

How our company contributes to radiation protection  
COCIR - European Coordination Committee of the Radiological,  
Electromedical and Healthcare IT Industry

## COCIR supports the EuroSafe Imaging campaign: working together for patient safety

Be part of the European Society of Radiology's radiation protection initiative, become a Friend of EuroSafe Imaging. [www.eurosafeimaging.org](http://www.eurosafeimaging.org)

COCIR welcomes the launch of the EuroSafe Imaging campaign to promote awareness and build collaboration around the importance of radiological imaging, while taking measures to protect patients from unnecessary exposure to radiation. COCIR is committed to promoting the campaign, raising awareness and training amongst radiologists, and helping accelerate the use of technologies in Europe that can help meet the campaign's objectives.

### COCIR's four Es: Endorse, Explain, Enhance, Educate

COCIR welcomes the European Society of Radiology's EuroSafe Imaging campaign to promote awareness and build collaboration around the optimised use of radiological imaging, as industry and healthcare professionals share a long history of pioneering technologies to reduce and optimise exposure to radiation.

Innovative technologies are crucial elements in improving clinical outcome. Amongst other technologies, x-ray, CT, radiation therapy, interventional procedures are used at all stages of patient care: screening, early diagnosis, treatment planning, monitoring and therapeutic procedures.

The industry continuously develops technologies to minimise radiation dose to patients and healthcare professionals. For example:

- » Moving conventional radiology to digital radiology
- » Introducing major technology breakthroughs to achieve low-dose CT
- » Measuring and monitoring dose through management software

COCIR encourages healthcare providers to prioritise dose reduction and dose optimisation when replacing ageing equipment or planning new investment.

COCIR also supports the European Society of Radiology in the promotion of training and education for healthcare professionals.

COCIR welcomes the newly published European Union legislation that promotes dose reduction to improve patient safety and support the EuroSafe campaign.

We appreciate initiatives to improve safety and encourage the European Union to promote the faster introduction of dose optimisation – both through guidance to Member States and the use of its own funding mechanisms.

### COCIR's commitment to radiation dose optimisation and reduction

#### COCIR technologies – supporting clinicians, benefiting patients

Ionising radiation has been used for over a century in medical imaging with untold benefits to patients. Though rising radiation doses from increasing medical procedures is of concern, it is important to recognise the benefit of a quality imaging examination that addresses pertinent clinical issues affecting patient care. Examinations should only be conducted when necessary and at the lowest radiation dose consistent with acquisition of the desired clinical information and in adherence to the principle of ALARA - as low as reasonably achievable - widely used in radiological protection.

COCIR's members work with clinicians to design new and improved technologies. Dose alert and reduction features have been available on CT systems and recent advances have been made to help clinicians better optimise radiation dose to patients: "Low-dose" CT provides the same clinical image quality using reduced radiation doses comparable to conventional x-ray, and new software has been introduced to measure, track and estimate patient dose.

Some hospitals in Europe now use these technologies, benefiting patients, clinicians and increasing efficiency, but others are still to replace ageing equipment or introduce "low-dose" systems for sensitive populations such as children or patients requiring multiple examinations. With the principle of ALARA reinforced in new EU legislation<sup>1</sup>, COCIR expects these technologies to become more prevalent in Europe and urges the EU to use funding mechanisms, such as structural funds, to assist eligible countries to adopt them.

#### COCIR – partnering for radiation protection in Europe

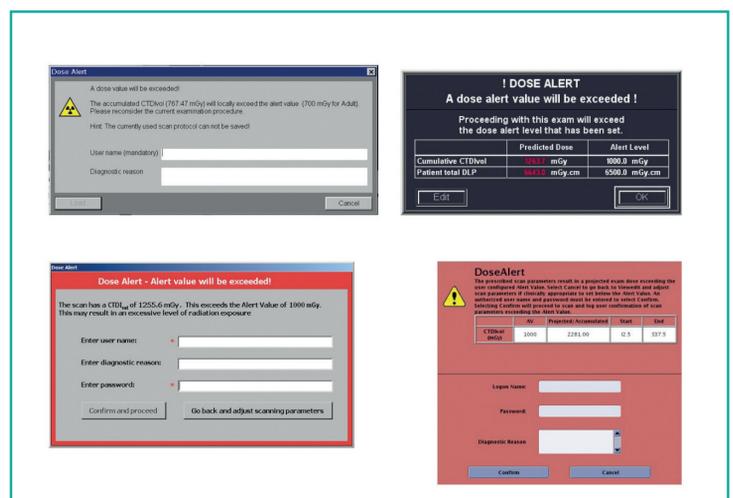
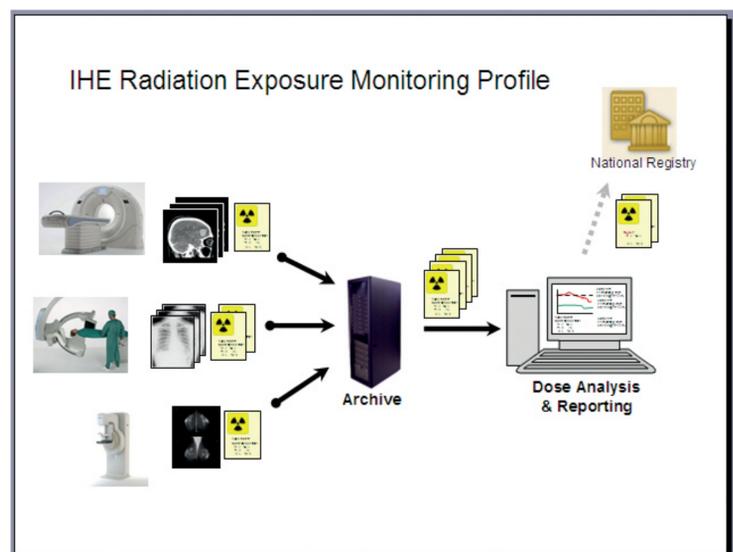
COCIR's CT manufacturers have worked with the Heads of Europe's Radiation Protection Control Authorities (HERCA) and issued a voluntary commitment on dose awareness and reduction in May, 2011. Work is ongoing in collaboration with other stakeholders (HERCA, scientific community, ESR, EMAN, EFRS, etc) on standardisation of dose reduction claims and dose estimation through phantom development and dose metrics such as size-specific dose estimate (SSDE).

COCIR's Radiation Task Force monitors regulations affecting medical devices using ionising radiation and assesses the impact of regulatory changes related to radiation dose. The Task Force is seeking harmonisation of those requirements across Europe, and has engaged in regular dialogue with the European Commission Directorate General for Energy (ENER) on the recasting of the EURATOM Directives and the EU guidelines on Radiation Protection (RP 162).

### Dose reduction technologies in CT systems

The following innovative features in CT systems allow for reduced dose in examinations, and enable hospitals to monitor and prevent excesses in the total dose given to a patient over a given period of time:

1. Iterative reconstruction technology - improves image quality and allows considerable dose savings
2. Dose modulation options - optimise dose for different patient sizes and can reduce dose to sensitive organs
3. Predefined protocols for adults and children
  - » Provision of specific training curricula
  - » Promotion of dose awareness
  - » Leveraging system dose reduction features
4. Dose management and reporting
  - » Radiation exposure monitoring (IHE-REM profile) (see Fig. 1)
  - » Dose alert feature (see Fig. 2)
  - » Access control to dose reference level settings, etc.



<sup>1</sup> Council Directive 2013/59/EURATOM laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, 5 December 2013

Visit the COCIR website for more information [www.cocir.org](http://www.cocir.org)