

ESOREX-Platform: European Platform for Occupational Radiation Exposures



INSTITUT
DE RADIOPROTECTION
ET DE SÛRETÉ NUCLÉAIRE

Faire avancer la sûreté nucléaire

A. Rannou, J. Feuillardent,
P. Scanff and E. Vial

alain.rannou@irsn.fr



Introduction: context and motivation

**ESOREX (European Study on Occupational Radiation Exposure)
Project initiated by the European Commission in 1997**

- | Overview on national arrangements for radiation worker's monitoring, dose reporting and recording
- | European database on occupational exposure
- | First attempt to harmonise data collection
 - Common data reporting format
 - Categorisation of professional work activities

➔ A recommendation to develop a sustainable Platform emerged during the last ESOREX Symposium in Prague, May 2010

Main objectives of the ESOREX-Platform project

3-years European project (Dec. 2012 - Dec. 2015) funded by the EC
Contractor = IRSN, France

- | To develop a Platform which allow representatives from national dose registries and dosimetry services to discuss emerging issues, assess dose trends and exchange experience
- | To establish working relationships with other relevant international organisations and bodies (in particular with UNSCEAR, HERCA, IAEA, NEA, EURADOS)
- | To develop appropriate mechanisms and establish the appropriate infrastructure to enable the sustainable continuation of operation of the ESOREX platform beyond the 3-years project, without further European Commission financial support

Database : national arrangements (1)

- 9 relevant ‘regulatory topics’ have been retained
 - Identification of the national competent authority
 - Description of the national legislative framework
 - *Main texts of the national regulation*
 - *Provisions more stringent than the Directive EURATOM*
 - Organization of the national dose register
 - *National body responsible for national statistics*
 - *Type of recorded data*
 - *Access to the register data*
 - ...
 - Description of the implementation of radiation passbook
 - Approved dosimetry services
 - Description of the techniques or procedures used for individual monitoring
 - *external exposure*
 - *internal exposure (including committed dose calculation)*
 - *aircrew exposure*

Database : results and trends of exposure

| List of the main parameters considered into the database

- *Country*
→ all countries participating in the platform, not limited
- *Year of exposure*
→ annual data (> 2010)
- *Type of exposure and related dosimetric quantities*
→ whole body (external ($\gamma+\beta$), external (neutron), internal committed dose, and effective dose = sum of the 3)
skin
extremities
lens of the eye
- *Field, sector or subsector of activity*
- *Occupation*
→ More representative occupations of each sector / subsector
- *Parameters of exposure*
→ collective dose
average dose per caput
number of workers

Data for activities and occupations

- A unique list for activities and occupations of interest including fields, sectors, subsectors, occupations
- 7 main activity fields have been retained
 - Medical field
 - Industry (without nuclear industry)
 - Nuclear field
 - Transport
 - Research and education
 - Natural sources
 - Other fields
- In each field of activity, relevant sectors and subsectors have been listed and relevant occupations in these sectors/subsectors have been retained
 - to limiting the complexity of the matrix
 - to focusing on the main situations for which workers are generally more exposed

Example for the medical field

Field	Sector	Subsector	Occupation
Medical field	Diagnostic radiology		Physician (diag. radiology) Radiographer (diag. radiology)
	Interventional radiology		Physician (cardio./interv. radiologist) Nurse (interv. radiology)
	Radiotherapy	Teletherapy only Teletherapy + brachytherapy	Radiographer (interv. radiology)
Nuclear medicine	Diagnostic unit only		Physician (nucl. med diag) Nurse (nucl. med diag) Radiographer (nucl. med diag)
	Therapeutic/diagnostic unit		Physician (nucl. med) Nurse (nucl. med) Radiographer (nucl. med)
Dental radiology			
Veterinary units			
Other medical activities			



ESOREX Platform

--- website in development -- European Platform for Occupational Radiation Exposure

Home

Charts

► Public, national correspondants and experts

Query database

Country

All countries

▼

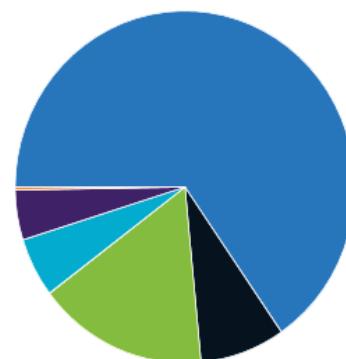
Year

2013 ▼

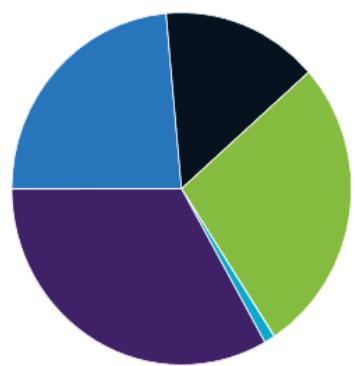
Apply

Monitored workers and collective dose per field

Monitored workers per field



Collective dose per field (man.Sv)





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Monitored and exposed workers per countries

Year

2012 ▾

Workers

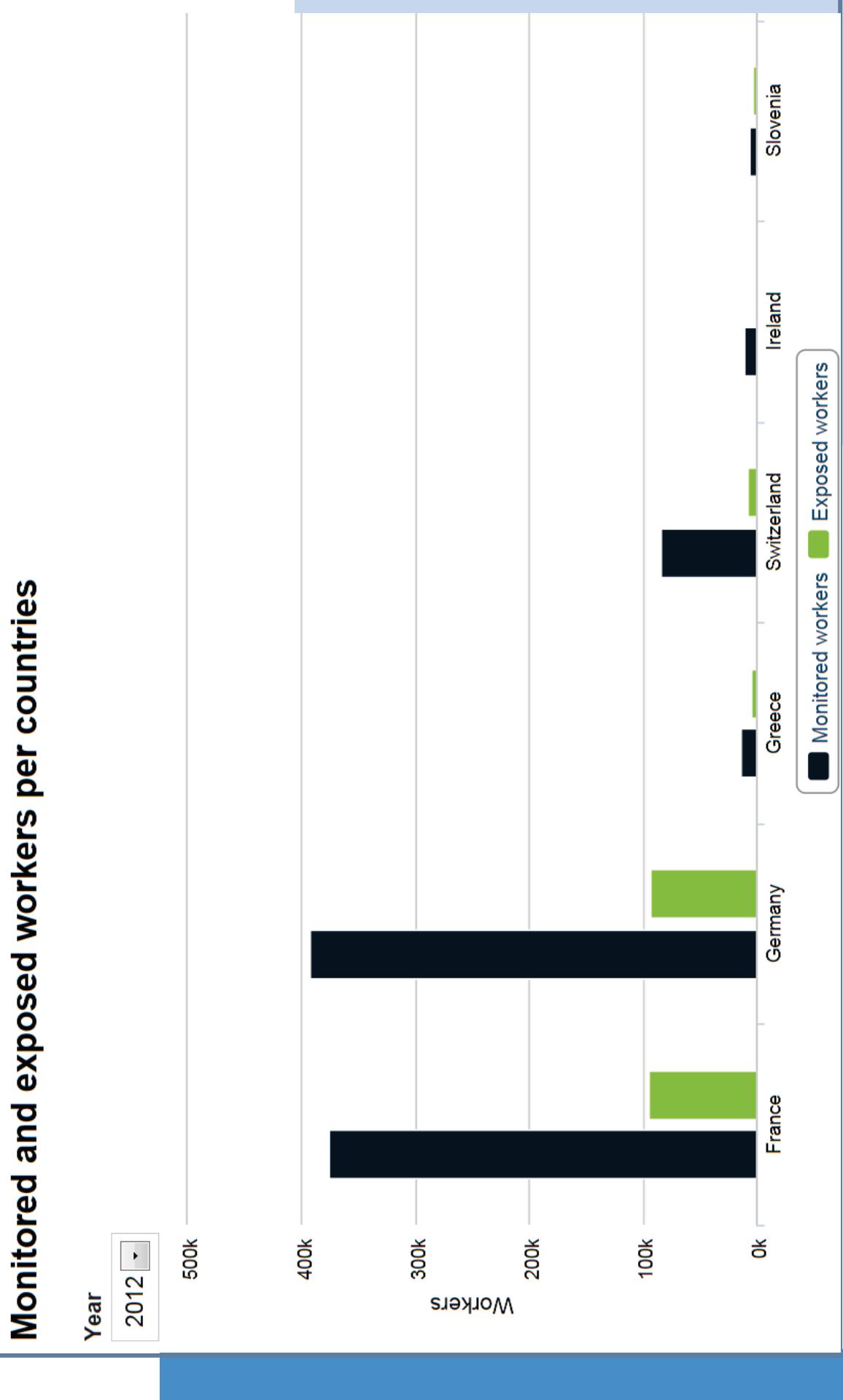
400k

300k

200k

100k

0k





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Charts



Average individual dose per countries and average values over all countries

Year

2012 ▶

1

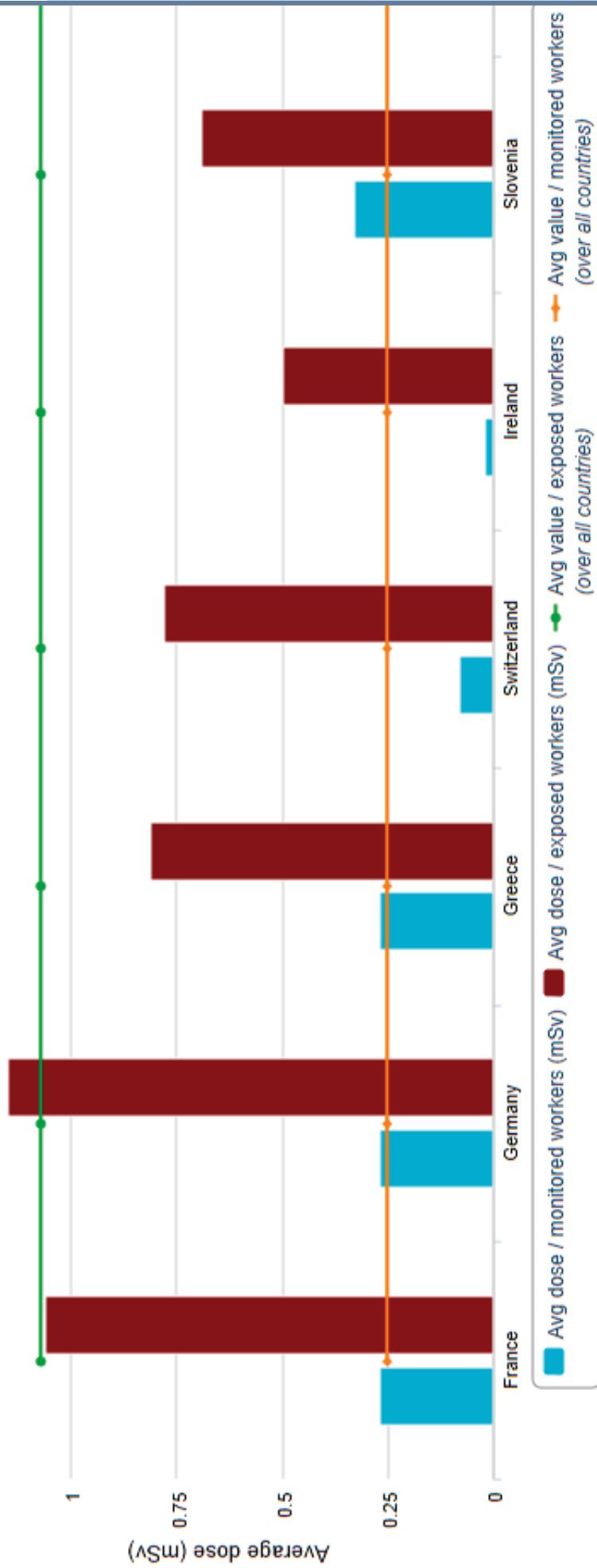
0.75

0.5

0.25

0

Average dose (mSv)



Conclusion

ESOREX-Platform :

A new tool dedicated to occupational exposures has been developed

- It is NOT ONLY a **database**
 - BUT ALSO a **forum** for exchange of experience
 - **Web based competence center** for national practices of ORP in Europe
 - **Network** for central dose registers and regulatory bodies
- Its sustainability will depend on the support of the national competent authorities in Europe and on the involvement of the end-users