
PROGRAMME OF
THE EUROPEAN UNION
Copernicus
Europe's eyes on Earth
Implemented by
European
Commission
Emergency
Management
#EUSpace
What's next for CEMS
GloFAS and GFM?
Peter Salamon, Joint Research Center,
European Commission & CEMS teams

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Emergency Management

Global Flood Monitoring

GFM archive:

- ongoing with GFM v3.0.0 – estimated release Q2 2024

GFM Access:

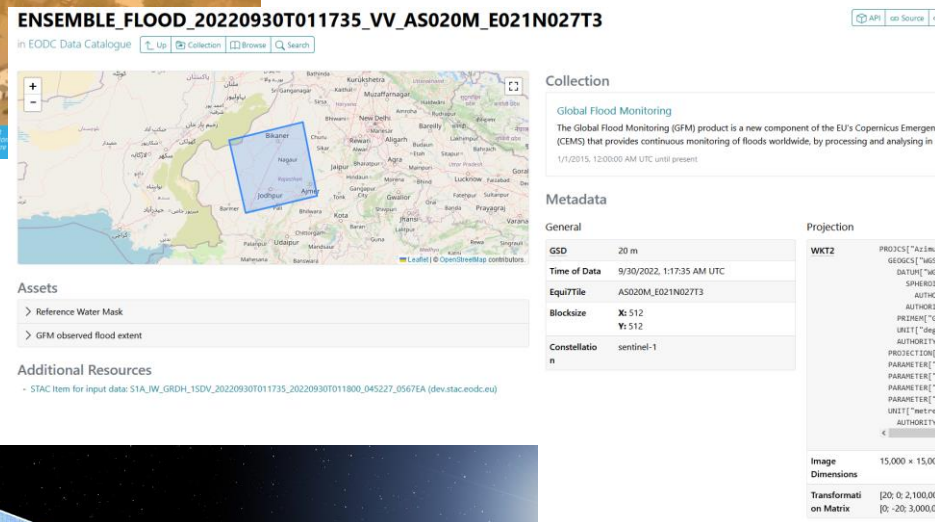
- STAC – SpatioTemporal Asset Catalog
- GFM STAC collection currently being built (STAC browser and STAC API URL)

GFM Annual Product and Service Quality Assessment Report 2023:

- estimated release Q2 2024
- GFM Annual Product and Service Quality Assessment Report 2022 available on the GFM Wiki

Sentinel-1C and Sentinel-1D integration:

- for Sentinel-1C integration foreseen as soon as launched (same for S-1D)



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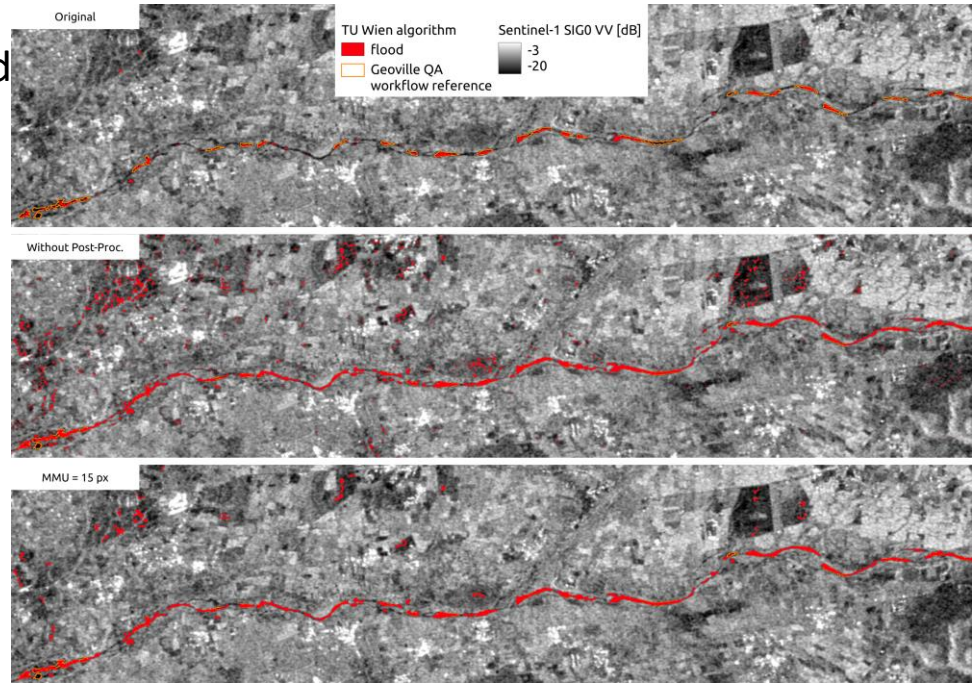
Global Flood Monitoring

GFM version 4.0.0

- (single) Sentinel-1 scenes carry speckle and noise – GFM applies post-processing to reduce scattered false positives on individual algorithm level and on ensemble level – can lead to underestimation of flood extent
- **re-evaluate and further develop current post-processing approach(es)** & integration in ensemble
- **Identification of novel post-processing methods** for each individual algorithm
- **Testing** at global level with a wide range of test cases
- **Estimated release**: Q1 2025



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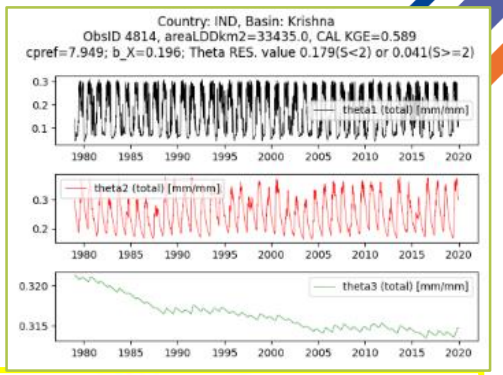
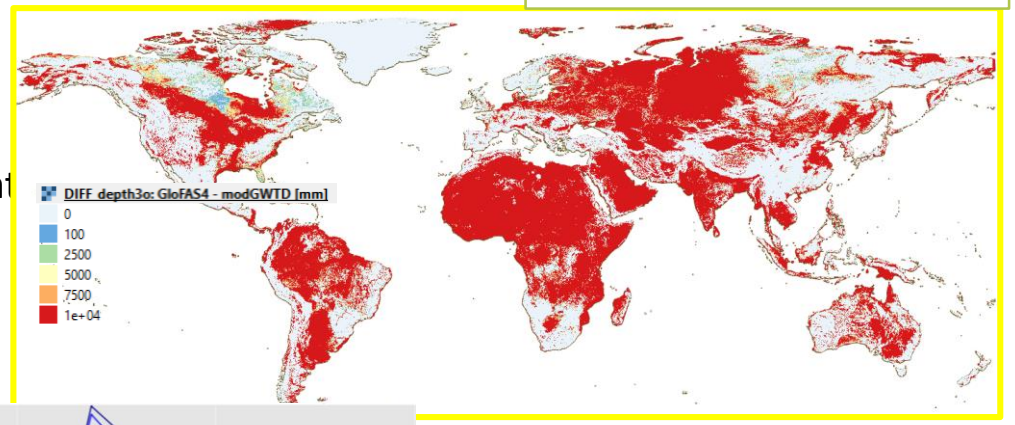
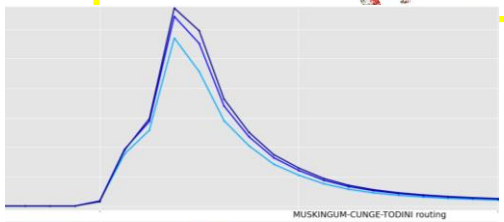
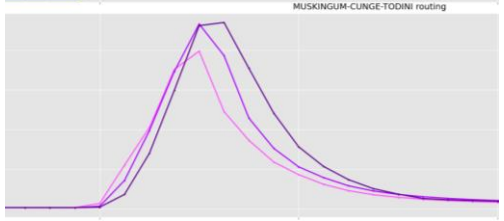
Global Flood Awareness System

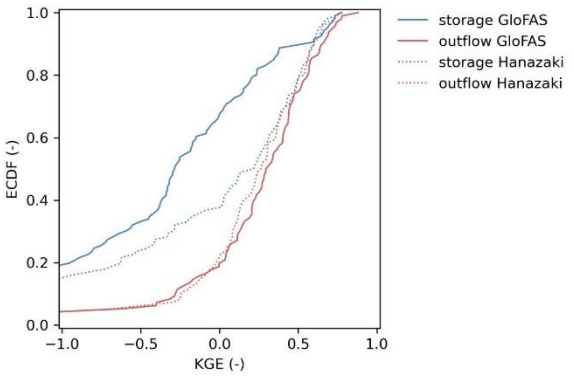
- **Minor update**: GloFAS v4.1 – improved visualization seasonal predictions,…..
- **Major update**: GloFAS v5.0
  - **Changes to OS-LISFLOOD**:
    - Combined kinematic wave and Muskingum-Cunge-Todini (improvement in mild sloping rivers)
    - Testing of improved reservoir routine based on different approaches published in recent scientific literature
    - Improved model initialization
    - Transmission loss/river bed infiltration (relevant in particular for arid/semi-arid areas)
  - **Changes to static maps**:
    - Updated soil depths and soil parameters
    - Increase number of reservoirs





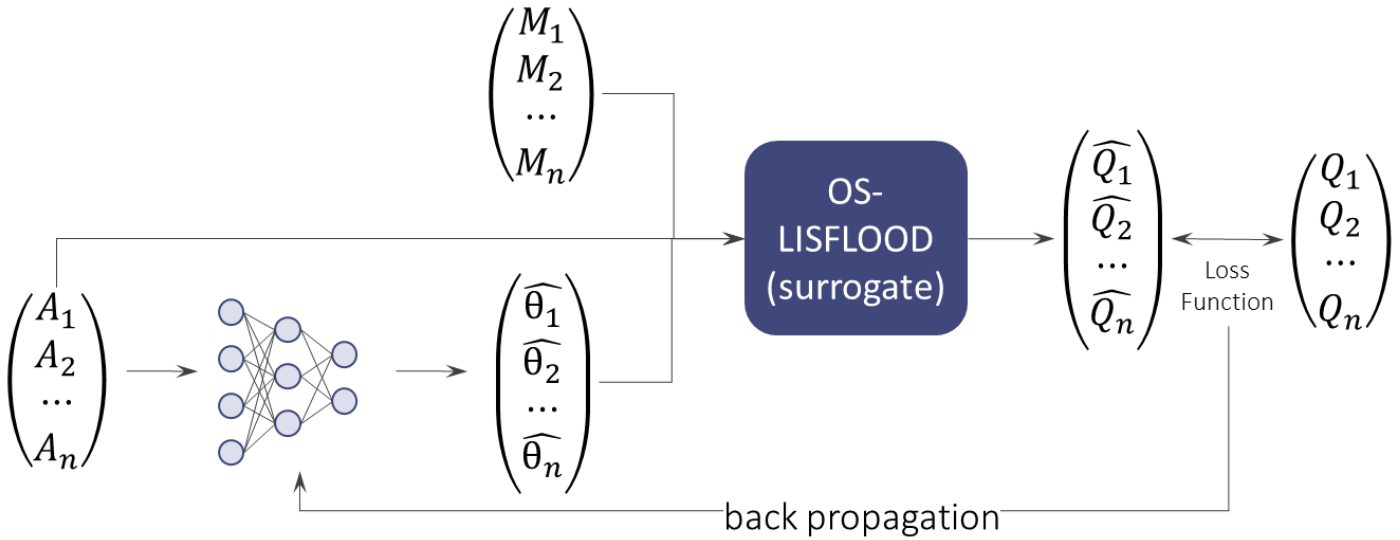






Global Flood Awareness System

- **Major update**: GloFAS v5.0
- **Calibration and regionalization:**
  - More observed discharge observations
  - ML-based parameter learning
    - Leverage on learning from all catchments instead of traditional catchment-by-catchment calibration
    - More generalizable model parameters
    - Improved transferability to ungauged catchments
- **Tentative release of GloFAS v5.0**: Q3 2025



M: meteorological inputs
A: static attributes
θ: model parameters
Q: observed/simulated discharge

The Copernicus Emergency Management Service

Annual Conference

May 2024

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Thank you