The European Commission's science and knowledge service

Joint Research Centre

The European Radiological Data Exchange Platform EURDEP

REM&EPR, G.10
Directorate for Nuclear Safety and Security

Marc De Cort
ALLIANCE-NERIS Workshop
Munich, 29 March 2018

European Commission

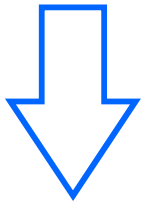
ECURIE

Introduction

EC Euratom Treaty - art 35-36
Basic Safety Standards Directive - art. 45

IAEA Early Notification Convention (27/10/86)
Early Assistance Convention (26/2/87)

EC Council Decision 87/600 (14/12/87)



European Community Urgent Radiological Information Exchange (ECURIE)

ECURIE

What: Network for Early Notification and Urgent Information Exchange under 87/600/Euratom Council Decision

Who: Full ECURIE member: EU28 + CH, MK and NO
ECURIE candidate country: IS, ME, RS, TR

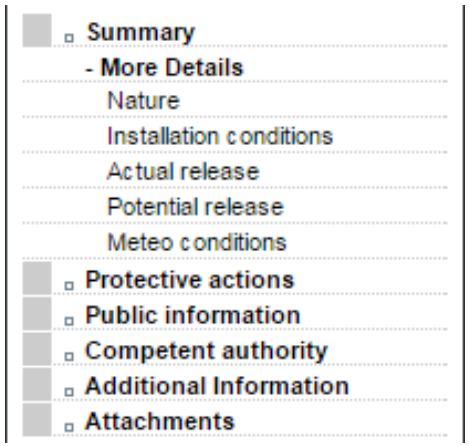
How: Dedicated WebECURIE portal
Fax as backup
Training on-line
Conception and software development by JRC (ITU REM)
Operated by DG ENER D.3 (Radiation Protection, Luxembourg)

ECURIE

Information categories

Structured information

- Nature of Event
- Installation Conditions
- Release
  - Actual
  - Potential
- Meteorology
- Protective Actions
- Public Information



Narrative information

- Additional information
- Attachments

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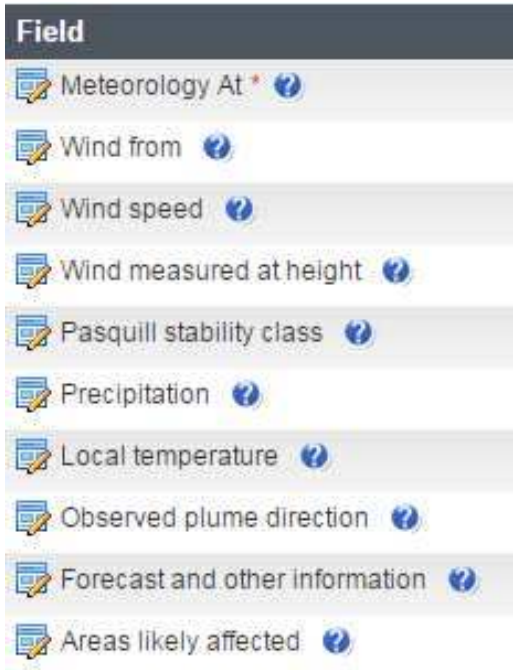

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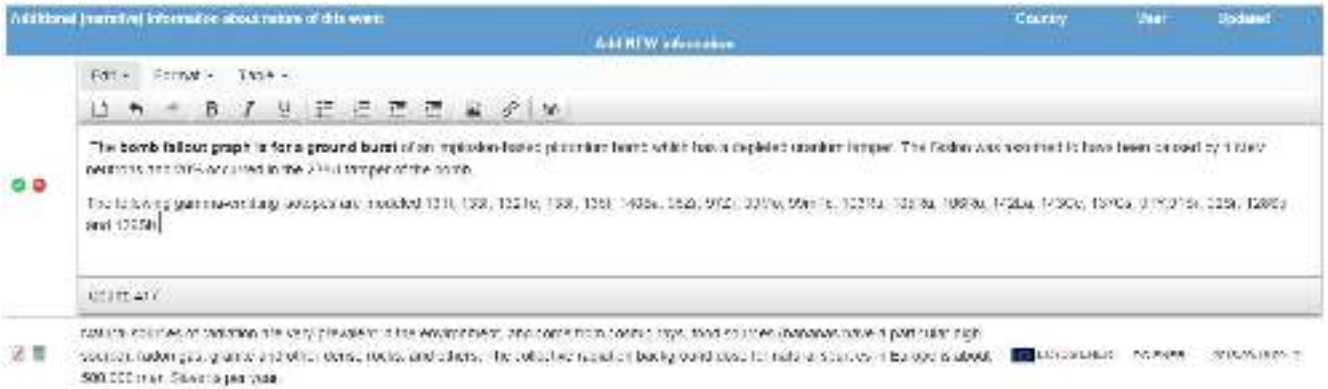

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EURDEP

General objectives

Timely and free exchange with Member States and other European participants of information relevant to the radiological situation to support nuclear emergency response

Exploration without prior commitment, regarding the use of EURDEP, for **meeting relevant EC requirements in routine and emergency conditions**

EURDEP

Participation

1996: (12) AT,SE,FI,GR,NL,PT,DK,DE,IE,NO,ES,UK

1998: (20) CZ,FR,LU,PL,RO,SK,SI,CH

2002: (22) HU,IT

2003: (26) EE,BE,BG,RU

2004: (29) IS,LT,LV

2005: (30) HR

2006: (32) TR,MT

2008: (33) CY

2011: (34) RS

2013: (36) GL,MK

2014: (37) AZ

2015: (38) BY

2016: (39) UA

2017-2018: (44) ME,BH,GE,CA,HK

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EURDEP: What is exchanged?

Common data format
(EURDEP and later IRIX)

Set-up regular data exchange

- gamma dose-rate (5100 stations in 39 European countries)
- airborne concentration
- On-site meteo

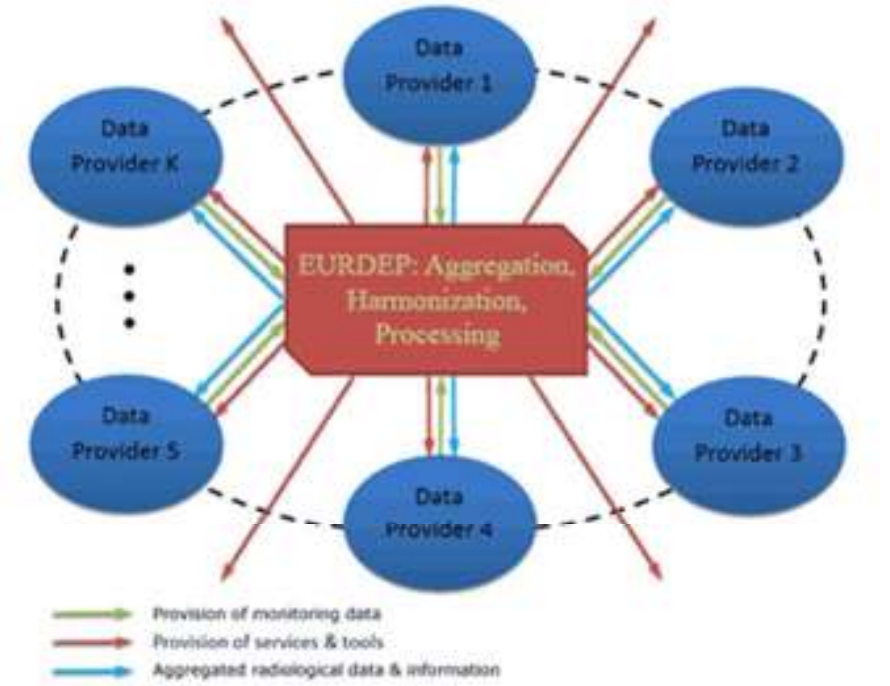
Harmonisation of the results from European national monitoring networks (AirDos, MetroERM, Preparedness)

EURDEP

Aggregates radiation monitoring data from most European monitoring networks in nearly real-time

*Provides a fast access for national authorities to the data during both **routine** and **emergency***

Helps to fulfil international obligations e.g. reporting to EC



The platform participant who submits the monitoring data from his managed networks, gets a full and unlimited access to the data submitted by all other participants.

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EURDEP

International Radiological Information eXchange

- A technical standard developed to facilitate exchange of radiological information and data between organizations during a nuclear or radiological emergency
- Two components:
  - **IRIX Format**

    a standard data format for reporting of emergency information and data (in XML) v1.0 released 03/2013
  - **IRIX Web Service specification**

    a system interface specification for submission of reports between systems over the web (based on W3C SOAP Web-Service standard)

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EURDEP

Data exchange

Availability of originally submitted datasets

Copied on 4 geographically distributed sites (5 min sync)

Immediate access to the data for all participants, no download limits

Aggregation and export to other systems

Data Quality Control

Visualization i.e. private & public

Export i.e. to participants & IRMIS

EURDEP Data visualisation

Private web-site https://eurdep.jrc.ec.europa.eu

- To all data-providers
- National and international governmental organizations concerned with emergency preparedness and response
- Some exceptions for research
  - Authorization by EC and/or IAEA
  - Authorization by national Contact Point
  - Reference to data-providers

Isolated

Public web-site https://remon.jrc.ec.europa.eu

- Country imposed delay
- No download of data
- No meteo-data

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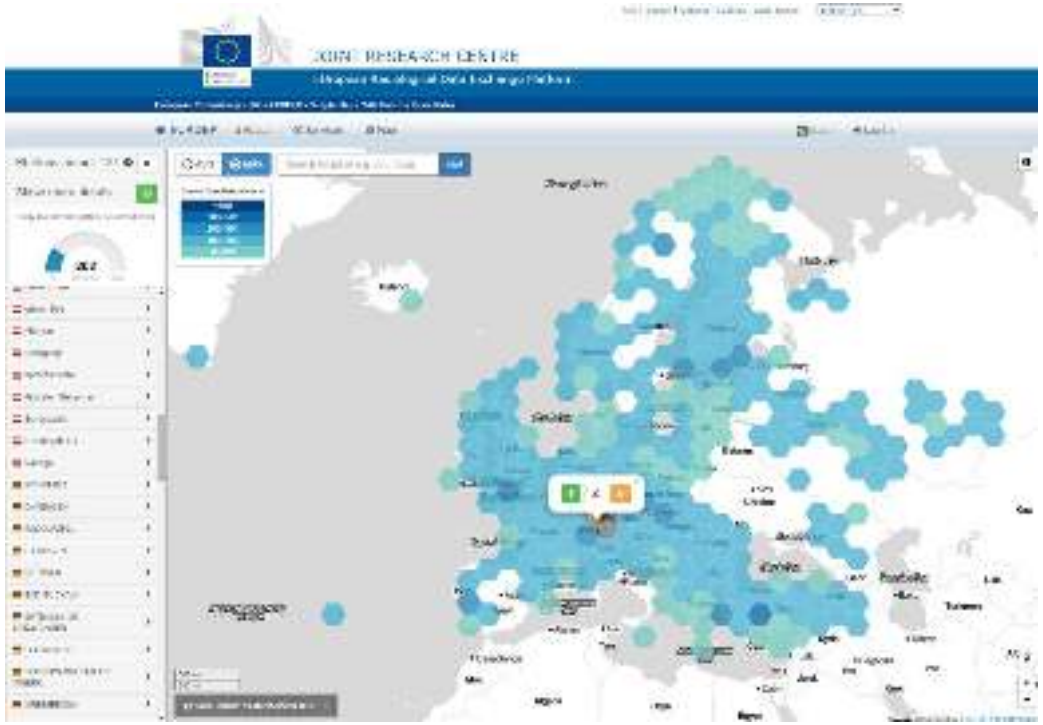
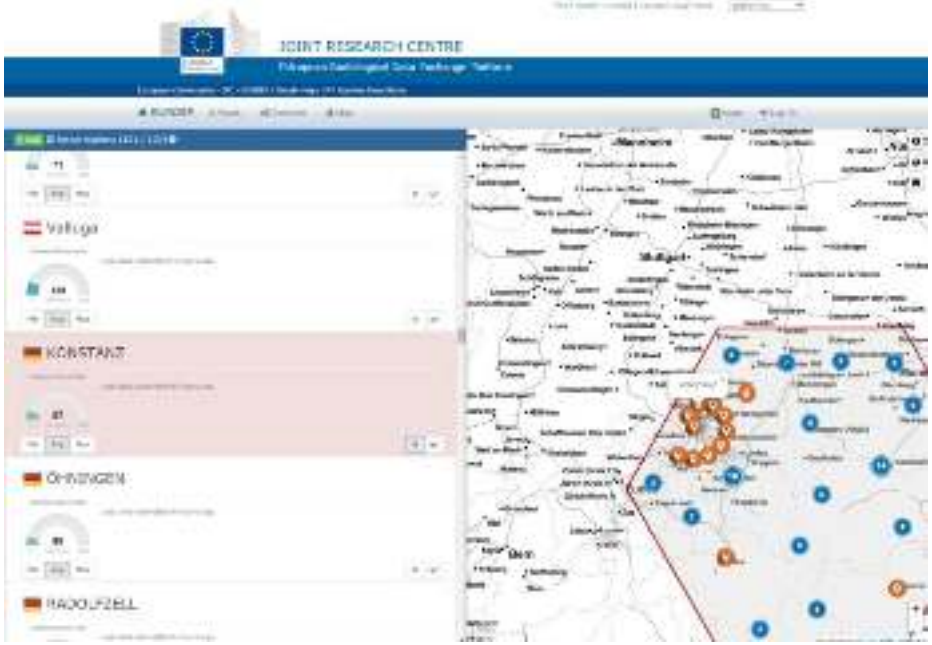
Public web-site



Visualisation



- ✓ **Intuitive**
- ✓ **Informative**
- ✓ **Responsive**
- ✓ **Widgets**

https://remon.jrc.ec.europa.eu

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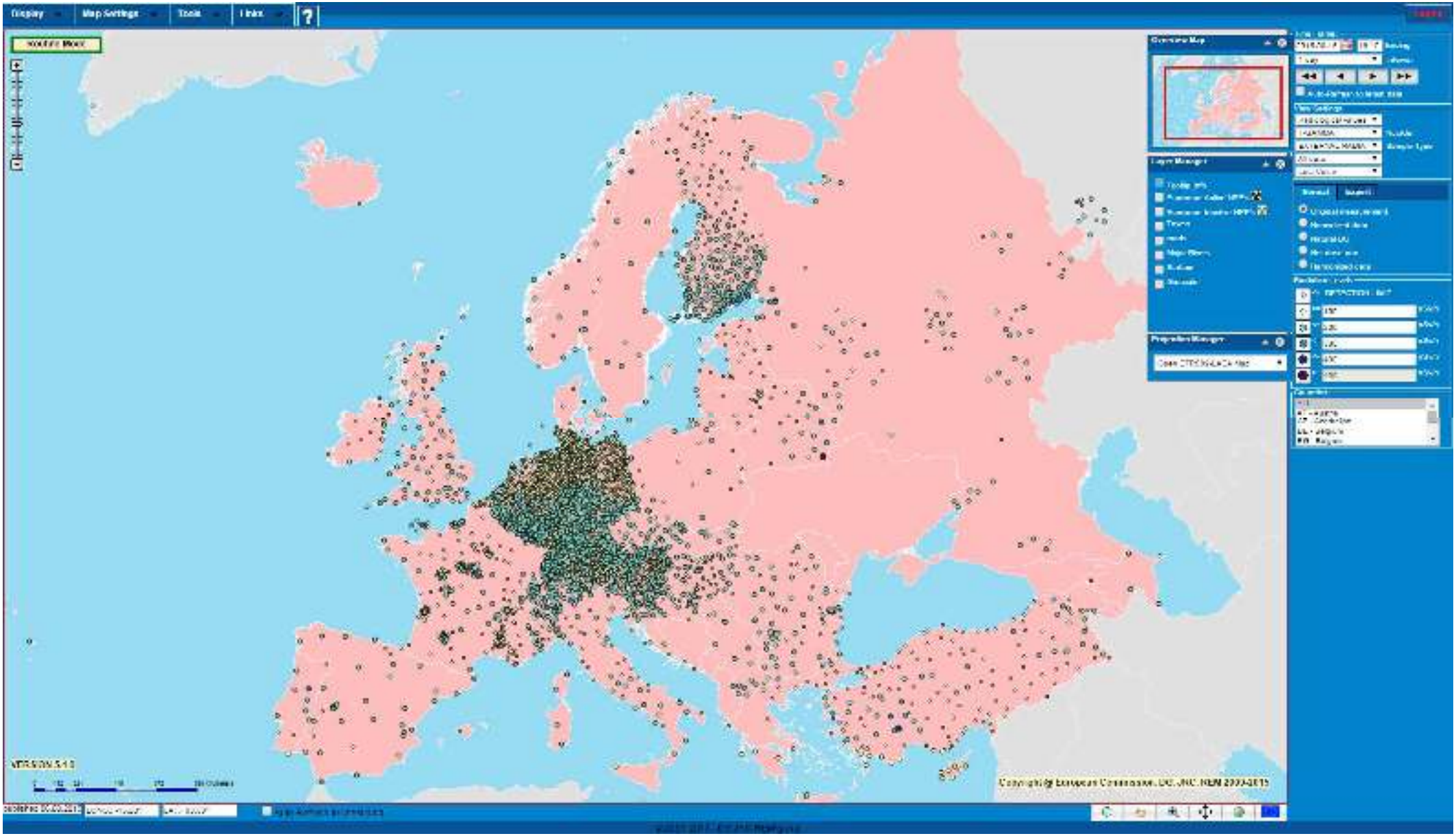
Expert maps



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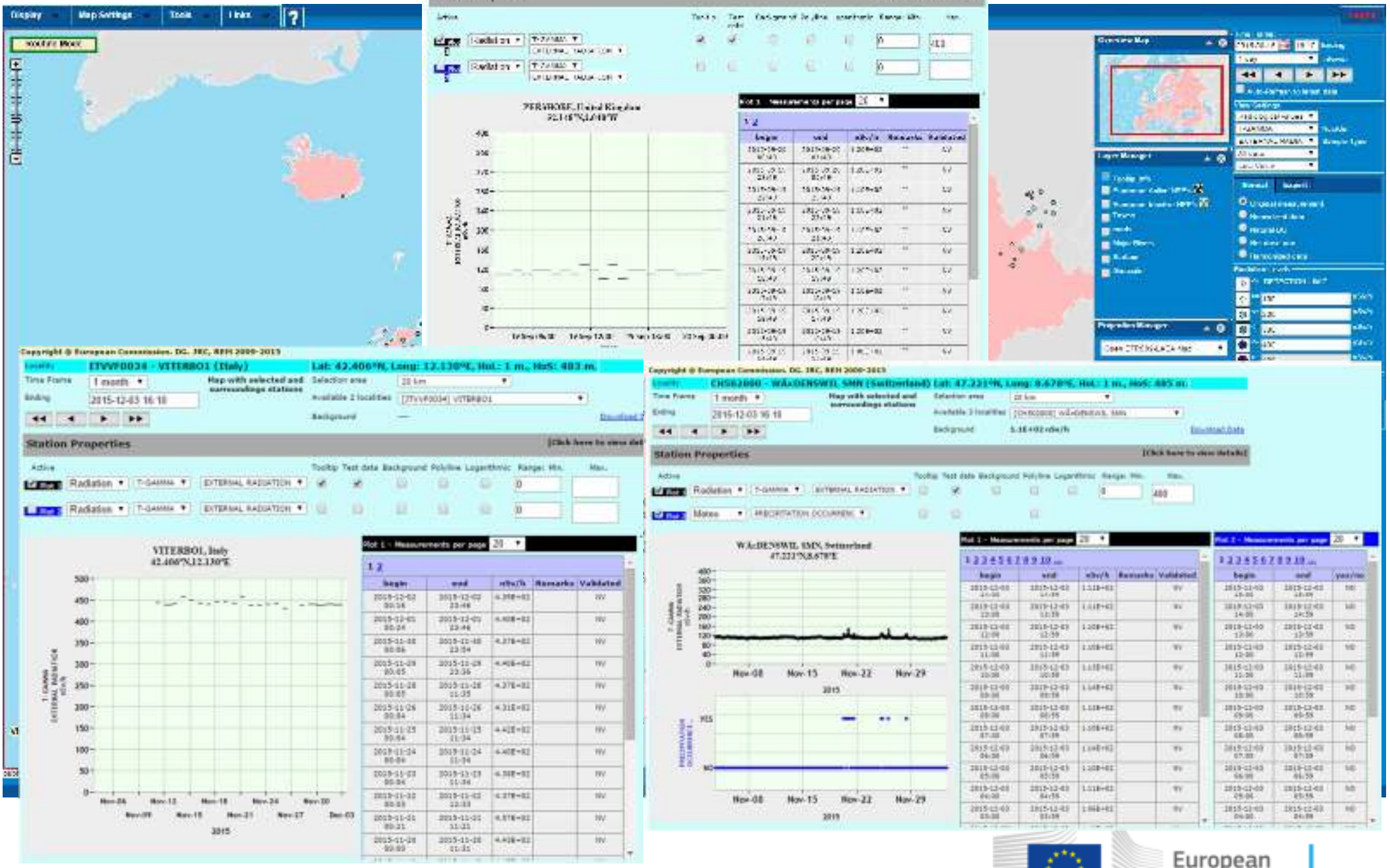

https://eurdep.jrc.ec.europa.eu

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Notifications

No gamma data *– every 6 hours after 48 hours of absence, mandatory*

No samples data *– every 6 hours after 7 days of absence, mandatory*

Stations shift *– once occurred, mandatory*

High Value detected *– once occurred, optional*

Parser events (EURDEP, IRIX) *– once occurred, optional*

EURDEP

European data HUB for IRMIS (IAEA)

- ✓ Regular submission interval for all countries 1 hour (IRIX 1.0)
- ✓ Correct identification i.e. correct affiliation for the organizations providing data
- ✓ Measurements corrections and revocation
- ✓ Site coordinates corrections, test mode
- ✓ Cleaned for redundant records

- ✓ Support to IRIX standard - EC is a part of the format Steering Committee

https://reconvert.jrc.ec.europa.eu/eurdep2irix
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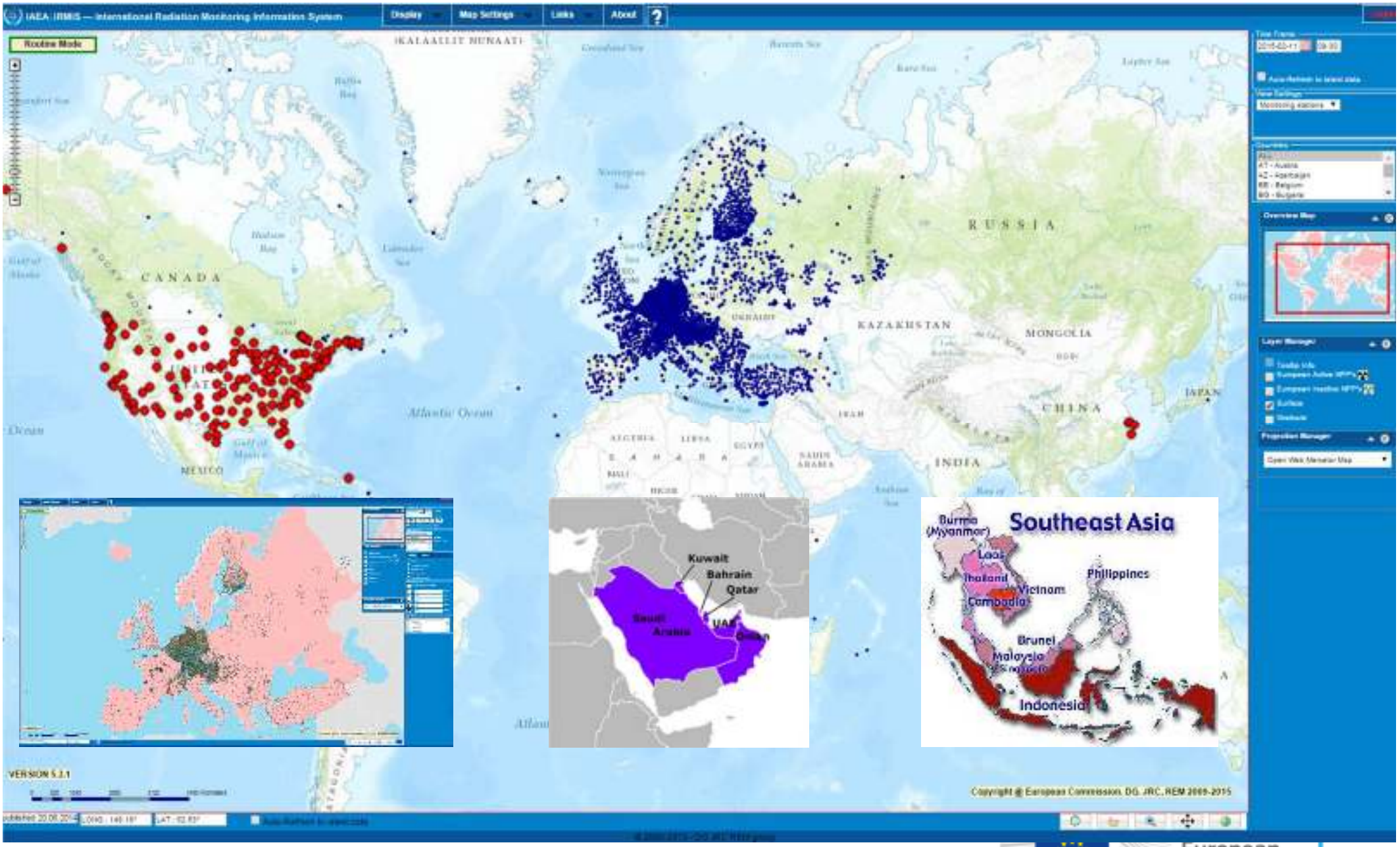
Regional data exchange concept



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Looking to the future

- Extension of sample types for the early phase of an accident (i.e. beyond the existing gamma dose rate, gradually include also automatic transfer of air concentration, deposition, milk, ..) as well as mobile monitoring (air- and car-borne monitoring, use of drones) – combining with routine monitoring.
- Collaboration on EP&R information exchange beyond Europe (e.g. IAEA-EC (DEVCO and JRC) collaboration on EPR support to ASEAN and GCC)
- Explore how to better involve the public and improve communication with them and the media (E.g. EURDEP public web-site). Also crowd-based monitoring networks are an interesting (and merging) issue that will be needed to be looked into, e.g. to avoid inconsistencies between what the authorities monitor and what the public measure in case of an emergency (new Euramet project: Preparedness).
- More EC assistance to bilateral exercises, e.g. by providing exercise data in EURDEP/ECURIE based on emergency scenarios.

PREPAREDNESS (JRP with EMPIR)

Metrology for mobile detection of ionising radiation following a nuclear or radiological accident

- Scientific work-packages:
  - WP1: Unmanned aerial detection of radiological data
  - WP2: Transportable air-sampling systems
  - WP3: Monitoring of ionising radiation by non-governmental networks
  - WP4: Passive dosimetry
- Coordinator PTB (Stefan.Neumaier@ptb.de)
- Project duration: 36 months (2017-2020)
- Web-site (including stakeholders registration/info): *http://www.preparedness-empir.eu*

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Metrology for Preparedness

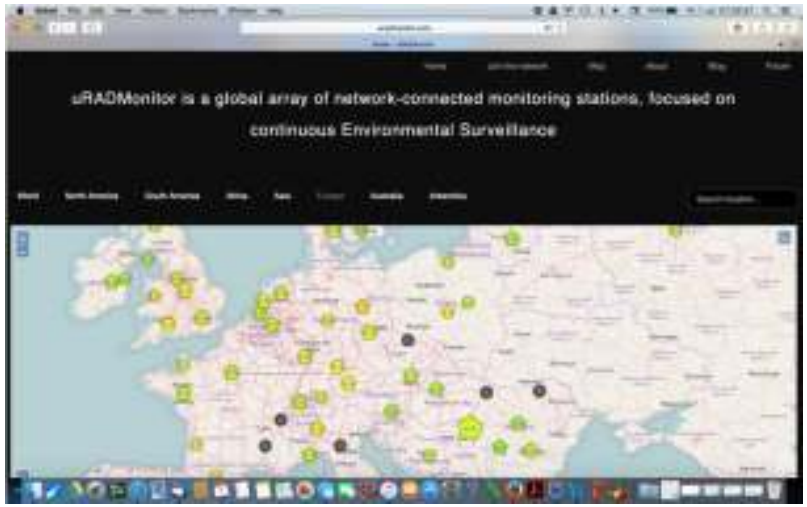
Specific Objective 3

To investigate the metrological relevance of 'crowd monitoring' data on dose rates and provide

- Promote manufacturers' participation to inter-comparison exercises
- Investigate to what extent the results from these monitoring networks could contribute in case of emergency.
- Recommendations on the usability of such data.
- Facilitate the collaboration (procedural) between national competent authorities/relevant stakeholders and manufacturers

Crowd monitoring

Some examples



Low-cost counter and false alarm
of a non-governmental network

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