



Emergency Management

# What's next for EFAS?

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22 October 2020



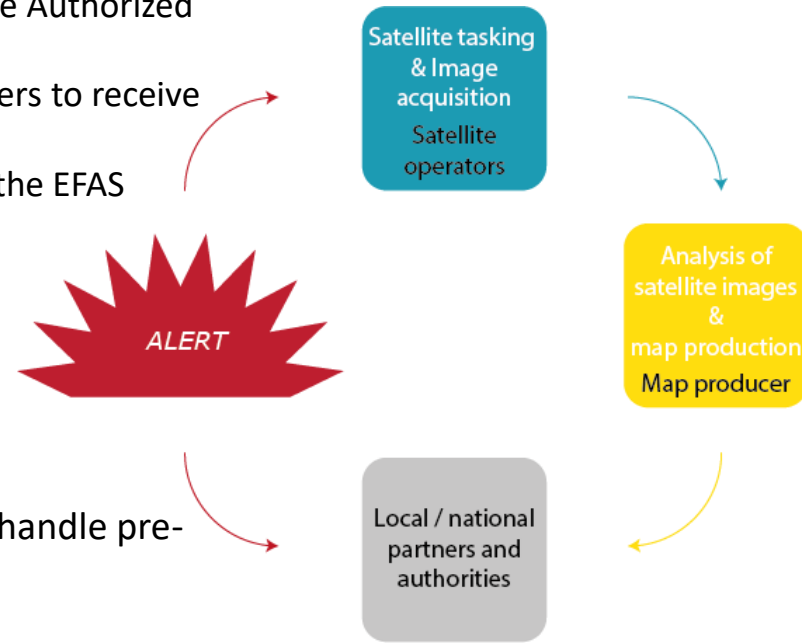


## Recommendations from Rapid Mapping Validation

- It is highly recommendable that the expected flood information included in the EFAS flood alert/pre-tasking request be also sent to the Authorized User
- It is recommendable that all Authorized Users be EFAS partners to receive the EFAS notifications directly from EFAS.
- It is highly recommendable a fluid communication between the EFAS partners and the Authorized User within each country.

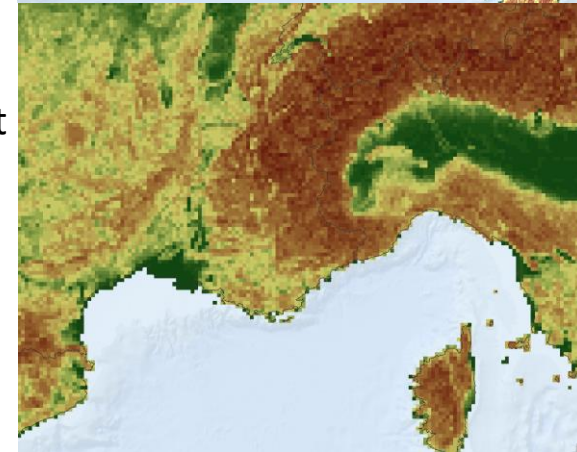
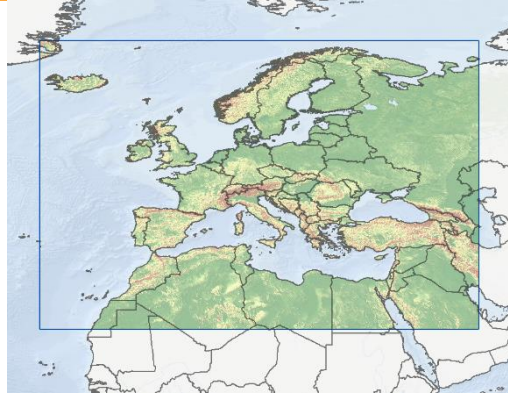
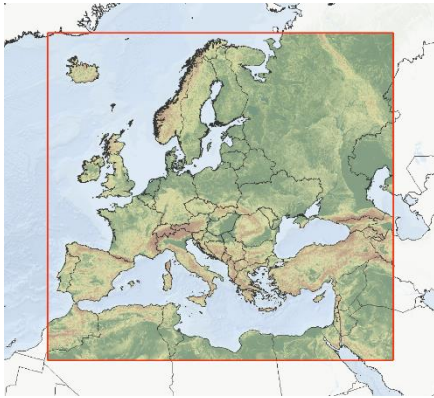
### Request EFAS partners to:

- Identify the AU and agree on internal procedures for to handle pre-tasking requests (discuss the situation, update AOI, etc.)
- Invite AU to join as **EFAS third party partner**
- Evaluate option to share EFAS information with the pre-tasking request to AU with clear reference to EFAS partner at the national level





## Increasing the spatial resolution



- 1 arcmin ( $\sim 1.8 \times 1.8$  km pixel size) resolution using WGS 84 projection system -  $\sim 2.8$  fold increase in resolution with  $\sim 7.7$  fold increase in pixels
- Static input maps completely re-done (DEM, LDD, Landuse, Forest Fraction, Soil maps, reservoirs, lakes, etc.....)
- New calibration with participatory approach from EFAS partners/third parties – your input is needed on calibration stations!
- Implementation timeline: 2022

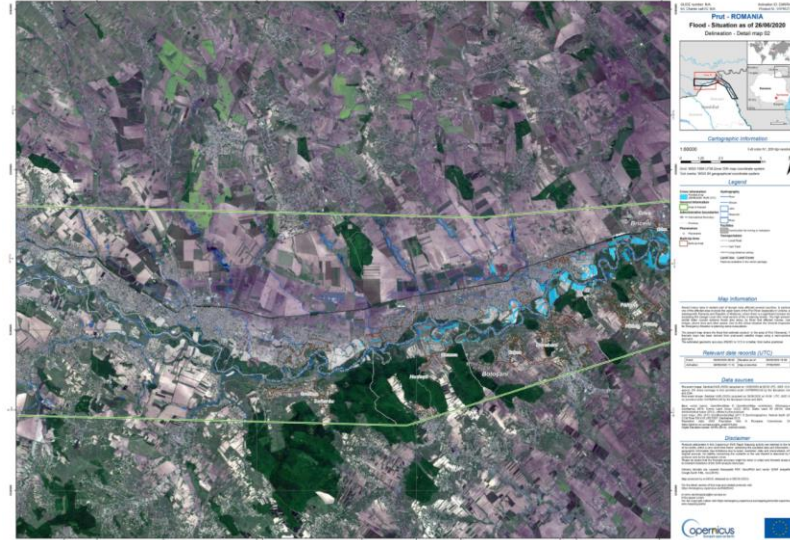


## CEMS Rapid Mapping component:

- Fast provision of flood extent info from satellite imagery
- 24/7/365 on-demand service

### Current limitations:

- No constant automatic monitoring
- Requires activation from a limited group of authorized users
- Activation requests usually arrive late (missing flood peak, reducing the map delivery times is difficult – introduction of pre-tasking with EFAS)
- Currently not possible to map all floods (resource limitations)



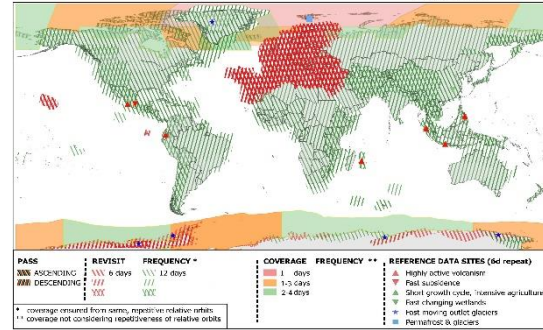


## New global flood monitoring product for CEMS:

### Sentinel-1 based:

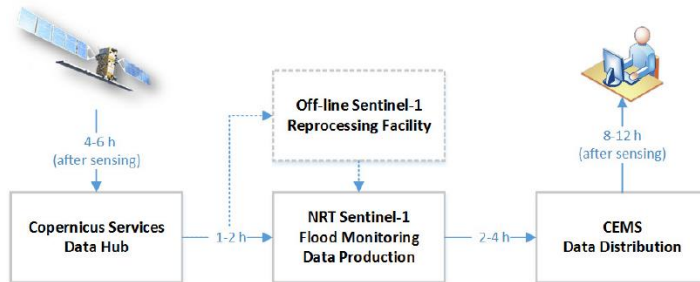
- SAR enables **all day and all weather** flood monitoring
- High **spatial resolution of 20 m**
- High **revisit frequency**: new flood maps for Europe **every 1 – 3 days**

Sentinel-1 Constellation Observation Scenario: Revisit & Coverage Frequency



### Automatic:

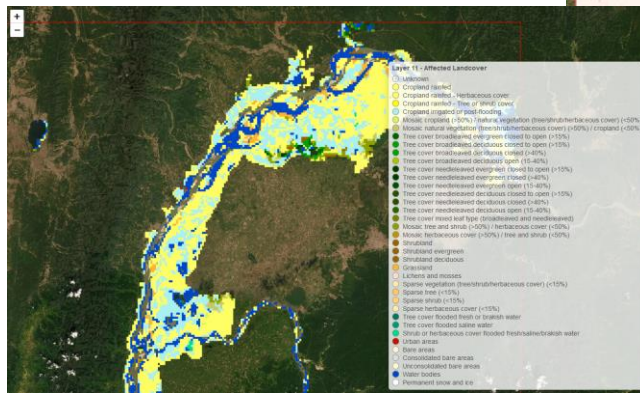
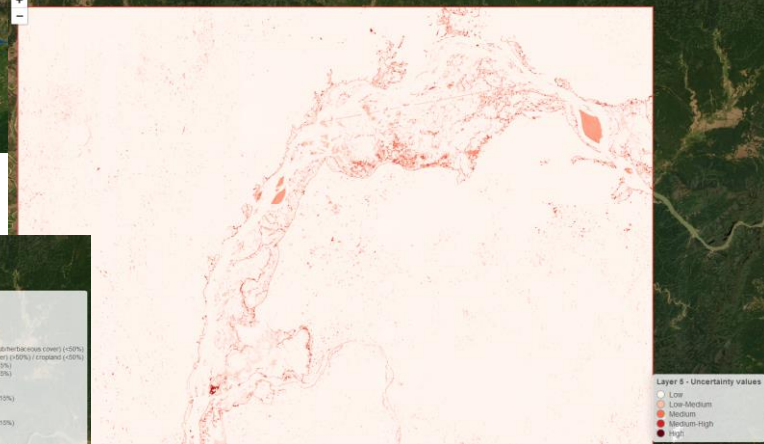
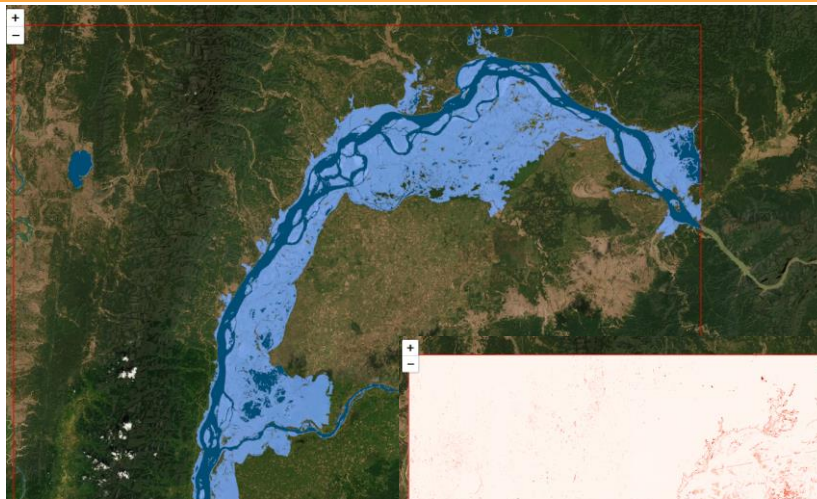
- **High timeliness** of the product – **less than 8 hours** between sensing and product delivery
- **Continuous monitoring** for large areas





## Products:

- Observed flood extent
- Reference water mask
- Uncertainty/advisory and exclusion layers
- Sentinel 1 metadata (footprint, schedule)
- Affected population and landcover





# CEMS – automatic global flood monitoring

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## Product access:

- Free and open
- EFAS web interface (also for unregistered users)
- Web services (WMS)
- API

## Implementation timeline:

- Start: October 2020
- Operational: August/September 2021



EODC Earth Observation Data Centre for  
Water Resources Monitoring GmbH



GeoVille Information Systems and Data  
Processing GmbH



Technische Universität Wien



Deutsches Zentrum für Luft- und Raumfahrt  
EV



Luxembourg Institute of Science and  
Technology



Centro Internazionale in Monitoraggio  
Ambientale – Fondazione CIMA





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# New Framework Contracts

## ***EFAS centre consortium***



Computational  
centre



Dissemination  
centre



Hydrological  
data collection  
centre



Meteorological  
data collection  
centre



All FWC of the EFAS centres end approx. August/September/October 2021







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# Thank you!

# Questions?



### Questions received in the chat:

**Question MITECO (Spain):** With requesting and pre-tasking maps, an regarding an transboundary event, could a national partner ask for satellite images in an area that is not under their national territory?

**Reply:** The authorised Users can only request the mapping within their territory. The pre-tasking driven by EFAS is however independent of political boundaries and therefore could cover multiple countries, in which case all the authorised users within those countries would be informed and have the option of triggering the Rapid Mapping

**Question BBK (Germany):** will we (i.e. AU of the CEMS or EFAS partners, in Germany, my office is both at the same time...) receive an explicit \*recommendation\* to activate the CEMS in Rush Mode, based on EFAS notifications?

**Reply:** Yes. Once we pre-task the EMS Mapping based on an EFAS forecast (usually 1 days before the event), the respective EFAS partner and AU is informed about this pre-tasking and encouraged to activate the service.