



Report on Argo float WMO 6901278 - 6901279 deployment

ARGO ESPAÑA - SOCIB - IEO / 21 - 62

Argo float deployment for
WMO 6901278 - 6901279

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1. Deployment design

Following the Argo program goals, the float density criteria demands a coverage distribution of $3^{\circ} \times 3^{\circ}$ grid cells (Fig. 1). In order to maintain the global Argo network coverage and taking in account the current distribution of the Argo floats, Argo España planned 1 float deployment in the Balearic sea area after some gaps in the network were identified. Also, SOCIB in the frame of WP6 from Euro-Argo RISE project (Euro-Argo Research Infrastructure Sustainability and Enhancement), planned 1 float deployment in Palma Bay. The objective was to extend the geographical coverage of Argo to shallow waters of the European marginal seas and for this purpose, to continuously change the configuration parameters to keep it in this area.

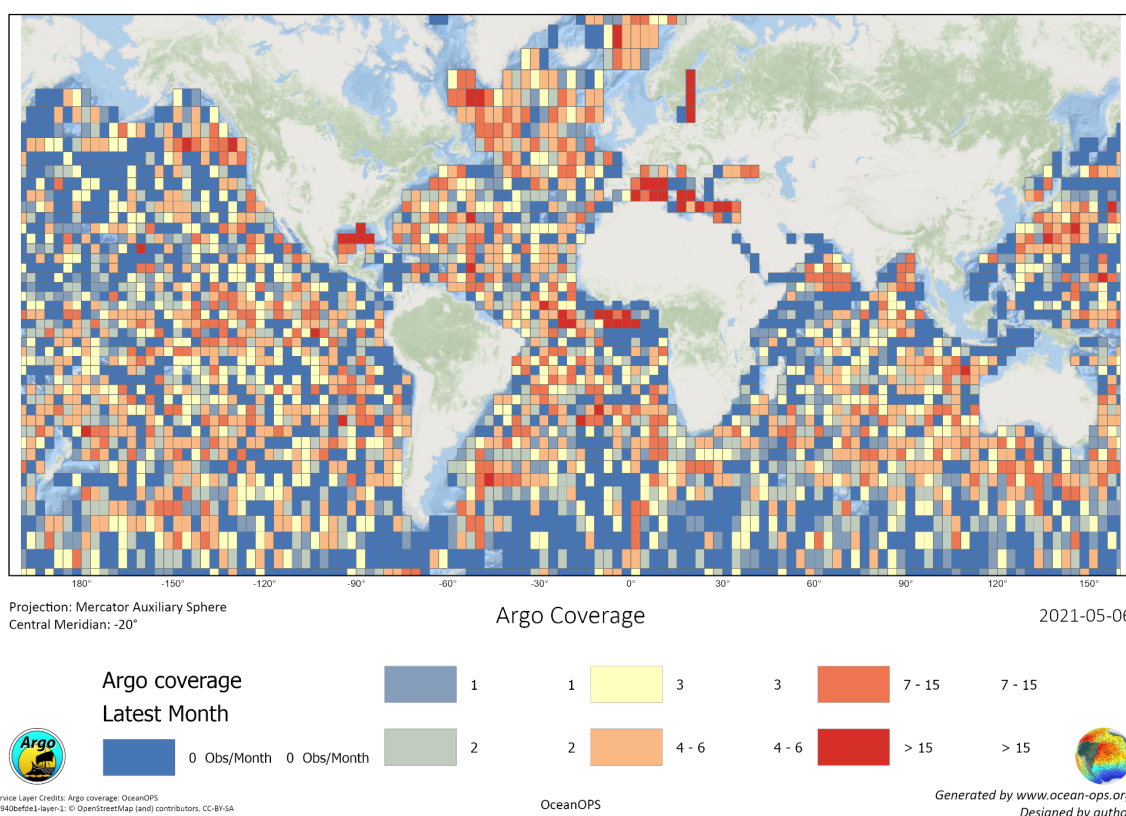


Figure 1. Density of Argo observations in the 2020. Deployments in the South Atlantic Ocean are needed if density observations goals want to be reached

As PI of the *EA-RISE 2020* cruise, Inmaculada Ruiz (SOCIB) led the Argo deployment planning. The R/V SOCIB was planned to carry out the research in

the Balearic Sea, in the south of the Bay of Palma. Floats deployed in this area, could drift several kilometers far from the study area by the influence of the Balearic current, making this area a difficult region to sample. The stations selected are shown in Figure 2.

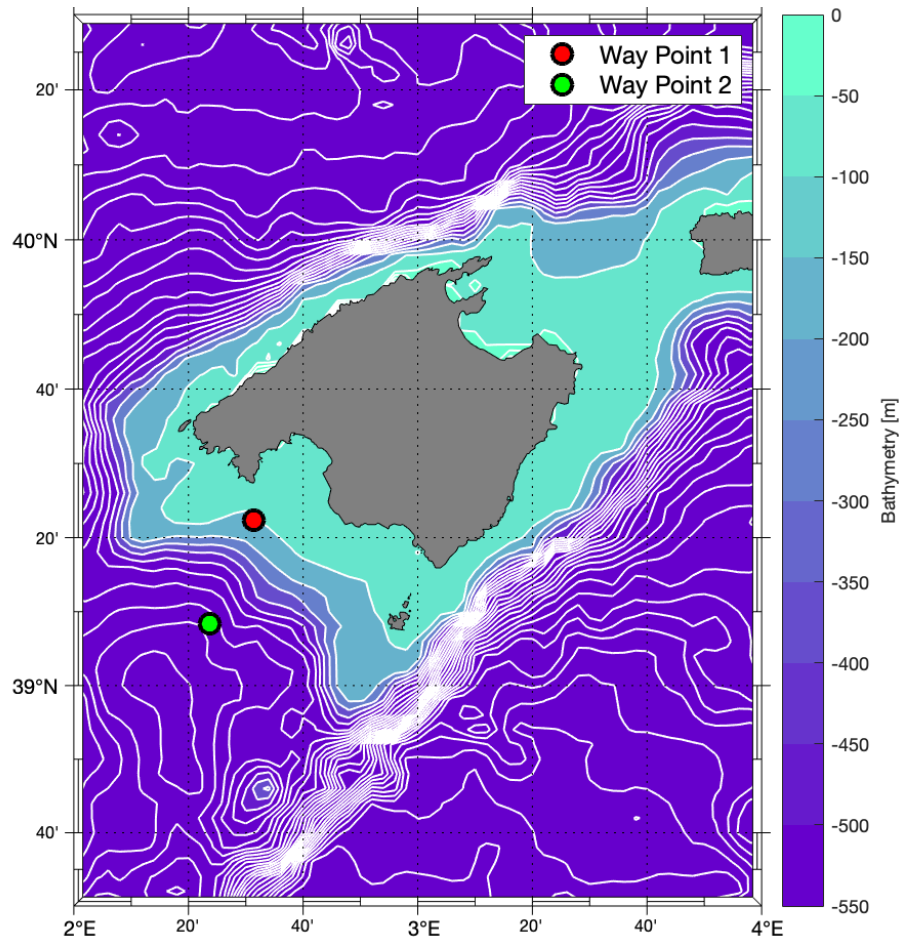


Figure 2. Argo's deployment plan for the *EA-RISE 2020* cruise.

2. Deployment data

Information of the float deployments is shown in these paragraphs.

- a. **WMO 6901278.** The following table contains all the data of the WMO 6901278 deployment during the EA-RISE 2020 cruise, deployed at Way Point 1 (Fig. 2). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Mar 06, 2020 and all the information was registered at the Argo Information Center database. The data is free and publicly available through the Argo data stream:

<http://www.oceanografia.es/argo/datos/floats/6901278.html>

DATE AND TIME	2020 - 03 - 12 / 08:43 UTC
DEPLOYMENT LOCATION	39°22.330 N 02°31.370 E
DEPLOYMENT PLATFORM	R/V SOCIB
CRUISE ID	EA-RISE 2020
FLOAT OWNER	SOCIB
PLATFORM TYPE	NKE Arvor - I
SERIAL NUMBER	AI2600-19SP001
TRANSMISSION SYSTEM	IRIDIUM
PARKING DEPTH (m)	100
PROFILE DEPTH (m)	100
DEPLOYMENT DEPTH (m)	100
WEATHER CONDITIONS	3.1 kn wind speed, sunny
DEPLOYMENT OPERATOR	Irene Lizarán-Esperilla, Lara Díaz Barroso

Table 1. WMO 6901278 information deployment.

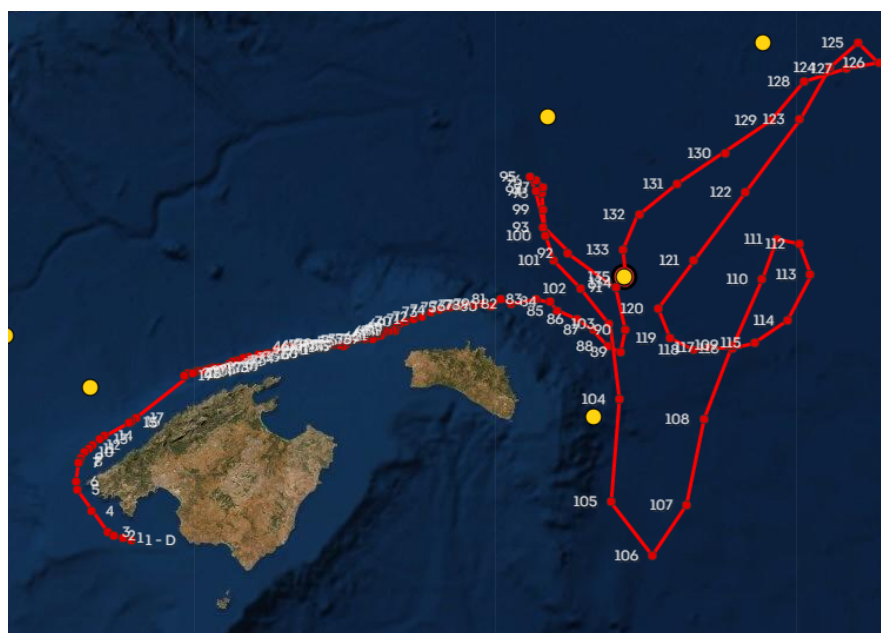
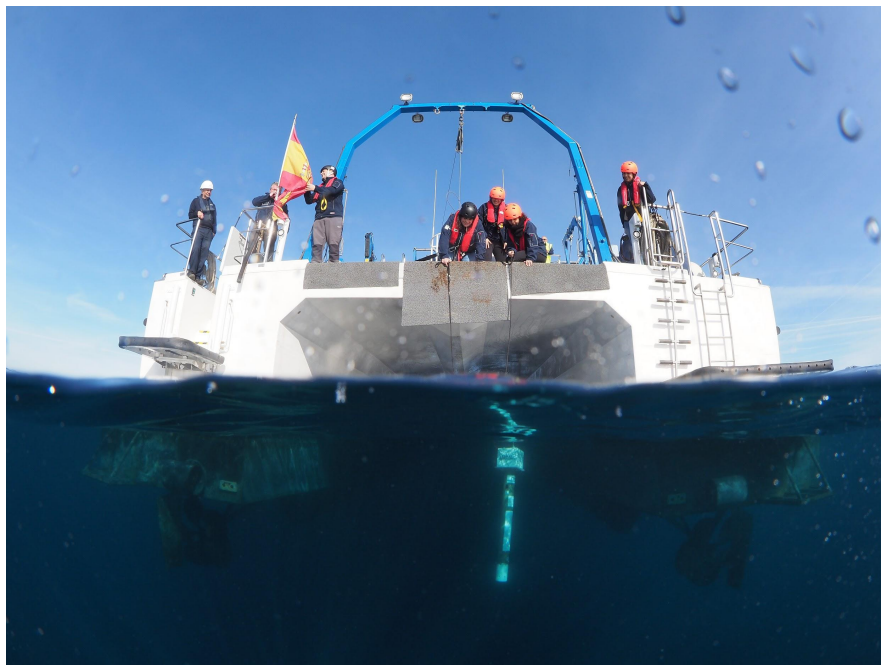


Figure 3 (up) and Figure 3 (down). Deployment maneuver of the float WMO 6901280 from R/V SOCIB (up). Deployment location and trajectory (Way Point 1, Fig. 2) (down).

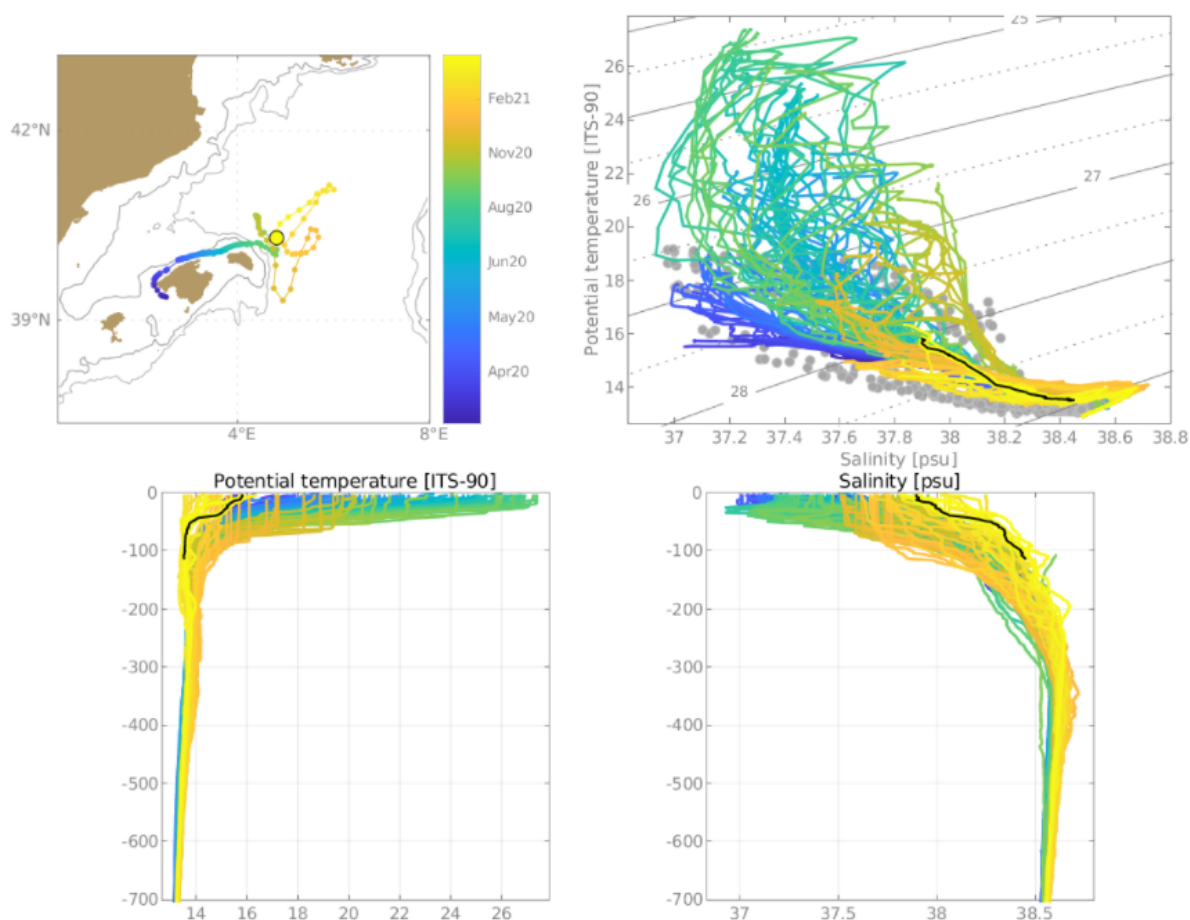


Figure 4. The trajectory of the float since the deployment is shown in the upper left side of the picture. T-S diagram of the data collected by WMO 6901278 is shown in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V SOCIB. Potential Temperature and Salinity profiles are also shown in the lower side of the picture.

- b. **WMO 6901279.** The following table contains all the data of the WMO 6901279 deployment during the *EA-RISE 2020* cruise, deployed at Way Point 2 station (Fig. 2). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Mar 06, 2020 and all the information was registered at the Argo Information Center database. The data is free and publicly available through the Argo data stream:

<http://www.oceanografia.es/argo/datos/floats/6901279.html>

Aug 29, 2020 we were notified that the float was caught by a fishing vessel, so we recovered it on Aug 31, 2020. Finally, the float deployment was stopped, and the float used for other mission.

DATE AND TIME	2020 - 03 - 12 / 11:24 UTC
DEPLOYMENT LOCATION	39°08.410 N 02°23.690 E
DEPLOYMENT PLATFORM	R/V SOCIB
CRUISE ID	<i>EA-RISE 2020</i>
FLOAT OWNER	SOCIB
PLATFORM TYPE	NKE Arvor - I
SERIAL NUMBER	AI2600-19EU021
TRANSMISSION SYSTEM	IRIDIUM
PARKING DEPTH (m)	1000
PROFILE DEPTH (m)	2000
DEPLOYMENT DEPTH (m)	700
WEATHER CONDITIONS	<i>3.1 kn wind speed, sunny</i>
DEPLOYMENT OPERATOR	Irene Lizarán-Esperilla, Lara Díaz Barroso

Table 2. WMO 6901279 information deployment.

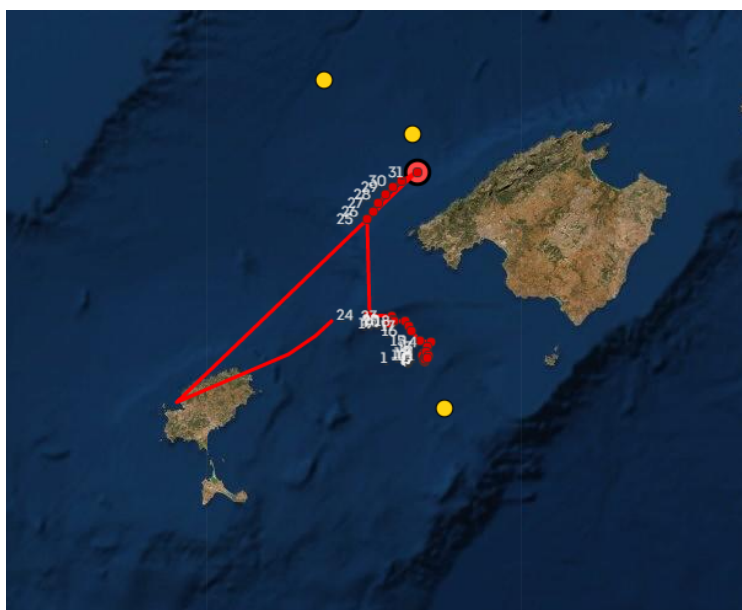
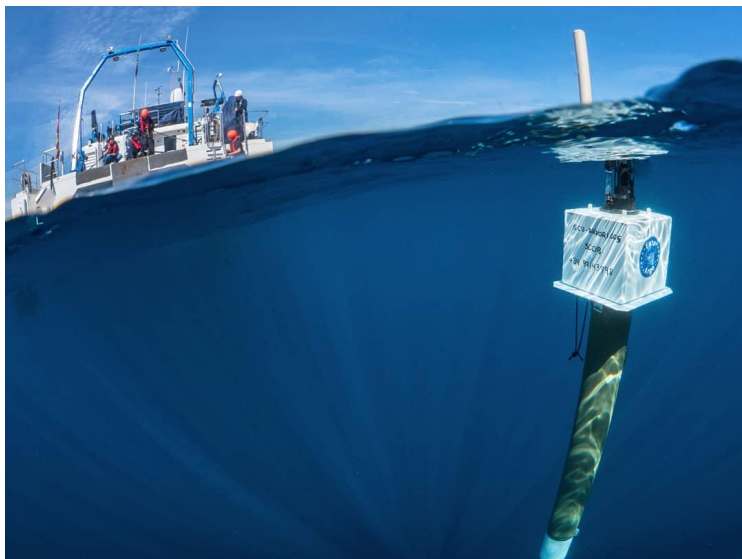


Figure 5 (up) and Figure 5 (down). Deployment maneuver of the float WMO 6901279 from R/V SOCIB (up).
Deployment location and trajectory (Way Point 2, Fig. 2) (down).

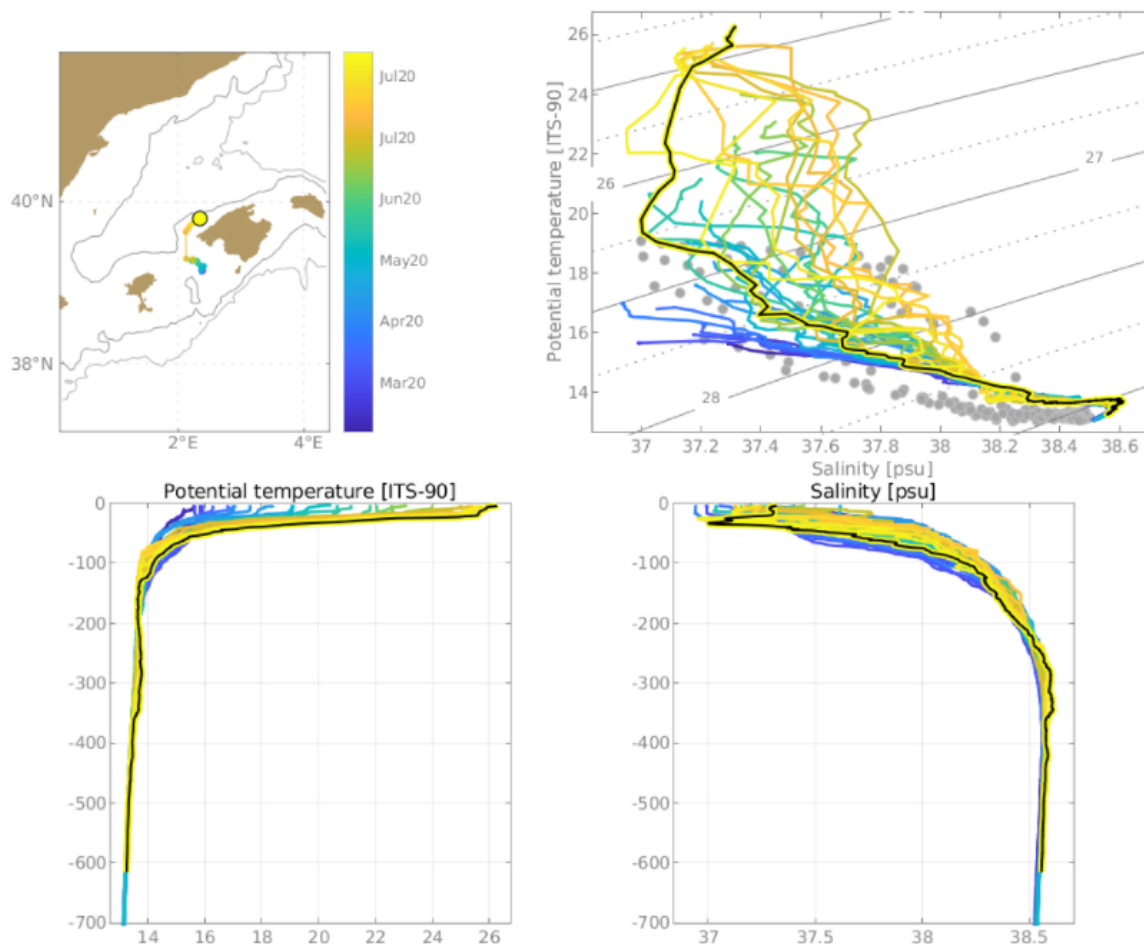


Figure 6. The trajectory of the float since the deployment is shown in the upper left side of the picture. T-S diagram of the data collected by WMO 6901279 is shown in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V SOCIB. Potential Temperature and Salinity profiles are also shown in the lower side of the picture.

3. Float configuration

“MC” parameters (table 3 and 4) were set according to the scientific requirements and the oceanographic study areas (Palma Bay, as shallow waters, and Balearic Sea). The float WMO 6901278 (Table 3) dives up to 100 m depth carrying out cycles of 24 hours, with a parking depth of 100 m, while WMO 6901279 (Table 4) dives up to 2000 m depth carrying out cycles of 120 hours, with a parking depth of 1000 m.

Command no.	Name	Values	Units
Mission Commands			
MC0	Total Number of Cycles	500	Whole number
MC1	Number of cycle with “Cycle Period 1”	500	
MC2	Cycle Period 1	24	Hours
MC3	Cycle Period 2	24	Hours
MC4	Reference Day	1	Number of days
MC5	Estimated time at the surface	6	Hours
MC6	Delay Before Mission	15	Minutes
MC7	CTD sampling mode (1=Continuous, 2=Eco, 3=Mixed, 4=Spot sampling)	1	
MC8	Descent CTD sampling period	0	Seconds
MC9	Drift CTD sampling period	1	Hours
MC10	Ascent CTD sampling period	10	Seconds
MC11	Drift pressure 1	100	dBar
MC12	Profile pressure 1	100	dBar
MC13	Drift pressure 2	100	dBar
MC14	Profile pressure 2	100	dBar
MC15	Alternate cycle number (1=not used, x=1/x alternated profile)	1	
MC16	Alternate profile pressure	2000	dBar
MC17	Threshold surface/Intermediate Pressure	10	dBar
MC18	Threshold Intermediate /bottom Pressure	500	dBar
MC19	Thickness of the surface slices	1	dBar
MC20	Thickness of the intermediate slices	1	dBar
MC21	Thickness of the bottom slices	1	dBar
MC22	Iridium End of Life Period	60	Minutes
MC23	Time between 1st&2nd Iridium session(0=no 2nd session)	0	Minutes
MC24	Grounding mode (0=Shift, 1=Stay grounded)	1	
MC25	Grounding shift	30	dBar
MC26	Wait at surface if grounding	10	Minutes
MC27	Optode type (0=no optode, 1=4330, 2=3830, 3=ext. sensor)	0	
MC28	CTD CutOff pressure	2	
MC29	In air acq.: Periodicity of in air measurement (0=no acq., 1=acq. on each cycle, x=acq. on 1/x cycle)	0	
MC30	In air acq.: Sampling period	30	
MC31	In air acq.: Acquisition duration	5	

Table 3. Configuration sheet for the float (WMO 6901278) deployed during *EA-RISE 2020* cruise.

Command no.	Name	Values	Units
Mission Commands			
MC0	Total Number of Cycles	500	Whole number
MC1	Number of cycle with "Cycle Period 1"	500	
MC2	Cycle Period 1	120	Hours
MC3	Cycle Period 2	120	Hours
MC4	Reference Day	2	Number of days
MC5	Estimated time at the surface	6	Hours
MC6	Delay Before Mission	30	Minutes
MC7	CTD sampling mode (1=Continuous, 2=Eco, 3=Mixed, 4=Spot sampling)	1	
MC8	Descent CTD sampling period	0	Seconds
MC9	Drift CTD sampling period	3	Hours
MC10	Ascent CTD sampling period	10	Seconds
MC11	Drift pressure 1	1000	dBar
MC12	Profile pressure 1	2000	dBar
MC13	Drift pressure 2	1000	dBar
MC14	Profile pressure 2	2000	dBar
MC15	Alternate cycle number (1=not used, x=1/x alternated profile)	1	
MC16	Alternate profile pressure	2000	dBar
MC17	Threshold surface/Intermediate Pressure	400	dBar
MC18	Threshold Intermediate /bottom Pressure	1400	dBar
MC19	Thickness of the surface slices	1	dBar
MC20	Thickness of the intermediate slices	2	dBar
MC21	Thickness of the bottom slices	5	dBar
MC22	Iridium End of Life Period	1440	Minutes
MC23	Time between 1st&2nd Iridium session(0=no 2nd session)	20	Minutes
MC24	Grounding mode (0=Shift, 1=Stay grounded)	0	
MC25	Grounding shift	50	dBar
MC26	Wait at surface if grounding	10	Minutes
MC27	Optode type (0=no optode, 1=4330, 2=3830, 3=ext. sensor)	0	
MC28	CTD CutOff pressure		
MC29	In air acq.: Periodicity of in air measurement (0=no acq., 1=acq. on each cycle, x=acq. on 1/x cycle)		
MC30	In air acq.: Sampling period		
MC31	In air acq.: Acquisition duration		

Table 4. Configuration sheet for the float (WMO 6901279) deployed during *EA-RISE 2020* cruise.

4. Acknowledgements

Argo España would like to thank Inmaculada Ruiz, Lara Díaz, Irene Lizarán and the rest of the crew of the R/V SOCIB, who cooperated for the success of the mission.