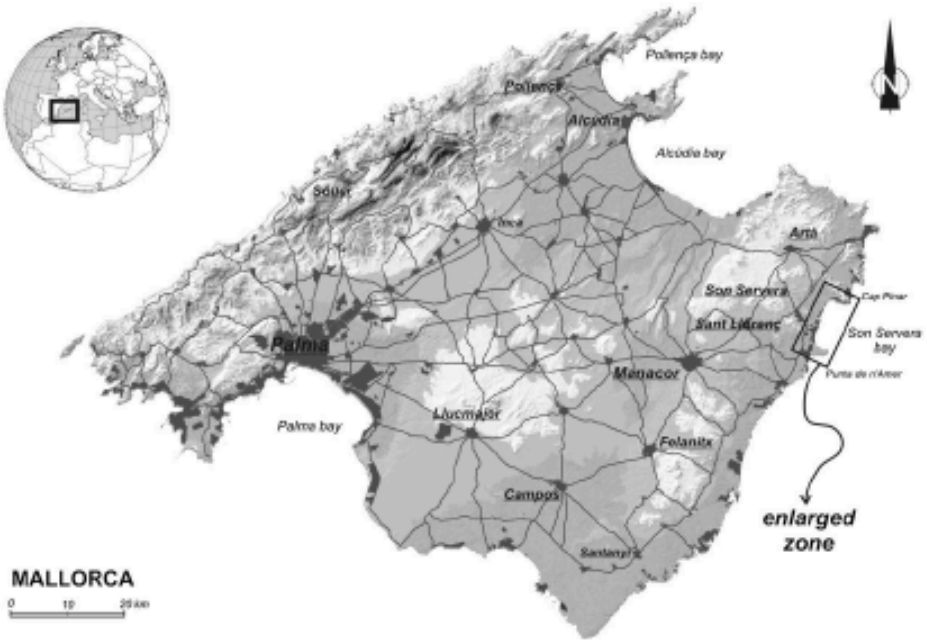
Sea-works authorization application to:

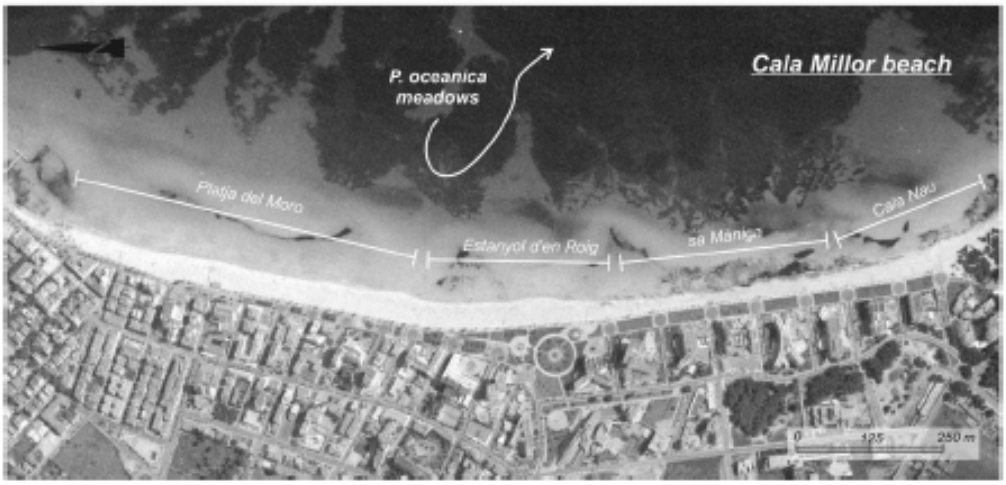
Demarcación de Costas en Islas Baleares
c/ Ciudad de Queretaro s/n
07007 Palma
Telf. 971 774 949

C. FIELDWORK CAMPAIGN DEFINITION

C.1 Environmental properties

The study area is a seaside tourist resort located in the eastern coast of Mallorca, at the Bay of Son Servera. The Bay is characterized by a maximum depth of around 25 m at 7 km from the coastline which reduces to 8 m at 300 m from the coastline. Water clarity is high around the Balearic ramp because there is virtually no fluvial input from the island and continental sedimentation is minimal. Waves approaching from NE and ESE come into the bay through northern and southern mouths, respectively. Meteorological and wave observations from Puertos del Estado (http://www.puertos.es) show that waves with significant height over 1 m act on the beach just during the 2% of the days of a year. Forcing by tides is almost negligible in the Mediterranean with a spring tidal range of less than 0.25 m, although combined changes between tides, atmospheric pressure and wind setup can account for sea level elevations close to 1 m.





Cala Millor is a beach backed by a boulevard, hotels and residential houses, and bounded by two rocky headlands, Cap Pinar northwards and Punta de n'Amer Southwards. It is a sandy beach near 1700 m long with a concave shape. From a morphodynamic point of view, Cala Millor 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 (D50) on the beach around 0.34 mm. *P. oceanica* meadows appear at 8 m in depth nearly a hundred meters from the shoreline.

C.2 Fieldwork campaign specifications

The aim of the fieldwork campaign at Cala Millor consists on providing the annual dataset described at SOCIB - MTBMF 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.
- 18 subaerial - submerged beach profiles
- 45 sediment samples
- ADCP deployment
- Cameras extrinsic geometric correction

C.3 Data sampling

C.3.1. Profile surveys

Profile	Initial sea point		Final sea point		Initial land point	
	X (UTM)	Y (UTM)	X (UTM)	Y (UTM)	X (UTM)	Y (UTM)
1						
2						
3						
4						
5						
6						
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8						
9						
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17						
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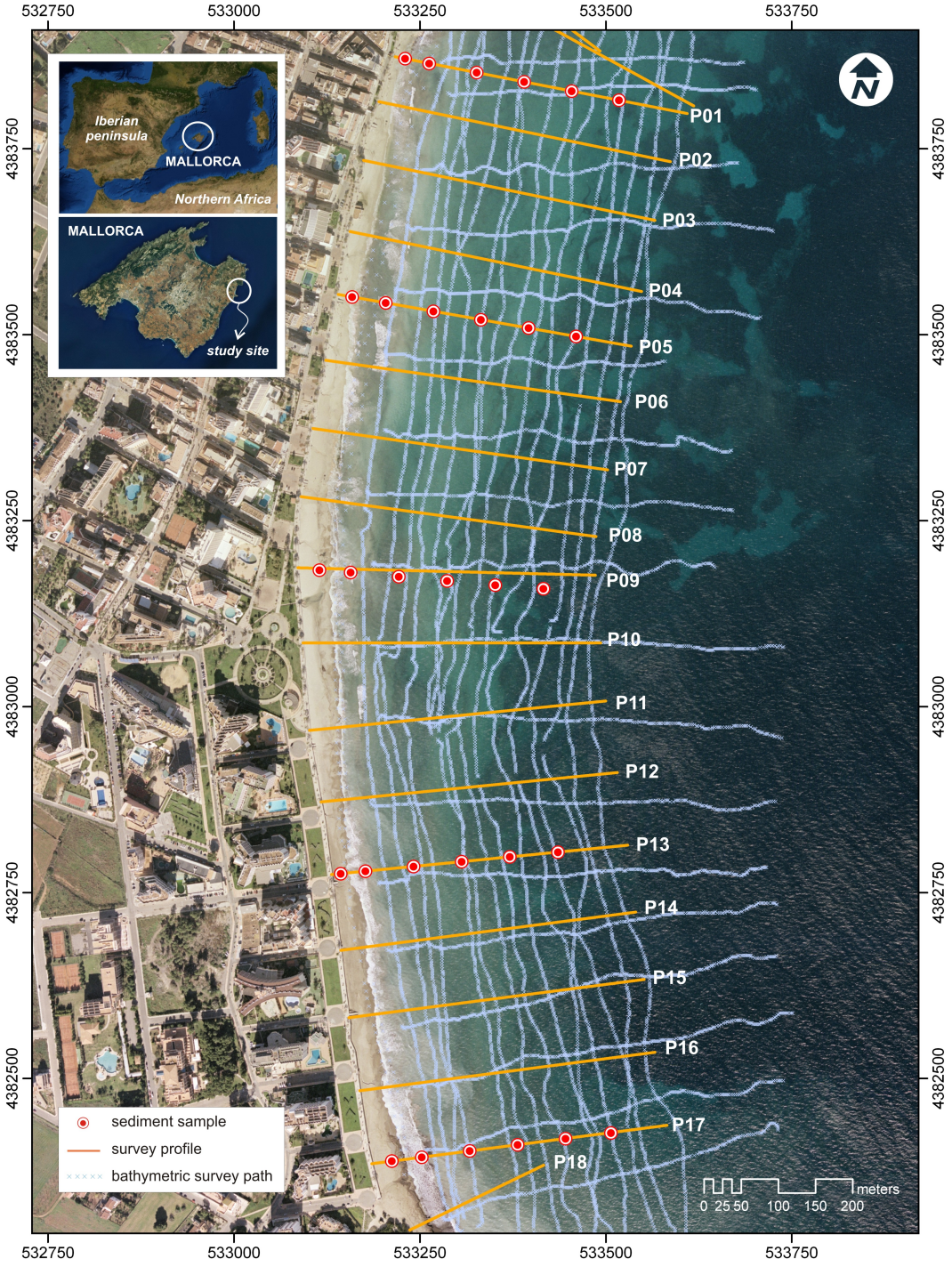
C.3.2. Bathymetric survey

Aprox. 40 km of bathymetric survey path



C.3.3. Sediment sampling

Sample #	X	Y	Z	Observations

C.3.4. Cameras calibration

Point #	Camera #	X (UTM)	Y (UTM)	Observations

C.4 Contact information

Port Cala Bona
c/ Explanada port s/n
Telf. 971 586 256
Fax. 971 586 256
E-mail: port.calabona@portsib.es

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