Argo-España

Parte de la estrategia global de observación del océano

Report on Argo floats WMO 2903822 – 2903823 - 4903713 deployment

ARGO ESPAÑA – IEO - SOCIB / 23 – 83

Argo float deployment for

WMO 2903822 – 2903823 - 4903713

Jun 29, 2023

A. González-Santana - L. Díaz- Barroso
Instituto Español de Oceanografía (IEO) - Sistema de Observación y Predicción Costero de las Illes Balears (SOCIB)

1. Deployments design

Following the Argo program goals, the floats' density criteria calls for a 3º x 3º grid cells coverage distribution of (Fig. 1). To maintain the global Argo network coverage and taking in account the current distribution of the Argo floats, Argo - España planned 3 float deployments in the Canary basin area after some gaps in the network were identified.

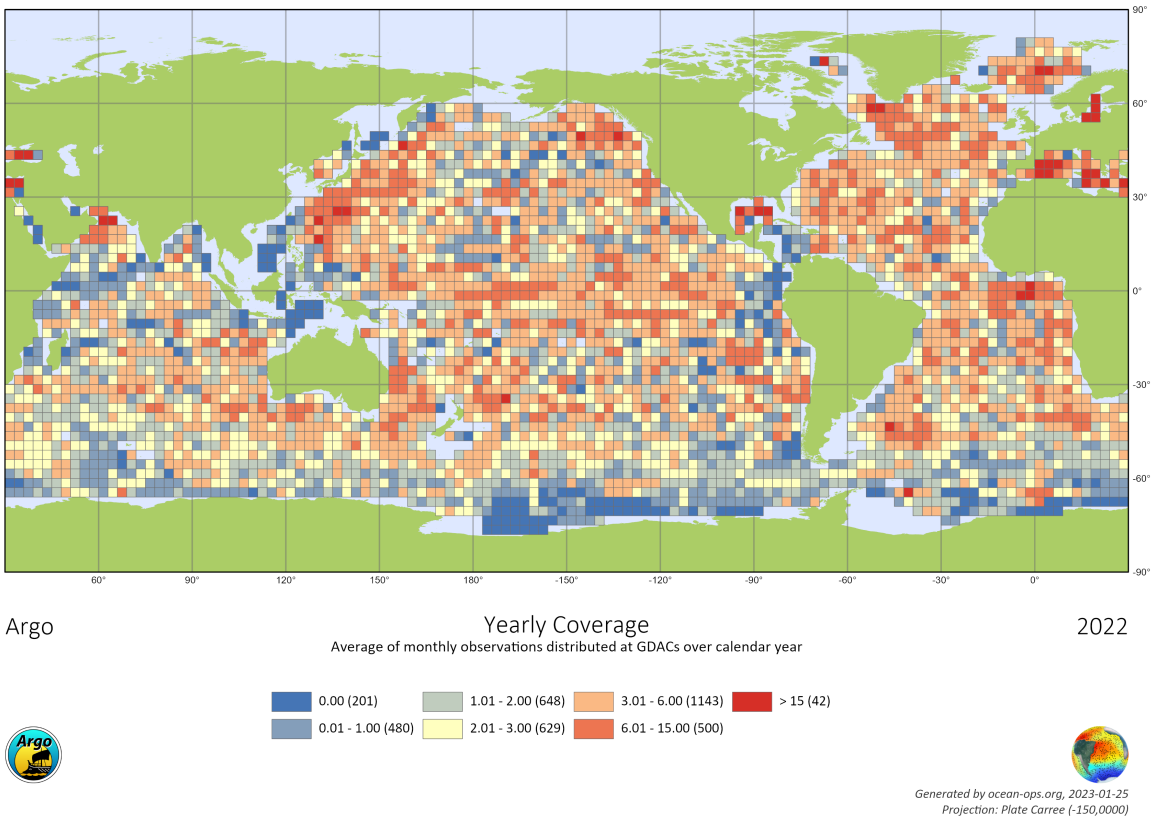


Figure 1. Density of Argo observations in the year 2022.

The RAPROCAN2304 cruise was divided into 60 stations with ideal characteristics for the requirements of Argo Spain. The RV Ángeles Alvariño made the cruise between 24º N - 31º N and 10º W - 19º W (Fig.2). Pedro Vélez and Alberto González (IEO-CSIC) were asked to lead the planning of the use of 3 Argo core floats.

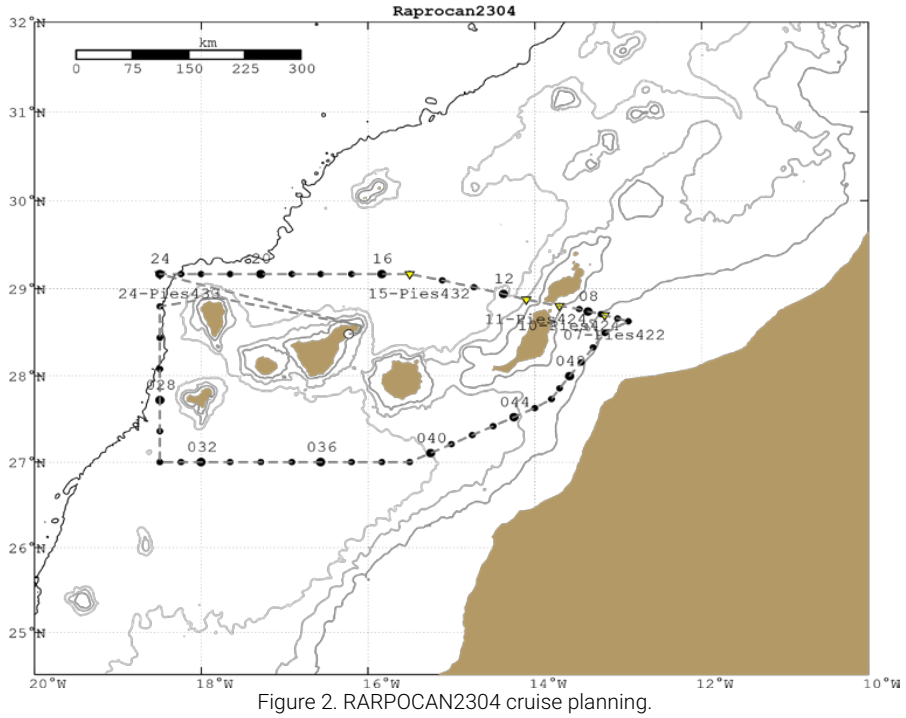


Figure 2. RARPOCAN2304 cruise planning.

2. Deployments data

Information of the floats' deployment is shown next:

a. WMO 2903822. The following table contains all the data of the WMO 2903822 deployment during the RAPROCAN2304 cruise, deployed at station 24 (Fig. 2). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Apr 15, 2023 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/2903822.html

DATE AND TIME	14 – 04 - 2023 / 22:36 UTC
DEPLOYMENT LOCATION	29°10.012' N -18°10.00' E
DEPLOYMENT PLATFORM	R/V ÁNGELES ALVARIÑO
CRUISE ID	RAPROCAN2304
FLOAT OWNER	IEO-CSIC
PLATFORM TYPE	NKE Arvor - I
SERIAL NUMBER	AI2600-23SP001
TRANSMISSION SYSTEM	IRIDIUM
PARKING DEPTH (m)	1000
PROFILE FEPTH (m)	2000
DEPLOYMENT DEPTH (m)	4000
WEATHER CONDITIONS	Calm
DEPLOYMENT OPERATOR	Alberto González-Santana

Table 1. WMO 2903822 information deployment.

Figure 3a (left). Deployment maneuver of the float WMO 2903822 from R/V Ángeles Alvariño. Figure 3b (right). Deployment location and trajectory.

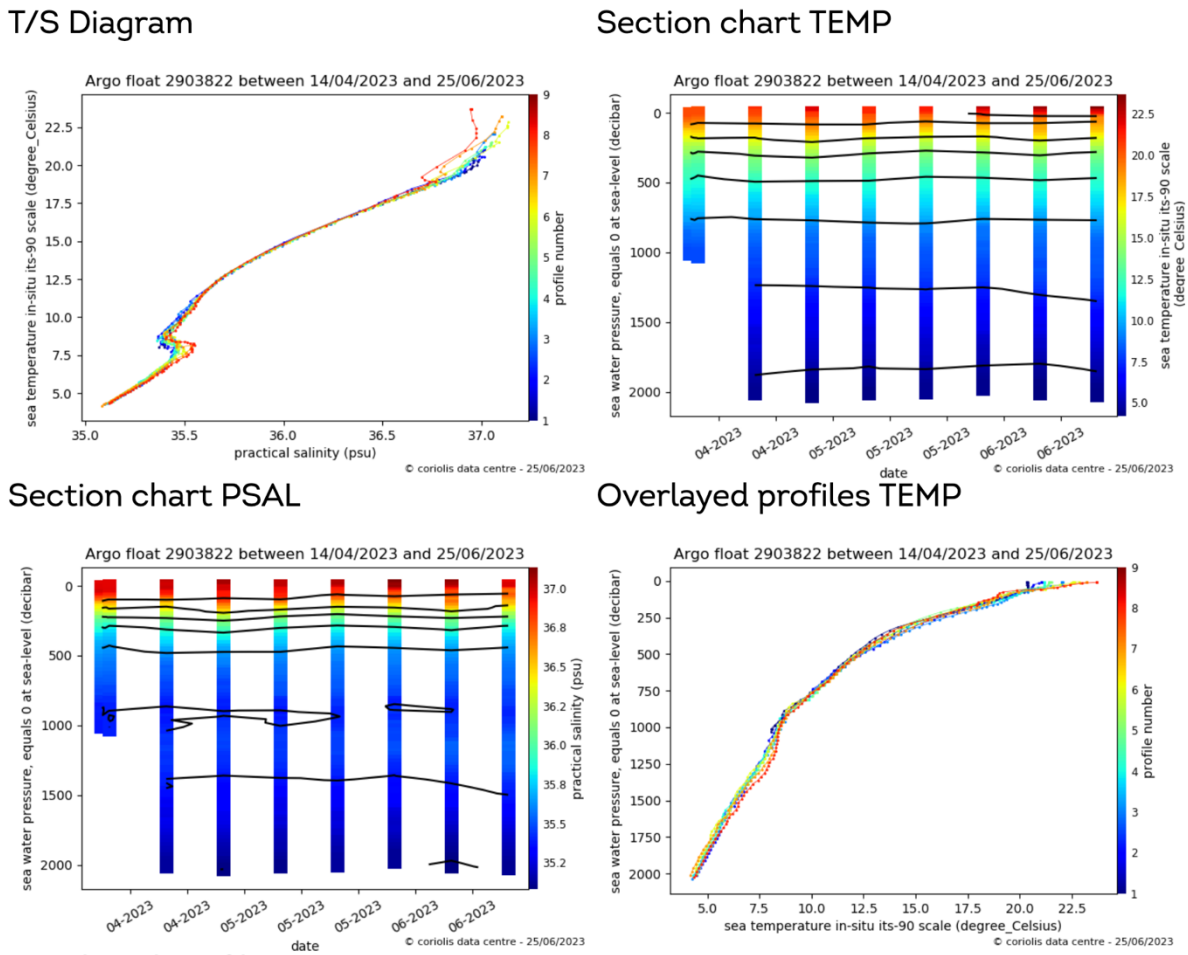


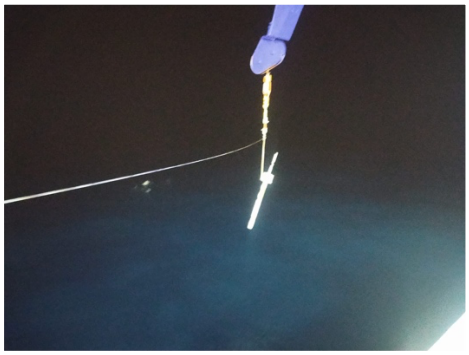
Figure 4. The trajectory of the float since the deployment is shown in the upper left side of the picture. T-S diagram of the data collected by WMO 2903822 is shown in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V Ángeles Alvariño. Potential Temperature and Salinity profiles are also shown in the lower side of the picture.

b. WMO 2903823. The following table contains all the data of the WMO 2903823 deployment during the RAPROCAN2304 cruise, deployed at station 12 (Fig. 2). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Apr 18, 2023 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/2903823.html

DATE AND TIME	17 – 04 - 2023 / 17:15 UTC
DEPLOYMENT LOCATION	28°56.40' N -14°22.80' E
DEPLOYMENT PLATFORM	R/V ÁNGELES ALVARIÑO
CRUISE ID	RAPROCAN2304
FLOAT OWNER	IEO-CSIC
PLATFORM TYPE	NKE Arvor - I
SERIAL NUMBER	AI2600-23SP002
TRANSMISSION SYSTEM	IRIDIUM
PARKING DEPTH (m)	1000
PROFILE FEPTH (m)	2000
DEPLOYMENT DEPTH (m)	2800
WEATHER CONDITIONS	Calm
DEPLOYMENT OPERATOR	Alberto González-Santana

Table 2. WMO 2903823 information deployment.



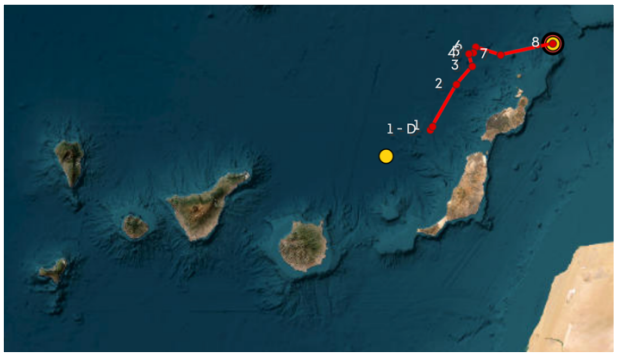


Figure 5a (left). Deployment maneuver of the float WMO 2903823 from R/V Ángeles Alvariño. Figure 5b (right). Deployment location and trajectory.

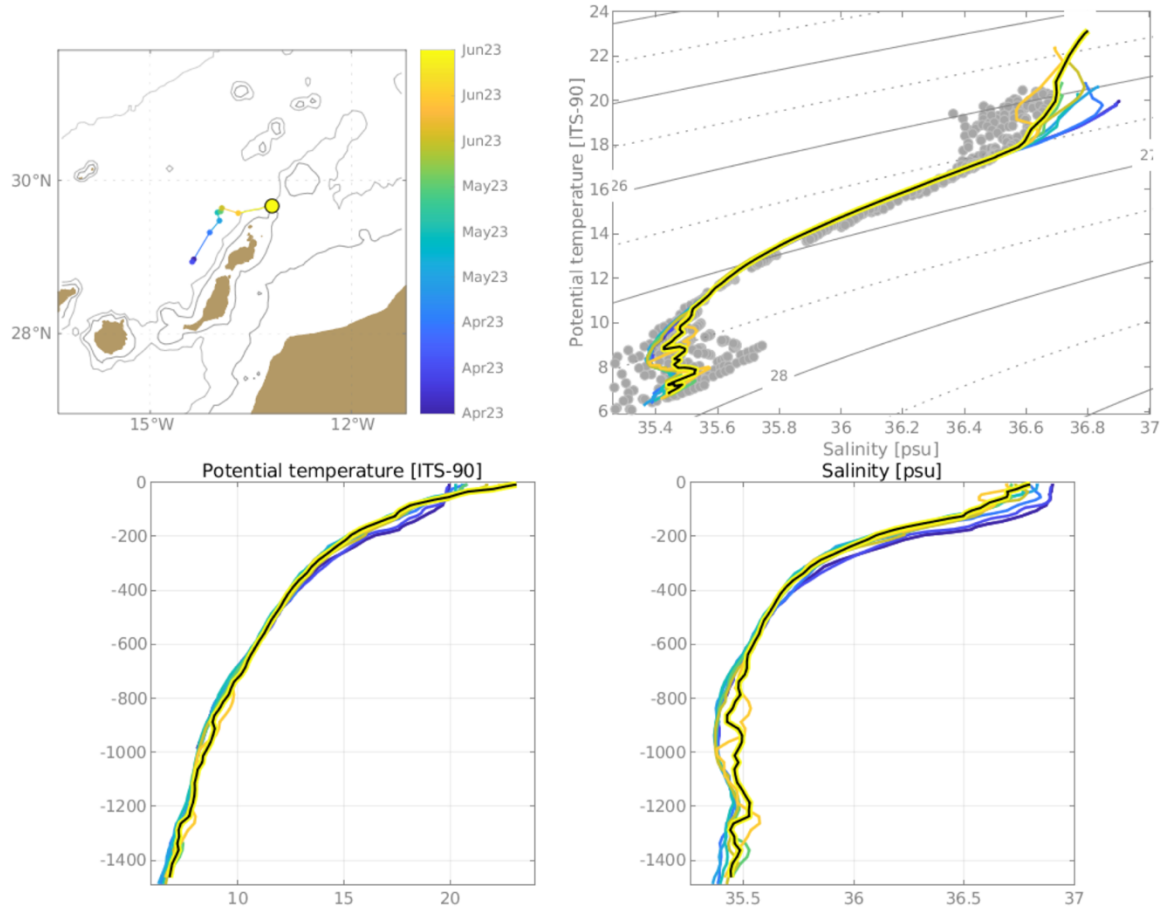


Figure 6. The trajectory of the float since the deployment is shown in the upper left side of the picture. T-S diagram of the data collected by WMO 2903823 is shown in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V Ángeles Alvariño. Potential Temperature and Salinity profiles are also shown in the lower side of the picture.

c. WMO 4903713. The following table contains all the data of the WMO 4903713 deployment during the RAPROCAN2304 cruise, deployed at station 11 (Fig. 2). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Apr 17, 2023 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/4903713.html

DATE AND TIME	16 – 04 - 2023 / 20:57 UTC
DEPLOYMENT LOCATION	29°14.77' N -15°50.50' E
DEPLOYMENT PLATFORM	R/V ÁNGELES ALVARIÑO
CRUISE ID	RAPROCAN2304
FLOAT OWNER	IEO-CSIC
PLATFORM TYPE	NKE Arvor - I
SERIAL NUMBER	AI2600-23SP003
TRANSMISSION SYSTEM	IRIDIUM
PARKING DEPTH (m)	1000

PROFILE FEPTH (m)	2000
DEPLOYMENT DEPTH (m)	1900
WEATHER CONDITIONS	Calm
DEPLOYMENT OPERATOR	Alberto González-Santana

Table 3. WMO 4903713 information deployment.

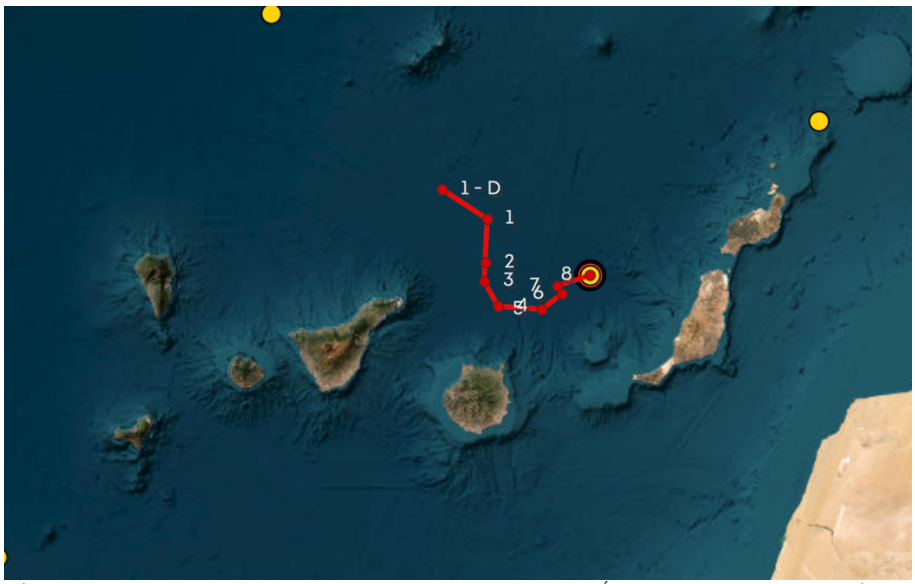


Figure 7a (above). Deployment maneuver of the float WMO 4903713 from R/V Ángeles Alvariño. Figure 7b (below). Deployment location and trajectory.

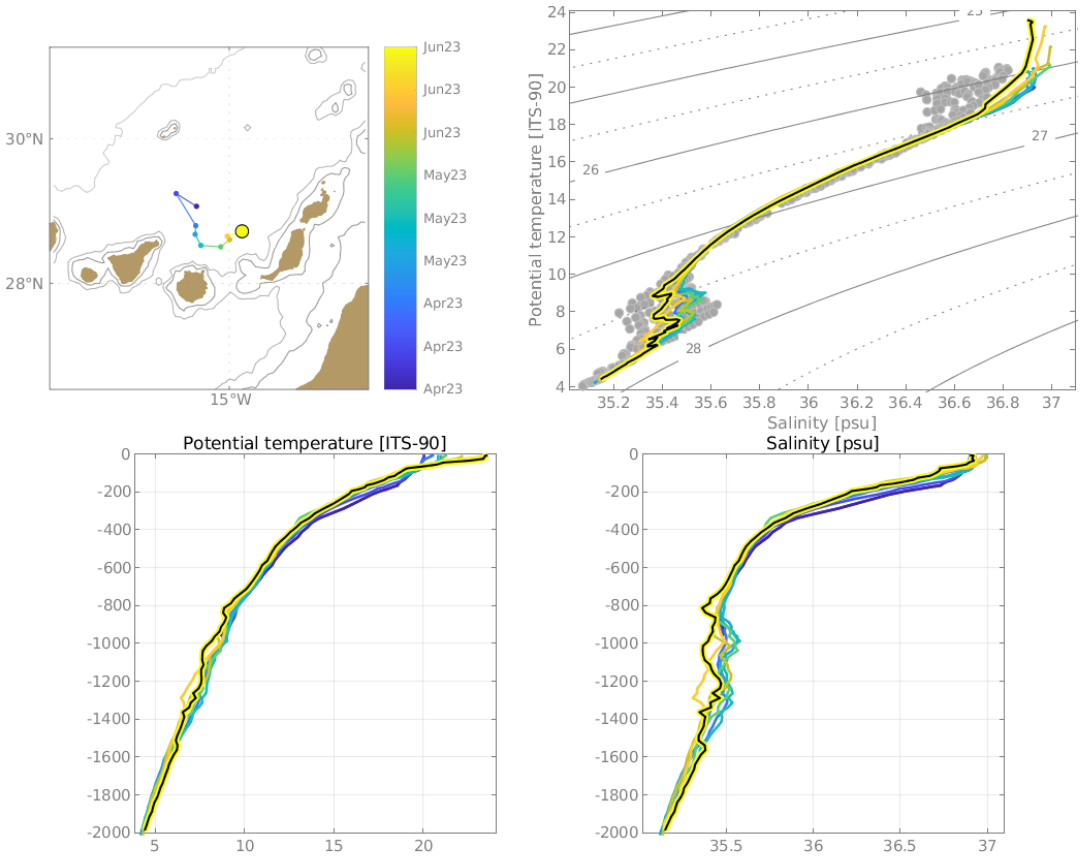


Figure 7. The trajectory of the float since the deployment is shown in the upper left side of the picture. T-S diagram of the data collected by WMO 4903713 is shown in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out by the float. The dark blue dashed line describes the CTD cast carried out from the R/V Ángeles Alvariño. Potential Temperature and Salinity profiles are also shown in the lower side of the picture.

3. Float configuration

"MC" parameters (table 4) were set according to the scientific requirements and the oceanographic study areas. The three floats were configured to dive up to 2000 m of profile depth carrying out cycles of 240 hours, with a parking depth of 1000 m.

Command no.	Name	Values	Units
Mission Commands			
MC0	Total Number of Cycles	300	Whole number
MC1	Number of cycle with "Cycle Period 1"	500	
MC2	Cycle Period 1	240	Hours
MC3	Cycle Period 2	240	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	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	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 4. Configuration sheet for the three floats deployed during the RAPROCAN2304 cruise.

4. Acknowledgements

Argo España would like to thank Fernando Alonso and rest the crew of the R/V Ángeles Alvariño, who cooperated for the success of the mission.