

IMDIS 2024 - Bergen (Norway), 27-29 May 2024 International Conference on Marine Data and Information Systems



VALIDATED OCEANOGRAPHIC NEAR-REAL-TIME DATA TO SUPPORT CIVIL PROTECTION

A. Cociancich, M. Lipizer, E. Partescano, A. Altenburger, M. Jokic, E. Geletti, M. E. Molina Jack, M. Vinci, A. Giorgetti OGS – National Institute of Oceanography and Applied Geophysics

Near-Real-Time (NRT) oceanographic data, crucial for environmental emergencies and civil protection, undergo Quality Control (QC) for societal use. The Italian National Oceanographic Data Center (NODC) has managed NRT data from Adriatic Sea fixed stations for over a decade. These stations, part of the IFON network, result from collaboration with the Regional Civil Protection Service, aiding in the installation of buoys and sensors in northeastern Italy. Additionally, buoys in the north and south Adriatic contribute to international infrastructures like EMSO, ICOS, JERICO, and ITINERIS, enhancing marine environmental monitoring and research.







Efficient risk prevention activities hinge on continuous monitoring, minimal data latency, and rigorous data quality assessment. Data transmission systems often operate in areas with limited telecommunication coverage, using compact data formats like NMEA to mitigate packet loss risks. Yet, interpreting data within these formats poses mapping challenges, particularly during instrument configuration changes, which can introduce inaccuracies into the database.



OGS decided to take advantage of the tools made available by Google Drive and Google App Scripts and developed a cloud-based system to quickly decode the tool's messages in XML format. This

. 0	🛞 ERDDAP - MAMBO1 timeSeries	s, i x +						-		×
← C (https://nodc.ogs.it/erddap/ta	abledap/MAMBO1_TS.graph?time%2CTEN	ИР_1%2 а 	$A^{h}=\Box_{0}$	☆	1) {≞	Ē	<i>~</i> }		•
	DDC's ERDDAP er access to OGS's data		By download	ding a resou	rce, you agre	e to OGS	Brough copyright	nt to you and da	i by NOI ta policy	bc
	P > tabledap > Ma	ake A Graph 🙍								
inge: long ormation: Sun	itude = 18.082417 to 18.082417°E	a Applied Geophysics - OGS, Division of O E, latitude = 41.5277 to 41.5277°N, depth = D 19115 Metadata Background Data Ac	-5.0 to 1185.0m, cess Form	time = 2021	-01-01T00:	5) 00:00Z to	(now?)			
raph Type: line Axis:	itude = 18.082417 to 18.082417°E Imary ? License ? FGDC ISC	d Applied Geophysics - OGS, Division of O E, latitude = 41.5277 to 41.5277°N, depth = D 19115 Metadata Background Data Ac	ceanography (D -5.0 to 1185.0m, cess Form Time	range: 1	I-01-01T00:	5) 00:00Z to ((now?) - + 🕨)	,	
ange: long nformation: Sum Graph Type: line (Axis: time (Axis: TEI color:	intude = 18.082417 to 18.082417°E intude = 18.082	d Applied Geophysics - OGS, Division of O E, latitude = 41.5277 to 41.5277°N, depth = D 19115 Metadata Background Data Ac	Ceanography (D -5.0 to 1185.0m, cess Form Time	range: 1	I-01-01T00:(▼ day(s)	s) 00:00Z to ((now?))]	
inge: long iformation: Sum iformation: Sum iraph Type: line Axis: time Axis: TEI olor: Constraints @	onar institute of Oceanography and itude = 18.082417 to 18.082417°E immary ♥ License ♥ FGDC ISC sAndMarkers ▼ ♥ e MP_1 + Optional Constraint #1 ♥	Optional Constraint #2 @	دوعالموتعلمان (D -5.0 to 1185.0m, cess Form Time	range: 1	I-01-01T00:	s) 00:00Z to	(now?))		
interioritic inter	onar institute of Oceanography and itude = 18.082417 to 18.082417°E nmary @ License @ FGDC ISC sAndMarkers • @ e • MP_1 • • - + Optional Constraint #1 @ >= • 2024-03-15T00:00:00Z >= •	Optional Constraint #2 @ < ✓ 2024-03-16T00:00:00Z	(Leanography (L) -5.0 to 1185.0m, cess Form Time	range: 1	I-01-01T00:1	s) 00:00Z to	(now?))		
Ange: long nformation: Sum Graph Type: line (Axis: TEI Constraints Constraints Lime	onar institute of Oceanography and itude = 18.082417 to 18.082417°E itude = 18.082417 to 18.082417°E itude = 18.082417 to 18.082417°E sAndMarkers @ * • <td>Optional Constraint #2 ?? < 2024-03-16T00:00Z</td> <= v	Optional Constraint #2 ?? < 2024-03-16T00:00Z	ریا -5.0 to 1185.0m, cess Form Time (<u>siss</u>) (<u>siss</u>)) (<u>siss</u>) (<u>siss</u>) (<u>siss</u>)) (<u>siss</u>)	range: 1	uameo1_13 I-01-01T00:f	5) 00:00Z to ((now?))		

SQL procedures perform hourly checks on data in the NRT database against predefined thresholds based on areaspecific climatological ranges. The resulting data quality evaluations and associated flags are publicly accessible via the ERDDAP service. Regular flag checks provide rapid feedback, facilitating timely interventions and hypothesis formulation to address anomalies. The aim is to streamline data processing, guarantee the timely availability of reliable data for effective risk prevention activities.

allows immediate access to data for staff monitoring and enriches it with metadata for verification and entry into the database.



Then set the File Type: <u>.htmlTable</u> (File Type information) and <u>Download the Data or an Image</u> or view the URL: <u>https://nodc.ogs.it/erddap/tabledap/MAMBO1_TS.htmlTable?time,TEMP_1&</u> (Documentation / Bypass this form ?)

Things You Can Do With Your Graphs

Well, you can do anything you want with your graphs, of course. But some things you might not have considered are:

() ITINERIS









Finanziato dell'Unione europea NextGenerationEU





