INLINE
Integrated pan-European rainfall and floods impact forecasts for cooperation in emergency management

Co-funded by the European Union

INLINE Training Materials

International Workshop, Lisbon

26th - 28th May 2026

Centre de Recerca Aplicada en Hidrometeorologia
UNIVERSITAT POLITÈCNICA DE CATALUNYA
ECMWF
ILMATIETEEN LAITOS METEOROLOGISKA INSTITUTET FINNISH METEOROLOGICAL INSTITUTE
AEMet Agencia Estatal de Meteorología
IPMA Instituto Português do Mar e da Atmosfera
EMA
GOBIERNO DE ESPAÑA MINISTERIO DEL INTERIOR
DIRECCIÓN GENERAL DE PROTECCIÓN CIVIL Y EMERGENCIAS

INLINE
Integrated pan-European rainfall and floods impact forecasts for cooperation in emergency management

Training Tools & Materials

Co-funded by the European Union

Scope & Context

Training materials developed for variety of target audiences and for different levels of detail:

- CP Practitioners
- HydroMet Services
- Forecasters

We Listened To You!

Community of Interest (COI) was established as part of INLINE project following feedback in EDERA.

COI meetings helped shape the training materials developed through structured meetings during project demonstration phase.

Materials Developed

Tailored resources for different user groups, including:

- Videos
- Online Documentation
- Community of Interest Meetings
- INLINE products in EFAS

Impact & Value

Build confidence and capability across user communities.

Enable users to work with INLINE forecast products in ‘real-world’ emergency management and decision making.

Scope & Context

Co-funded by the European Union

Training materials were developed with different target audiences in mind

Depth of knowledge required

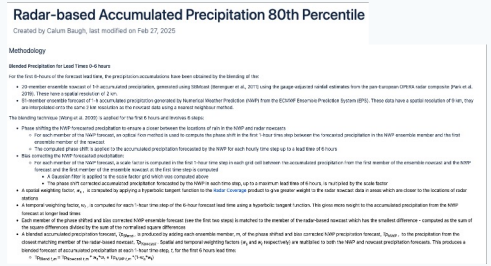
VERSUS

Time available to invest in learning

Increasing complexity

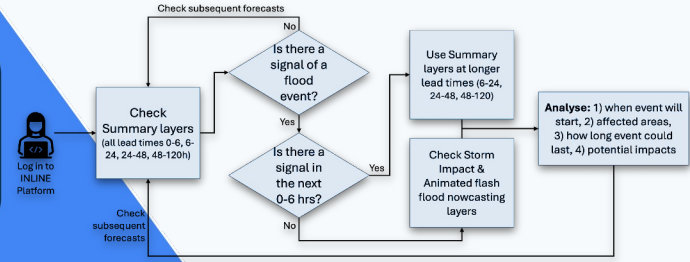
Understanding

product generation methodology
data sources
model limitations
inappropriate use cases



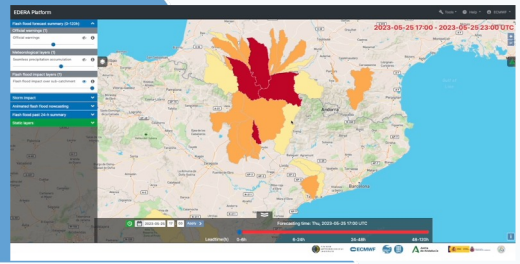
Interpretation

Guidance on how to interpret the products during an event, hands-on exercises



Access

navigating the platform interface
understanding the products
suggested workflows



We Listened to You!

Co-funded by the European Union

Feedback on Training Materials from COI

"Live follow along training sessions on using the platform and forming workflows" ✅

"short step-by-step video tutorials to get started quickly could be nice. e.g. also showing how to set up notifications. " ✅

"Pdf to download with layers information"

"you could add a list of technical references to list of layers"

"I did not yet spend much time on the supporting material, but a workshop where we go through a case study would probably be nice" ✅

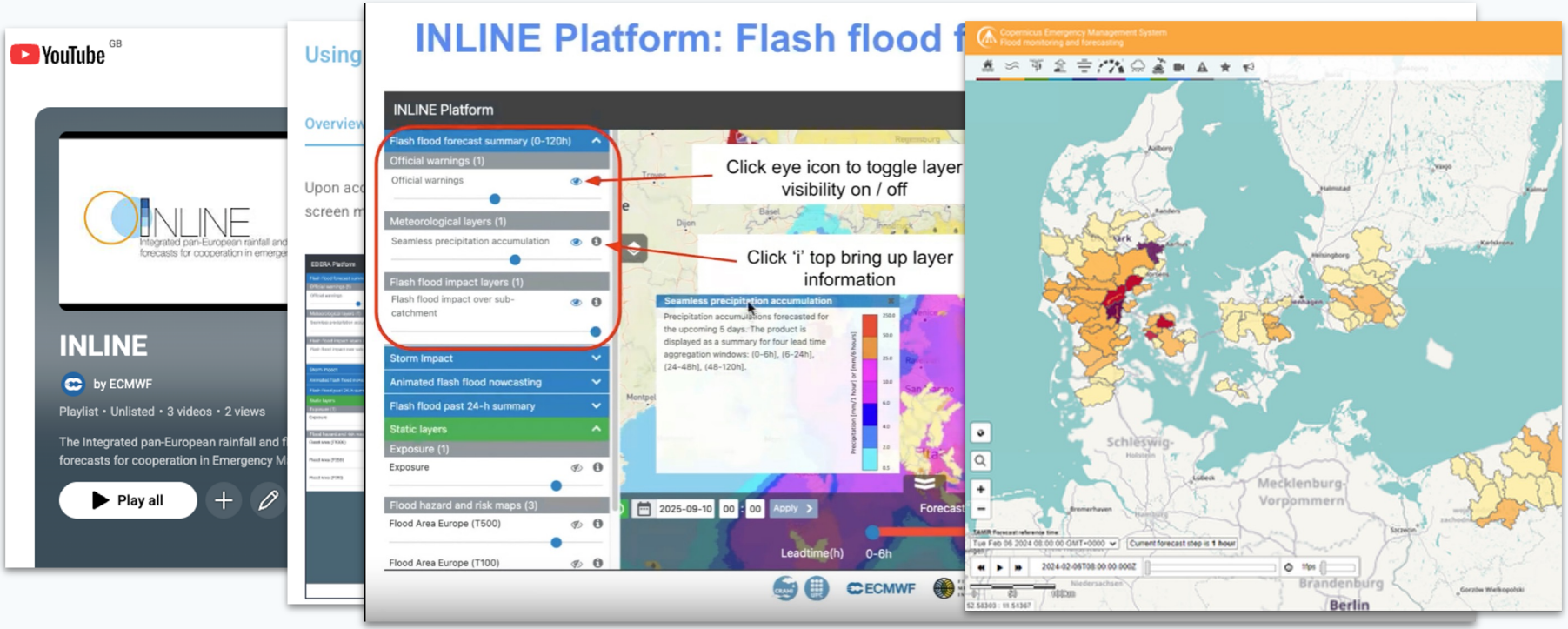
Ranking of existing material available for EDERA

1. Video tutorials
2. Using the platform
3. How to analyse a forecast
4. Case Studies using EDERA Products
5. List of Layers

Materials Developed

Co-funded by the European Union

Videos | Documentation | Community of Interest | INLINE in EFAS



Materials Developed

Co-funded by the European Union

Videos | Documentation | Community of Interest | INLINE in EFAS

Access to the INLINE Platform

Materials Developed

Co-funded by the European Union

Videos | Documentation | Community of Interest | INLINE in EFAS

How to configure INLINE Notifications

Materials Developed

Co-funded by the European Union

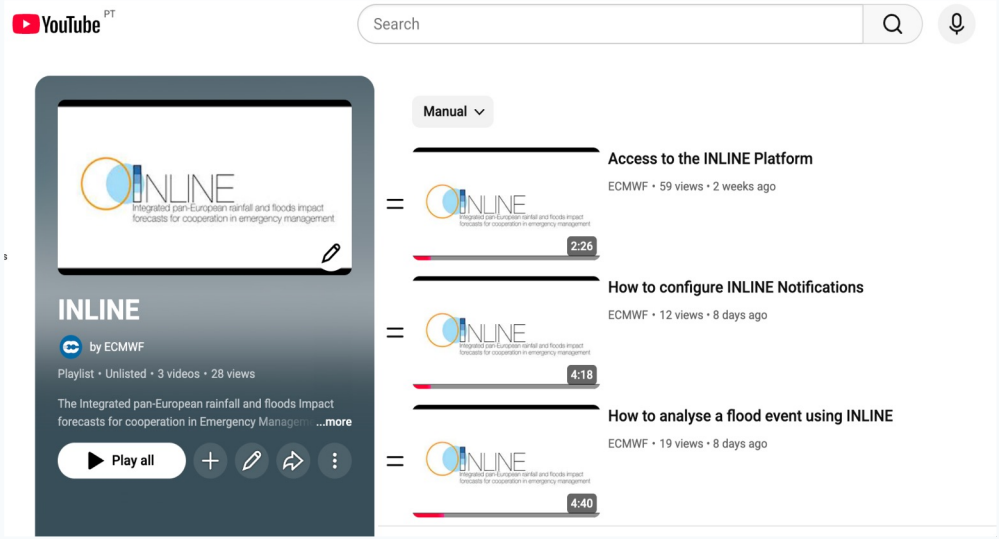
Videos | Documentation | Community of Interest | INLINE in EFAS

How to Analyse a Flood Event using the INLINE Platform

Materials Developed

Co-funded by the European Union

Videos | Documentation | Community of Interest | INLINE in EFAS



Videos are available on ECMWF YouTube Channel, will be integrated on the INLINE platform soon.

https://youtube.com/playlist?list=PLwv2rZ5UPWUHx_kMyQS3iys8ky_em4yKx&si=n8Wrxl3jvPHq-Rfx

Materials Developed

Videos | **Documentation** | Community of Interest | INLINE in EFAS

Reviewed existing online documentation and updated for INLINE products & platform

Using Diátaxis framework

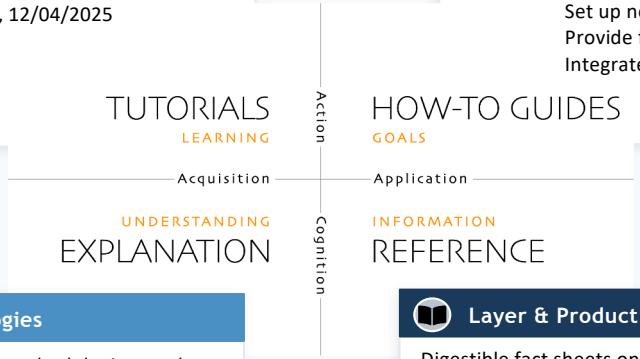
New documentation will be uploaded to INLINE Platform soon!

Tutorials

Step-by-step tutorials showing users how to analyse a case study using the INLINE forecast products:
- Storm Francis, Spain, 04/01/2026
- Odivelas, Portugal, 12/04/2025
- And more…

How to Guides

Detailed guidance on "How to…":
- Change a forecast date?
- View the forecast layers?
- Set up notifications?
- Provide feedback?
- Integrate products into your own system?



Scientific Methodologies

Explanations of the scientific methodologies used to create the INLINE forecast products, including references:
- Storm Impact Products
- River Flash Flood Nowcasting
- Urban Flash Flood Nowcasting
- Computing Flood Hazards
- Bending Radar and NWP

Layer & Product Descriptions

Digestible fact sheets on each of the layers/products available in the INLINE Platform, with graphics:
- Flash flood forecast summary (0-120 h)
- Storm Impact
- Animated flash flood nowcasting
- Flash flood past 24-h summary
- Static layers

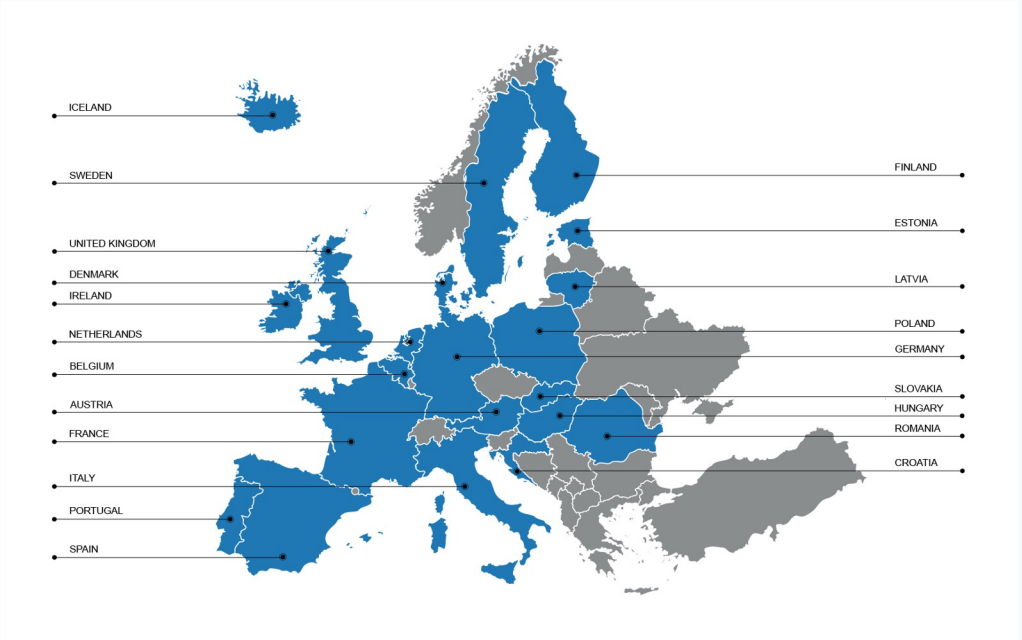
Materials Developed

Co-funded by the European Union

Videos | Documentation | **Community of Interest** | INLINE in EFAS

21 Countries
61 Institutions
100+ Practitioners
(non-partners signed up to COI mailing list)

~20 non-partner attendance to online COI meetings



Materials Developed

Co-funded by the European Union

Videos | Documentation | Community of Interest | INLINE in EFAS

18th September

- Presentation of the INLINE Project & COI member introductions
- Introduction to INLINE platform, products and training materials
- Round table discussion with stakeholders of EDERA/INLINE
- Configuration of INLINE Notifications

Training materials created from COI meeting content

30th October

- COI feedback session on accessing the platform, setting up notifications, and training materials
- Deep dive: River flash flood forecast products

11th December

- What is new in INLINE? Nowcasting using deep learning, radar data to initialise EFAS forecasts, user-tailored notifications, improved products for EFAS
- Case Studies from COI Members - IPMA Portugal & SMHI Sweden
- Deep dive: Pluvial Hazard & Storm Impact Products from FMI / AI nowcasting tool

22nd January

- Presentation of a recent flood event in Spain
- Hands - on training exercise using the INLINE Platform - case study in Murcia Spain

26th March

- EMA presents case studies from Spain
- Hands-on exercise of Storm Francis, Spain & short assessment

Materials Developed

Co-funded by the European Union

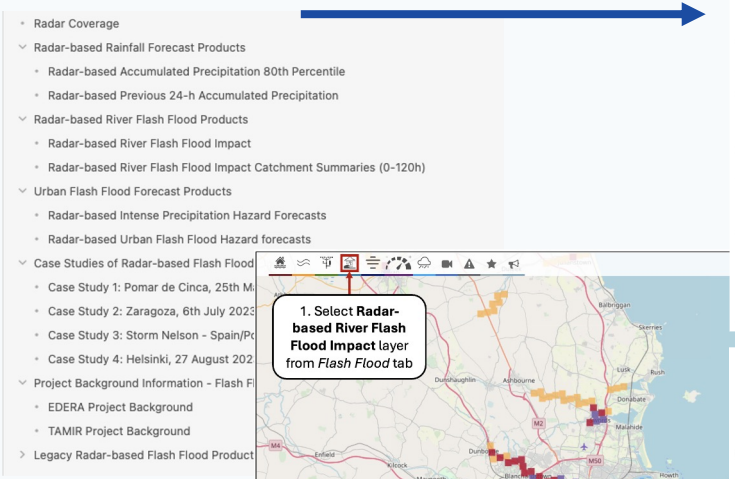
Videos | Documentation | Community of Interest | INLINE in EFAS

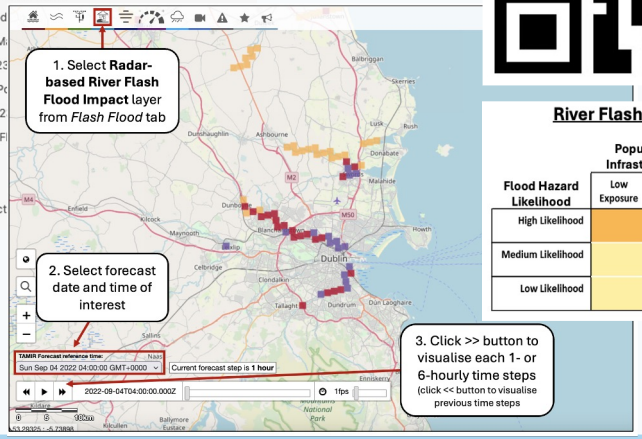
INLINE Products are referred to as **radar-based products** in EFAS (developed as part of TAMIR and EDERA projects).

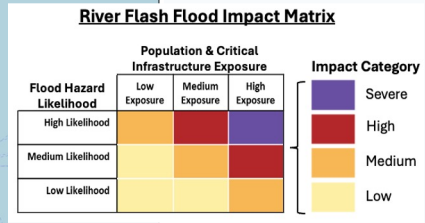
Detailed documentation of radar-based products is available on the EFAS wiki

Radar-based products are NOT operationally supported like other EFAS products.

EFAS wiki pages







Materials Developed

Co-funded by the European Union

Videos | Documentation | Community of Interest | INLINE in EFAS

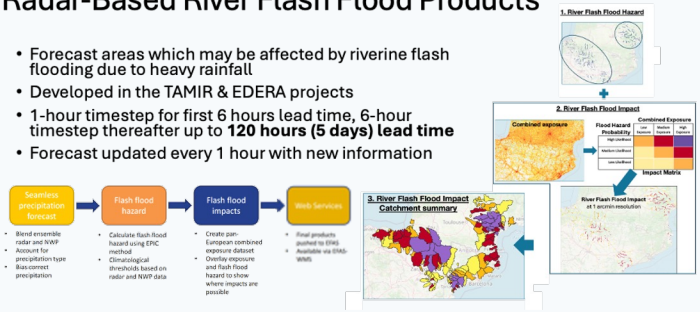
INLINE products will be integrated into EFAS soon & documentation will be updated!

Urban Flash Flood Forecast Products

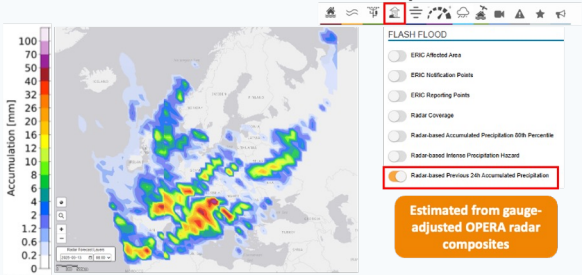
Intense Precipitation Hazard Forecasts: Highlights areas (ellipses) where intense precipitation may cause flash flood impacts

Radar-Based River Flash Flood Products

- Forecast areas which may be affected by riverine flash flooding due to heavy rainfall
- Developed in the TAMIR & EDERA projects
- 1-hour timestep for first 6 hours lead time, 6-hour timestep thereafter up to **120 hours (5 days) lead time**
- Forecast updated every 1 hour with new information



Radar-Based Accumulated Precipitation



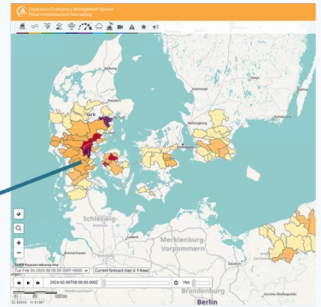
Urban Flash Flood Forecast Products

Urban Flash Flood Hazard Forecasts: Highlights severity of potential flash flooding in urban areas

Catchment Impacts

•Radar-based River Flash Flood Impact Catchment Summary Layers

- Summarize the 90th percentile of the maximum impact level in each sub-catchment for lead-time ranges of: 0-6, 7-24, 25-48, and > 48 hours
- Pop out window summarizes impact matrix and exposure information



Materials Developed

Co-funded by the European Union

Videos | Documentation | Community of Interest | INLINE in EFAS

Webinar of radar-based flash flood products as shown in EFAS - June 2025
(developed in EDERA)

Impact & Value

Co-funded by the European Union

Your experience guides the development of the project and training materials! Help us by giving feedback…Poster in coffee area.

Use **notes to give feedback** on products:

1. Which block of products do you find most useful?
2. Which layers do you use most often/consider the most valuable?
3. Is the information easy to understand? Layers/Legends/Colour Scales/documentation?
4. If you could add or change one feature, what would it be?

Use **stickers to vote** for your favourite products.

Monitor of end-user confidence throughout the project…

- Initial survey ✅
- Feedback during COI meetings ✅
- Feedback from the international workshop ✅
- End of project survey ☐