Optimize your Argos tracks

Reprocessing your Argos tracks for greater positioning precision

Argos reprocessing service

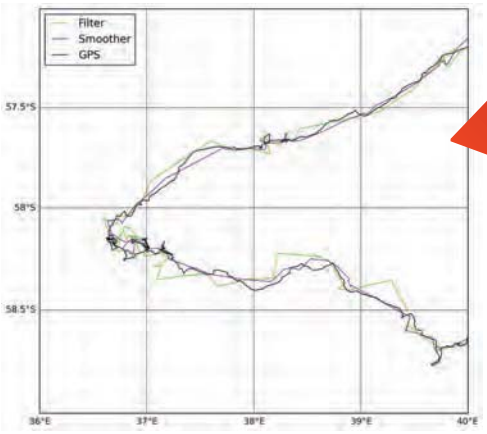
Argos positioning is based on the Doppler shift of the carrier frequency of the messages (http://www.argos-system.org/manual/3-location/32_principle.htm). In addition to the near-real time data processing service, CLS provides a reprocessing service via ArgosWeb that re-estimates platform trajectories with much a higher level of accuracy.
The service relies on an advanced estimation technique and only works retroactively.

On average, compared to the real-time processing service, our reprocessing service reduces error by approximately one third for locations based on 2 or 3 messages. For 1- message locations, the error is typically halved.

The use of an Interacting Multiple Model (IMM) filter with a delayed processing significantly improves the Argos location accuracy. This is obtained using a fixed-interval multiple-model smoothing technique.

For more information and technical references, please refer to: Lopez, R., Malardé, J. P., Danès, P., & Gaspar, P. (2015). Improving Argos Doppler location using multiple-model smoothing. Animal Biotelemetry, 3(1), 1. http://animalbiotelemetry.biomedcentral.com/articles/10.1186/s40317-015-0073-4

CLS can reprocess Argos Doppler locations from 01/01/2008



Our reprocessing service allows scientists to focus on the ecological interpretation of Argos trajectories rather than on the technicalities of data processing

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For questions or a quote, please contact your local customer care.

Enrich animal tracks with contextual data (weather, ocean currents…)

Global models allow a full depiction of atmospheric and ocean conditions. Model data provide atmospheric and oceanographic information to better exploit satellite tracking data by coupling environmental conditions with a trajectory.

CLS has been processing satellite oceanographic data for more than 20 years and is connected to the highest quality atmosphere and ocean model data servers in the world (Copernicus, ECMWF, NOAA…).

We can now provide metocean model data to our clients along Argos tracks.

Moving towards climate studies:

Knowing air pressure, wind, temperature, and humidity conditions along bird trajectories, and ocean currents, plankton concentration and sea temperature along marine animal trajectories, are a crucial part of behaviour analysis for biologists. These environmental data are also key to assessing the impact of climate change.

› Meteorological data

- Air temperature
- Humidity
- Rain
- Wind
- Pressure

Source: Global meteorological weather prediction models (ECMWF, NOAA, Météo France)

› Oceanographic data

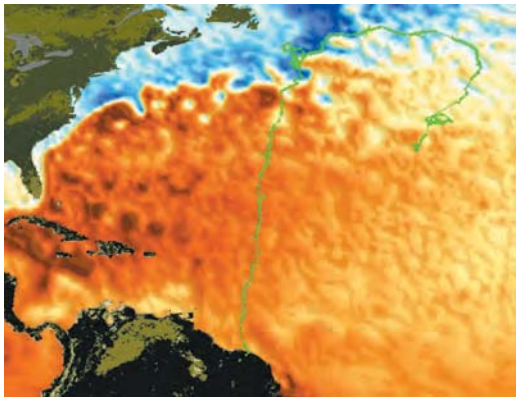
Satellite:

- Sea level and geostrophic current
- Temperature
- Plankton

Model:

- 3D temperature
- 3D current
- 3D Salinity

Use oceanographic data in your GIS software to enhance animal tracks.



Source: Satellite observation (CLS) and Global ocean circulation model (Copernicus)

What we deliver:

Reprocessed data — Additional MetOcean data

Loc. date	Lat.	Long.	Loc. quality	Frequency	Error radius	Ellipse orientation	Dist. Subsat Track (deg)	Salinity[0/00] : -78.0	Salinity[0/00] : 0.0	Color standardRes (mg/m3)	primary Production (mg/m2/day)	Altimetry surface Anomaly[cm]	Sub Temperature (°C) : -78.0	Sub Temperature (°C) : -2.0	Sub Temperature (°C) : 0.0
31/08/2015 12:15	-48.93664	85.42171	B	401677558.53	22623.0	85.0	0.95	34.324	34.325	0.137	205.217	-4.27	7.747	7.761	7.761
31/08/2015 13:49	-48.91489	85.38037	A	401677555.00	844.0	93.0	14.34	34.306	34.318	0.128	196.011	-3.647	7.648	7.728	7.728
31/08/2015 19:36	-48.80806	85.19893	B	401677561.33	7838.0	91.0	1.30	34.135	34.131	0.333	169.961	-0.506	6.81	6.843	6.843
31/08/2015 22:21	-48.83050	85.19671	1	401677561.04	644.0	101.0	8.01	34.137	34.133	0.354	165.98	-0.165	6.843	6.883	6.883
01/09/2015 08:05	-48.68052	85.01042	0	401677560.65	4186.0	83.0	12.66	34.211	34.137	0.159	256.964	2.151	6.937	6.694	6.694
01/09/2015 10:25	-48.65392	84.94853	B	401677552.07	4792.0	96.0	20.38	34.226	34.184	0.167	268.805	3.016	6.866	6.731	6.731
01/09/2015 13:26	-48.61230	84.86714	B	401677557.83	4845.0	102.0	17.75	34.18	34.177	0.171	264.092	4.128	6.934	6.963	6.963
01/09/2015 17:33	-48.55649	84.76951	A	401677553.69	1478.0	75.0	9.59	34.171	34.152	0.213	254.823	5.753	6.856	6.855	6.856
01/09/2015 19:05	-48.54035	84.71555	B	401677554.14	1398.0	98.0	22.71	34.169	34.144	0.161	251.483	6.951	6.714	6.747	6.748
01/09/2015 19:33	-48.53804	84.70393	1	401677556.78	1393.0	85.0	3.90	34.167	34.142	0.158	250.544	7.228	6.671	6.716	6.716
01/09/2015 21:58	-48.50663	84.61208	0	401677552.76	2591.0	125.0	11.98	34.128	34.119	0.182	241.351	9.223	6.136	6.236	6.236
01/09/2015 23:25	-48.48952	84.59734	0	401677554.13	5709.0	113.0	5.86	34.108	34.103	0.199	242.868	9.311	5.974	6.061	6.061
01/09/2015 23:58	-48.49297	84.59189	B	401677551.09	4353.0	107.0	10.69	34.109	34.104	0.192	241.221	9.423	5.973	6.058	6.058
02/09/2015 01:15	-48.48997	84.56266	B	401677557.93	3149.0	119.0	22.71	34.087	34.084	0.168	236.623	10.913	5.845	5.91	5.91
02/09/2015 01:15	-48.49325	84.56610	B	401677555.71	1185.0	120.0	20.01	34.092	34.089	0.177	236.009	10.9	5.875	5.944	5.944
02/09/2015 03:20	-48.48848	84.55632	B	401677560.53	1152.0	96.0	19.49	34.081	34.078	0.162	237.063	10.988	5.814	5.875	5.875
02/09/2015 03:20	-48.48727	84.54627	A	401677554.49	3631.0	96.0	1.08	34.073	34.071	0.157	237.56	11.12	5.771	5.825	5.825
02/09/2015 11:13	-48.33261	84.41491	0	401677551.50	2632.0	39.0	16.78	33.96	33.96	nc	247.661	11.053	5.442	5.457	5.457
02/09/2015 11:14	-48.33172	84.41485	A	401677557.85	1847.0	40.0	4.03	33.961	33.961	nc	248.465	11.039	5.444	5.459	5.459
02/09/2015 11:48	-48.33935	84.41656	B	401677564.07	2257.0	92.0	8.18	33.959	33.96	nc	245.915	11.142	5.429	5.444	5.444
02/09/2015 11:49	-48.33913	84.41652	0	401677566.06	2990.0	92.0	5.09	33.96	33.96	nc	245.955	11.139	5.429	5.445	5.445
02/09/2015 11:49	-48.33908	84.41595	B	401677561.61	1792.0	92.0	8.26	33.96	33.96	nc	245.97	11.146	5.431	5.446	5.447