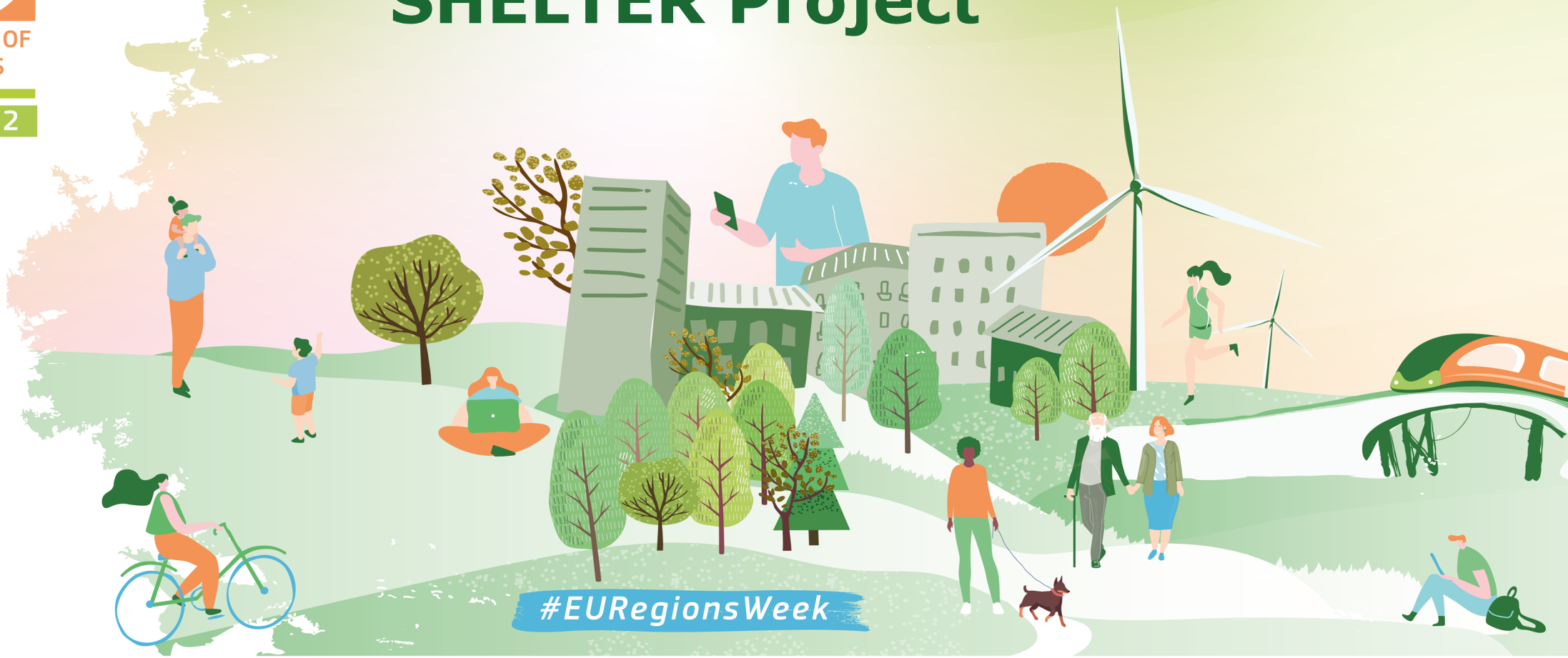
EUROPEAN WEEK OF REGIONS & CITIES

2003 - 2022

New Challenges for Europe's Cohesion

SHELTER Project



Shelter

What's SHELTER Project?

New Challenges for Europe's Cohesion

Data driven and community-based resilience enhancement as result of the interplay of two processes collaborating → individual solutions for each HA:

- **Data driven approach →** supports diagnosis, decision making, implementation and monitoring based on existing knowledge and heterogenous data
- **Open Labs approach →** continuous framework for local knowledge extraction, citizen´s engagement, co-creation, capacity building and innovation

#EURegionsWeek

SHELTER 5 Open Labs

- Ravenna
- Seferihisar
- Dordrecht
- Baixa-Lima
- Sava river basin

Typologies of HA Resilience

→ 3 scales
→ 6 hazards
→ Intangible, Cultural and Natural Heritage

SHELTER Open Labs

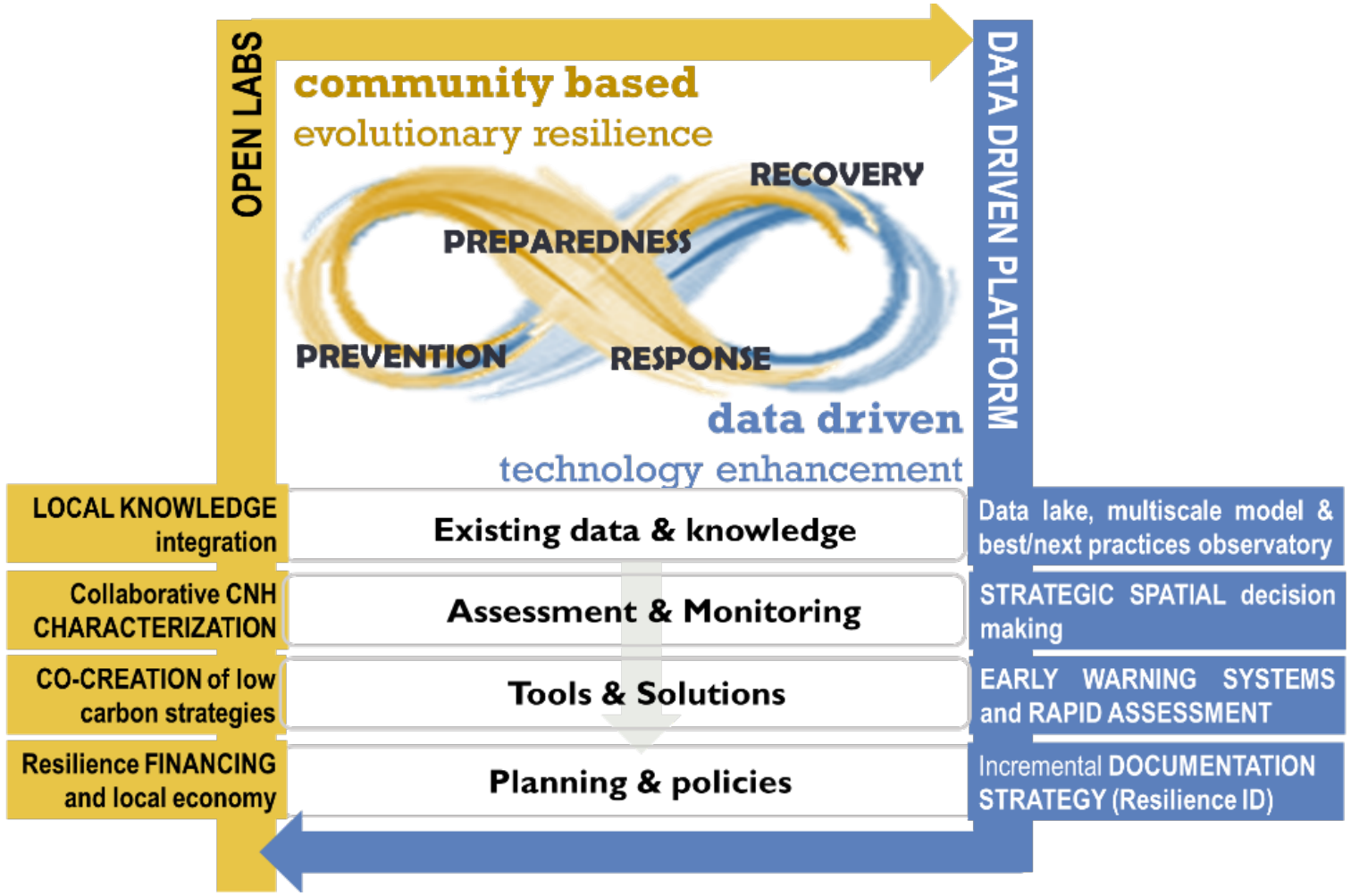
OPEN LAB	CODE	CO- CREATION STRATEGY TYPE	CASE STUDY	TOOLS	HAZARD	METHODS
URBAN	U-TEC	Technological co-adaptation strategy	Ravenna	Stabilization and consolidation techniques	Earthquakes	Co-creation of specifications for the solution through the involvement of citizens and master students. International open call for suppliers
				Pumps	Subsidence	
	U-ICT	ICT solution co-creation strategy	Dordrecht	Tailored IMMERSITE solution	Floods/Storms	Co-creation and co-development of tailored citizen engagement tool (SHELTER)
	U-VER	Vernacular co-adaptation	Seferihizar	Innovation in vernacular architecture	Earthquakes	Co-creation of solutions based on traditional skills through the involvement of local research, academia and local business.
				Vernacular eco-rehabilitation	Heatwaves	
CROSS-REGIONAL	CR-NBS	NBS co-creation strategy	Baisa-lima	Co-creation of NBS	Wildfires	Co-creation of NBS through the involvement of local research, academia and local business.
	CR-GOV	Multilevel governance	Sava river	Co-creation of multilevel governance schemes for transnational HA.	Floods	Co-creation of collaborative governance schemes.

→committed to co-create their own path towards resilience

EUROPEAN WEEK OF REGIONS & CITIES
2003 - 2022

SHELTER operational knowledge framework

New Challenges for Europe's Cohesion

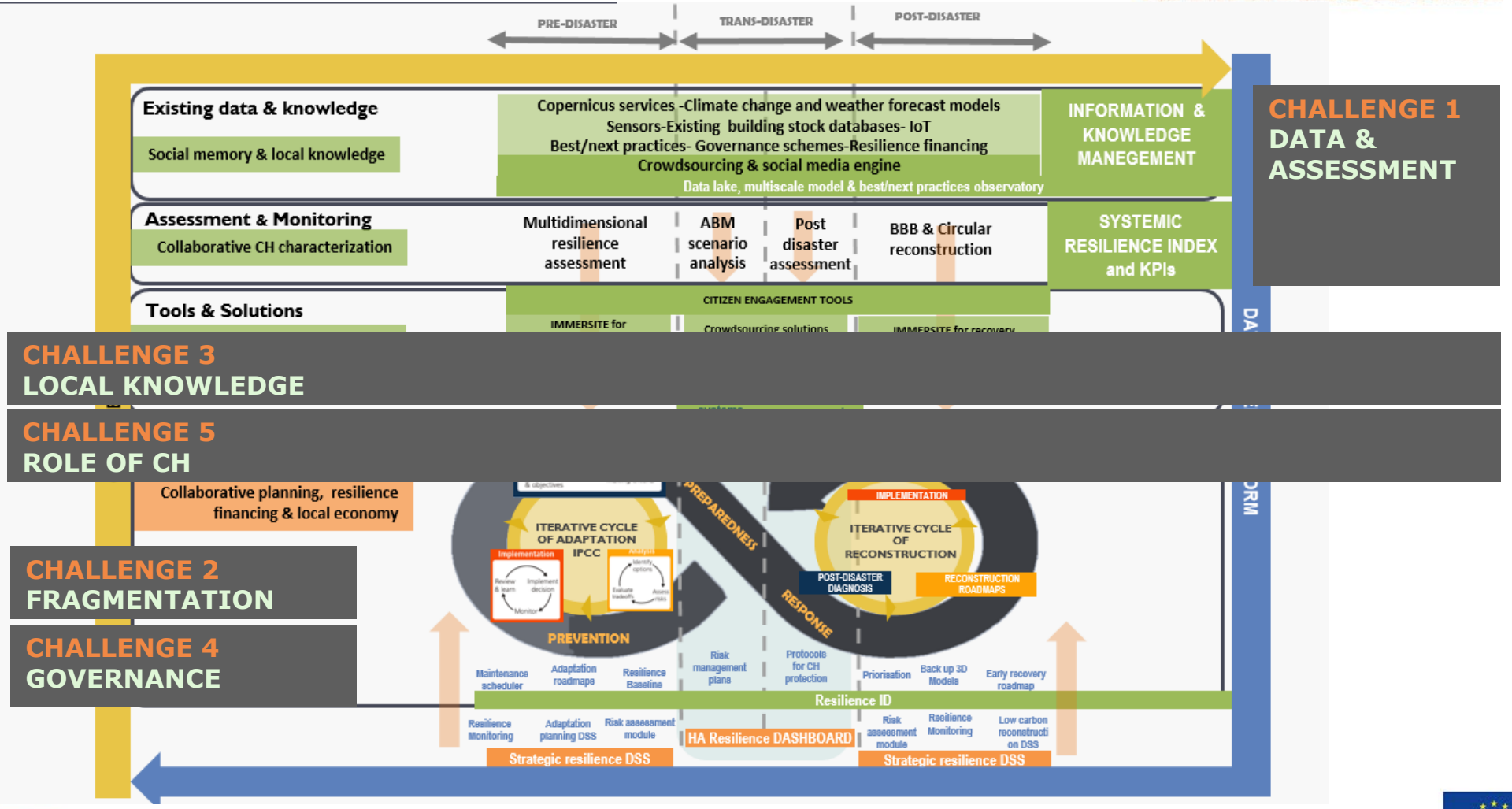


#EURegionsWeek

EUROPEAN WEEK OF REGIONS & CITIES
2003 - 2022

SHELTER operational knowledge framework

New Challenges for Europe's Cohesion



#EURegionsWeek

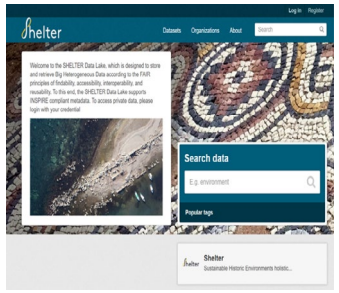
EUROPEAN WEEK OF REGIONS & CITIES
2003 - 2022

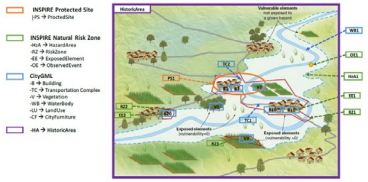
Existing data & knowledge

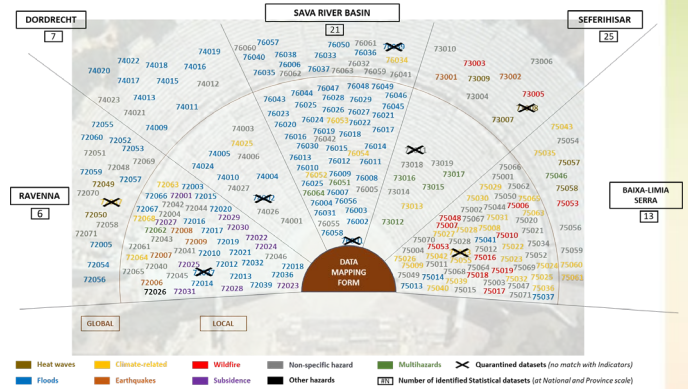
New Challenges for Europe's Cohesion

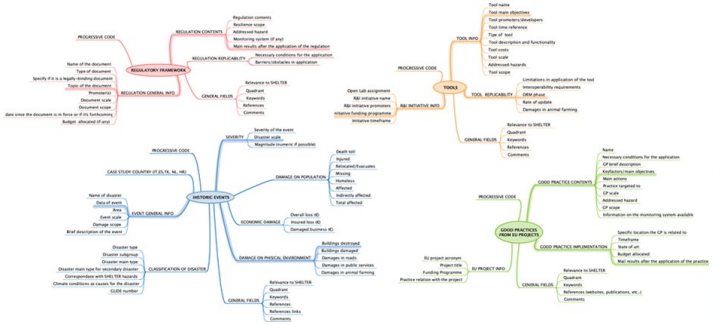
Challenge: operationalize data and information

- ✓ **Data mapping form** → 251 datasets
- ✓ SHELTER **Ontology** → + 65 definitions in Shelter **Wiki page**
  → matched with ARCH glossary
- ✓ **Best/Next Practice Observatory**
  → 150 references codified + protocol for historic events + 94 Good practices + 100 Tools
- ✓ **Data Lake** → 72 data sets
- ✓ **Multiscale Multisource Data Model** → 5 models of our OLs









#EURegionsWeek

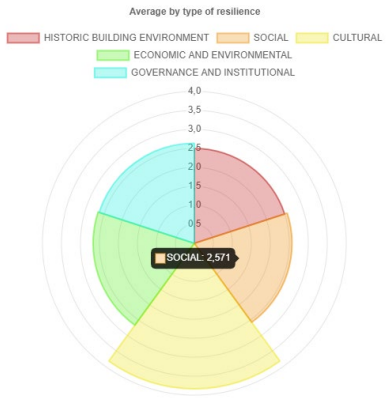
Assessment & Monitoring

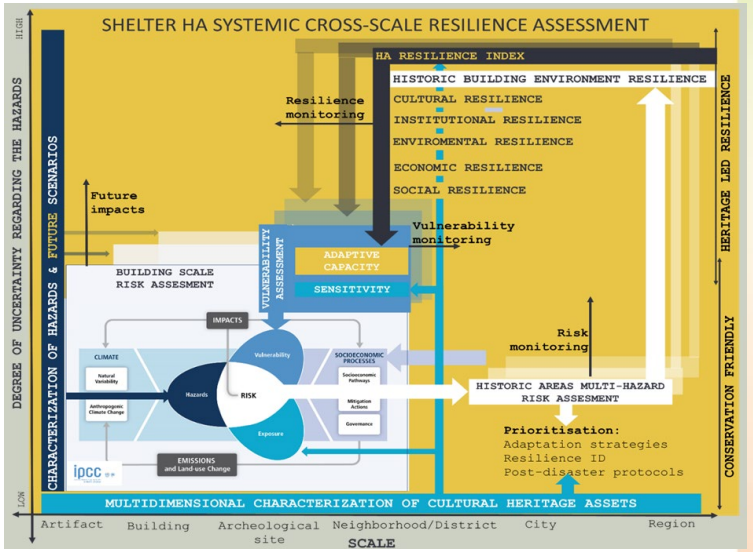
New Challenges for Europe's Cohesion

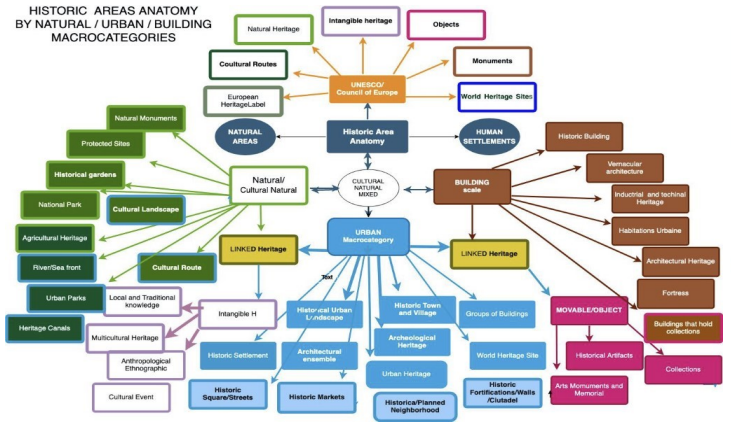
EUROPEAN WEEK OF REGIONS & CITIES 2003 - 2022

Challenge: measure resilience

- ✓ **Conceptual basis**: Definition of Resilience + HA Resilience structure
- ✓ **HA resilience assessment and monitoring framework→** 262 indicators
- ✓ **Anatomy of HA**: methodology to collaboratively characterise CH assets for a heritage-led resilience
- ✓ **Local knowledge→** Consultation with OLs through local working sessions addressing socio-economic and non-climate stressors
- ✓ **A replicable spatially explicit risk assessment methodology→** to be implemented in the DDP
- ✓ **Resilience index→** self diagnosis tool







#EURegionsWeek

Tools & Solutions

New Challenges for Europe's Cohesion

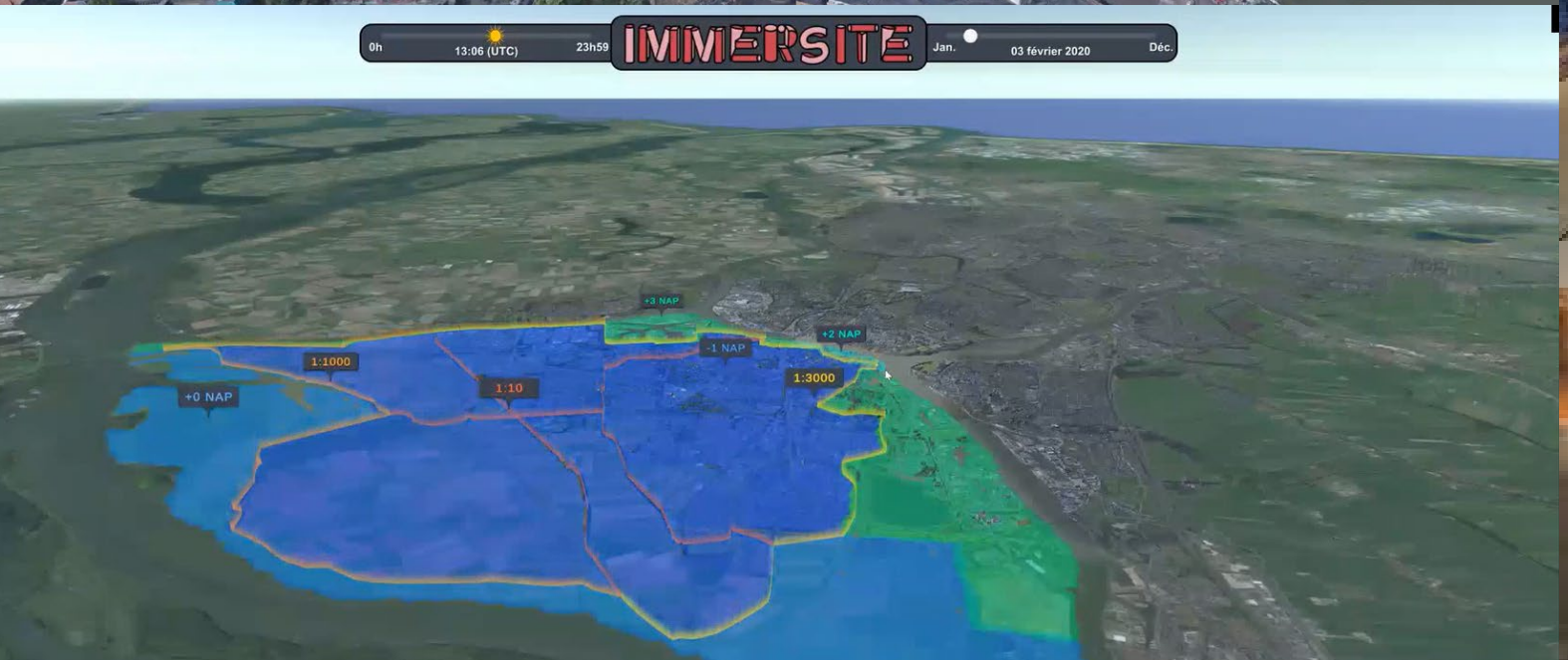
Challenge: To develop tools for all the phases of DRM

	Prevention	Preparedness	Response	Recovery
Portfolio of solutions	✓	✓	✓	✓
Early warning systems		✓		
Rapid damage assessment			✓	
Intelligent conversational tool		✓	✓	
Social media data engine		✓	✓	
SHELTER INMMERSITE	✓			✓

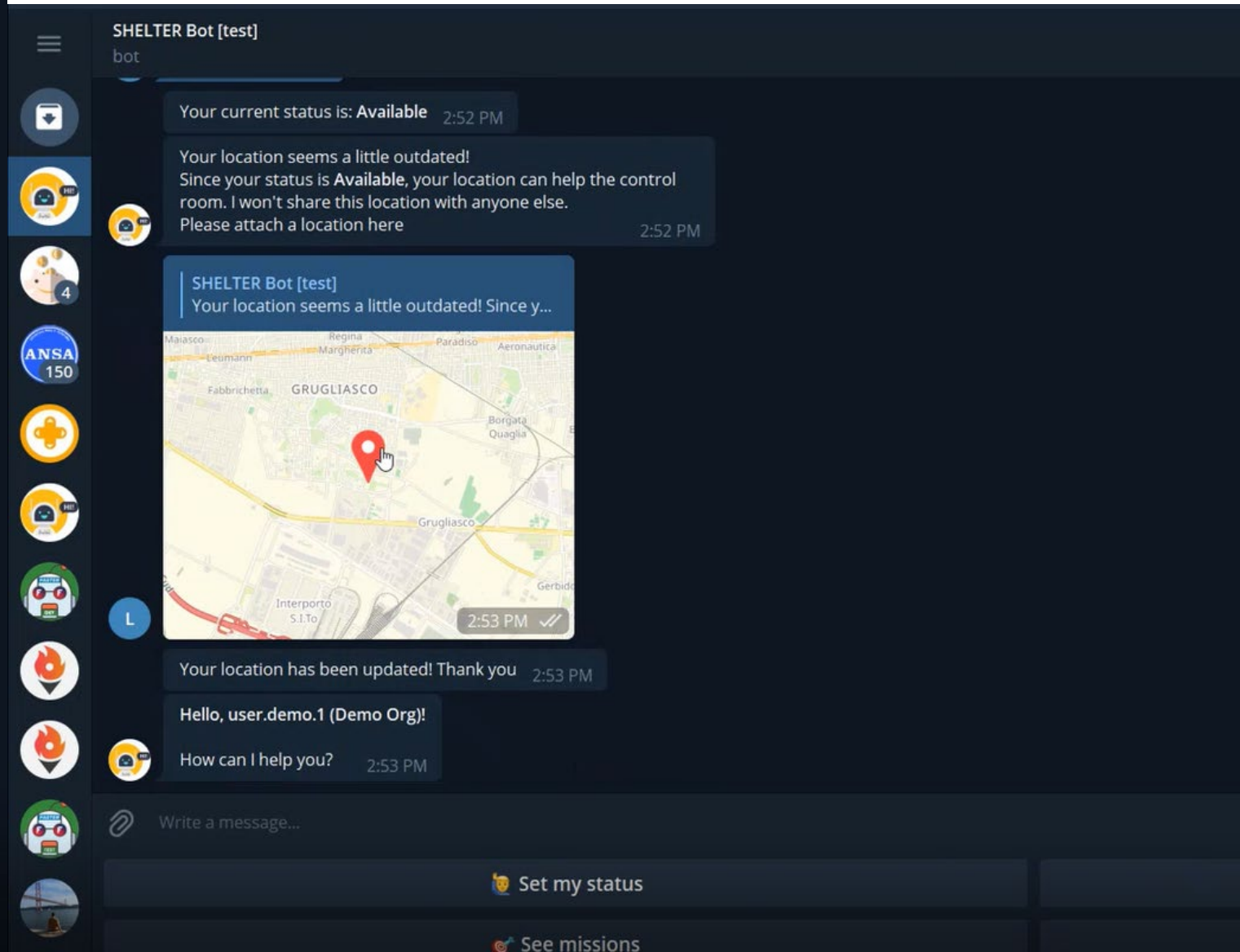
#EURegionsWeek

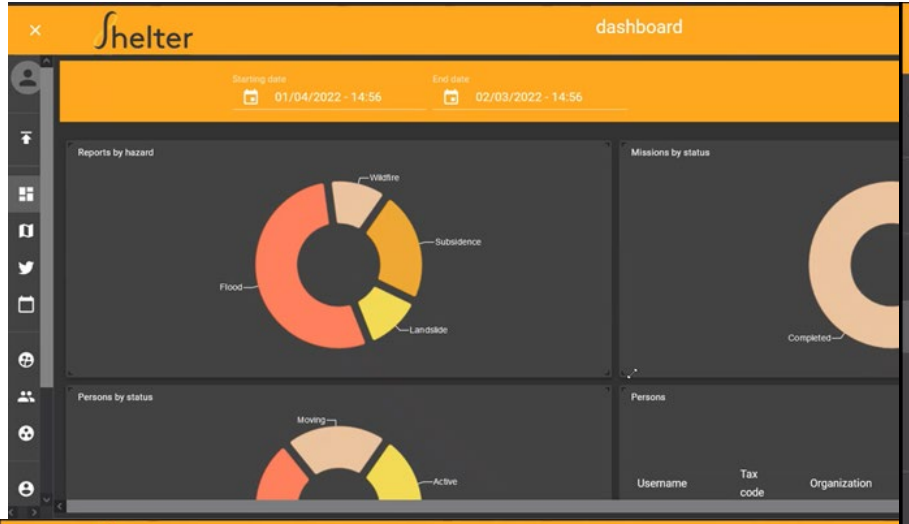
0h
10:38 (UTC)
23h59
IMMERSITE
Jan.
02 mai 2020
Déc.
5m
4m
Dykes level
3m
2m
1m
0m

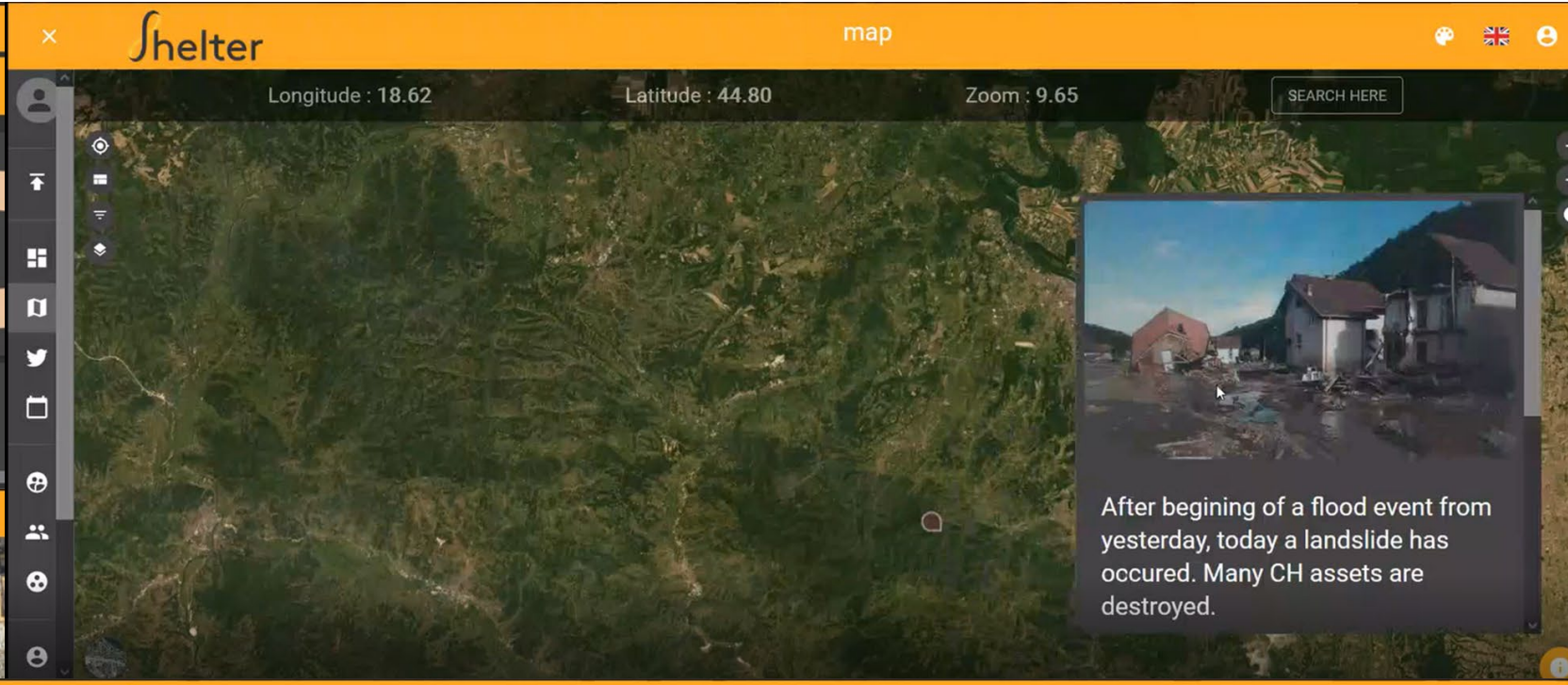
0h
13:06 (UTC)
23h59
IMMERSITE
Jan.
03 février 2020
Déc.

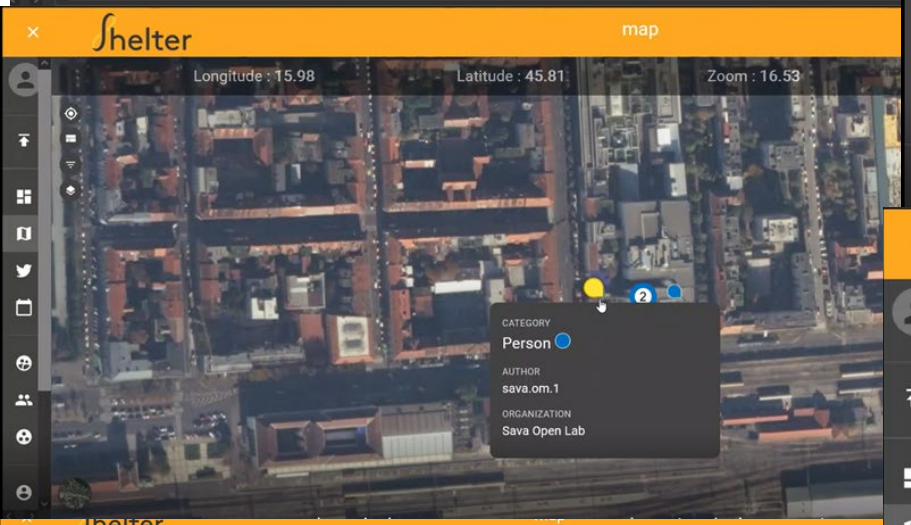

0h
13:06 (UTC)
23h59
IMMERSITE
Jan.
03 février 2020
Déc.
+3 NAP
+2 NAP
-1 NAP
1:1000
1:10
1:3000
+0 NAP

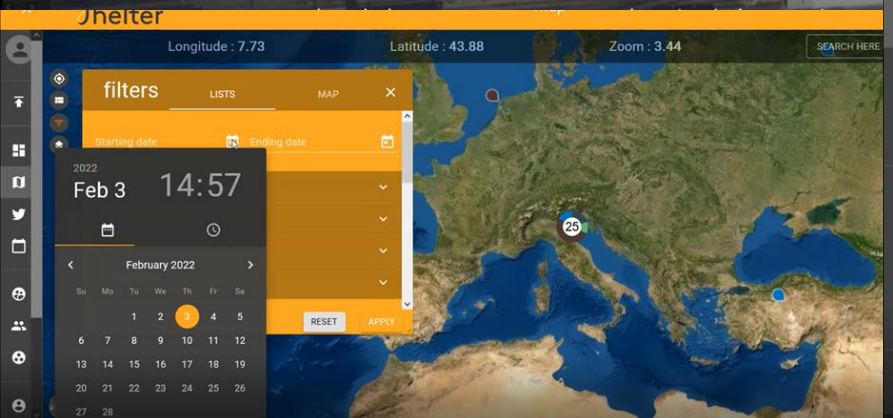
SHELTER CHATBOT

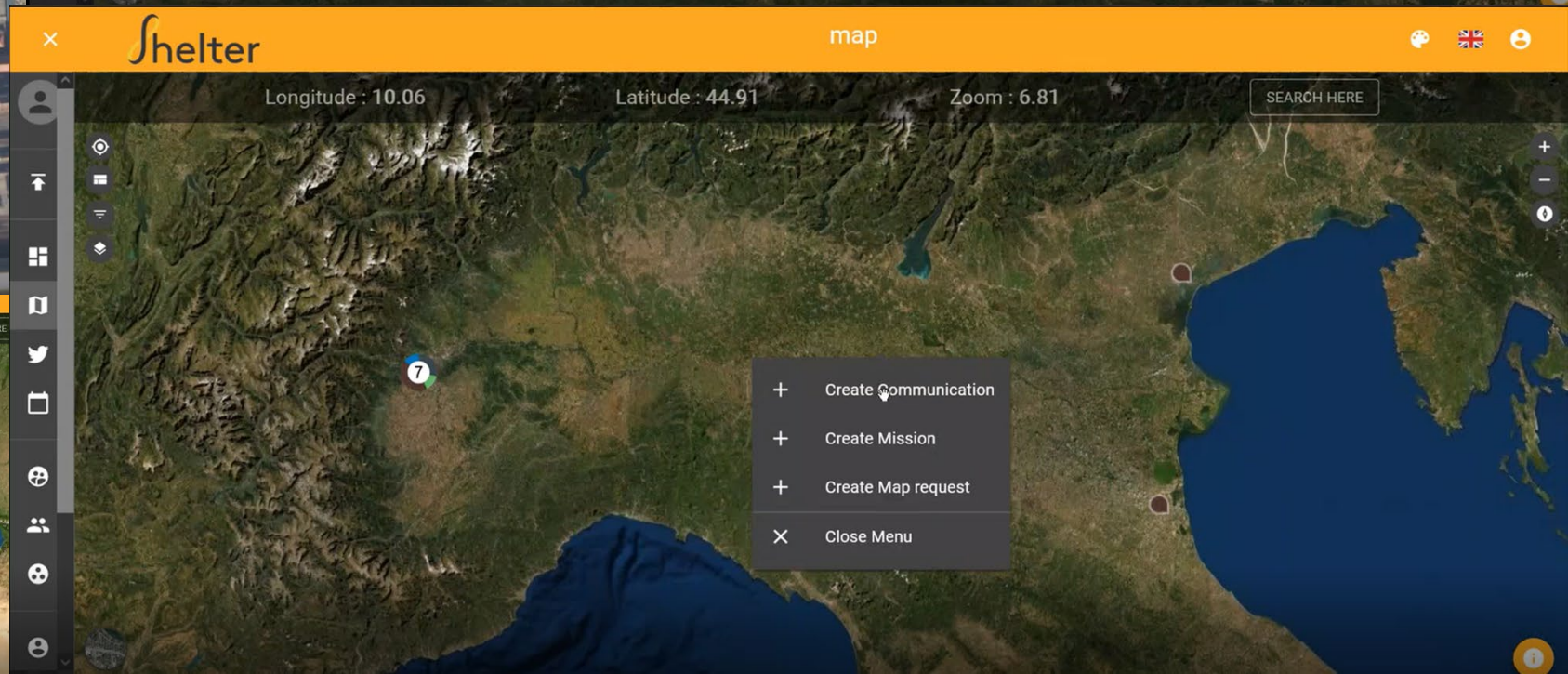


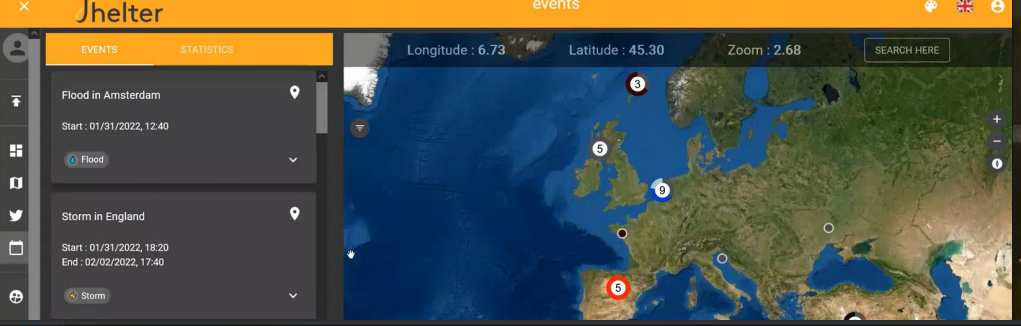

Shelter
dashboard
Starting date
01/04/2022 - 14:56
End date
02/03/2022 - 14:56
Reports by hazard
Wildfire
Subsidence
Flood
Landslide
Missions by status
Completed
Persons by status
Moving
Active
Persons
Username
Tax code
Organization

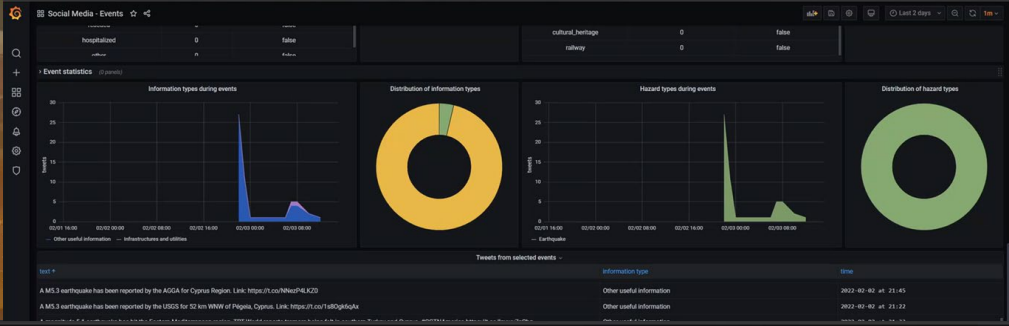

Shelter
map
Longitude : 18.62
Latitude : 44.80
Zoom : 9.65
SEARCH HERE
After begining of a flood event from yesterday, today a landslide has occured. Many CH assets are destroyed.


Shelter
map
Longitude : 15.98
Latitude : 45.81
Zoom : 16.53
CATEGORY
Person
AUTHOR
sava.om.1
ORGANIZATION
Sava Open Lab


Shelter
Longitude : 7.73
Latitude : 43.88
Zoom : 3.44
SEARCH HERE
filters
LISTS
MAP
Starting date
Ending date
2022
Feb 3
14:57
February 2022
RESET
APPLY


Shelter
map
Longitude : 10.06
Latitude : 44.91
Zoom : 6.81
SEARCH HERE
Create Communication
Create Mission
Create Map request
Close Menu





Social Media - Stream

SHELTER SOCIAL MEDIA ENGINE

information type: All | hazard type: All | languages: All | informativeness: true | Time bucket: 1m

Statistics

Geolocated entities

Informative tweets

informative	52430	not informative	0

Languages

en	43415	es	3769	hr	41	it	1794	nl	173	tr	3238

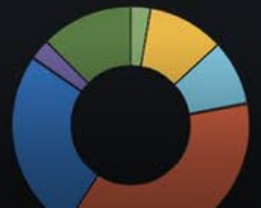
Latest 100 tweets

time	text	hazard types	informati
2022-02-03 15:11:52	Okorocha Storms Aso Rock, Cries To Buhari Over EFCC Saga https://t.co/bFE2ZWcclu	Storm	Other use
2022-02-03 15:11:51	7000+ Pakistani students (Studying in china) are stucked in Pakistan since COVID-19 get started. PM @ImranKhanPTI please discuss our issue with Chinese authoritie...	Pandemic	Other use
2022-02-03 15:11:51	@FRANCES75115244 The 6 double vaxxed have become unvaxxed due to loss of vaccine immunity. Time from vaccination must be factored in for all the future cases ...	Pandemic	Other use
2022-02-03 15:11:49	While the US deals with winter weather, its summer in the southern hemisphere. Tropical cyclone #Batsirai is forecast to make landfall Saturday on Madagascar, which ...	Storm	Caution a
2022-02-03 15:11:49	@UnaVoceHamilton @GlobalBC The cold or flu doesn't cause long term, debilitating illness. Long Covid exists. Do you want to be one of them? Cleaning the air ALLOW...	Pandemic	Other use
2022-02-03 15:11:46	Democrats please point out this is because of the gop policy and rub it in the voters faces.	Storm	Other use
2022-02-03 15:11:44	#CancunCruz did nothing! #VoteBlueIn2022 @BetoORourke More than 50,000 without power in Texas as major winter storm moves east More than 50,000 without po...	Storm	Other use
2022-02-03 15:11:43	That's too bad. An educated guess would tell me that you don't wear a mask in public and you don't social distance. Since you're so much better than the rest of us, do ...	Pandemic	Other use
2022-02-03 15:11:43	@kentlee47 So now show me proof that the unvaccinated are responsible for the deaths.. Did all unvaccinated people kill granny?? Did all vaccinated people kill granny...	Pandemic	Affected
2022-02-03 15:11:42	This whole protest has been nothing but a grift of a few ppl. The media has played a big part in making it a story that never existed. The organizers are crooks.	Pandemic	Other use
2022-02-03 15:11:41	Thunderstorm Information NCR_PRSD Issued at: 10:00 PM,03 February 2022 Thunderstorm is LESS LIKELY to develop over NationalCapitalRegion within 12 hours.How...	Storm	Caution a
2022-02-03 15:11:41	ANOTHER WINTER STORM is forecast to produce heavy snow from the southern Rockies to northern New England, while heavy ice is likely from Texas to Pennsylvania...	Storm	Caution a
2022-02-03 15:11:41	@provaxtexan @ogilville1 @sammy44231 @MatthewNewell67 @Abraham47955674 @VikiLovesFACS @jayne_kniphofia @Alimasubway @IdunsDaughter @andylumm...	Pandemic	Affected

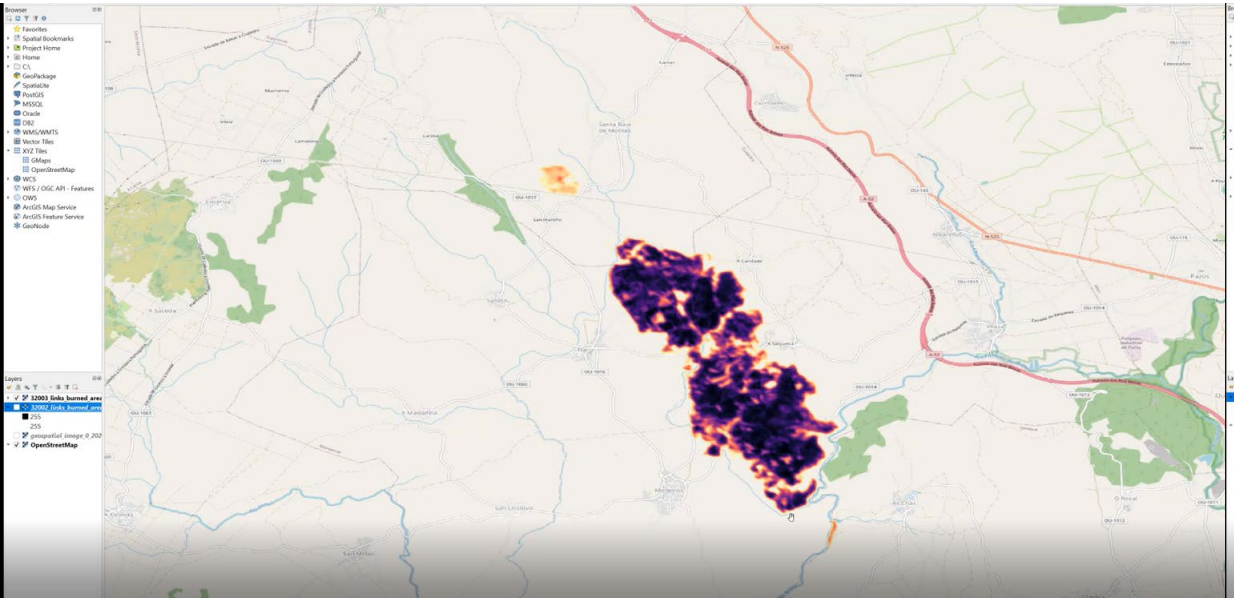
Information types distribution

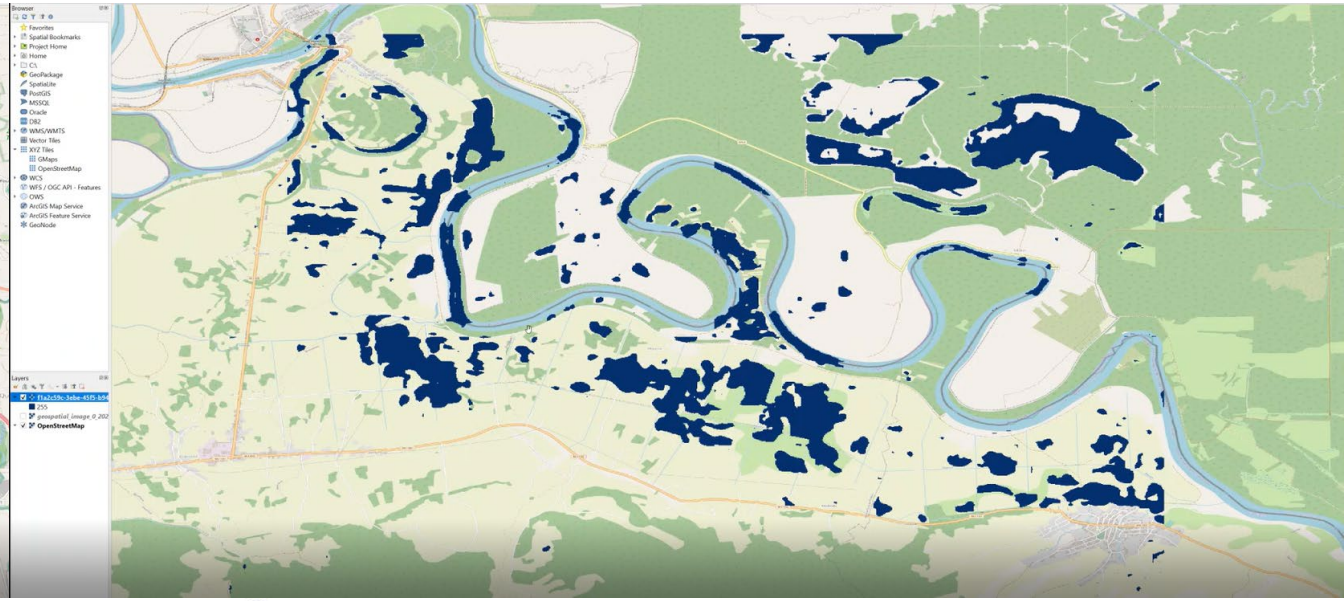
Information types per minute

Hazard types distribution

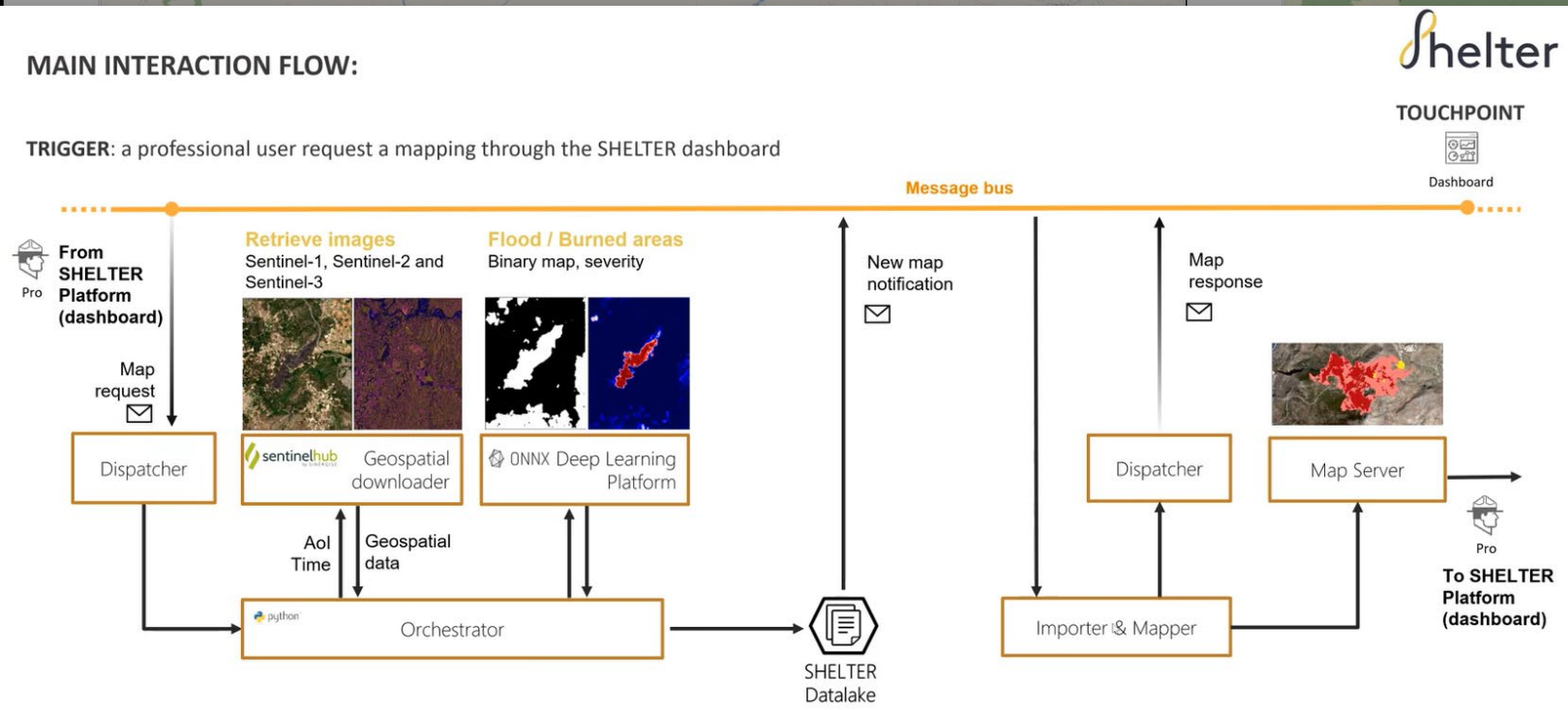


Hazard types per minute





MAIN INTERACTION FLOW:



BURNT AND FLOODED AREA DELINEATION BY SATELLITE DATA

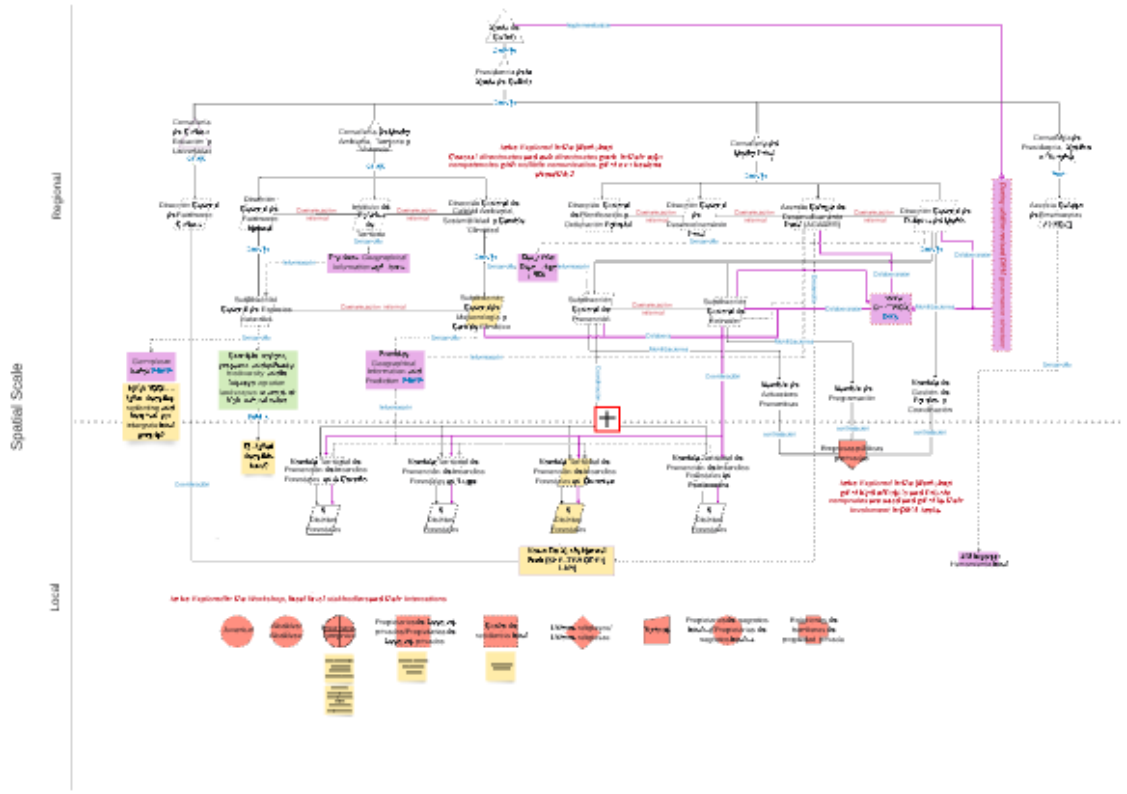
Community-based resilience

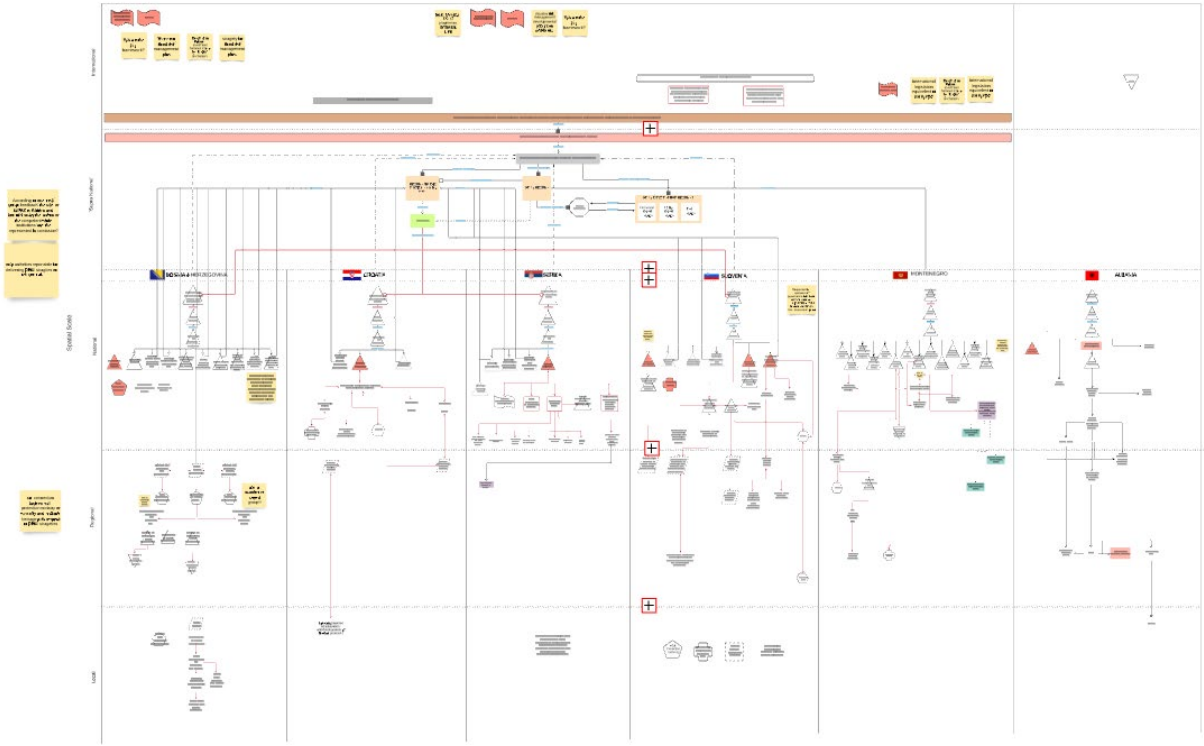
Challenge: develop the tools and the methodology to support community-based approaches

- ✓ **Organigraphs**→ organigraphs as reflection tool and catalyst

- ✓ **Resilience Financing Toolkit:** Co-created five interrelated tools designed to define resilience financing landscape geography:
  1. Stakeholder mapping matrix
  2. Methodology for assessing CH losses
  3. Narrative to understand insurance landscape
  4. Resilience investment plan
  5. Business model canvas

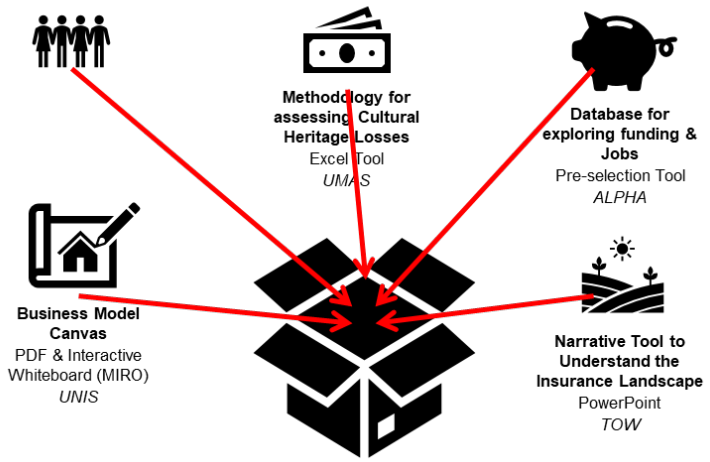
SHELTER ADAPTIVE GOVERNANCE MAPPING SCHEMES





SHELTER CH ECONOMIC VALUE AND LOSS ASSESSMENT TOOL

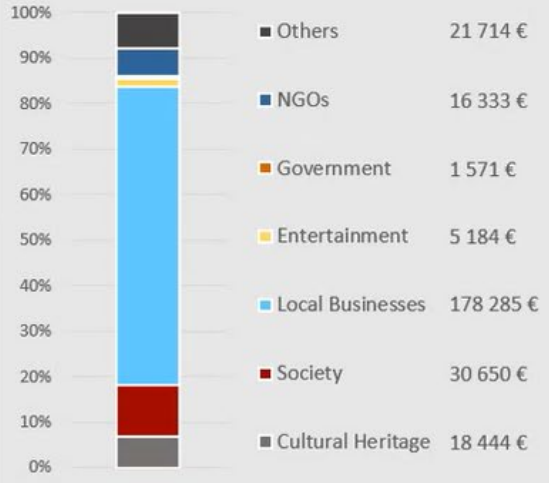
T6.6 – The Resilience Financing Toolkit

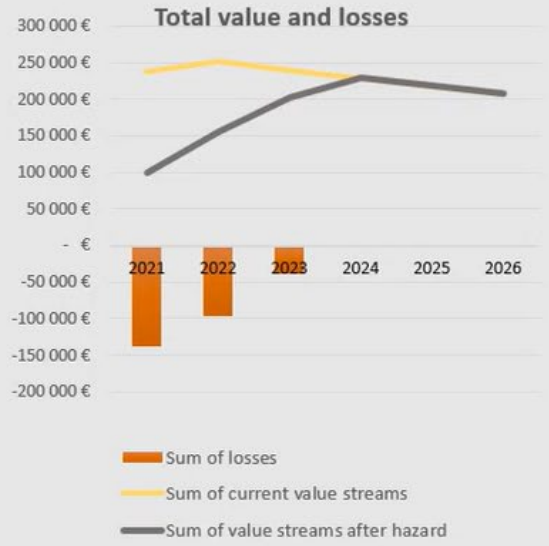


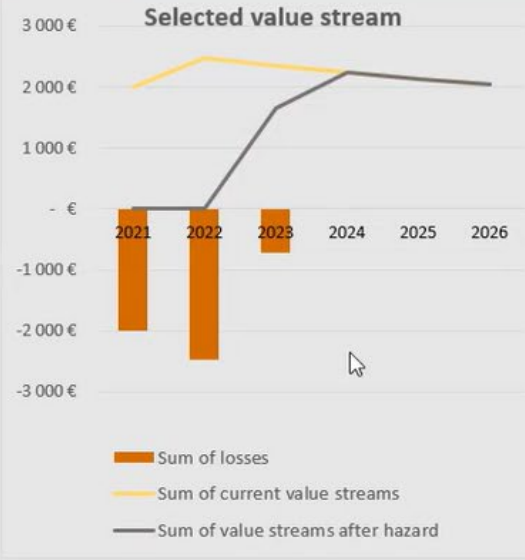
CHARTS

Total loss from year 2021 to year 2026

Value stream: Entertainment







CULTURAL HERITAGE VALUE

	Current	Future years estimation								
	2021	2022	2023	2024	2025	2026	-	-	-	-
Sum of costs	42 000 €	11 654 €	11 099 €	10 571 €	10 068 €	9 588 €	- €	- €	- €	-
Sum of current value streams	236 850 €	252 400 €	240 381 €	228 934 €	218 033 €	207 650 €	- €	- €	- €	-
Sum of value streams after hazard	99 540 €	155 573 €	202 337 €	228 934 €	218 033 €	207 650 €	- €	- €	- €	-
Sum of losses	- 137 310 €	- 96 827 €	- 38 044 €	- €	- €	- €	- €	- €	- €	-

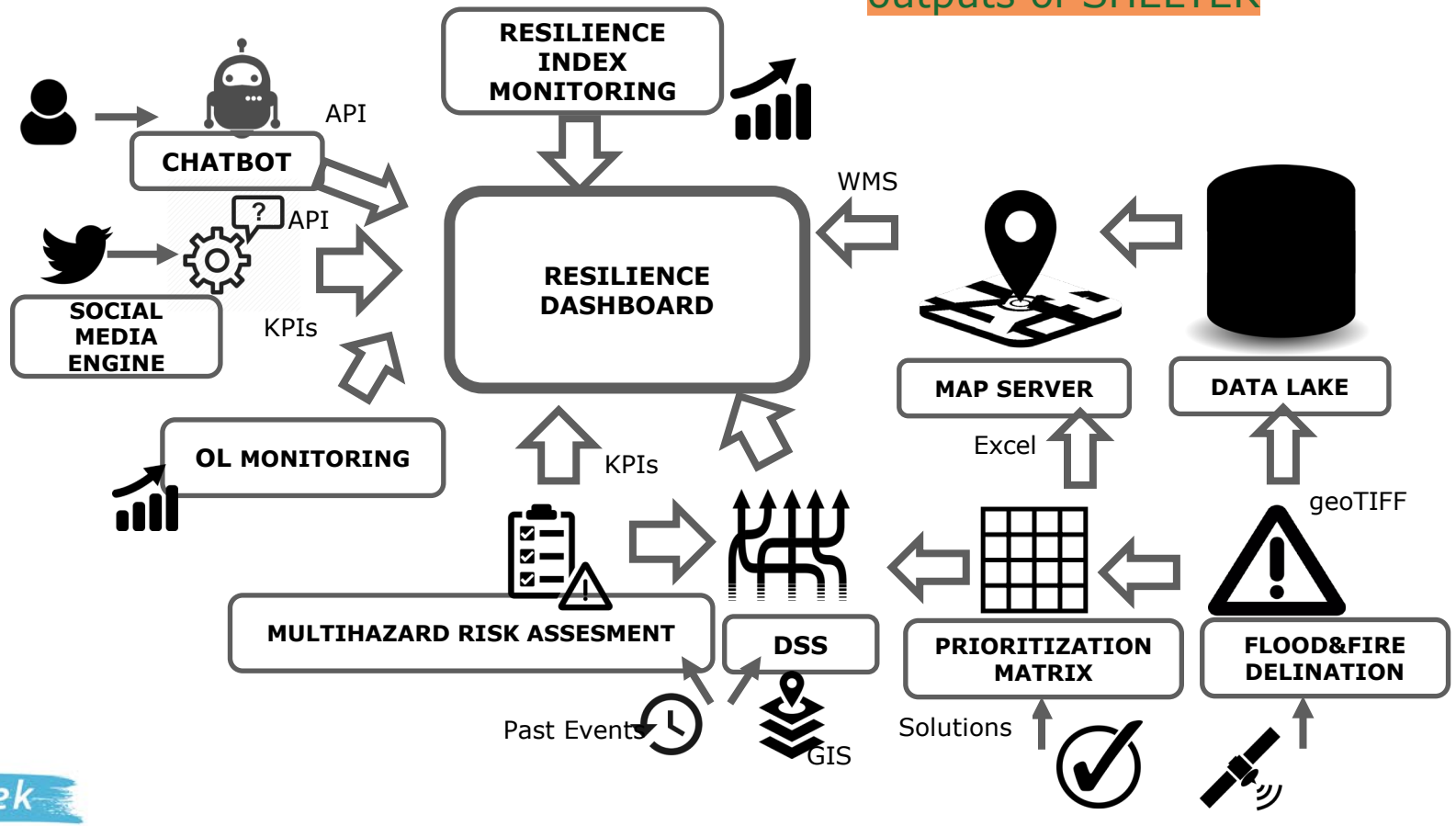
IMPACT OF HAZARD

Notes | Input Data | Cultural Heritage Value | Hazard Influence | Loss of Value

Data driven platform

New Challenges for Europe's Cohesion

Challenge: develop a DDP able to provide data services and a visualization dashboard for decision support that integrates relevant outputs of SHELTER



#EURegionsWeek

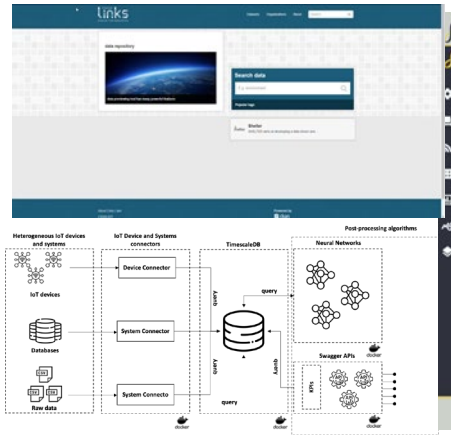
Data driven platform

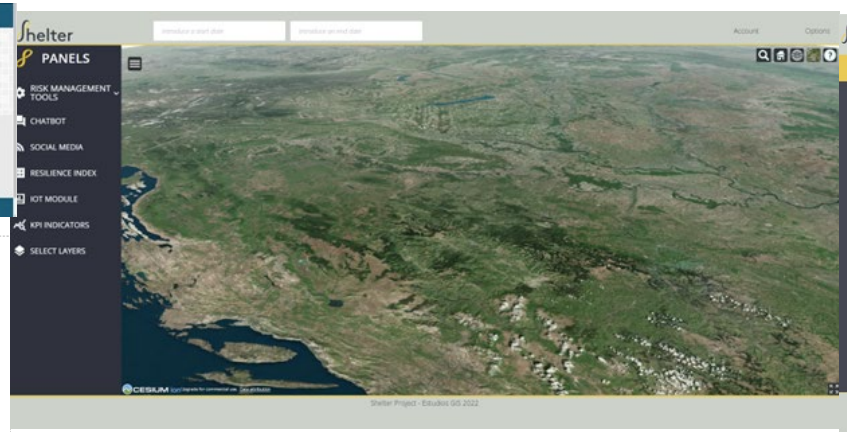
All **components** (AA Server, Message Bus, Data Lake, Importer & mapper**) are operational**

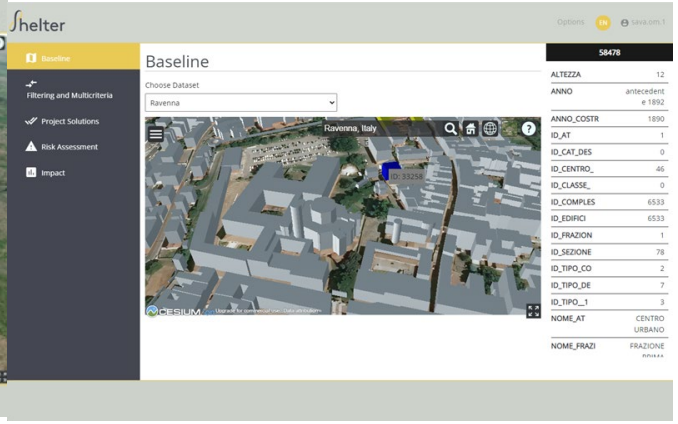
IoT module: All components are up and running

Web-based Resilience dashboard → first release available

Risk assessment module and DSS in progress (prototype available)







Open Labs