



Sustainable Competence
in Advancing Healthcare



COCIR **SELF-REGULATORY INITIATIVE** FOR MEDICAL IMAGING EQUIPMENT

3rd ANNUAL FORUM

FROM ENVIRONMENT TO SUSTAINABILITY



**COCIR SELF-REGULATORY INITIATIVE
FOR MEDICAL IMAGING EQUIPMENT**

MAGNETIC RESONANCE EQUIPMENT
MEASUREMENT OF ENERGY
CONSUMPTION 2011

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COCIR
SUSTAINABLE COMPETENCE IN ADVANCING HEALTHCARE

European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry





FOCUS ON ENVIRONMENT

- The COCIR SRI focused so far on reducing environmental impacts. From LCA, the most significant impact is caused by energy consumption in the use phase.
- But:
 - ✓ Medical devices are complex equipment with many functions, used for saving lives and improving life's quality.
 - ✓ Safety for users and patients is a fundamental aspect.
 - ✓ Medical devices are capital investment equipment for healthcare providers.
- **At the design stage, environmental considerations have to be weighted against benefits for patients and users.**



ENERGY CONSUMPTION

- Potential reduction of energy usage has been investigated for the modalities with higher environmental impacts and targets/goals are set.
- Additional functionalities, diagnostic capabilities and benefits for patients and users are going to increase the energy consumption.
- Companies are adding energy saving options for the user to select.
- For remaining modalities we expect similar behavior: less significant impact (lower energy consumption, smaller number of equipment) and lower improvement potentials (mature technologies).



TOWARDS SUSTAINABILITY



- Medical devices are used to save lives and improving life's quality. Access to healthcare is of primary importance.
- For medical devices the three pillars are: User Benefits, Environment and Patient Benefits
- Environment: energy consumption/efficiency is the most significant aspect, therefore there is no need to have additional indicators.
- Resource efficiency is high on the agenda of COCIR Members. Refurbishment of used medical devices extends lifetime and saves energy and resources.



SUSTAINABLE MEDICAL DEVICES

- A Doctor Thesis is being developed in Siemens, born around the COCIR SRI. The objective is to define a tool for sustainable design for medical devices.
- The Doctor Thesis will be published soon therefore no details are yet available.
- The idea is to define a set of indicators for environment, economy and patient benefits and the methodologies to measure them.
- While environmental indicators can be quantified by LCA, for the other indicators new methodologies are proposed.



INDICATORS

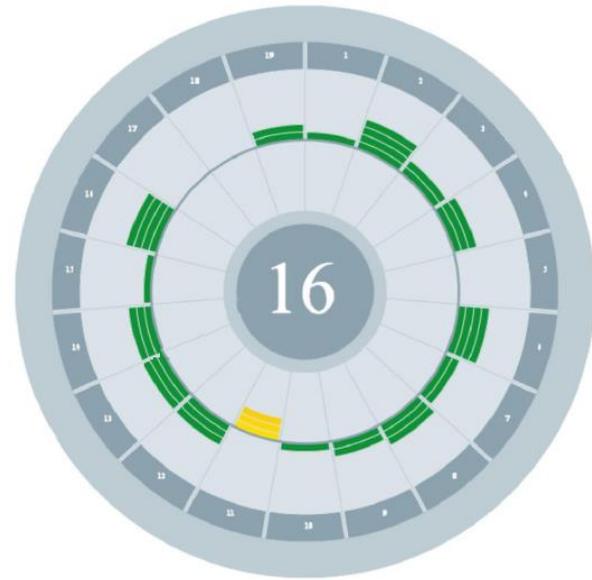
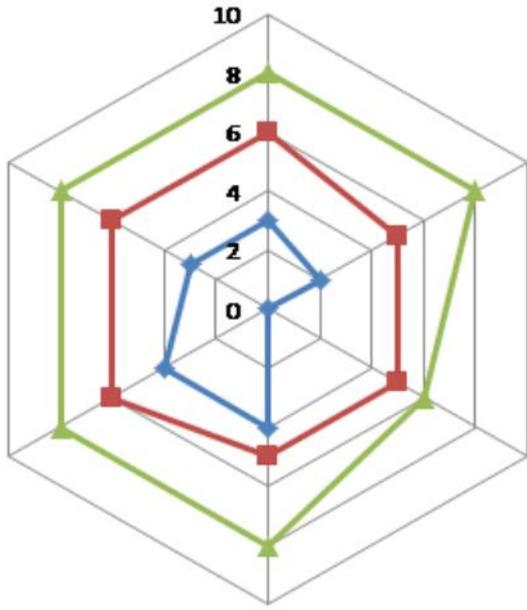
Example of indicators for the economical and social pillars of sustainability:

- Restricted materials
- Clinical performance
- Reimbursement capability
- Capability for treatment/diagnosis
- Product campaigns/education
- Scan speed
- Innovativeness
- Image quality
- Serviceability
- Reliability
- Design/product appearance
- User friendliness
- End of life options
- Affordability
- **Reusability/Easiness for reusability**



SUSTAINABLE MEDICAL DEVICES

- The methodology provides a “picture” of sustainability which can be represented graphically with radar diagrams.
- Its is not different from the Environmental Footprint Methodology developed by EC so far but it encompasses the three pillars and not only environment.
- The indicators can be weighted to get a single index





BENEFITS OF THE APPROACH

- Sustainability indicators provide a full picture of equipment performances interesting for purchasers and users.
- The issue of trade-off and incomparability is solved. Higher energy usage can be balanced by higher performances, benefits and economic returns. It is up to the purchaser to decide which aspects to favor.
- The usefulness of an aggregated index has to be evaluated with care. It may be relevant for internal use to evaluate design options.



COCIR SRI WAY FORWARD

- The details of the methodologies are still unknown.
- Such approach, like LCA, is very useful during the design phase to compare new generations with old ones. Comparing different products from different manufacturers is a different challenge.
- Methodologies for quantifying indicators other than environmental ones need to be verified against:
 - Feasibility
 - Sensitiveness
 - Cost and resources needed
- The SRI SC will evaluate the methodology in 2014/2015 to see if it is suited for a pilot project on a few selected indicators.