DATA BUOY COOPERATION PANEL (DBCP)

FORMAT FOR NATIONAL REPORTS ON CURRENT AND PLANNED BUOY PROGRAMMES

Country	SPAIN
Year	2021

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	
	(b) operational	15DeepWater + 12 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 (some due to third parties interactions)+ 4 in Coastal Network during 2020 *(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.	
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	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	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 buoy was deployed on 2011
	(b) operational as of 17TH september 2021	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: no incidents during 2019-2020	

Agency or programme	PLOCAN- ESTOC	
Number and type of buoys	(a) deployed during the year	1 Meteo-ocean buoy
	(b) operational as of 31 August	1Meteo-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	PLOCAN-SEAMON HC buoys	
Number and type of buoys	(a) deployed during the year	2 (Tair, PAR, SST, HC detection
	(b) operational as of 31 August	1
	(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	[]
Main deployment areas	Region of the Macaronesia (Porto Santo- Madeira; Las Palmas- Canary Islands)	
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	
Cortegada raft 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	MORGAN1 buoy (Universidad de Las Palmas de Gran Canaria, ULPGC)	
Number and type of buoys Multidisciplinary oceanographic buoy with floatMediterráneo Señales Marítimas G-2000	(a) deployed during the year	0. Since 2020
	(b) operational as of 31 August	YES
	(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	ULA-2 buoy (Universidad de Las Palmas de Gran Canaria, ULPGC)	
Number and type of buoys Multidisciplinary oceanographic buoy with float Mediterráneo Señales Marítimas G-2000	(a) deployed during the year	Since 2021
	(b) operational as of 31 August	YES
	(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: 27º38.10' N 17º59.79' W	
Vandalism incidents	(a) Number of incidents 0	

Agency or programme	Balearic Island Observing and Forecasting System (SOCIB). Fixed Mooring	
Number and type of buoys	(a) deployed during the year	
	(b) operational as of 31 August	2
	(c) reporting on GTS as of 31 August	2
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	1
	(b) operational as of 31 August	1
	(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. Profile drifters.	
Number and type of buoys	(a) deployed during the year	
	(b) operational as of 31 August	22
	(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	

*2. **PLANNED PROGRAMMES:***

Agency or programme	PUERTOS DEL ESTADO	
Number and type of buoys	planned for deployment in the next 12 months	Maintenance and Pasaia, new Coastal station to be moored late 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		

Agency or programme	EuskOOS, Basque Operational Oceanography System	
Number and type of buoys	planned for deployment in the next 12 months	Just maintaining Donostia buoy
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[
Main deployment areas		

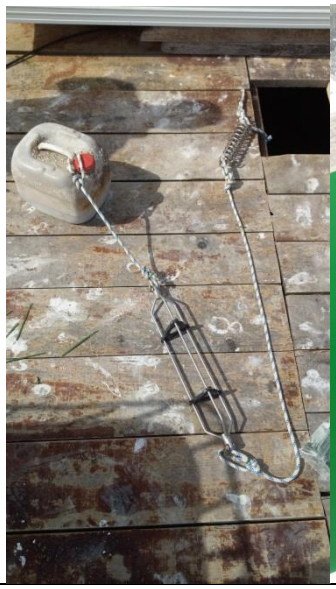
Agency or programme	Instituto Español de Oceanografía (IEO). AGL buoy.	
Number and type of buoys	planned for deployment in the next 12 months	Maintaining AGL buoy
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	
Main deployment areas		

Agency or programme	PLOCAN- ESTOC and PLOCAN-SEAMON HC buoys	
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	MORGAN-1 and ULA-2 (ULPGC)	
Number and type of buoys	planned for deployment in the next 12 months	Only maintenance. Planning a new deployment for end of 2021 of a new coastal meteo-buoy at La Graciosa (Canary Islands)
Purpose of programme *(check/uncheck boxes using [_] or [x] as appropriate)*	(a) operational	[x]
	(b) met / ocean research	[x]
	(c) developmental	[]
Main deployment areas		

*3. **TECHNICAL DEVELOPMENTS:***

(a) Buoy design	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. EuskOOS-AZTI • WAVESCAN BUOY (FUGRO/OCEANOR) IEO - AGL buoy • Seawatch type ODAS • On November 2017, Telemetry has been changed from Inmarsat C to Iridium system • On November 2017 a set of different equipment were fixed to the anchor chain: from surface to 200m depth a system of 18 thermistors to study mixed layer variability and a WQM (WET Labs) equipment to study plankton seasonal cycle. 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: Hydrophone deploymentwas modified and displaced to improve performance  

	ULPGC - MORGAN-1 AND ULA-2 • 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
(b) Instrumentation	PUERTOS DEL ESTADO • New buoys Triaxys purchase. Telemetry based on 3/4G OBSEA BUOY • Meteo station • Current meter • Video camera • Current meter • O2, T, Salinity • Hydrophone 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 (Optode3835. 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).

	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 • Some devices for fish tracking were installed in Cortegada platform, Ribeira Buoy and Rande mooring for some months. ULPGC - MORGAN-1 AND ULA-2 The buoys are equipped with: • 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)

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

Ref	*Title*	*Type*[1]
1	A. Sanchez-Vidal, M. Llorca, M. Farré, M. Canals, D. Barceló, P. Puig, A. Calafat, 2015. Delivery of unprecedented amounts of perfluoroalkyl substances towards the deep-sea. Science of The Total Environment, 526, 41-48. https://dx.doi.org/10.1016/j.scitotenv.2015.04.080	(7) Data use (scientific paper)
2	J. Martín, X. Durrieu de Madron, P. Puig, F. Bourrin, A. Palanques, L. Houpert, M. Higueras, A. Sanchez-Vidal, A. M. Calafat, M. Canals, S. Heussner, N. Delsaut, C. Sotin, 2013. Sediment transport along the Cap de Creus Canyon flank during a mild, wet winter. Biogeosciences, 10, 3221-3239. https://dx.doi.org/10.5194/bg-10-3221-2013	(7) Data use (scientific paper)
3	A. Rumín-Caparrós, A. Sanchez-Vidal, A. Calafat, M. Canals, J. Martín, P. Puig, R. Pedrosa-Pamies, 2013. External forcings, oceanographic processes and particle flux dynamics in Cap de Creus submarine canyon, NW Mediterranean Sea. Biogeosciences, 10, 3493-3505. https://dx.doi.org/10.5194/bg-10-3493-2013	(7) Data use (scientific paper)
4	X. Durrieu de Madron, L. Houpert, P. Puig, A. Sanchez-Vidal, P. Testor, A. Bosse, C. Estournel, S. Somot, F. Bourrin, M.N Bouin, M. Beauverger, L. Beguery, A. Calafat, M. Canals, L. Coppola, D. Dausse, F. D'Ortenzio, J. Font, S. Heussner, S. Kunesch, D. Lefevre, H. Le Goff, J. Martín, L. Mortier, A. Palanques, P. Raimbault, 2013. Interaction of dense dense shelf water cascading and open-sea convection in the Northwestern Mediterranean during winter 2012. Geophysical Research Letters, 40, 1-7. https://dx.doi.org/10.1002/grl.50331	(7) Data use (scientific paper)
5	Mechanical characteristics of a spherical oceanographic buoy	(8) Poster
6	A high performance power supply assembly used in oceanographic drifting buoys	(8) Poster
7	Drogue loss detection from drifter positioning data	(8)Conference paper
8	High precision polar GPS buoys for Arctic Sea-Ice oceanography	(8)Conference paper
9	Small-scale deformation of an Arctic sea ice floe detected by GPS and satellite imagery	(8) Paper
10	Thirty years of research and development of Lagrangian buoys at the Institute of Marine Sciences	(8) Paper
11	Arctic sea ice geodesy using SATICE-type GPS ice drifters	(8) Poster
12	Towards a RUDICS Open Solution	(8) Poster
13	On the deployment of an array of geodetic-quality GPS ice-drifting buoys in the Arctic Ocean	(8) Poster
14	Deployment of an array of geodetic-quality GPS ice-drifting buoys in the Arctic Ocean	(8) Poster
15	Handbook of best practices for open ocean fixed observatories	(2) Operations
16	Indicador 4.3 de ESTOC de 2017	2, 3, 4, 5
17	ESTOC since 1991: Two decades observing	8
18	Manso-Narvarte, I., Fredj, E., Jordà, G., Berta, M., Griffa, A., Caballero, A., and Rubio, A.: 3D reconstruction of ocean velocity from high-frequency radar and acoustic Doppler current profiler: a model-based assessment study, Ocean Sci., 16, 575–591, https://doi.org/10.5194/os-16-575-2020,	(7) Data use (scientific paper)

[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

	2020.	
19	A compilation of global bio-optical in situ data for ocean-colour satellite applications	6
20	Evolving and Sustaining Ocean Best Practices and Standards for the Next Decade	8

(repeat rows in the table above as necessary)

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. 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 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 dissolved oxygen and chlorophyll buoy sensors calibration. PLOCAN • Real Time data: • Regional range test; Spike test; Frozen test; Stuck value test; 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 - MORGAN-1 AND ULA-2 • 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.

(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 PLOCAN • Iridium RUDICS XUNTA DE GALICIA • Campbell COM110A GPRS modem ULPGC - MORGAN-1 AND ULA-2 • Via GSM
(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 (10 years or more) 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 is currently deployed since 30/12/2020 XUNTA DE GALICIA • Approximately two months maintenance frequency. Every 4 years, mooring line is changed. • Coastal buoys Network (10 years or more) ULPGC - MORGAN-1 AND ULA-2 • Since 2020 and 2021 respectively. Every 2 months are cleaned and every 8-10 months the buoy is moved to the lab for maintenance.
(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

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

	OBSEA BUOY • www.obsea.es 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 • www.boya-agl.st.ieo.es • http://www.meteocantabria.es/meteocantabria/boya/boya-ieo • OCEANSITES • COPERNICUS • SEADATANET PLOCAN • http://data.plocan.eu/thredds/catalog/aggregate/public/ESTOCInSitu/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 - MORGAN-1 AND ULA-2 • http://eacfe-quima.blogspot.com/p/canbio-canoa.html
(e) New Observations[3]	PLOCAN • Passive Acoustic XUNTA DE GALICIA • Custom pH sensor under test.
(f) GFCS and WIGOS[4]	•
(g) Additional Requirements[5]	•
(h) DBCP Linkages[6]	•
(i)Contribution to UN Decade and UN SDGs[7]	ULPGC - MORGAN-1 AND ULA-2 • These buoys are included in the GOA-ON who is within the UN Decade • SDG 13 and 14

[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)?

[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.

(j) Other (i.e. Impact of COVID19 on observing systems and mitigation efforts)	PUERTOS DEL ESTADO • E-SURFMAR program: Since 2019, compensation model has changed and it is based on observation number (wind, air pressure and wave) • Preventive services and a couple of extraordinary ones were delayed to avoid technicians displacements from March to May

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

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** **Latitude** / **Longitude**	**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)**
2020	43,40º N / 3,13º W	Moored Coastal buoy	Drift, mooring line lost	n/a (Bilbao)	2 days	Estimated, 3.000 € works to moor with a new mooring line	AIS system sends warnings about buoy position. But this area is very dangerous because navigation and another kind of traffic
2020	43,35ºN / 8,56ºW	Moored Coastal buoy	Drift, mooring line lost	n/a (Langosteira)	5 months	6.000 € extra	Extraordinary service had to be delayed until June due to COVID
2020	36,00ºN / 5,59ºW	Moored Coastal buoy	Buoy was hit, water intrusion affecting the entire electronic. Serious damages, no repair	n/a (Tarifa)	Out of order station due to works at the lighthouse, one year ago	Decommissionated	Out of lifetime, some spare parts were not neither available nor compatible
2020	36,07ºN / 5,42ºW	Moored Coastal Buoy	Buoy was hit, water intrusion affecting the entire electronic. Serious damages, no repair	n/a (Algeciras)	2,5 months	Insurance company compensation to buy a new one	Extraordinary service had to be delayed until June due to COVID
2020	43,64º N / 3,09º W	Moored deep water Met-Ocean buoy	Drift. Mooring line lost.	6200024	21	Covered by the insurance	Suspect that a third party is involved
2020	43,64º N / 3,09º W	Moored deep water Met-Ocean buoy	Drift. Mooring line lost.	6200024	17	Covered by the insurance	
2020	44,123ºN / 7,7154º W	Moored deep water Met-Ocean buoy	Drift. Mooring line lost.	6200082	17	Covered by the insurance	
2020	42,119ºN / 9,4293º W	Moored deep water Met-Ocean buoy	Transmission stop.	6200084	11	Covered by the insurance	Accident due to a collision

2020	39,701ºN	4,4244ºE	Moored deep water Met-Ocean buoy	Drift. Mooring line lost.	6100197	127	Covered by the insurance	Suspect that a third party is involved. Delay in reposition due to COVID situation.
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			(please include pictures if available; and email electronic versions to support@jcommops.org)					

Country			SPAIN					
Contact person e-mail			Pablo Álvarez Chaver (palvarez@cetmar.org) and Silvia Torres López (storres@cetmar.org).					
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	42° 45.38'N	9° 1.46'W	Met -Ocean Buoy	Structural damage	6101061	**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 anddr.r.venkatesan@gmail.com). A template of the form can be downloaded from the following SharePoint site: https://wmoomm.sharepoint.com/:w:/s/wmocpdb/EXsq1FXv0vpHmOjQA-tTobwBMrNnjXnaQok3oudPhKIb3A?e=2IR9Wh