DATA BUOY COOPERATION PANEL (DBCP)

FORMAT FOR NATIONAL REPORTS ON CURRENT AND PLANNED BUOY PROGRAMMES

Country	SPAIN
Year	2022

Please Identify your Programme's Major Opportunities and Challenges/Risks during the upcoming year and how DBCP can most effectively assist your Programme.

1. *CURRENT PROGRAMME:*

Please Identify your Programme's Major Opportunities and Challenges/Risks during the upcoming year and how DBCP may assist your Programme.

Agency or programme	PUERTOS DEL ESTADO	
Number and type of buoys	(a) deployed during the year	Coastal Triaxys Buoy at PASAIA (Basque Coast)
	(b) operational	15DeepWater + 13 Coastal
	(c) reporting on GTS	15 (DeepWater)
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas		
Vandalism incidents	5 in DeepWater Network (due to third parties' interactions) + 1 in Coastal Network *(See annex)*	

Agency or programme	EuskOOS, Basque Operational Oceanography System. Donostia deep water buoy.	
Number and type of buoys	(a) deployed during the year	
	(b) operational as of 31 August	1 Metocean buoy
	(c) reporting on GTS as of 31 August	
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	
Main deployment areas	Basque Coast (Spain)	
Vandalism incidents	(a) Number of incidents:	

Agency or programme	Instituto Español de Oceanografía (IEO). AGL buoy.	
AGL buoy WMO Number: 6201030	(a) deployed during the year	2007
	(b) operational as of 31 August	AGL Meteo-ocean buoy was only operational for one month the past year. Its mooring line broke. Now, the buoy has been revised, and since it is ok, it will be redeployed as soon as possible.
	(c) reporting on GTS as of 31 August	One month in the l

		past year (Aug-Sep 2021)
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	Bay of Biscay, Eastern N Atlantic	
Vandalism incidents	(a) Number of incidents: 0	

Agency or programme	UPC (UniversitatPolitècnica de Catalunya): OBSEA BUOY	
Number and type of buoys	(a) deployed during the year	0. the buoy was deployed on 2011
	(b) operational as of 19TH september 2022	1
	(c) reporting on GTS as of 31 August	0, No GTS reporting
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	Western Mediterranean	
Vandalism incidents	(a) Number of incidents: due to bad weather OBSEA BUOYwas lost on december 2021. During July 2022 a new buoy was deployed at same site.	

Agency or programme	PLOCAN- ESTOC	
Number and type of buoys	(a) deployed during the year	0Meteo-ocean buoy
	(b) operational as of 31 August	0Meteo-ocean buoy
	(c) reporting on GTS as of 31 August	0, no reporting in GTS
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	Eastern North Atlantic Central	
Vandalism incidents	No incidents	

Agency or programme	XUNTA DE GALICIA / OBSERVATORIO RAIA	
Muros buoy WMO Number: 6101061 Aton number: 1256	(a) deployed during the year	2015
	(b) operational as of 31 August	YES
	(c) reporting on GTS as of 31 August	YES
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	42° 45.38'N 9° 1.46'W	
Vandalism incidents	(a) Number of incidents: 1	
Agency or programme	XUNTA DE GALICIA / OBSERVATORIO RAIA	
Cies buoy WMO Number: 6201040 Aton number: 1252	(a) deployed during the year	2008
	(b) operational as of 31 August	YES
	(c) reporting on GTS as of 31 August	YES
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	42º 10.69'N 8º 53.59'W	
Vandalism incidents	(a) Number of incidents: None.	
Agency or programme	XUNTA DE GALICIA / OBSERVATORIO RAIA	

Rande mooring WMO Number: 6201039 Aton number: 1251	(a) deployed during the year	2007
	(b) operational as of 31 August	YES
	(c) reporting on GTS as of 31 August	YES
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	42º 17.19'N 8º 39.60'W	
Vandalism incidents	(a) Number of incidents: None	
Agency or programme	XUNTA DE GALICIA / OBSERVATORIO RAIA	
Ribeira buoy WMO Number: 6201062 Aton number: 1255	(a) deployed during the year	2011
	(b) operational as of 31 August	YES
	(c) reporting on GTS as of 31 August	YES
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	42º 32.98'N 8º 56.87'W	
Vandalism incidents	(a) Number of incidents: None.	
Agency or programme	XUNTA DE GALICIA / OBSERVATORIO RAIA	
Cortegadaraft WMO Number: 6201038 Aton number: 1250	(a) deployed during the year	2007
	(b) operational as of 31 August	YES
	(c) reporting on GTS as of 31 August	YES
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	42º 37.54'N 8º 47.03'W	
Vandalism incidents	(a) Number of incidents: None	
Agency or programme	XUNTA DE GALICIA / OBSERVATORIO RAIA	
A Guarda buoy WMO Number: 6201031 Aton number: 1253	(a) deployed during the year	2010
	(b) operational as of 31 August	YES
	(c) reporting on GTS as of 31 August	YES
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	41º 54.28'N 8º 53.85'W	
Vandalism incidents	(a) Number of incidents: None	

Agency or programme	Universidad de Las Palmas de Gran Canaria, ULPGC	
Number and type of buoys	(a) deployed during the year	1
	(b) operational as of 31 August	3
	(c) reporting on GTS as of 31 August	0, no reporting in GTS
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	Canary Islands: 27º55.78' N 15º21.88' W	
Vandalism incidents	(a) Number of incidents 0	

Agency or programme	Balearic Island Observing and Forecasting System (SOCIB). Fixed Mooring	
	(a) deployed during the year	

Number and type of buoys	(b) operational as of 31 August	1
	(c) reporting on GTS as of 31 August	1
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas		
Vandalism incidents	(a) Number of incidents	

Agency or programme	Balearic Island Observing and Forecasting System (SOCIB). Surface drifters	
Number and type of buoys	(a) deployed during the year	7
	(b) operational as of 31 August	7
	(c) reporting on GTS as of 31 August	
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[]
Main deployment areas		
Vandalism incidents	(a) Number of incidents	

Agency or programme	ARGO SPAIN	
Number and type of buoys	(a) deployed during the year	3
	(b) operational as of 31 August	23
	(c) reporting on GTS as of 31 August	
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	MEDITERRENEAN SEA AND NORTH ATLANTIC	
Vandalism incidents		

(repeat table above as often as necessary)

*2. **PLANNED PROGRAMMES:***

Agency or programme	PUERTOS DEL ESTADO	
Number and type of buoys	planned for deployment in the next 12 months	Only maintenance
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas		

Agency or programme	Instituto Español de Oceanografía (IEO). AGL buoy.	
AGL buoy WMO Number: 6201030	planned for deployment in the next 12 months	Re-deploy AGL buoy as soon as possible
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	Bay of Biscay, mid-latitudes North East Atlantic	

Agency or programme	PLOCAN- ESTOC	
Number and type of buoys	planned for deployment in the next 12 months	Only maintenance
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[]
Main deployment areas		

Agency or programme	XUNTA DE GALICIA /OBSERVATORIO RAIA.	
Number and type of buoys	planned for deployment in the next 12 months	Maintaining the six stations
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	
Main deployment areas		

Agency or programme	ARGO SPAIN	
Number and type of buoys	planned for deployment in the next 12 months	15
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[x]
Main deployment areas	MEDITERRENEAN SEA AND NORTH ATLANTIC	

(repeat table above as often as necessary)

*3. **TECHNICAL DEVELOPMENTS:***

(a) Buoy design	PUERTOS DEL ESTADO: • Deep Water Buoy Network: Seawatch and Wavescan buoys (Fugro Norway AS) • Coastal Buoy Network: Triaxys, WatchKeeper (1) and WatchMate (1) buoys (Axys) EuskOOS-AZTI • Wavescan buoy (Fugro/Oceanor) IEO - AGL buoy • Seawatch type ODAS equipped with sensors for the measurement of atmospheric, oceanographic and biogeochemical parameters as air pressure and temperature; relative humidity and wind direction and speed (at 2 meters height); sea surface temperature (SST) and salinity (SSS); dissolved oxygen and chlorophyll (at 3 m depth); and wave data sensors and an ADCP (RDI 300 Khz) for the measurement of the currents in the first one hundred meters of the water column. OBSEA BUOY • Buoy designed by UPC and manufactured by La MaquinistaValenciana. (buoy type: http://www.lmvsa.com/lmvcp/uimg/file_ap_es_55.pdf) • Communication link by GSM or cabled to shore via Obsea cabled observatory. PLOCAN • Multidisciplinary mooring, located in the Central Eastern Atlantic, open ocean site with over 15 years of continuous surface and mid-water meteorological, physical and biogeochemical monitoring. • float- Mediterráneo Señales Marítimas (MSM- model EBM23OC • Central System: management, storage and communication: - 2 Campbell data logger model-CR1000 - 2 Campbell modems- model 9522B (Iridium) and two antennas. - Power: solar panels and batteries XUNTA DE GALICIA • Cortegada platform: 3 solar panels of 100W, 3 batteries and protection devices added to power, some new sensors that will be collecting data. A custom CTD has been tested for 2 months.

- Rande **station:**
  An AC plug and electrical protection devices has been installed in Rande station in order to allow high-powered devices be used

ULPGC

- Multidisciplinary oceanographic buoy for ocean acidification and CO2 system
- Float: Mediterráneo Señales Marítimas G-2000 (las dos)
- Central System: management, storage and communication:
- Data logger and Comuminication by 3G
- Power: solar panels and batteries

ARGO SPAIN
3 different buoys designed by NKE:

- ARVOR – I
- DEEP ARVOR
- PROVOR CTS4

	https://argo.ucsd.edu/wp-content/uploads/sites/361/2022/05/D3-nke-float.pdf
(b) Instrumentation	PUERTOS DEL ESTADO • Installation of Currents and T/S sensors in three buoys of the Deep Water Buoy Network in the Med Sea (WMO: 6100196, 6100197, 6100430). • Installation of Oxygen sensor in one buoy of the Deep Water Buoy Network (WMO: 6200084) • New buoy WatchKeeper purchase with ADCP profiler for Algeciras position (Coastal Network). It is expected to moor in a few months EuskOOS-AZTI • Wave sensor (Oceanor, Integrated wave sensor and datalogger, 300012) • Doppler Surface currentmeter (Aanderaa, DCS 4100R) • ADCP (RD Instruments, Workhorse quatermaster, 150kHz) • CTD chain with 7 instruments from 0 down to 200m water depth (Seabird Electronics, 6xCT+1xCTD, SBE 37IM) • Wind velocity (Aanderaa, 2740) • Wind direction (Aanderaa, 3590) • Air Temperature (Aanderaa, 3555) • Sun radiation (Aanderaa, 2770) • Net Radiation (Aanderaa, 2811) • Air pressure (Aanderaa, 2810) IEO - AGL buoy • Wind Speed/Direction (04106-19, Wind monitor JR-MA. Young) • Air Temperature (300006. Omega/FugroOceanor) • Air Pressure (PTB220A. Vaisala) • Humidity sensor (HMP155. Vaisala) • Sensor de Oleaje DWR (Directional Waverider MK II. Datawell) and from November, 2017 Wavesense3 (Oceanor, Integrated wave sensor and datalogger) • Water Conductivity/temperature (SBE 37SIP MicroCAT. Sea-Bird Electronics, Inc) • Fluorescence (ECO FL 3971. Wetlabs) • Dissolved Oxygen (Optode 4385. Aanderaa) • ADCP (Sentinel 300 KHz WH5300. RDI) • 2 trackers (Argos, 76634 and iridumXeos) • Thermisthors from suface to 200m depth: 2 SBE 37(at 48 and 200m depth), SBE16 at 18 m, 16 SBE 56 (at 1, 8, 13, 23, 28, 33, 38, 43, 53, 63, 78, 93, 108, 126, 151 and 176 md depth). OBSEA BUOY • Meteo station • Current meter • Video camera • Current meter • O2, T, Salinity • Hydrophone

	PLOCAN • Meteorology (Redundant sensors) - Air temperature/ Rel. humidity- Vaisala HMP155 - B. Pressure. Vaisala PTB110 - Wind speed and direction. - Compás- Young 35200 - PAR- Apogee SQ215 • Oceanography (Redundant sensors except to pH and pCO2) - SST, Cond/Salinity- SB37SM - pH, Sensor lab SP-200 - pCO2, ProOceanus CO2 Pro CV - Dissolved Oxygen/ Temp.- Aanderaa Optode 4835 - Chlorophyll/Turbidity Wetlab FLNTU XUNTA DE GALICIA • Cortegadaplatform**:** Water Radon sensor, turbidimeter and a Sky Quality Meter installed • Devices for fish tracking has been installed in every station. ULPGC • Wind Speed/Direction (MaxiMet GMX 501 Compact weather station) • Air Temperature (MaxiMet GMX 501 Compact weather station) • Air Pressure (MaxiMet GMX 501 Compact weather station) • Humidity sensor (MaxiMet GMX 501 Compact weather station) • pH (ISAMI-pH (Morgan iS0032p y ULA iS0066p) meta-cresol purple(Indicador) 7.1–9.1(range) • Water Conductivity/temperature (SBE 37SIP MicroCAT. Sea-Bird Electronics, Inc, Morgan 64487-8546 y en ULA 14536) • Fluorescence (Cyclops 7F, Turner, Morgan 21180512 y ULA 21180535) • Dissolved Oxygen (Optode 4835 AANDERAA,Morgan 752 y en ULA 925) • pCO2 (CO2-Pro CV, Prooceanus, Morgan 28-090-45 y ULA 40-775-75) ARGO SPAIN • Standard Argo float equipped with CTD that measures pressure, temperature and salinity up to 2000 m. • Deep Argo float equipped with CTD that measures pressure, temperature and salinity up to 4000 m. • Biogeochemical (BGC) Argo float equipped with CTD that measures pressure, temperature, salinity, oxygen and chloropyll up to 2000 m.

4. PUBLICATIONS (on programme plans, technical developments, QC reports, etc.):

Ref	*Title*	*Type*[1]
1	Delayed Mode Quality Control for Argo float WMO 3902126	QC report
2	Delayed Mode Quality Control for Argo float WMO 3902127	QC report
3	Delayed Mode Quality Control for Argo float WMO 6901246	QC report
4	Delayed Mode Quality Control for Argo float WMO 6901247	QC report
5	Report on Argo float recovery of WMO 6901249 float	Technical report
6	Assessing the extension of the Argo array towards the deep ocean: an analysis of the long-term stability and accuracy of the SBE61, SBE41 and RBR CTD sensors.	Poster communication VIII International Symposium on Marine Sciences
7	Development of the Argo Online School under the frame of the project EA-RISE	https://www.euro-argo.eu/Outreach/Educational-material/Argo-Online-School

(repeat rows in the table above as necessary)

1: Types of publications: (1) Implementation, (2) Operations, (3) Instrumentation, (4) Quality Management, (5) Data Management, (6) Data collection and/or location, (7) Data use, (8) Other

*5. **ADDITIONAL COMMENTS:***

(a) Quality of buoy data	PUERTOS DEL ESTADO • Data go through real time quality control tests at Puertos del Estado before dissemination. It is also validated in delay mode by scientists. Raw data from datalogger are reprocessed in delay mode once or twice a year IEO - AGL buoy • Data are monthly calibrated using the *R/VRamon Margalef.* The oceanographic parameters are compared with CTD data and meteorological ones with the data from the ship meteorological station. Samples are taken from Niskin bottles to be analyzed in laboratory for salinity, dissolved oxygen and chlorophyll buoy sensors calibration. Calibrated data (delayed mode) are made free available through OceanSITES to which the AGL buoy together with its oceanographic deep station (st7 of Santander standard section) form SATS (Santander Atlantic Time-Series). OBSEA BUOY • Data is offered on Emodnet: http://www.emodnet-physics.eu/map/platinfo/piroosplot.aspx?platformid=8805&60days=false • Quality Control flags are used PLOCAN • Real Time data: • Regional range test; Spike test; Frozen test;Stuck valuetest; Rate of change in time; location test and date test. http://eurogoos.eu/download/publications/rtqc.pdf http://archimer.ifremer.fr/doc/00251/36232/34792.pdf XUNTA DE GALICIA • Following Meteogalicia procedure based on UNE 500540 ULPGC • Every other month samples are collected with Niskin bottles to be analyzed and the parameters of the CO2 system are calibrated with the Ct and At from the VINDTA equipment at the lab. Oxygen is also measured in the same samples. ARGO SPAIN • The data is processed through two quality controls. The first one in real time (RT) and the second one in deferred mode (DM). Access to the data is free and can be downloaded from various sources.The data quality control procedures are reflected in this manual, which is publicly accessible: https://archimer.ifremer.fr/doc/00228/33951/32470.pdf
(b) Communications	PUERTOS DEL ESTADO • IRIDIUM satellite in the deep water buoy network • Radio or GPRS in the coastal buoy network

	OBSEA BUOY • Via GSM or cabled through the Obsea cabled observatory IEO, AGL BUOY • IRIDIUM satellite PLOCAN • Iridium RUDICS XUNTA DE GALICIA • Campbell COM110A GPRS modem ULPGC • Via GSM ARGO SPAIN • All three types of buoys commonly use IRIDIUM SBD communication systems. http://www.cubic-i.co.jp/en/iridium/system.html
(c) Buoy lifetimes	PUERTOS DEL ESTADO • Deep Water Network, multipurpose buoys: an extra budget is always devoted to renovate sensors installed onboard. So, it's complicated to say a figure. The buoys are maintained twice or three times a year. The mooring lines are changed every 2 years. • Coastal buoys Network : services every six months and new mooring line every year EuskOOS - Donostia deep water buoy. • Moored buoys: aprox 10 years IEO - AGL buoy • Every 3 years, mooring line is changed. PLOCAN • Approximately six months maintenance frequency The buoy was recovered in December 2021. We are waiting for an available oceanographic vessel. XUNTA DE GALICIA • Approximately two months maintenance frequency. Every 4 years, mooring line is changed. • Coastal buoys Network (10 years or more) ULPGC • Since 2020 and 2021 respectively. Every 2 months are cleaned and every 8-10 months the buoy is moved to the lab for maintenance. ARGO SPAIN • The estimated average lifetime of each buoy is 4 years.

(d) Data Accessibility[2]	PUERTOS DEL ESTADO • PORTUS system: http://portus.puertos.es • Copernicus Marine Environment Monitoring Service (IN SITU-TAC: http://www.marineinsitu.eu/) • GTS • EMODnet portal: http://www.emodnet-physics.eu • OceanOPS EuskOOS - Donostia deep water buoy. • http://www.euskoos.eus/en/basque-ocean-meteorological-network/donostia-deep-water-buoy/ • Copernicus Marine Environment Monitoring Service (IN SITU TAC - IBI region) http://www.marineinsitu.eu/) • EMODNET http://www.emodnet-physics.eu IEO - AGL buoy • http://www.boya-agl.st.ieo.es • http://www.meteocantabria.es/meteocantabria/boya/boya-ieo • OCEANSITES http://tds0.ifremer.fr/thredds/catalog/CORIOLIS-OCEANSITES-GDAC-OBS/DATA/catalog.html • COPERNICUS https://www.copernicus.eu/es • SEADATANET, EMODnet physics http://www.emodnet-physics.eu OBSEA BUOY • www.obsea.es PLOCAN • http://data.plocan.eu/thredds/catalog/estoc/catalog.html XUNTA DE GALICIA • http://www2.meteogalicia.gal/galego/observacion/plataformas/plataformas.asp?request_locale=gl • http://www.intecmar.gal/Plataformas/plataformas.aspx • Copernicus Marine Environment Monitoring Service (IN SITU TAC - IBI region) http://ibidataportal.puertos.es/ • EMODNET http://www.emodnet-physics.eu • CMEMS in-situ TASK http://www.marineinsitu.eu/dashboard/ ULPGC - • http://eacfe-quima.blogspot.com/p/canbio-canoa.html ARGO SPAIN • There are several ways to get acces Argo data, all of them summarized in this link https://argo.ucsd.edu/data/data-from-gdacs/ Also, we created the Argo Online School. An interactive tool to get and use the Argo data https://www.euro-argo.eu/Outreach/Educational-material/Argo-Online-School
(e) New Observations[3]	PLOCAN

[2]How does the international community access the ocean observing data provided by your Organization

[3]What new ocean observations does your Organization plan to make in the upcoming year (i.e. new parameters, expanding geographic scope, filling spatial or latency gaps)?

	• Passive Acoustic XUNTA DE GALICIA • Seapoint Turbidimeter sensor under test. • Water Radon-meter sensor. • Sky quality meter ARGO SPAIN • Trough the BGC floats, we're planning to get oxygen and chlorophyll-a observations.
(f) GFCS and WIGOS[4]	●
(g) Additional Requirements[5]	●
(h) DBCP Linkages[6]	●
(i)Contribution to UN Decade and UN SDGs[7]	XUNTA DE GALICIA • Technology Innovation/ Service to Society ARGO SPAIN • Our networks are focused on providing data of the global ocean in order to know its role in the climate system, its state and its prediction > Climate action (Goal number 13).
(j) Other (i.e. Impact of COVID19 on observing systems and mitigation efforts)	ARGO SPAIN • The contribution to the Argo network is sustained through National funding. In our case (Spain), the administrative procedures for the acquisition of Argo buoys were paralyzed during the pandemic. A call that includes more than a dozen buoys is still pending resolution by the Spanish Government.

Note: It is recommended that this form is filled in electronically and returned also electronically to the Secretariat. A template of the form can be downloaded from the following SharePoint site:

https://wmoomm.sharepoint.com/:w:/s/wmocpdb/EQ1z8KndbxREkzE6RH4NFkkBDdvOItne74OP8f4voMMSbg?e=pgru6r

[4]How do your Organization's observations contribute to the WMO's Integrated Global Observing System (WIGOS) and/or Global Framework for Climate Services (GFCS)?

[5]What additional requirements (other than climate) does your organization have that are currently not adequately addressed by the DBCP?

[6]How would your organization benefit from DBCP's closer linkages to the Global Ocean Observing System(GOOS), Data Management and Modelling Communities?

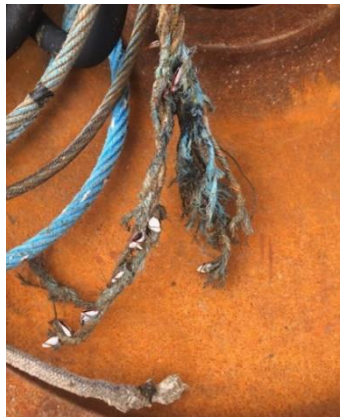
[7]How do your ocean observing networks contributing to the UN decade on Ocean Science and UN Sustainable Development Gloas.

ANNEX - FORM FOR REPORTING INCIDENTS OF VANDALISM ON DATA BUOYS

Country		SPAIN						
Contact person e-mail		Coastal Buoy Network (M. Isabel Ruiz Gil de la Serna, maribel@puertos.es) DATA NOT AVAILABLE ON GTS (Not WMO-ID) Deep Water Buoy Network (Marta de Alfonso, mar@puertos.es) Data available on GTS (WMO numbers assigned)						
Year	**Buoy Location**		**Type of Buoy (e.g. Tsunami / Met-Ocean Buoy/Drifter/ARGO floats/ Other)**	**Type of damage to buoy**	**Buoy id/WMO id**	**Number of days of transmission lost**	**Cost of replacement**	**Remarks (e.g. whether photos have been taken)**
	Latitude	**Longitude**						
2021	43,75º N	6,16º W	Moored deep water Met-Ocean buoy	Drift. Mooring line lost. Wind sensor (Young) and its bracket broken. Rubber cord cut.	6200025	10	Covered by the insurance	Third party is involved, rubber cord cut. Photos taken.
2021	39,51ºN	0,2ºE	Moored deep water Met-Ocean buoy	Transmission stop. Two solar panels stolen. Power Motion Unit and solar panel cables damaged.	6100281	29	Covered by the insurance	Third party is involved. Solar panels stolen. Photos taken.
2021	41,9ºN	3,64ºE	Moored deep water Met-Ocean buoy	No GPS data. Main mast bended and wind sensor (Young) damaged.	6100196	41	Covered by the insurance	Suspect that a third party is involved (collision). Main mast bent. Photos taken.
2021	28,19º N	-15,81º W	Moored deep water Met-Ocean buoy	Drift. Mooring line lost. Flash light, air temperature (Omega) and wind sensor (Young) broken.	1300130	20	Covered by the insurance	Third party is involved. Rubber cord, nylon rope and safety line cut.
2021	28,0º N	-16,61º W	Moored deep water Met-Ocean buoy	Drift. Mooring line lost.	1300131	76	Covered by the insurance	
2021	28,05º N	-15,4º W	Moored coastal buoy (Triaxys)	Drift. Mooring line lost	n/a	19	9.650 €	Rubber cord, nylon rope and safety line cut.
Efforts taken against vandalism			Some of the buoys have changed the mooring position to avoid accidents. Requested collaboration to Port Community in order to inform about data collecting by the buoy. Installed an AIS warning system in some buoys to warn the vessels.					

Awareness meeting Organised	
Suggestions (if any)	
Photos on Vandalism	 6200025 buoy: Wind sensor bracket broken.  Buoy 6100281: Solar panel stolen.

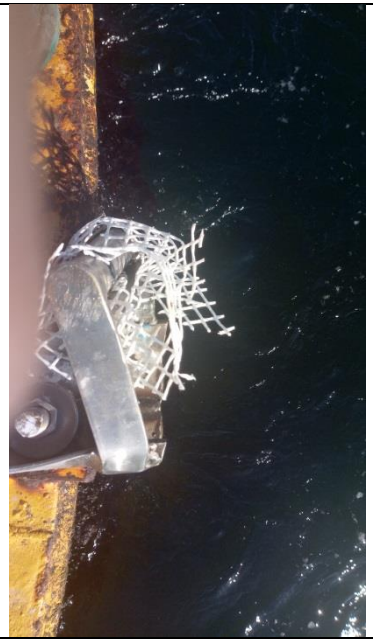
Buoy 6100196: Main mast bent



Buoy 1300130: Rubber cord, nylon rope and safety line cut

(please include pictures if available; and email electronic versions to support@jcommops.org)

Country								
Contact person e-mail								
Year	**Buoy Location**		**Type of Buoy (e.g. Tsunami / Met -Ocean Buoy/Drifter/ARGO floats/ Other)**	**Type of damage to buoy**	**Buoy id/WMO id**	**Number of days of transmission lost**	**Cost of replacement**	**Remarks (e.g. whether photos have been taken)**
	Latitude	**Longitude**						
Efforts taken against vandalism								
Awareness meeting Organised								
Suggestions (if any)								
Photos on Vandalism			(please include pictures if available; and email electronic versions to dbcp-tc@jcommops.organd karen.grissom@noaa.gov)					

Country			SPAIN					
Contact person e-mail								
Year	**Buoy Location**		**Type of Buoy (e.g. Tsunami / Met -Ocean Buoy/Drifter/ARGO floats/ Other)**	**Type of damage to buoy**	**Buoy id/WMO id**	**Number of days of transmission lost**	**Cost of replacement**	**Remarks (e.g. whether photos have been taken)**
	Latitude	**Longitude**						
2022	41º 54.28'N	8º 53.85'W	Met -Ocean Buoy	Structural damage	6201031	none		Pictures of impacts on structure
Efforts taken against vandalism								
Awareness meeting Organised								
Suggestions (if any)								
Photos on Vandalism								

Note: It is recommended that this form is filled in electronically and returned electronically also to OceanOPS(dbcp-tc@jcommops.org and karen.grissom@noaa.gov). A template of the form can be downloaded from the following SharePoint site: https://wmoomm.sharepoint.com/:w:/s/wmocpdb/EXsq1FXv0vpHmOjQA-tTobwBMrNnjXnaQok3oudPhKIb3A?e=2IR9Wh