EMS for floods and storms: emergency alert and crisis operations

Copernicus Emergency Management Service
The Floods are the emergency events for which the RM Service receives more activation requests.
Floods and storms are types of disasters where **EARLY WARNING** and **TIMELY ALERT** are critical for the full success of the EMS Rapid Mapping activations.

**Rapid Mapping Performance**

- **EARLY WARNING**
  - Floods: EFAS
  - Forest Fires: EFFIS

**REFERENCE MAPS**
- Delineation Maps
- Grading Maps
- Validation

**RISK AND RECOVERY MAPPING**
- On demand
- Tailored to user needs
- Weeks/months

**VALIDATION**

**81%** of Time required for the production of a post-event analysis is spent for **SATELLITE TASKING AND ACQUISITION**.
Emergency Management

Operational Workflow V2.0

Early Warning Service

EW ALERT

Copernicus EMS RM Consortium

Satellite data request

ESA & Satellite Operators

Satellite data delivery

Member States Civil Protections

✓ They can activate or not the RM Service
✓ Satellite acquisition available timely
EFAS early warning for potential rapid mapping activation for France

**Situation description:** Heavy rains are affecting central and northern parts especially during Monday 30 May until Wednesday 1 June. EFAS predicts a high risk of flooding from Tuesday 31 May onward for the Seine and Loire river basins.

**Affected country:** France

**Affected river basin(s):** Seine, Loire

**Affected region(s):** Indre-et-Loire, Seine-et-Marne, Essonne, Loir-et-Cher, Loiret

**Predicted start of the event:** Tuesday 31 May

**Major affected cities:** Montrichard, Romorantin-Lanthenay, Salbris (Region: Loir-et-Cher; severe flooding/peak expected 31 May); Amilly, Chalette-sur-Loing, Montargis (Region: Loiret; severe flooding/peak expected 31 May); Moret-sur-Loing, Nemours (Region: Seine-et-Marne; severe flooding/peak expected 31 May); Crosne (Region: Seine-et-Marne; severe flooding/peak expected 1 June); Coulommiers (Region: Seine-et-Marne; severe flooding/peak expected 2 June); Tours (Region: Indre-et-Loire; severe flooding/peak expected 3 June)

**Next situation update:** 31 May 2016
Event Time (UTC): 2016-05-30 08:00
Event Time (LOC): 2016-05-30 10:00
Event Type: Flood
Activation Time (UTC): 2016-06-01 18:45
Delineation maps produced: 16
Grading maps produced: 5
Affected Countries/Territories:
- French Republic
Area Descriptor: Loiret, central region
Authorized User: France | Centre Operationnel de Gestion Interministeriel de Crises (C.O.G.I.C)
Activation Reason:
Many localities in central and eastern France following the exceptional flood has induced over Loing river basin, Red early warning was emmttites by National central forecasting centre
Requested Product: Delineation + Grading
The AU asked the production of **DELINEATION MAPS**

Definition of 2 AoIs with a small map scale in order to check the floodmask over a large area → **1:100.000**

Tasking of **RADAR Imagery** → it allows to monitor of the event also with bad weather conditions

**1 DEL MAP + 2 MONIT MAPS**
The AU asked also the production of **GRADING MAPS**

Definition of 5 AoIs with a large map scale in order to provide the damage assessment over the AoI → 1:35,000

Tasking of **OPTICAL Imagery** → VHR resolution – 0.5 m
The connection between **Rapid Mapping** and **Early Warning** drastically reduces the time between the request for activation and the first post-event acquisition over the affected areas.

The availability of the **Sentinel-1 mission** improves the potential acquisitions and the possibility to coverage the AoI.

- It is not always possible to correctly define the areas of interest.
- Spatial **resolution versus** large area coverage.