



Sustainable Competence
in Advancing Healthcare



SELF REGULATORY INITIATIVE FOR MEDICAL IMAGING EQUIPMENT

1ST ANNUAL FORUM

SRI PROCESS AND METHODOLOGY FOR MEDICAL IMAGING EQUIPMENT

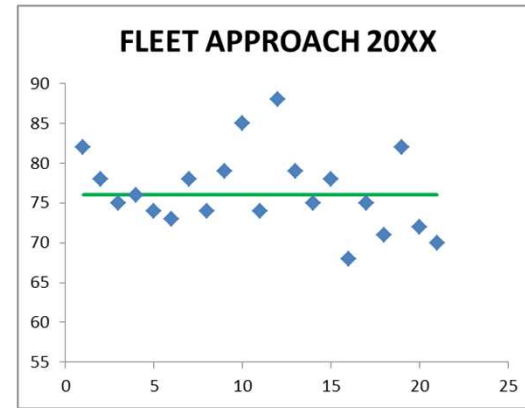
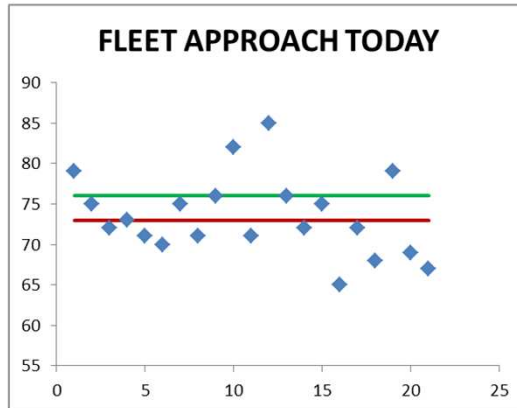
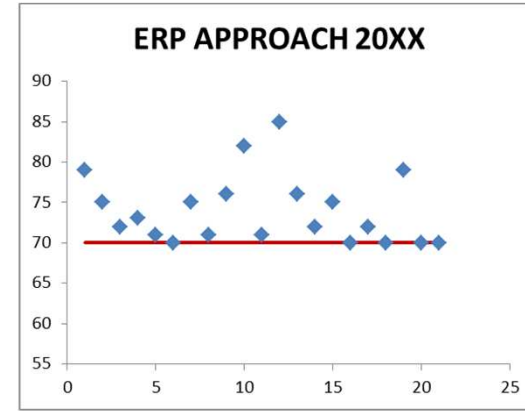
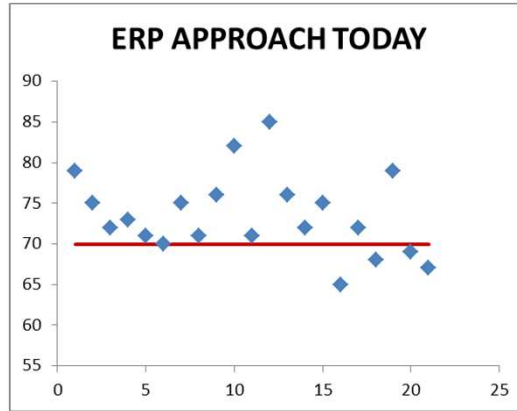
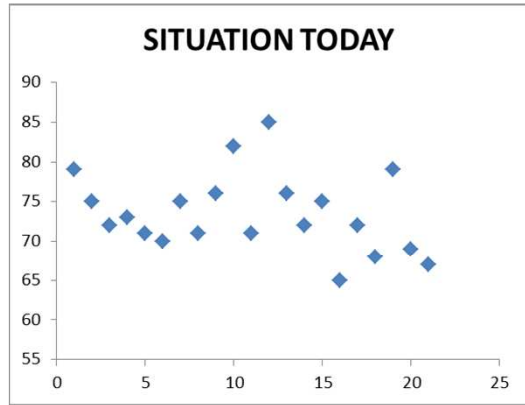
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THE SRI APPROACH



FLEET APPROACH Vs ErP DIRECTIVE APPROACH





THE FLEET APPROACH POSSIBLE

MARKET COVERAGE

Modality		2009 Market Value	2010 Market Value	Estimated EU Market Coverage	Other targeted companies
Computer Tomography (CT)		581 M€	566 M€	98 %	Some international ones
Magnetic Resonance Imaging (MRI)		708 M€	777 M€	96%	Esaote, Fonar, Aurora, Medrad, Neusoft
Nuclear Medicine (SPECT, PET)		244 M€	240 M€	98%	Mediso
Ultrasound		801 M€	814 M€	82 %	Esaote, Sonosite, Mindray, Ultrasonix, Zonare, Medison
X-ray	Cardio (45%)	377 M€	380 M€	92 %	None
	Others (55%)	503M€	569M€	65 %	Approx. 50 companies



WHY THE FLEET APPROACH

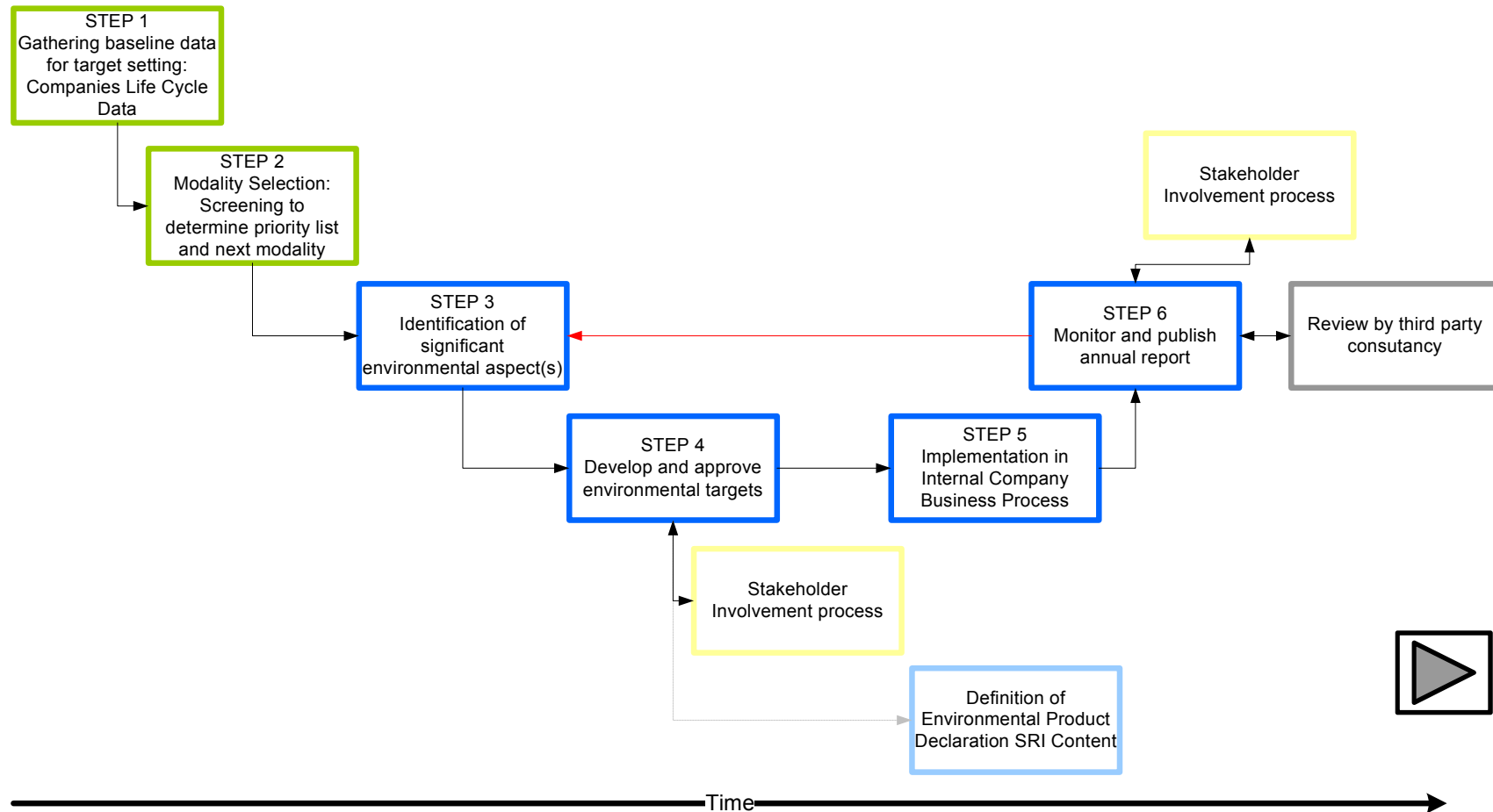
- The fleet approach provides more flexibility that is of paramount importance for the medical sector.
- Companies are given different tools to achieve targets, and are free to adopt technological solutions not restricting their ability to innovate and develop new technologies
- Increasing the average performance of the market could be achieved also acting on the market mix.



THE SRIV2 METHODOLOGY



THE SIX STEP METHODOLOGY



Overview SRI 6 STEPS Methodology (the green boxes signify task that need to be done once . The blue boxes cover the four steps that represent a closed loop: to be repeated for continuous improvement and transparency)



STEP 1 AND 2 RESULTS

Modality	Environmental loads ranking 2009	Risk Assesment ranking 20xx*	Average Ranking	Final Ranking
MRI	1	1	1	1
CT	3	2	2,5	2
X-Ray	2	3	2,5	3
Nuclear Medicine	4	4	4	4

**depends on the typical modality innovation cycle*





STEP 3 RESULTS

MRI

Identification of most significant environmental aspect		
Aspects	Average internal ranking	Final COCIR Ranking
Energy use	1	1
Non ferrous metals	2	3
Ferrous alloys	3	4
Helium consumption	2	2
Magnet metals	3	5
Copper in Gradient coil	4	8
Copper: end of life	2	6
Copper: production	3	7

CT

Identification of most significant environmental aspect		
Aspects	Average (internal ranking)	Final COCIR Ranking
Energy use	1	1
electronic/electric parts	2	4
Non-ferrous metals and alloys	3	2
ferrous alloys and steel	3	3





ONE MODALITY PER YEAR

- The SRI for Medical Imaging Equipment applies to the following modalities:
 - Magnetic Resonance
 - Computer Tomography
 - X-ray
 - Nuclear Medicine
 - Ultrasound
- The complexity of imaging equipment requires time and resources to develop common definitions for system boundaries, functional units, categorizations, use scenarios and most important a test procedure to measure the energy consumption.

	2011/12	2012	2013	2014	2015
MRI	✓				
CT		✓			
X-Ray			✓		
Nuclear Medicine				✓	
Ultrasound					✓



TARGET SETTING

To determine the target, 3 different scenarios are defined according to different assumptions based on expert judgement.

- **Business as usual scenario (BAU):** the basic assumption is that given the situation today, during the innovation cycle all the competitors will invest in research to match the best performing players on the market.
- **Best not yet available technology scenario (BnyAT):** each company provides a reasoned reduction value, based on the “best not yet available technology” (technology not yet available but still in the research and development phase) that could be achieved during the innovation cycle. The scenario is based on the assumption that all the companies could reach a reduction equal to the provided reduction values.
- **Beyond as usual scenario (Beyond BAU):** This scenario is based on the assumption that in the innovation cycle all the players will improve their products according to the average reduction of the BnyAT, except the best performing company that will improve the performance according to its own prediction, as improvements for the top runner are more difficult to obtain. The average value obtained from this scenario is chosen as the target for the next innovation cycle.



TARGET SETTING

3. Gather Company Expert judgment on feasible improvement (expert judgement - Best NOT yet available technology (20xx)) for later verification of final target (related to functional unit and use scenario)*

Forecast individual feasible improvement per Company (Expert judgment)	-10%	-19%	-20%	-21%
Average feasible improvement for SRI companies (expert judgment - Best NOT yet available technology (20xx))	-17,50%			

* Expert judgment of individual companies for aspect that has been selected in the previous step

Note: The top-performer can identify itself as the leader by recognizing its aspect value to be equal to the average absolute value of the Scenario One BAU. This company will be allowed to set itself its declared expert judgment improvement potential percentage, if this is lower than the BAU percentage. This principle will be automatically included from COCIR in the calculation of the overall proposed target.

Scenario	Company A	Company B	Company C	Company D	(absolute) average of aspect (all SRI companies)*	Range for setting targets	Description
Energy use kWh of individual companies - today - (Incl. Frontrunner considered as BAT)	12,0	15,0	13,0	15,0	13,75	baseline today	
Scenario One Energy use (kWh) BAU - 20xx -	12,0	12,0	12,0	12,0	12,00	-12,7%	All SRI companies will aim to achieve in average what the front runner has achieved today (goal to mutually achieve -14.6%)
Scenario Two Energy use (kWh) Best NOT yet available technology -20xx-	9,9	12,38	10,73	12,38	11,34	-17,5%	Each individual SRI company will strive to achieve what has been predicted on average by the experts (-17,50%)
Scenario Three Energy use (kWh) BEYOND BAU - 20xx	10,8	12,38	10,73	12,38	11,57	-15,9%	Each individual company will strive to achieve what is possible on avg. today (-17,50%, except Front Runner -10%), adding up to a total improvement -15,9%

* Absolute average values are reported. They are relevant for the individual company target setting. Especially the average absolute value of Scenario One BAU is important for the individual company to identify itself as the possible top-performer if its aspect value to be equal to the average absolute value.

Note: An additional incentive for the designer can be abstracted from the table since the company can see the average value of absolute performance and thus determine its actual standing. So there will be no extra need to report confidential information to individual members.



ULTRASOUND EQUIPMENT PILOT PROJECT



ULTRASOUND PILOT PROJECT

- The Ultrasound pilot project was launched in 2009 as a pilot to gather experience for developing the SRI methodology.
- Ultrasound equipment was chosen because of the relative simplicity, the companies in the SRI producing it (7 out of 11) and the already well established ecodesign practices. The lessons learnt from the US pilot helped to develop the SRIv2.
- The Steering Committee decided not to apply the new methodology SRIv2 to Ultrasound, not to lose the achievements obtained in 2010, but to start in 2010 with MRI.
- The ultrasound pilot project committed participating companies to achieve by 2012 a reduction of 25% in energy consumption of sold products compared to 2005 baseline (14,5% compared with 2009 level).
- The new methodology will be applied to ultrasound starting from 2014/2015.



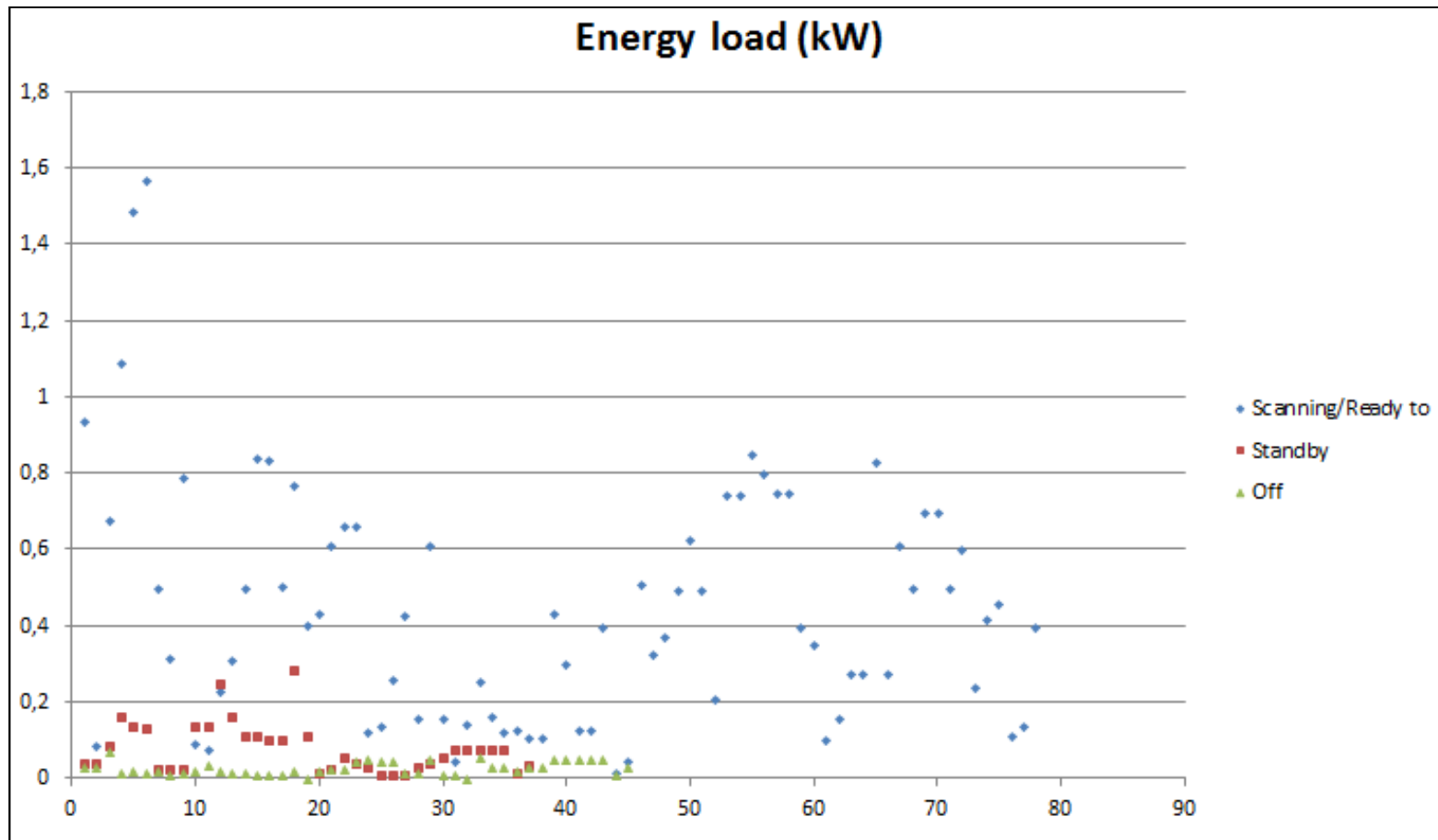
ULTRASOUND PILOT PROJECT

Year	Total annual sales	Total annual sales as a % of 2005 annual sales	Total annual energy consumption of all new products sold	Total annual energy consumption of all new products as a % of 2005 annual energy consumption	Actual average annual energy consumption of all new products sold in kWh (per unit and year)	Actual average annual energy consumption of all new products compared to 2005	Predicted average annual energy consumption of all new products sold	Predicted annual energy consumption of all new products compared to 2005
	Units		kWh		kWh/unit year		kWh/unit year	
2005	17099	100%	15.757.081	100,00%	922	100,00%	-	
2006	20260	118%	17.536.665	111,29%	866	93,93%	-	
2007	21526	126%	17.193.377	109,12%	799	86,67%	-	
2008	22316	130%	16.606.597	105,39%	744	80,75%	-	
2009	17295	101%	13.977.060	88,70%	808	87,70%		
2010	19030	111%	13.858.605	87,95%	728	79,03%	769	83,5%
2011							730	79,2%
2012							691	75,0%



ECODESIGN DATA SOURCE

Ultrasound energy product data





CONCLUDING REMARKS

- Practical method developed.
- Ultrasound project running and set targets will be achieved by 2012.
- Method further explained for MRI in the afternoon session.
- Discussions already ongoing to include therapy equipment and cyclotrons starting from 2015/2016.



COCIR



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Thank you very much