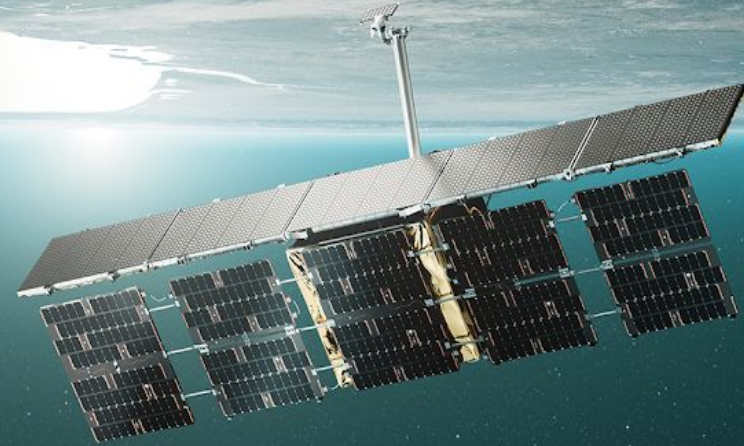


ICEYE



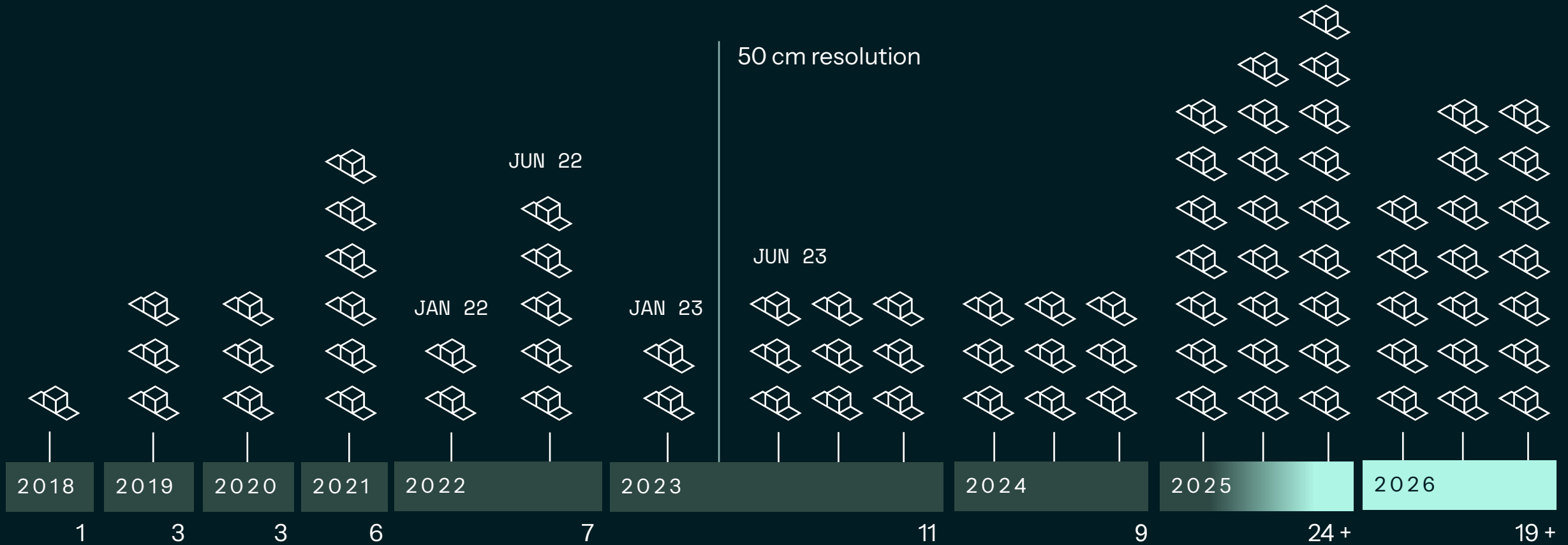
Satellite based Services for Disaster Risk Management in Spain

Franck Ranera
Business Lead , NatCat Solutions – Europe

A satellite is mounted on a test rig in an anechoic chamber. Two technicians in white lab coats are adjusting the rig. The chamber walls are covered with white cross-shaped absorbers, and the floor is covered with a dense array of dark grey pyramidal absorbers.

WORLD LEADER
MICROSATELLITES
SAR

44 satellites launched to date. Another ~40 planned through 2026



Synthetic Aperture Radar [SAR] sees:

Through Clouds
Through Darkness
Through Smoke
Through Volcanic Ash

SAR and flexibility from our constellation scale mean we have super advantages over other forms of remote sensing:

Scale of the NatCat event capture
Progression and peak of the NatCat event capture
Reliable, predictable and rapid speed of delivery

Global Flood Monitoring Stats since 2021

44

Countries

306

Event Analyzed

569,728

Mapped Area km²

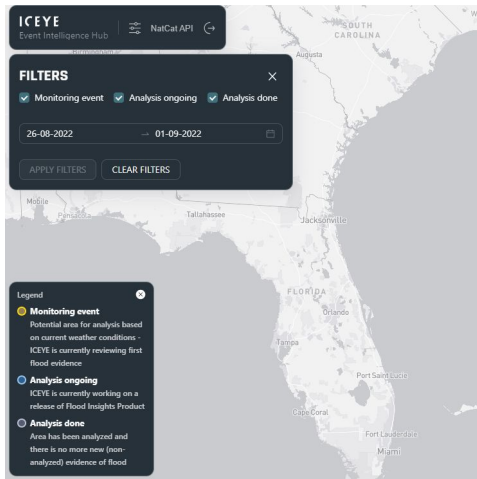
29

Floods in the last 3 months

ICEYE'S SAR-DERIVED FLOOD INSIGHTS

MONITOR

Potential flooding globally to task satellites



COLLECT

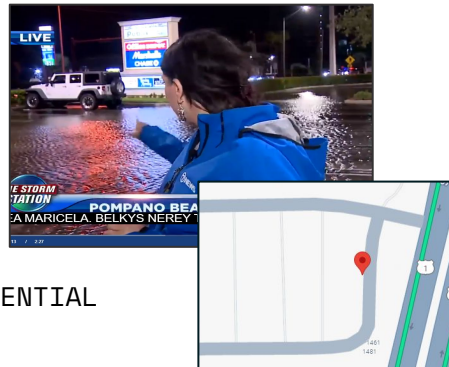
SAR + auxiliary flood data to identify impacts

SAR imagery



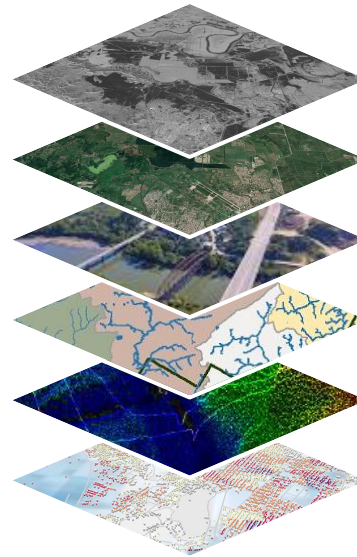
+

Geolocated Flood Evidence



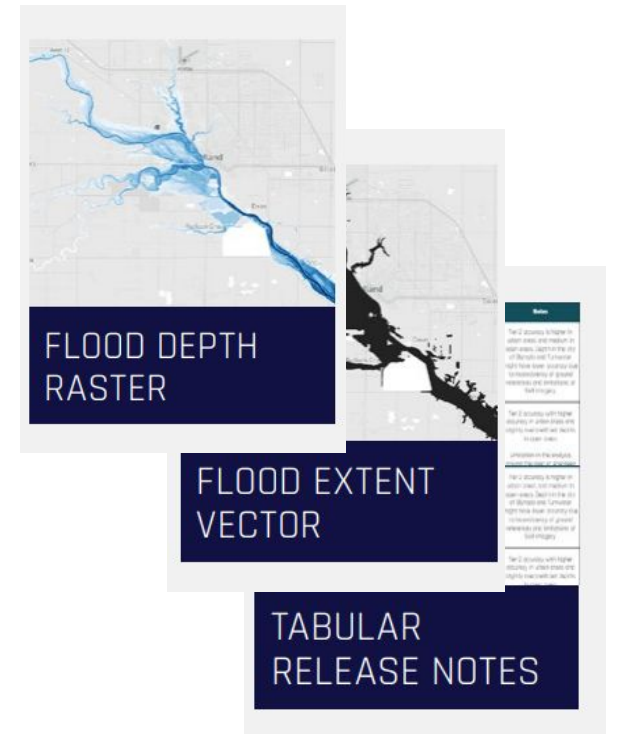
ANALYZE

Multi-source insights to capture full scope of flooding

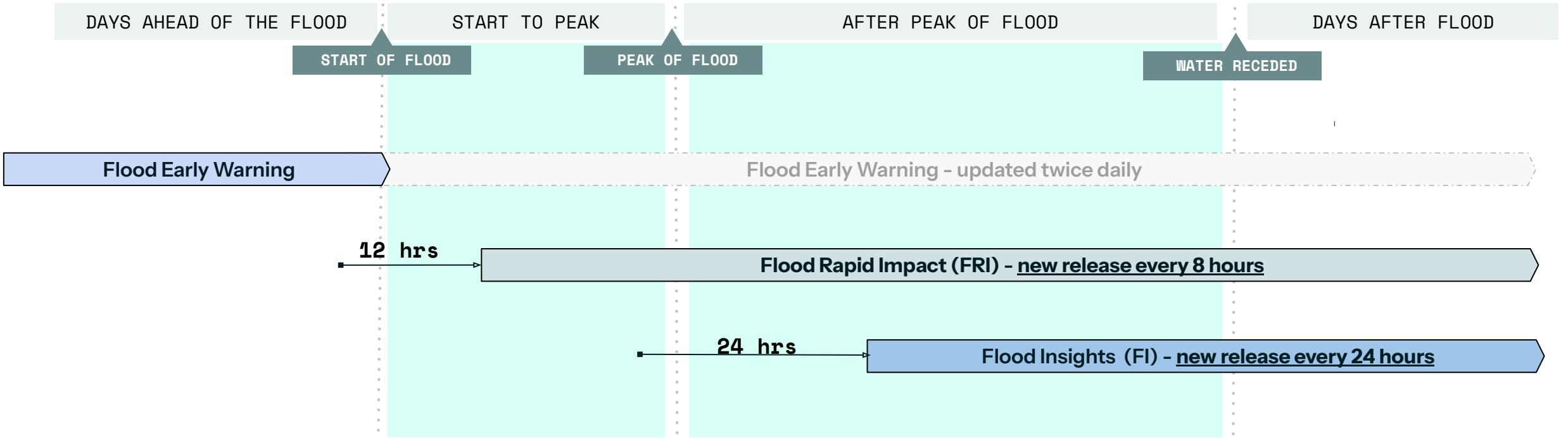


DELIVER

Flood Insights to customers in near-real time

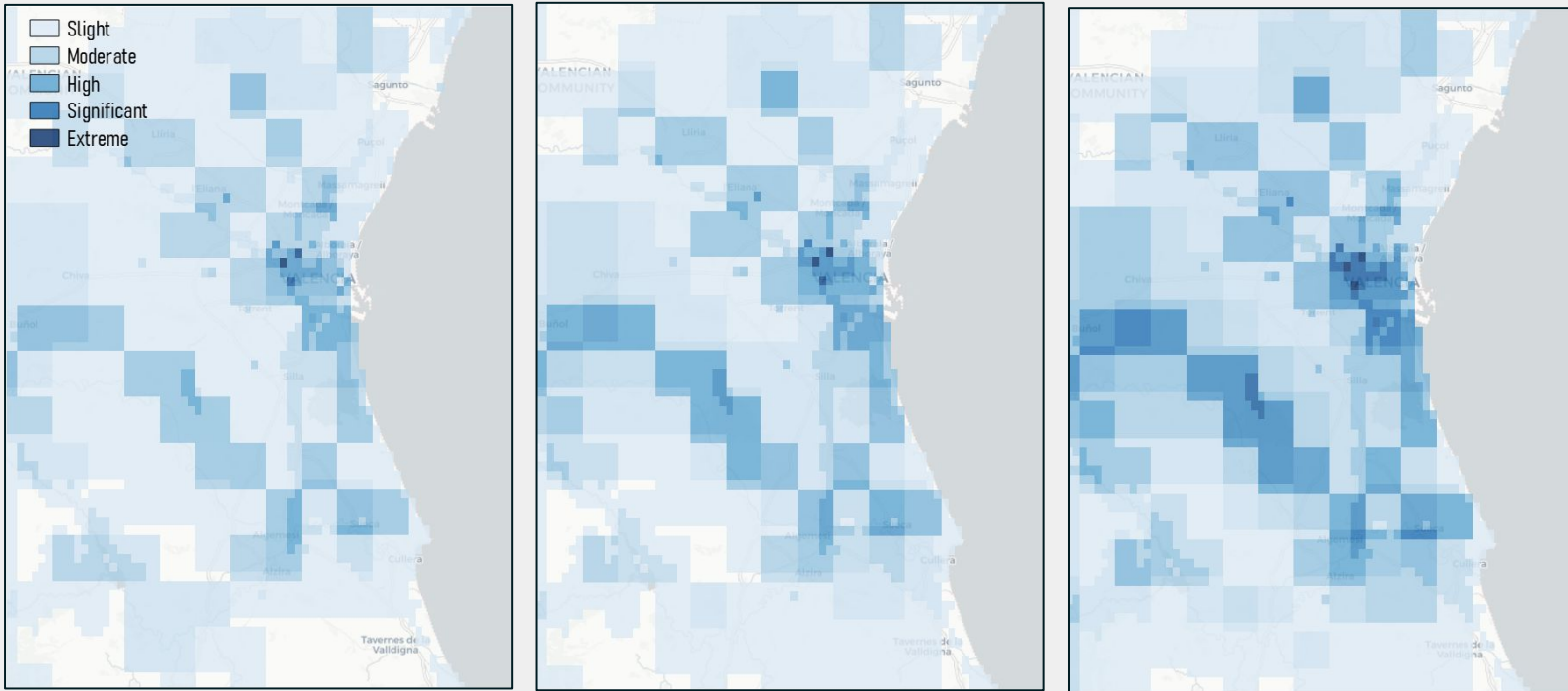


Flood timeline with ICEYE Flood products overlay



Valencia

Flood Early Warning



48-72h

24-48h

0-24h

27th of October

28th of October

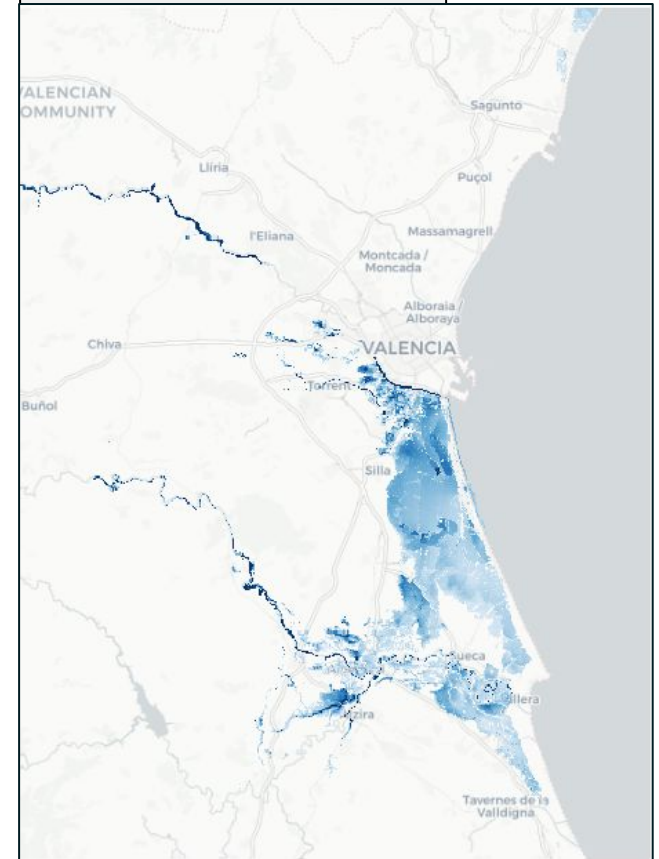
29th of October

Release 8

9th of November

Start of event

Flood Depth



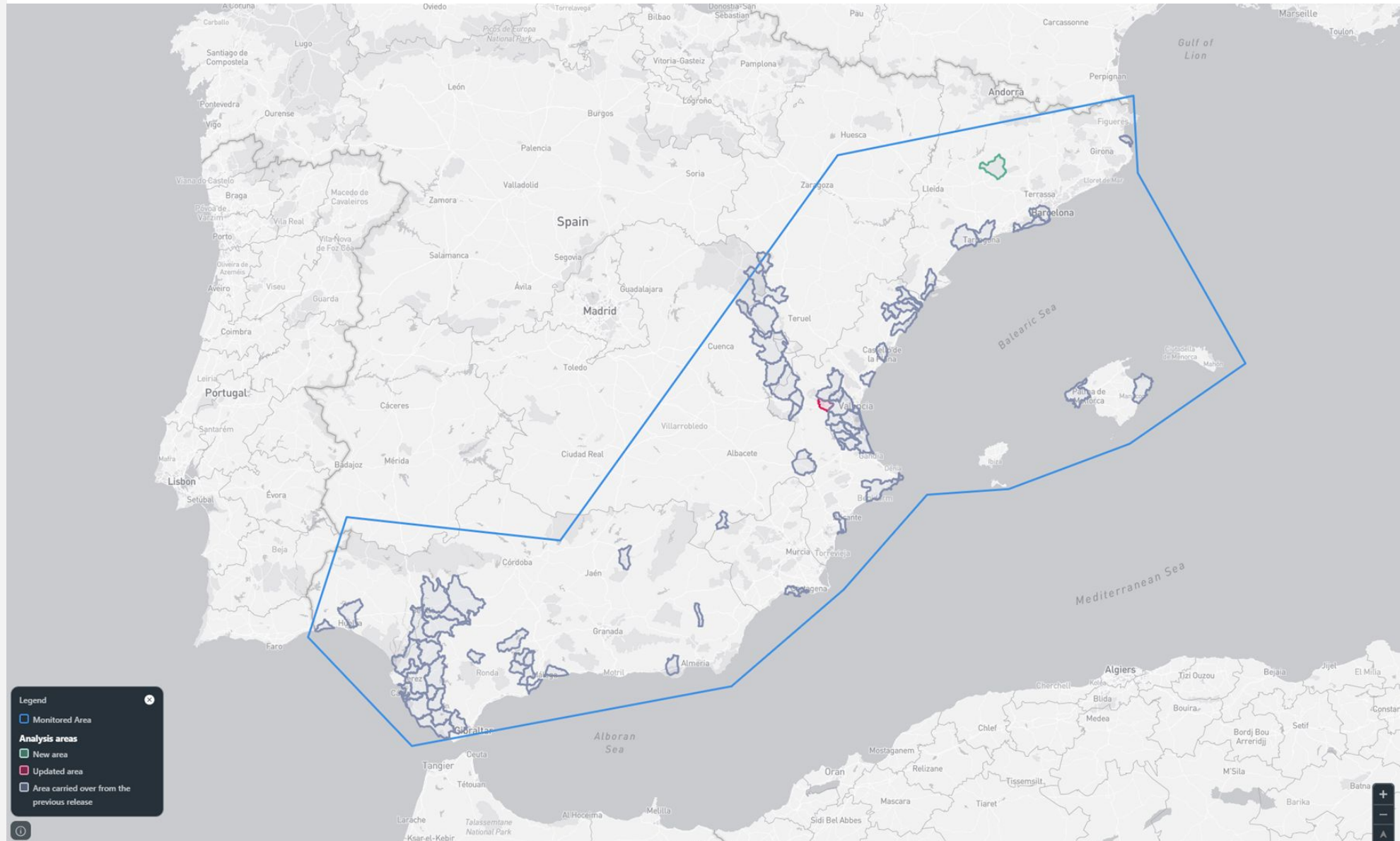
Inundación España

Oct - Nov 2024

El 29 de octubre, una tormenta DANA golpeó el este y sureste de España, provocando varias horas consecutivas de lluvias torrenciales en algunas localidades. La región de Valencia fue la más afectada, con más de 300 mm de lluvia medidos en pocas horas. ICEYE produjo 8 informes para este evento, con el último el 9 de noviembre de 2024

Legenda

- Nuevo área
- Área actualizada
- Área de la previa entrega



D CONFIDENTIAL

9

ICEYE

Dana, Spain

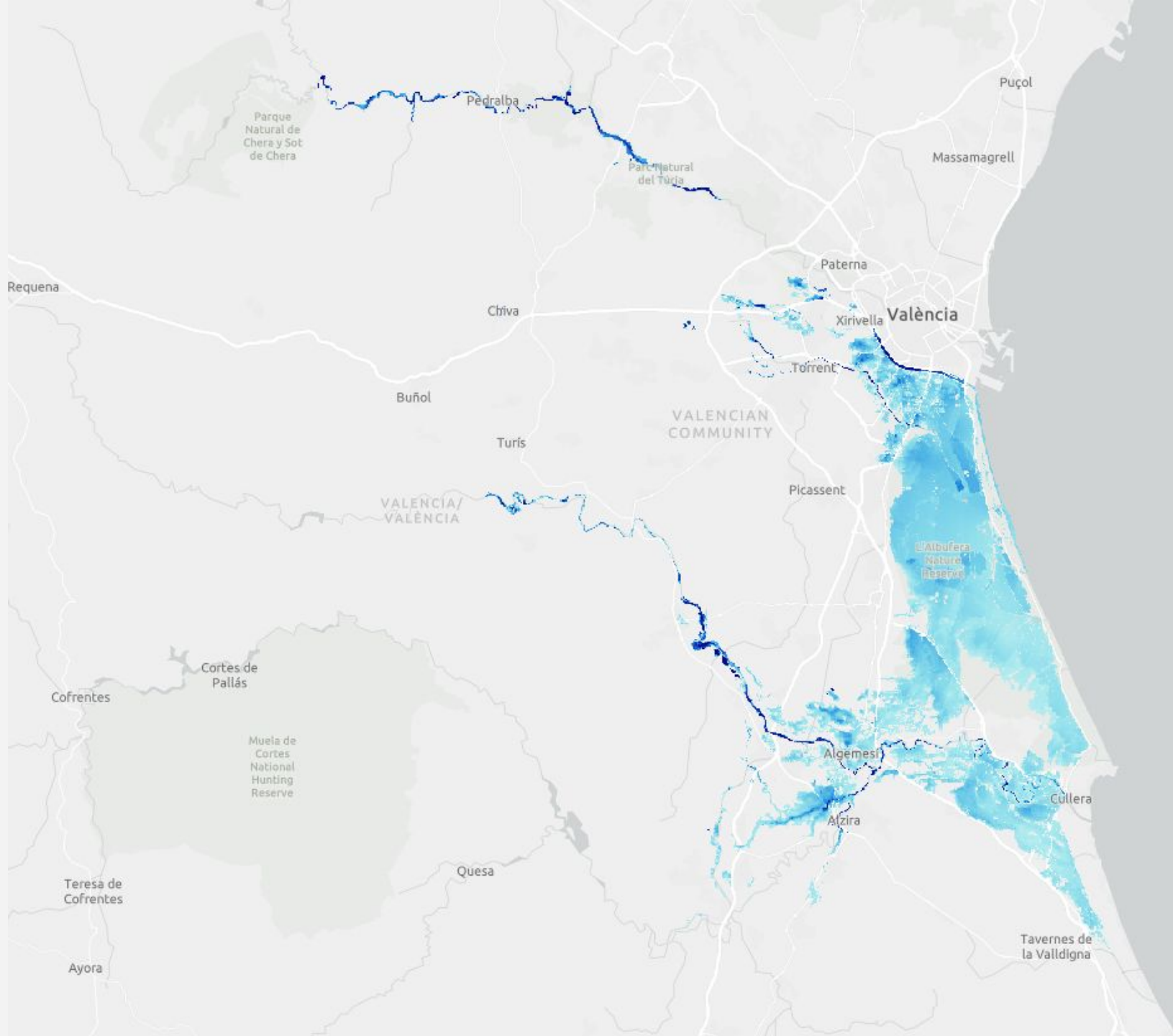
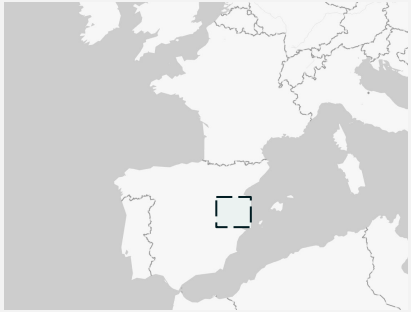
October 2024

→ 667 km² total flood extent

ICEYE customers received high resolution depth information 24 hours after first high water

Buildings affected:

- 68 VERY HIGH >2.4 M
- 248 HIGH 1.5-2.4 M
- 1866 MEDIUM 0.6-1.5 M
- 4623 LOW <0.6 M



ICEYE

Dana, Spain

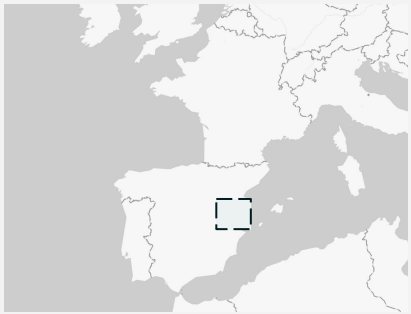
October 2024

→ 667 km² total flood extent

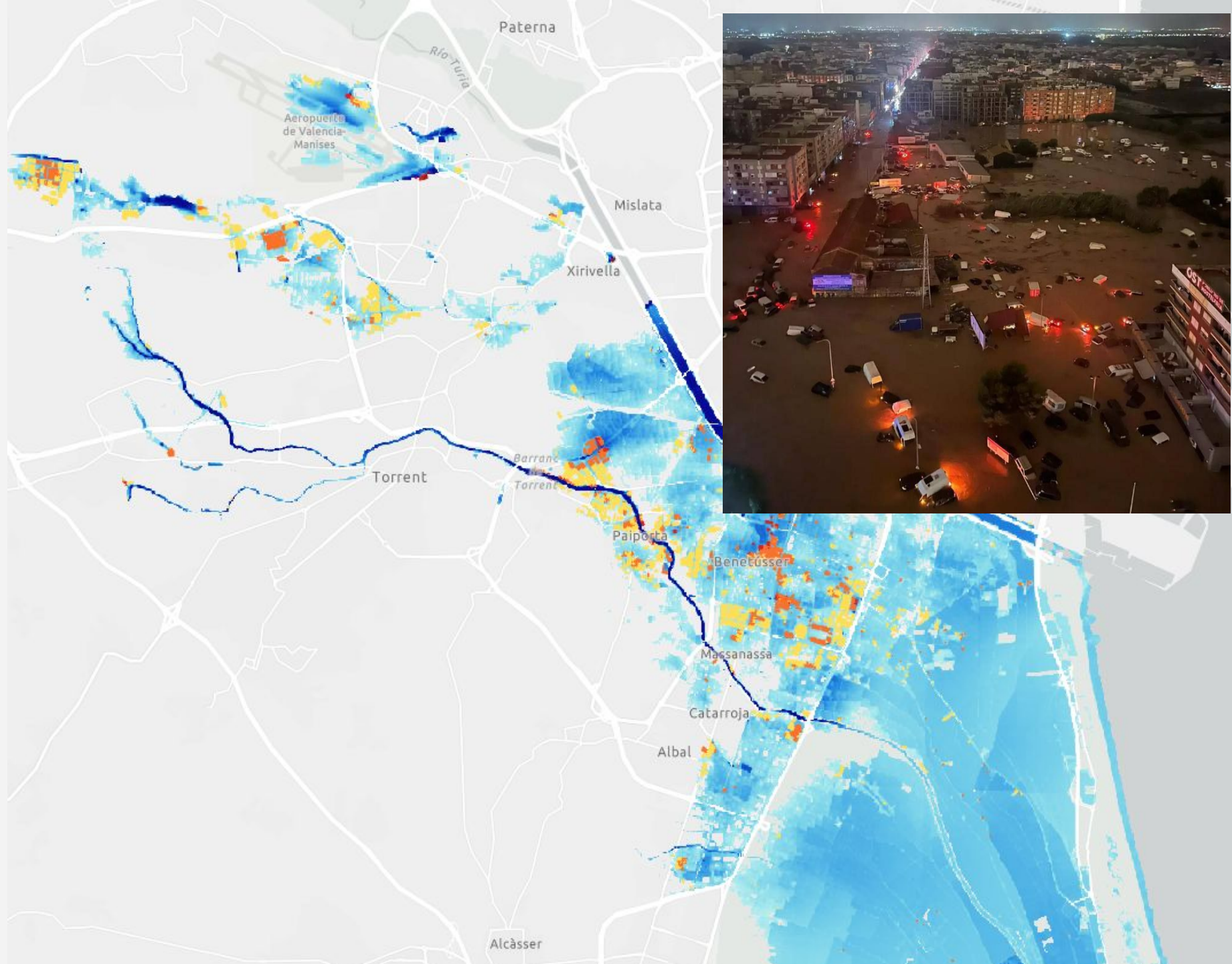
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PROPRIETARY AND CONFIDENTIAL



ICEYE

Dana, Spain

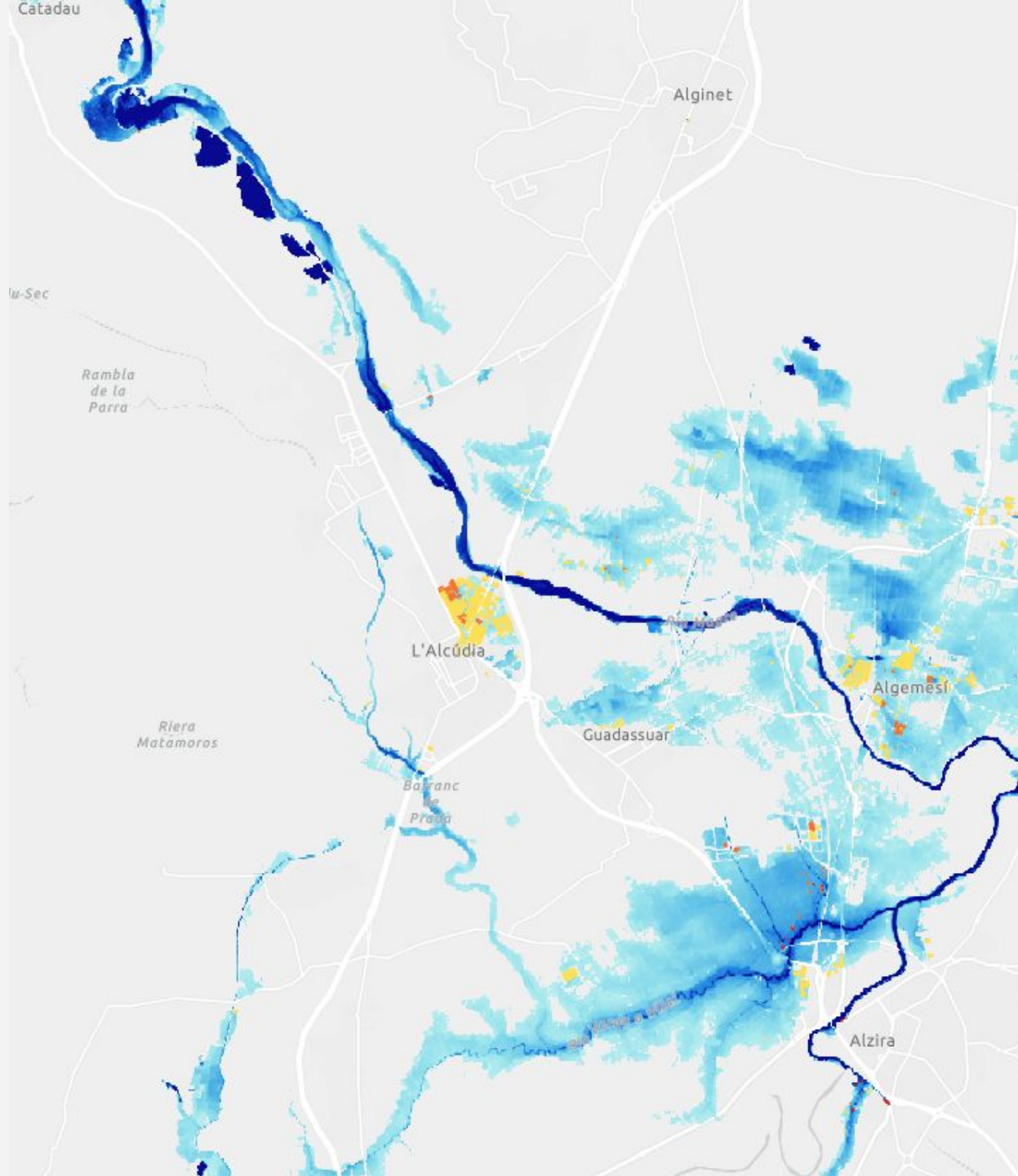
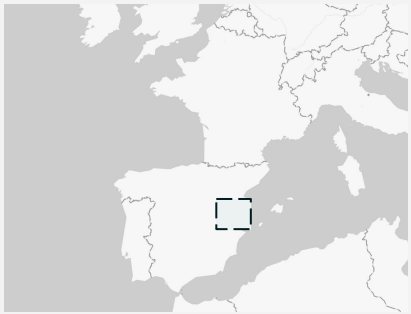
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ICEYE

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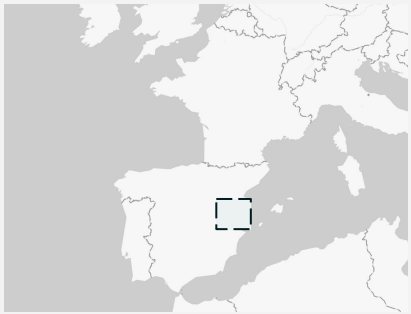
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PROPRIETARY AND CONFIDENTIAL



Dana, Spain

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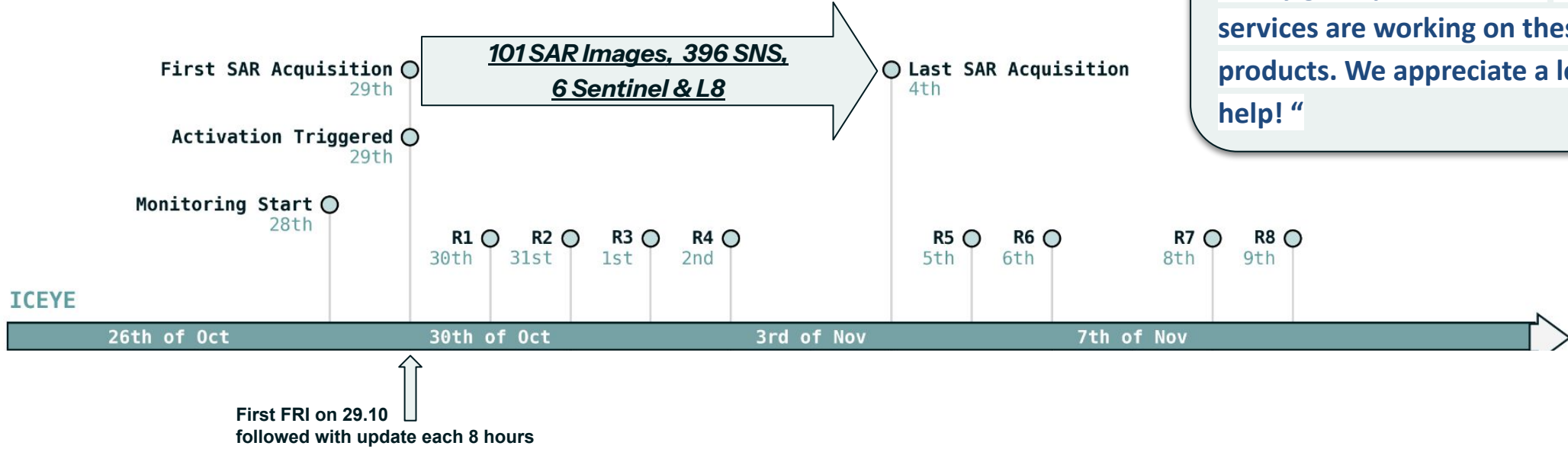
Castelldefels, Barcelona



Flood Insights Timeline and Spanish Authorities

EMAD on Nov 5th

“ Very good products. Our emergency services are working on these products. We appreciate a lot your help! “



Government of Valencia

ESRI SPAIN

Spanish Defence General Staff (EMAD)

Valencian Cartographic Institute (ICV)

Spanish Space Agency

**UME
Guardia Civil**

Policia Nacional

Higher Council for Scientific Research (CSIC)

ICEYE FLOOD SERVICES for SPAIN

2021

2023

2024

ICEYE

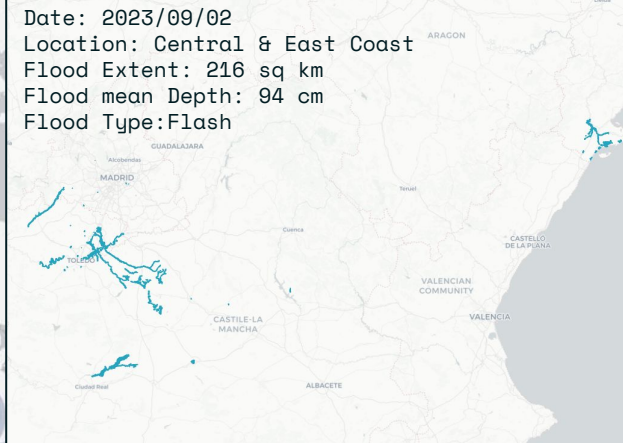
FSD-827

Date: 2021/12/08
Location: Northern Spain
Flood Extent: 699 sq km
Flood mean Depth:-
Flash Type: Fluvial



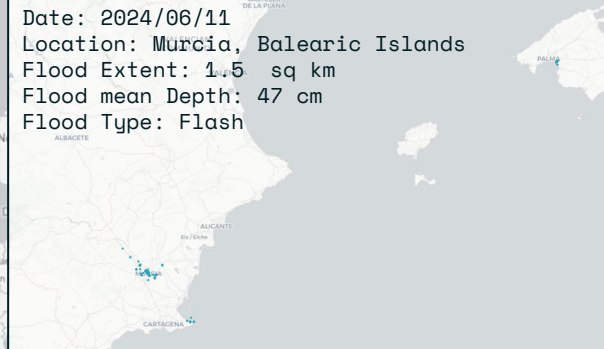
FSD-1702

Date: 2023/09/02
Location: Central & East Coast
Flood Extent: 216 sq km
Flood mean Depth: 94 cm
Flood Type: Flash



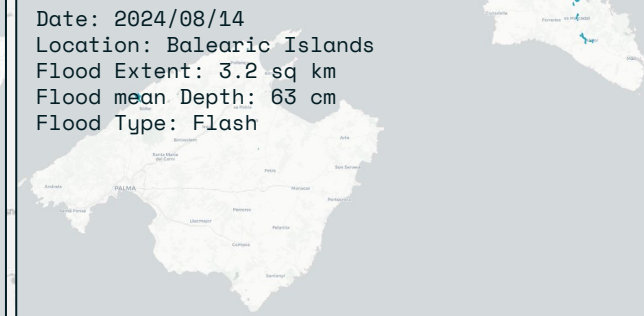
FSD-2076

Date: 2024/06/11
Location: Murcia, Balearic Islands
Flood Extent: 1.5 sq km
Flood mean Depth: 47 cm
Flood Type: Flash



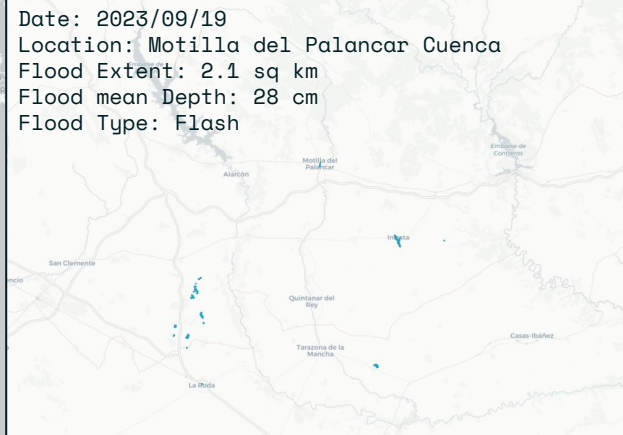
FSD-2168

Date: 2024/08/14
Location: Balearic Islands
Flood Extent: 3.2 sq km
Flood mean Depth: 63 cm
Flood Type: Flash



FSD-1734

Date: 2023/09/19
Location: Motilla del Palancar Cuenca
Flood Extent: 2.1 sq km
Flood mean Depth: 28 cm
Flood Type: Flash



FSD-2283

Date: 2024/10/28
Location: South, East Coast & Balearic Islands
Flood Extent: 668 sq km
Flood mean Depth: 54 cm
Flood Type: Flash



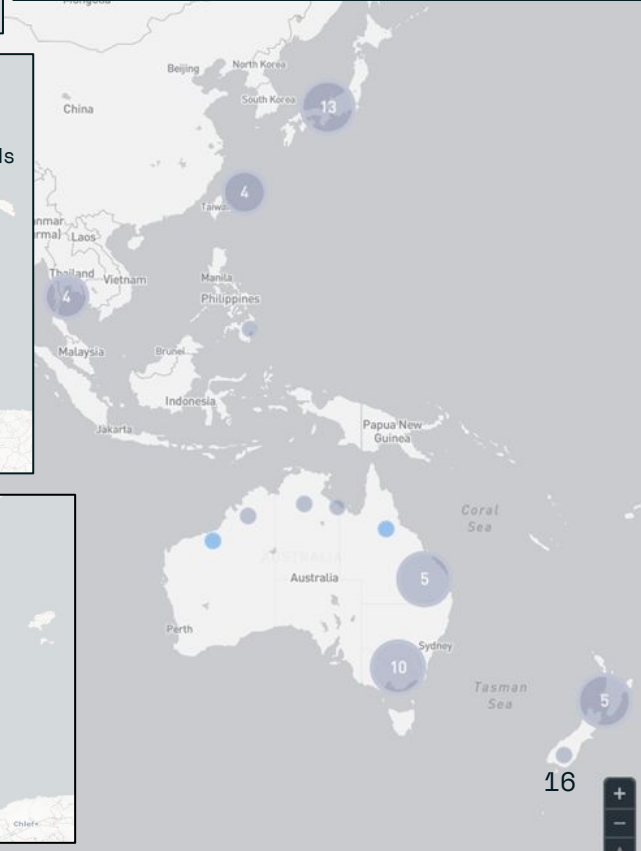
FSD-2303

Date: 2024/11/12
Location: Mediterranean Coast
Flood Extent: 76 sq km
Flood mean Depth: 36 cm
Flood Type: Tropical Cyclone









Legend

- Monitoring event
Potential area for analysis based on current weather conditions - ICEYE is currently reviewing first flood evidence
- Analysis ongoing
ICEYE is currently working on a release of Flood Insights Product
- Analysis done
Area has been analyzed and there is no more new (non-analyzed) evidence of flood



How we contribute to elevate existing service levels...

-  **Real Time Insight** : Fast and Frequent updates for a Near Real Time view of the situation
-  **Reliable and Guaranteed service** : Contractual commitment, no “Best effort” limitations
-  **Complete Coverage** : Comprehensive monitoring of impacted areas
-  **Seamless integration** : Automated / customized flow into existing system
-  **High volume of data** : Unlimited volume of Satellite data (up to 0.5m resolution)
-  **Flexible & Customizable** : Tailored solution to meet specific needs

ICEYE Contribution with European Initiatives / Program

EC - ESA DPS for Copernicus

ESA Civil Security from Space Program (CSS) : COSMOS project



Sources :
ESA CCM Announcement On October 12, 2021
https://www.esa.int/Applications/Observing_the_Earth/Copernicus/19_New_Space_signatures_for_Copernicus_Contributing_Missions?utm_content=323377317&utm_medium=social&utm_source=linkedin&hss_channel=icp-4856503

ICEYE Press release
<https://www.iceye.com/press/press-releases/iceye-na-med-as-a-contributing-mission-to-europes-copernicus-satellite-imaging-programme>

ICEYE is proud to be among the six established European space industry players supporting the European Space Agency - ESA's Copernicus program.

As an existing contributing mission to the European Union's flagship program, #Copernicus, ICEYE has now entered the Dynamic Purchasing System (DPS) for Copernicus, further strengthening access to high-quality, near real-time radar satellite data. This advancement enables better decision-making for environmental monitoring, disaster response, and global security.

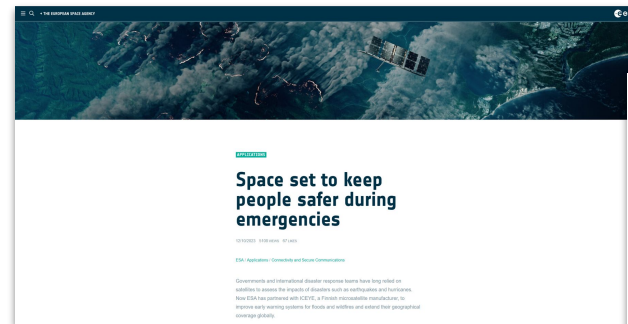
ICEYE's CEO Rafal Modrzewski at the European Space Conference earlier this week, accepting the Certificate of Recognition for ICEYE's esteemed roles as a Copernicus Contributing Mission (CCM).

Read more: <https://hubs.li/Q034QY8P0>

#EarthObservation #5AR #EUSpace



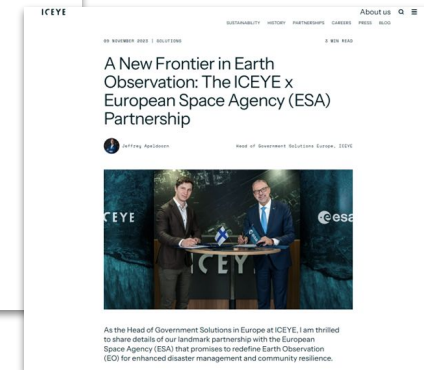
Sources : **ESA DPS Announcement On January 28, 2025**
https://www.esa.int/Applications/Observing_the_Earth/Copernicus/19_New_Space_signatures_for_Copernicus_Contributing_Missions?utm_content=323377317&utm_medium=social&utm_source=linkedin&hss_channel=icp-4856503



Sources : **ESA Announcement of the COSMOS Project**
https://www.esa.int/Applications/Connectivity_and_Secure_Communications/Space_set_to_keep_people_safer_during_emergencies



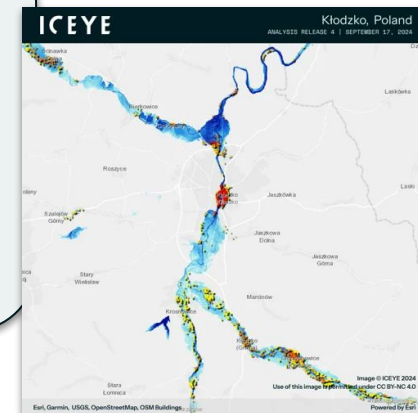
Sources :
<https://www.iceye.com/press/press-releases/esa-taps-iceye-for-first-civil-security>
<https://www.iceye.com/blog/iceye-european-space-agency-partnership-disaster-management>



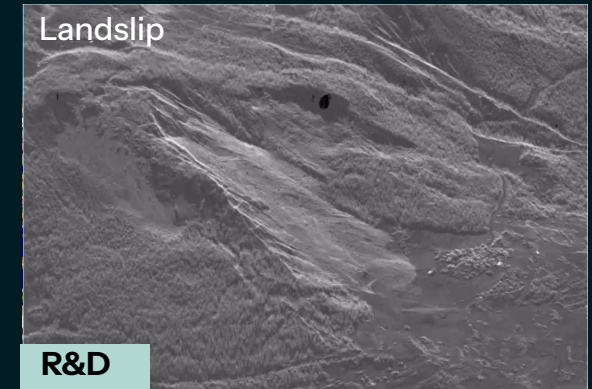
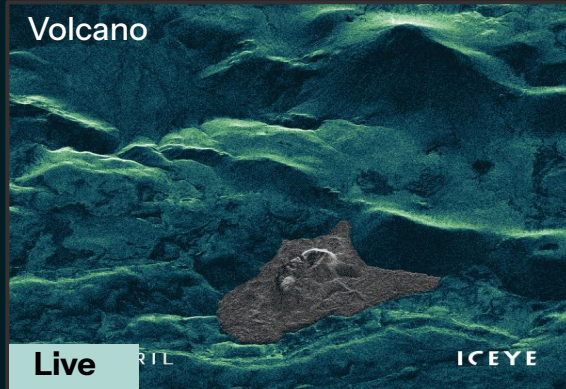
Jakub Ryzenko, Head of Crisis Information Centre, SRC PAS

"ICEYE's data proved essential during Storm Boris, particularly when other information sources were not available in such a timely manner. [...]"

This timely data access helped make more informed decisions during critical periods. We look forward to continuing our collaborative work with ICEYE to further strengthen our emergency response systems."



Flood and Wildfire Solutions are live, with Hurricane Damage available for the 2024 US Wind season, and Earthquake in pilot in Japan with two customers



Gracias!

Contactos:

Franck Ranera
Senior Manager Government Solutions Europe
franck.ranera@iceye.com

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Productos ICEYE para Inundaciones

Antes:

¿Cómo de grave va a ser?

Predicciones con **96 horas de antelación**

¿Cuáles son las zonas de mayor riesgo?
¿Cómo serán afectadas las zonas de interés?
¿Podemos hacer algo para mitigar los daños?
¿Cuánto me debe preocupar esta inundación?

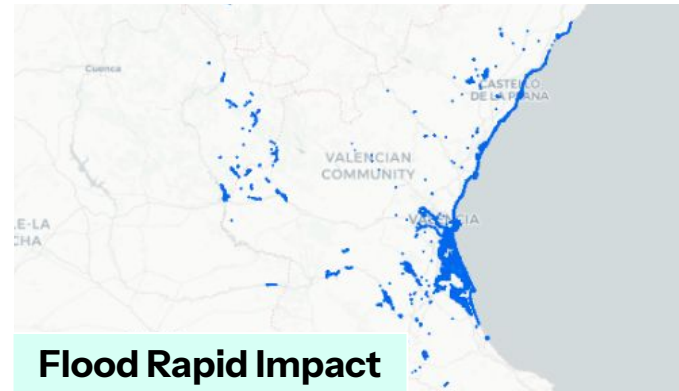


Durante:

¿Dónde está el agua?

Observaciones desde el comienzo de la inundación y actualizadas cada ~ 6-8 horas

¿Qué zonas están inundadas ahora? ¿Y ahora?
¿Dónde hay agua? ¿Dónde no?
¿Cuál es la extensión total de la inundación?



Después:

¿Cómo de grave fue la inundación?

Entregas cada 24 horas hacia el daño final basado en todas las observaciones

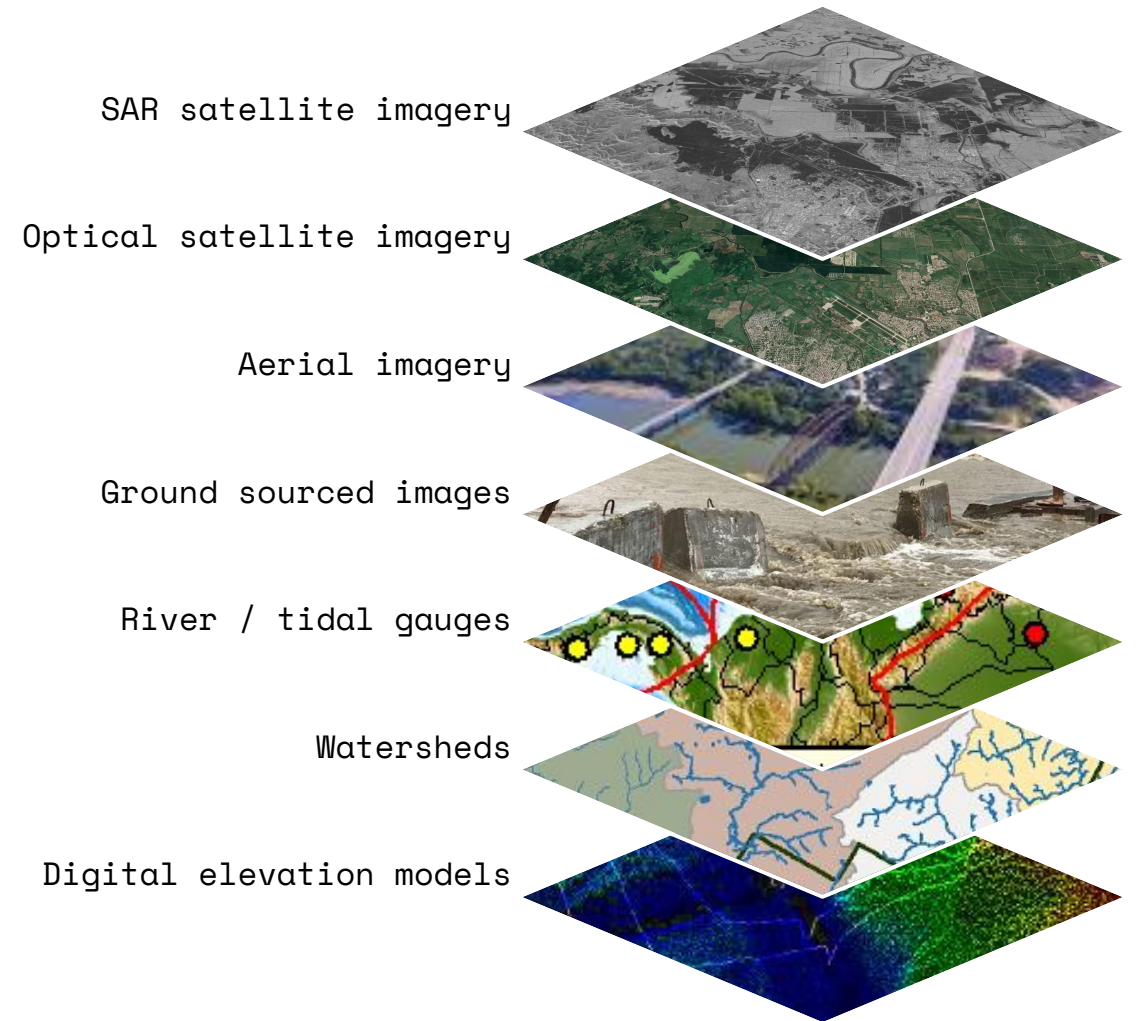
¿Cómo de grave fue la inundación?
¿Cuál fue la profundidad en cada área afectada?



Flood Insights Process: Data Fusion

ICEYE collects as much event specific, flood observation data as possible for any given event.

- This starts with ICEYE's own SAR constellation, and includes publicly available satellite data - such as Sentinel and Landsat - when available.
- Aerial imagery from planes and drones as well as pictures or videos uploaded to the internet are also collected and used as inputs.
- ICEYE uses publicly available terrain data that is generally produced by a national or regional organisation.



Inundación España

Oct - Nov 2024

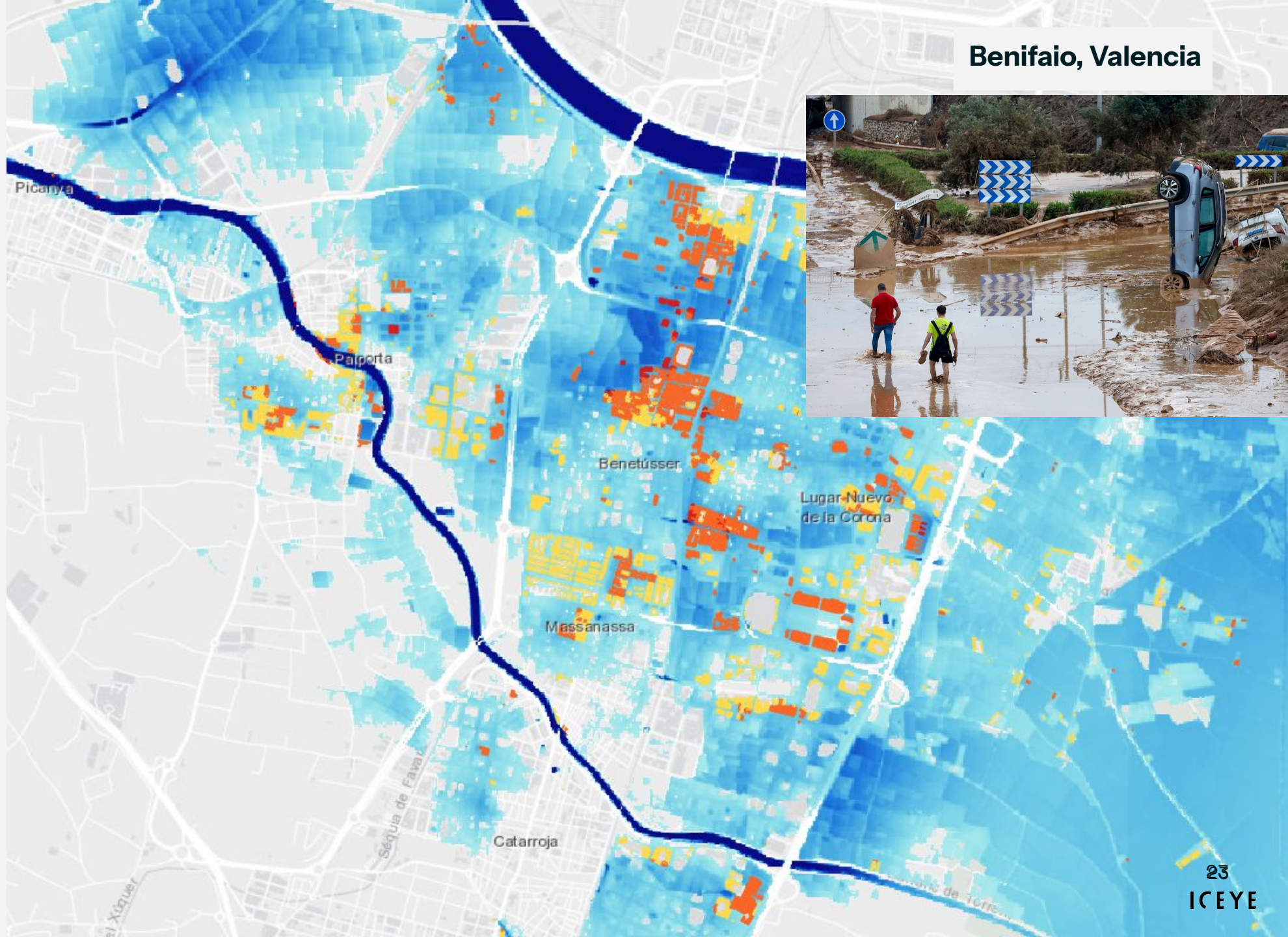
- 668 km² extensión total
- 0.5 m profundidad media a nivel de edificio individual
- > 6,800 edificios inundados
- > 5 m de profundidad en algunas áreas

Edificios Afectados (R8):

- 68 MUY ALTO >2.4 M
- 250 ALTO 1.5-2.4 M
- 1869 MEDIO 0.6-1.5 M
- 4618 BAJO <0.6 M



Benifaió, Valencia



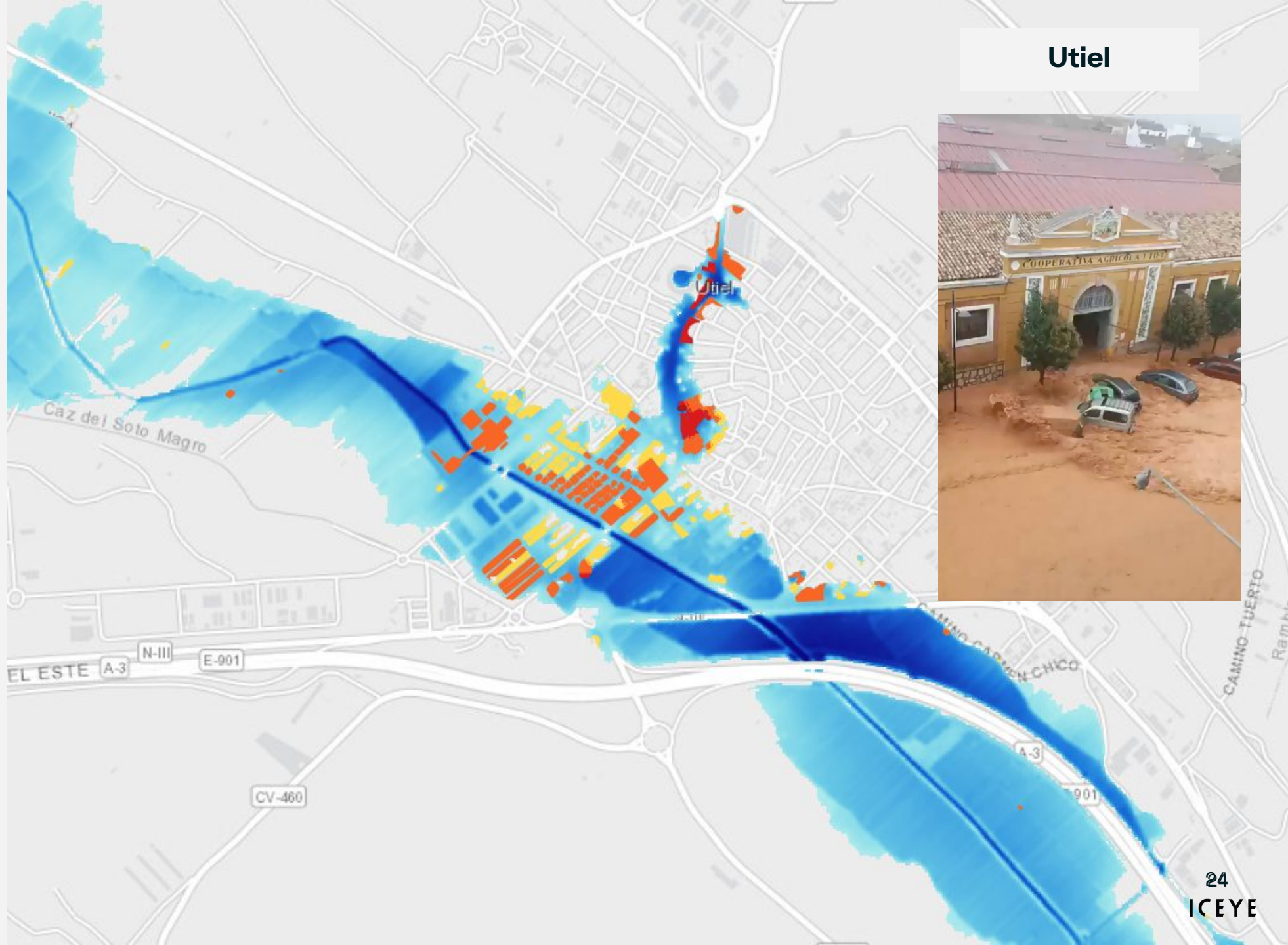
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Utiel

