



PROGRAMME OF
THE EUROPEAN UNION



Implemented by



European
Commission



Emergency
Management

#EUSpace

The Global Flood Monitoring (GFM) – a short intro and latest news

4th CEMS Global Flood Meeting 2025

Michaela Seewald, GeoVille & the GFM consortium



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Global Flood Monitoring (GFM)



Microwave
satellite imagery



Flood Map provision
within 8 hours
after data acquisition



High spatial resolution
with **20-meter pixel**
sampling



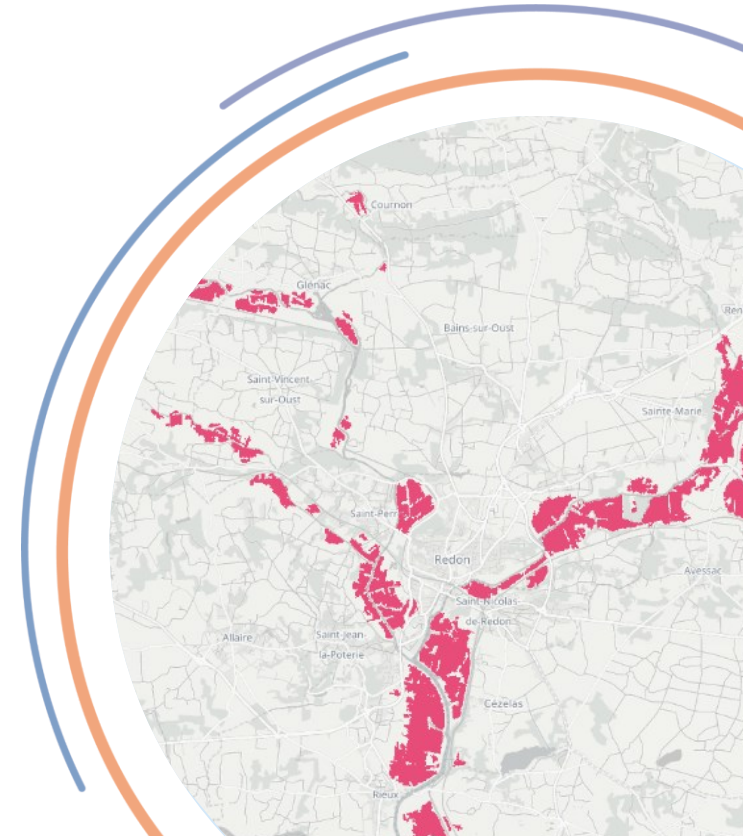
Global coverage
(except poles)



Full flood archive
from 2015 to
ongoing



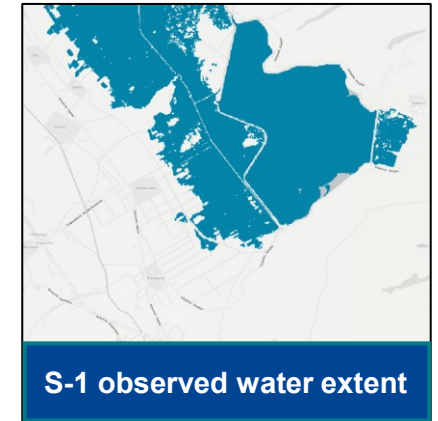
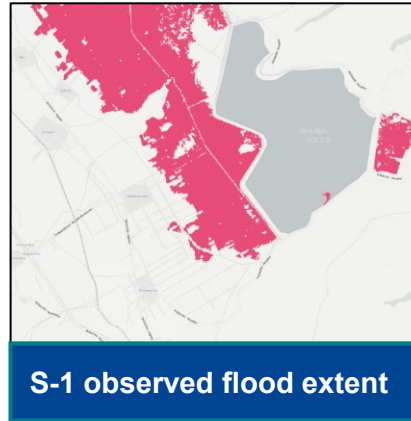
Web Map Service
with temporal
layers (WMS-T)



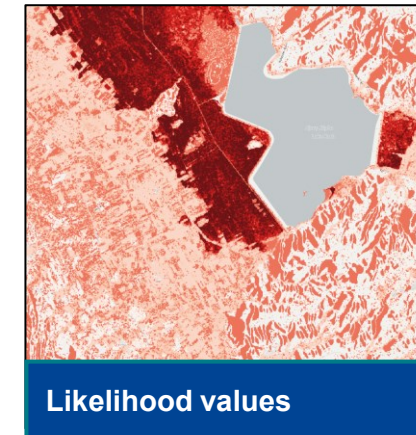


Product output layers

Water observations



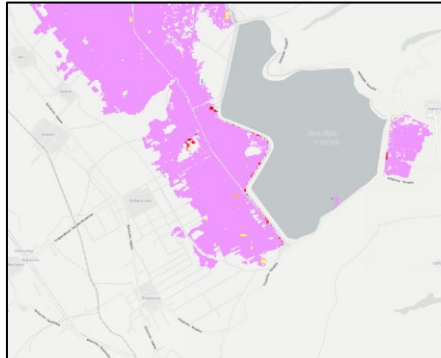
Contextual information





Product output layers

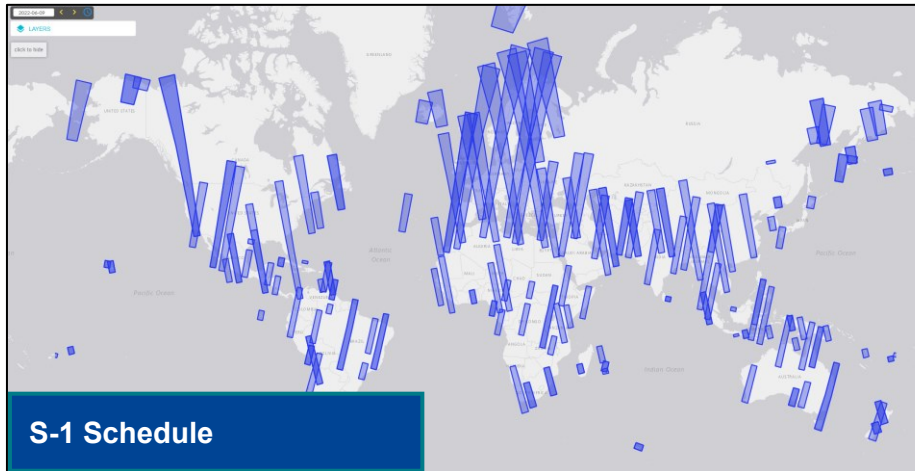
Metadata & Contextual information



Affected
Landcover/Population



S-1 Footprint & Metadata



S-1 Schedule



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Data Access Points



Access through GloFAS & EFAS



GFM UI for the download of all available datasets



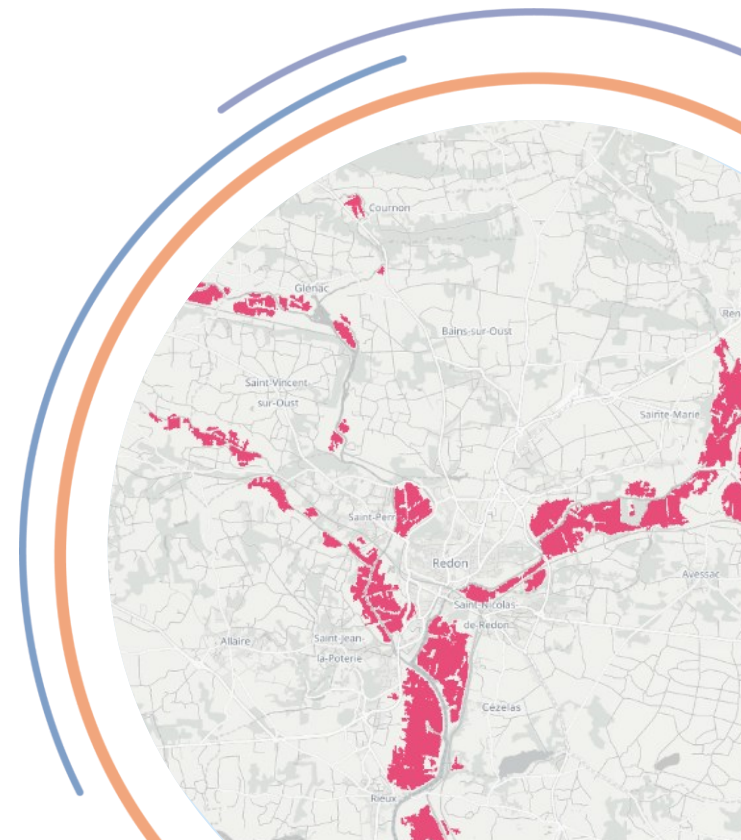
WMS-T service freely accessible for integration in preferred GIS environment



API service for expert users



STAC catalogue





GFM components & health status



Visible in all
access points

INITIAL CONDITIONS METEOROLOGICAL HYDROLOGICAL FLOOD RISK EVALUATION STATIC MONITORING EXTERNAL WMS

HOME MAP BACKGROUNDS OUT GLOFAS MONITORING SEARCH

Drag Here

Status of GFM system components

Group	Status	Message	Date
Sentinel1 Datastream	✓	No alert registered for this group. Seems as everything is working smoothly.	01/02/2023
GFM Production	✓	Flood data production is up and running.	31/01/2023
GFM Dissemination	✓	No alert registered for this group. Seems as everything is working smoothly.	01/02/2023
API Health	✓	No alert registered for this group. Seems as everything is working smoothly.	01/02/2023

Note: As a result of the end of the mission of the Copernicus Sentinel-1B satellite (announced by ESA on 3 August 2022), due to the technical anomaly that occurred on 23 December 2021, the current global coverage of the GFM Product, as indicated by the latest Sentinel-1 satellite image tiles which are displayed in the GloFAS Map Viewer, is based on image acquisitions performed by the Sentinel-1A satellite only. It is expected that the full global coverage of the GFM Product (i.e. based on the two-satellite Sentinel-1 configuration) will be restored following the fast-tracked launch of Sentinel-1C, which is currently planned for the second quarter of 2023.

Drag Here

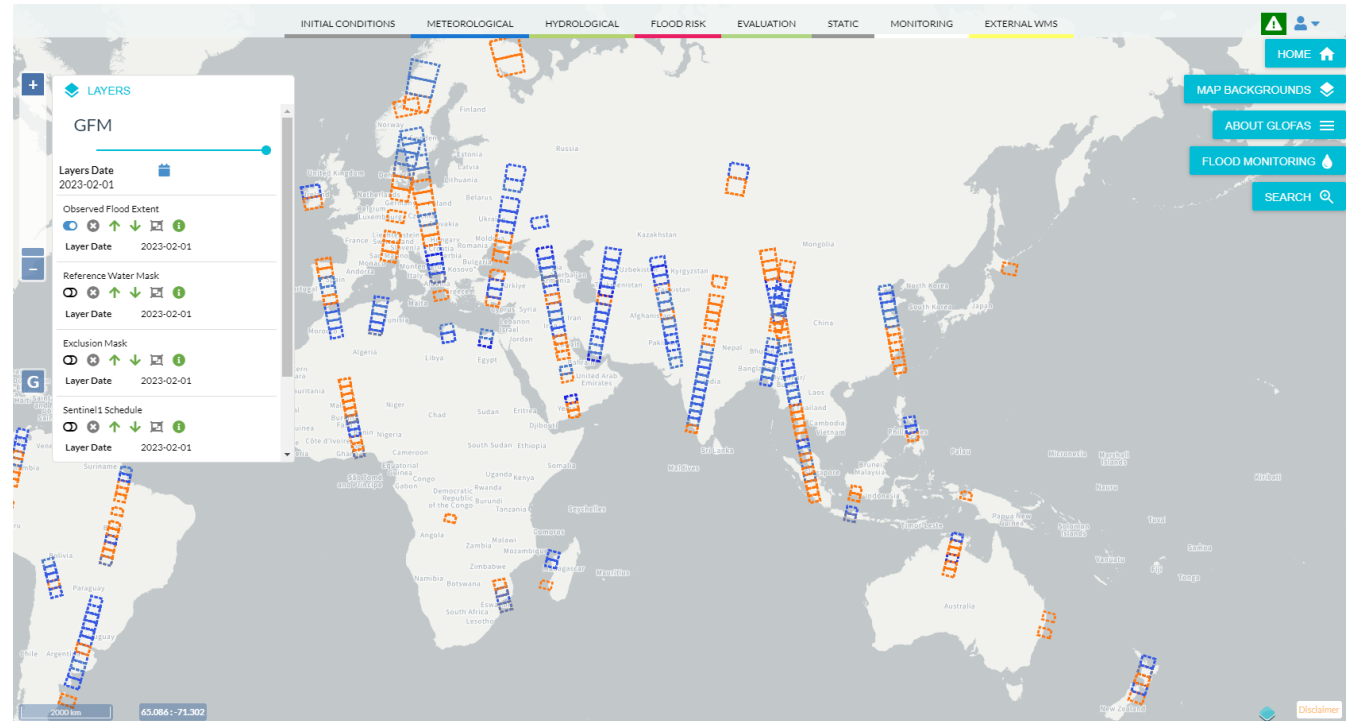
2000 km 68.346 - 122.279 Disclaimer



Timeliness



Continuous update of
the global, daily layer

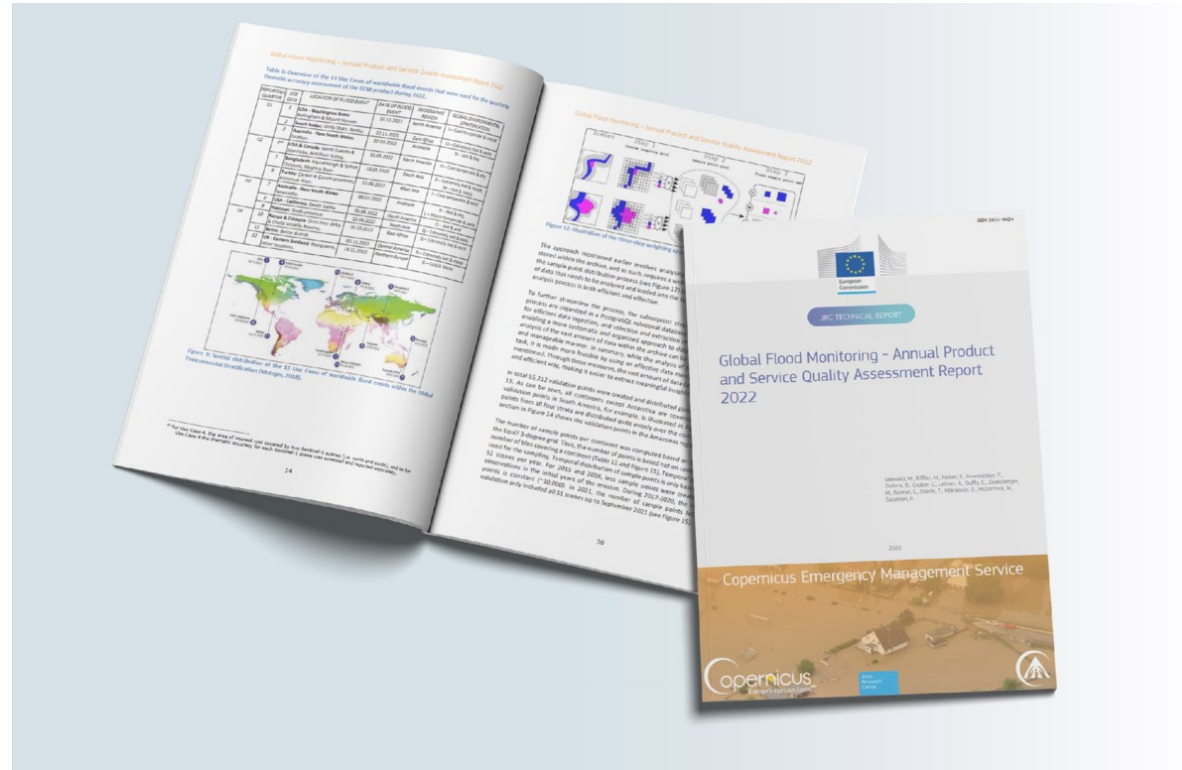




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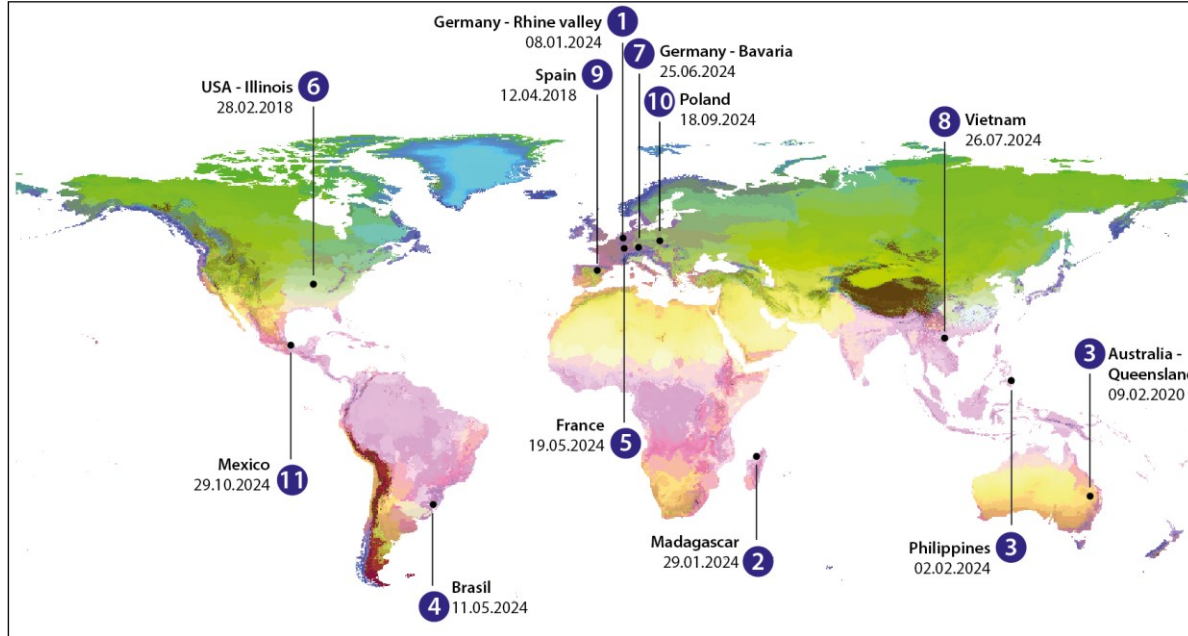


Quality Assessment – Annual Reports



Annual Report
2024 under review

Quality Assessment – Thematic Accuracy



#	USE CASE	KPI-3a (%)	KPI-3b	KPI-3c (%)	KPI-3d (%)	KPI-3e (%)
1	Germany (January 2024)	72.0	0.867	99.8	9.9 [0.2]	21.9 [0.1]
2	Madagascar (January 2024)	78.3	0.799	99.3	1.2 [0.7]	21.0 [0.0]
3	Philippines (February 2024)	80.9 ●	1.057	98.9	13.0 [0.4]	8.0 [0.7]
4	USA (February 2018)	87.7 ●	0.878	99.1	0.1 [1.0]	12.2 []
5	Brazil (May 2024)	82.7 ●	0.878	98.4	3.2 [1.4]	15.0 [0.3]
6	Germany (May 2024)	67.4 ●	1.081	99.7	22.5 [0.1]	16.2 [0.2]
7	Spain (April 2018)	74.1	0.887	99.8	9.4 [0.2]	19.7 [0.1]
8	Germany (June 2024)	76.3	0.964	99.9	9.9 [0.2]	21.9 [0.1]
9	Vietnam (July 2024)	65.8 ●	1.107	99.7	24.5 [0.1]	16.4 [0.2]
10	Poland (September 2024)	80.4 ●	1.029	99.7	12.1 [0.1]	9.6 [0.2]
11	Mexico (October 2024)	80.0 ●	0.907	99.1	6.5 [0.7]	15.2 [0.3]
12	Australia (February 2020)	38.7 ●	1.339	98.2	51.3 [0.6]	34.8 [1.2]

Critical Success Index (KPI-3a, target = 70-80%)

Bias (KPI-3b, target = 1.0)

Overall Accuracy (KPI-3c, target > 95%)

Commission Error (KPI-3d, target < 5%)

Omission Error (KPI-3e, target < 5%)



Quality Assessment – Service & User Uptake

REPORTING QUARTER	KPI-1	KPI-2a (%)	KPI-2b (%)	KPI-2c (%)	KPI-4	KPI-5	KPI-6	KPI-7 (%)
Q1	99.95%	86.4	98.9	99.5	2,534	83,158	178.592 / 16.099.838 MB	86
Q2	99.91%	90.7	97.1	97.2	3,326	105,844	324.523 / 7.419.936 MB	145
Q3	99.72%	92.9	99.2	99.7	3,604	101,850	106.040 / 860.822 MB	76,2
Q4	99.97%	92.8	99.9	99.9	3,669	156,033	135.803 / 745.940 MB	98

Service Availability (KPI-1); Product Timeliness from image acquisition to user (KPI-2a), ESA to user (KPI-2b), EODC to user (KPI-2c); Unique Visitors (KPI-4); Total Visitors (KPI-5); Total Downloads (KPI-6); Service Performance Experience (KPI-7).



News



Improvements with
new post processing
approach



Integration of
Sentinel-1C



On-going study to
identify scientific
improvements



2024 GloFAS and GFM Annual Survey

Have your say!

Deadline 4 April 2025



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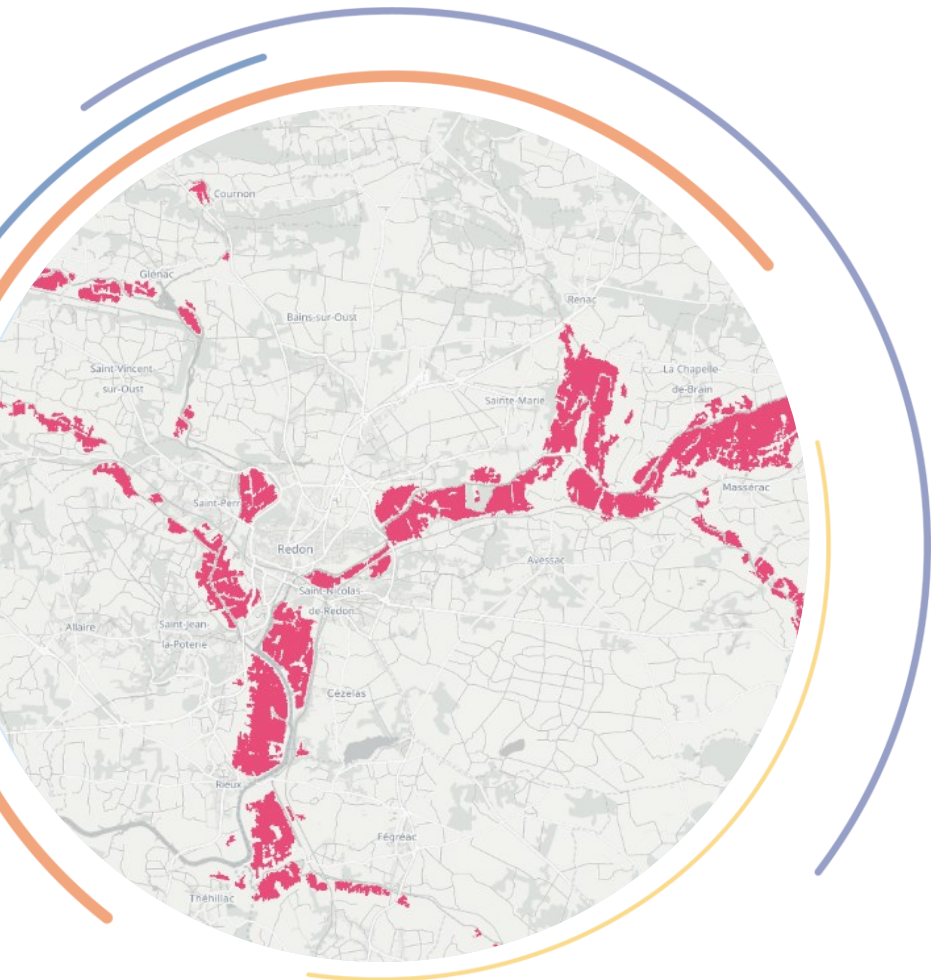




GFM Wiki

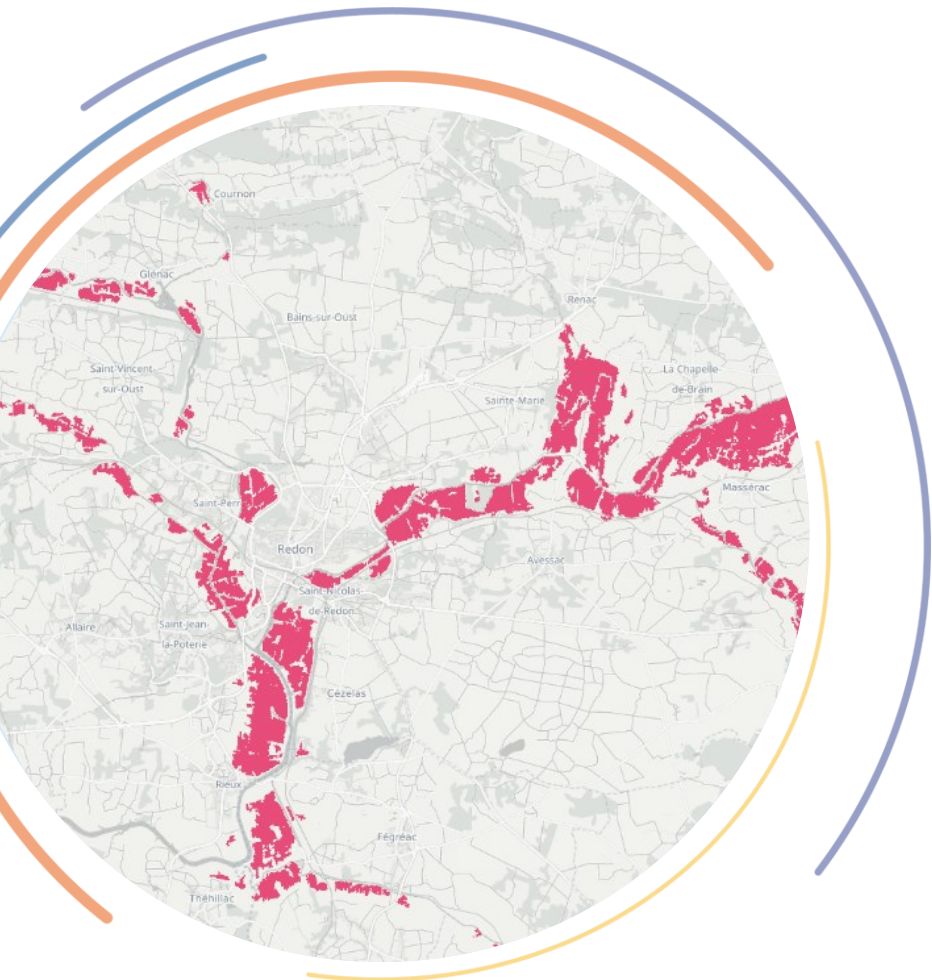
- Product User Manual
- Product Definition Document
- Quick Start Guide
- GFM Versioning

<https://extwiki.eodc.eu/en/GFM>





How to reach us



- GloFAS Contact Form: <https://global-flood.emergency.copernicus.eu/contact-us/>
 - Subject [Satellite-based Global Flood Monitoring]
- GFM Support: gfm-support@eodc.eu



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Thank you



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