CENTRE D'ÉTUDE SUR L'ÉVALUATION DE LA PROTECTION DANS LE DOMAINE NUCLÉAIRE

ALARA AND PROFESSIONAL NETWORKS - PROMOTING OPTIMISATION OF RADIATION PROTECTION

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Optimisation of Radiation Protection - ALARA

- ICRP 103 (2007)

*'the **likelihood** of incurring exposures, the **number of people** exposed, and the **magnitude** of their **individual doses** should all **be kept As Low as Reasonably Achievable, taking into account economic and societal factors.***

*This means that the level of protection should be the **best under the prevailing circumstances,** maximising the margin of benefit over harm.“*

Exposure situations

- **Optimisation of radiation protection should be applied in all type of exposure situations**
  - **Planned exposure situations:** situations involving the deliberate introduction and operation of sources.
  - **Emergency exposure situations:** situations that may occur during the operation of a planned situation, or from a malicious act, or from any other unexpected situation, and require urgent action in order to avoid or reduce undesirable consequences.
  - **Existing exposure situations:** exposure situations that already exist when a decision on control has to be taken, including prolonged exposure situations after emergencies

- And **for all categories of exposed individuals**
  - Public, Patients, Workers, ..

Some key elements for the implementation of ALARA

- The development of a **radiation protection culture** among the involved parties
- A **predictive** approach
- Procedures, structures and tools adapted to the exposure situation
- The sharing of feed-back experience

- A behaviour and a frame of mind
- A questioning attitude of 'individuals':
  - **Have I done all I reasonably can to reduce individual doses and the number of people exposed ?**
- A necessity to work collectively to be able to answer to that question

Role and interest of professional networks in promoting and implementing optimisation of radiation protection

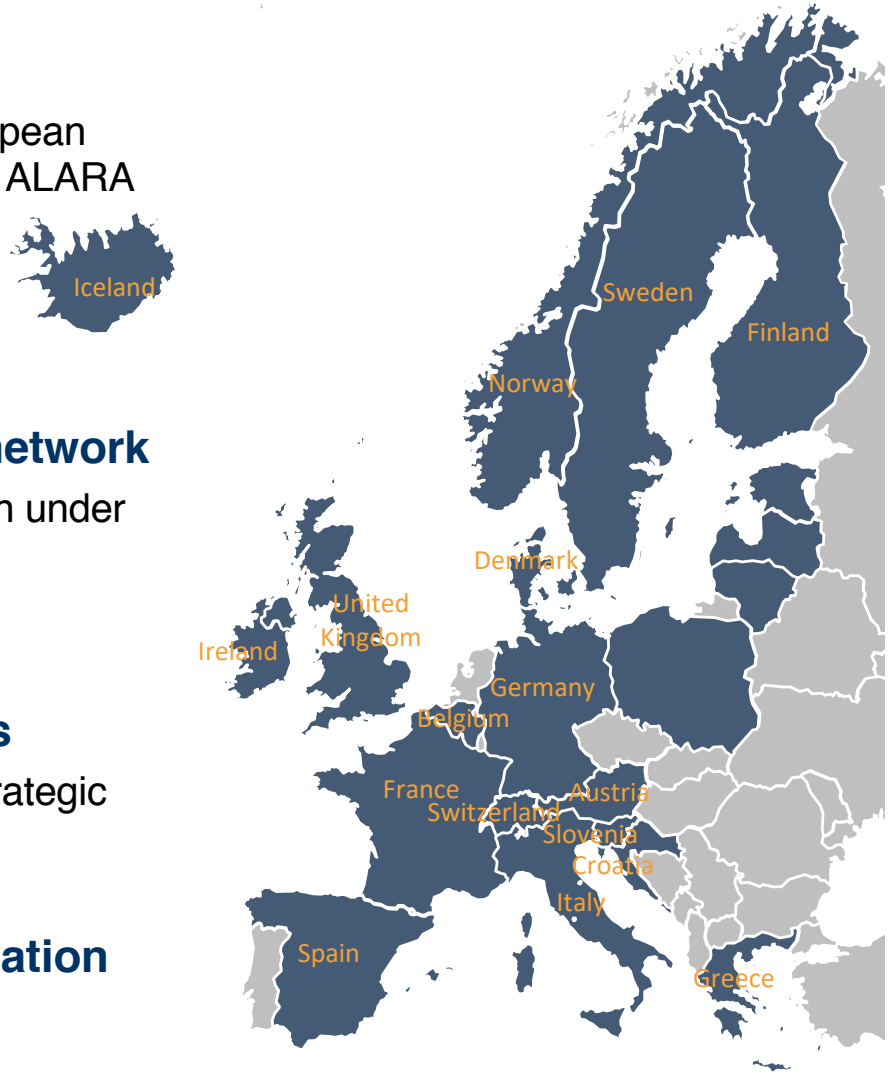
The European ALARA Network (EAN)

- **1996: EAN founded by the European Commission**
  - cooperation of experts from various European organisations mediated by the European ALARA training course
  - European financial support from 1996 to 2004

- **2005: Evolution to a self supporting network**
  - EAN a legal entity, non-profit organisation under French law
  - Coordination: CEPN (Fr) , PHE (UK)

- **2009: Evolution from 8 to 20 Members**
  - Continuation of the EAN association; Strategic Agenda for 2010-2015

- **2014: Continuation of the EAN association**
  - EAN Strategic Agenda for 2015-2020



EAN organisation

Steering group Members, participating to the Administrative Board

BfS – Federal Office for Radiation Protection, Germany
CEPN – Nuclear Protection Evaluation Centre, France
CSN – Nuclear Safety Council, Spain
INSTN/CEA – National Institute for Nuclear Science and Technology, France
EPA – Environmental Protection Agency, Office of Radiological Protection, Ireland
NRPA – Norwegian Radiation Protection Authority, Norway
PHE – Public Health England, United Kingdom
SCK•CEN – Belgian Nuclear Research Centre,
(represents FANC, Belgoprocess, Belgian Association for Radiation Protection and Belgonucléaire) Belgium
SFOPH – Swiss Federal Office of Public Health, Switzerland
SSM – Swedish Radiation Safety Authority, Sweden

Other Steering group Members

EKOTEH Dosimetry Co., Croatia
GAEC – Greek Atomic Energy Commission, Greece
GR – Icelandic Radiation Safety Authority, Iceland
ISS – Italian Institute of Health, Italy
Seibersdorf Laboratories GmbH, Austria
SIS – National Institute for Radiation Protection, Denmark
SRPA – Slovenian Radiation Protection Administration,
STUK – Radiation and Nuclear Safety Authority, Finland

EAN Objectives

- The objectives of the network are defined in the EAN "*Terms and Conditions*", which are formally signed by all the Members

- To **promote the implementation of the ALARA principle** for the protection of **worker**, **public** and **patient** exposures in **all situations**

- To **engage stakeholders** in ALARA and provide a focus and a mechanism for the **exchange and dissemination** of information, knowledge and practical experience

- To identify and investigate **topical issues of common interest** to further improve the implementation of ALARA

EAN Activities

- The EAN ALARA Newsletter
- The EAN workshops
- European surveys
- EAN website
- EAN subnetworks and working groups
- Formal cooperation with other European organisations and networks

EAN ALARA Newsletter

- 40 issues published (2 × year)
- Technical and scientific papers, comparisons of regulations and practice, recommendations from workshops, ALARA news, FAQ ALARA
- Largely distributed (> 2,000 openings)
- Subscription is free

EUROPEAN ALARA NETWORK

NEWSLETTER

40th ISSUE • NOVEMBER 2017

Editorial

You may have noticed this Newsletter has something new. What's the change?

The EAN logo!

We tried to choose something more modern in style but, of course, still illustrating the founding principle of the Network.
In the same vein, we have also changed the layout of the website: you can have a look and comment.

But what does not change is the spirit of the Network. The Newsletter, the website, the **workshops**, – and all the EAN Members behind them continue to be the core components of the EAN. We recently organised a workshop on the application of the ALARA principle in 'emergency exposures situations' and you will find down below some of its outcomes (pp. 2 - 16).

Surveys are also an effective way to share experience and you will find the results of a survey regarding radiation protection practices in dental radiography (p. 17).

The young generation is not forgotten; the Youth Club of the French Society for Radiation Protection and the Rising Generation Group of United Kingdom Society for Radiation Protection have drafted a survey intended for the young generation in radiation protection (p. 19).
Please share this survey to the young RP you know.

The EAN is not a closed network. **If you are interested we cordially invite you to to join.**

The EAN Newsletter Editorial Board. –
Sylvain Andresz, Julie Morgan, Pascal Croüail and Fernand Vermeersch.

The EAN Newsletter is distributed free of charge by the European ALARA Network.
Do not hesitate to distribute it to organisations or colleagues that might be interested.
Subscription: direct with [illegible] *or e-mail to* [illegible]

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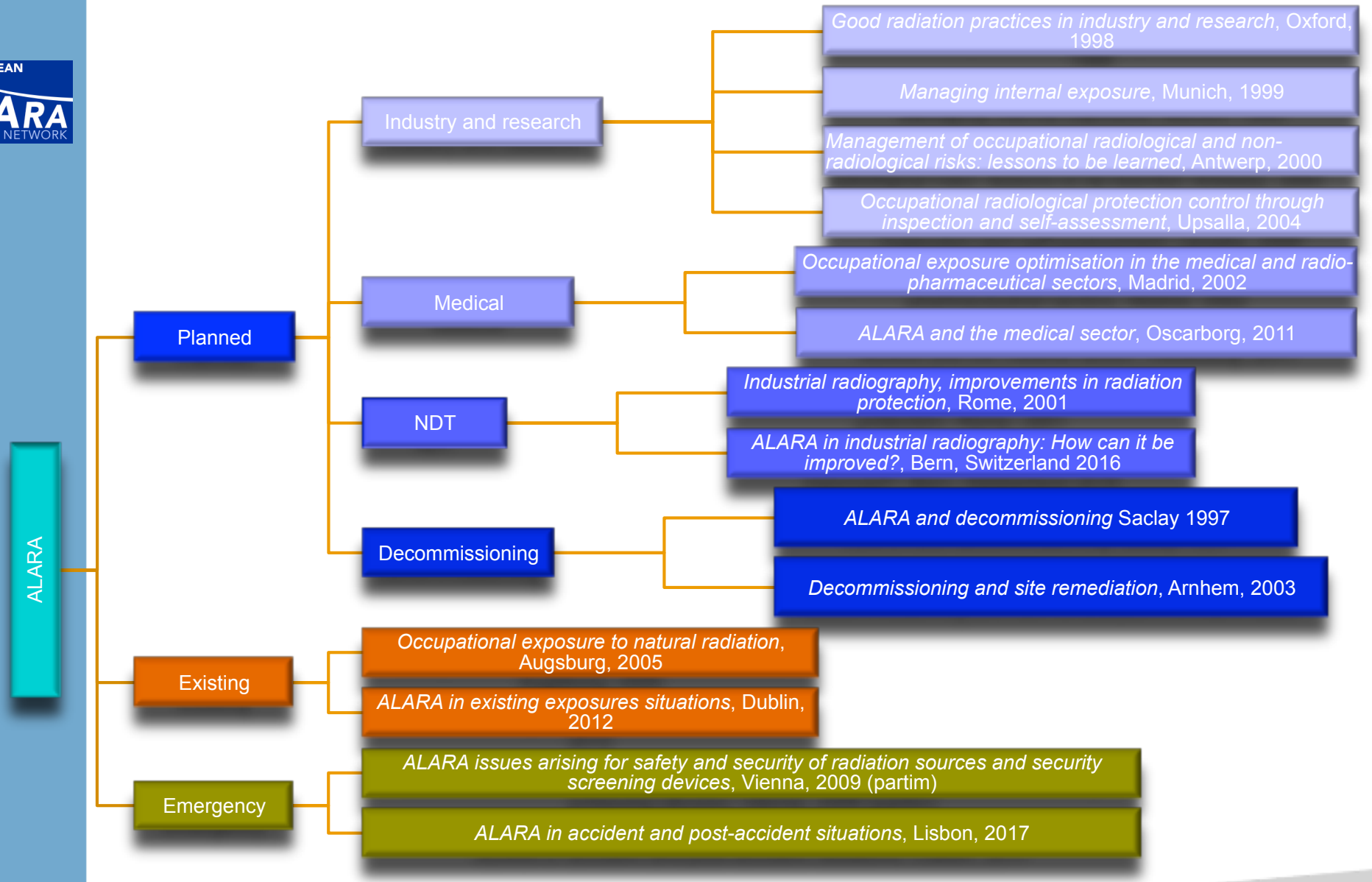
EAN Workshops

- **17 Workshops** have been organised
  - 50 to 80 participants per workshop from 10 to 20 countries
  - Mixing authorities, manufacturers, trainers, experts, research etc.
  - Plenary presentations + working groups
  - ***Conclusions and Recommendations*** produced and aiming to be disseminated
    - EU, ICRP, IAEA, national authorities, operators, education & training organism etc.
  - Common themes from Conclusions and Recommendations
    - Improve safety culture/RP/ALARA culture;
    - Harmonize and develop good training standards;
    - Involvement in risk management;
    - Set up adequate system for feedback from incidents
  - Last conclusions published in the *Journal of Radiological Protection*

EAN Workshops



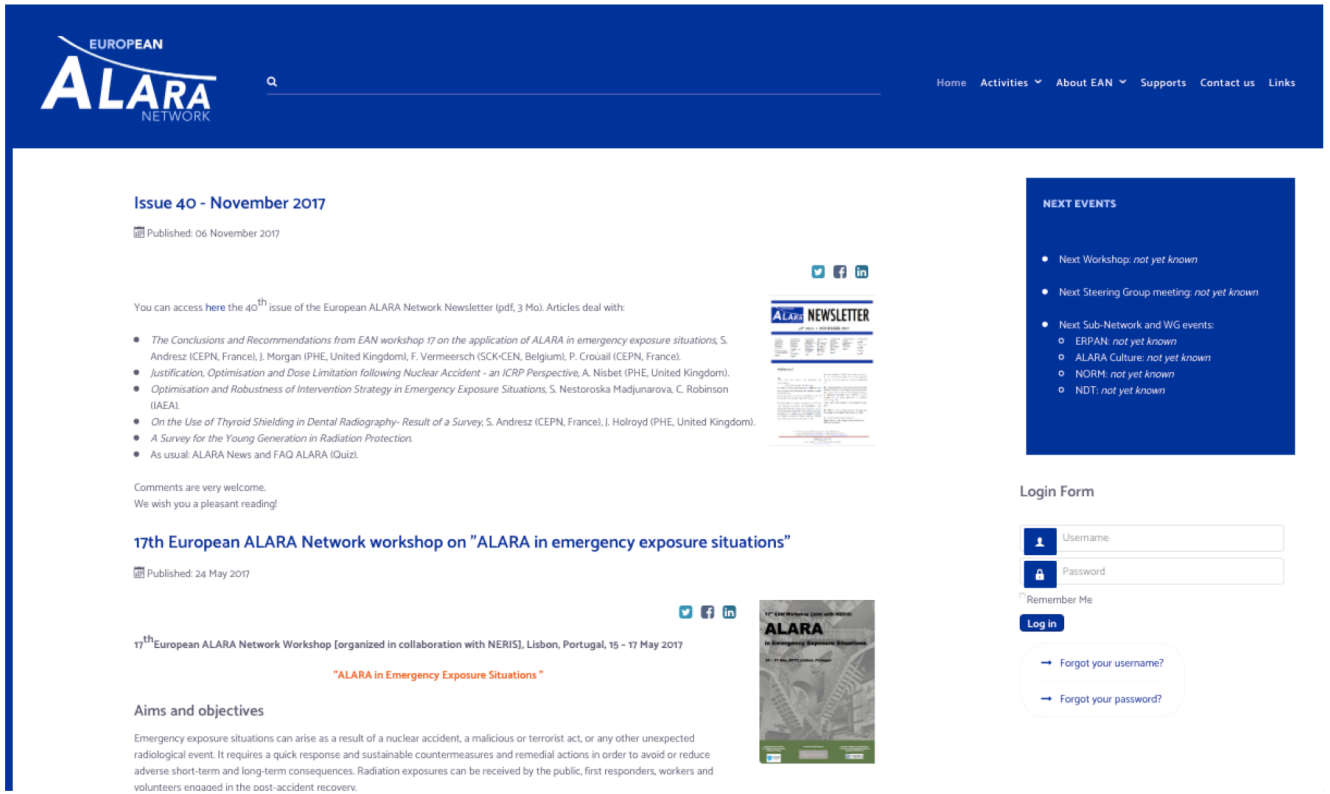
European surveys

- **8 surveys organized**; on request
- Disseminated with the help of the Members
- Synthesis is distributed to the participants and later published on the website

	Delineation and access to regulated areas
	Radiation protection of Aircraft crew (2 X)
	Dose constraints
	Radon exposure management
	The implementation of the European Directives 96/29 and 97/43 in national regulations
	The management of radioactively contaminated soils
	Potential exposures in nuclear installations
	The Diagnostic Reference Levels (DRLs) in Europe

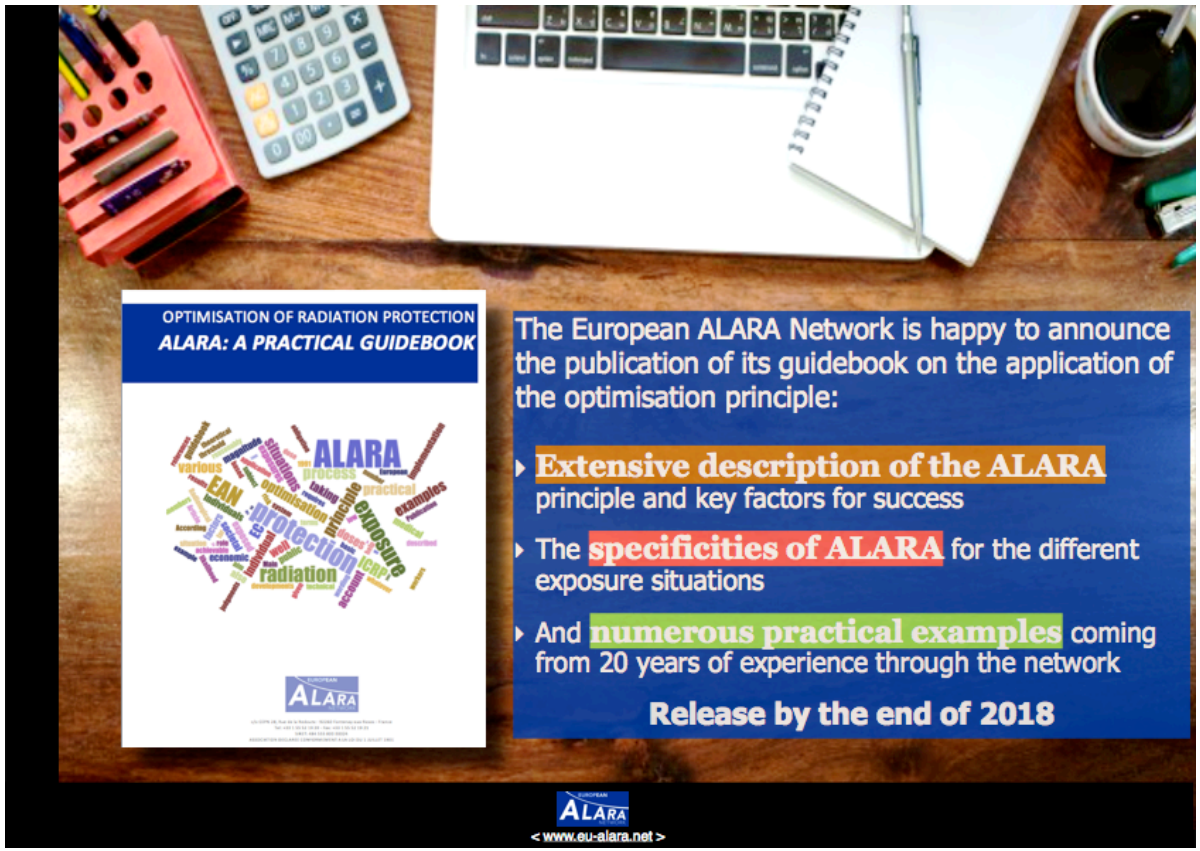
EAN Website

- **EAN website : www.eu-alara.net**
- Important media for disseminating information, publications
- Between 150 to 300 visitors/month



Working Groups

- **ALARA Training** (*no longer active*)
- **ALARA Tools** (*no longer active*)
- **ALARA Culture** (2009)**:** Elaboration of a book



Example of impacts

- **Conceptual framework of RP** : influence on ICRP (ex. RP06 paragraph 133 (dose coefficients and low radon emanation from W9)
- EAN is now a Specific Liaison Organization of ICRP
- **Regulatory body activities** : Modification of regulatory requirements and/or radiation protection regulations and practices (ex. national plan in Norway)
- **EU research**: participation of EAN in
  - the SMOPIE project (internal exposure from Industrial Natural Sources (W1&3);
  - EURAIDE (European Accident and Incident Data Exchange)
  - TRASNUSAFE (Training Scheme on Nuclear Safety Culture)
- **Devices:** development of an alarm device called “sentinelle” for advising when the NDT source is not back in the container
- Establishment of **database on radiation protection incidents: RELIR/OTHEA**: http://relir.cepn.asso.fr/index.php/en.html

Cooperation with other organisations

- Observer, participation in EU projects; organisation of joint workshop etc.
  - **EFNDT**: European Federation for NDT
  - **EFRS**: European Federation of Radiographer Societies
  - **ESR**: European Society of Radiology
  - **EFOMP**: European Federation of Organisations for Medical Physics
  - **NERIS**: The European platform on preparedness for nuclear and radiological emergency response and recovery
  - **EUTERP:** European Platform on Training and Education in Radiation Protection
  - **ENETRAP:** European Network on Education and Training in Radiological Protection
  - **EURADOS:** European Radiation Dosimetry Group
- Co-operation with other existing networks:
  - ISOE (Information System of Occupational Exposure): Network of RP managers in nuclear power plants and RP authorities
  - AFAN African ALARA Network:

As a synthesis, EAN is

- **a forum for discussions** between stakeholders who otherwise would have little or no opportunity to interact.
- a **media of information** with regard to ALARA
- actively **sharing and disseminating practices and experience** to help raise standards
- a **time-saving search tool** providing a rapid means of getting answer to question, through a contact list of experts or by the use of surveys
- an **alerting mechanism**: information on incidents can be disseminated quickly; new RP issues can be identified and disseminated

Different kind of 'professional' networks can help in promoting ALARA

- **Local, National, Regional, International level**
- **Various fields: industrial, medical, nuclear,…**
- **Professional societies**
  - eg: medical professionals (physicists, radiographers, rdiologists, nuclear medicine,...), industrial radiography,
  - RP societies,
- **Dedicated network (one sector or multi-sectorial)**
  - eg: Occupational RP (ISOE for RP in nuclear power plants, RP0s, ...)
  - eg: ALARA Networks (all sectors), eg EAN, ARAN,..
  - eg: Authority networks (ERPAN, HERCA)
  - ...

Interests of such networks / associations

- Members sharing the same objectives
- Particular benefit for isolated professionals
- Creation of individual relationships
- Sharing of experience
- Identification of 'good practices'
- Creation of knowledge
- Training
- Benchmarking
- Harmonisation of practices
- Spreading a professional culture
  - RP culture but also sharing issues of other professionals
  - For a better understanding and better collaboration

Challenges of networks

- **Resources**
  - Financial resources
  - "Human" resources (time to be spent in participating in activities of the network/association)

- **A need to keep alive and to regularly**
  - Adapt to evolving context
  - Sustain motivation
  - Renew activities (strategic plan)
  - Involve young generations
  - Reach new members
  - Create links and cooperation between networks/societies of RP professionals and other professional networks

Thank you for your attention