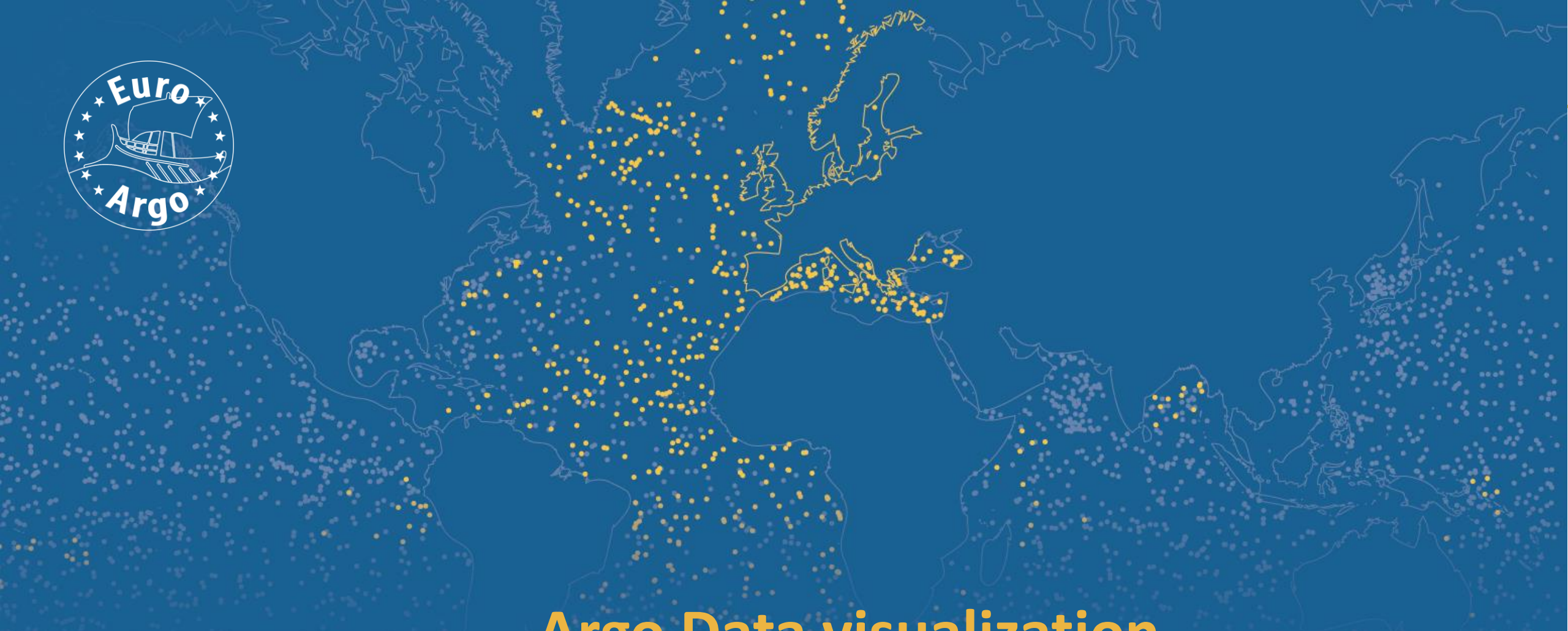


Argo Data visualization

Monitoring Argo floats – Euro-Argo

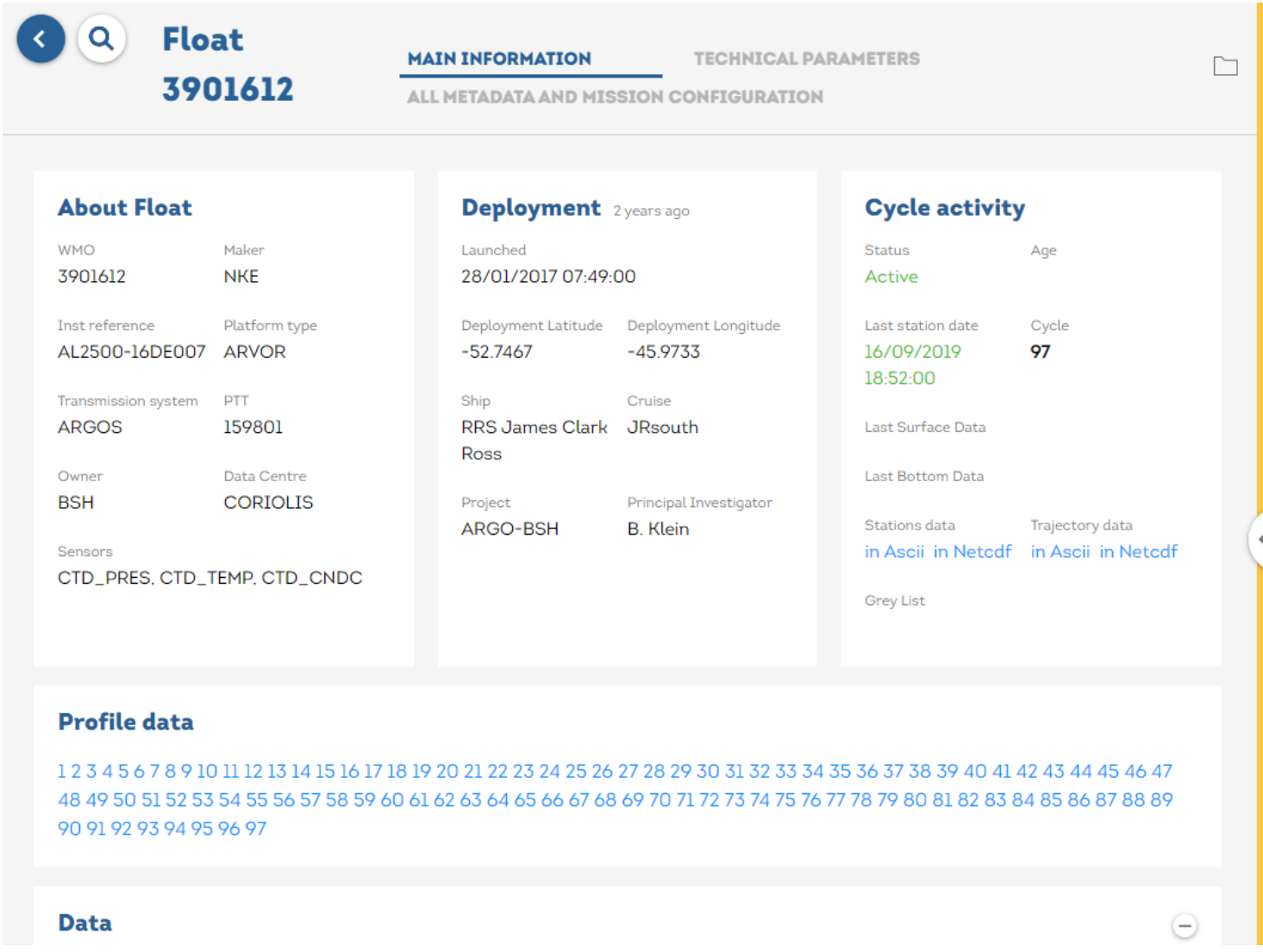
https://fleetmonitoring.euro-argo.eu

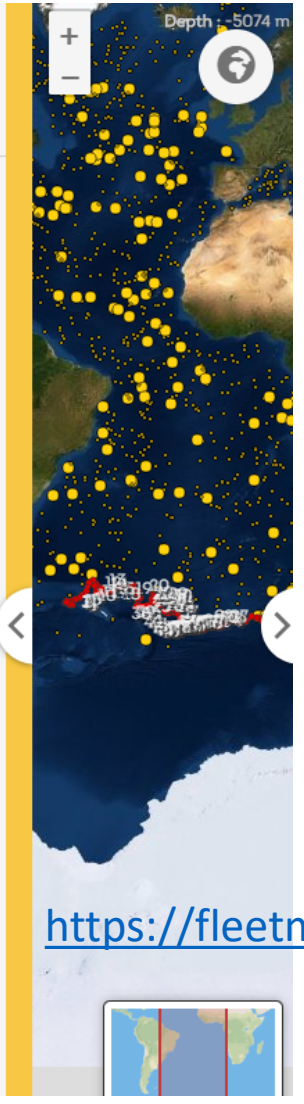
Euro-Argo fleet monitoring

- Dashboard
- Float webpages

Monitoring Argo floats – History

- Euro-Argo **float webpage** + dashboard all floats (update 2019-2020)

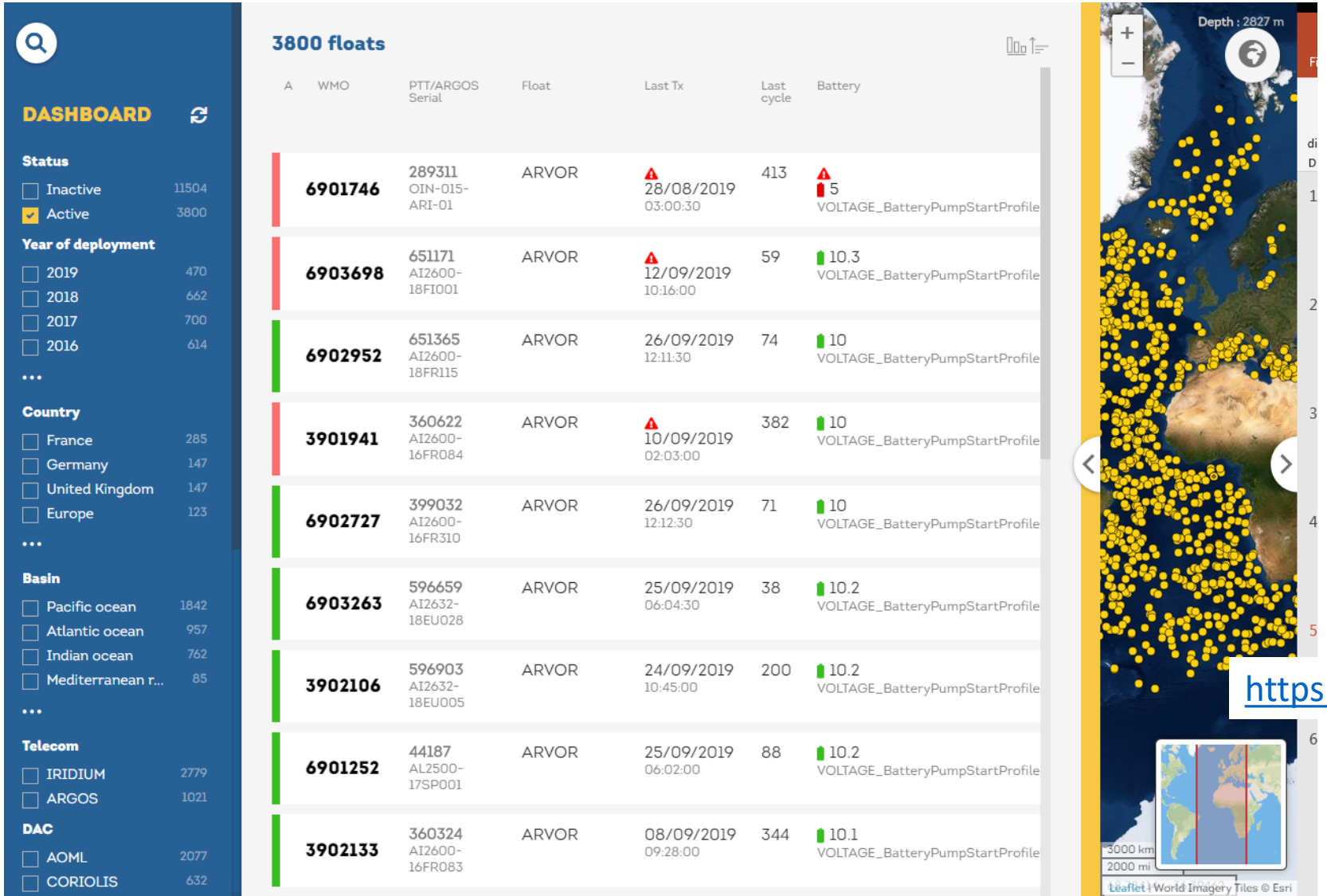




https://fleetmonitoring.euro-argo.eu/float/3901612

Monitoring Argo floats – History

- Euro-Argo float webpage + **dashboard all floats** (update 2019-2020)



https://fleetmonitoring.euro-argo.eu/dashboard

Monitoring Argo floats – Targeted audience

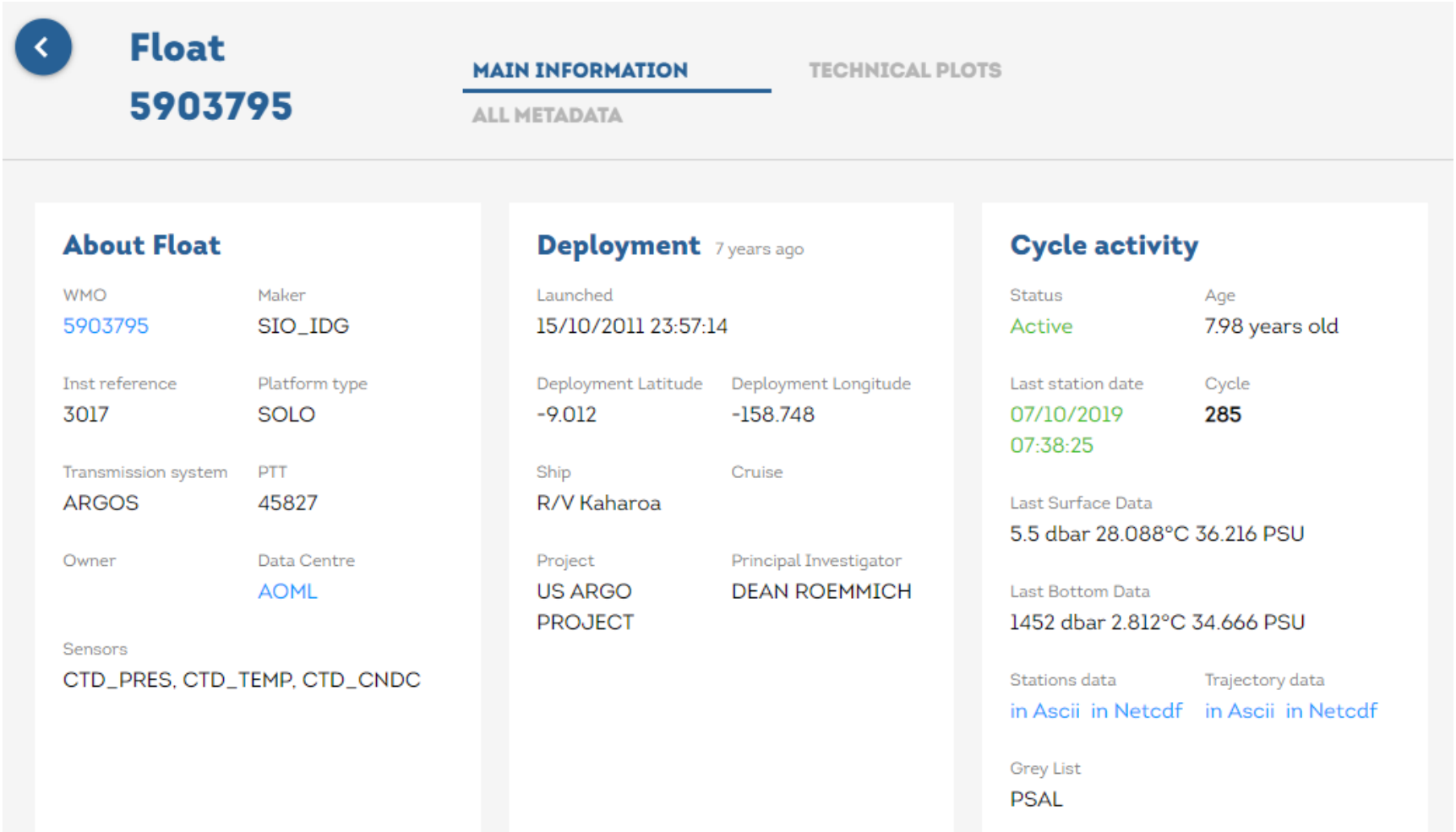
https://fleetmonitoring.euro-argo.eu/dashboard

- “Visualization of Argo profiling float metadata, ocean measurements, trajectories and technical parameters”
- For
  - **Argo fleet operators**
  - PIs
  - General public and communication activities
  - ARCs

Monitoring Argo floats – Demo

https://fleetmonitoring.euro-argo.eu/dashboard

- "Visualization of Argo profiling **float metadata**, ocean measurements, trajectories and technical parameters"

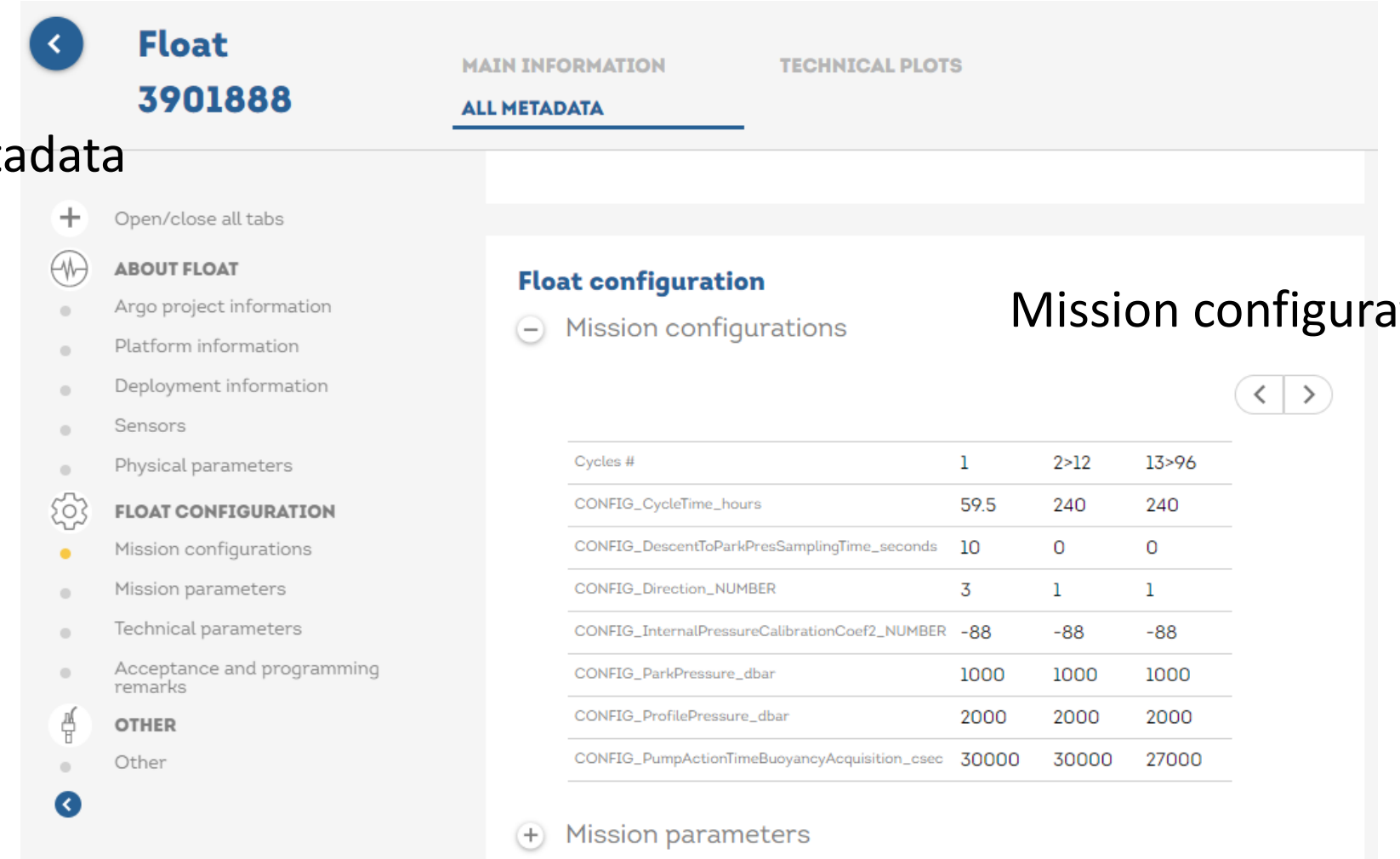


Monitoring Argo floats – Demo

https://fleetmonitoring.euro-argo.eu/dashboard

- "Visualization of Argo profiling **float metadata**, ocean measurements, trajectories and technical parameters"

Hierarchized metadata



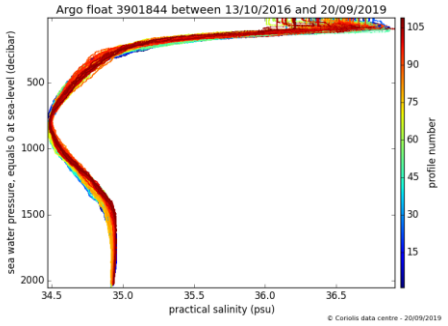
Mission configurations

Cycles #	1	2>12	13>96
CONFIG_CycleTime_hours	59.5	240	240
CONFIG_DescentToParkPresSamplingTime_seconds	10	0	0
CONFIG_Direction_NUMBER	3	1	1
CONFIG_InternalPressureCalibrationCoef2_NUMBER	-88	-88	-88
CONFIG_ParkPressure_dbar	1000	1000	1000
CONFIG_ProfilePressure_dbar	2000	2000	2000
CONFIG_PumpActionTimeBuoyancyAcquisition_csec	30000	30000	27000

Monitoring Argo floats – Demo

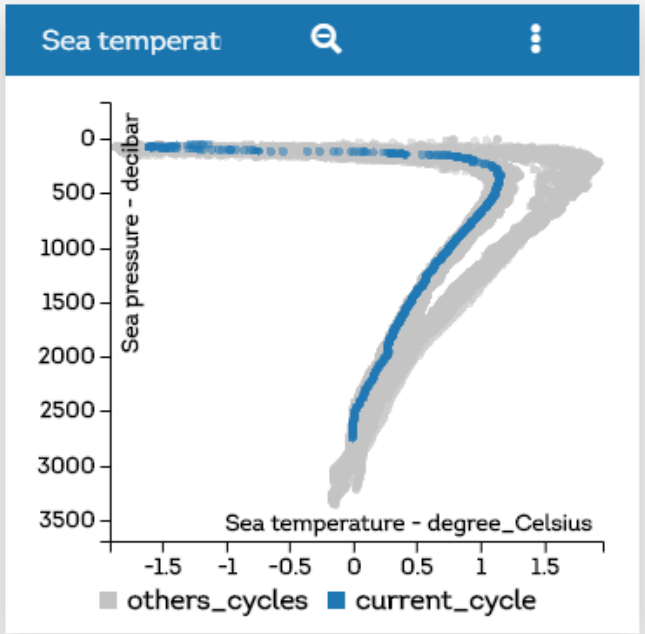
https://fleetmonitoring.euro-argo.eu/dashboard

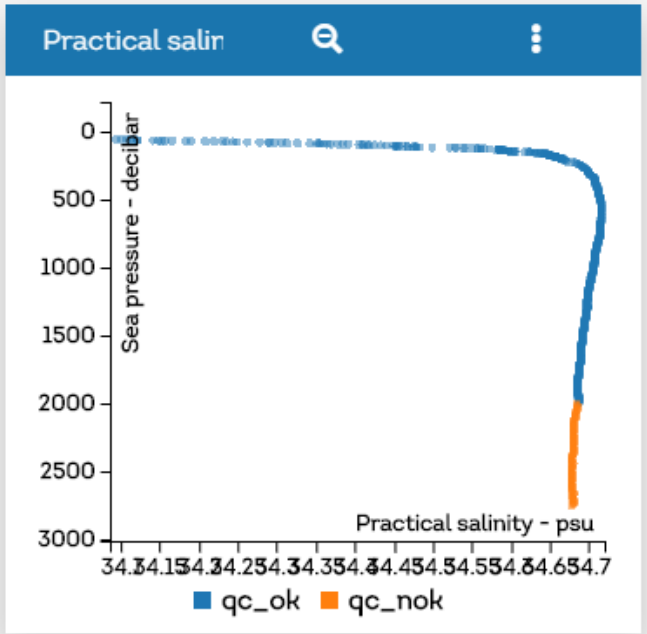
- "Visualization of Argo profiling float metadata, **ocean measurements**, trajectories and technical parameters"
- Data popup (will be updated in 2020)

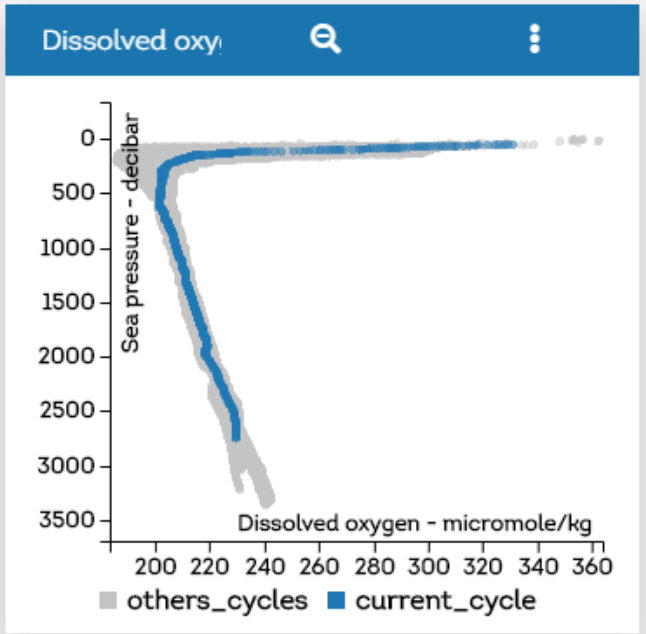


Float 3902129 **Cycle 34** **ASCENDING**

in Ascii in Netcdf



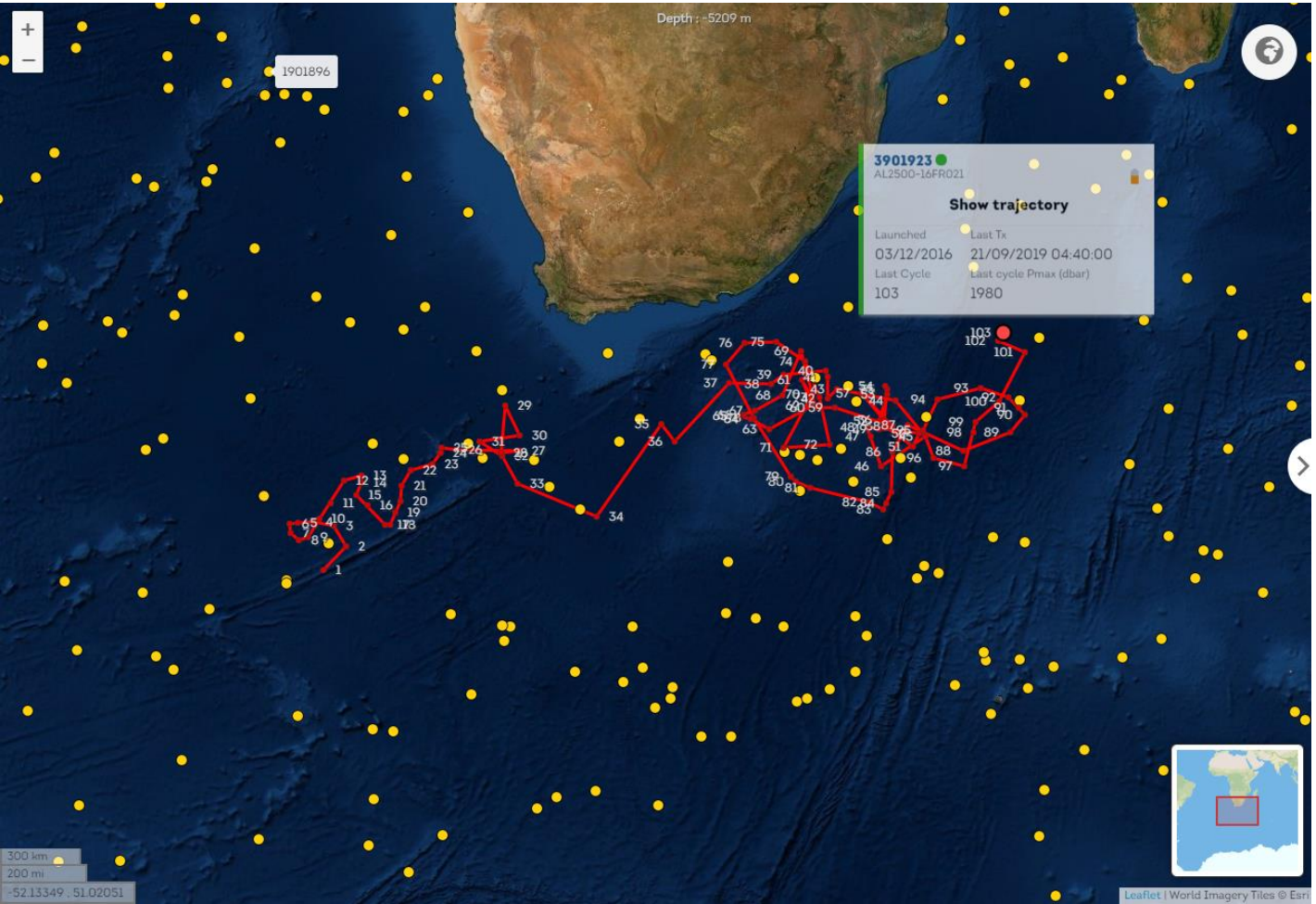




Monitoring Argo floats – Demo

https://fleetmonitoring.euro-argo.eu/dashboard

- “Visualization of Argo profiling float metadata, ocean measurements, **trajectories** and technical parameters”

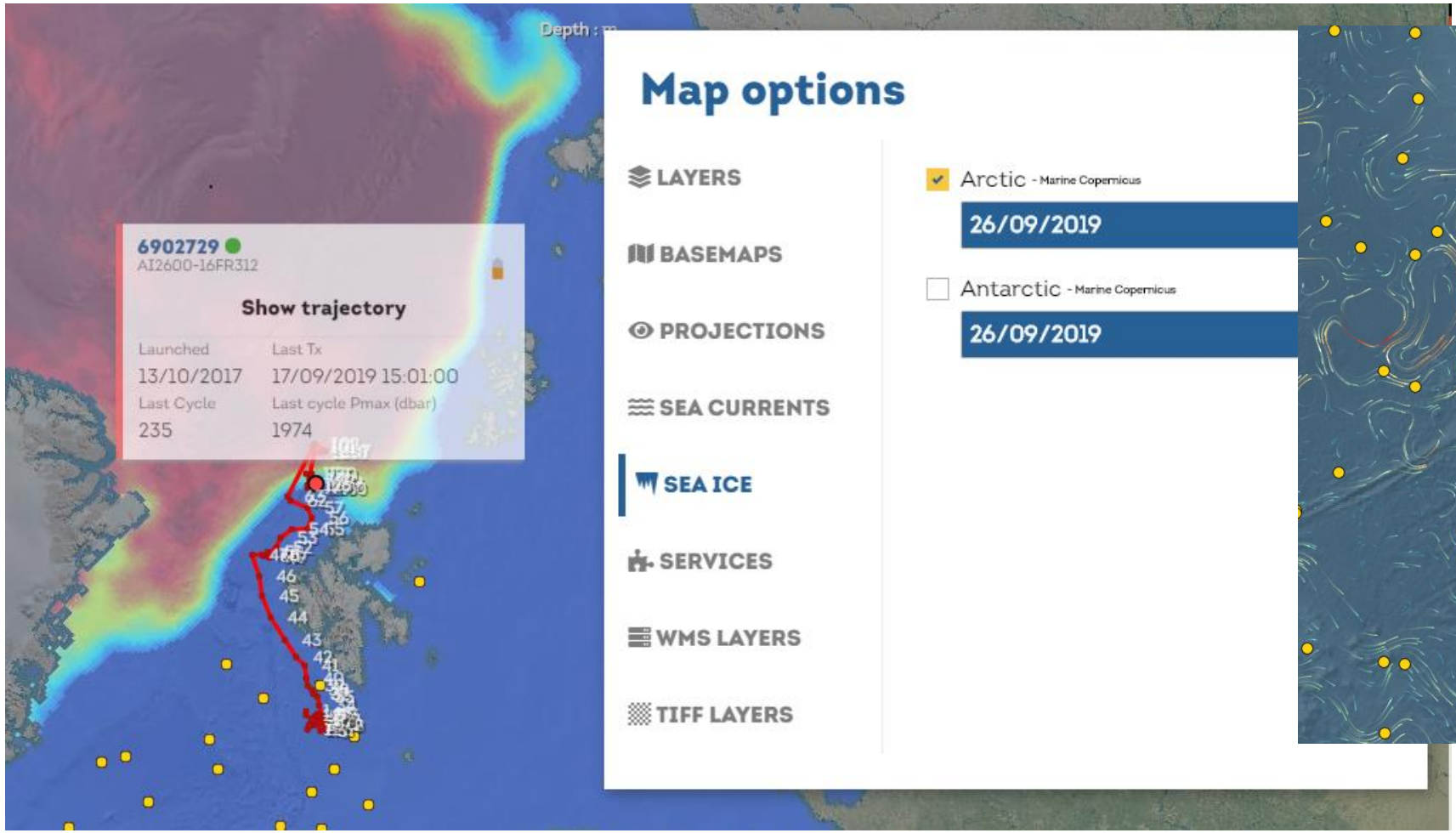


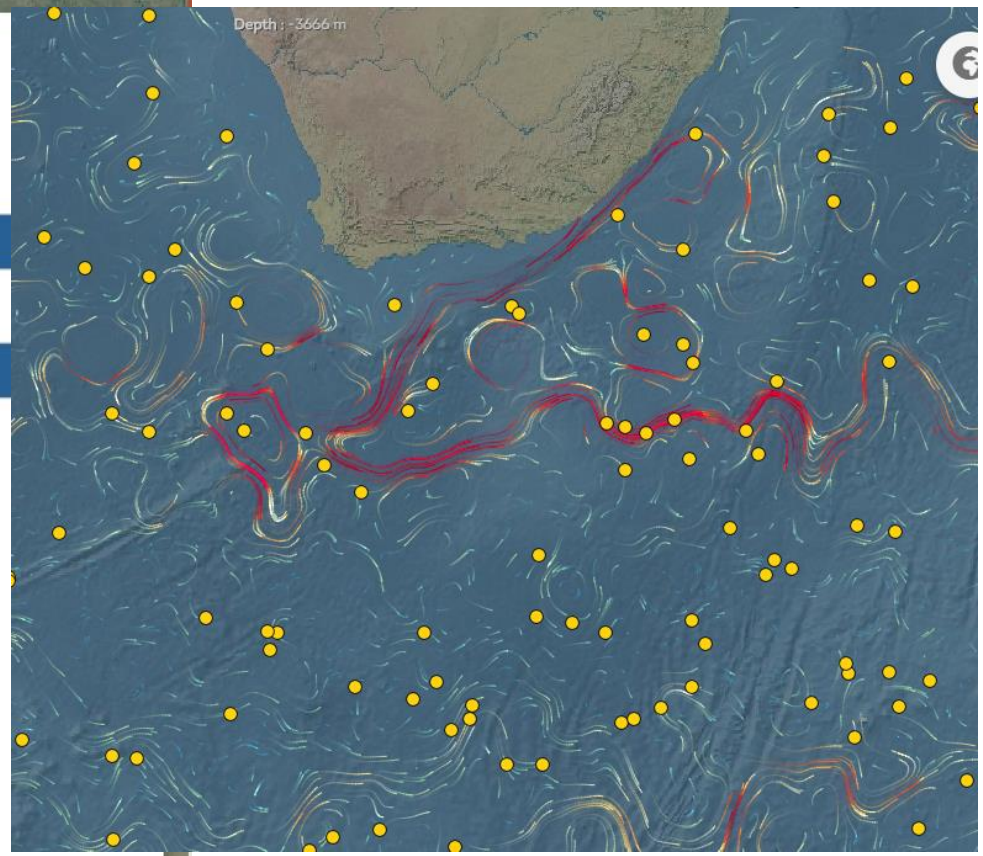
- Basemaps
- Projections
- Context (depth, sea ice, sea currents, etc.)
- Last position of all floats
- …

Monitoring Argo floats – Demo

https://fleetmonitoring.euro-argo.eu/dashboard

- "Visualization of Argo profiling float metadata, ocean measurements, **trajectories** and technical parameters"

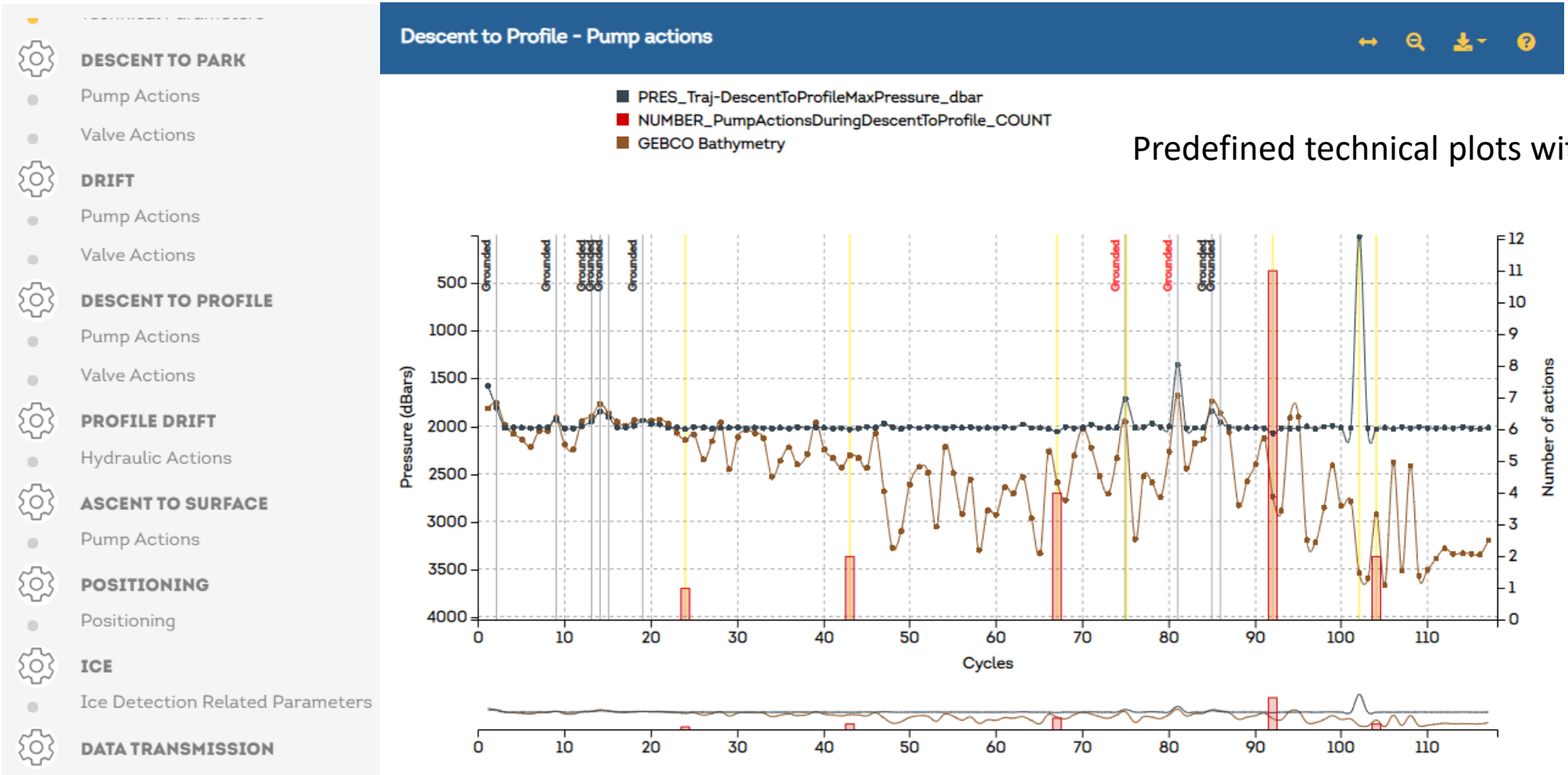




Monitoring Argo floats – Demo

https://fleetmonitoring.euro-argo.eu/dashboard

- "Visualization of Argo profiling float metadata, ocean measurements, trajectories and **technical parameters**"

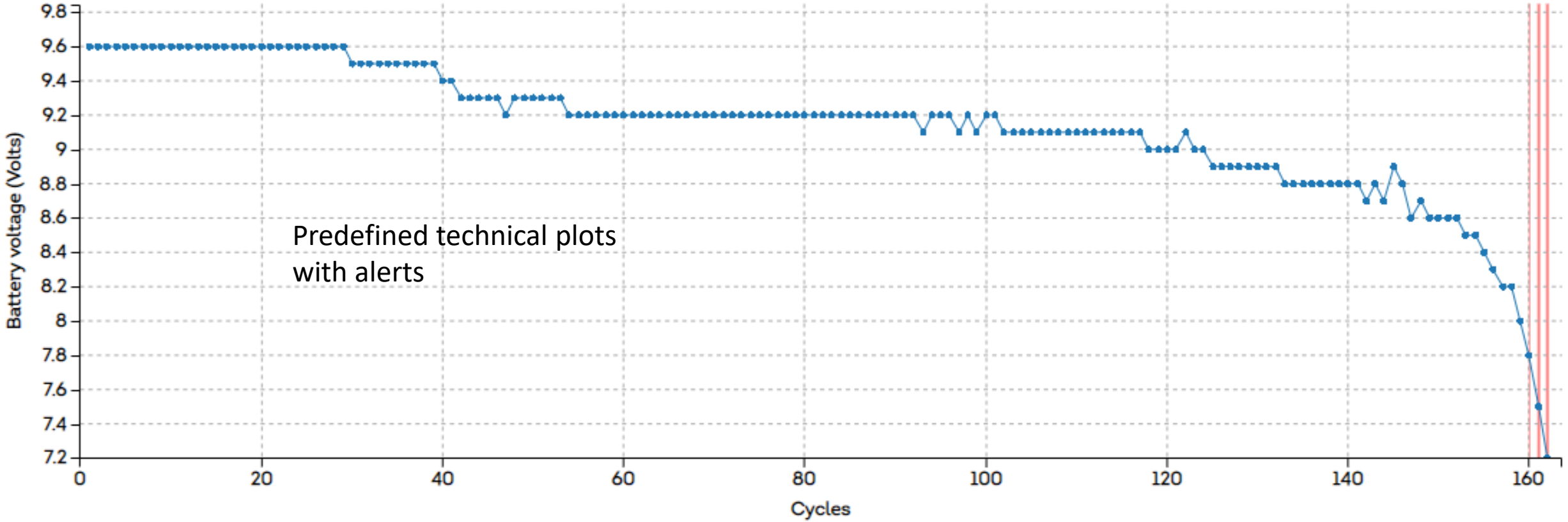


Predefined technical plots with alerts

Monitoring Argo floats – Demo

https://fleetmonitoring.euro-argo.eu/dashboard

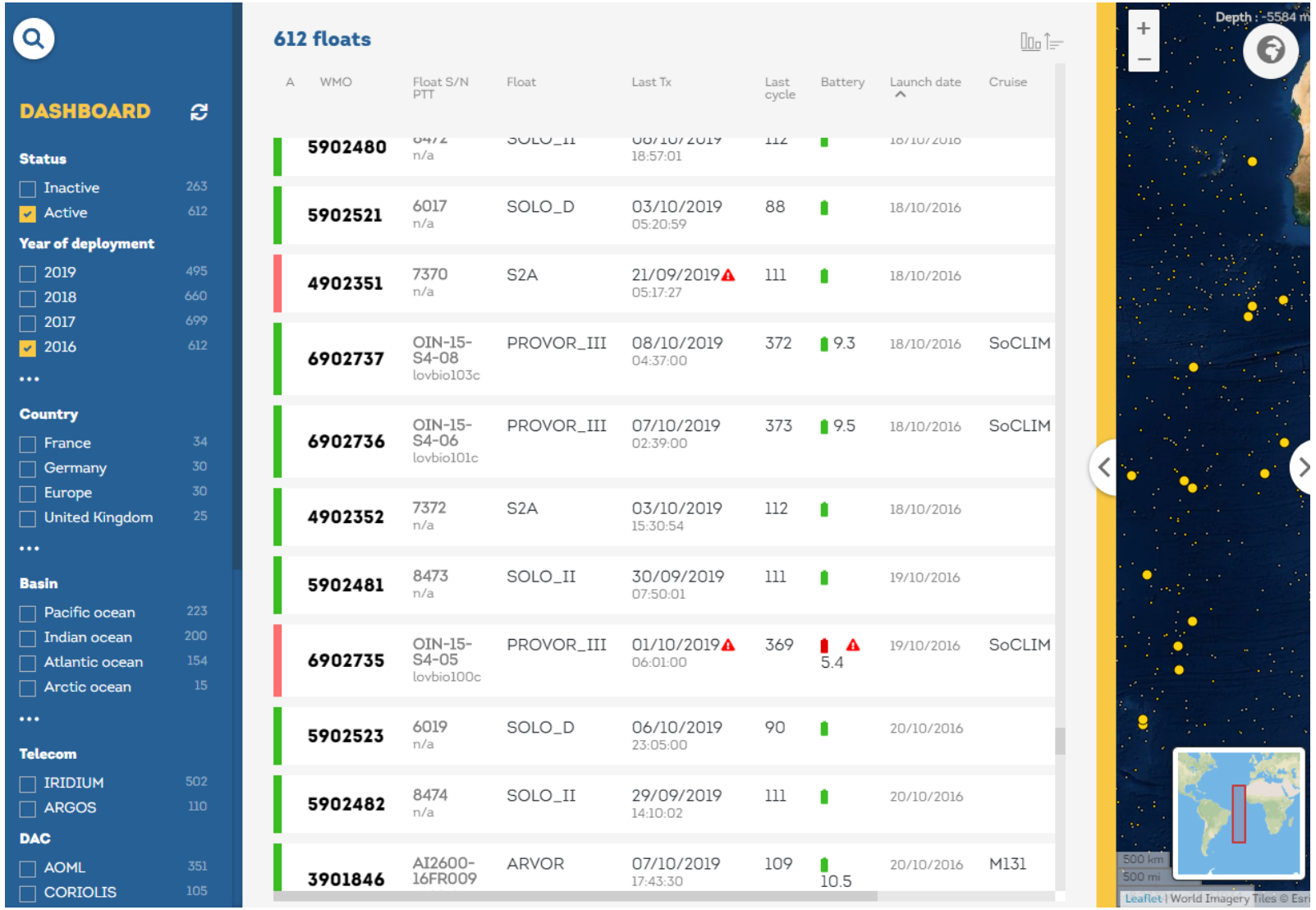
- "Visualization of Argo profiling float metadata, ocean measurements, trajectories and **technical parameters**"



Monitoring Argo floats – Demo

https://fleetmonitoring.euro-argo.eu/dashboard

- **Dashboard**



- Indexes
- Results table
- Link to float pages
- Alerts
- Map

Euro-Argo fleet monitoring

- Use cases

Dashboard – ALERTS

- Your floats (selection through indexes)
- Sort by Alert
  - **Missing Profile** (today > cycle_period + last Tx): your float is probably dead or not decoded
  - **Battery**: your float will probably die soon; consider recovery?

The dashboard displays information on float last cycle only

Dashboard – ALERTS

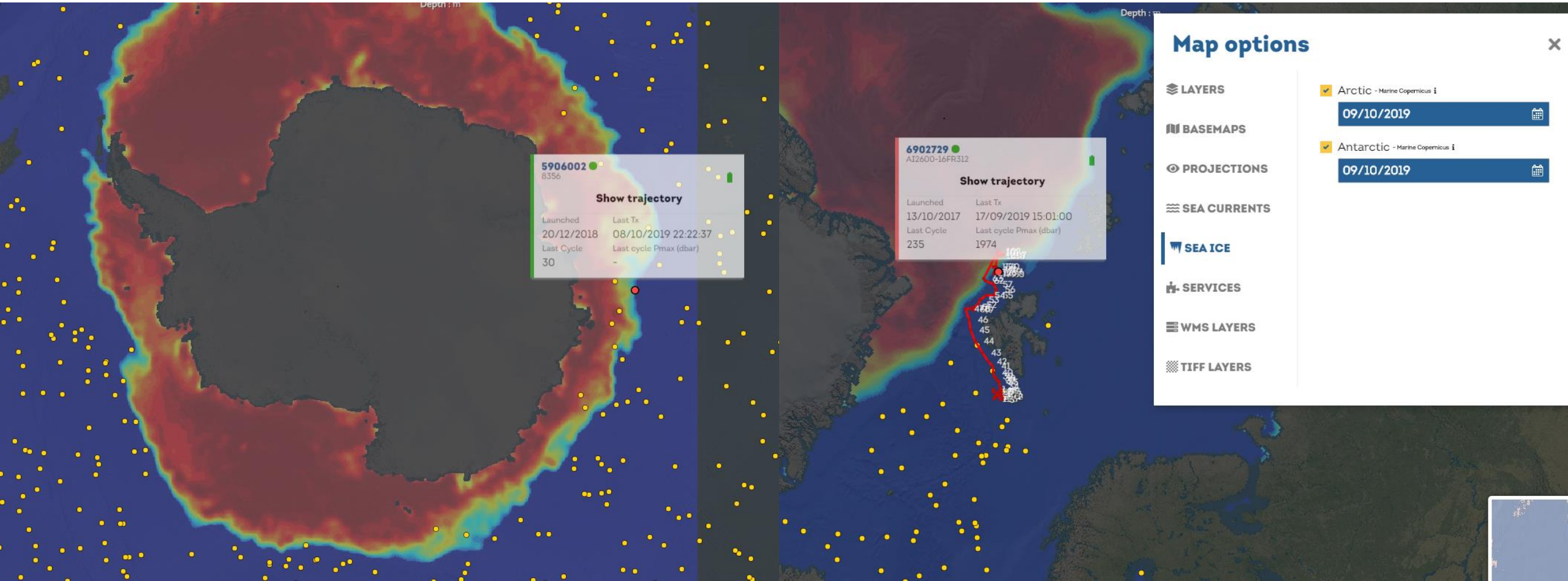
- **Surface** (End of Life messages, grounded @ 0 dbar, tech messages but not profile data, saturation of valve actions during buoyancy reduction phase, etc.): check your float!
- **Grounding** (alert if not coherent with bathy; to be refined)
- **Profile max pressure**: your float did not reach its target profile pressure +/- tolerance

A	WMO	Last Tx	Last cycle	Battery	Last cycle Pmax (dbar)	Surface float	Last cycle grounded
	3901860	12:22:55		10.6			
	3901941	10/09/2019 02:03:00	382	10	0	10/09/2019 06:28:23	G
	6902811	30/09/2019 07:04:40	79	12.6	2967		G
	6901269	01/10/2019 05:54:00	48	9.5	1360		G

	6902753	30/09/2019 23:55:00	77	9.2	2070
	6902904	09/10/2019 09:24:00	83	9.7	1950
	6900900	02/10/2019 06:13:00	170	9.5	1990

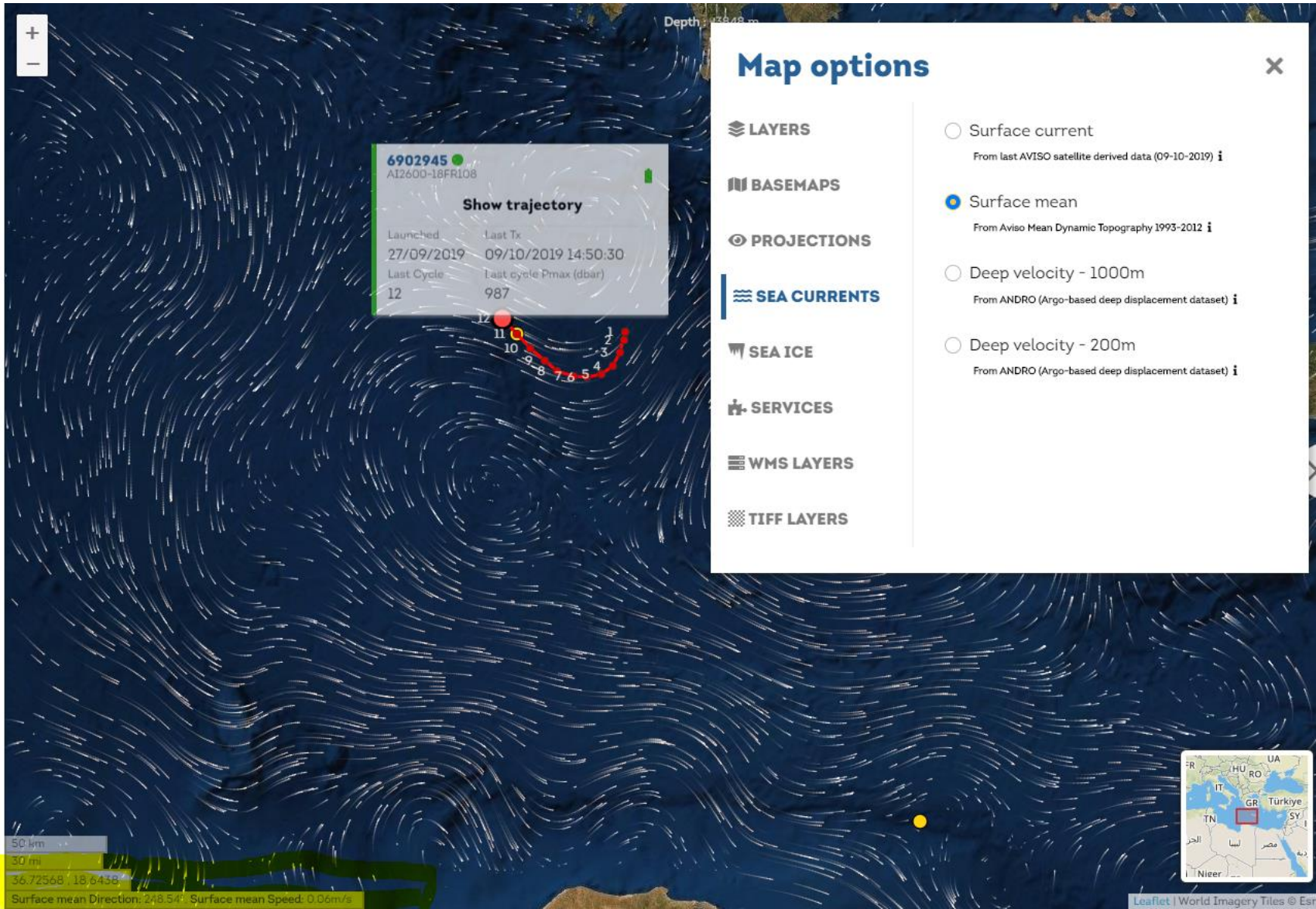
Dashboard – Map – ICE

- **Check float positions with last sea ice edge:**
  adjust float parameters (ISA, cycle period etc.) before the float is trapped under ice;
- Go back in time to check ice edges with float trajectory and profile dates



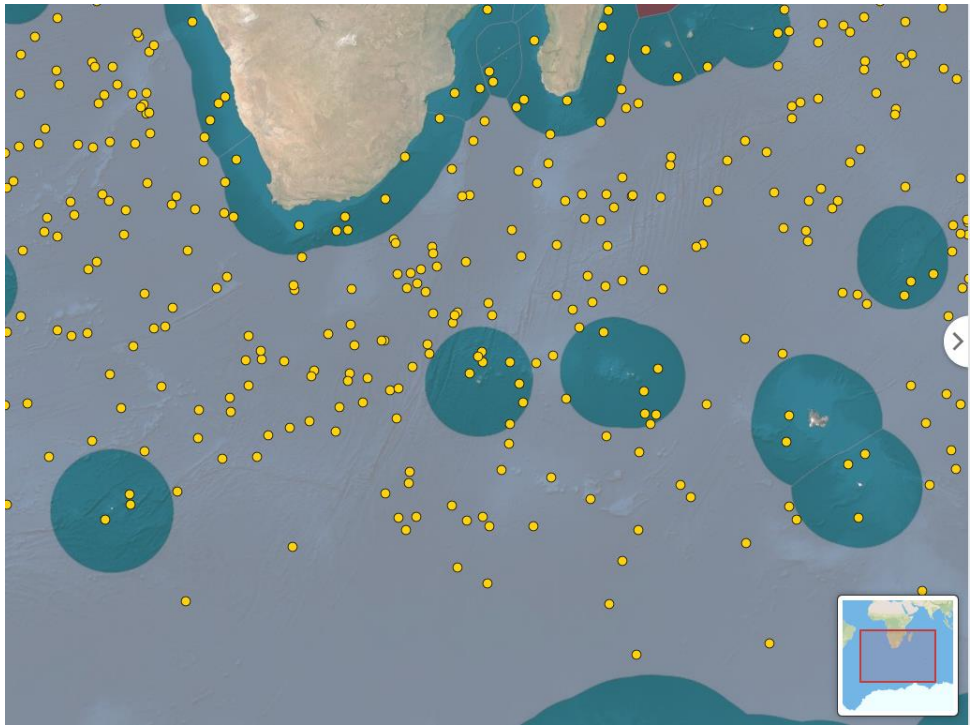
Dashboard – Map – CURRENTS

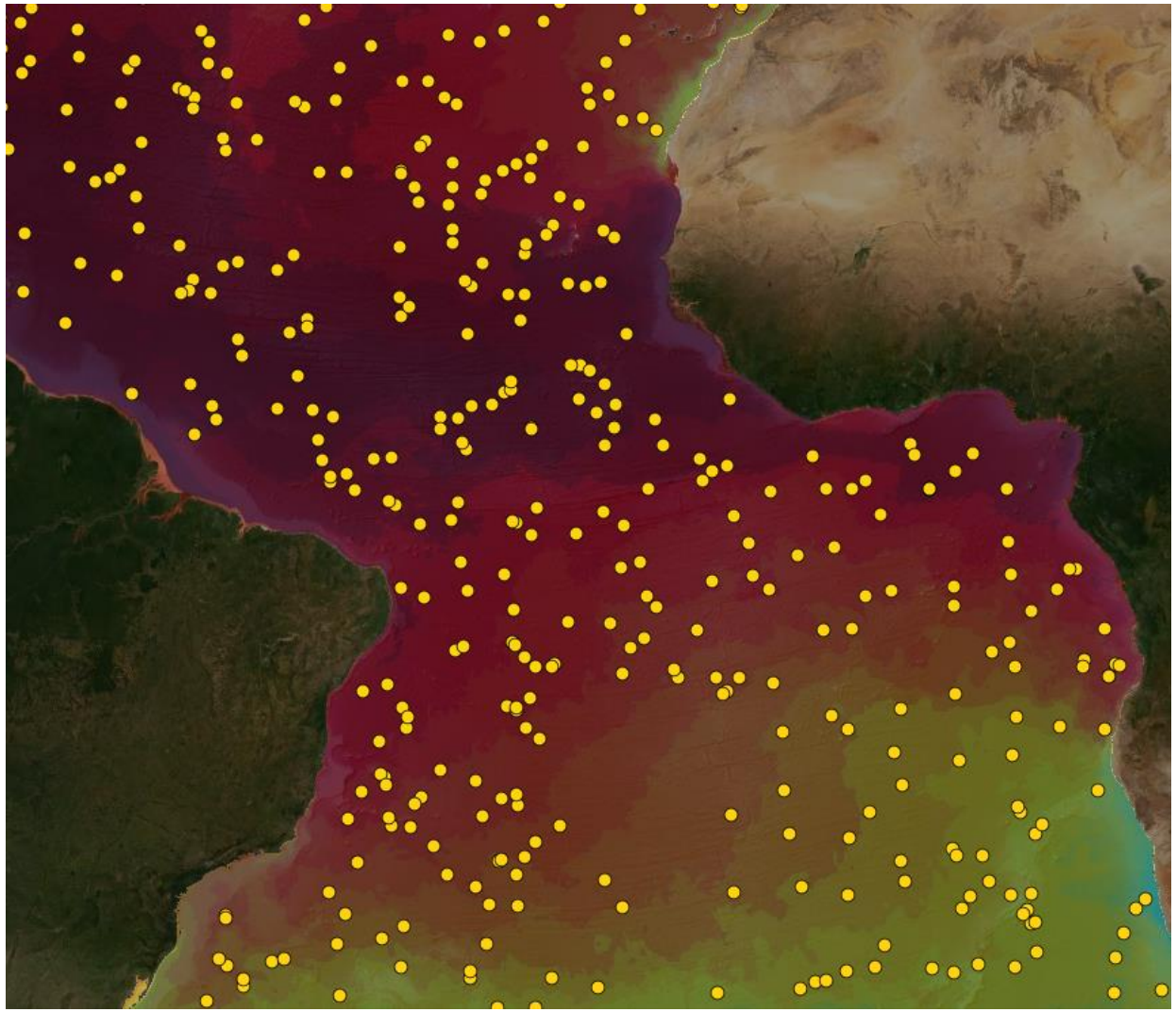
- Float trajectory with surface current (AVISO) deep current (ANDRO)



Dashboard – Map – Other Layers

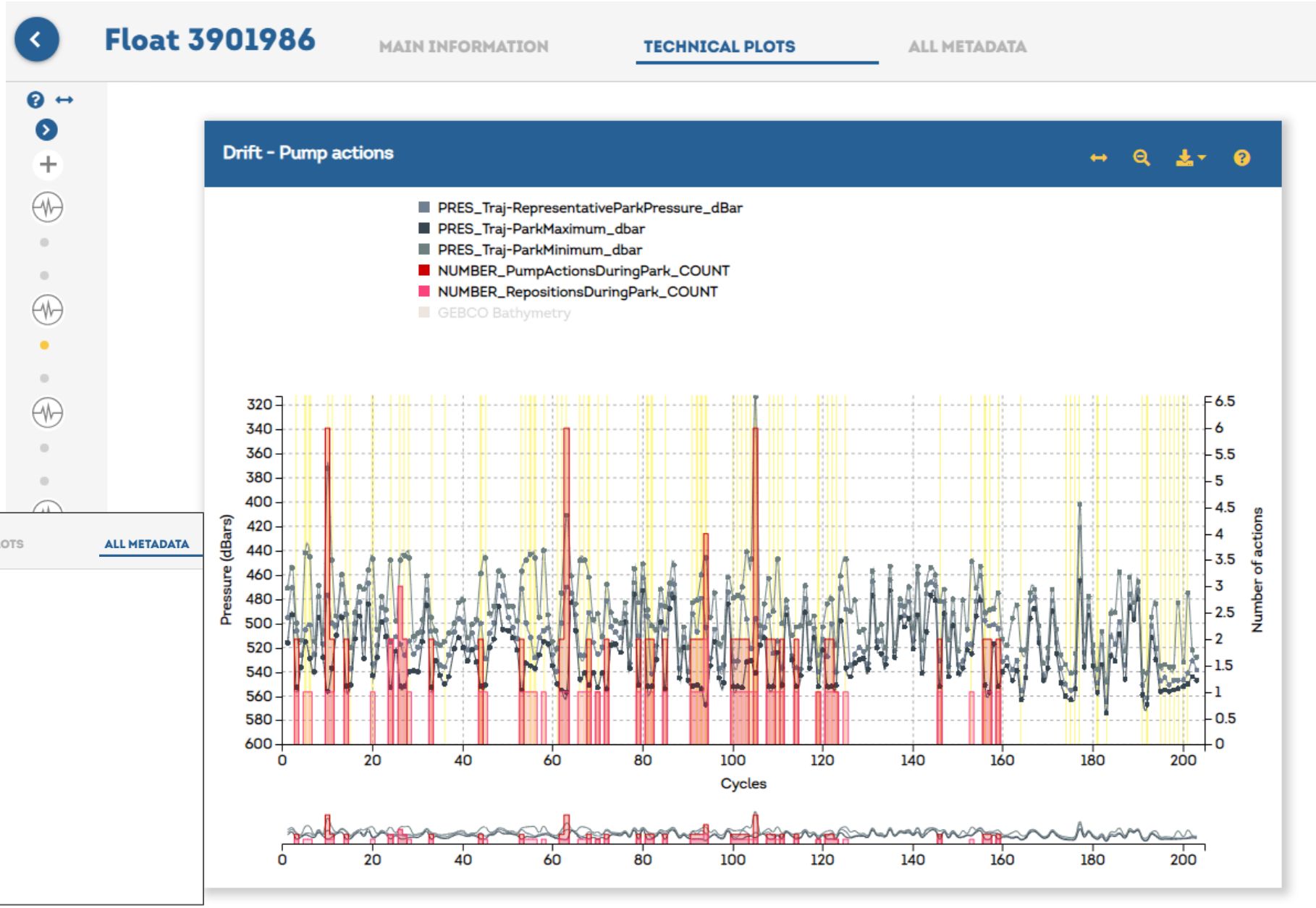
- Sea Surface Temperature
- EEZ
- WMS

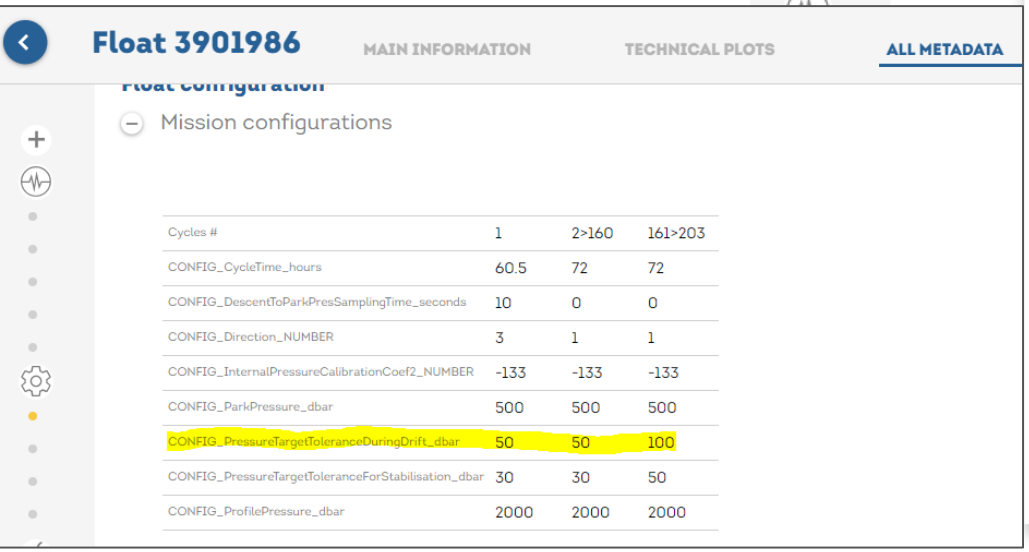




Float page – Technical plots – HYDRAULIC

- *Stabilisation problems during drift (pump actions)*
- *Increased tolerance after cycle 161*

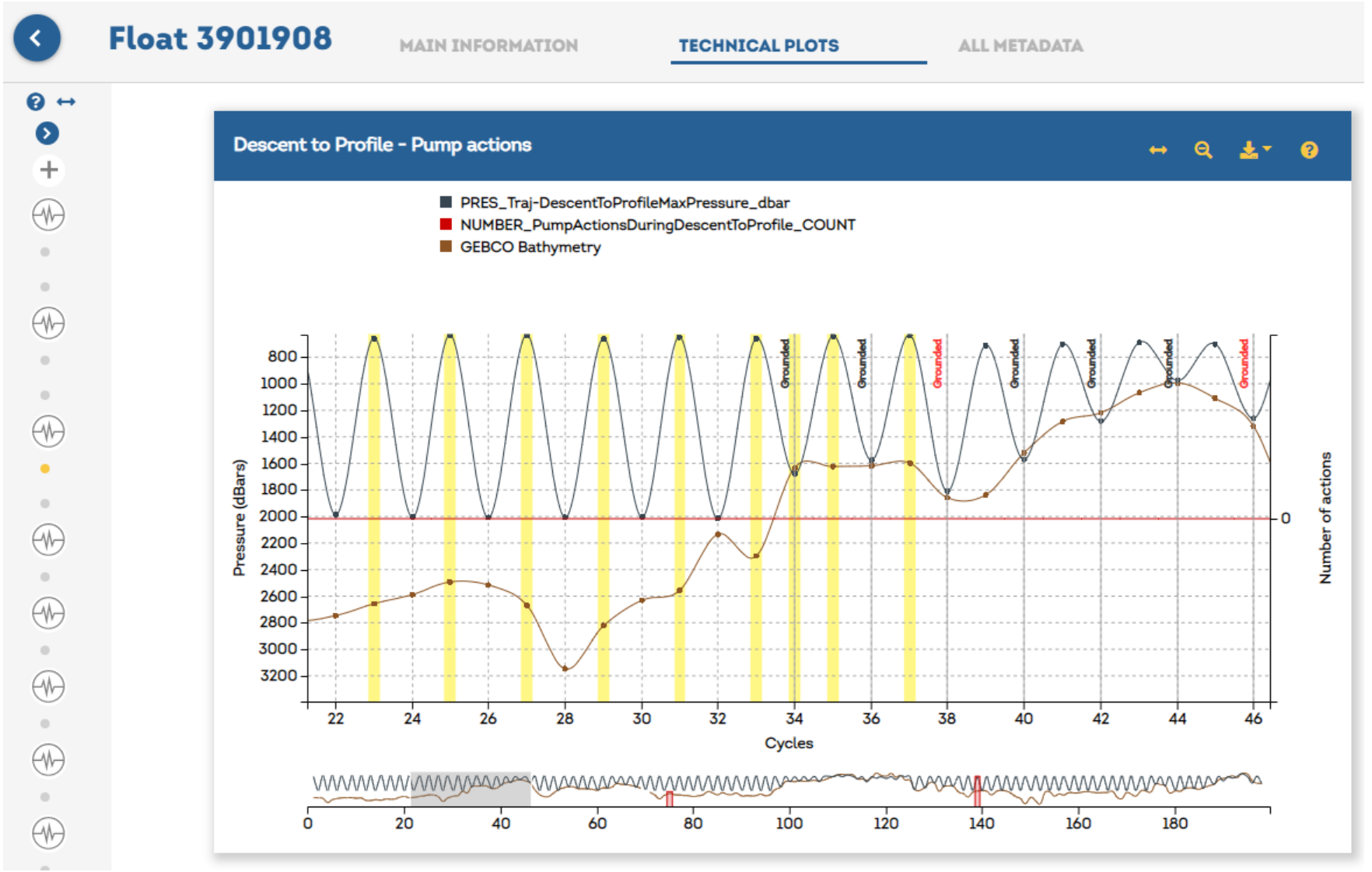




Cycles #	1	2>160	161>203
CONFIG_CycleTime_hours	60.5	72	72
CONFIG_DescentToParkPresSamplingTime_seconds	10	0	0
CONFIG_Direction_NUMBER	3	1	1
CONFIG_InternalPressureCalibrationCoef2_NUMBER	-133	-133	-133
CONFIG_ParkPressure_dbar	500	500	500
CONFIG_PressureTargetToleranceDuringDrift_dbar	50	50	100
CONFIG_PressureTargetToleranceForStabilisation_dbar	30	30	50
CONFIG_ProfilePressure_dbar	2000	2000	2000

Float page – Technical plots – HYDRAULIC

- *Targeted profile pressure not reached for alternate cycles (@700 dbar)*
- *Decrease DescentSpeed after cycle 38*

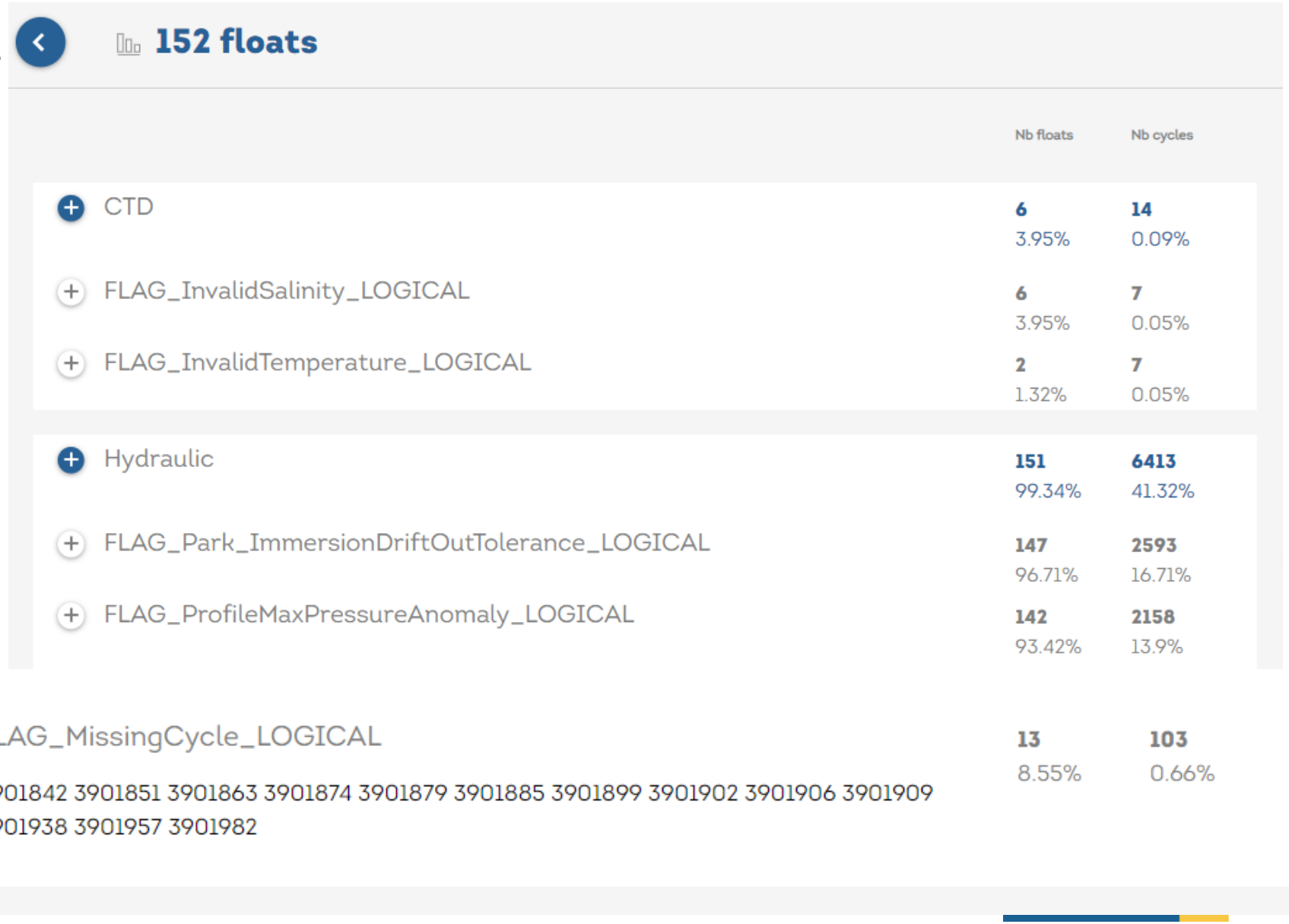


Dashboard – Statistics – MISSING CYCLES

- *Check the floats that have missing cycles*

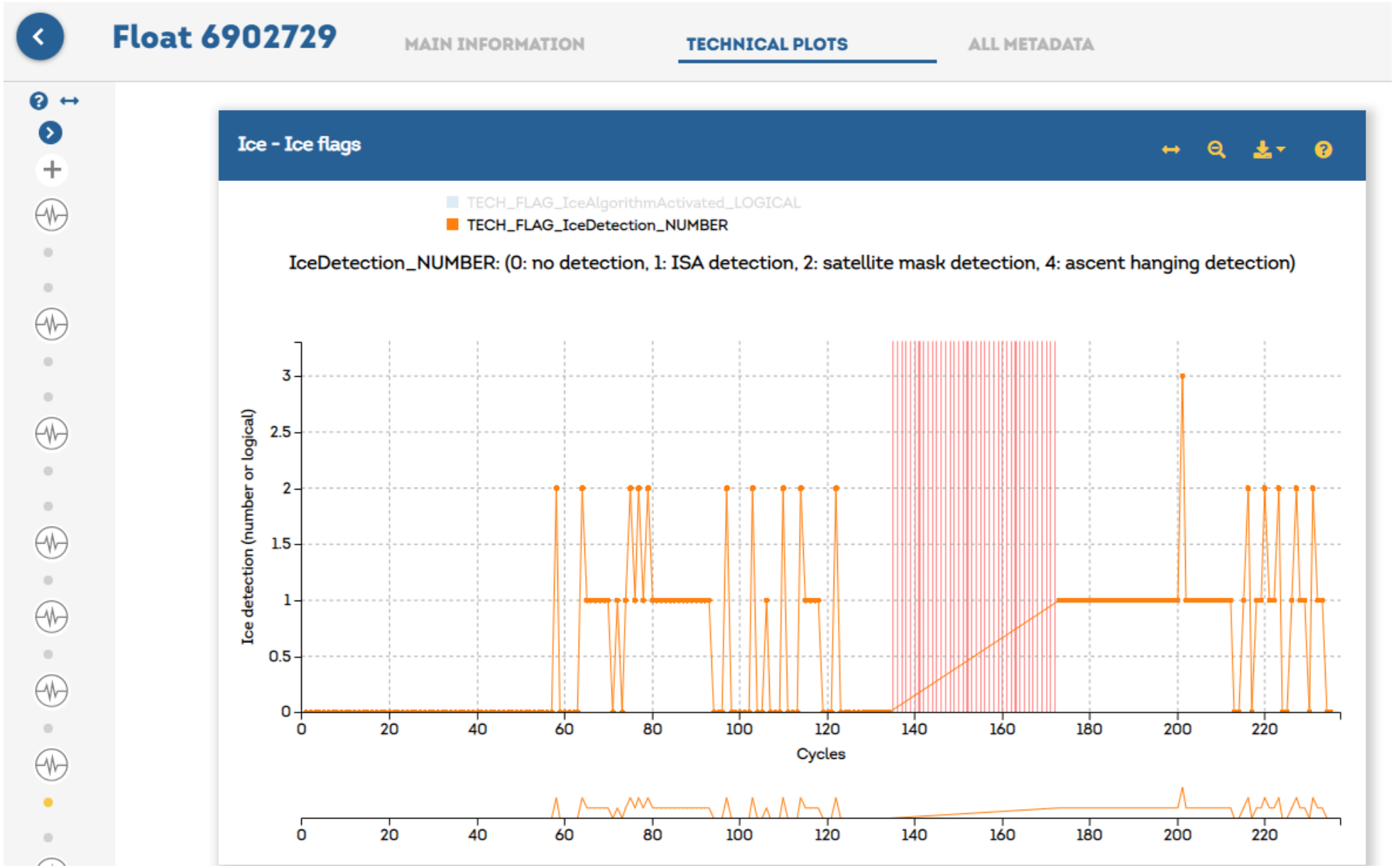
(difference between number of cycles and max cycle number)

- *Under ice, not decoded, etc.*



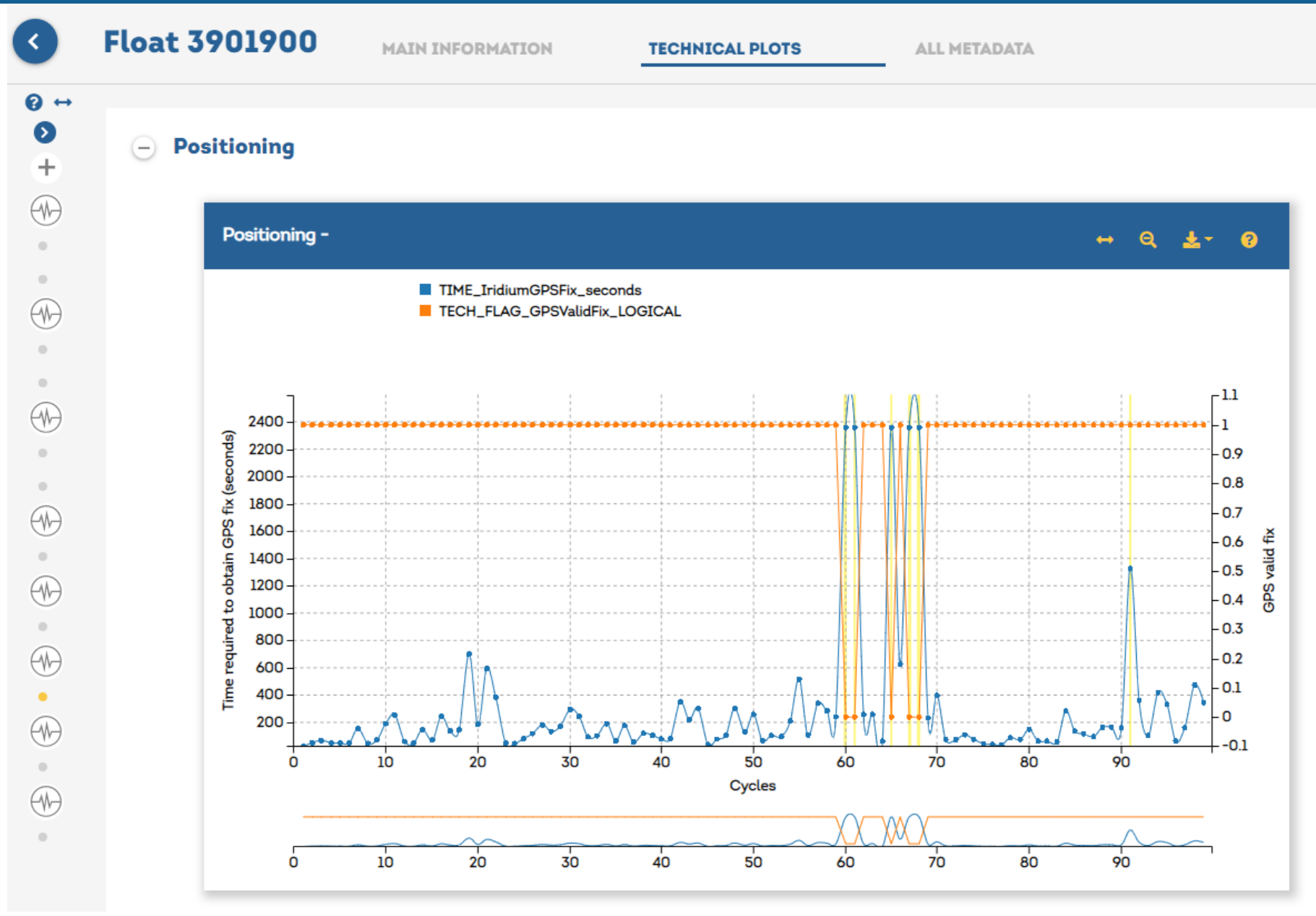
Float page – Technical plots – ICE

- *Ice detections*



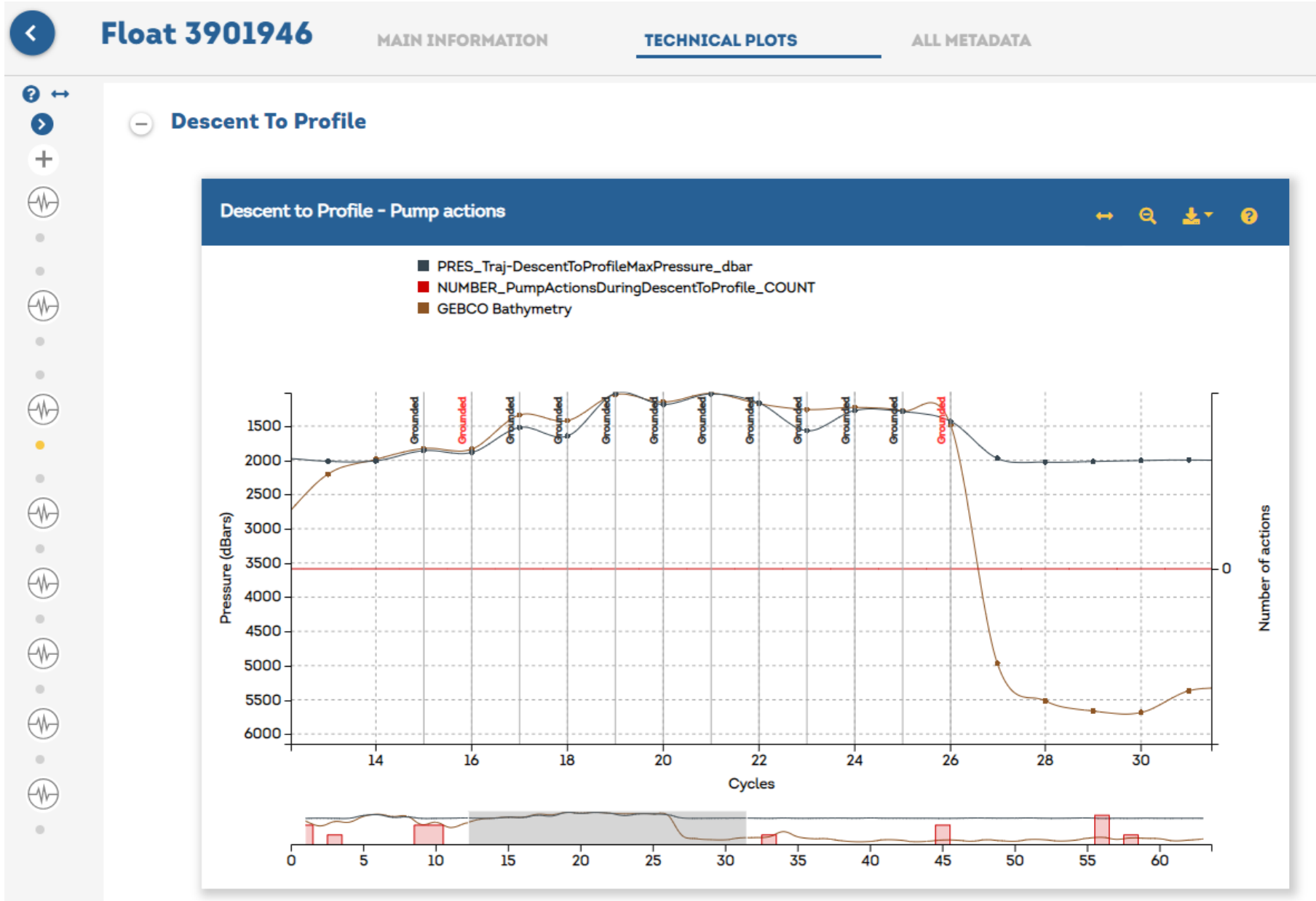
Float page – Technical plots – GPS

- *GPS valid fix*



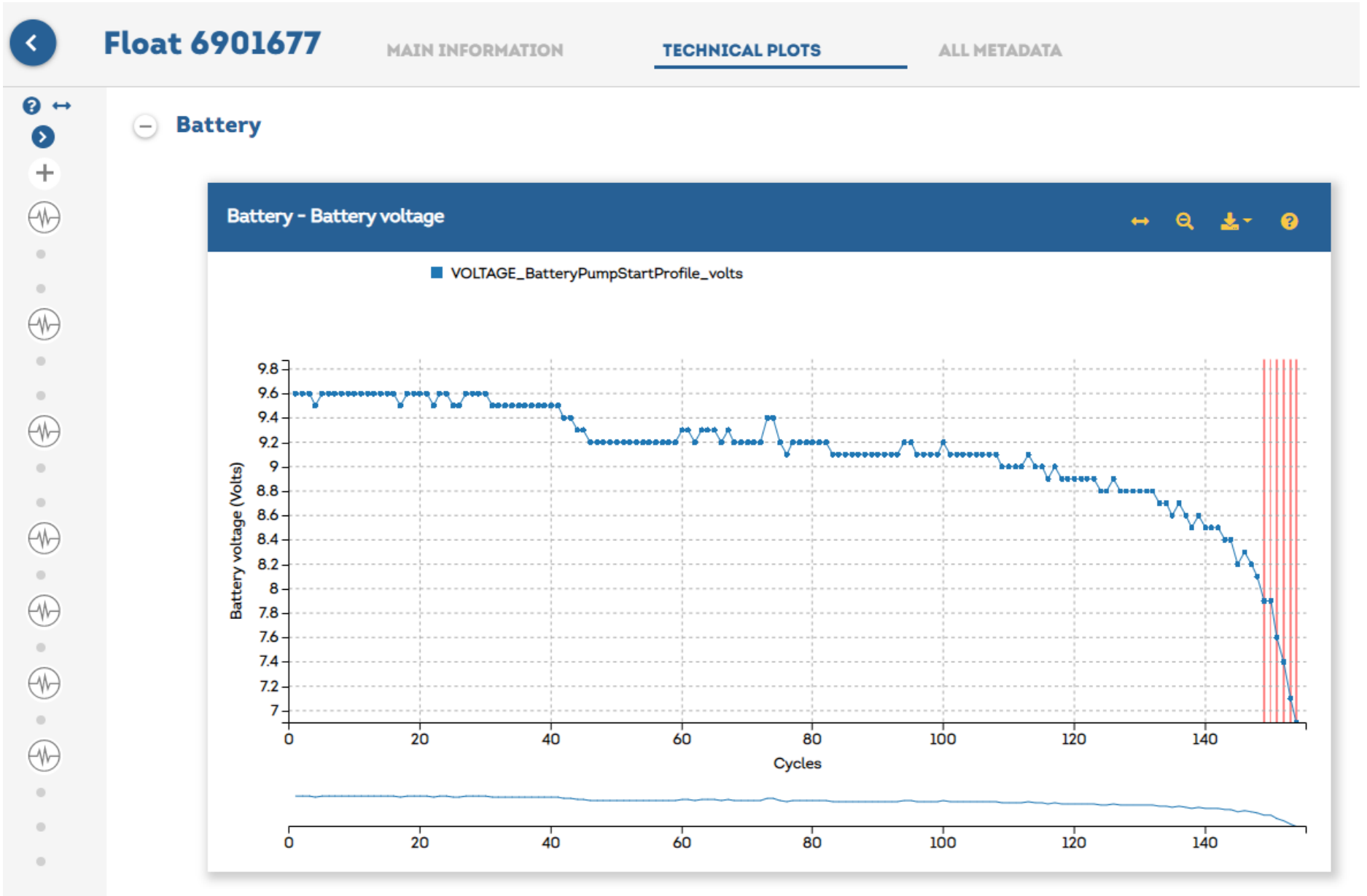
Float page – Technical plots – GROUNDING

- *By cycle phases*



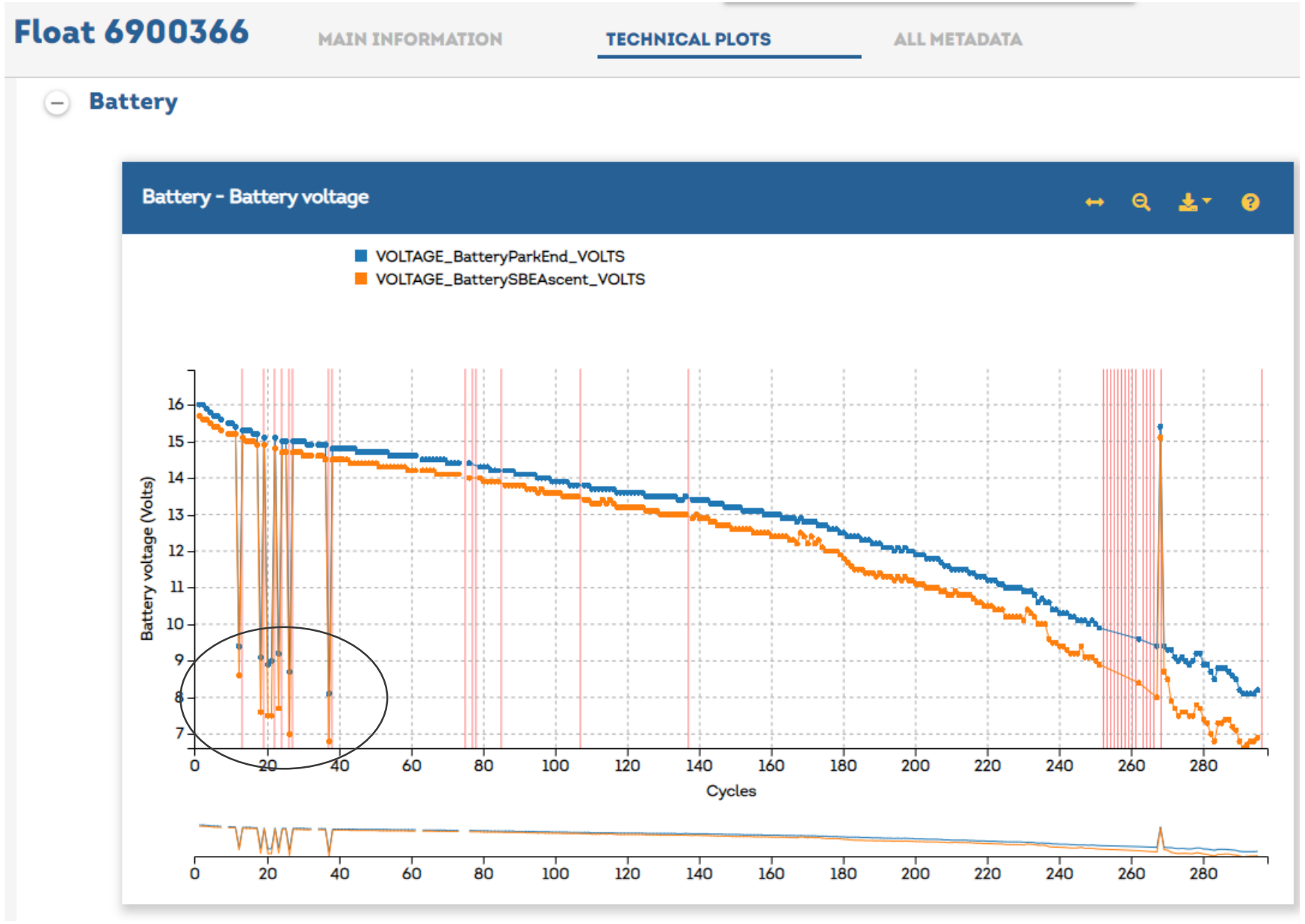
Float page – Technical plots – BATTERY VOLTAGES

- *Below threshold*
- *Drop (difference x% compared to last cycle)*



Float page – Technical plots – BATTERY VOLTAGES

- *APEX Alkaline*

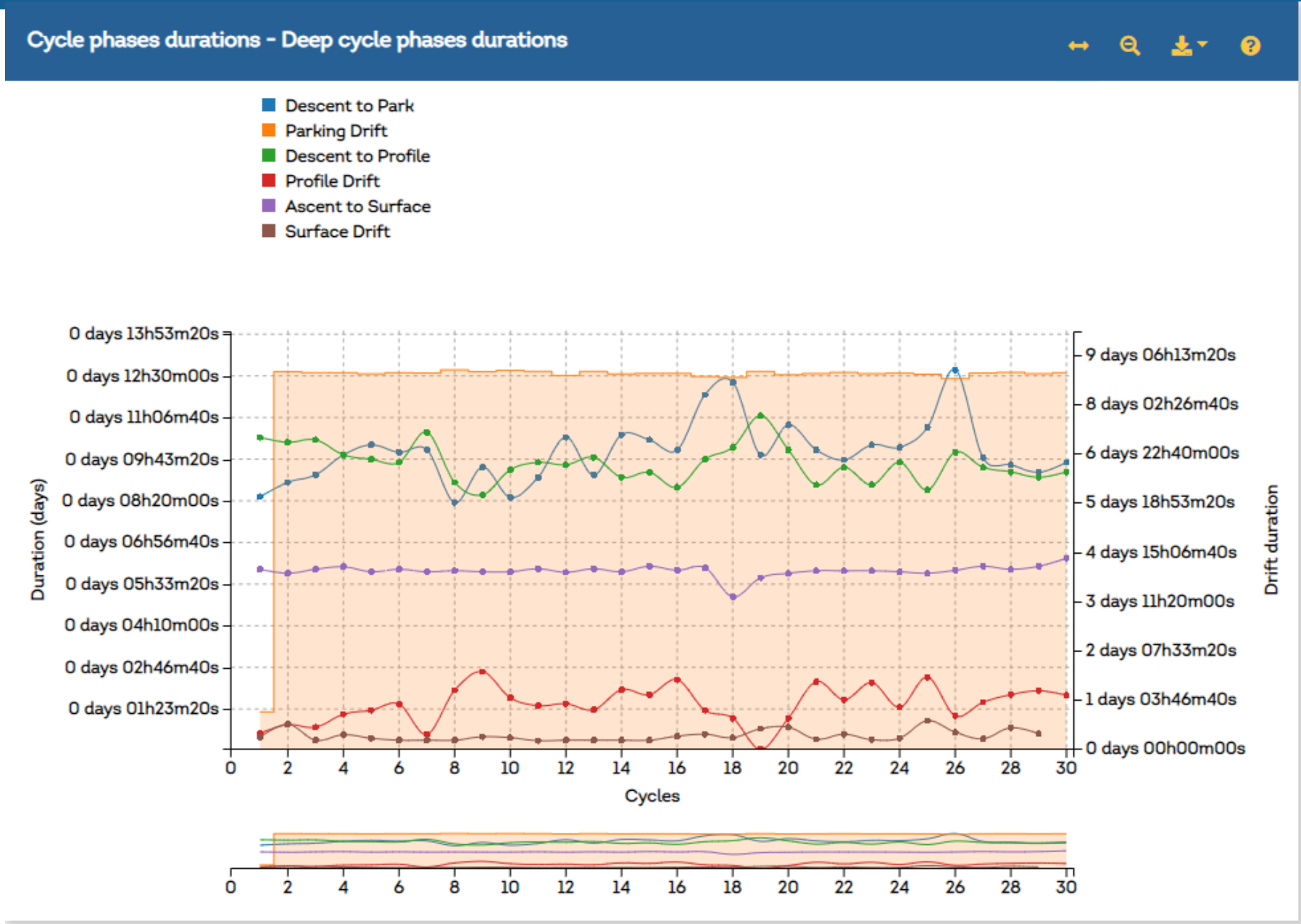


Float page – Technical plots – DATA TRANSMISSION

- *ARGOS transmission problems*
- *Some packets sent by the float are not received on shore*

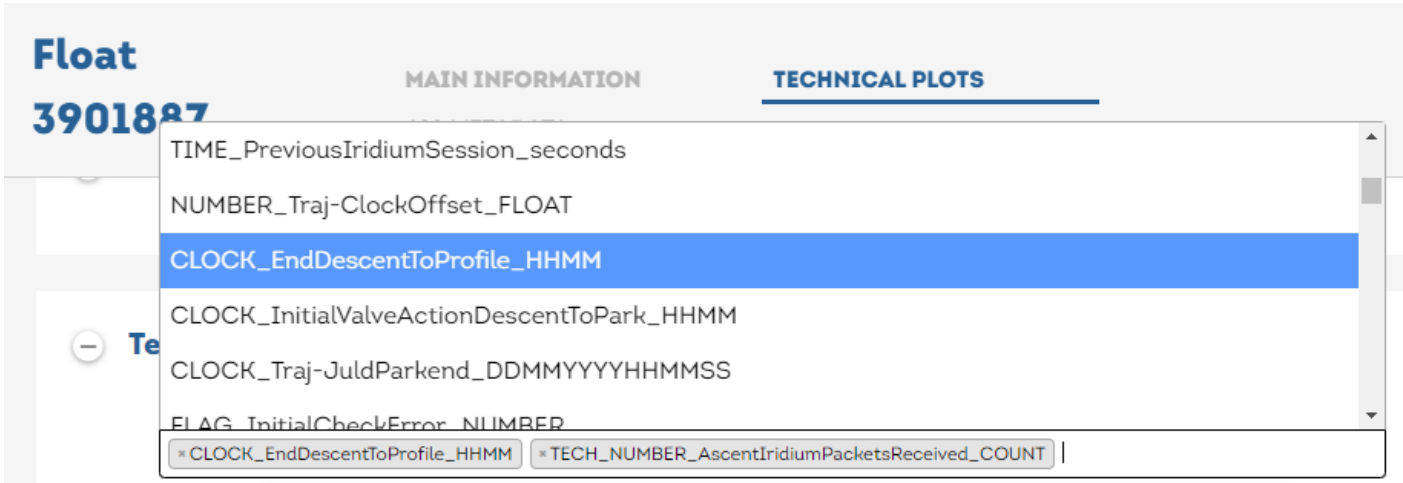
Float page – Technical plots – DURATIONS

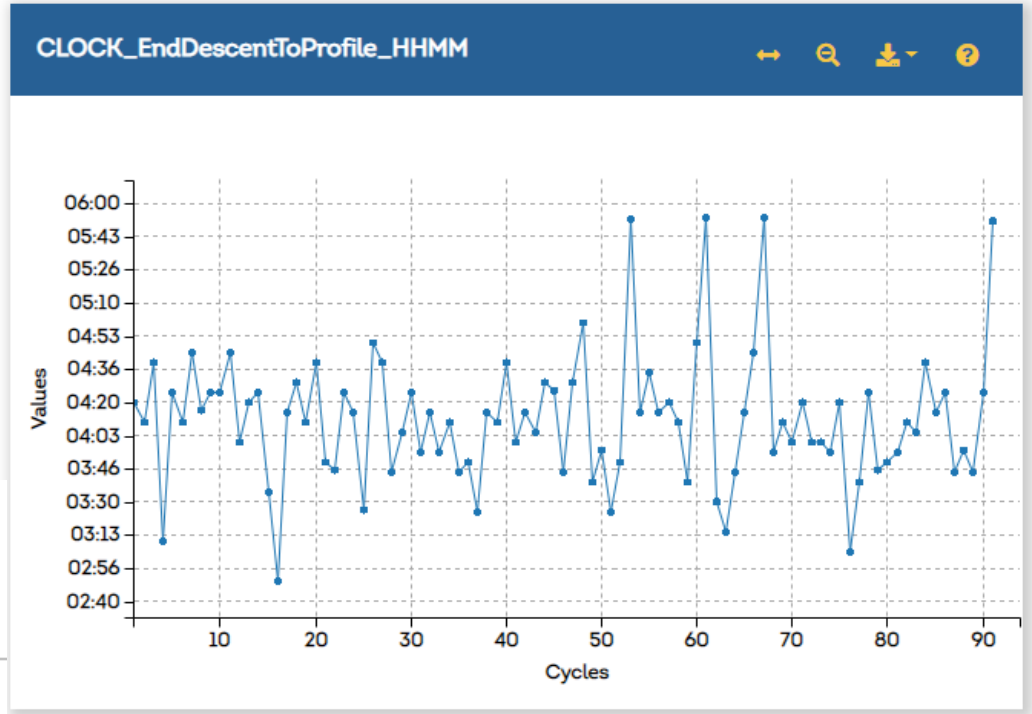
Durations of the different float cycle phases



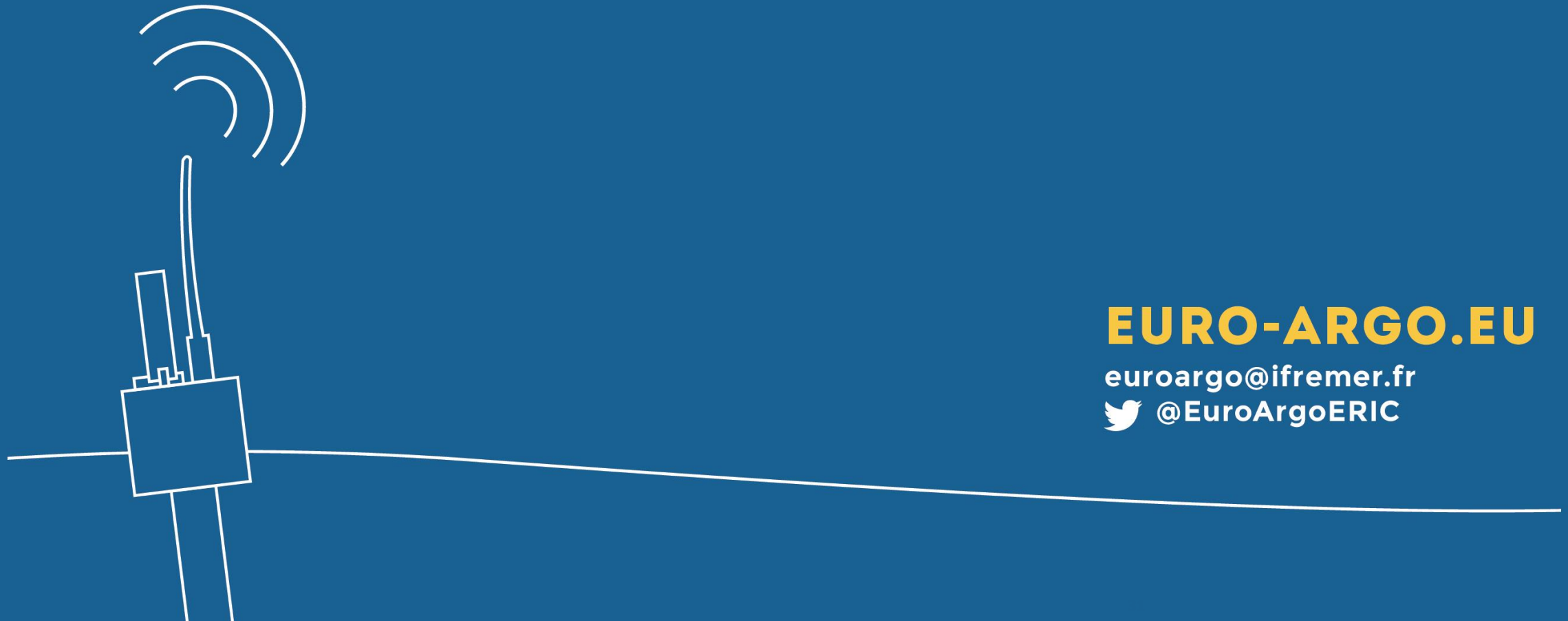
Float page – Technical plots – ANY PARAMETER

Plot any technical parameter





Please send us your feedback!



EURO-ARGO.EU

euroargo@ifremer.fr

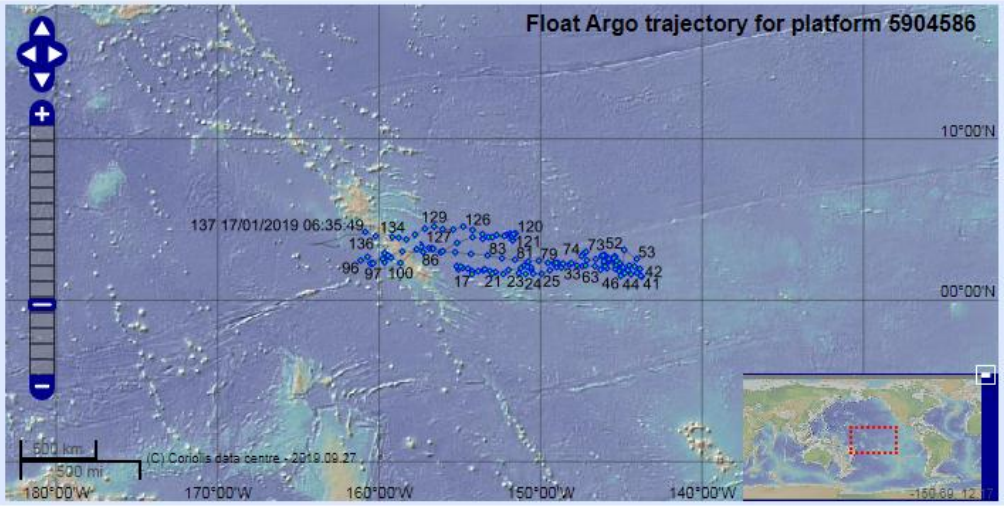
@EuroArgoERIC

Euro-Argo fleet monitoring

- History

Monitoring Argo floats – History

- Ifremer **float webpage** + at sea monitoring for group of floats (2002 => 2017)

Code	5904586
Name	NAVIS_A Profiling Float
Description	Argo PMEL
Project	US ARGO PROJECT
Institution	Pacific Marine Environmental Laboratory (PMEL), National Oceanic and Atmospheric Administration (NOAA)
Data Assembly Center	AO : AOML
Activity	Inactive
Status	
Comment	
First station date	28/04/2015 14:35:58
Last station date	17/01/2019 06:35:50
Float cycles	162, 161, 160, 159, 158, 157, 156, 155, 154, 153, 152, 151, 150, 149, 148, 147, 146, 145, 144, 143, 142, 141, 140, 139, 138, 137, 136, 135, 134, 133, 132, 131, 130, 129, 128, 127, 126, 125, 124, 123, 122, 121, 120, 119, 118, 117, 116, 115, 114, 113, 112, 111, 110, 109, 108, 107, 106, 105, 104, 103, 102, 101, 100, 99, 98, 97, 96, 95, 94, 93, 92, 91, 90, 89, 88, 87, 86, 85, 84, 83, 82, 81, 80, 79, 78, 77, 76, 75, 74, 73, 72, 71, 70, 69, 68, 67, 66, 65, 64, 63, 62, 61, 60, 59, 58, 57, 56, 55, 54, 53, 52, 51, 50, 49, 48, 47, 46, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0
Stations	in Ascii, in Netcdf
Trajectory data	in Ascii, in Netcdf
Graphics of individual profiles	Verticals profiles, Immersion profiles
Map	
T/S Diagram	

Login | Enter platform code | Float list

http://www.ifremer.fr/co-argoFloats/float?ptfCode=5904586

Monitoring Argo floats – History

- Ifremer float webpage + **at sea monitoring for group of floats** (2002 => 2017)

Float age | Float status | Functional monitoring | Technical monitoring

Full report | WMO Correspondance | Print page

http://www.ifremer.fr/co-techMonitoring/floatMonitoring?lang=en&groupCode=632

Active Floats | Dead Floats

MOCCA
152 floats - 138 active floats at 27/09/2019

2 deployed floats, 2 new dead float(s) since last monthly bulletin at 02/08/2019

ARVOR (20) + 0 - 0 | ARVOR_I (116) + 2 - 2

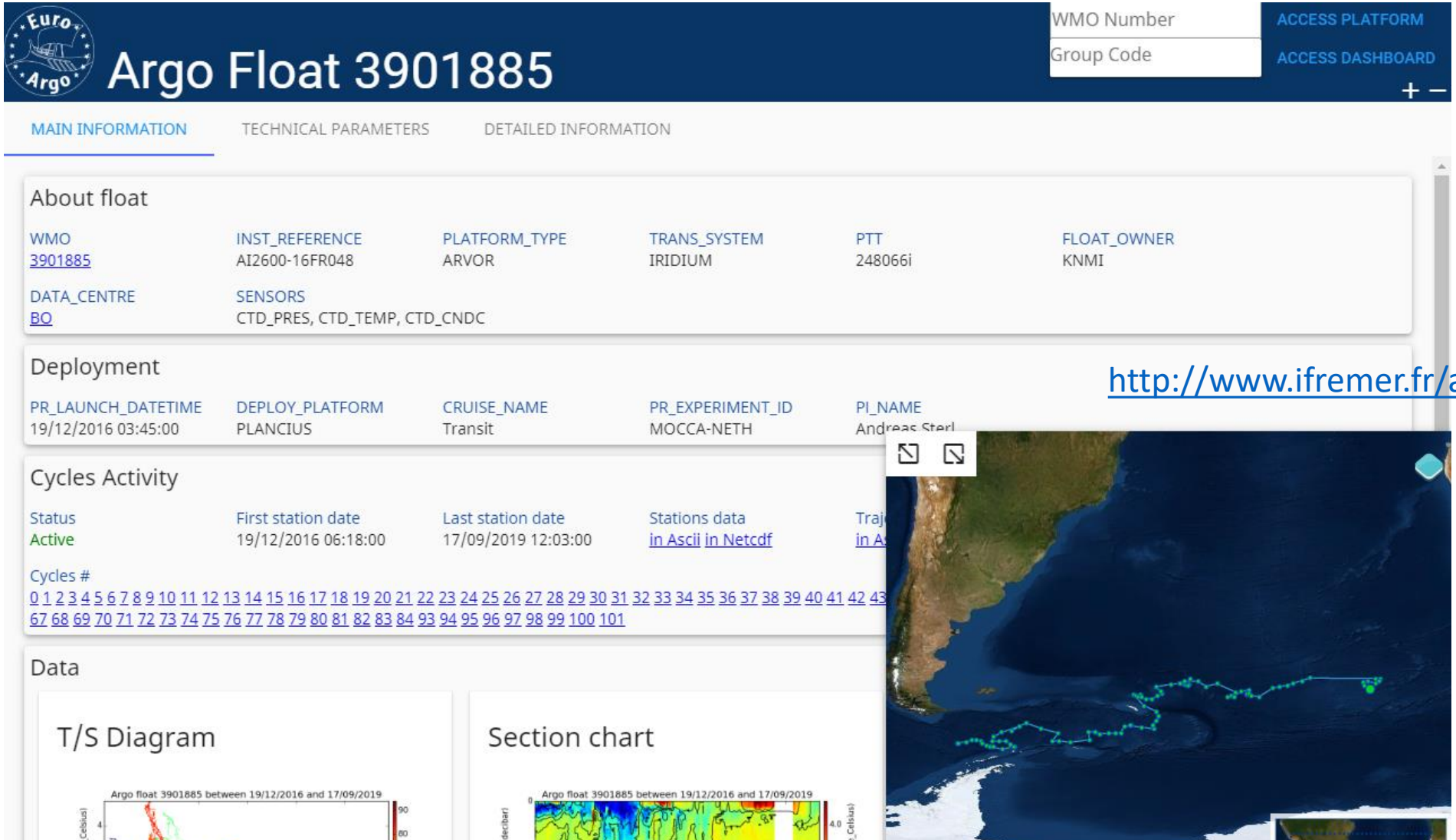
floats - 20 active floats at 27/09/2019

0 deployed floats, 0 new dead floats since last monthly bulletin at 02/08/2019

Floats	Program	Deployment data	Lastest cycle	T/S Profiles		Drift	Data Transmission			Battery Voltage	Kms		
			Missing cycles	Quality	Length	Cycles with anomaly	Cycle	Missing Frames	Missing Measurements		Kms done	kms done / previous month	Expected Kms/ previous month
3901937	MOCCA-EU	09/01/2017	**18/09/2019 #99**	OK	Too short	OK	OK			9.2	198.9	**10.0**	11.2
3901935	MOCCA-EU	08/01/2017	**17/09/2019 #99**	OK	Too short	OK	OK			9.1	196.1	**8.0**	11.2
3901934	MOCCA-EU	10/01/2017	**19/09/2019 #99**	OK	Too short	OK	OK			9.2	198.0	10.1	11.2
3901933	MOCCA-EU	31/10/2017	23/09/2019 #70	OK	Too short	OK	OK			9.3	140.7	12.1	11.2
3901932	MOCCA-EU	08/06/2018	23/09/2019 #48	OK	Too short	OK	OK			9.3	96.1	12.0	11.2
3901931	MOCCA-EU	19/01/2017	**18/09/2019 #98**	OK	Too short	OK	OK			9.1	195.7	**10.0**	11.2
3901930	MOCCA-EU	24/01/2017	23/09/2019 #98	OK Grey List: 17/03/2019 #- PSAL TEMP	Too short	OK	OK			9.4	194.2	12.1	11.2

Monitoring Argo floats – History

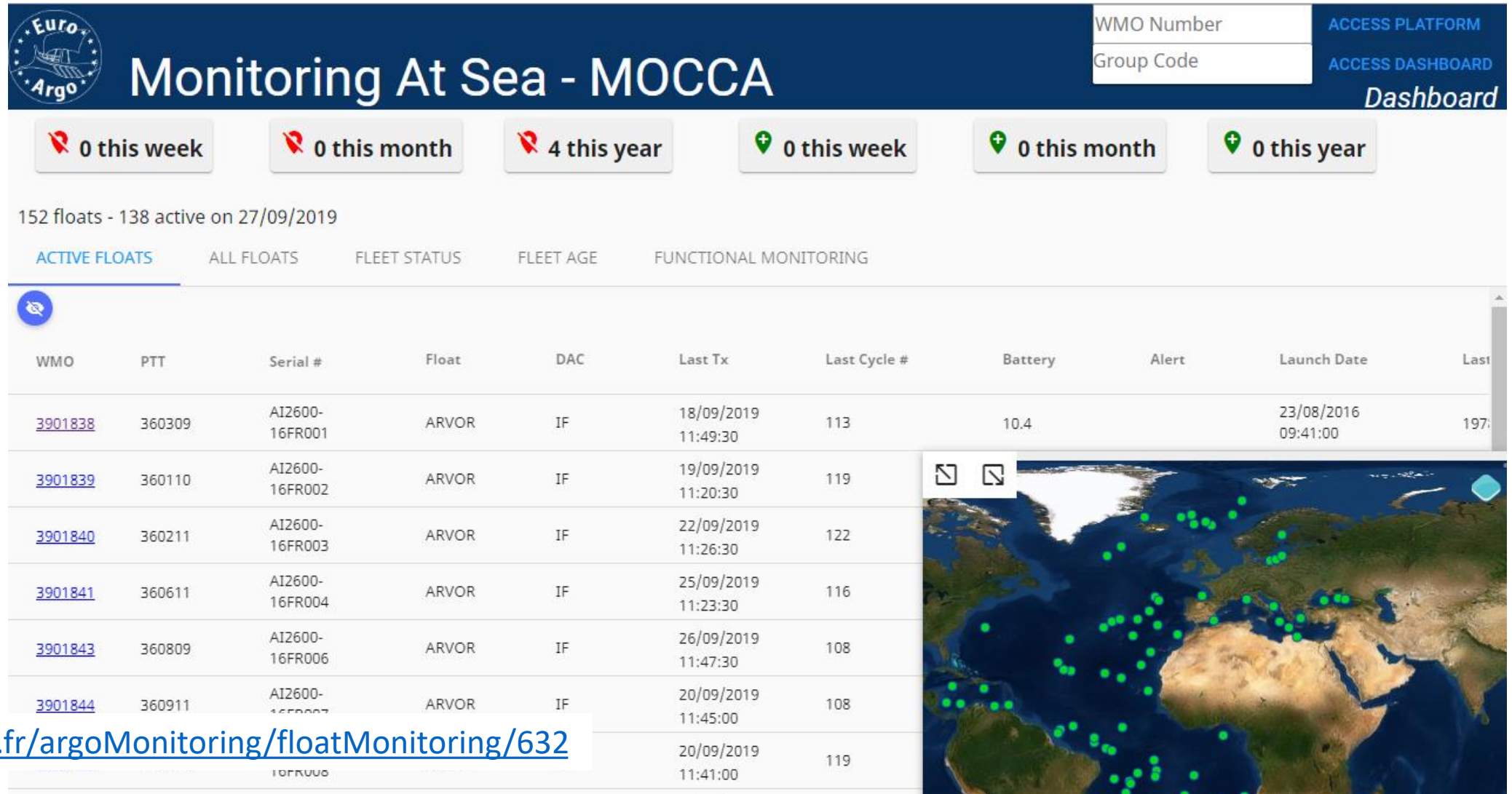
- Euro-Argo **float webpage** + dashboard for group of floats (2017 => 2019)



http://www.ifremer.fr/argoMonitoring/float/3901885

Monitoring Argo floats – History

- Euro-Argo float webpage + **dashboard for group of floats** (2017 => 2019)



http://www.ifremer.fr/argoMonitoring/floatMonitoring/632