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End-user driven  
DEmo for cbrNe

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## Chemical Demonstrations (EDEN WP50)

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# Objectives of chemical demonstrations

# Main objectives of chemical demonstration

- **Main objective: Organize, conduct and assess large multiple C attacks demos in different environment (industrial, transportation) to test and validate EDEN Store regarding chemical attacks**
- Objectives of the organisation of chemical demos activities
  - Training for end users
  - Use of technical solutions in simulated/real operational environment
  - Evaluate and improve the effectiveness of EDEN Store and its integrated tools as well as the training kit for chemical crisis management
  - Assess the state maturity of selected tools & further C+E specific tools developments and improvements
- Main activities
  - Customize EDEN Store content for C demos
  - Conduct 2 TTX to train users on the use of EDEN Store content for C demos
  - Conduct 2 full scale C demonstrations

# Organisation of chemical demonstrations

# Organisation of chemical demonstrations

- **Events:**
  - 2 tabletops exercises:
    - 3-4 June 2015 in Norway (FFI)
    - 29th October 2015 in Italy (SES)
  - 2 full-scale demo
    - 30th June and 1st July 2016 in Gurcy Le Chatel, France (INERIS)
    - 28th and 29th September 2016 in Italy (UCSC )
  - Test service period
- **Gaps and needs addressed**
  - Lack of adequate and user friendly personal protection equipment (PPE).
  - Lack of coordinated medical response and treatment delivery,
  - Improve real time threat assessment,
  - Improve decontamination
  - Lack of improved decision support systems and of System of Systems approach to link systems
  - Need of capacity assessment of infrastructures involved in emergency response
  - Improve detection and safe sampling
  - SAR: Lack of a robust tag and trace system.
- **Tools and toolboxes focus:** detection, preparedness, triage/tag&trace, decontamination, situation awareness with information gathering, communication, social media

# Medical practices for CWA release - TTX (Norway)

- CWA-TTX 3<sup>rd</sup>-4<sup>th</sup> June 2015 in Norway led by FFI focused on medical management of CWA release with medical emergency experts
- 2 scenarios: sarin in a building ventilation system and bomb blast with suspected sulphur mustard
- Exchange on practices based on the scenarios and demo of the selected tools
- Tools: NORIA, HAYA and ConfCom (ADS), Webservice/Physiological model (UCSC), SESMER (SES), SIMGE (INDRA), Risk Tweet (R-TECH), PRIOR CBRN Protocol (DGKM), HPZone (In-Fact)
- Main achievements:
  - C-demo baseline on practices based on the results from the questionnaire sent to the end-users,
  - Good exchange within the end-users,
  - Positive feedback on the tools presented.



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# CWA release in an urban environment- TTX (Italy)



- I-TTX 29<sup>th</sup> October 2015 in Italy led by Selex ES focused on management of multichemical release of contaminants (primarily sarin and soman types) in urban environment,
- Scenario: release of two different CWAs through railway station in central Rome, at morning rush hours.
- Demo of the selected tools with their insertion in SESMER
- Tools: :
  - Preparedness: SIMP (ENEA), CRISTAL (BAES), UCSC Physiological Model, Practice \_HSS
  - Sensors: NEXSENSE (SES), USCS webservice (UCSC)
  - Tag, tracing and new means for info gathering: Tag & Trace (Prometech), EONIX B\_Life Apps, SESMER (SES)
- Main achievements:
  - Good exchanges focused on preparedness, sensors and tag&trace areas with organization of focusing discussion tables
  - Positive feedback on the tools presented.

# Gurcy demo

- Full-scale demo 30<sup>th</sup> June and 1<sup>st</sup> July 2016 in Gurcy, France, led by INERIS
- 2 scenarios:
  - IED into a chemical facility causing releases of TICs – 3 victims – 7 chemical experts FR
  - IED containing sarin and sulphur mustard on a train – 21 victims – 13 FR
- Focus on :
  - Situation assessment on field: detection, sampling, first responder intervention, mapping,
  - Rescue and decontamination on field: Rescue, triage, decontamination of people and material.

18 tools selected from the EDEN matching 27 gaps linked to PPE, SAR, detection, sampling, situation overview, triage and decon, communication.

- Main achievements:
  - Positive feedback for the demonstration
  - Interesting feedback during the 2 preparation days from firefighters involved on the field
  - Adaptation of normal procedures to highlight as much as possible selected tools

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# Gurcy demo

- Gurcy full-scale demo: 30<sup>th</sup> June and 1<sup>st</sup> July – 1<sup>st</sup> scenario*



- Gurcy full-scale demo: 30<sup>th</sup> June and 1<sup>st</sup> July – 2<sup>nd</sup> scenario*



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# Rome medical demo

- Rome Chemical Incident Live Medical Demo 28 & 29 September 2016, in Rome, Italy led by UCSC focused on medical management of CWA release in an Emergency Department (at UCSC/Fondazione Policlinico Universitario A. Gemelli)
- Scenario:
  - Emergency Dpt is alerted and non-conventional casualty protocol is initiated;
  - Arrival of contaminated and “worried-well” patients, both by ambulance and by their own means;
  - Decontamination procedure of patients and staff ; registration and triage; fist life saving procedures
  - Main professional figures involved: medical staff (emergency control center, physicians, nurses, technicians etc.) firefighters, security guards, organizational staff
- 8 tools selected from the EDEN Store matching 12 gaps linked to PPE, Situation overview , Triage, Decontamination and Communication/Networks providing
- Demo repeated, one day with and the other without the support of the tools

# Rome medical demo



Decontamination tents



Tag and triage, with or without NORIA



Protection suits



# Main findings of chemical demonstrations

# Main findings of TTX

- The end-users were satisfied by the exchange on practices thanks to the diversity of EU countries participating to the table-tops.
- Gaps and needs identified filled or partially filled by the tools and integrated solutions presented or selected for TTX : tools can potentially improve the preparedness, response and recovery
- Confirmation of areas for further improvements:
  - Harmonisation of civilian and military supplies and procedure
  - Need to qualify some tools as certified tools in the decision making process
  - Improve communication planning between experts in order to differences in hospital capacities as well as in planning and decontamination procedures not to be barriers when facing an event in different countries

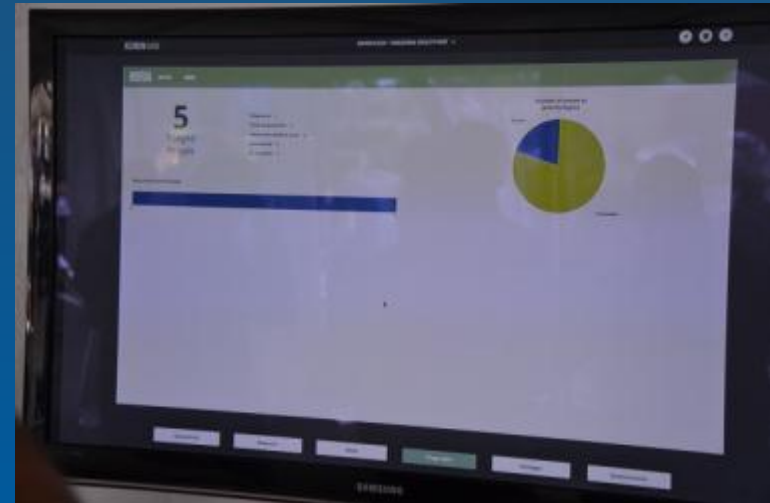
# Main findings of field demonstrations

- Most gaps and needs identified filled or partially filled by the pre-selected tools
- Good opportunity to test procedures and operations on the field
- Feedback and good practices on field operations
- Learning from experience on the tested tools by end-users (mostly FR):
  - Need for robust tools on-field
  - Satisfying interoperability between tools from different tools providers



Example of tools integration

# Examples of tools integration



# Main findings of field demonstrations

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- Learning from experience on the tested tools by end-users (mostly FR):
  - Need for robust tools on-field
  - Satisfying interoperability between tools from different tools providers
  - Positive feedbacks on tested data gathering tools in order to get a clear overview of the situation in real time
  - Feedbacks from FR about the PPE tested in real situation (ergonomy, breathing system, sound, autonomy, sealing, ..)
  - Positive feedbacks on tools for emergency decontamination



# CONTACTS AND EDEN CONSORTIUM

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End User Driven Demonstrator for CBRNe (313077)

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