



Bridging resources in large crisis management

“Implementation according to the BRIDGE project”

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BRIDGE – relevant issues (glossary)

- Large Crisis Management —→ This is what BRIDGE is about
- Concept Cases —→ This is to demonstrate what was done
- Middleware —→ This is what we are paid for
- Blasting tests —→ This is what makes fun
- Validation —→ This is one good reason for the Commission to pay



BRIDGE

Full title: “BRIDGE: Bridging resources and agencies in large-scale emergency management”

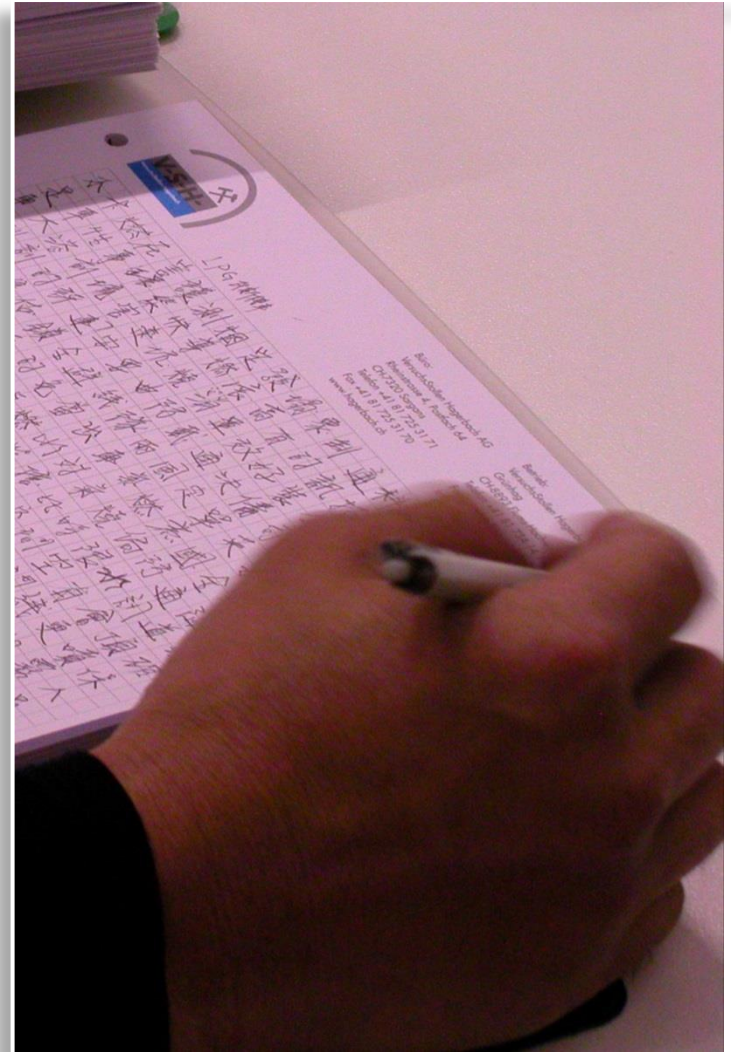
- Different Agencies
- Different Systems
- Different Countries





BRIDGE Success Criteria

- Improve communication and understanding
- Facilitate collaboration
- Prove usability of tools in real environment





BRIDGE Validation Objectives I

- Develop a BRIDGE Validation Plan
- Validate the functionality and robustness of developed and integrated systems
- Accompany the development to guarantee interoperability under harsh underground conditions
- Test the usability of tools in real environment

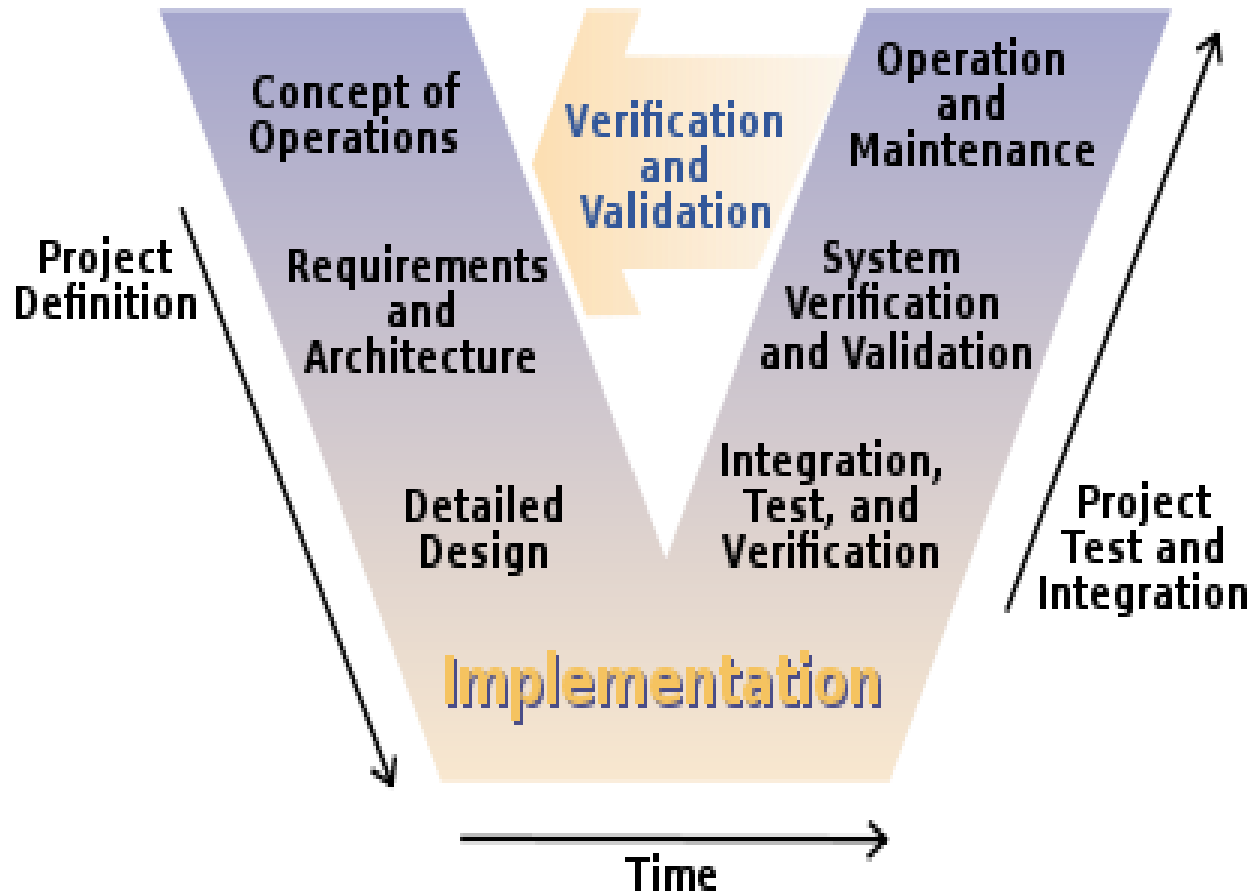


BRIDGE Validation Objectives II

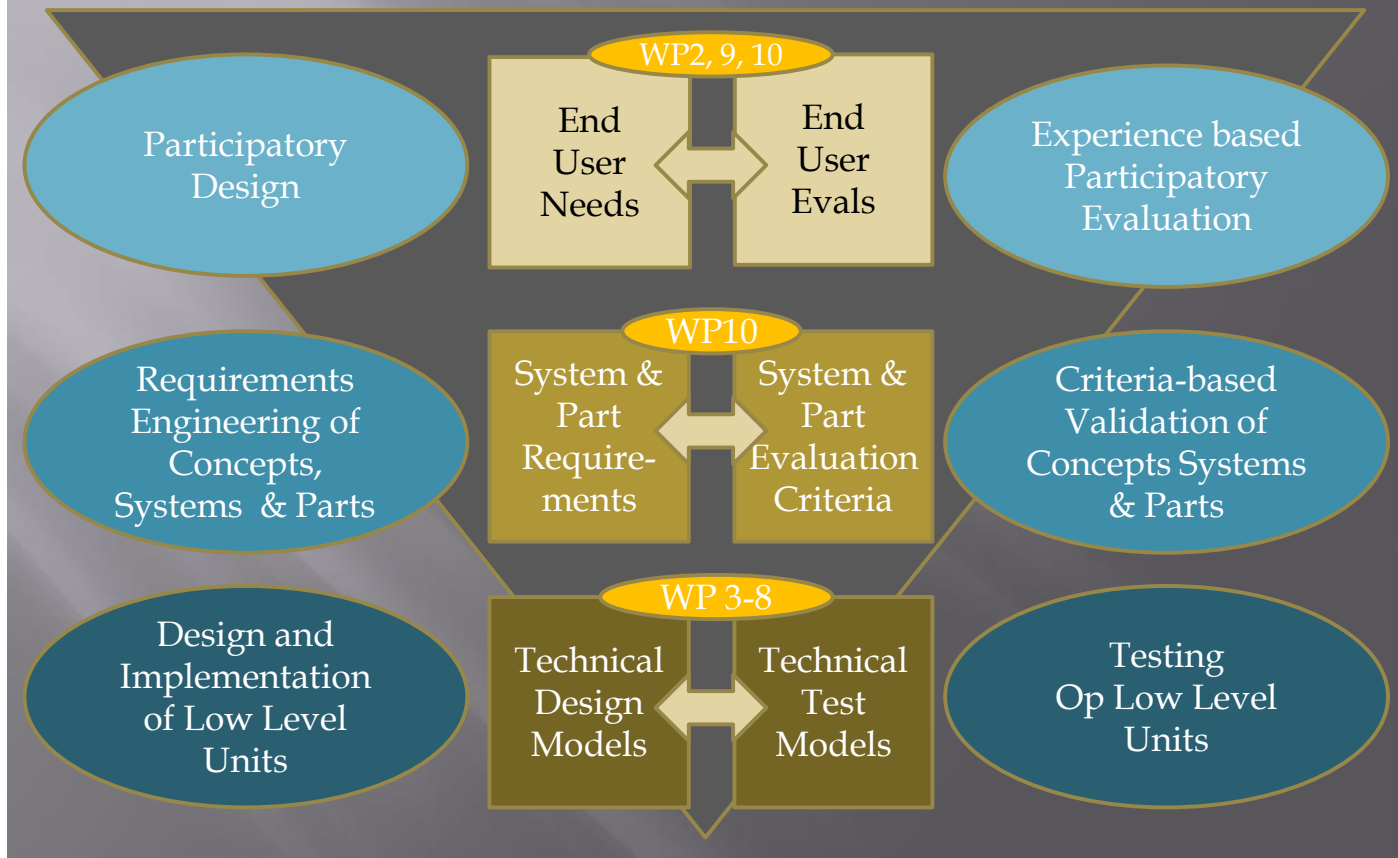
- Prove the reliability of an ad hoc network in case of crises
- Integrate computer simulation and validation of explosions in confined spaces
- **Involve the End User Advisory Board** to integrate end users' feedback and comments



V-Model for Validation



Needs and Checks





9 BRIDGE Concept Cases

- Infrastructure Concepts
 - (1) Robust and Resilient Communication
- Situation Awareness Concepts
 - (2) Information Intelligence (social media analysis)
 - (3) Dynamic Tagging of the Environment (Sensors Tag Network)
 - (4) Advanced situation awareness (Octocopter UAV)
- Decision-making & Action Concepts
 - (5) *Master Table (Touchscreen Map)*
 - (6) Adaptive Logistics (patients, evacuations, resources)
 - (7) Situation aware Human Resource Management (SWARM)
 - (8) Federated Control Rooms (Expert Network with Face-Map/Process)
- Training Concepts
 - (9) First Responder Integrated Training System (FRITS)



9 BRIDGE Concept Cases

Concept Cases	Relevance for Tunnel Operation
<ul style="list-style-type: none">Infrastructure Concepts<ul style="list-style-type: none">(1) Robust and Resilient Communication	<p>(1) In case of fire or explosion, disruption of power supply in tunnels, the normal communication networks may break down.</p>
<ul style="list-style-type: none">Situation Awareness Concepts<ul style="list-style-type: none">(2) Information Intelligence (social media analysis)(3) Dynamic Tagging of the Environment (Sensors Tag Network)(4) Advanced situation awareness (Hexacopter UAV)	<p>(2) Avoidance of information overflow, gathering all relevant information and ONLY relevant information</p> <p>(3) Identification and location of vehicles, persons, recourses in an incident area</p> <p>(4) Availability of data relevant for normal operation and/or intervention (pictures, video, infrared, gas detection, etc.)</p>



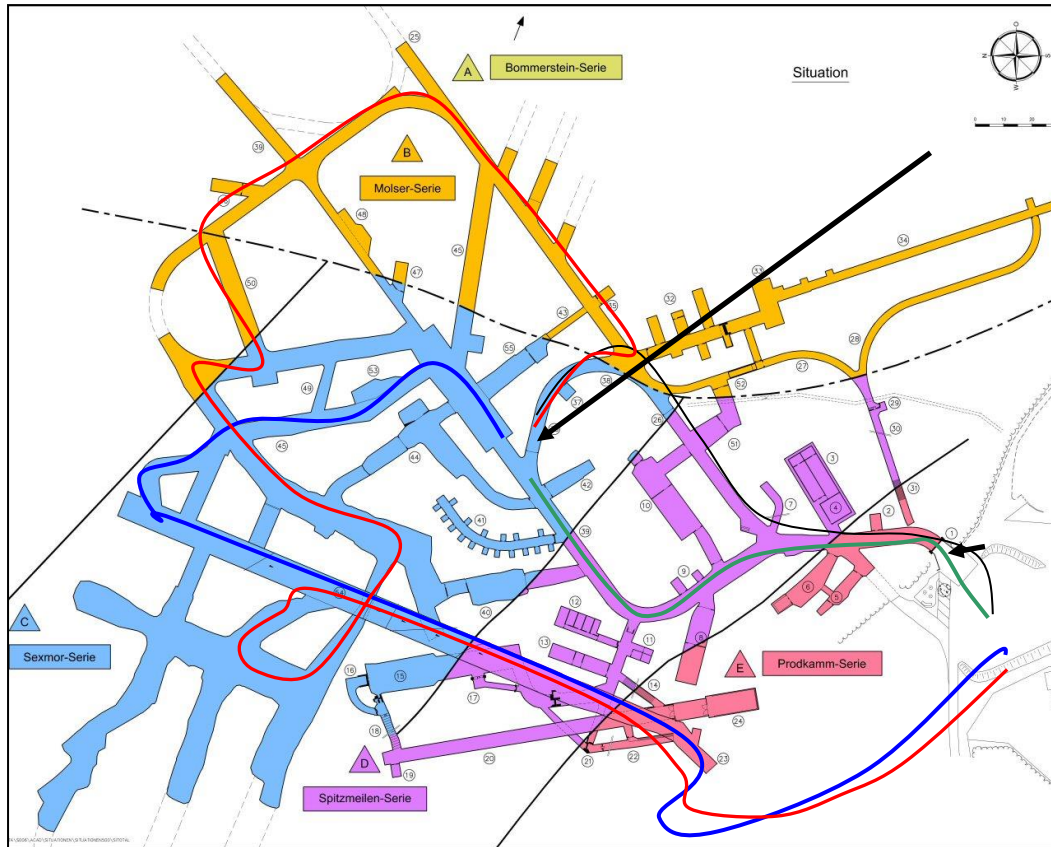
9 BRIDGE Concept Cases

Concept Cases	Relevance for Tunnel Operation
<ul style="list-style-type: none">Decision-making & Action Concepts<ul style="list-style-type: none">(5) <i>Master Table (Touchscreen Map)</i>(6) Adaptive Logistics (patients, evacuations, resources)(7) Situation aware Human Resource Management (SWARM)(8) Federated Control Rooms (Expert Network with Face-Map/Process)	<ul style="list-style-type: none">(5) Master screen in the control room(6) Overview of persons, resources, goods in the tunnel(7) Distribution of personnel, action teams, ...(8) Support in finding the right persons / experts for an incident
<ul style="list-style-type: none">Training Concepts<ul style="list-style-type: none">(9) First Responder Integrated Training System (FRITS)	<ul style="list-style-type: none">(9) Trainings methodology and tool for high quality first responder training



9 BRIDGE Concept Cases

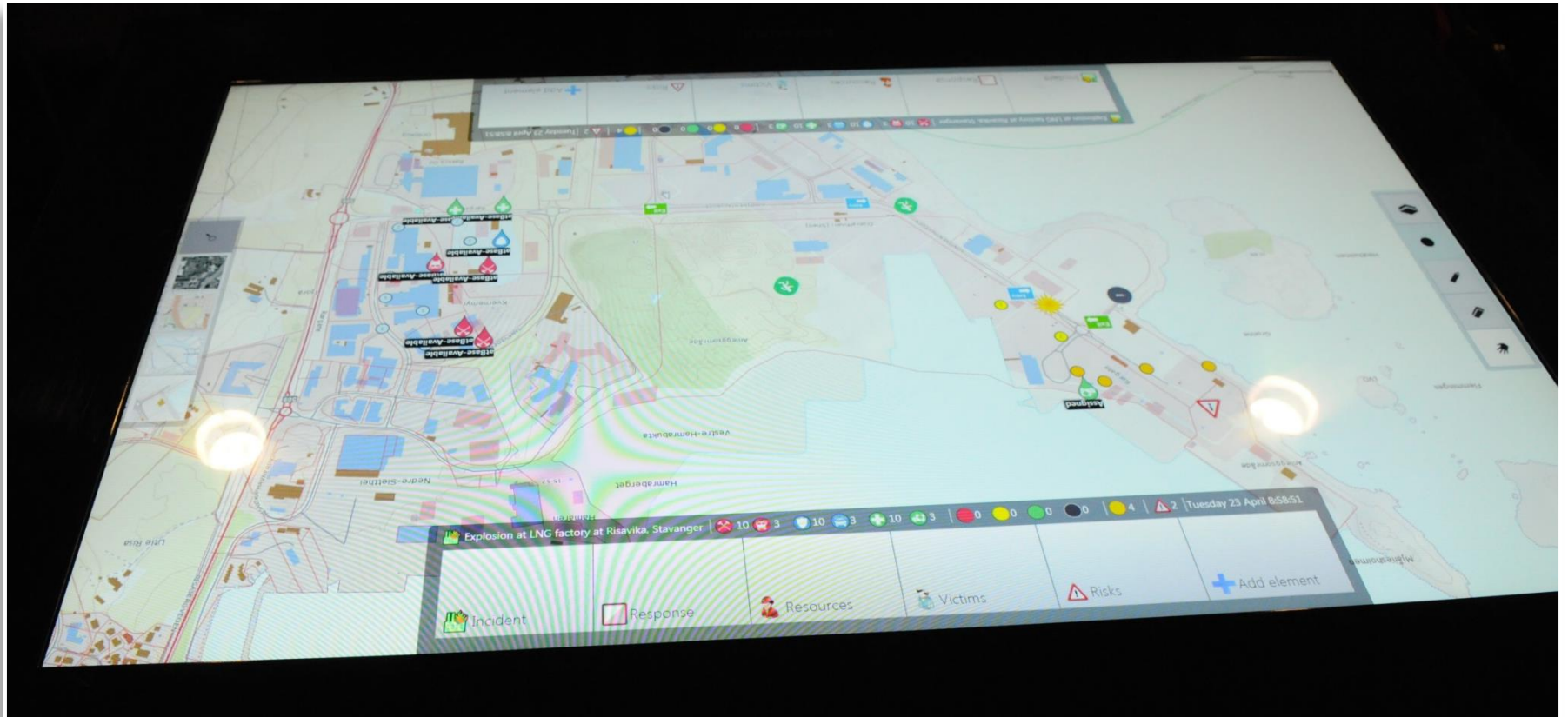
Concept Cases - Example Dynamic Tagging





9 BRIDGE Concept Cases

Concept Cases - Master Table





CC Specific Test Cases

- Interest for validation
 - Crisis management Story
 - Invite Local first responders as End Users
- Interest for dissemination
 - Go to the public
 - Link to other large events like exhibitions
- Interest for Exploitation
 - Find partners and clients (internal and external)



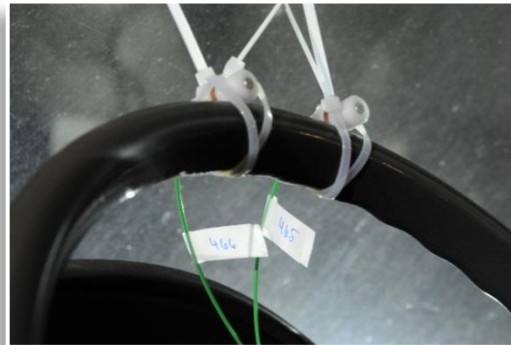
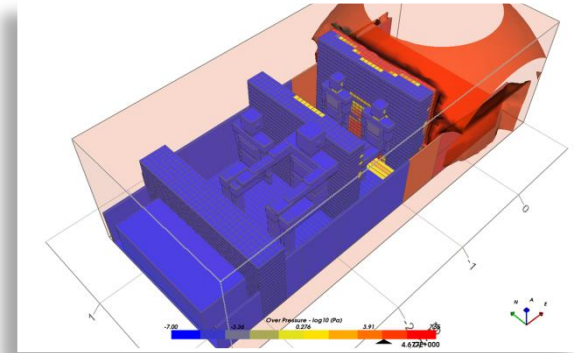
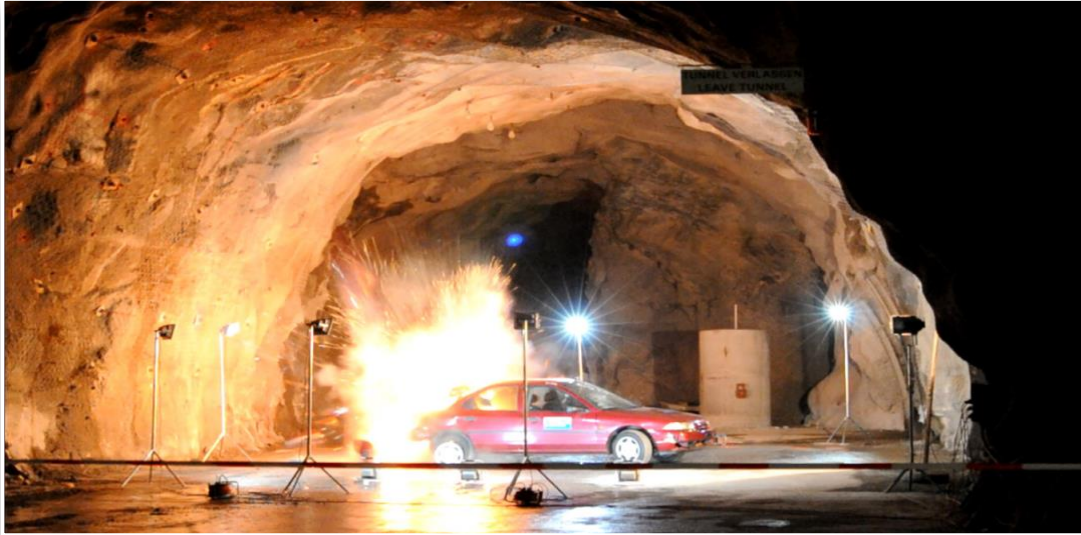


Validation – Demo1 at VSH





Validation of PLUS software





Validation of PLUS software



Blasting tests have been carried out with different charges to proof scalability of the model simulation.



Validation of PLUS software





Key findings from the 2nd review - conclusions

- Validation is a key element to ensure useful outcomes of an R&D project
- End user involvement is highly appreciated by the EC reviewers
- Communication and the quality of information is critical for large crisis management
- It is all about integration





Questions:

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Thank you for your attention!