



Climatic emergencies: Operational decision support tools for emergency management centres

Prof. Daniel Sempere-Torres
UPC-CRAHI
Barcelona





Objective

The ultimate purpose of ANYWHERE is to
**empower exposed responder
institutions and citizens**

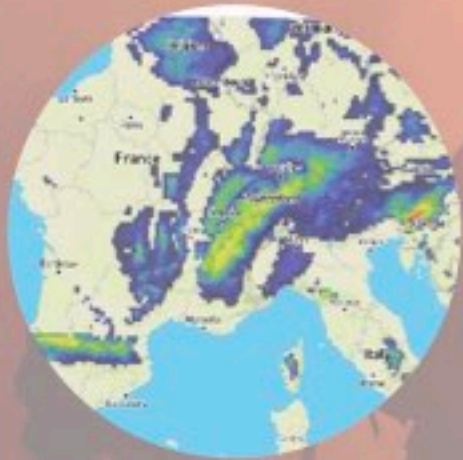
to enhance their **anticipation and**

pro-active capacity of response

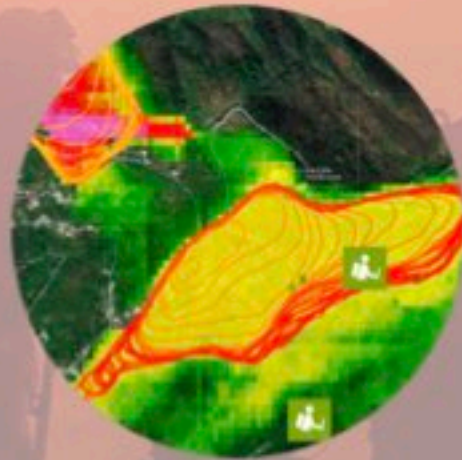
to face

weather and climate emergencies

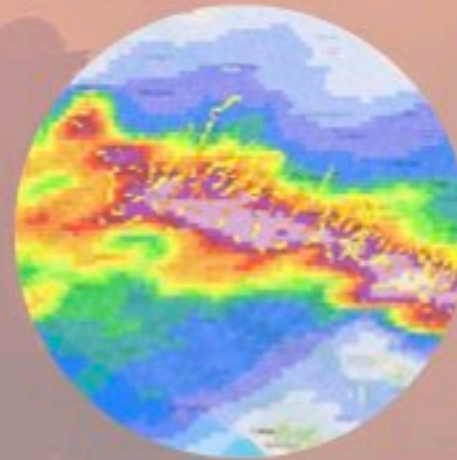
The ANYWHERE approach based on **impact forecasting** represents a disruptive innovation in the field of the **climatic emergencies operational management**



**Meteorological
forecasts**



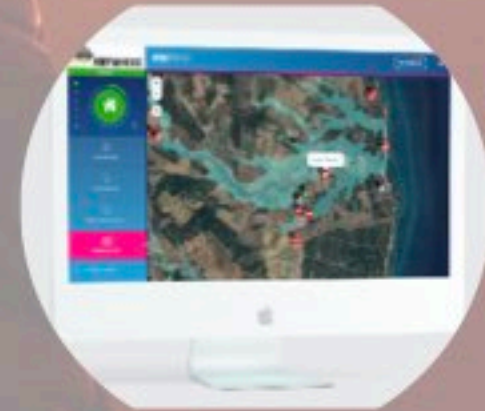
**Hazard
forecasts**



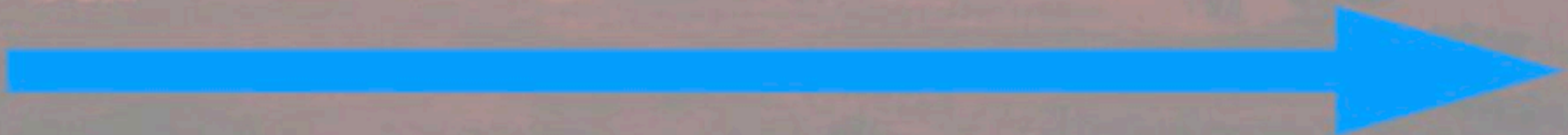
**Impact
forecasts**



**Actionable
decisions**



**Operational
solutions**



Main ACHIEVEMENTS



- **ANYWHERE For Europe (A4EU) platform** successfully developed, implemented and **operationally running from October 2018 in 7 pilot site demonstrations**

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ANYWHERE 

7 Pilot Sites: Operational Demonstrations

**OPERATIONAL
from
OCTOBER 2018**

*(and can be implemented
ANYWHERE else in
EUROPE...)*



Main ACHIEVEMENTS



- 🕒 We have **extended the agreement with the data providers** up to July 2020, and **4 of them continue fully operational during this period**
- 🕒 **The biggest event of the ANYWHERE demonstration (storm Gloria)** has been registered in **January 2020 in Catalonia: snow falls** at 500 m, the biggest **storm surge** ever recorded in Mediterranean (8 m of wave height), **strong winds** and **3 days of consecutive heavy rains** (up to 500 mm of accumulated rain, and over 200 mm over a surface on 20.000 km²).
13 casualties, 2 bridges collapsed, 20.000 inhabitants confined in Girona (under analysis at the moment).



Copernicus EMS @CopernicusEMS · 22 de gen.

Storm [#Gloria](#) has caused a storm surge that has ravaged the Ebro delta up to 3 km inland, resulting in severe damage to the rice paddies and to the ecosystem

[#Sentinel1](#)   radar image acquired yesterday 22 January
See before after comparison below



9



449



368



Main ACHIEVEMENTS



- 🕒 **The operational authorities participating as pilot sites are extremely enthusiastic about the ANYWHERE results**



"We've made a huge change of the way we deal emergency situations, specially in the case of floods, because now we are able to move forward and be advance to the impact, so we are able to alert citizens of one area to avoid damage. Previous to this tool we had to wait to the impact and have a rapid response but always after the impact."

Sergio Delgado, Deputy-Director of Catalonia Civil Protection



"It's a very useful platform for our command centre and simple to use. We've used it to assist and to improve the anticipation managing different climatic events. The platform provides very precise information and allows you to best anticipate, to best dispatche means on the field and to be able to alert the population and the Mayor to avoid damage when facing these events."

Patric Botey, Service Incendie et Secours de Corse



"Using this tool, the Civil Protection authorities are actually able to raise the preparedness levels even before the formal notification from the Finish Meteorological Institute is sent. Now everything is authomatisized and we have better data, the system automatically reacts and we can start to advise people."

Pekka Tiainen, Finnish Ministry of Interior (FMol)

Main ACHIEVEMENTS



- **ANYWHERE** has provided decision support tools that are **better than the previous systems**
- From the **7 Emergency Management Centres** participating in the pilot sites **the 3 having registered relevant events are the most enthusiastic (Catalonia, Corsica, Spain)**
- They confirm the **paradigm change** in their way to operate: **from reactive to proactive response**

How to support EMCs?



ANYWHERE

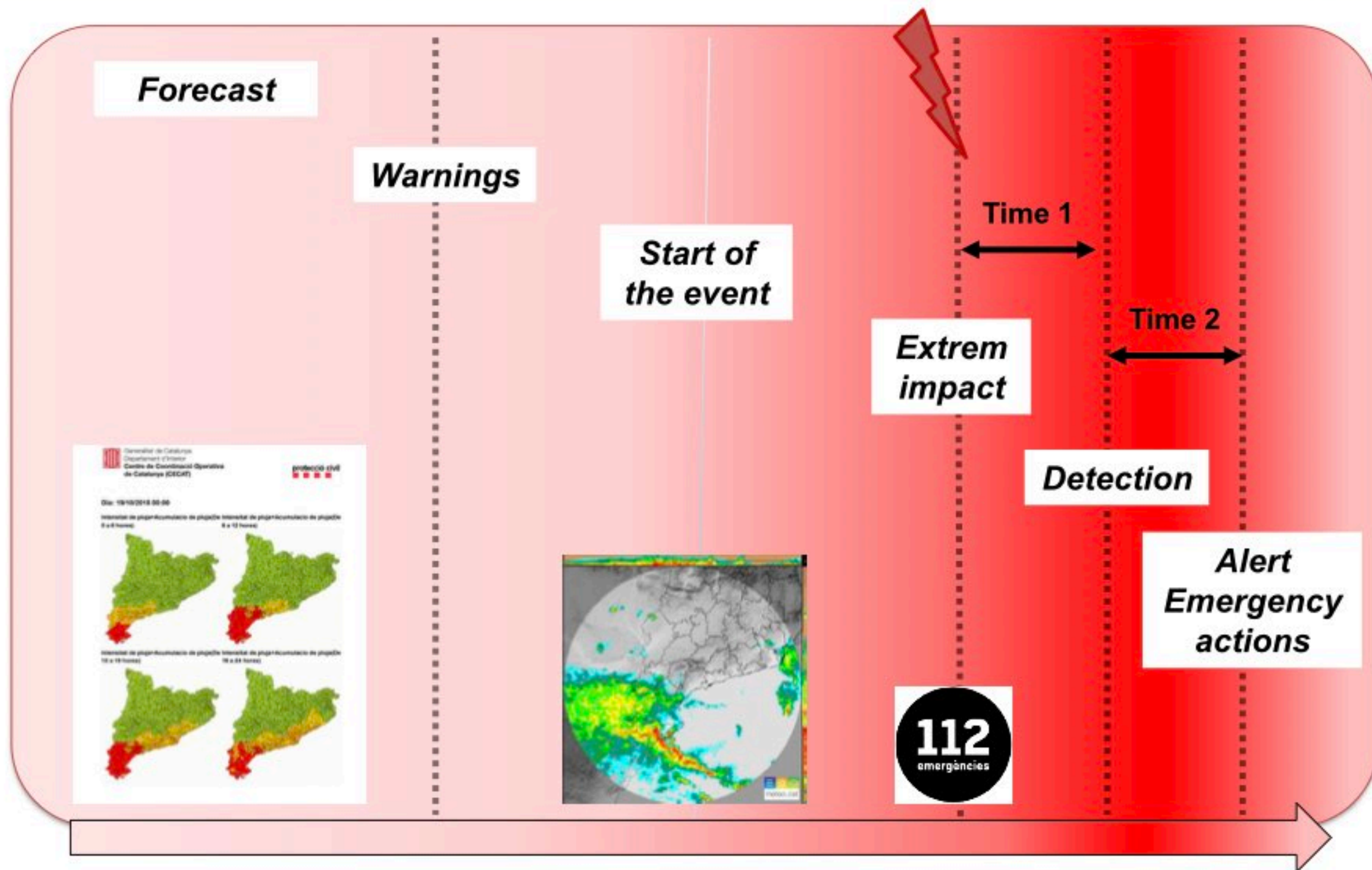


www.anywhere-h2020.eu

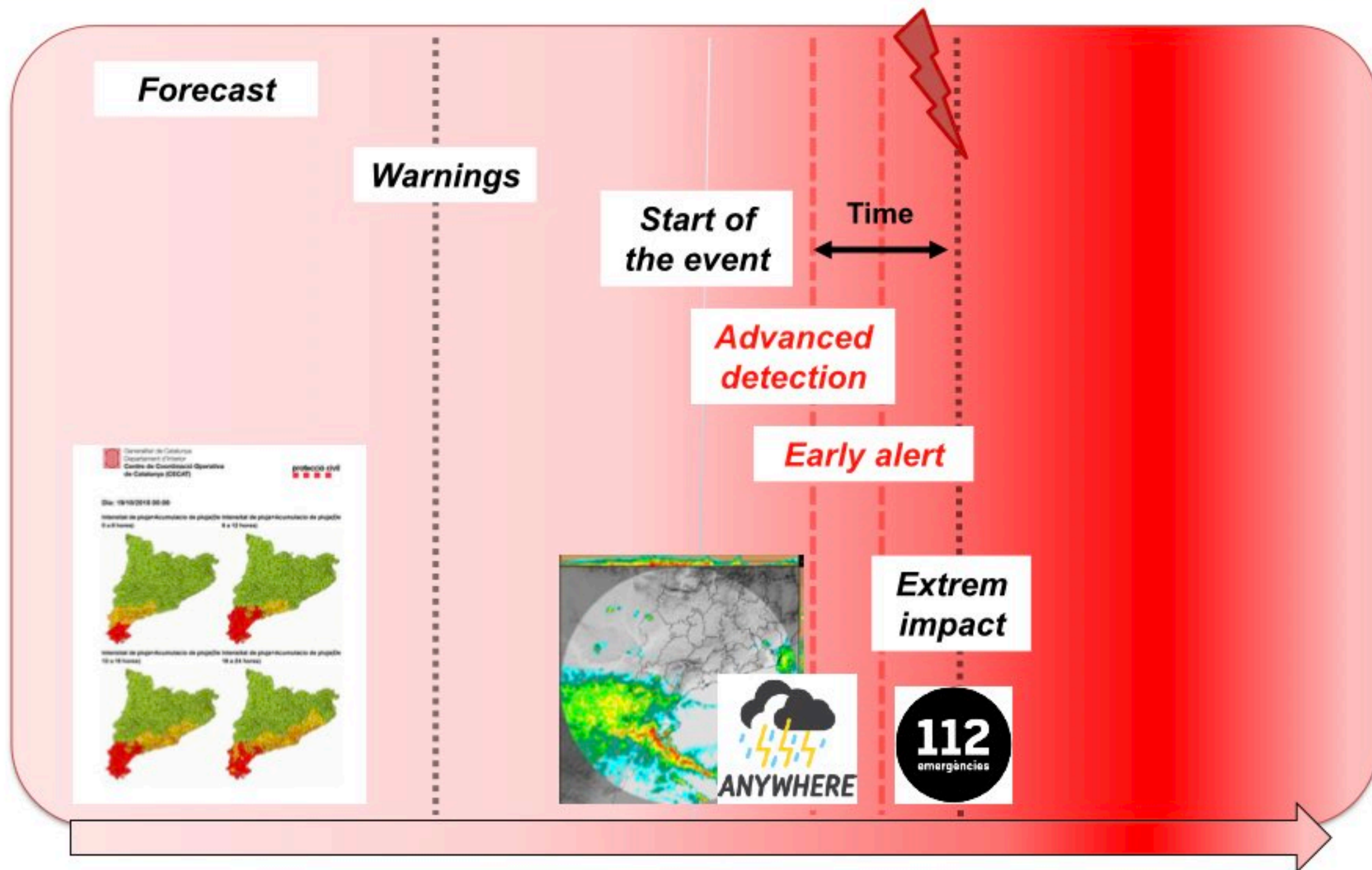
***CHANGE OF PARADIGM:
From RE-ACTIVE to
PRO-ACTIVE RESPONSE***

***Advanced detection and
response***

Evolution of the management model of weather and climatic emergencies



Evolution of the management model of weather and climatic emergencies



Main ACHIEVEMENTS



- They recognize that participating in **ANYWHERE** have led **them to a learning process about to improve their protocols**
- They are committed in ensuring the **continuity of operation of the ANYWHERE platforms.**
- Corsica, Catalonia, Civil Protection Spain and other regional Civil Protection are now **preparing public procurements for Early Warning Systems in the next months**



Anywhere2020

@AnywhereH2020



After the experience of A4Cat (ANYWHERE's A4EU platform for Catalonia Pilot Site) operational test at [@emergenciescat](#), the Catalan government included in its budget a procurement tender for a forecasting decision-support tool for extreme weather events.

[Traducir Tweet](#)

interior

Interior ✓

@interiorcat · 3 feb.

@MiquelBuch : "El pressupost de la Direcció General de Protecció Civil @emergenciescat preveu implantar una eina de detecció en temps real dels episodis de component meteorològic de risc extrem i la renovació de 14 sirenes d'avís de risc químic".



emergències

Protecció civil ✓

@emergenciescat · 4 feb.



We're glad to continue improving our capabilities to protect population from flashfloods and other damages with the early warnings coming from [@anywhere2020](#) A4CAT platform [@ComissioEuropea](#)



Anywhere2020

@AnywhereH2020 · 4 feb.

After the experience of A4Cat (ANYWHERE's A4EU platform for Catalonia Pilot Site) operational test at @emergenciescat, the Catalan government included in its budget a procurement tender for a forecasting decision-support tool for extreme weather events.
[twitter.com/interiorcat/st...](#)



ANYWHERE



***Ensuring MARKET UPTAKE:
Making sustainable the
maintenance of the systems
and services***

A4Schools

A4EU

A4Snow

A4Campsites

**Emergency
Management
Control Centres**

A4Fire

A4Grids

A4Cities

A4Industries

A4Mobility

Main ACHIEVEMENTS



A4Cities

ANYWHERE FOR CITIES (A4Cities) was a last development that have initiated in RP3 as a **proof of concept** in the municipalities of Blanes (Spain) Setubal and Mafra (Portugal) and

It has generated the FIRST CONTRACT on the ANYWHERE results

AQUOLOGY (member of the Network of Associated Enterprises) saw the exhibit at the FINAL WORKSHOP and has contracted an adaptation for several cities in Alicante area (South East of Spain) affected by the big event on September 2019

Main ACHIEVEMENTS



- **15 Deliverables** and **3 Milestones** have been achieved
- **Hands-on training activity for stakeholders at Spanish Civil Protection School** in Madrid (March 2019, M34): **70 participants**.
- **Hands-on demonstration** in Brussels in October 2019 (M41): **157 participants**.
- **Final ANYWHERE Workshop** in Brussels in October 2019 (M41): **214 participants**.
- **27 Scientific papers in JRC journals (in the 3RP)**
- **48 Key Exploitable Results (see D7.4), some of them at TRL 9**
- **6 ANYWHERE NEW videos** have been produced and presented (available at website and in YouTube channel)

Main ACHIEVEMENTS



- **Participation in CoU meetings** in Brussels (March 2019), and **SRE2019** in Helsinki (November, 2019)
- **ANYCaRE serious game session at PROCIV workshop** in Helsinki (June 2019, M37).
- **A Citizen Science campaign** (“Carretera Nevada”, in English: “Snowed road”, <http://crahi.upc.edu/carreteranevada>)
- **Brand New Website from July 2019** (M38)
- **335 dissemination / communication activities** during RP3
- **110 Stakeholder institutions in the ANYWHERE Boards** (from which 40 enterprises)



ANYWHERE



Operationally supporting decision making at operational control centres during climate induced emergencies



TECNIO
Be tech. Be competitive

How to support EMCs?



**Translate best adapted
METEOROLOGICAL
FORECASTS into *IMPACT*
FORECASTS**

**Forecasting impacts:
Snow on roads**



Catalogue of ANYWHERE Products for Hazard Forecasting and Impact Localization due to Weather and Climate Events



Harvest the power of advanced Weather Risk Forecasting and integrate geolocalized Data or Spatial Imagery into your own solutions.



Robust yet Simple Global Situation Awareness toolkit. Designed and tested by European Civil Protection and First Responders

www.anywhere-h2020.eu/catalogue

☒ Meteorológicos

×

00:00
Jan 21, 2020

Snow impacts in highways A3 and A31 forecasted more than 48h in advance

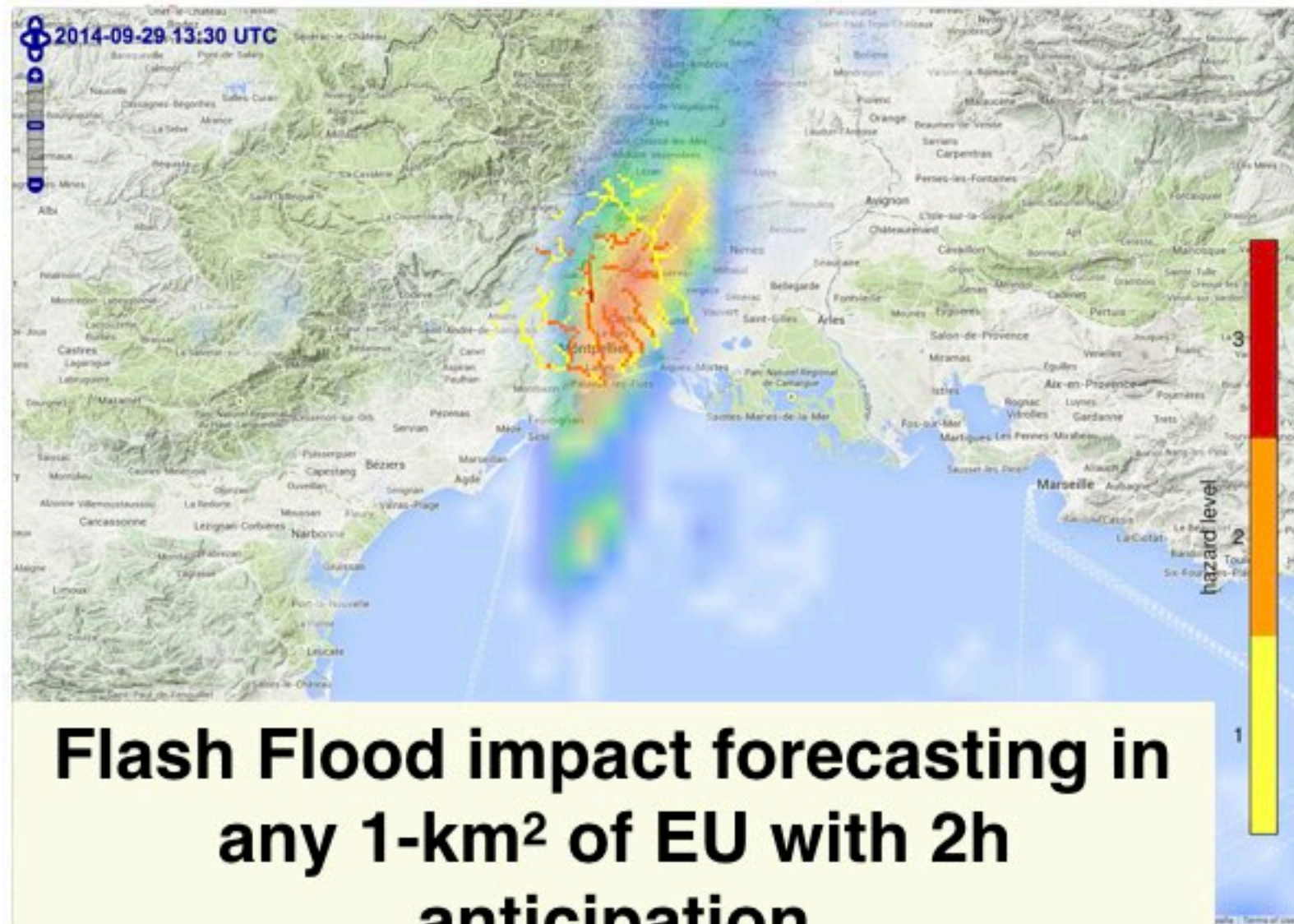
20-01-2020 10:32:18

How to support EMCs?



**Translate best adapted
METEOROLOGICAL
FORECASTS into *IMPACT*
FORECASTS**

Forecasting impacts: Flash Flood Impacts



**Flash Flood impact forecasting in
any 1-km² of EU with 2h
anticipation**



Catalogue of ANYWHERE Products for Hazard Forecasting and Impact
Localization due to Weather and Climate Events



Harness the power of advanced Weather Risk Forecasting and integrate
geolocated Data or Spatial Imagery into your own solutions.



Robust yet Simple Global Situation Awareness tool. Designed and
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**[www.anywhere-
h2020.eu/catalogue](http://www.anywhere-h2020.eu/catalogue)**

At 1km over the entire EU, at 200m in pilot sites

A4EU: Flood impact example

1

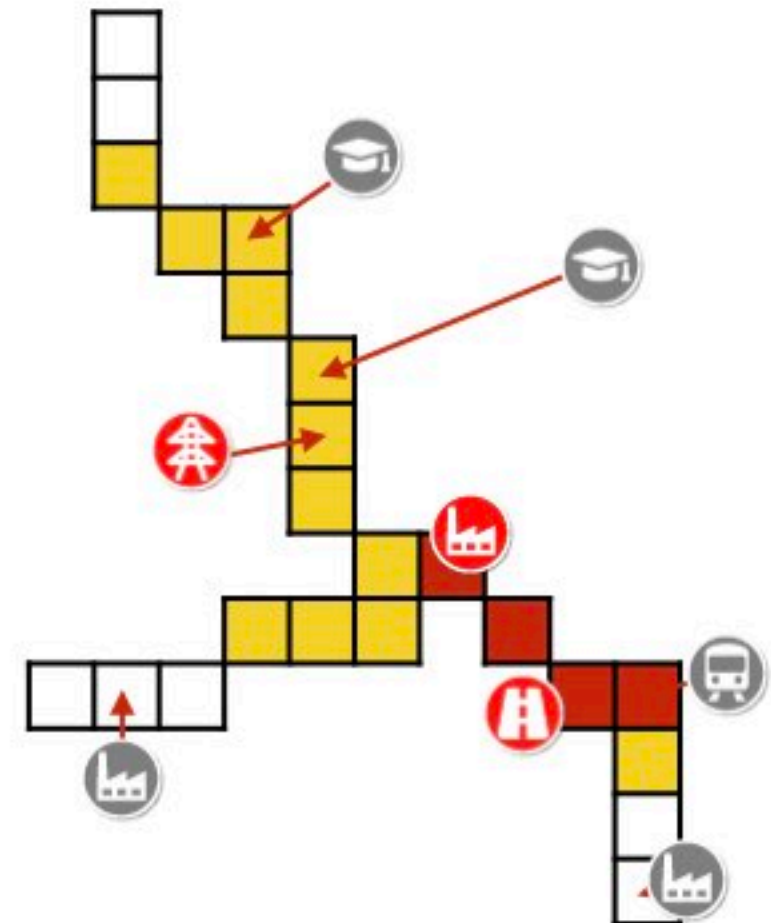
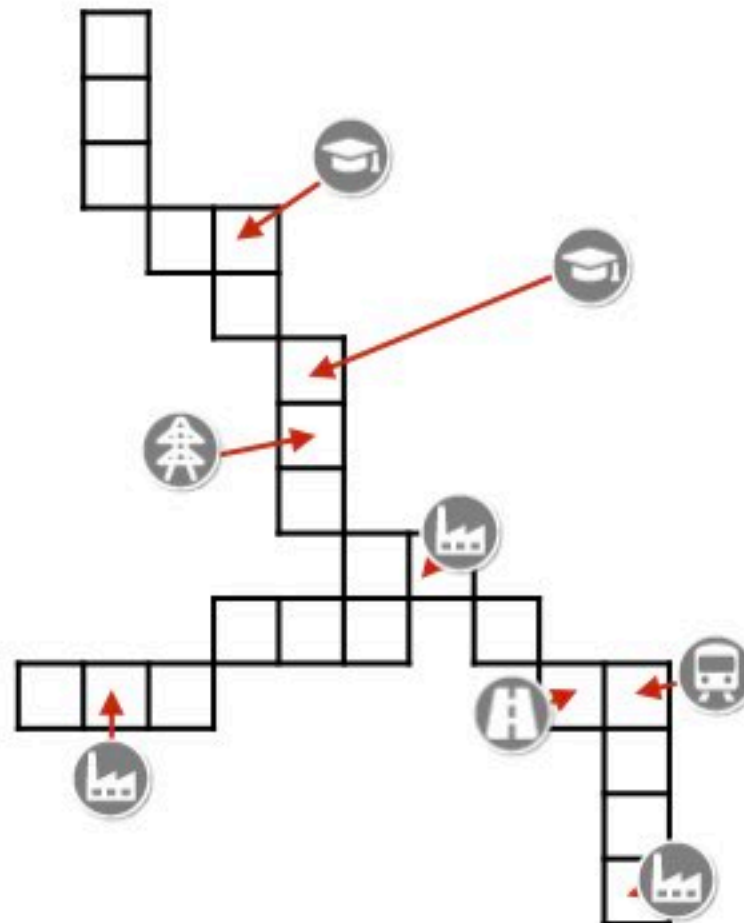
Set thresholds for most vulnerable points

2

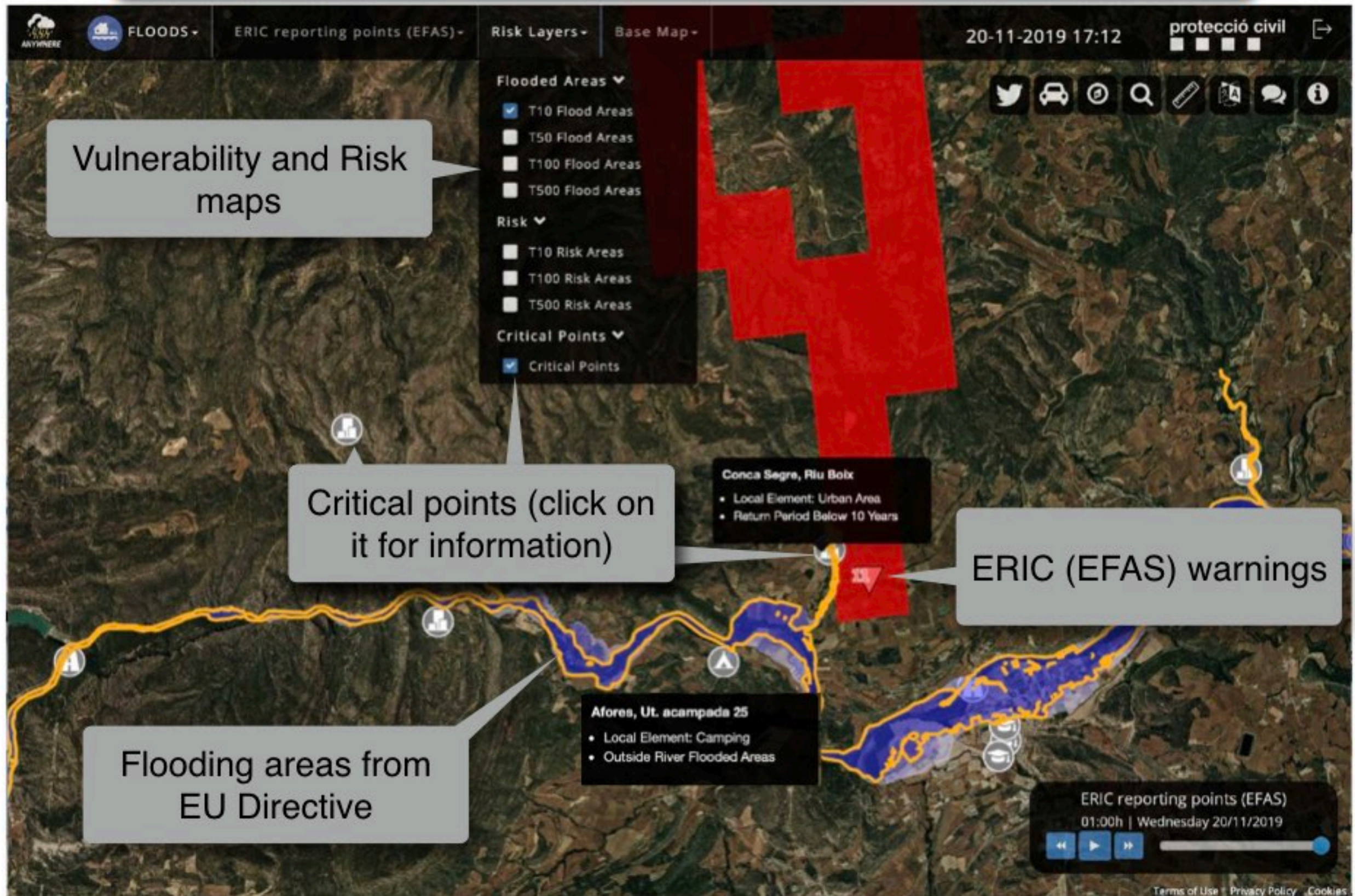
Link with impact products

3

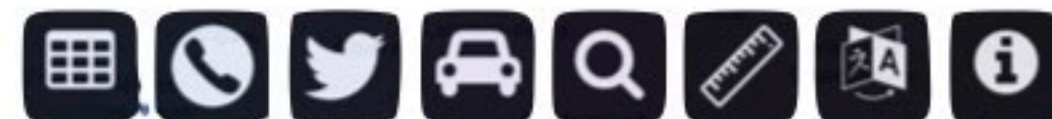
Activate in Real Time using Impact Forecasts



A4EU Platform - Impact products - Floods



A4EU Platform: Transversal information



**112 geolocated
calls
Only A4Cat**

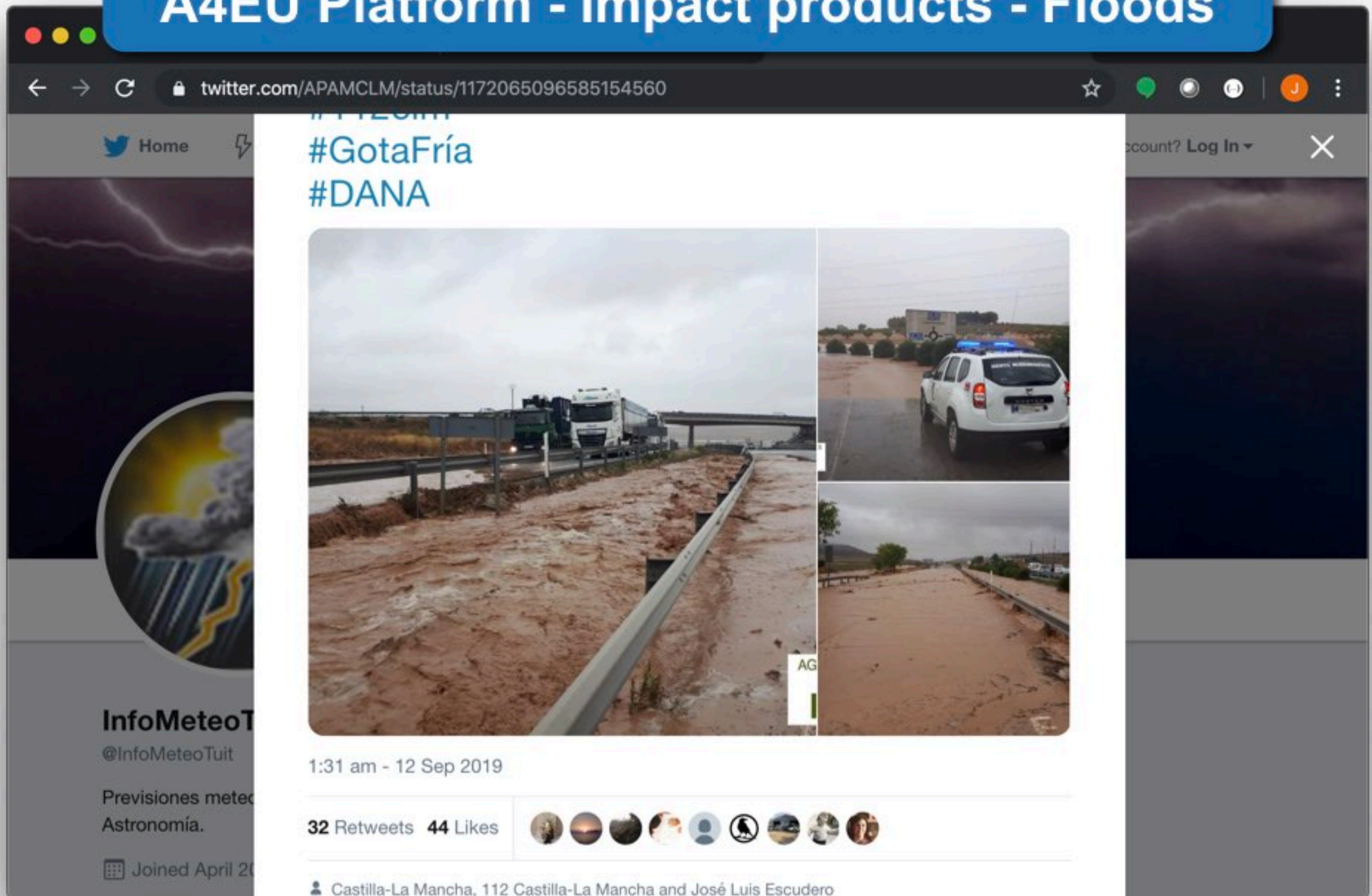
Filtered
Tweets

112

-  Last 30 min
-  (30, 60] min ago
-  (60, 90] min ago

Filters by typology

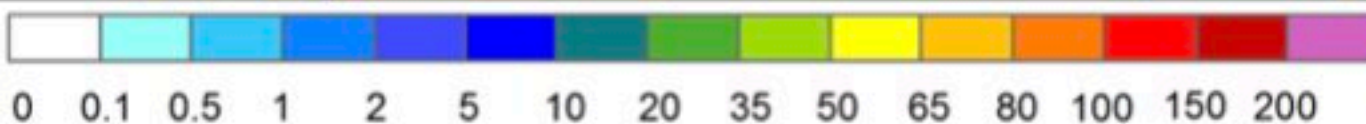
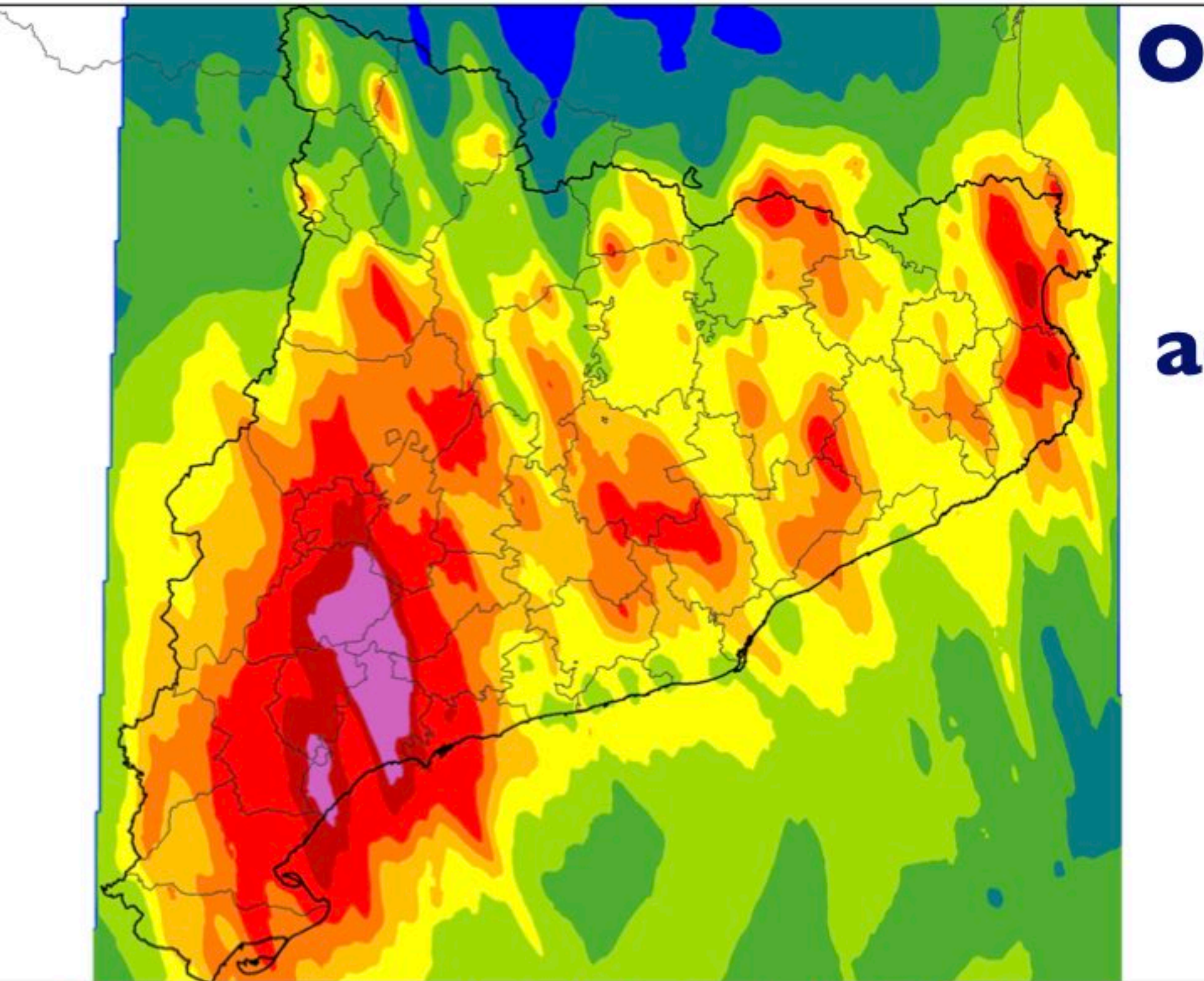
A4EU Platform - Impact products - Floods



Estimació de la precipitació acumulada (mm)

22 i 23 d'octubre de 2019 (fins a les 6h)

S'obté combinant les dades dels radars de la XRAD i dels pluviòmetres de la XEMA

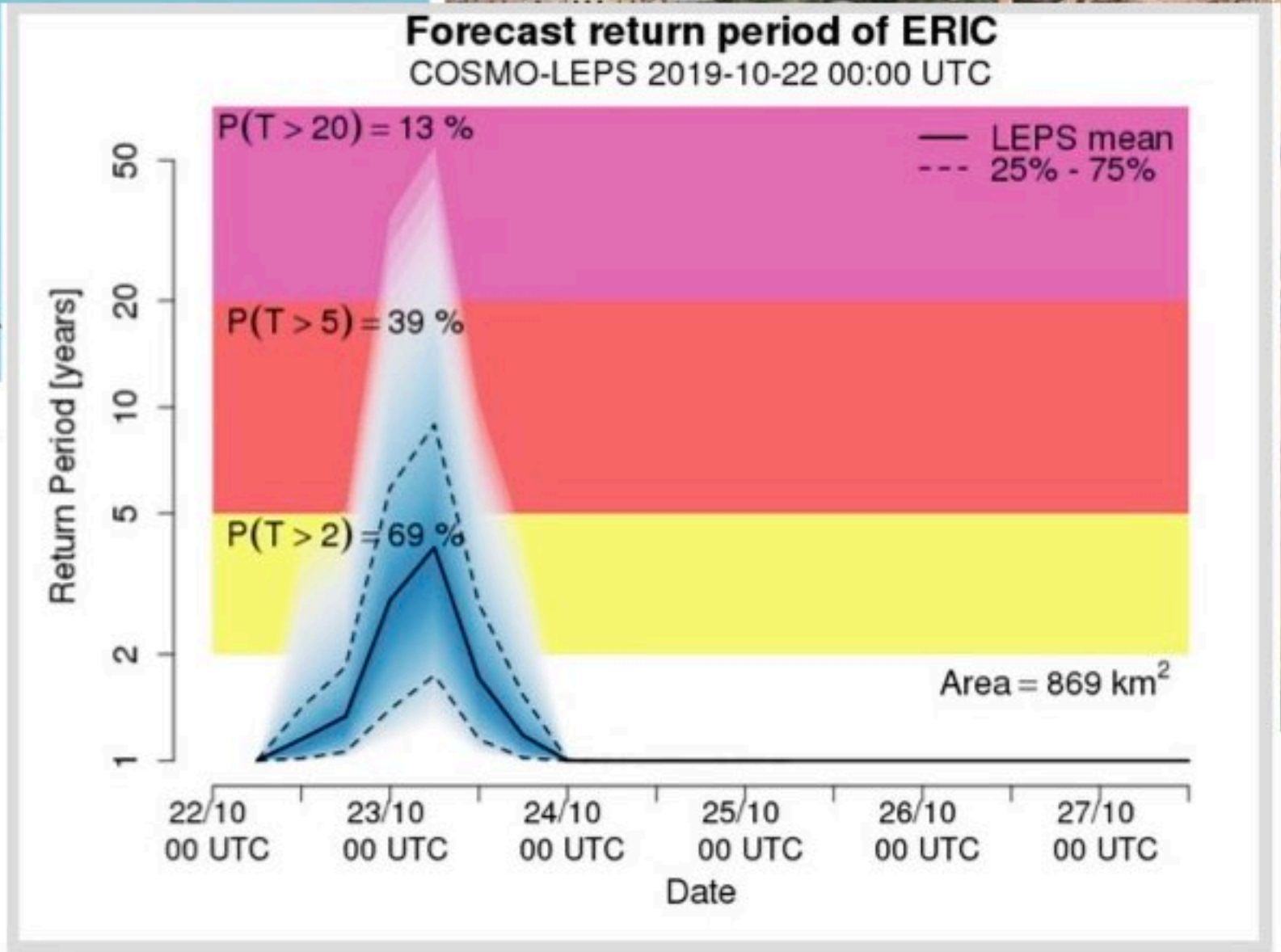
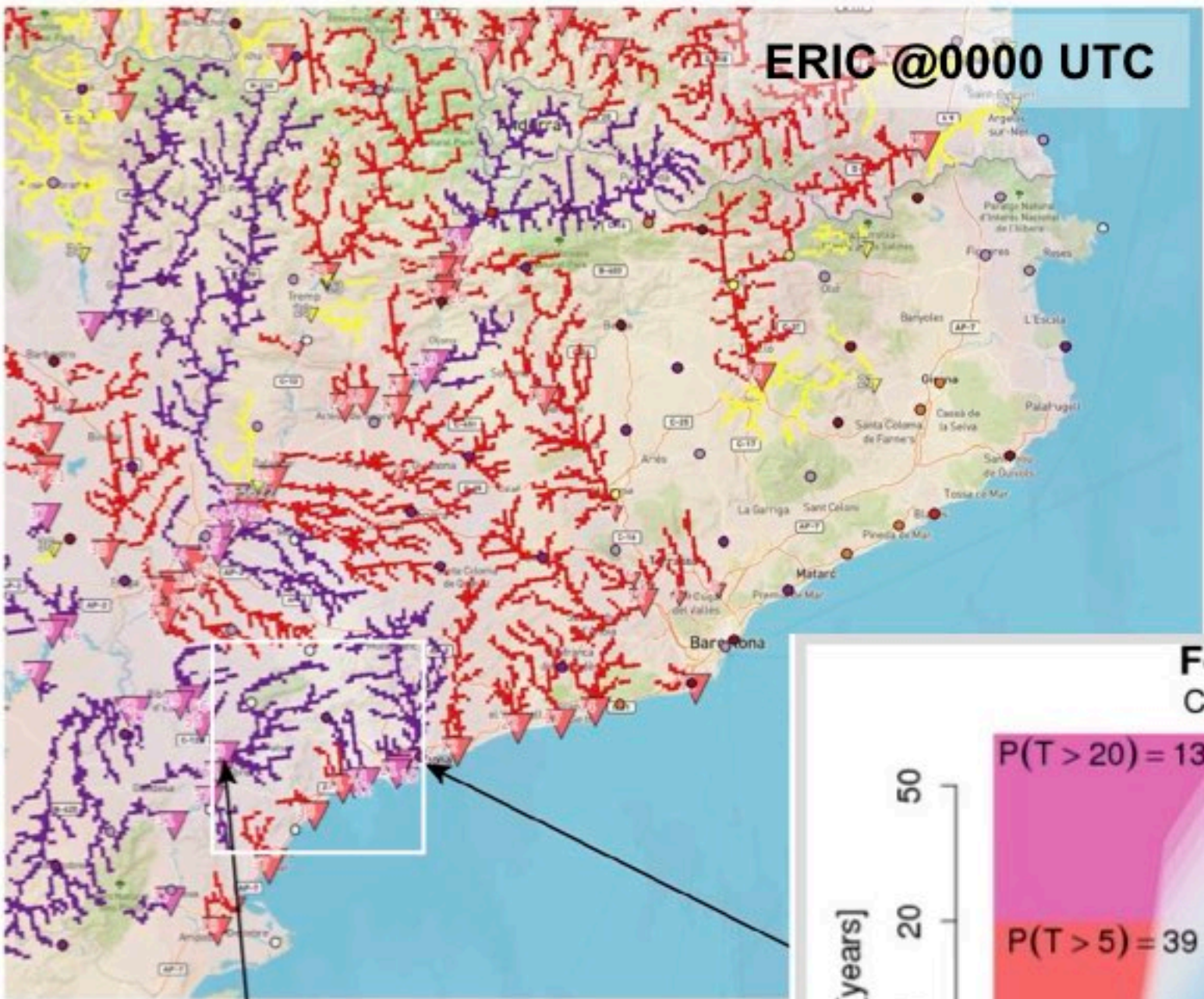


Servei Meteorològic
de Catalunya

22-23

**October 2019
Catalonia
Event
accumulated
rainfall**

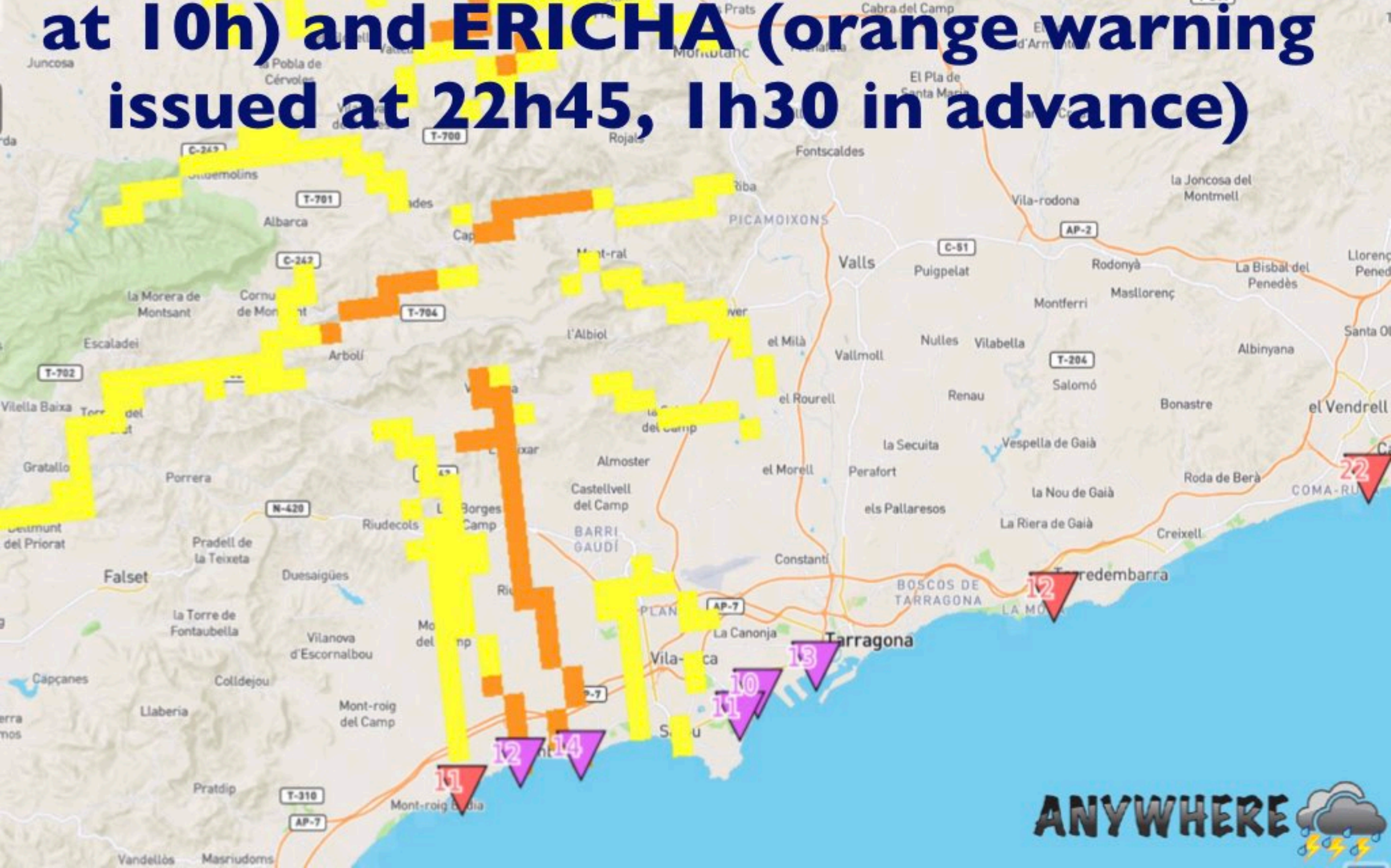




22 October 2019 Flash Flood

ANYWHERE warnings: **ERIC** (available at 10h) and **ERICHA** (orange warning issued at 22h45, 1h30 in advance)

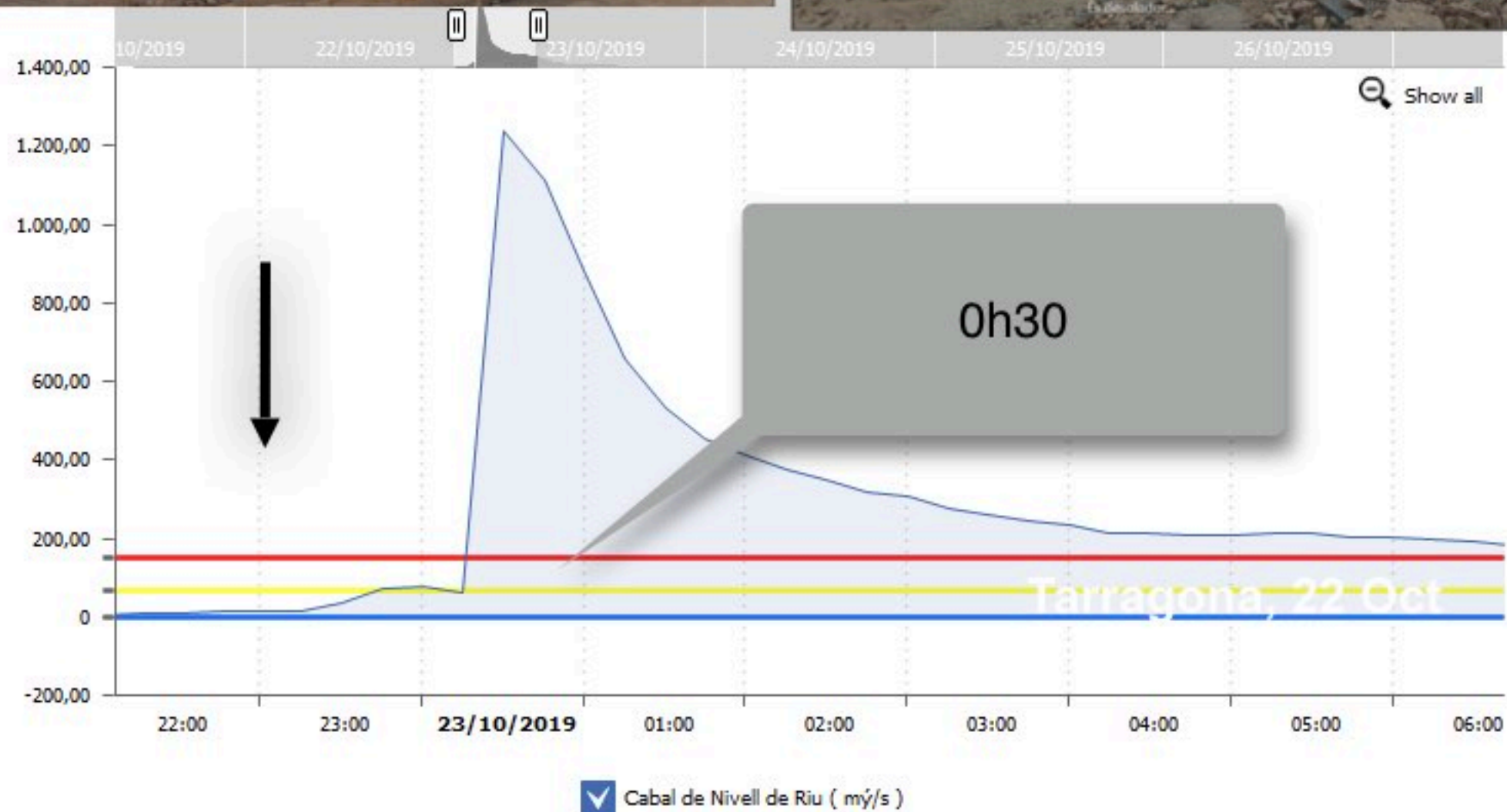
2019-10-22 18:45 UTC



22 Oct 2019



ANYWHERE



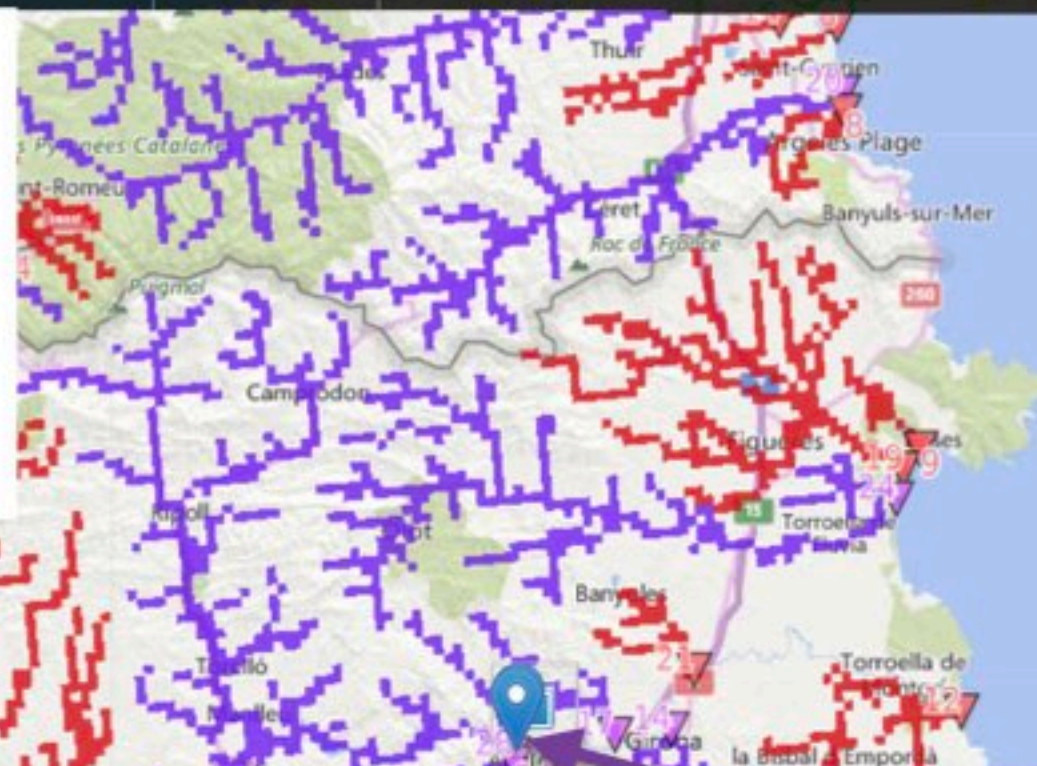
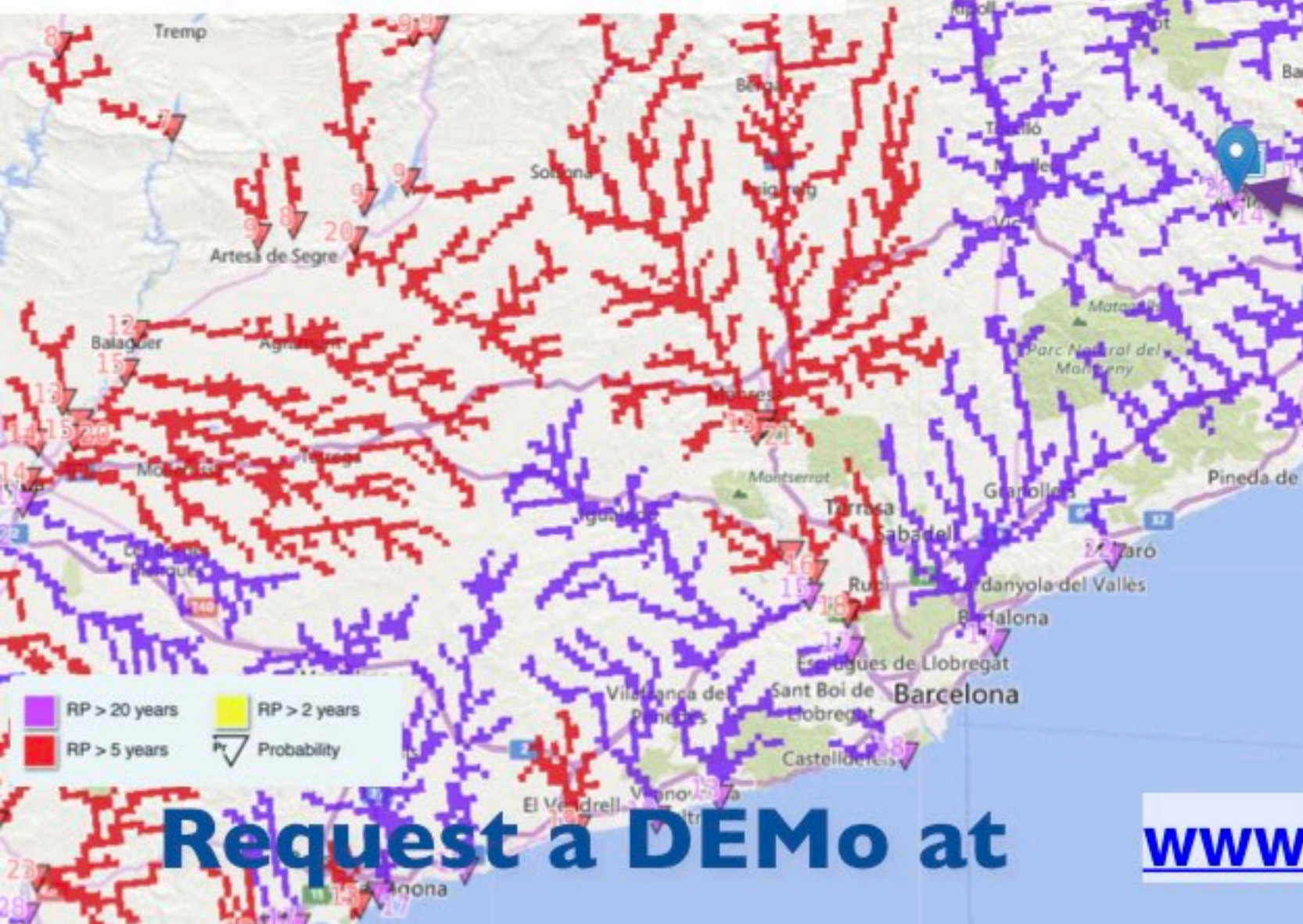




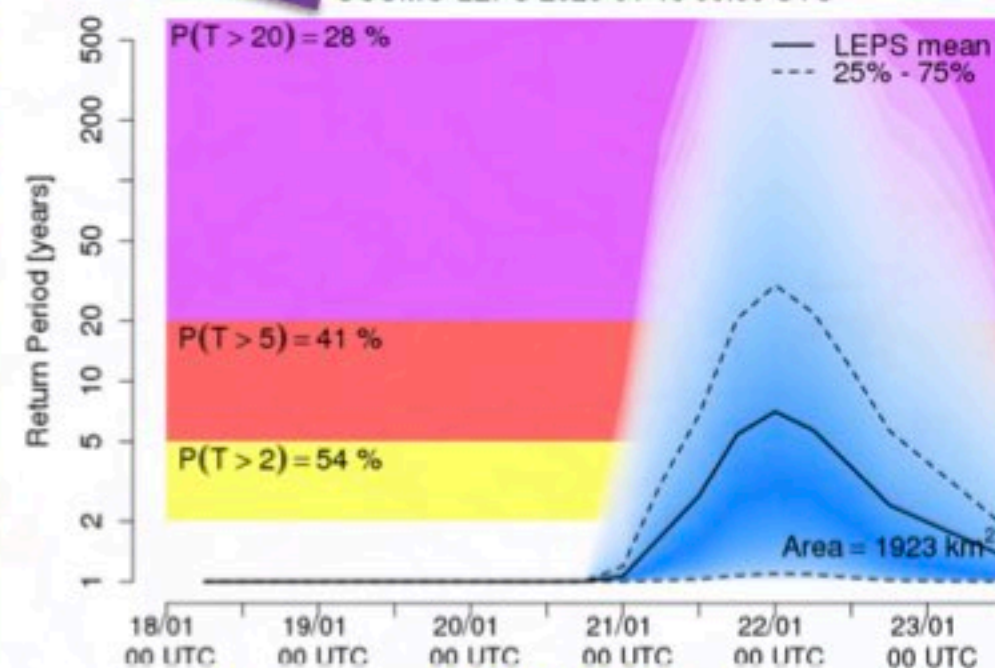
ANYWHERE



Storm Gloria ERIC forecasts on 18/1/2020 @ 00h 96h in advance



Forecast return period of ERIC
COSMO-LEPS 2020-01-18 00:00 UTC



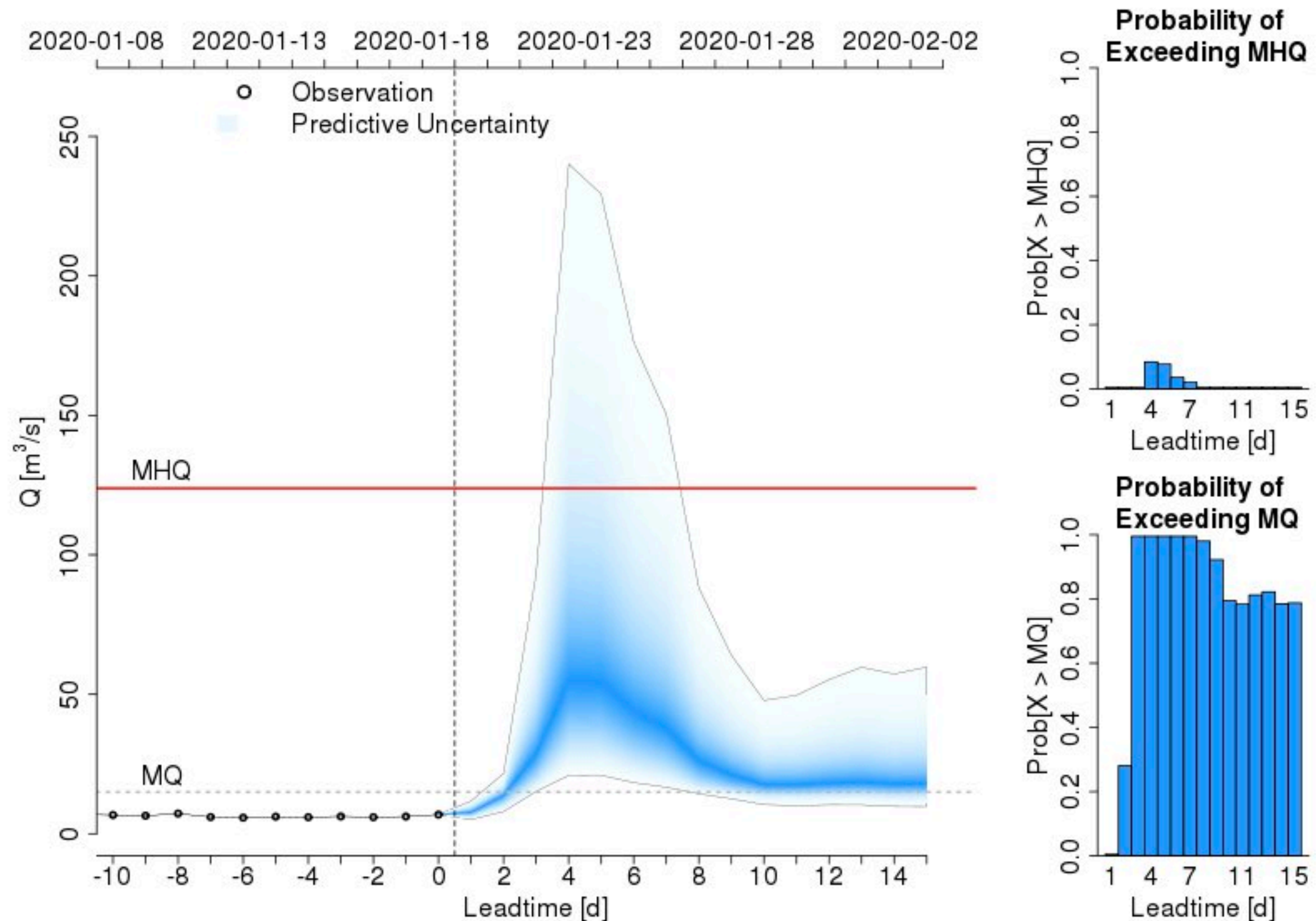
Request a DEMo at

www.anywhere-h2020.eu

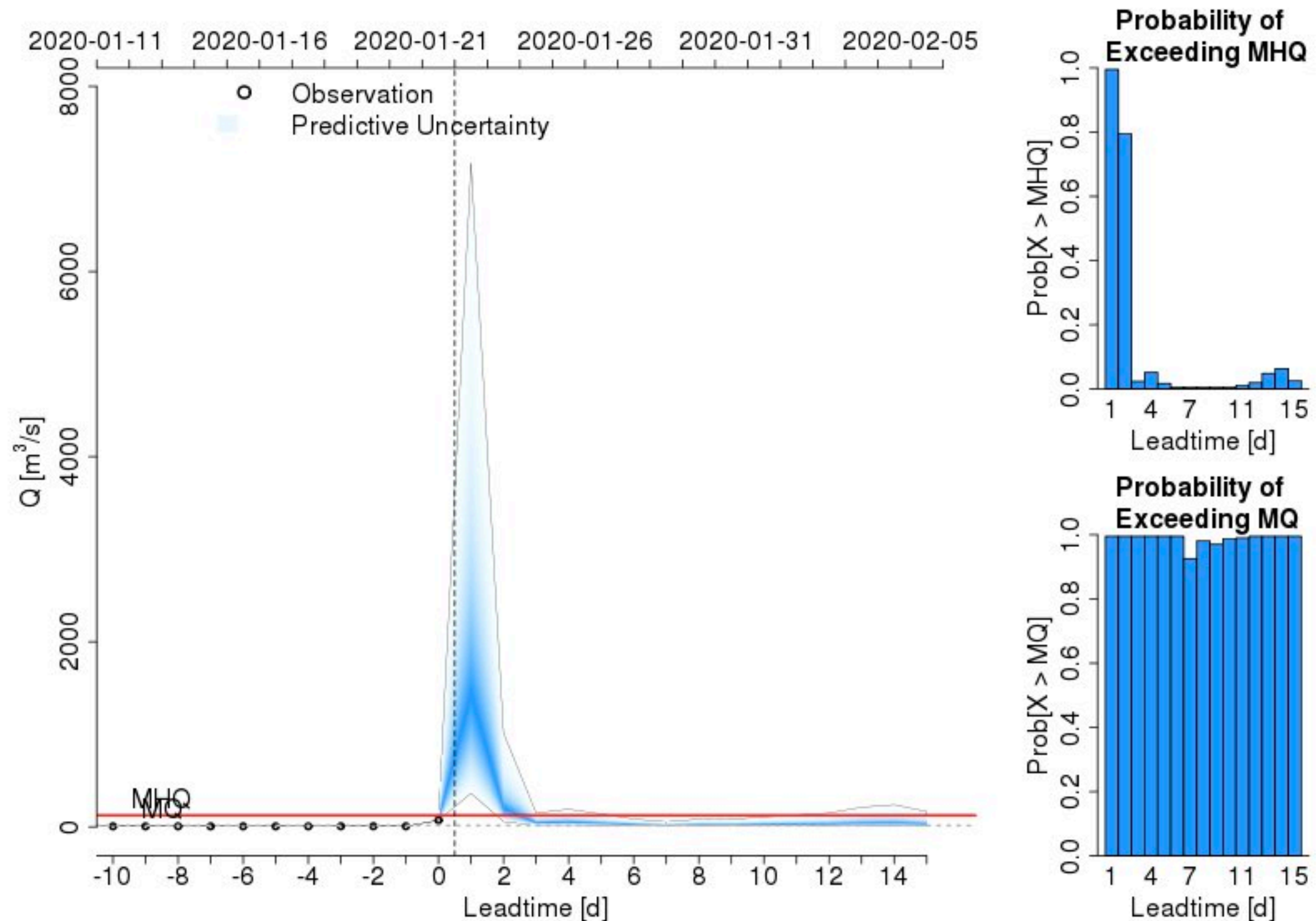
Storm Gloria EFAS forecasts on 19/1/2020 @ 00h

more than 96h in advance

Discharges at TER (Roda de Ter)



Storm Gloria EFAS forecasts on 22/1/2020 @ 00h more than 24h in advance Discharges at TER (Roda de Ter)



MANAGEMENT AND FINANCIAL STATEMENT



- 🕒 **Two partners** (SMEs RAB and ARANTEC) **unable to present their Financial Statement in time** (NOT INCLUDED)
- 🕒 **Some partners with provisional CFS** (waiting to include the travel spenses of the Review meeting).
- 🕒 **Globally: Potential Requested EU contribution exceeds 500 k€ the EC funds**

**The work done has required
500 k€ over the initial budget**

MANAGEMENT AND FINANCIAL STATEMENT



- **AIRBUS** is declaring again Unjustified Eligible Costs in RP3
- **AND INCLUDES INADMISSIBLE ADJUSTMENTS FOR RP2 over 580 k€ and over 200 k€ for RPI**

We will present a claim of non-conformity of their Financial Statement

MANAGEMENT AND FINANCIAL STATEMENT



700099 (ANYWHERE) IA  HORIZON 2020 THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION Period No: 3 Duration (months): 11 Reporting Period : [01 Feb 2019 - 31 Dec 2019]	Beneficiary 3: AIRBUS Legal Name: AIRBUS DEFENCE AND SPACE SAS PIC: 999809265 Status: VALIDATED Legal Address: 31 RUE DES COSMONAUTES ZI DU PALAYS 000 , 31402 , TOULOUSE CEDEX France	Financial Statement 
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Financial Statement

Financial Statements		
Period	Adjustment	Requested Contribution
01 Feb 2019 - 31 Dec 2019 (Period No. 3)	No	295,079.34 €
01 Dec 2017 - 31 Jan 2019 (Period No. 2)	Yes	589,134.27 €
01 Jun 2016 - 30 Nov 2017 (Period No. 1)	Yes	209,733.51 €

Financial Statement for period '3' - (01 Feb 2019 - 31 Dec 2019)

Eligible costs:

Cost Category	Total	Actions
a) Direct personnel costs declared as actual costs	285,830.10 €	 
b) Direct personnel costs declared as unit costs (average costs)	0.00 €	
d) Direct costs of subcontracting	0.00 €	
e) Direct costs of providing financial support to third parties	0.00 €	
f) Other direct costs	51,403.43 €	
h) Costs of internally invoiced goods and services	0.00 €	
i) Indirect costs (= 0.25 * (a + b + f + h - p))	84,308.38 €	
k) Total costs (= a + b + d + e + f + h + i)	421,541.91 €	
l) Receipts	0.00 €	
n) Maximum EU contribution (= 70% * k)	295,079.34 €	
o) Requested EU contribution	295,079.34 €	



ANYWHERE



Preparing ANYWHERE Market Uptake

Sustainability after the end of the project



**ANYWHERE
FOUNDATION**



ANYWHERE H2020



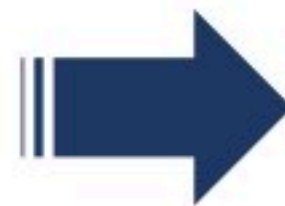
Continuity of the platform
operation and improvements

+

Product commercialisation

+

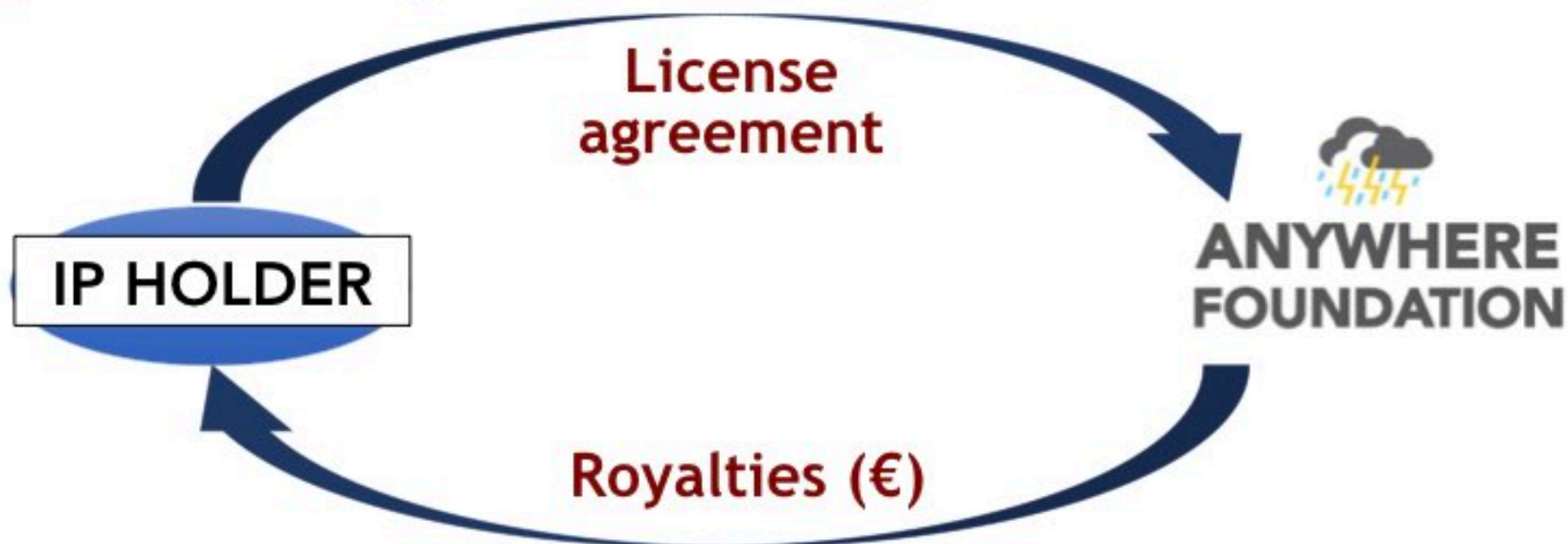
Actions of general interest



**ANYWHERE
FOUNDATION**

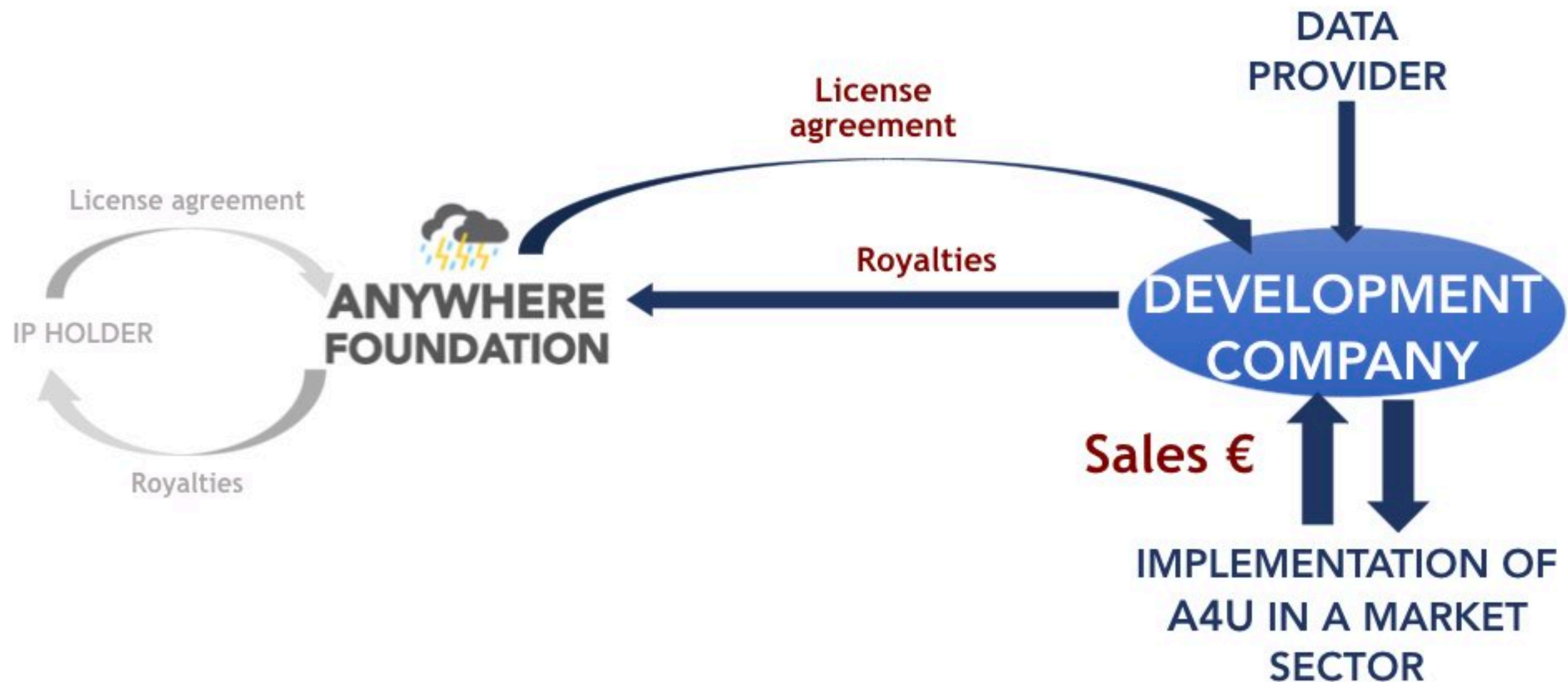
ANYWHERE FOUNDATION

Stage 1. Management IP Royalties



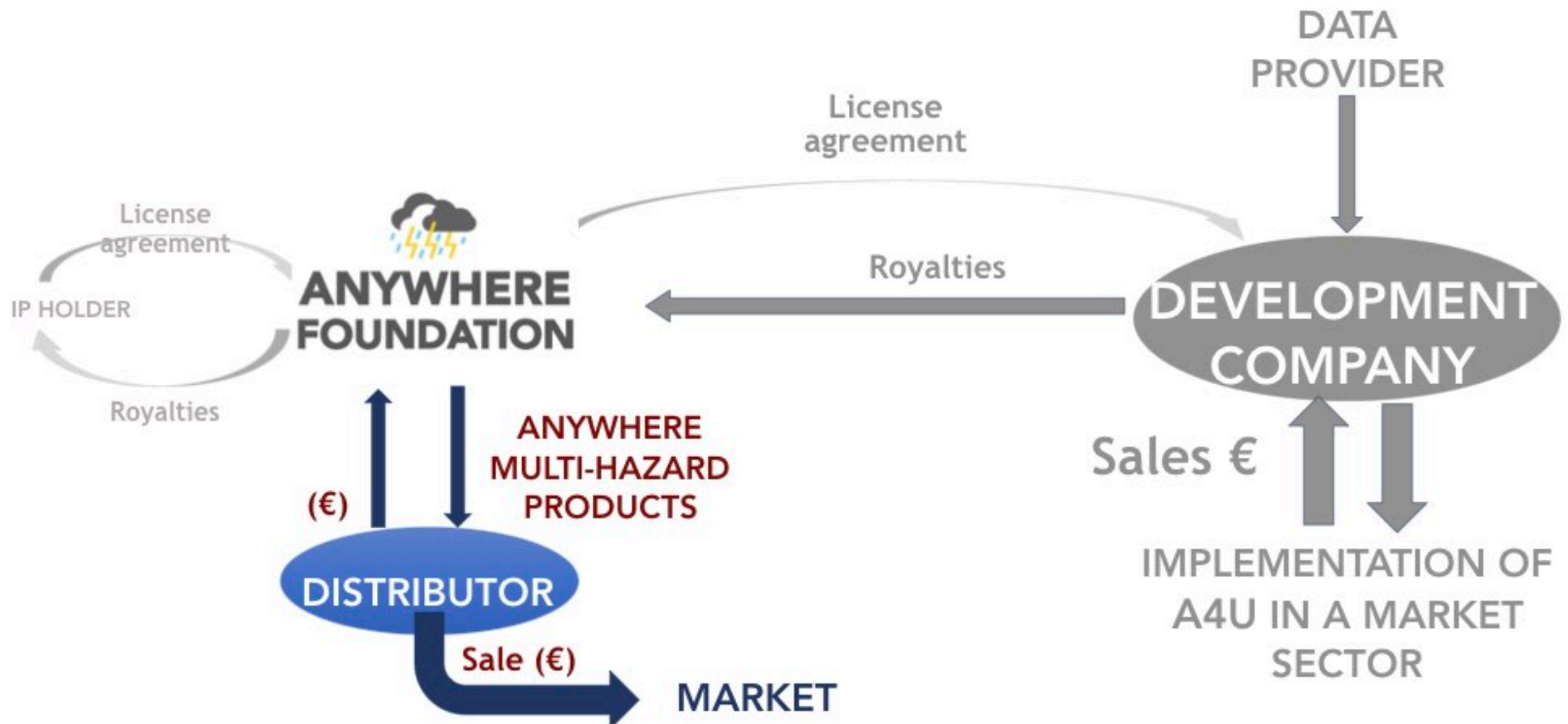
ANYWHERE FOUNDATION

Stage 2. Facilitate agreements with implementing parties



ANYWHERE FOUNDATION

Stage 3. Facilitate commercialisation and distribution



Purposes of general interest

- Promote coordination between scientists, operational authorities, citizens and enterprises
- Drive society's response to the climatic emergency
- Inform about the society needs to adapt to the effects of climate change
- Create a community of users
- Make recommendations
- Promote standardisation in the sector
- Create a quality brand for products and service suppliers
- Good practices.



A4U

**Get your OWN
customised SERVICE**



ANYWHERE



www.anywhere-h2020.eu