

# Argo-España



Parte de la estrategia global de observación del océano

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## Report on Argo float WMO 6901282 - 6901283 - 6901284 deployments

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Argo float deployments for  
**WMO 6901282 - 6901283 - 6901284**

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## 1. Deployment design

Following the Argo program goals, the float density criteria demand 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 3 float deployments in the Balearic sea area after some gaps in the network were identified.

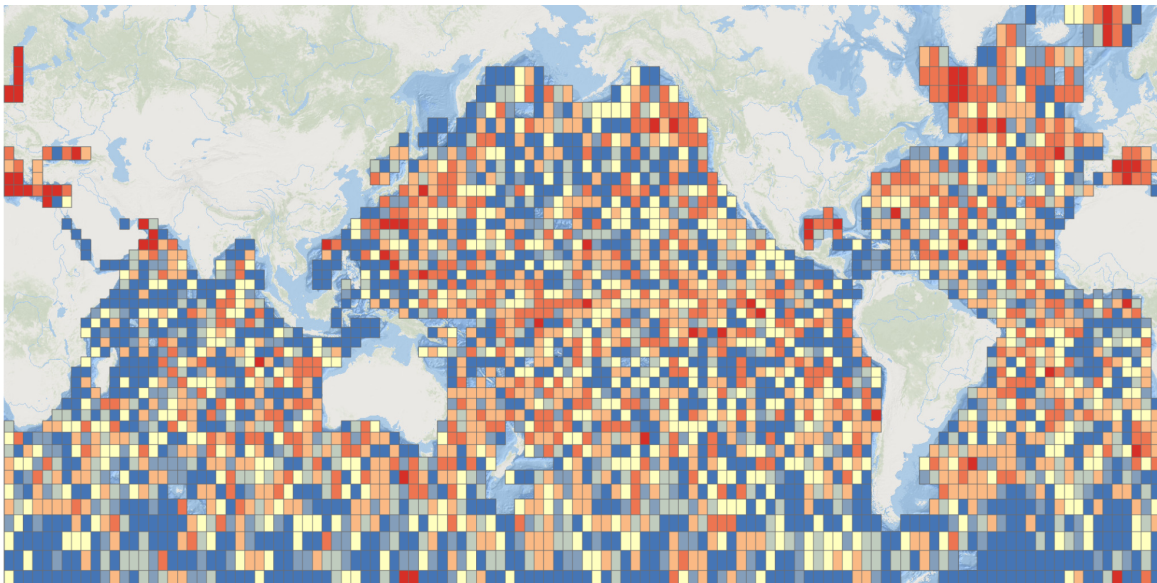


Figure 1. Density of Argo observations in 2020 (2021 is not update yet). Deployments in the South Atlantic Ocean are needed if density observations goals want to be reached

As PI of the *Canals Autumn 2021* cruise, Joaquín Tintoré (SOCIB) was requested to lead the Argo deployment planning. The R/V SOCIB was planned to carry out the research in the Balearic Sea, through Denia - Ibiza - Mallorca (Fig. 2a). Floats deployed at the Balearic Sea are occasionally driven out to shore land, making this area a difficult region to observe continuously. The survey was divided in several transects, which includes an ideal location for Argo España purposes. Stations RADMED\_06 and S2\_05 (Fig. 2b, 2c) were selected for the Argo float deployments.



## 2. Deployment data

Information of the float deployments is shown in these paragraphs.

- a. **WMO 6901282.** The following table contains all the data of the WMO 6901282 deployment during *Canales Autumn 2021* cruise, deployed at RADMED\_06 station (Fig. 2b). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Dec 15, 2021 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/6901282.html>

DATE AND TIME	2021 - 12 - 13 / 12:17 UTC
DEPLOYMENT LOCATION	39°16,585'N 1°58,838' E
DEPLOYMENT PLATFORM	R/V SOCIB
CRUISE ID	<i>Canales Autumn 2021</i>
FLOAT OWNER	SOCIB
PLATFORM TYPE	NKE Arvor - I
SERIAL NUMBER	AI2600-21EU001
TRANSMISSION SYSTEM	IRIDIUM
PARKING DEPTH (m)	350 / 1000
PROFILE DEPTH (m)	2000
DEPLOYMENT DEPTH (m)	585
WEATHER CONDITIONS	<i>waves 0.5 m, wind 5 knots, wind direction SW (205°), air temperature 16°C</i>
DEPLOYMENT OPERATOR	Nikolaus Wirth

Table 1. WMO 6901282 information deployment.

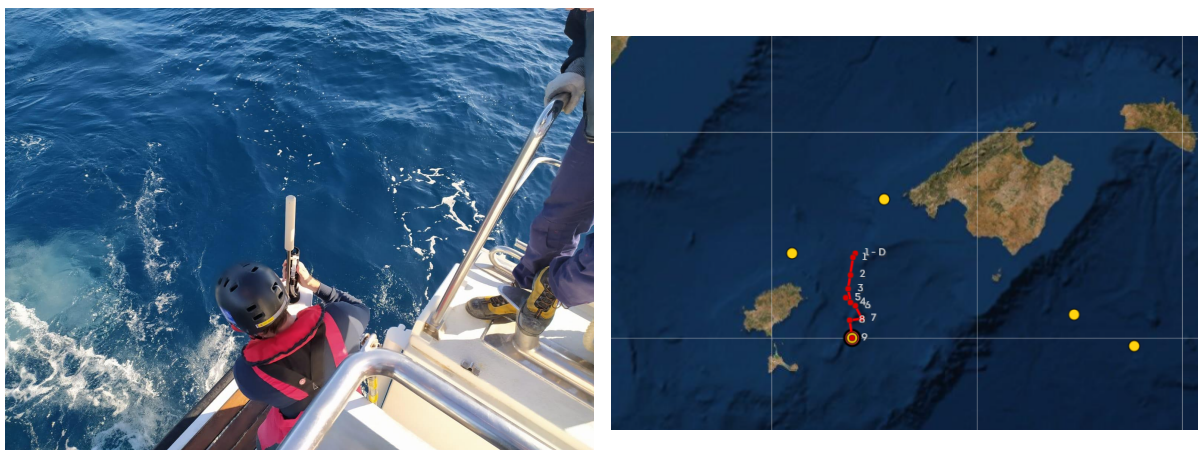


Figure 3. Left: Deployment manoeuvre of the float WMO 6901282 from R/V SOCIB. Right: Deployment location (RADMED\_06, Fig. 2b).

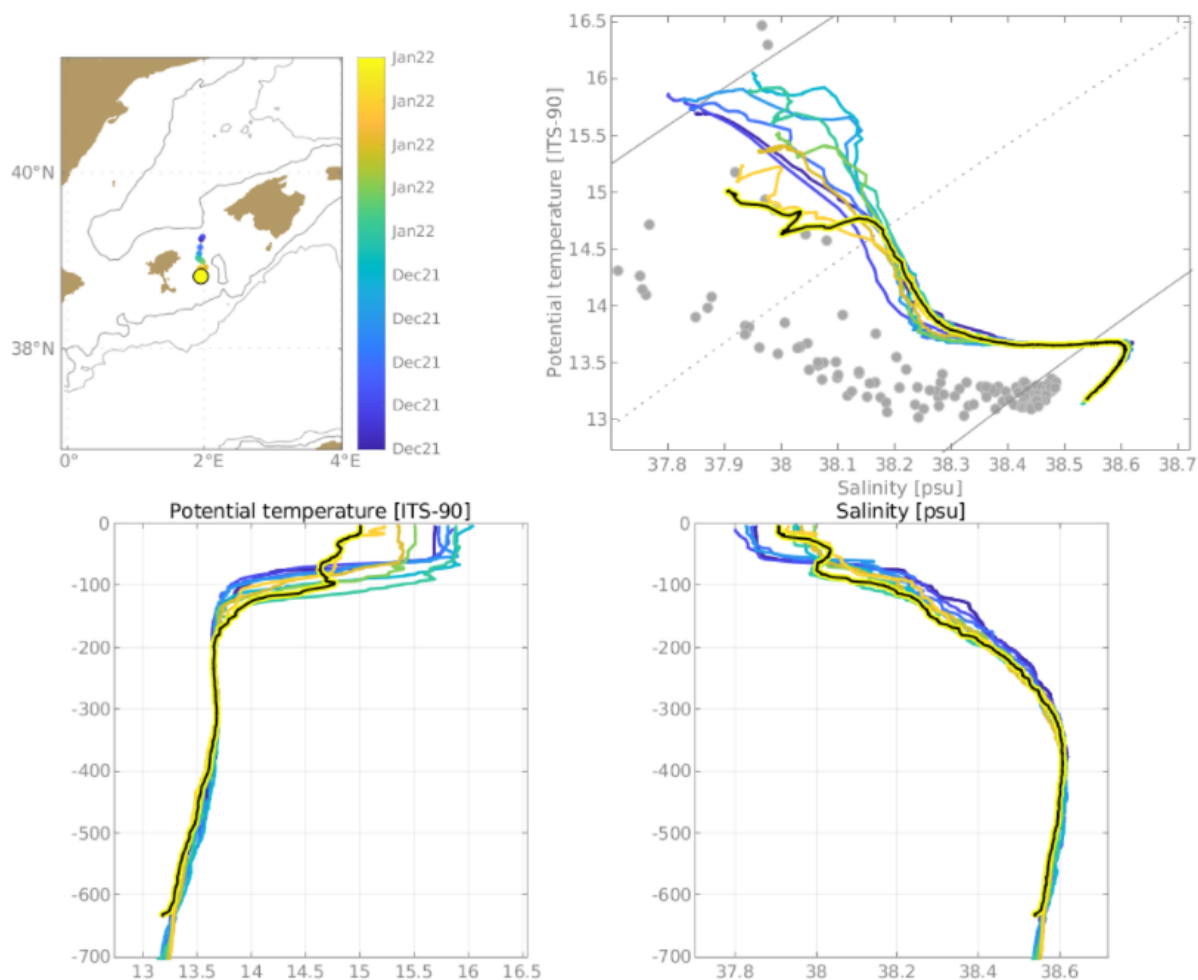


Figure 4. The trajectory of the float since the deployment is showed in the upper left side of the picture. T-S diagram of the data collected by WMO 6901282 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out 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 6901283.** The following table contains all the data of the WMO 6901283 deployment during *Canales Autumn 2021* cruise, deployed at S2\_05 station (Fig. 2c). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Dec 15, 2021 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/6901283.html>

DATE AND TIME	2021 - 12 - 14 / 11:57 UTC
DEPLOYMENT LOCATION	39°00.030' N 0°43.759' E
DEPLOYMENT PLATFORM	R/V SOCIB
CRUISE ID	<i>Canales Autumn 2021</i>
FLOAT OWNER	SOCIB
PLATFORM TYPE	NKE Arvor - I
SERIAL NUMBER	AI2600-21EU002
TRANSMISSION SYSTEM	IRIDIUM
PARKING DEPTH (m)	350 / 1000
PROFILE DEPTH (m)	2000
DEPLOYMENT DEPTH (m)	950
WEATHER CONDITIONS	<i>waves 0.5 m, wind 6 knots, wind direction E (78°), air temperature 16°C</i>
DEPLOYMENT OPERATOR	Nikolaus Wirth

Table 2. WMO 6901283 information deployment.

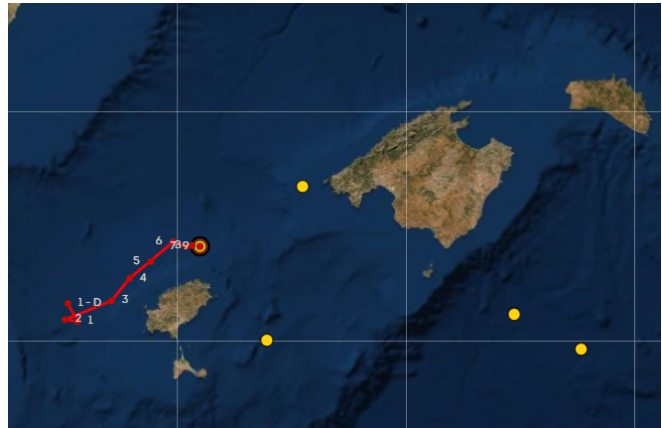
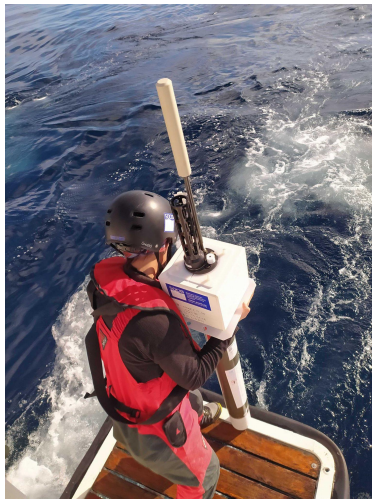


Figure 5. Left: Deployment manoeuvre of the float WMO 6901283 from R/V SOCIB. Right: Deployment location (S2\_05, Fig. 2c).

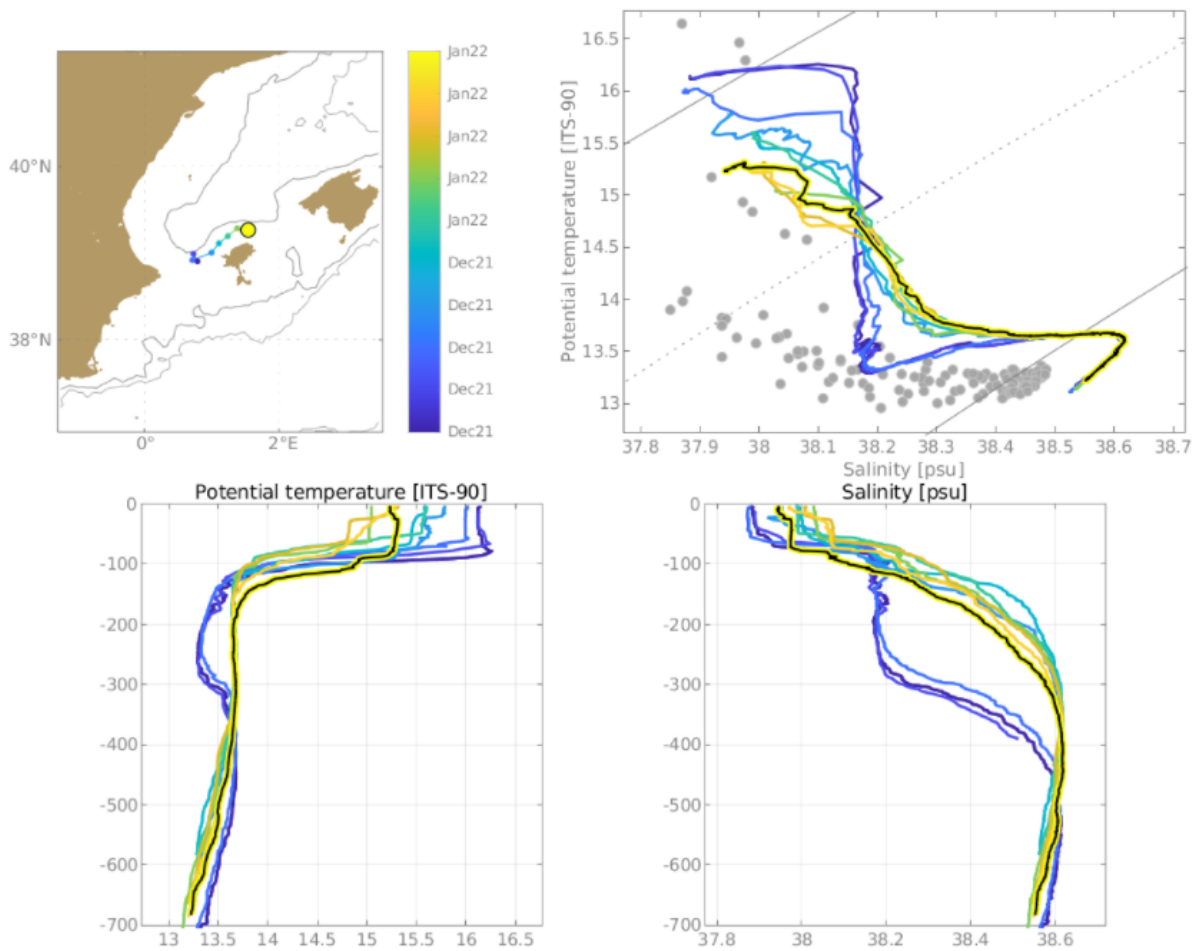


Figure 6. The trajectory of the float since the deployment is shown in the upper left side of the picture. T-S diagram of the data collected by WMO 6901283 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out 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.

- c. **WMO 6901284.** The following table contains all the data of the WMO 6901284 deployment during *Canales Autumn 2021* cruise, deployed at S2\_05 station (Fig. 2c). No troubled issues during the deployment were reported. CTD cast is available at the deployment location. Coriolis was notified on Dec 15, 2021 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/6901284.html>

DATE AND TIME	2022 - 12 - 14 / 11:57 UTC
DEPLOYMENT LOCATION	39°00.031' N 0°43.751' E
DEPLOYMENT PLATFORM	R/V SOCIB
CRUISE ID	<i>Canales Autumn 2021</i>
FLOAT OWNER	SOCIB
PLATFORM TYPE	NKE Arvor - I
SERIAL NUMBER	AI2600-21EU003
TRANSMISSION SYSTEM	IRIDIUM
PARKING DEPTH (m)	350 / 1000
PROFILE DEPTH (m)	2000
DEPLOYMENT DEPTH (m)	950
WEATHER CONDITIONS	<i>waves 0.5 m, wind 6 knots, wind direction E (78°), air temperature 16°C</i>
DEPLOYMENT OPERATOR	Nikolaus Wirth

Table 3. WMO 6901284 information deployment.

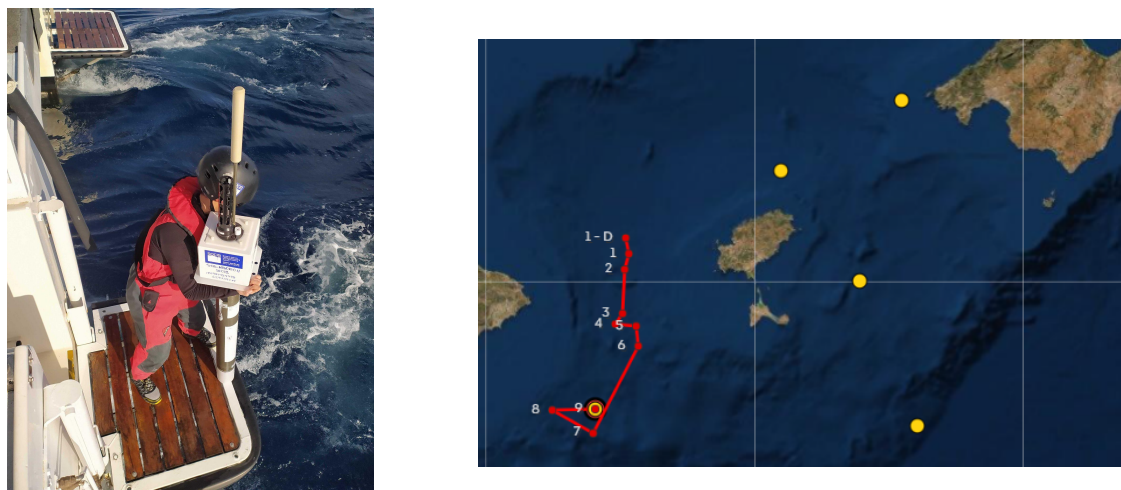


Figure 7. Left: Deployment manoeuvre of the float WMO 6901284 from R/V SOCIB. Right: Deployment location (S2\_05, Fig. 2c).

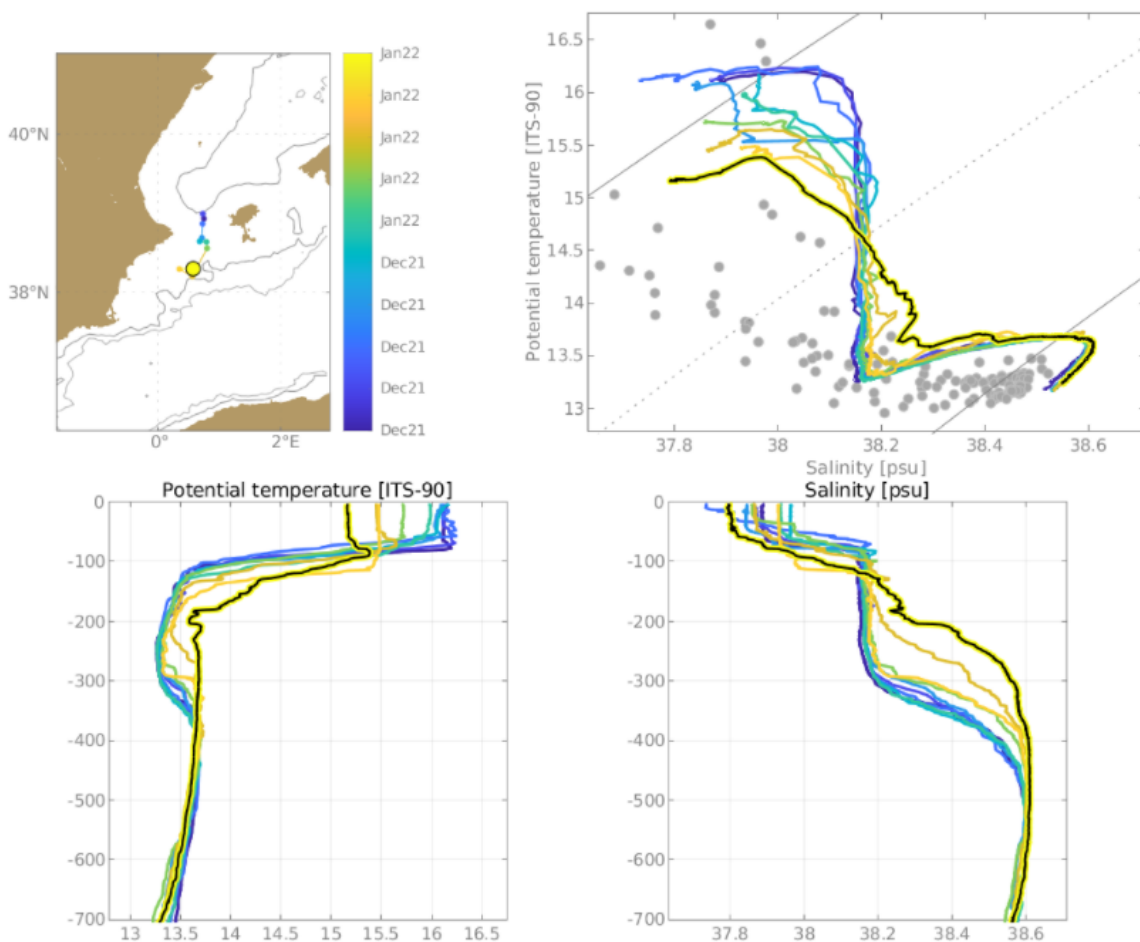


Figure 8. The trajectory of the float since the deployment is showed in the upper left side of the picture. T-S diagram of the data collected by WMO 6901284 is showed in the upper right side of the picture. The grey points are the climatology of the area. The black line is the first profile carried out 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 4) were set according to the scientific requirements and the oceanographic area of study (Balearic Sea). The floats WMO 6901282, 6901283 and 6901284 dive up to 2000 m depth carrying out cycles of 121 hours, with a parking depth of 350 m (1) and 1000 m (2).

Command no.	Name	Values	Units
<b>Mission Commands</b>			
MC0	Total Number of Cycles	500	Whole number
MC1	Number of cycle with "Cycle Period 1"	500	
MC2	Cycle Period 1	121	Hours
MC3	Cycle Period 2	121	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	350	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	2	dBar
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	Seconds
MC31	In air acq.: Acquisition duration	5	Minutes

Table 4. Configuration sheet for the float deployed during *Canales Autumn 2021* cruise.

### 4. Acknowledgements

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