European Union

Union Civil Protection Knowledge Network

Welcome

Day 3 – Wednesday, 18 June 2025
Townhall Europe, Sq. de Meeûs 5, 1000 Bruxelles

Next steps under the Preparedness Union Strategy for the DRM Science & Planning Working Group

Moderator: Gaetano Vivo, DG ECHO.B3

9:00 – 9:45

- **Global Wildfire Information System Decision Support**, Jaime Abad Perez, *DG ECHO.A2*
- **Innovation Uptake and Disaster Risk Management**, Giannis Skiadaresis, *DG HOME.F2*
- **Updates on deliverables under the DRM Science & Planning WG**, Juha-Pekka Jäpölä, *DG ECHO.B3*

Towards a Global Wildfire Decision Support System

Jaime Abad, Scientific Analyst,
ECHO A.2

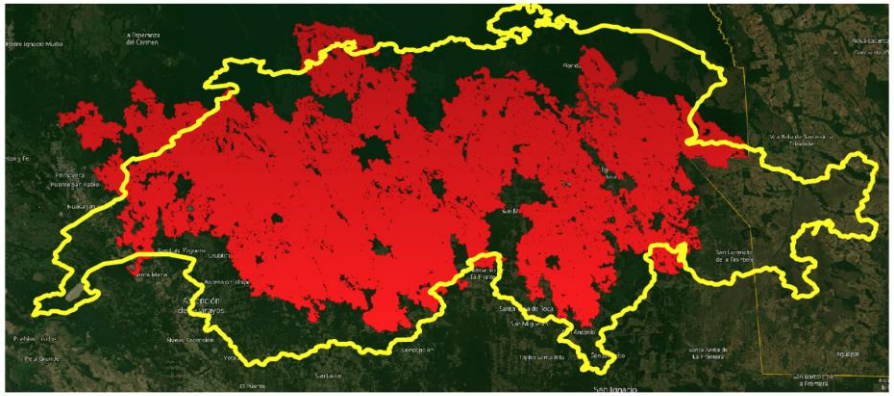
European Commission

Vision

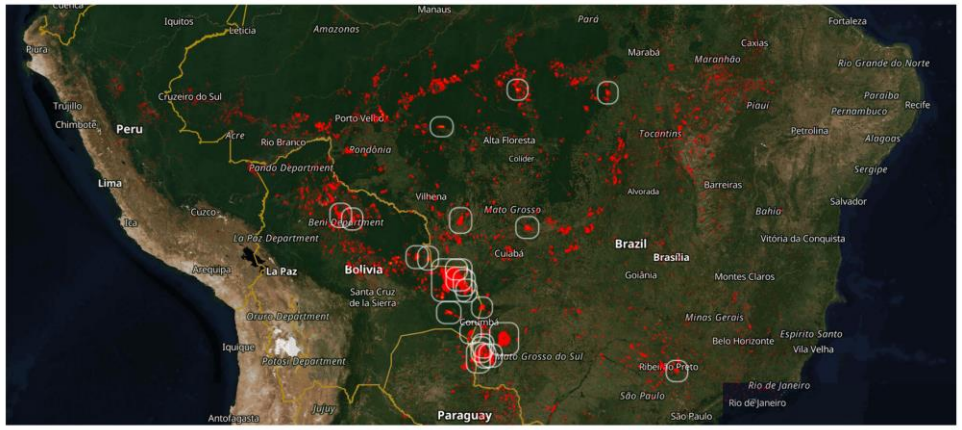
- The platform will provide emergency responders with tools and information to anticipate, optimize and track disaster response efforts.
- Enhance coordination and resource management: supporting decision-making in disaster management and optimizing response to specific disasters.

Goals

- The overarching goal is improving Crisis Management: Enhance emergency response capabilities to mitigate the impact of natural disasters.
- The key objective is the development of a Decision Support System for the management of **critical wildfires**.



GWIS viewer snapshot of burned areas Bolivia 2024.

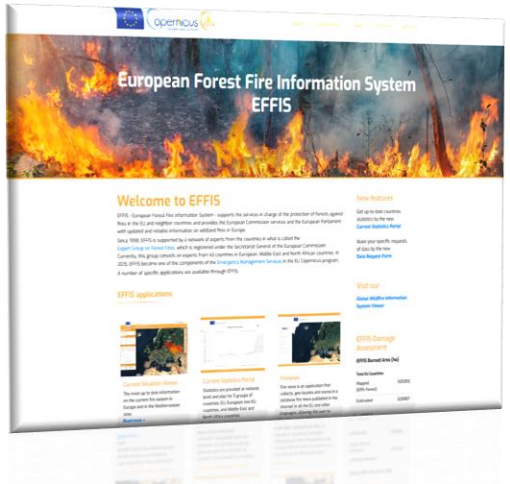


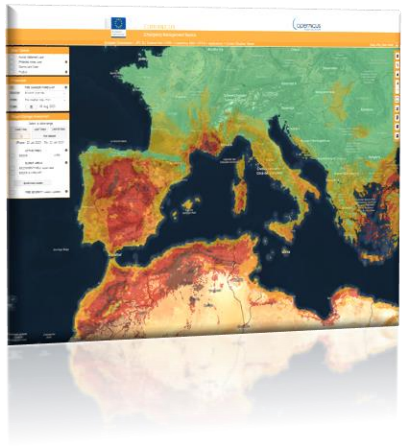
GWIS viewer Burned areas & Large fires from August 1st to August 31st 2024.

- DG CNECT is for digital policies. Tasked to promoting the development and use of trustworthy AI. Creating solutions for societal good.

- DG ECHO is responsible for civil protection and humanitarian aid operations. Coordinates ECPM and Emergency Response Coordination Center.

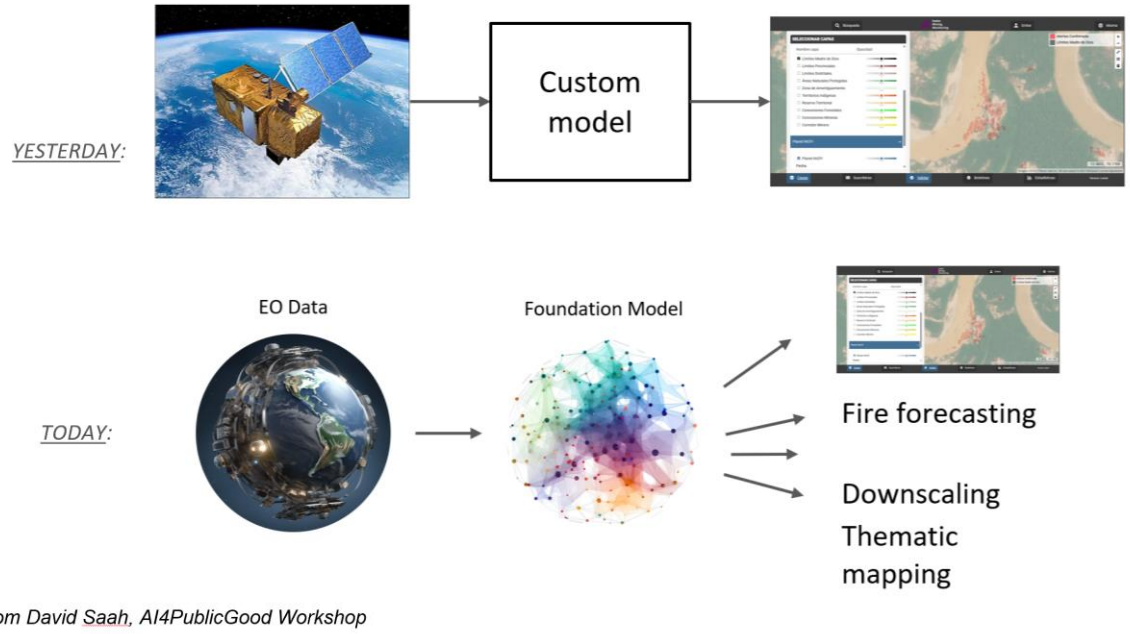
- DG JRC manages daily operations and continuous development of the European Forest Fire Information System (EFFIS) and Global Wildfire Information system (GWIS).





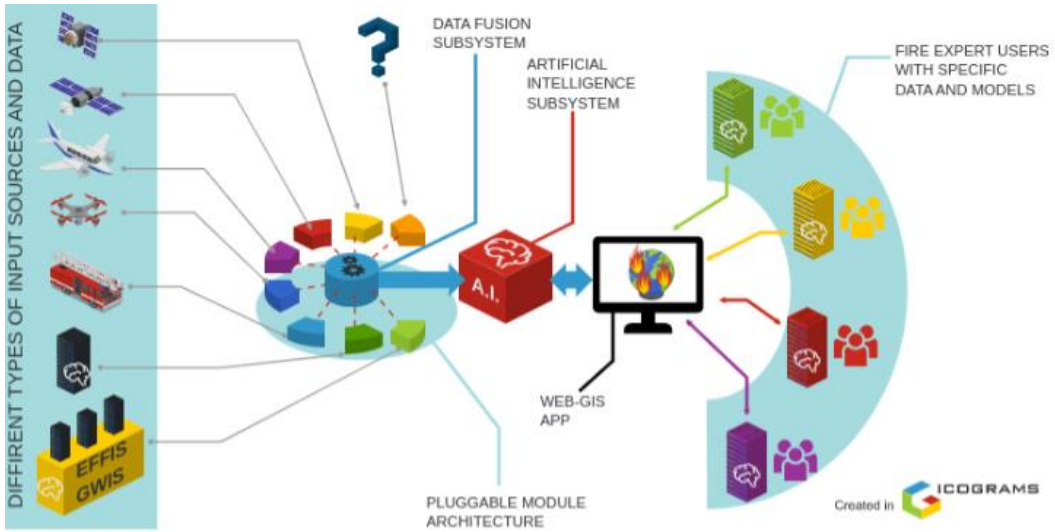
https://forest-fire.emergency.copernicus.eu/
https://gwis.jrc.ec.europa.eu/

- Increasing data availability: more sensors, higher resolution higher frequency, lower latency.
- Integration of complex and diverse sets of information.
- Improved spatial and temporal detail of meteorological variables
- Quicker analysis, quicker response.
- Understanding extreme events
- New generation of foundation models (Geo foundation models) will represent a major disruption.

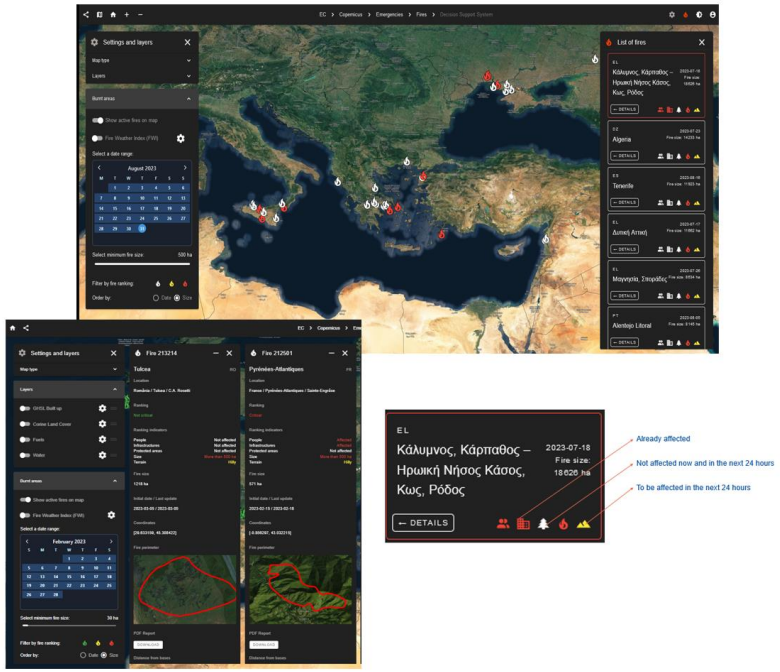


From David Saah, AI4PublicGood Workshop

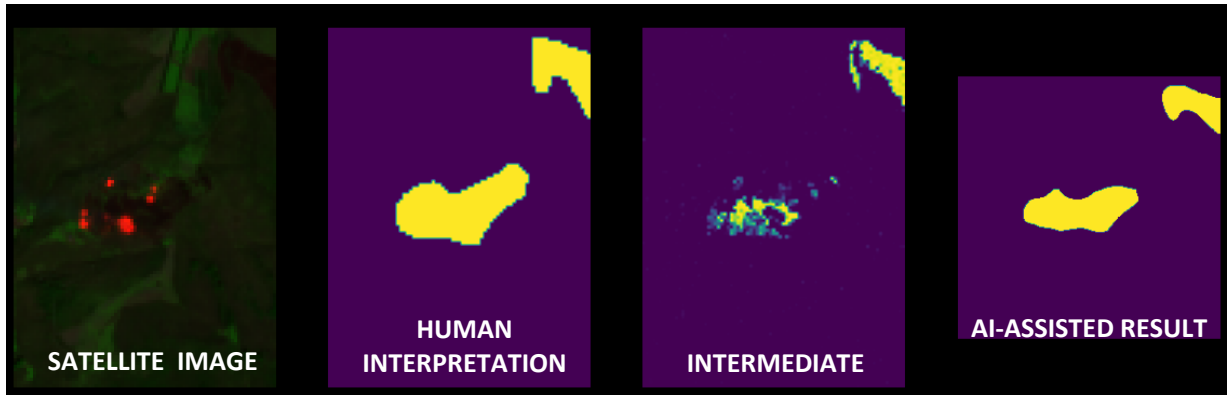
- Develop a **modular and real-time information system** to track major disasters such as **wildfires** (first module).
- Allow for the **sequential inclusion of additional disasters** such e.g. floods, hurricanes, etc.
- Develop tools to forecasts potential evolutions with the **use of AI algorithms.**
- Provide **Decision Support Systems** & tools to **aid decision making** of first responders (e.g. deployment of means, evacuation, etc.).
- Use of pluggable software and applications based on Open Software (**OS**) to support community development.



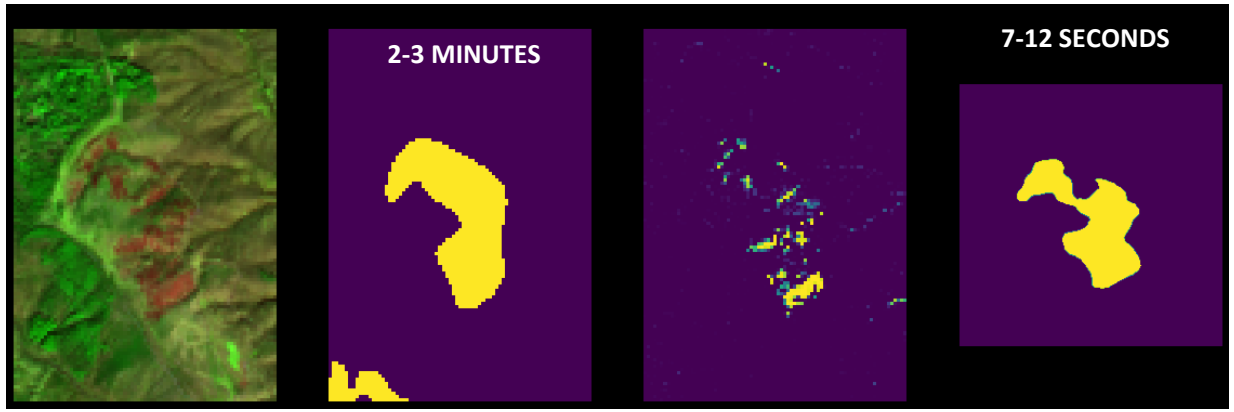
1. Initial prototype similar to EFFIS Decision Support System.
2. Near-real time mapping of wildfires (Deep Learning)



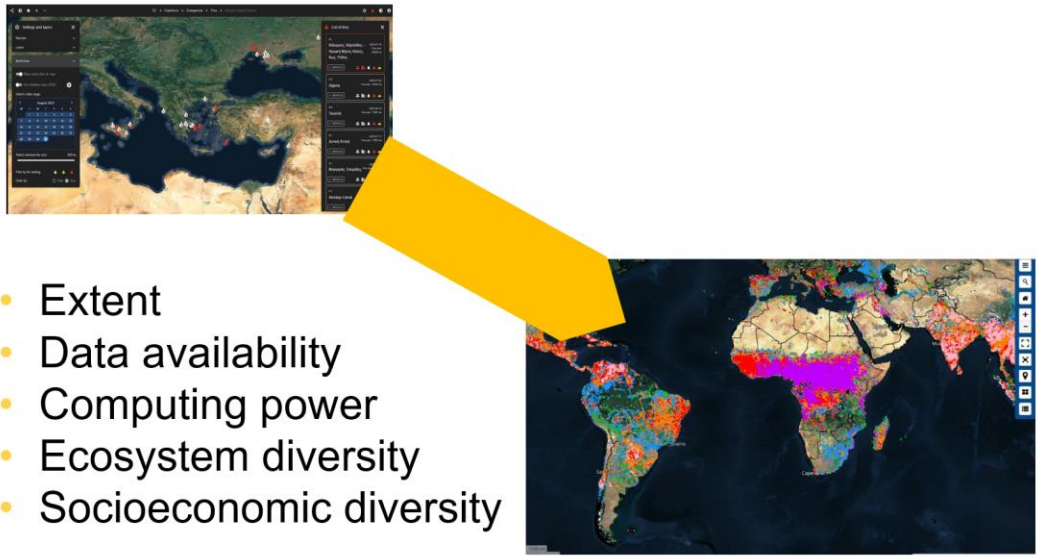
Area Of Interest 1



Area Of Interest 2



From Europe to Global…….



- Extent
- Data availability
- Computing power
- Ecosystem diversity
- Socioeconomic diversity

Progressive Inclusion of AI components:

- Fire danger forecast
- Improved fire behaviour simulations: analysis of multiple possible scenarios of fire danger, fuel management, firefighting means, etc.
- Optimal decision making to minimize wildfire damage and cost
- Geo foundation models for generation of updated fuel maps
- Etc!

Innovation Uptake for disaster preparedness

Giannis Skiadaresis, DRS Area Coordinator

DG HOME, European Commission

AI for Preparedness: Building capacity for AI-powered Disaster Risk Management

16 - 18 June 2025

European Commission

Core Values of Our Strategy

Policy Alignment

Ensure that security R&I maintains the focus on the final use of its outcomes in alignment with policy priorities.

Future Security & Preparedness

Contribute to forward-looking planning of EU practitioner capabilities to anticipate future threats.

Social Compatibility

Ensure the development of innovative security technologies that are socially compatible.

Industrial Growth

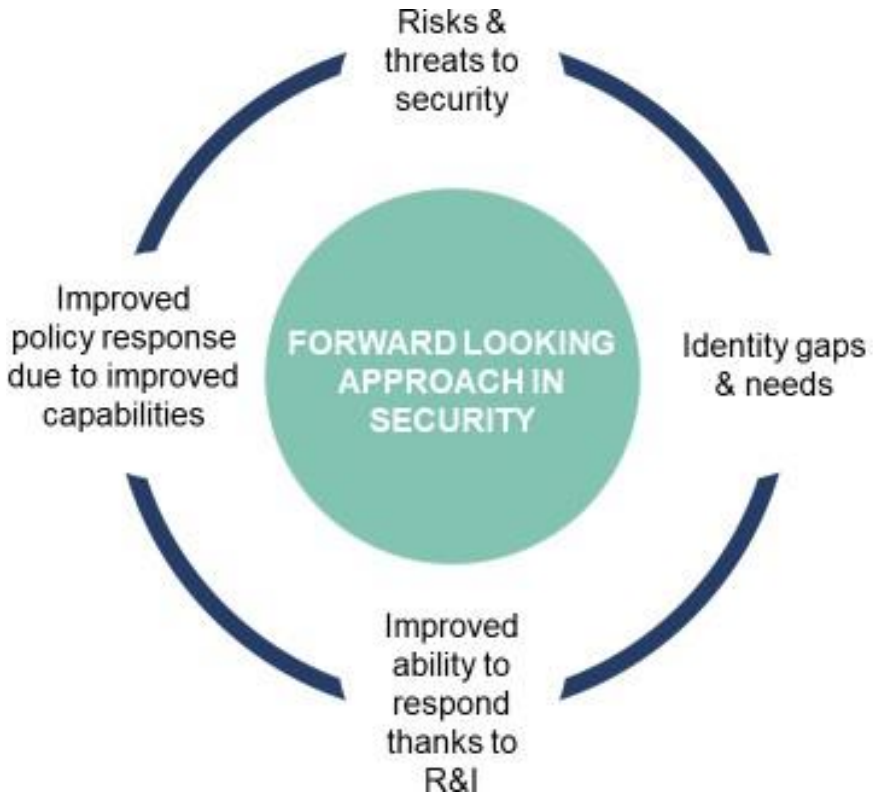
Pave the way for industrialisation, commercialisation, acquisition, and deployment of successful R&I outcomes.

EU Sovereignty

Safeguard EU Strategic autonomy and technological sovereignty by strengthening the security industrial base.

Pursuing a forward-looking capability-driven approach in security

- Move from a reactive to a proactive approach in security, based on foresight, prevention & anticipation.



Challenges:

COVID, extreme weather events, pressure at external borders, crime, terrorist attacks, hybrid attacks etc.

Use tools & actors

referred to in Commission staff working document (2021) 422 final: CERIS, EU Innovation Hub for Internal Security, EU agencies etc.

Support policy response

response in disaster resilience, fight against crime & terrorism, critical infrastructure protection, border management, cyber security.

Innovation Uptake

- EU investment for the development of capabilities supporting policy priorities
  - Innovation can be decisive: modernisation / effectiveness / efficiency
  - **Uptake of innovation remains a challenge**

› Create a favourable environment to generate specific knowledge

› Foster a structured dialogue and coordinated action among market actors;

› Exploit catalysts of uptake

› Conduct cross-cutting security research.

Innovation Uptake Factors

Hindering & Enabling factors*

- Protection and clarity of IP rights
- Quality of information flows & sharing
- Market fragmentation
- Insufficient output maturity for uptake
- Lack of foresight & evolving end user requirements
- Challenges associated with public acceptance
- Challenges of an institutional market

- Funding mechanisms
- Communication & dissemination of information
- Procurement mechanisms
- End-user involvement
- Partnerships & collaboration
- Testing & demonstrations

*Findings from the Study on Factors Influencing the Uptake of EU-Funded Security Research Outcomes

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HE CL3 - Pre-commercial Procurement (PCP)

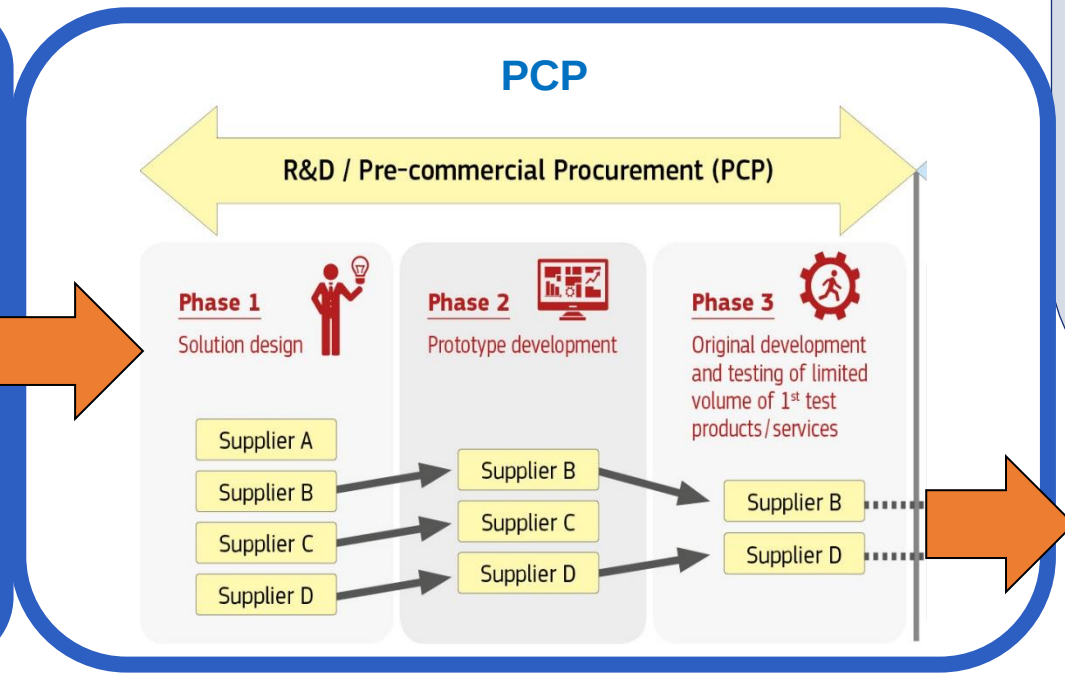
- CSA -> Pre-Commercial Procurement action
- Oriented to the acquisition of R&D services for the development of innovative technologies, systems, tools or techniques in various civil security areas.

But why are PCPs important?

- Provide **innovative solutions to practitioners** tested and tailored on their needs
- Boosting **business opportunities for SMEs and startups**
- **More efficient, higher quality solutions** solving real-life problems
- **Reinforces strategic autonomy** through 'made in Europe' solutions

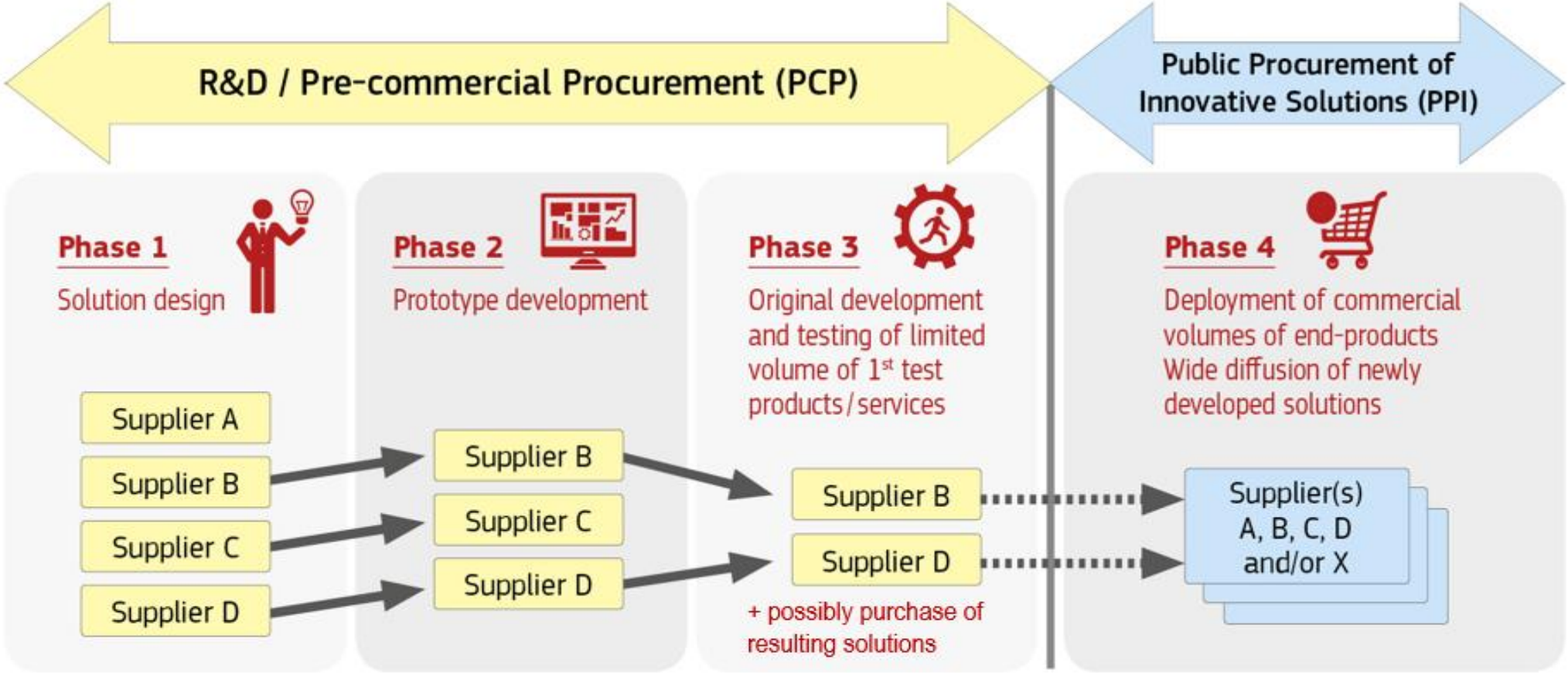
CSA

Preparatory Action



Informed Procurement Decision

What's next?



PCP falls outside WTO GPA and EU public procurement directives (COM(2007)799 & SEC(2007)1668)

Study on 20 years of EU-funded civil security research

Published in Q1 2025

- Confirms earlier findings on EU added value, positive impact, policy and market uptake, coherence with other EU funding instruments

- Assesses various types of impact:
  - Societal impact: dissemination of results, uptake, contribution to security and capability development
  - Policy impact: alignment of research/policy priorities, policy uptake
  - Economic impact: market creation, market uptake, integration with other funding mechanisms, competitiveness
  - Technological impact: technological advancement, promotion of disruptive research, development of key capabilities

- Identifies challenges, e.g.:
  - Data availability limitations
  - Challenges to market uptake - commercialization barriers;
  - Heavy reliance on EU-funding for research and innovation - relative lack of national alternatives

Capability mapping - Secure Communication (EUCCS)

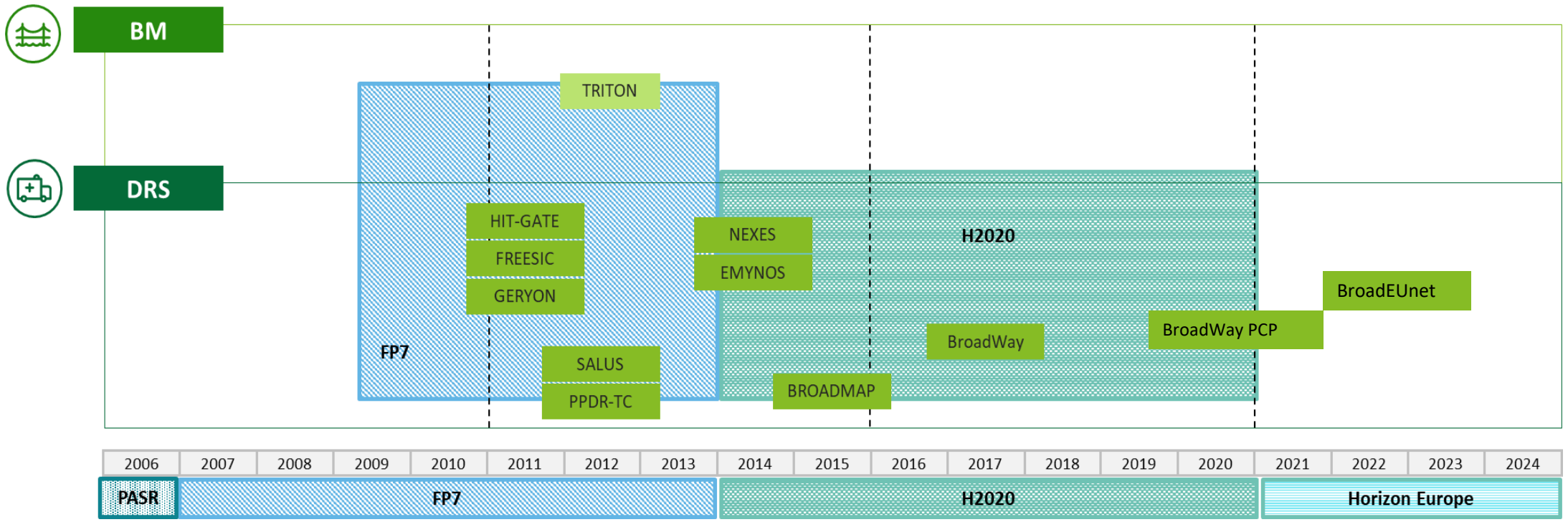


Figure: European Commission - Study on Strengthening Security Research, 2025 (page 104).

Capability mapping - Incident Response

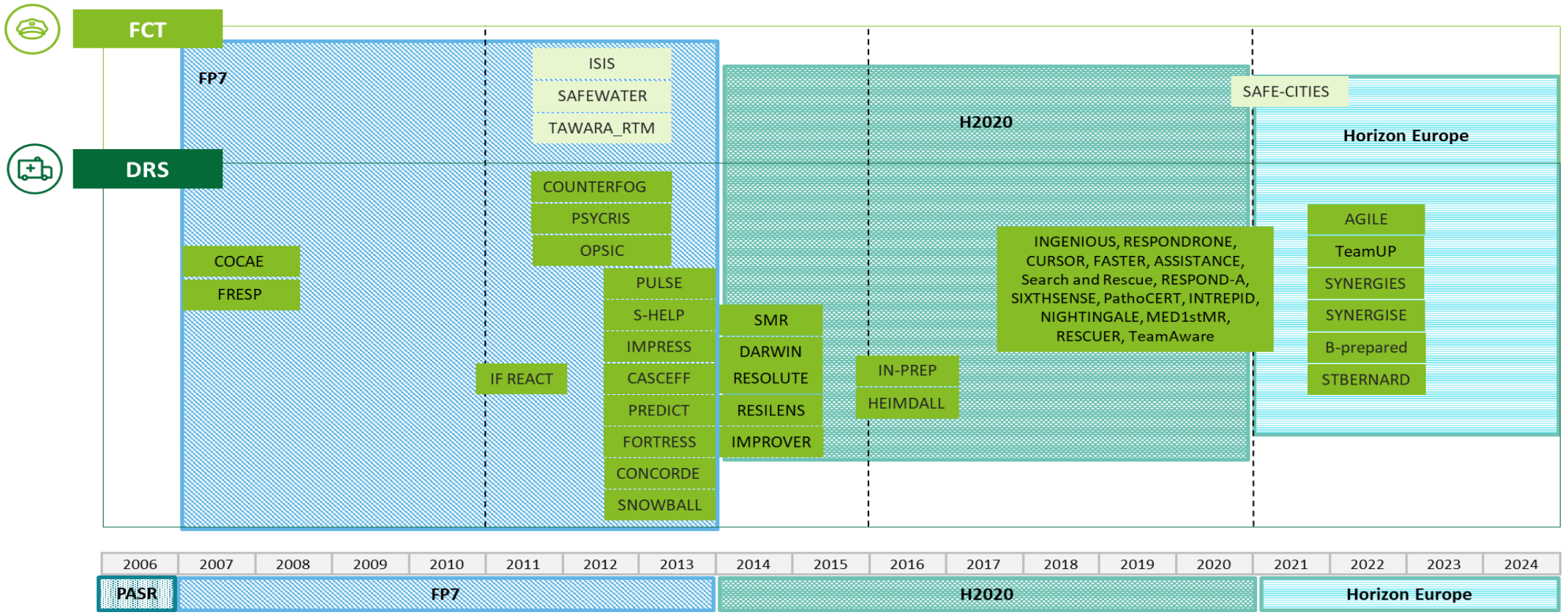
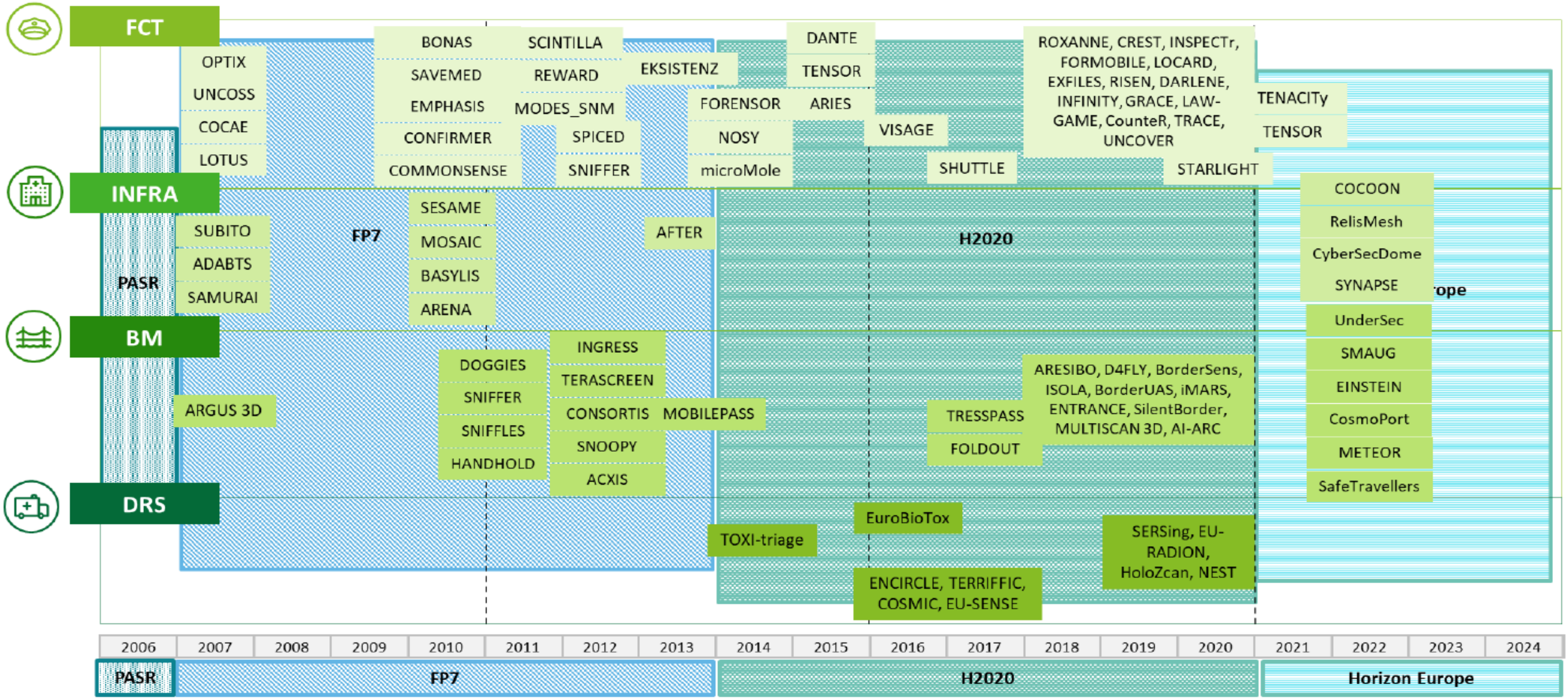
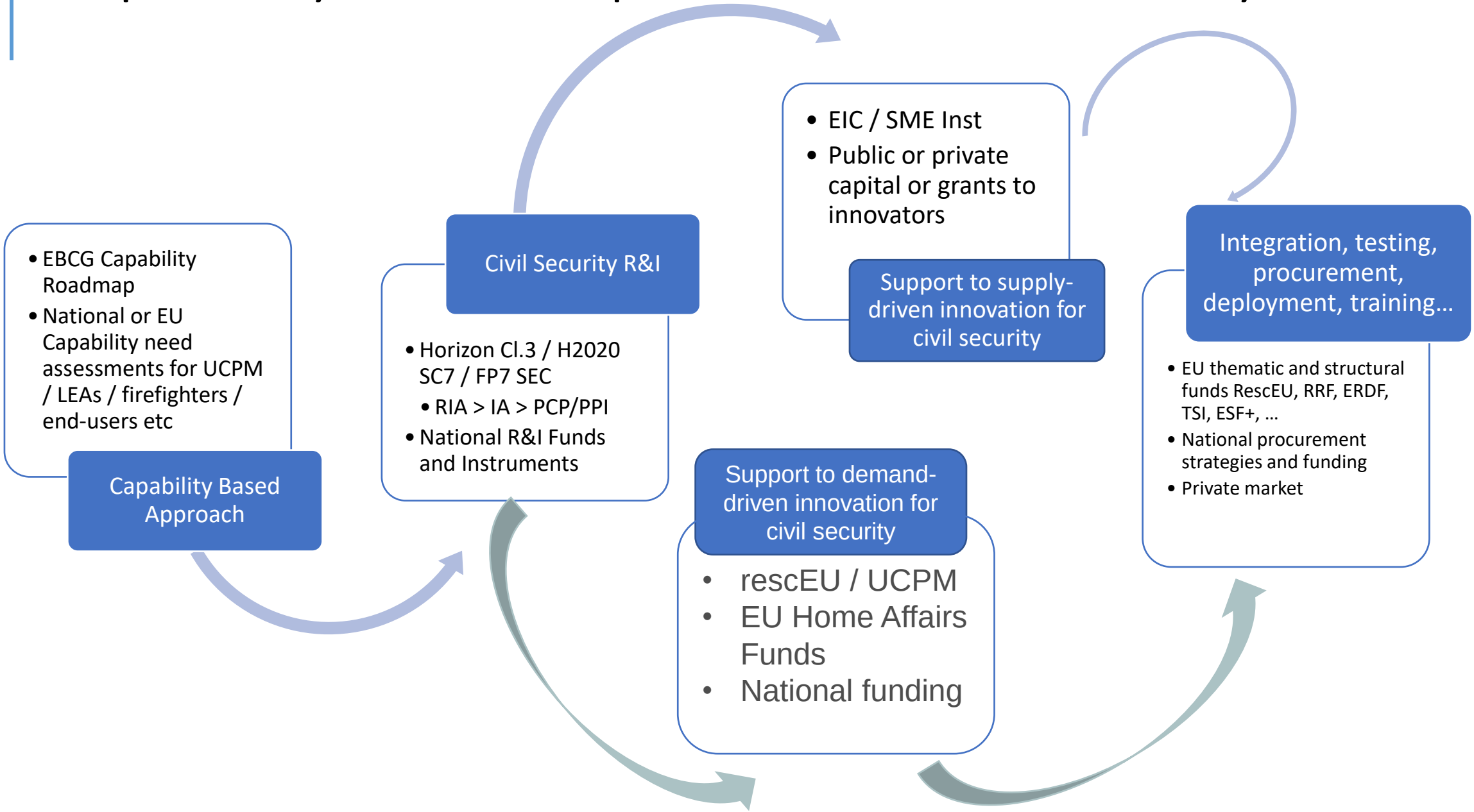


Figure: European Commission - Study on Strengthening Security Research, 2025 (page 102).

Capability mapping – Detection, Identification and Authentication



Capability-Based Uptake for civil security R&I



Recommendations

- #1 – Increased allocation of resources to civil security and disaster resilience research
- #2 – Improve pipeline connection between Horizon Europe and UCPM
- #3 – Refining the integration of practitioners in research projects
- #4 – Upscaling CERIS - UCPM and related events to further enable capacity-building across the European security research ecosystem
- #5 – Explore the potential to promote the involvement of newcomers in EU-funded projects
- #6 – Innovation Procurement

Relevant links

- Horizon Results Booster
- IP Helpdesk & Horizon IP Scan
- Horizon Results Platform & HRP TV
- Horizon Standardization Booster
- Innovation Radar
- Others …
- Horizon Dashboard
- CORDIS

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Updates on deliverables under the DRM Science & Planning WG

Juha-Pekka Jäpölä

ECHO.B3 Prevention and Preparedness Capacity Building

Background

- Tasks of the DRM Science & Planning working group
  - Propose scientific activities in line priorities based on identified needs of the UCPM and its MS/PS
  - Channel relevant bottom-up initiatives
  - Provide technical input on the implementation of initiatives that strengthen the application of research in civil protection and disaster risk management planning and operations, scientific knowledge, and innovative technologies

- Has met 7 times since June 2023
  - 4 x as working group
  - 3 x as subgroup on scenario-building

- Framework thus far
  - Scientific Research Needs Assessment – February 2024
  - Discussion on priorities – June 2024
  - Work Plan 2024-2025 – October 2024
    - Indicative Deliverables 2025 - March 2025

Deliverables 2025 by Commission services

TOPIC 1: Multi-hazard risk approach for tackling complexity of disasters

Expected Outcome: *MS/PS and EU services increase their capacity to deal with multi-hazard risk and supported by cutting edge AI/ML applications under Disaster Resilience Goals (DRGs) #1 Anticipate and #3 Alert.*

a) Done

1. Future of Conflict Early Warning : New Technologies and Policy Impact workshop
2. AI for Preparedness: Building capacity for AI-powered Disaster Risk Management workshop
3. AI approaches for Disaster Risk Management – science for policy brief

b) Upcoming

1. Development of an **"Introduction to AI for Disaster Preparedness"** e-learning
2. 4th DestinE User eXchange / 25-26 Jun in Vienna, Austria
3. Combined **CEMS** and **DRMKC** Conferences by JRC / 4-6 Nov in Turin, Italy
4. **Building Capacity on AI for Disaster Preparedness** high-level event / early Dec in Brussels, Belgium
    1. Hosting the 3rd meeting of the UN Global Initiative on Resilience to Natural Hazards through AI

Deliverables 2025 by Commission services

TOPIC 2: Behavioural insight for whole-of-society of preparedness

Expected Outcome: *MS/PS and EU services increase their risk communication capacities and support to population preparedness under DRG #2 Prepare. New initiatives under the strand will be explored throughout 2025.*

a) Done

1. preparEU risk communication training development workshop
2. 4th Social Media-driven DRM workshop
3. Behavioural insights for disaster preparedness – knowledge primer
4. Knowledge Series on 'Inclusive Preparedness' and 'Youth Action in Preparedness'

b) Upcoming

1. 2x pilot **preparEU training-of-trainers courses**
2. Studies on citizen response and disaster preparedness behaviour
    1. Ongoing VR study on **behaviour under flood and misinformation** (MISFLOOD), analysis/results expected for autumn
    2. New VR study on **behaviour under wildfire** has started preparation now

Deliverables 2025 by Commission services

CROSS-CUTTING: Capacity building, climate change, emerging topics, and research project engagement

Expected Outcome: *Horizon Europe projects and the next research Framework Programme 10 (FP10) serve the needs of MS/PS and EU services, gaps between policy-science-operation are reduced, and topical knowledge (e.g., climate resilience) for DRM is shared openly.*

a) Done

1. CERIS workshop on solutions for first responders and Disaster Resilience Days
2. Bridging Policy and Science for EU Disaster Preparedness at European Geosciences Union (EGU)

b) Upcoming

1. **Horizon Europe Work Programme 2025**: EUR 100M+ available for disaster and climate preparedness-related projects – open till September-November
2. Mediterranean Forum of the Mission on Adaptation to Climate Change / 19 Jun in Bologna, Italy
3. **Joint Programme Committee** / 17 Sep in Brussels, Belgium
4. Evidence for Policy in DRM **Summer School** / 29 Sep – 01 Oct in Barcelona, Spain
5. **Strengthening Resilience: Bridging Preparedness and Recovery** webinars / Dec
    1. Climate Adaptation Mission's thematic month

Future?

- **Preparedness Union Strategy** –key action implementation
- **UCPM** - legislation revision
- **Climate Adaptation Plan** 2026
- **Multiannual Financial Framework** 2028-2034

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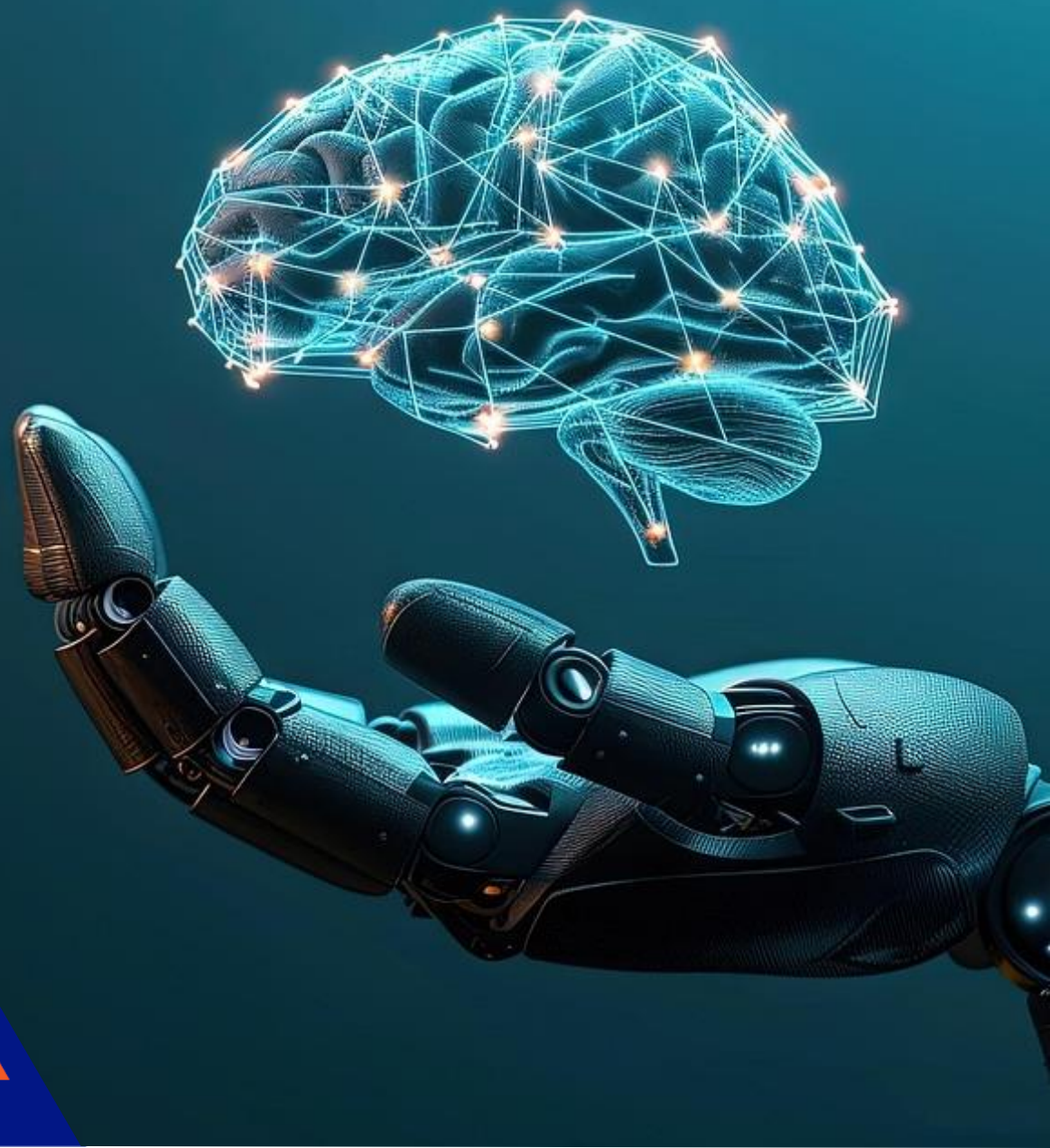
Future of AI Integration: Needs, Gaps and Next Steps I

Discussions in breakout groups

09:45 – 10:45



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Breakout Discussions

1. Do you see **potential for any of the presented solutions** to be taken up in your national systems and why?
   - If not, what are the barriers? In which sectors do you see the most potential
2. Are you familiar with the presented **Commission tools to support innovation uptake**?
   - How would you **integrate and procure innovative solutions in your national systems?** What assistance would you need from the COM in this regard?
3. How could an **AI e-learning course** support you?
   - How should it best be structured to be beneficial?
4. In which part of the DRM cycle could there be the most added value?
   - What are the main gaps it could fill? What are the main challenges for integration into your work?

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Break

10:45 – 11:00

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Future of AI Integration: Needs, Gaps and Next Steps II

Discussions in breakout groups

11:00 – 12:00

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Breakout Discussions

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Closing of the workshop

Gaetano Vivo, Deputy Head of Unit,

DG ECHO.B3

12:00 – 12:15

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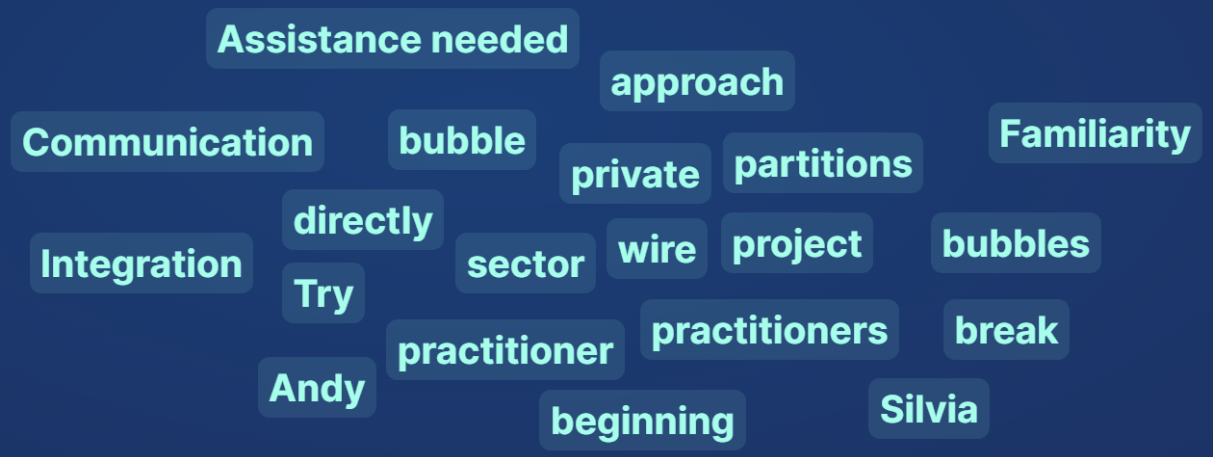
Are you familiar with the presented EC tools to support innovation uptake? How would you integrate and procure innovative solutions in your national systems? What assistance would you need from the COM in this regard?



Do you see potential for any of the presented solutions to be taken up in your national systems and why? If not, what is the barrier?

The COM is planning to develop an introductory e-learning course on AI for disaster preparedness. Do you have any suggestions and ideas to share (length, target, topics)?

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Connect. Share. Grow.

civil-protection-knowledge-network.europa.eu

ECHO-CP-KNOWLEDGE-NETWORK@ec.europa.eu