



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)

Float
3901612

MAIN INFORMATION **TECHNICAL PARAMETERS**
ALL METADATA AND MISSION CONFIGURATION

About Float

WMO 3901612	Maker NKE
Inst reference AL2500-16DE007	Platform type ARVOR
Transmission system ARGOS	PTT 159801
Owner BSH	Data Centre CORIOLIS
Sensors CTD_PRES, CTD_TEMP, CTD_CNDC	

Deployment 2 years ago

Launched 28/01/2017 07:49:00	
Deployment Latitude -52.7467	Deployment Longitude -45.9733
Ship RRS James Clark Ross	Cruise JRsouth
Project ARGO-BSH	Principal Investigator B. Klein

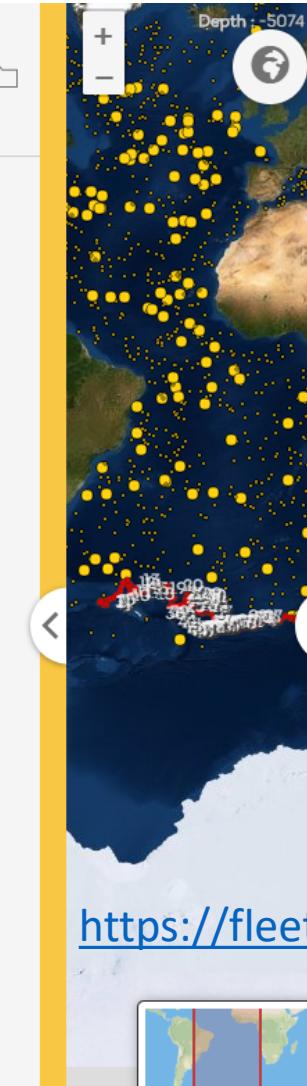
Cycle activity

Status Active	Age
Last station date 16/09/2019 18:52:00	Cycle 97
Last Surface Data	
Last Bottom Data	
Stations data in Ascii in Netcdf	Trajectory data in Ascii in Netcdf
Grey List	

Profile data

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89
90 91 92 93 94 95 96 97

Data

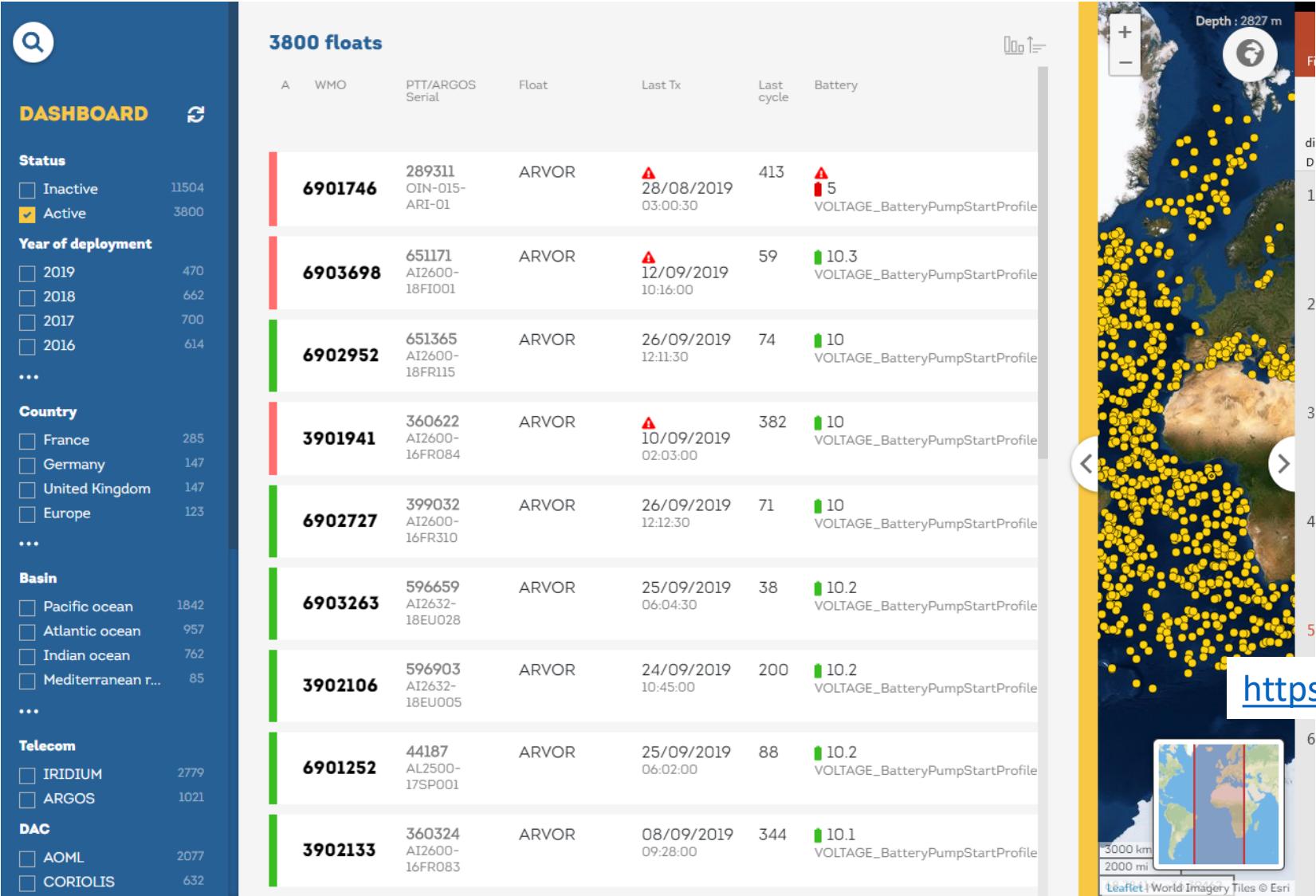


<https://fleetmonitoring.euro-argo.eu/float/3901612>



Monitoring Argo floats – History

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



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



- “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”

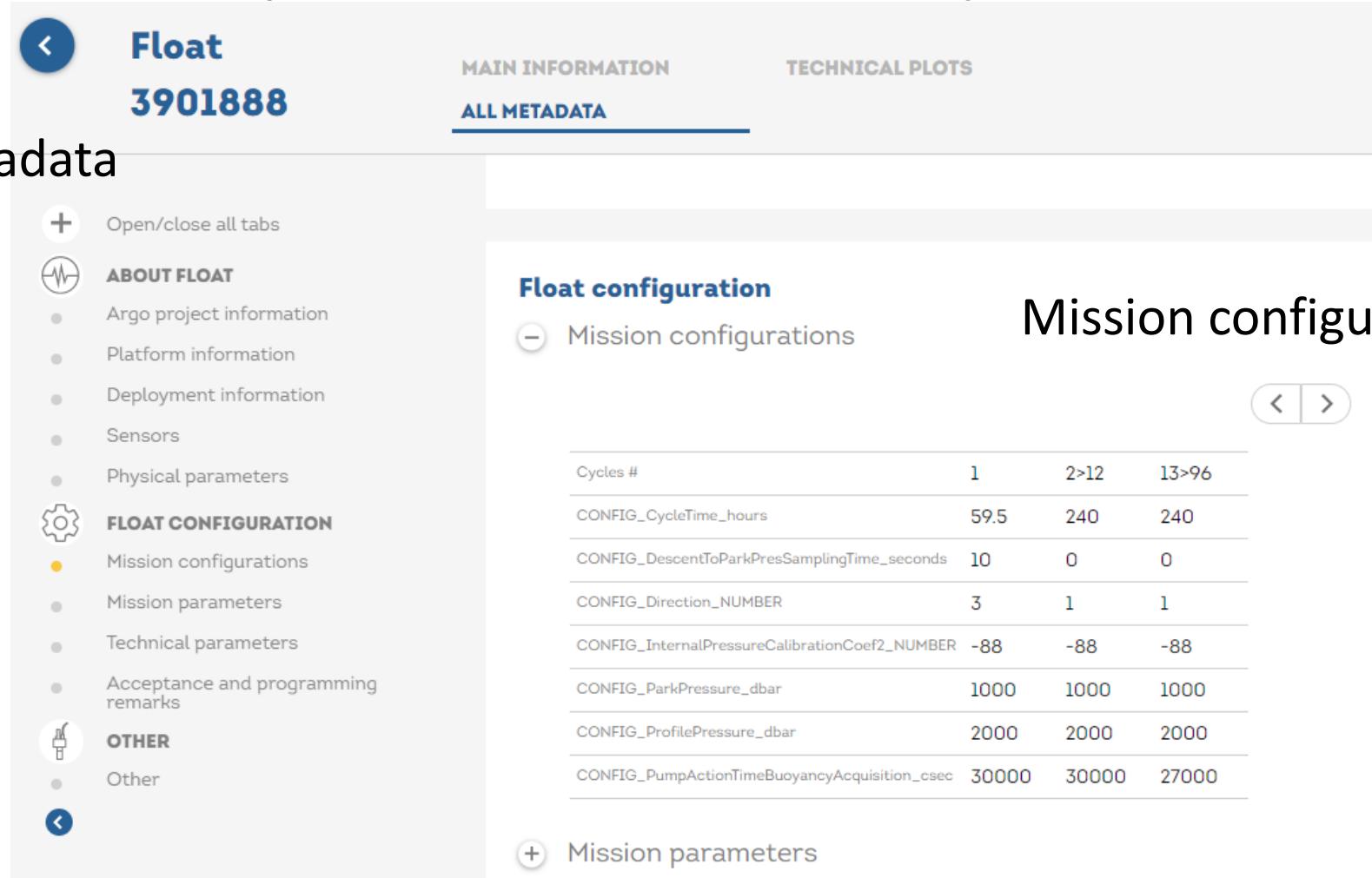
Float
5903795

MAIN INFORMATION **TECHNICAL PLOTS**

ALL METADATA

About Float		Deployment 7 years ago		Cycle activity	
WMO 5903795	Maker SIO_IDG	Launched 15/10/2011 23:57:14	Deployment Latitude -9.012	Deployment Longitude -158.748	Status Active
Inst reference 3017	Platform type SOLO	Ship R/V Kaharoa	Cruise	Age 7.98 years old	Last station date 07/10/2019
Transmission system ARGOS	PTT 45827	Project US ARGO PROJECT	Principal Investigator DEAN ROEMMICH	Cycle 285	07:38:25
Owner AOML				Last Surface Data 5.5 dbar 28.088°C 36.216 PSU	
Sensors CTD_PRES, CTD_TEMP, CTD_CNDC				Last Bottom Data 1452 dbar 2.812°C 34.666 PSU	
				Stations data in Ascii in Netcdf	Trajectory data in Ascii in Netcdf
				Grey List PSAL	

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



The screenshot shows a web-based interface for monitoring Argo floats. At the top left, there's a circular icon with the text "Euro" at the top and "Argo" at the bottom, surrounded by small stars. To its right is the title "Monitoring Argo floats – Demo". On the far right is the URL "https://fleetmonitoring.euro-argo.eu/dashboard".

The main content area has a header with tabs: "MAIN INFORMATION" and "TECHNICAL PLOTS". Below this, a sub-header says "ALL METADATA" with a blue underline.

On the left, there's a sidebar with a tree-like structure of metadata categories:

- ABOUT FLOAT**: Argo project information, Platform information, Deployment information, Sensors, Physical parameters.
- FLOAT CONFIGURATION**: Mission configurations (selected), Mission parameters, Technical parameters, Acceptance and programming remarks.
- OTHER**: Other.

The main panel displays two sections: "Float configuration" and "Mission configurations".

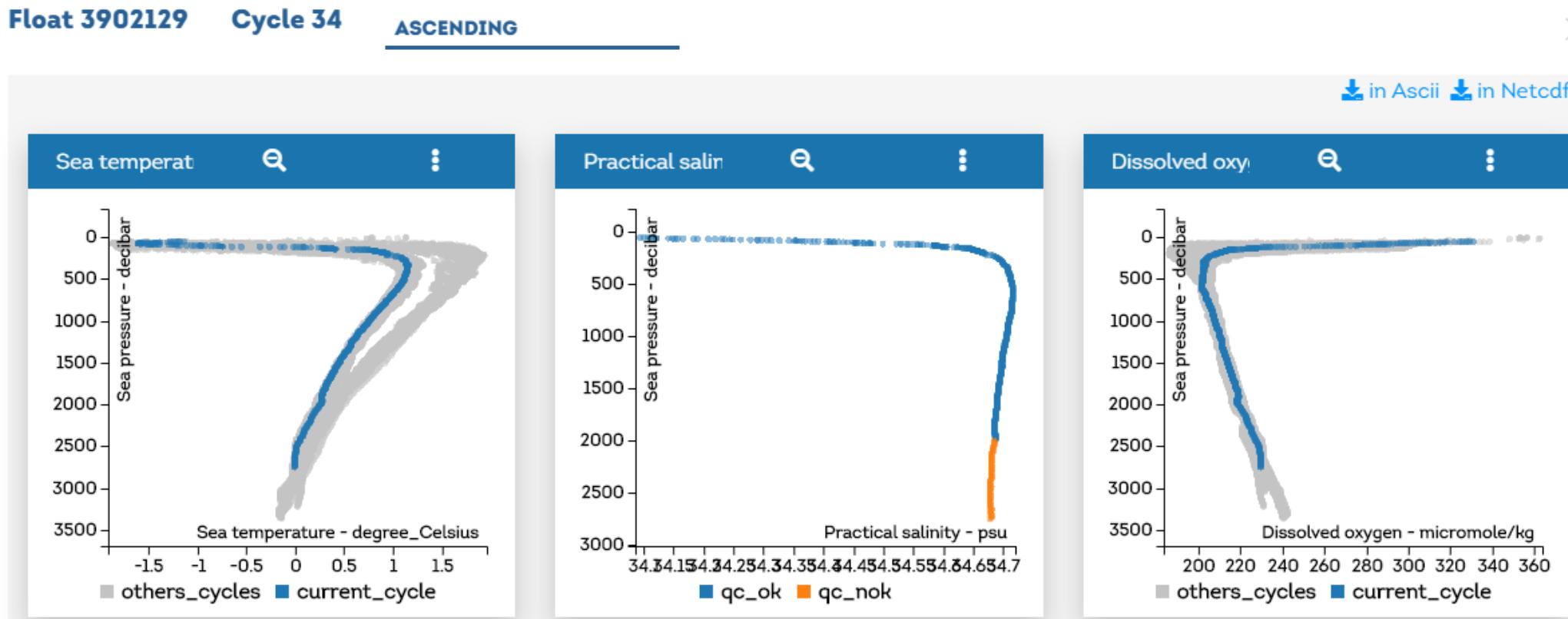
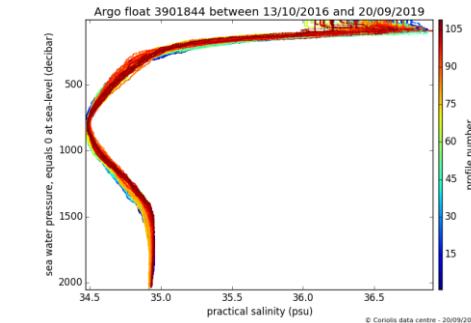
Float configuration (under "Mission configurations") shows the following table:

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

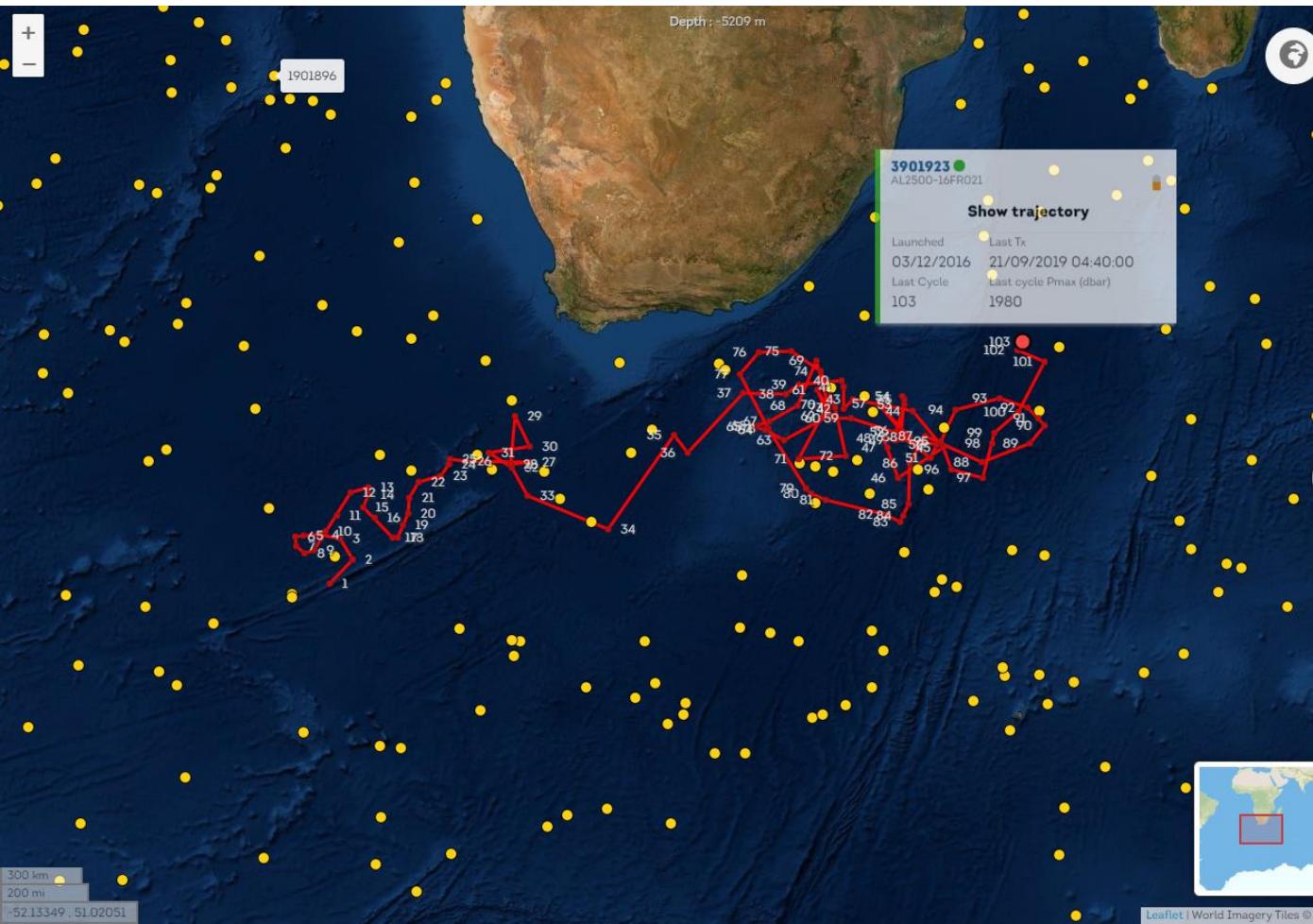
Mission configurations (under "Mission configurations") shows a table with three columns of data. The first column is labeled with arrows pointing left and right, indicating navigation between mission configurations.

At the bottom, there's a section for "Mission parameters" with a plus sign icon.

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

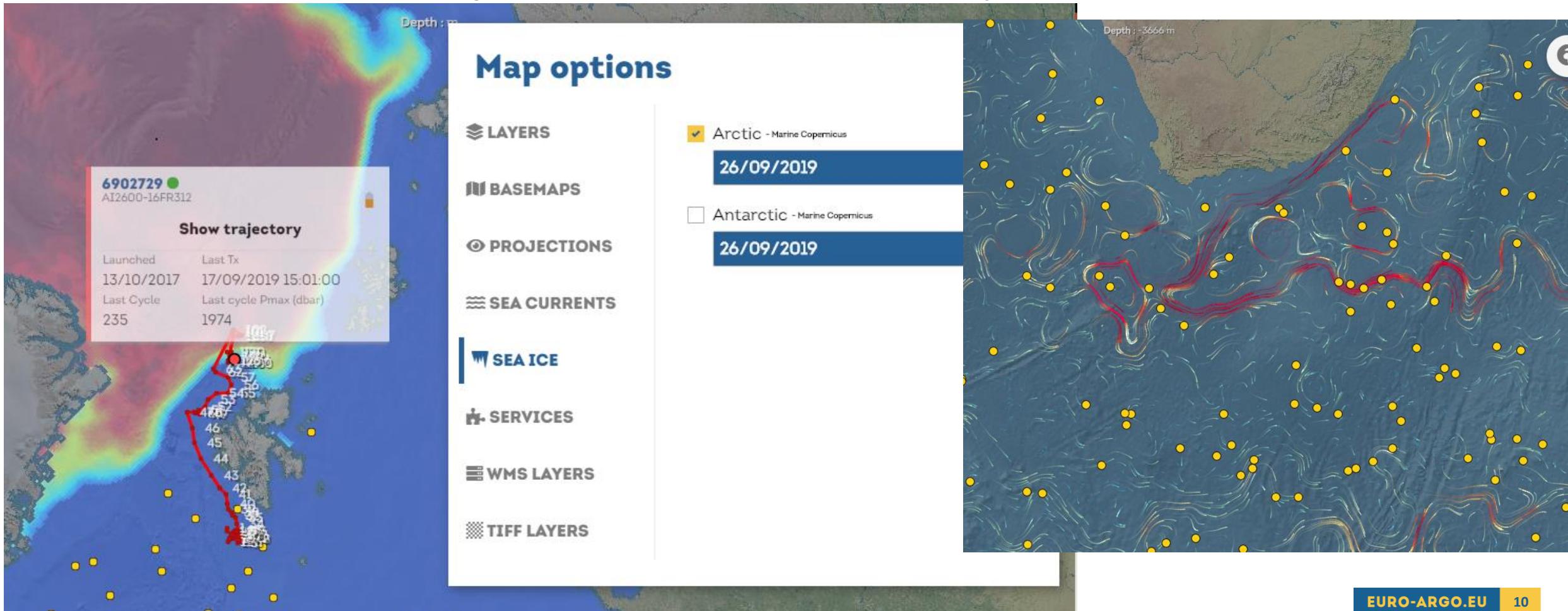


- “Visualization of Argo profiling float metadata, ocean measurements, **trajectories** and technical parameters”

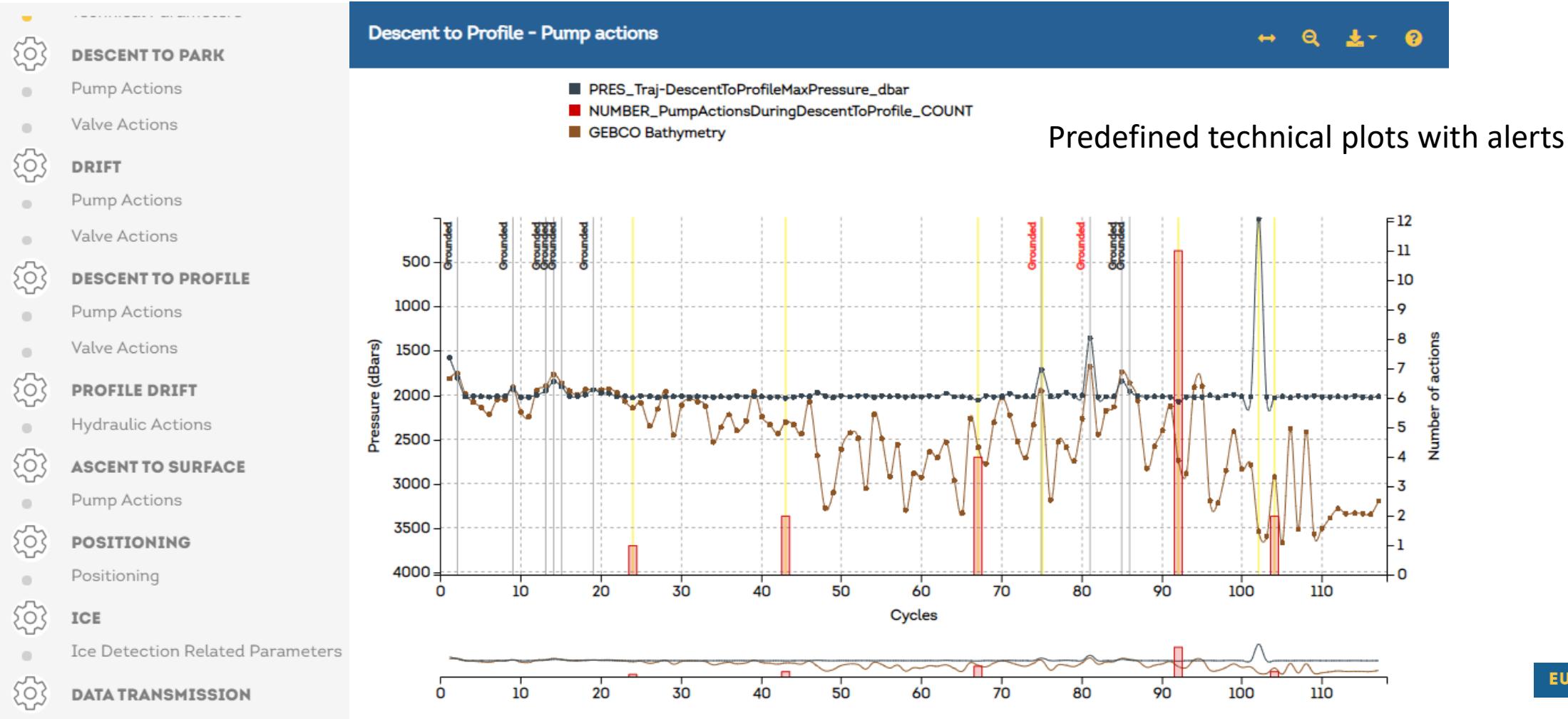


- Basemaps
- Projections
- Context (depth, sea ice, sea currents, etc.)
- Last position of all floats
- ...

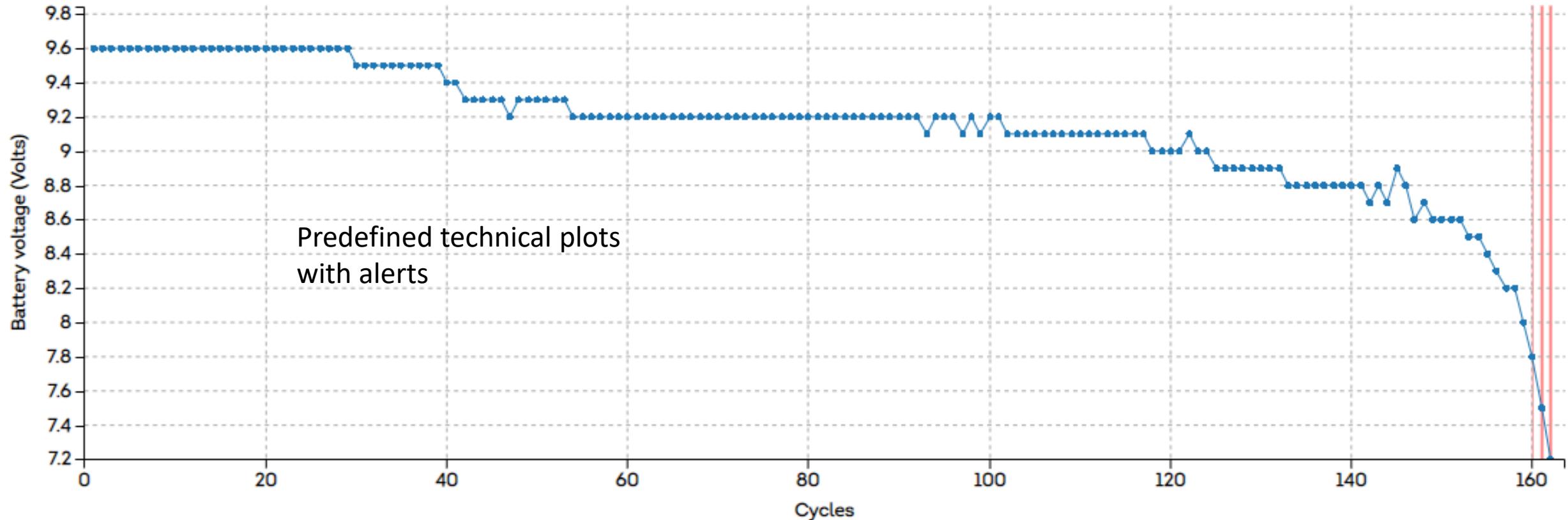
- “Visualization of Argo profiling float metadata, ocean measurements, **trajectories** and technical parameters”



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



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



- Dashboard

DASHBOARD

Status

- Inactive 263
- Active 612

Year of deployment

- 2019 495
- 2018 660
- 2017 699
- 2016 612
- ...

Country

- France 34
- Germany 30
- Europe 30
- United Kingdom 25
- ...

Basin

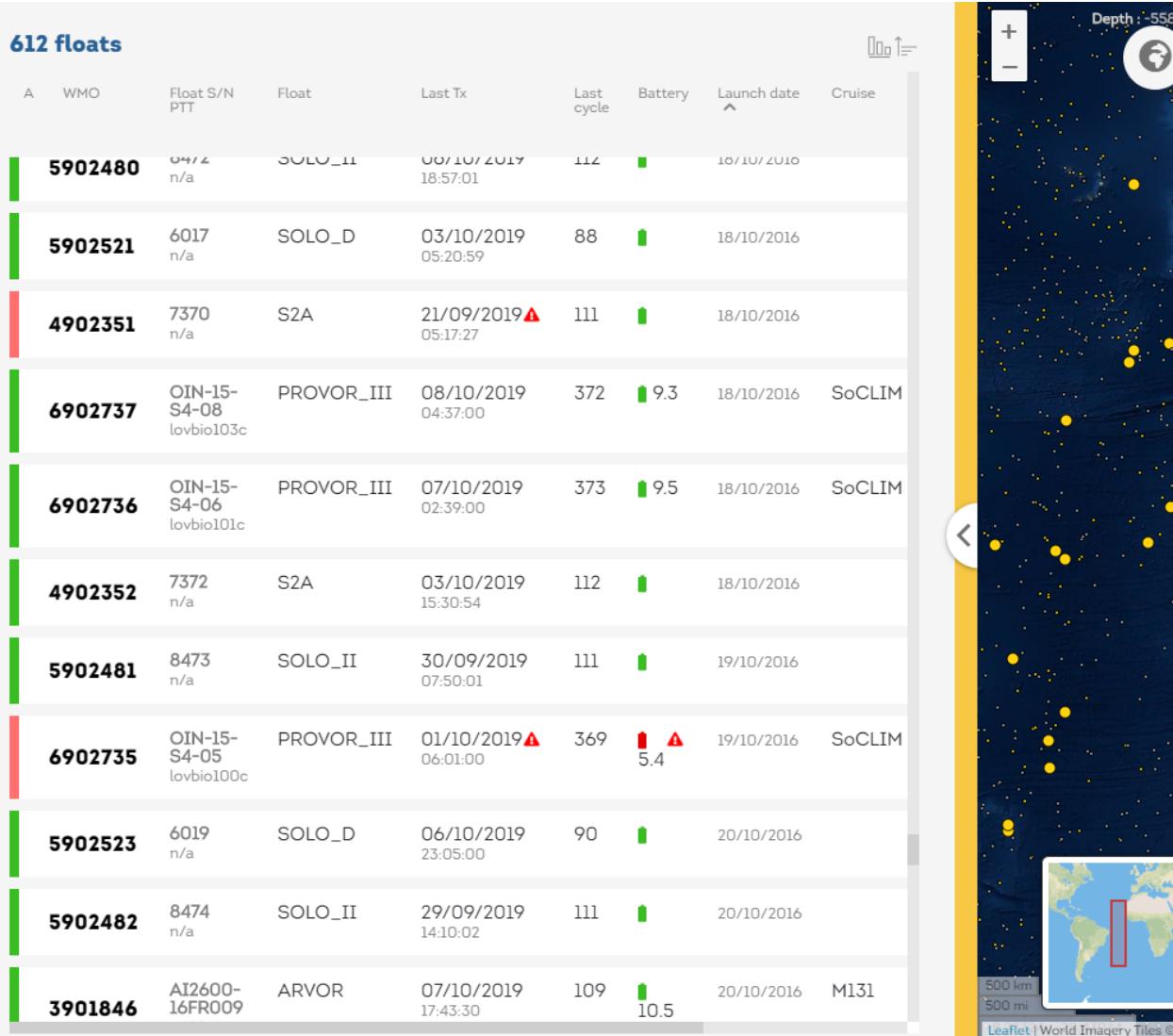
- Pacific ocean 223
- Indian ocean 200
- Atlantic ocean 154
- Arctic ocean 15
- ...

Telecom

- IRIDIUM 502
- ARGOS 110

DAC

- AOML 351
- CORIOLIS 105



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



Euro-Argo fleet monitoring

- Use cases



Dashboard – ALERTS

- Your floats (selection through indexes)

The dashboard displays information on float last cycle only

- 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?

6901677	OIN-14- AR-32 140824	ARVOR	08/10/2019 07:27:00	154	6.9	29/07/2015
6902631	OIN- 15D- ARL-11 152046	ARVOR	25/09/2019 12:13:00	141	6.9	15/11/2015
6901735	OIN-14- AR-74 144178	ARVOR	28/09/2019 20:31:00	165	6.9	31/03/2015



Dashboard – ALERTS

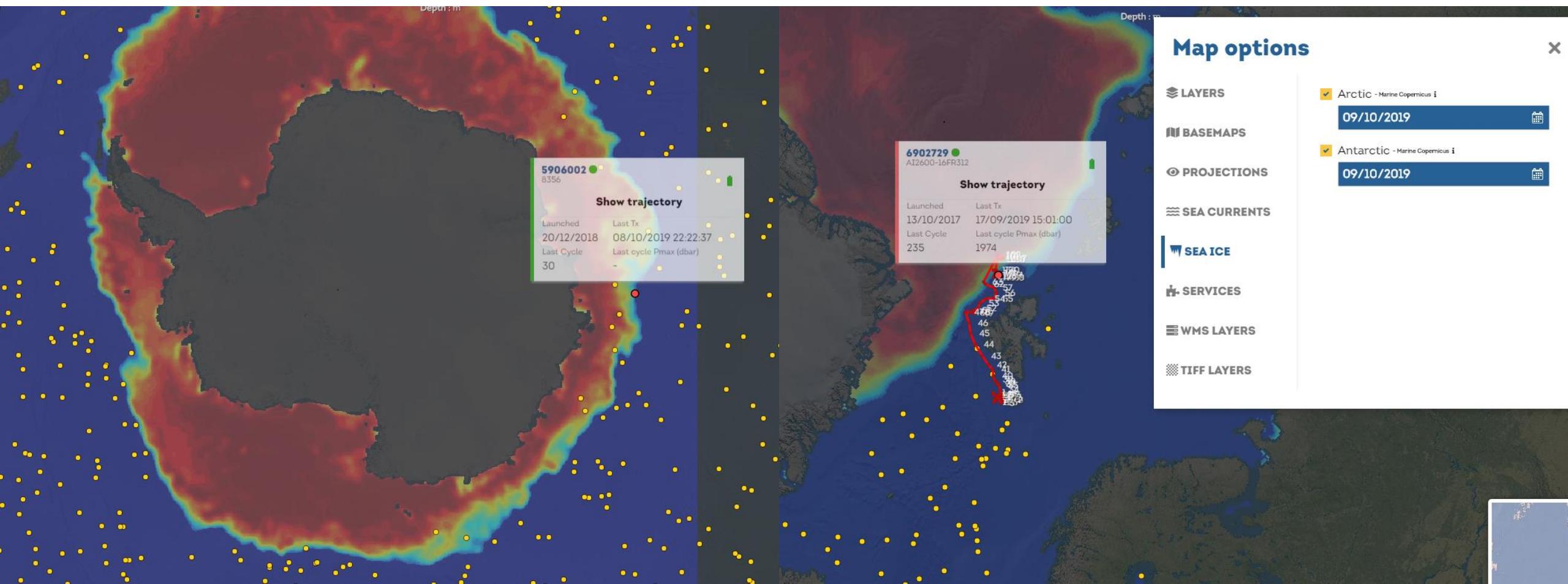
- **Surface** (End of Life messages, grounded @ 0 dbar, tech messages but not profile data, saturation of valve actions during buoyancy reduction phase, etc.): check your float!
- **Grounding** (alert if not coherent with bathy; to be refined)
- **Profile max pressure**: your float did not reach its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

A	WMO	Last Tx	Last cycle	Battery	Last cycle Pmax (dbar)	Surface float	Last cycle grounded				
	6901800	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⚠️				



Dashboard – Map – ICE

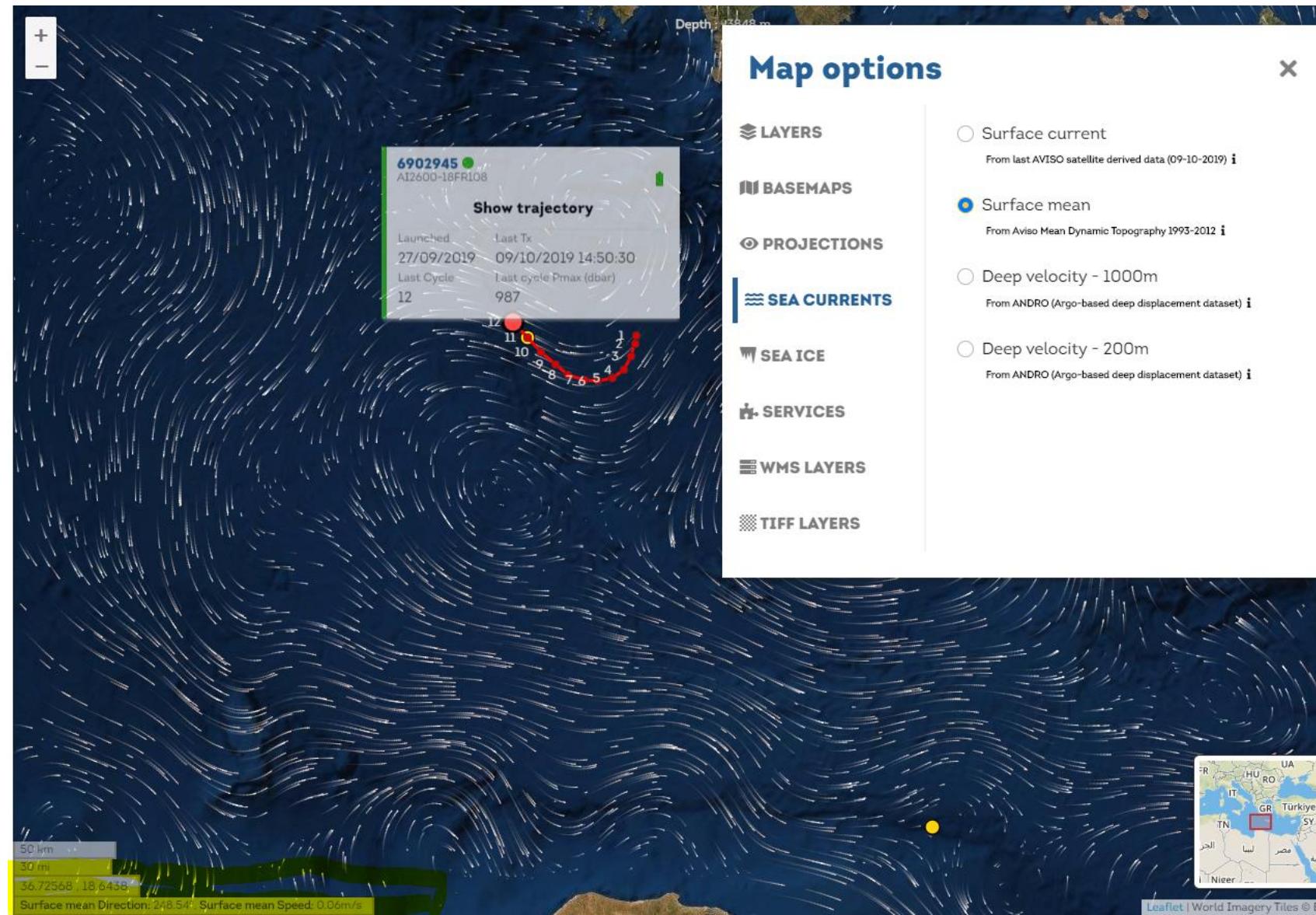
- Check float positions with last sea ice edge:
adjust float parameters (ISA, cycle period etc.) before the float is trapped under ice;
- Go back in time to check ice edges with float trajectory and profile dates





Dashboard – Map – CURRENTS

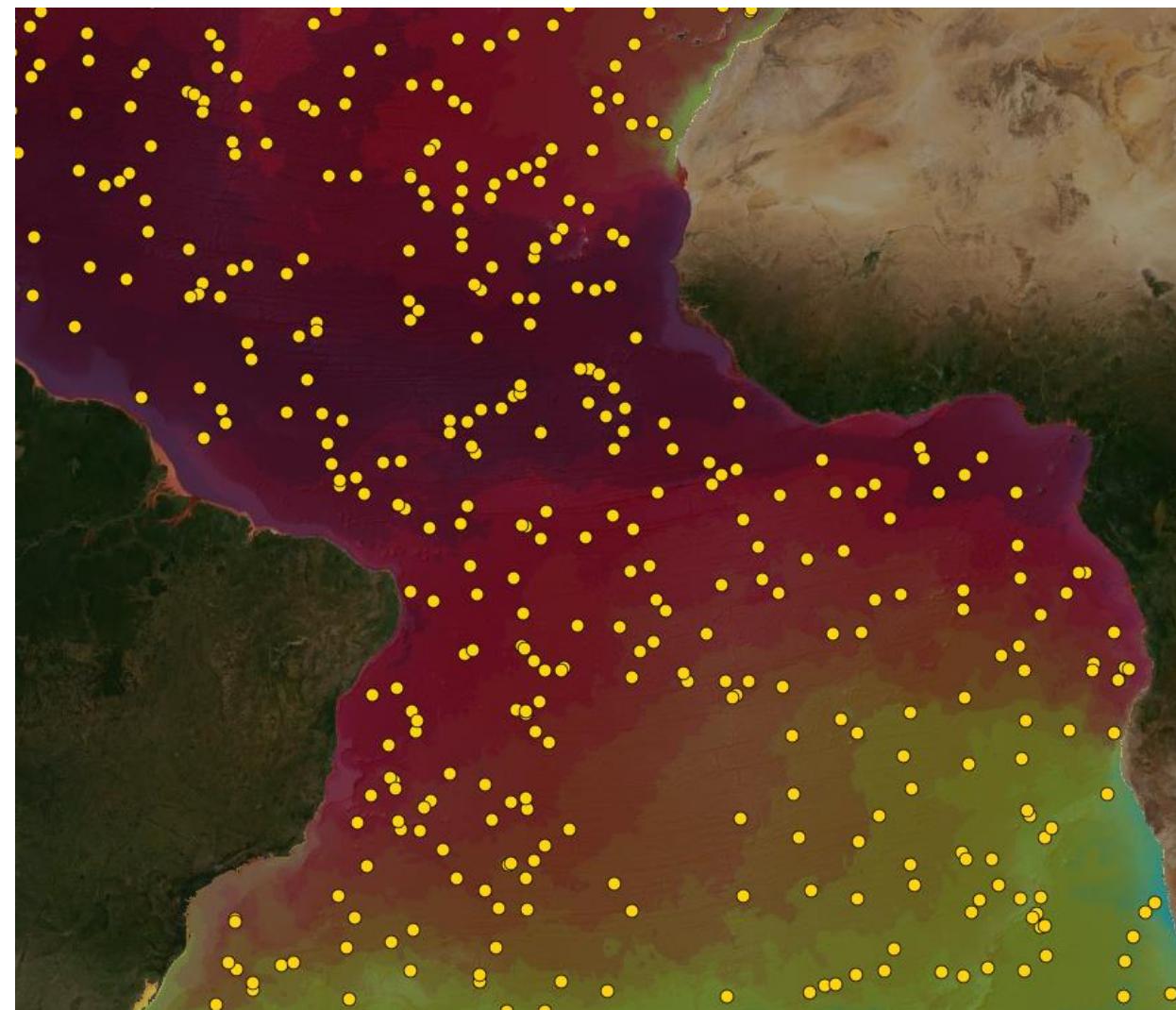
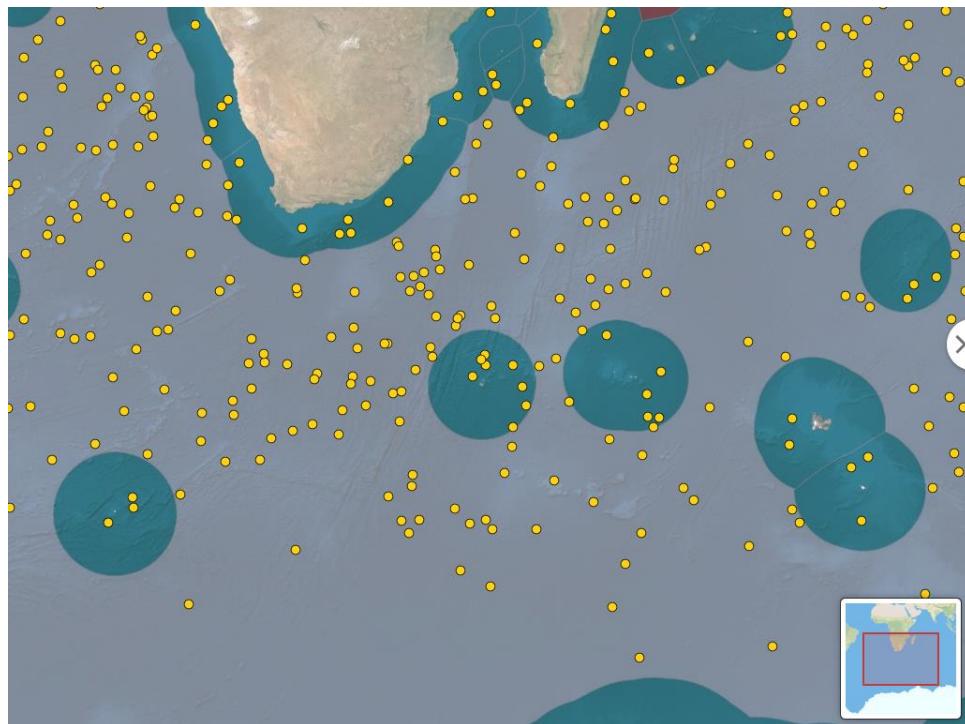
- Float trajectory with surface current (AVISO) deep current (ANDRO)





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

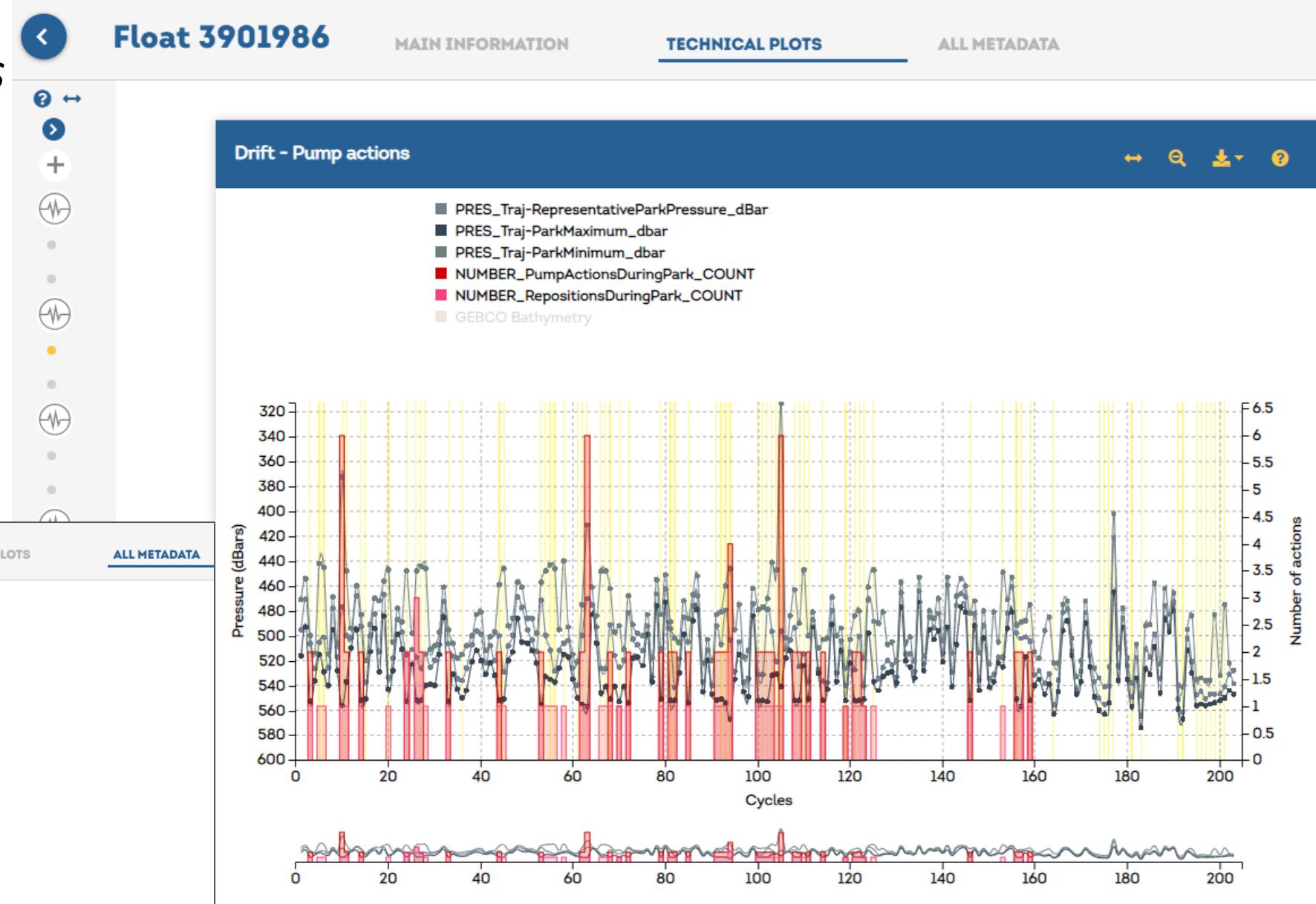
Float 3901986

MAIN INFORMATION TECHNICAL PLOTS ALL METADATA

Float configuration

Mission configurations

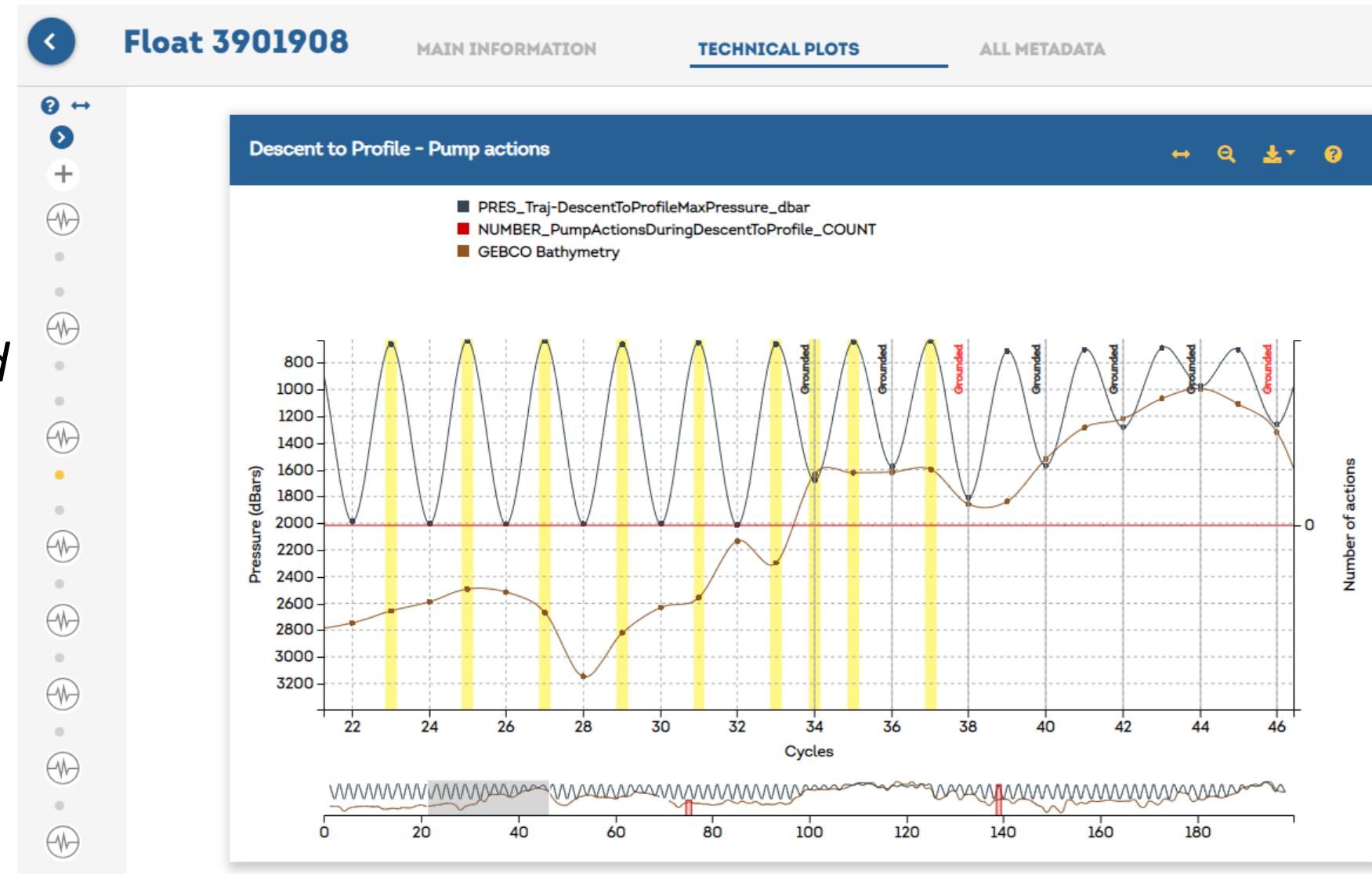
Cycles #	1	2>160	161>203
CONFIG_CycleTime_hours	60.5	72	72
CONFIG_DescentToParkPresSamplingTime_seconds	10	0	0
CONFIG_Direction_NUMBER	3	1	1
CONFIG_InternalPressureCalibrationCoef2_NUMBER	-133	-133	-133
CONFIG_ParkPressure_dbar	500	500	500
CONFIG_PressureTargetToleranceDuringDrift_dbar	50	50	100
CONFIG_PressureTargetToleranceForStabilisation_dbar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

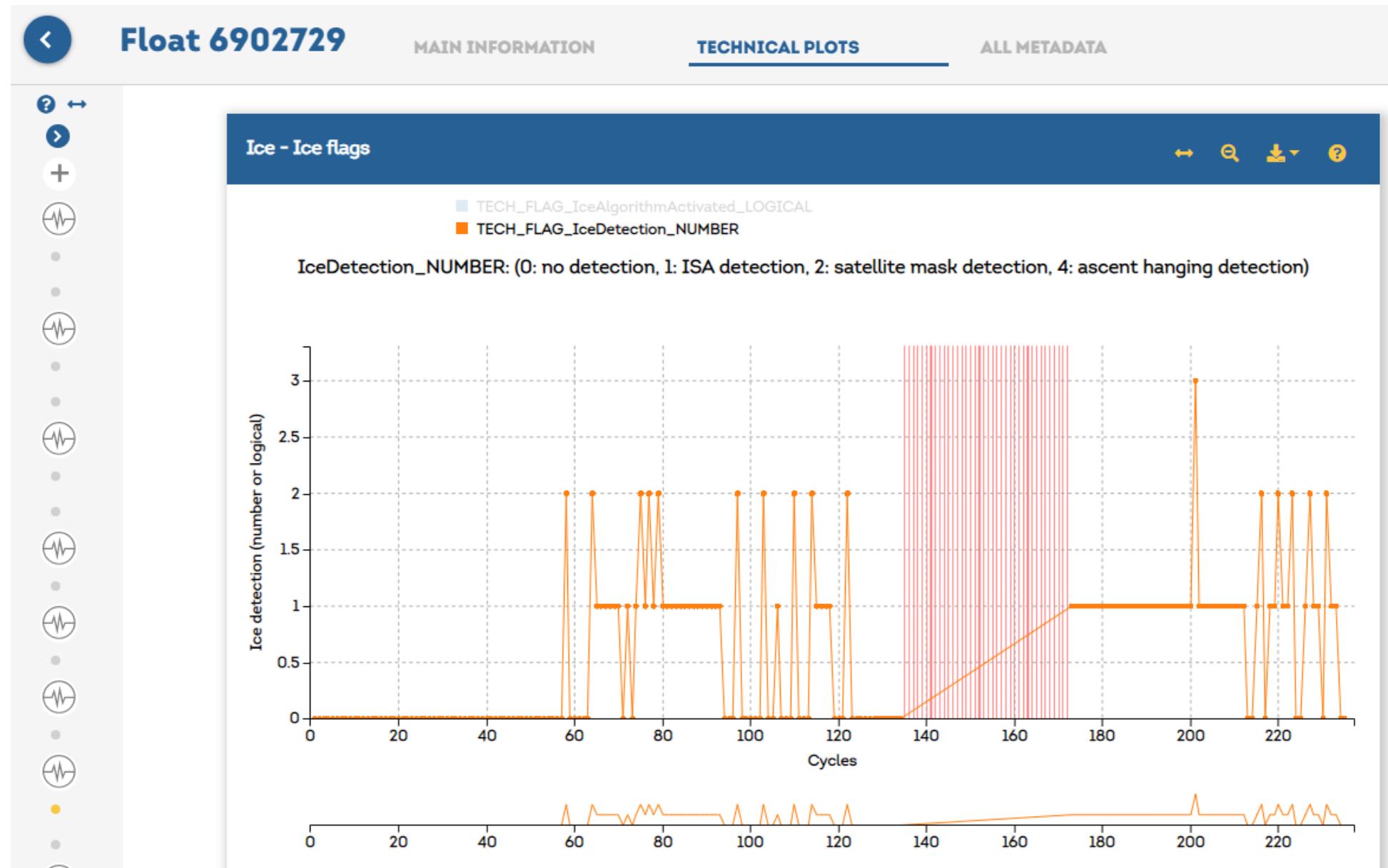
152 floats

	Nb floats	Nb cycles
+ CTD	6 3.95%	14 0.09%
+ FLAG_InvalidSalinity_LOGICAL	6 3.95%	7 0.05%
+ FLAG_InvalidTemperature_LOGICAL	2 1.32%	7 0.05%
+ Hydraulic	151 99.34%	6413 41.32%
+ FLAG_Park_ImmersionDriftOutTolerance_LOGICAL	147 96.71%	2593 16.71%
+ FLAG_ProfileMaxPressureAnomaly_LOGICAL	142 93.42%	2158 13.9%
- FLAG_MissingCycle_LOGICAL	13 8.55%	103 0.66%
	3901842 3901851 3901863 3901874 3901879 3901885 3901899 3901902 3901906 3901909 3901938 3901957 3901982	



Float page – Technical plots – ICE

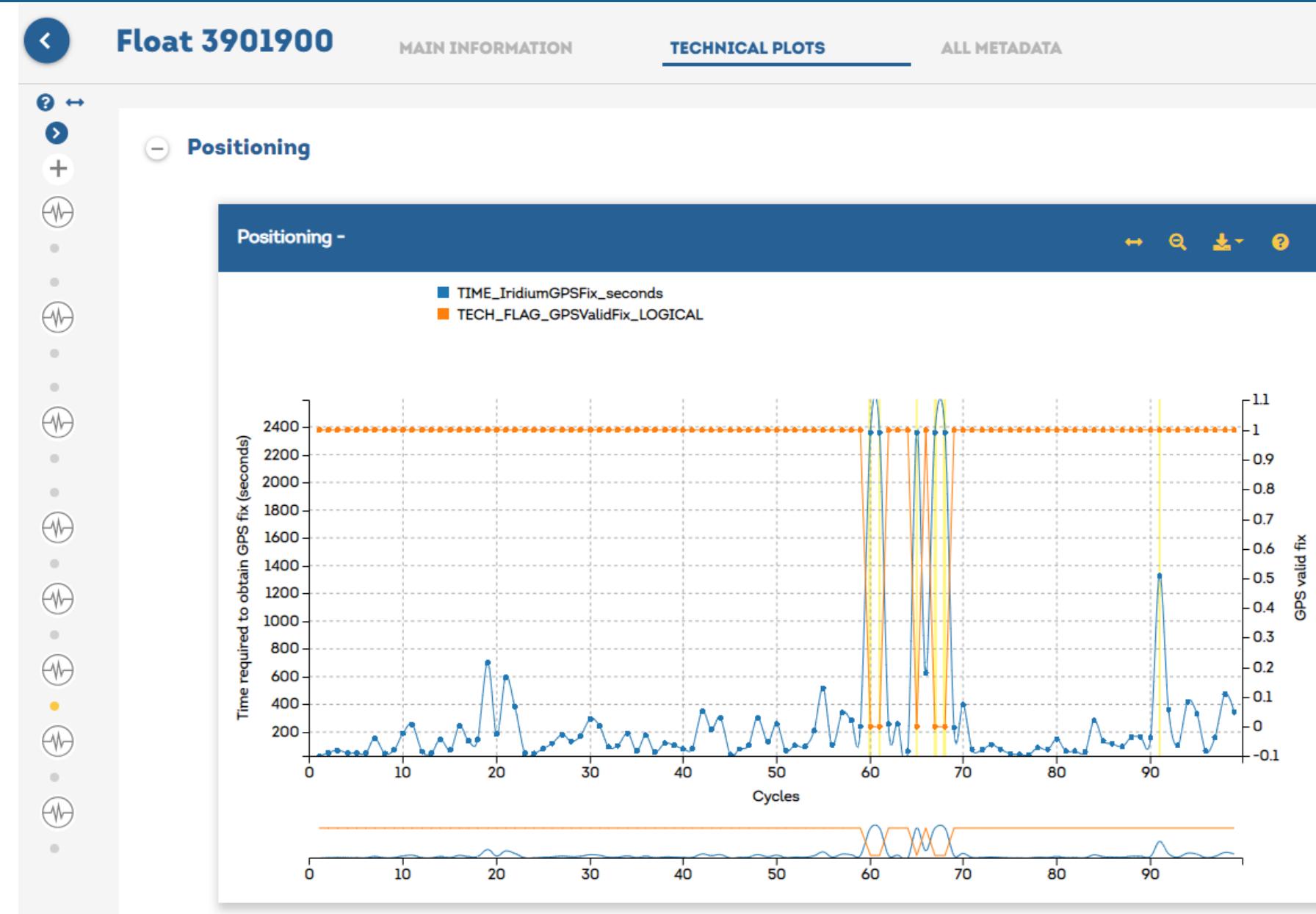
- *Ice detections*





Float page – Technical plots – GPS

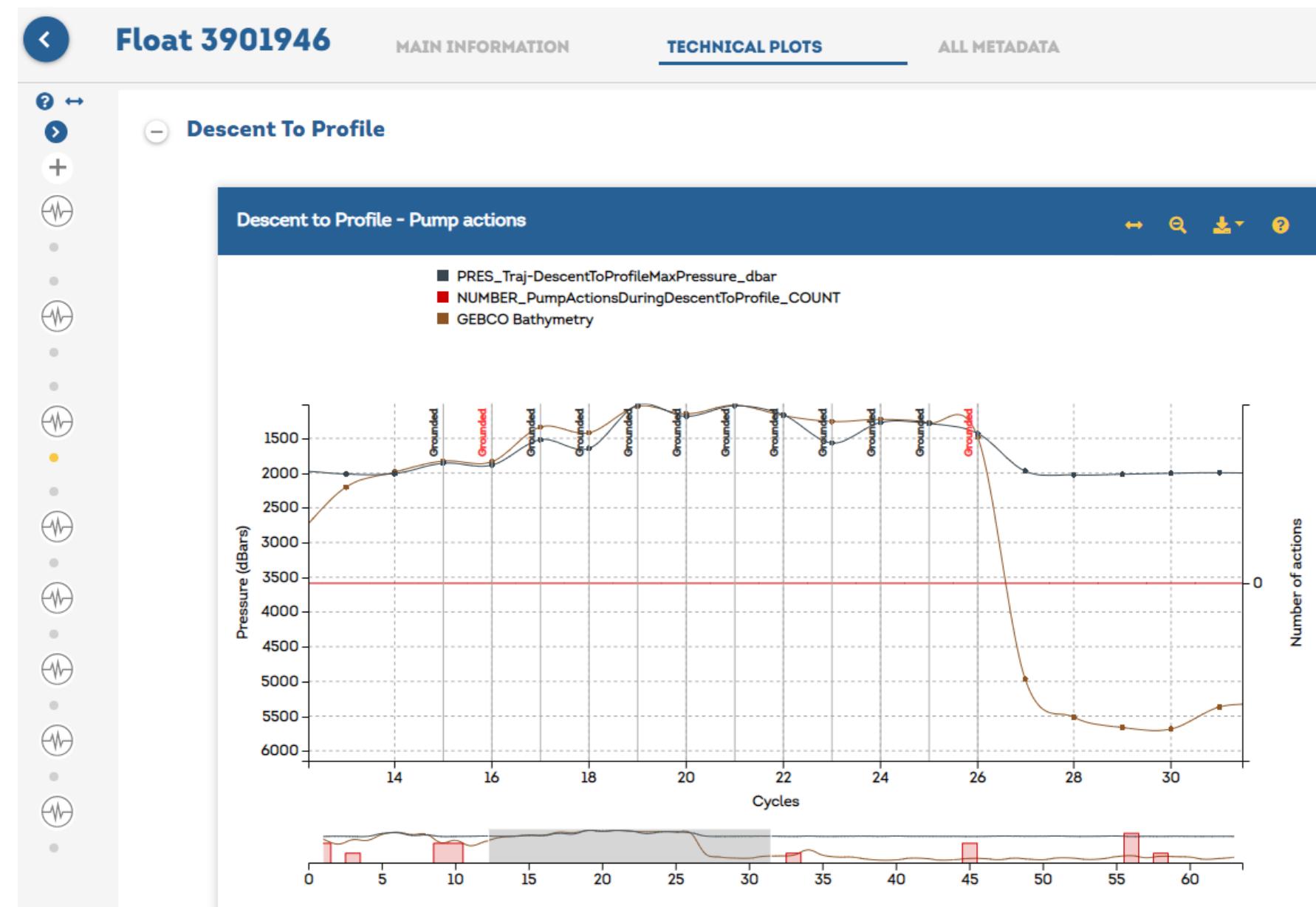
- *GPS valid fix*





Float page – Technical plots – GROUNDING

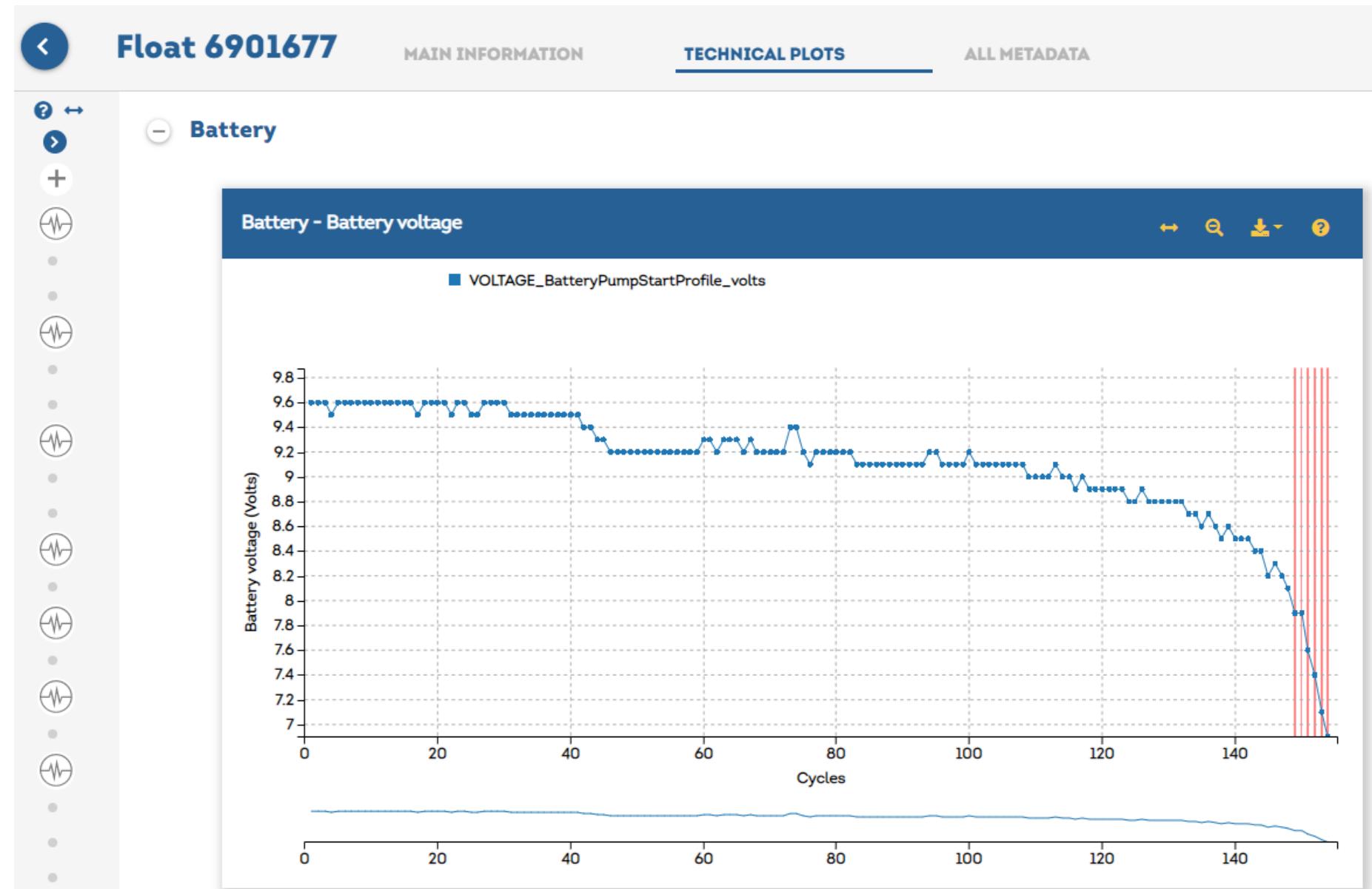
- By cycle phases





Float page – Technical plots – BATTERY VOLTAGES

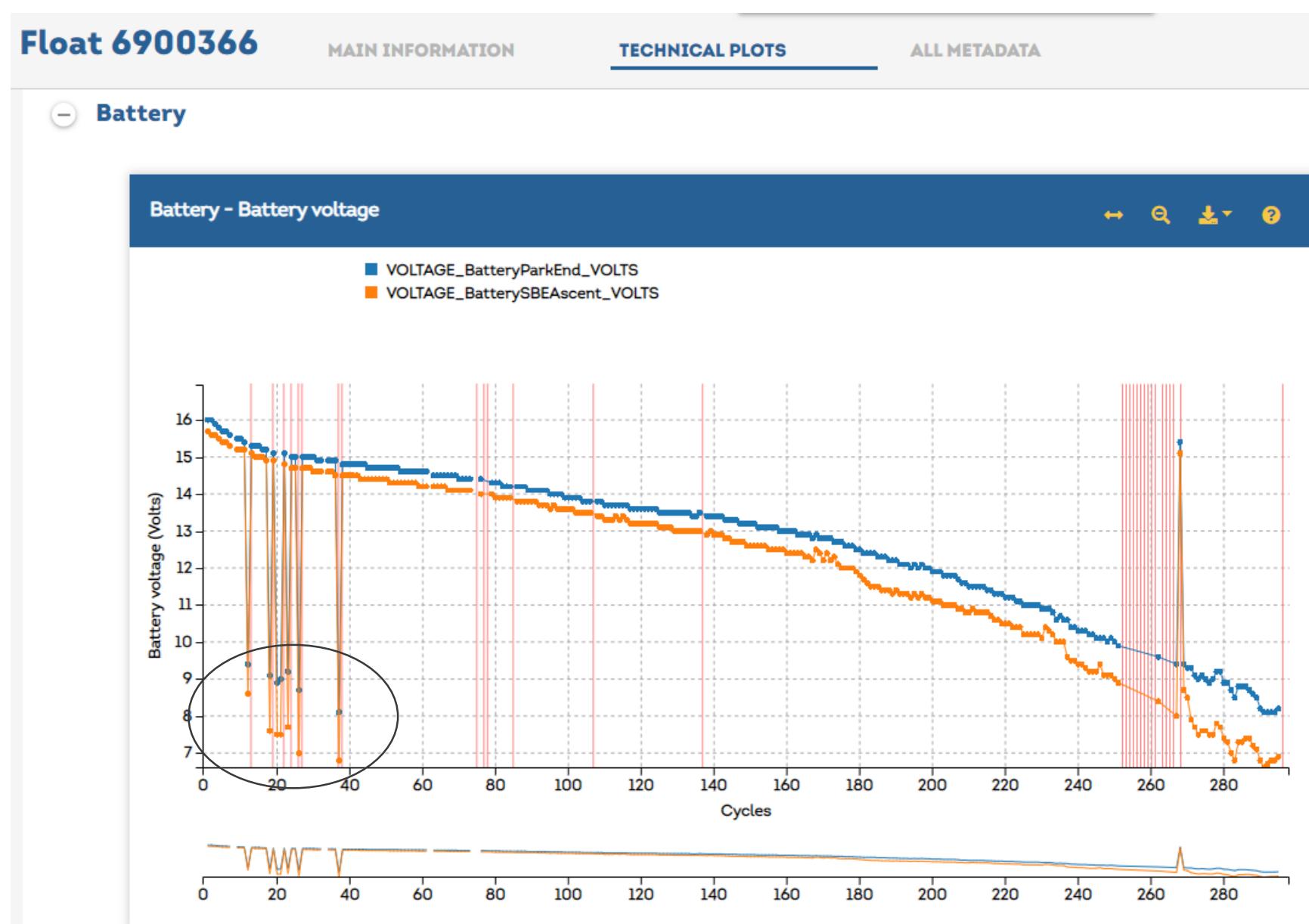
- *Below threshold*
- *Drop (difference x% compared to last cycle)*





Float page – Technical plots – BATTERY VOLTAGES

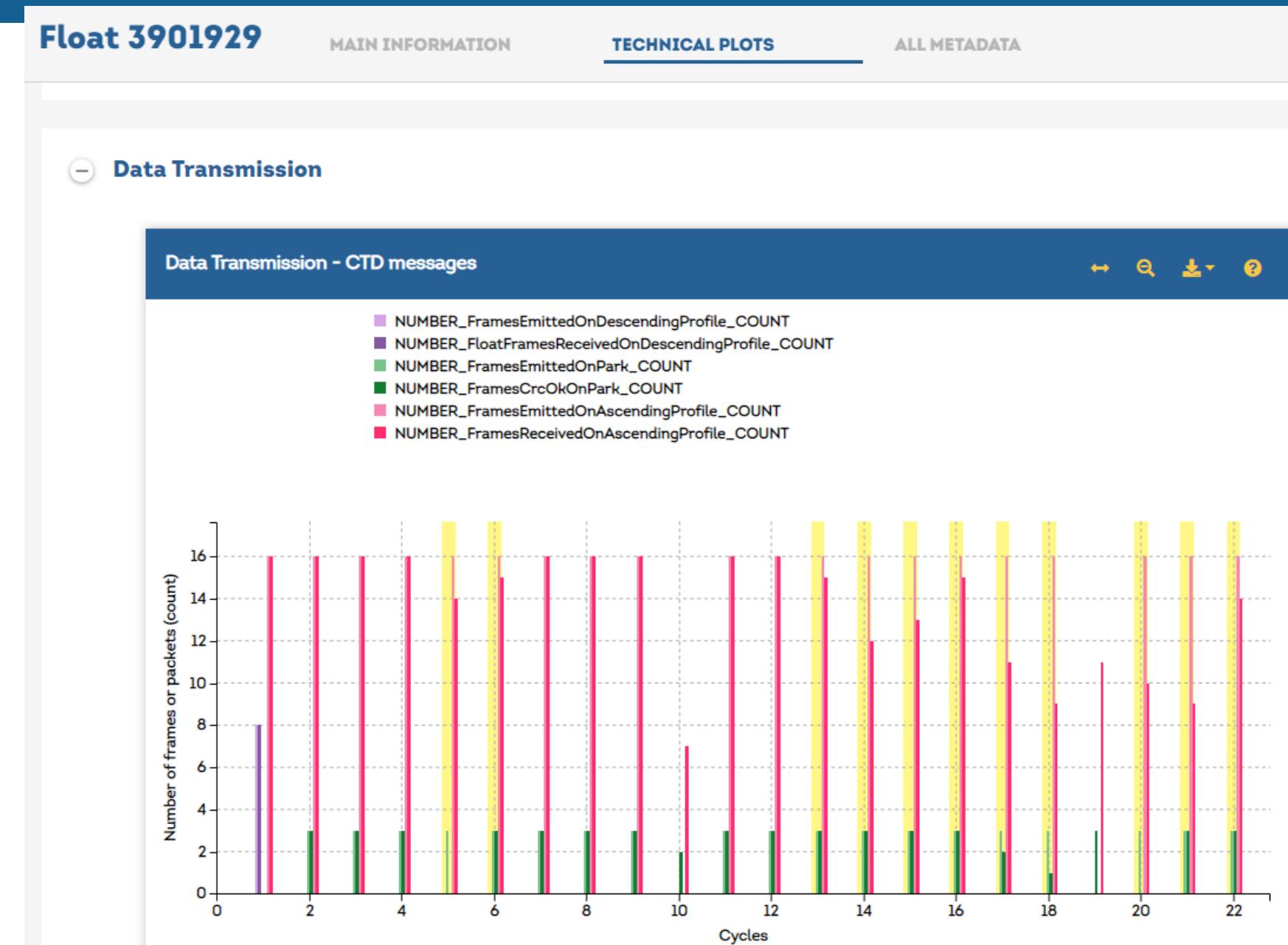
- APEX Alkaline





Float page – Technical plots – DATA TRANSMISSION

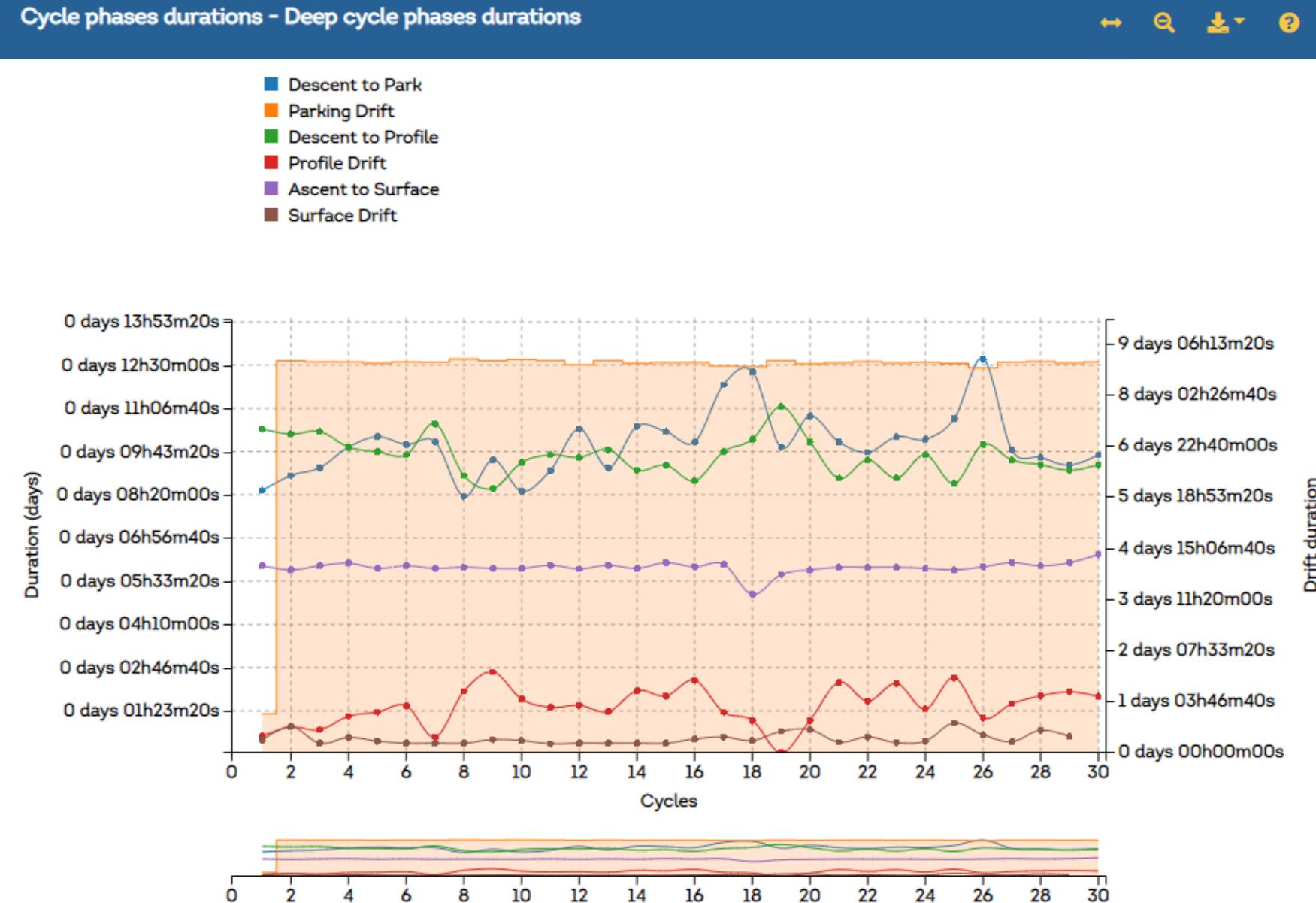
- ARGOS transmission problems
- Some packets sent by the float are not received on shore





Float page – Technical plots – DURATIONS

Durations of the different float cycle phases





Float page – Technical plots – ANY PARAMETER

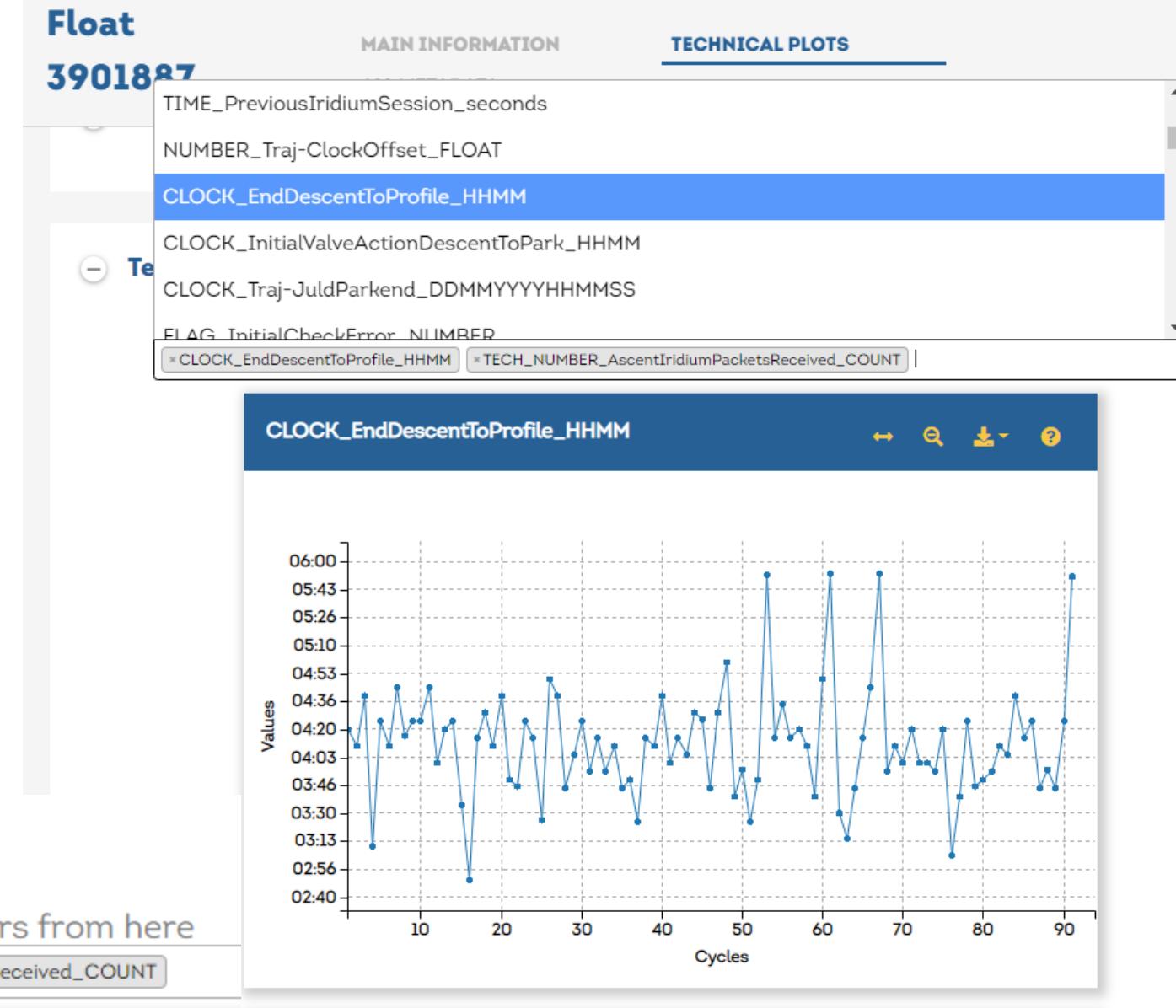
Plot any technical parameter

Technical Parameters

Select the technical parameters from here

CLOCK_EndDescentToProfile_HHMM

TECH_NUMBER_AscentIridiumPacketsReceived_COUNT



Please send us your feedback!



EURO-ARGO.EU

euroargo@ifremer.fr

 @EuroArgoERIC

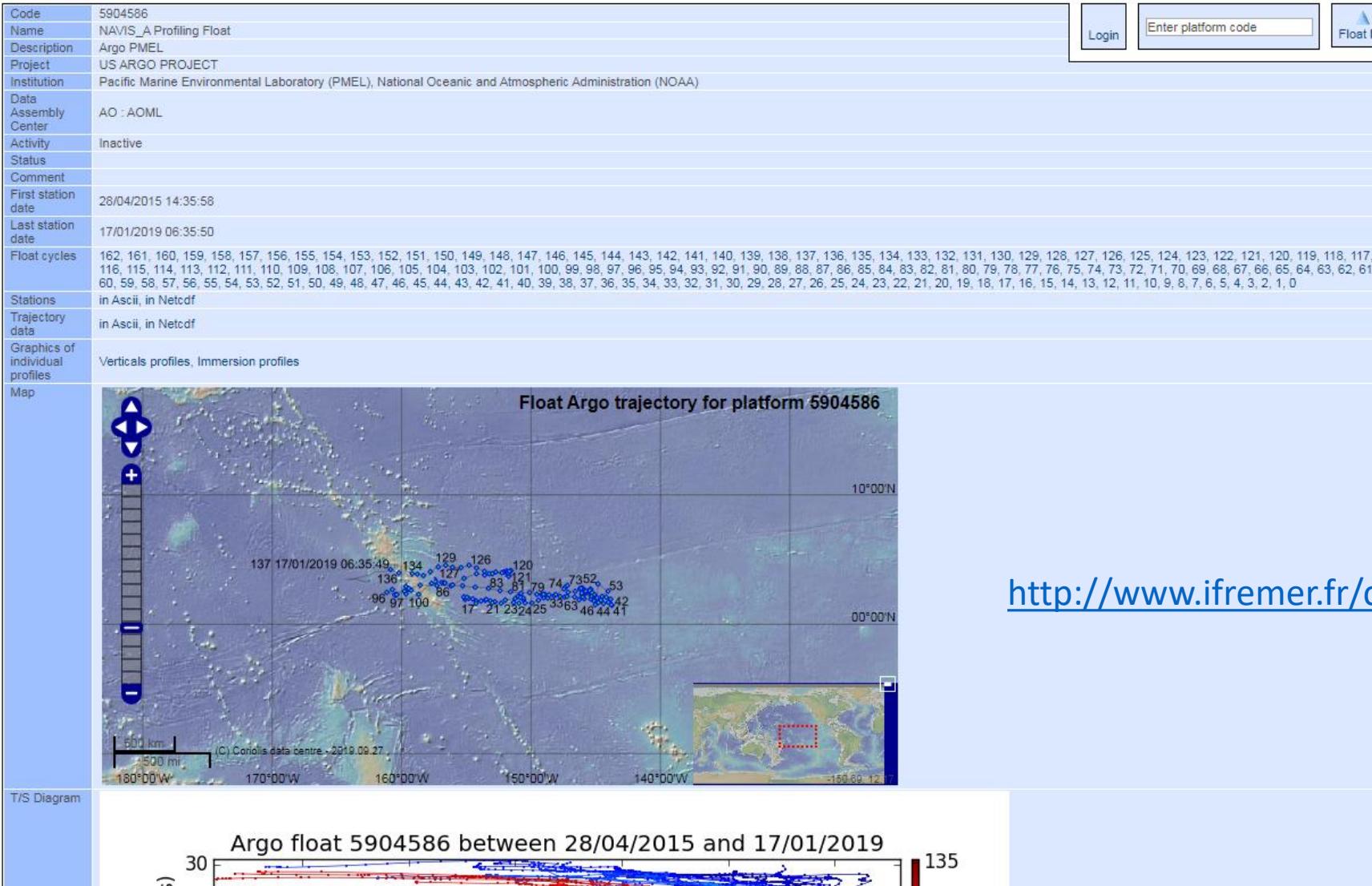


Euro-Argo fleet monitoring

- History

Monitoring Argo floats – History

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



<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)

Monitoring Argo floats – History

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

Argo Float 3901885

WMO Number: 3901885 Group Code: [+ -](#)

[MAIN INFORMATION](#) [TECHNICAL PARAMETERS](#) [DETAILED INFORMATION](#)

About float

WMO 3901885	INST_REFERENCE AI2600-16FR048	PLATFORM_TYPE ARVOR	TRANS_SYSTEM IRIDIUM	PTT 248066i	FLOAT_OWNER KNMI
DATA CENTRE BO	SENSORS CTD_PRES, CTD_TEMP, CTD_CNDC				

Deployment

PR_LAUNCH_DATETIME 19/12/2016 03:45:00	DEPLOY_PLATFORM PLANCIUS	CRUISE_NAME Transit	PR_EXPERIMENT_ID MOCCA-NETH	PI_NAME Andreas Sterl
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Cycles Activity

Status Active	First station date 19/12/2016 06:18:00	Last station date 17/09/2019 12:03:00	Stations data in Ascii in Netcdf	Trajectory in Ascii in Netcdf
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Data

[T/S Diagram](#) [Section chart](#)



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

EURO-ARGO.EU

35



Monitoring Argo floats – History

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

Monitoring At Sea - MOCCA

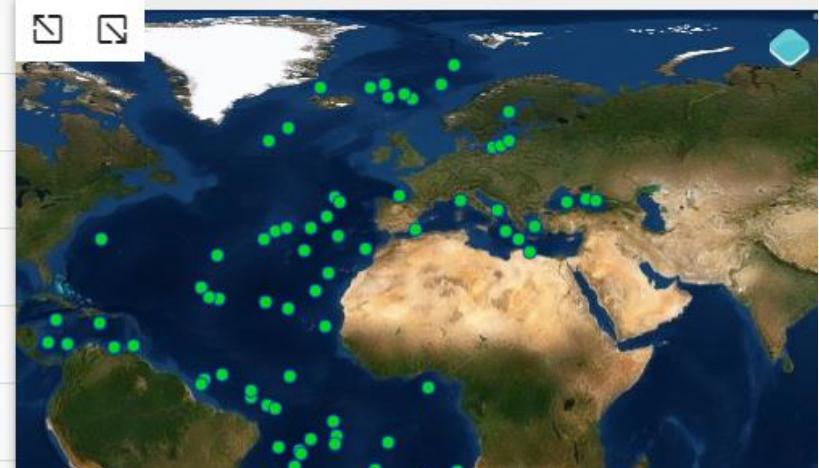
WMO Number ACCESS PLATFORM
Group Code ACCESS DASHBOARD
Dashboard

0 this week 0 this month 4 this year 0 this week 0 this month 0 this year

152 floats - 138 active on 27/09/2019

ACTIVE FLOATS **ALL FLOATS** **FLEET STATUS** **FLEET AGE** **FUNCTIONAL MONITORING**

WMO	PTT	Serial #	Float	DAC	Last Tx	Last Cycle #	Battery	Alert	Launch Date	Last
3901838	360309	AI2600-16FR001	ARVOR	IF	18/09/2019 11:49:30	113	10.4		23/08/2016 09:41:00	197
3901839	360110	AI2600-16FR002	ARVOR	IF	19/09/2019 11:20:30	119				
3901840	360211	AI2600-16FR003	ARVOR	IF	22/09/2019 11:26:30	122				
3901841	360611	AI2600-16FR004	ARVOR	IF	25/09/2019 11:23:30	116				
3901843	360809	AI2600-16FR006	ARVOR	IF	26/09/2019 11:47:30	108				
3901844	360911	AI2600-16FR007	ARVOR	IF	20/09/2019 11:45:00	108				
					20/09/2019 11:41:00	119				



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