

 **MELODI** Multidisciplinary European Low Dose Initiative

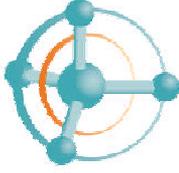
MELODI: Multidisciplinary European Low Dose Initiative

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 **MELODI** Multidisciplinary European Low Dose Initiative



MELODI

Multidisciplinary European Low Dose Initiative

The mission of MELODI is to coordinate and promote European research on the risks associated with low-dose exposure to ionizing radiation

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Introduction

There are concerns about the associated short and/or long term health effects after low ionising radiation exposure .

Actual Radiation Protection Standards in Europe are based upon scientific knowledge (UNSCEAR) and recommendations of the International Commission on Radiological Protection (ICRP).

Radioprotection for high doses is well established. However, with respect to low doses a number of uncertainties and open questions exist.

•The report of the HLEG in 2009 pointed out that a **better understanding as well as the acquisition of new scientific knowledge is needed in order to improve the protection of the public, radiation workers and medical patients from adverse radiation health effects.**



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Key questions:

- How robust is the current system of radiation protection and risk assessment?
- How can it be improved?
- What are the areas of greatest uncertainty in radiation research?
- What are the research priorities?

HLEG also proposed an operational strategy for getting answers to these questions involving the setting-up of R&T in Europe on a long term basis, **through a dedicated organisation.**

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Key questions:

On these grounds a platform and a network of research have been created:



- 1.the **European platform MELODI « Multidisciplinary European Low Dose Initiative »** consisting of major national bodies with research programmes and long term commitment to low dose risk research in Europe and designed to combine and pilot efforts on low dose ionising radiation research in Europe. www.melodi-online.eu
- 2.(as part of the 7th Framework Programme of Euratom) the **Network of Excellence (NoE) DoReMI « Low Dose Research towards Multidisciplinary Integration »**, as an operational tool for addressing/resolving HLEG key policy questions and developing the MELODI platform. www.doremi-noe.net




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MELODI: Multidisciplinary European Low Dose Initiative

MELODI is an European Platform dedicated to low dose radiation risk research. In 2010 MELODI was founded as a registered association with 15 members.

MELODI is a European research platform, open to all interested scientific and regulatory organizations and stakeholders.



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Recent Members:

CREAL, Spain
DUTH, Greece
NCCRRP, Bulgaria
NINCBP, Czech Republic
ENEA, Italy
IRA, Switzerland
NRIRR, Hungary
SSM, Sweden
 and
Dr. Wolfgang Weiss (BfS)
 as honorary member

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How to join MELODI

The MELODI Association is open to European organisations that have missions in the field of low dose radiation research and which would be willing and capable to contribute to the goals of MELODI.

To join MELODI, the organisation should send a letter of interest to the [Chair of MELODI](#). The letter should be signed on behalf of the organisation and include:

- A general presentation of the organisation.
- An overview of mandate, activities and financial and human resources implemented by the organisation for research in low dose risk research.
- The completed and signed [Appendix 3 of the Statutes](#).

After a first evaluation of the dossier by the Secretariat on completeness and eligibility, the candidate- members will be invited to the next Board meeting to present themselves, to help the Board making an evaluation of the candidate-members. The final approval is by the General Assembly, after the payment of first annual membership fee.

- [MELODI Internal Rules](#)
- [MELODI Statutes](#)
- [Appendix 3 of the Statutes](#)

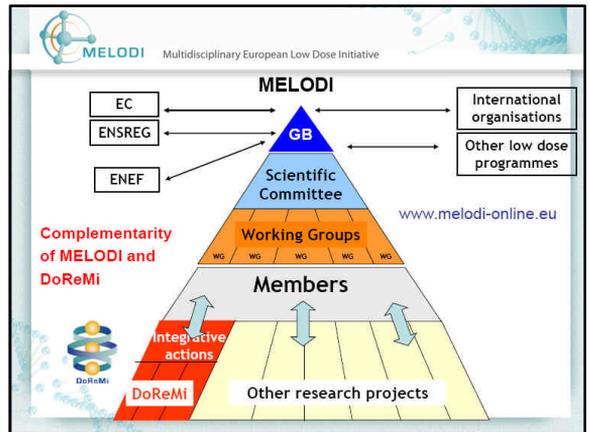
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Structure of MELODI:

1. 'General Assembly' (GA)
2. 'Governing Board' (GB)
3. 'Bureau' that runs the Association's affairs.

The actual **President** is **Jacques REPUSSARD (IRSN, France)**.

- A **Scientific Committee (SC)** of 9 renowned scientists in relevant key disciplines.
- **Ad-hoc working groups** which are non permanent structures dedicated to the coordination and elaboration of MELODI positions on specific issues.
- The **European network of excellence DoReMi (WP2)** which is involved in structuring MELODI, the establishment and updating of the MELODI **Strategic Research Agenda (SRA)** and in dissemination and long term sustainability issues.



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The purposes of MELODI are:

- ✓ **MELODI** is willing to play a key role in coordinating present and future low dose risk research in Europe
- ✓ Organisations taking part in MELODI share the common mission of developing and updating a joint research agenda in low dose risk and radiation protection (SRA).
- ✓ To promote **multidisciplinary, highly coordinated research and the development of integrated and long term sustainable research on health risks associated with low dose ionising radiation exposures.**
- ✓ To help ensure the sustainability of **infrastructures, education and teaching, and dissemination and knowledge management.**



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MELODI: Activities and Expected Results

Activities

- ◊ Updating the SRA
- ◊ Development and promotion of sustainable R&D programs at European level and at the national level
- ◊ Development of sustainable Programs for Education & Training and Infrastructures at the European level
- ◊ Interaction with international Organisations
- ◊ Setting up internal calls
- ◊ MELODI Awards
- ◊ Dissemination of knowledge

Expected results

- ◊ Integration with common goals
- ◊ Optimization of radiation protection in Europe
- ◊ Advice and service to the European Commission
- ◊ Active part in HORIZON 2020
- ◊ Access to Education & Training and to infrastructures in Europe
- ◊ Joint actions with international Organisations
- ◊ Strengthening of R&D by internal calls
- ◊ Knowledge management

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MELODI SRA



The MELODI consortium had constituted a small group of experts 28 May 2010:

1. Dietrich AVERBECK, IRSN/CEA Consultant, Leader of WP2 of DoReMi, Emeritus CNRS, IRSN, Fontenay-aux-Roses, France
2. David LLOYD, Emeritus, Cyto genetics Consultant, Health Protection Agency (HPA), Chilton, UK
3. Peter O'NEILL, Gray Institute for Radiation Oncology & Biology, University of Oxford, UK

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MELODI SRA

Based on the outcomes of the yearly MELODI workshops a [Strategic Research Agenda \(SRA\)](#) is being progressively developed. To assure an open and vivid discussion and development of the SRA the contribution from a large number of scientists and stakeholders is needed.

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1st International MELODI Workshop
September 28-29, 2009
Stuttgart, Germany

2nd International MELODI Workshop
October 18-20, 2010
Paris, France 2010

3rd International MELODI Workshop
November 2-4, 2011
Rome, Italy

4th International MELODI Workshop
12-14 September 2012
Helsinki, Finland

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Development of MELODI SRA

The 3rd Draft has been essentially prepared on the basis of the outcomes of the 3rd MELODI Workshop in Rome, related comments and results from dedicated DoReMi and MELODI Workshops and congresses.

New items are indicated by references to the Rome meeting or to prominent scientific papers.

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SRA key issues:

- induction of cancers
- non-cancer effects,
- radiosensitivity of individuals and tissues,
- effects of radiation quality,
- effects of internal contamination,
- mixed exposures



Development of MELODI SRA

Preparation of the next SRA version

Questions to be asked

- Is the Structure of the SRA adequate?

SRA contents: Background information with questioning and scientific focus, **scientific vision** (unperturbed (homeostatic) state versus perturbed state (precursor for pathologies, cancer, non cancers), **Research priorities** (Dose relationship for cancer, non cancer effects, and individual sensitivity, intrinsically including cross-cutting issues like radiation quality, tissue effects and internal contamination) and the **research areas** to be primarily exploited and approaches to be considered. **Infrastructures and Education and Training**.



Development of MELODI SRA

Preparation of the next SRA version

Questions to be asked

- Are the scientific premises correct? (adapted to Horizon 2020?)
- How should the more organisational (operational) issues of **Infrastructure and Education and Training** be presented?
- How can we design a Roadmap with planned and reasonably achievable time schedules ?
- Are the references sufficient?
- Are the Annexes useful?
- What is missing in the SRA? (Roadmap, Illustrations...)
- Can we create more interaction through specific MELODI working groups and discussion forums together with increased exchanges of scientific knowledge and more efficient knowledge management (work on Websites)?



The three level approach of the MELODI SRA

- 1) **Fundamental and molecular research**: dissection of altered metabolic pathways as a function of low dose 'omics', biomarkers, systems biology
- 2) **Epidemiological research**: suitable (*retro- and prospective*) cohorts : precise definition of doses and pathologies with the help of suitable biomarkers
- 3) **Mathematical modeling** of altered metabolism and pathways in relation to persistent pathological changes. Evaluation of radiation health risks .



Pre-requisites:

- A. Better definitions in mechanistic studies of:**
- **dosimetric matters**
 - **biological endpoints and health effects**: molecular analyses (e.g. 'omics' etc.) and their producibility as well as classical endpoints (survival, mutation...)
- B. Better definitions in epidemiological studies of:**
- **dosimetric matters**
 - the **pathologies examined together with confounding factors** (gender, age, lifestyle...): use of molecular biomarkers for specific pathological conditions (cancer, non cancer), physiological states (hormonal state, level of antioxidant, DNA repair, immunological defences, metabolic deficiencies etc.)
 - **additional exposures** (or stresses) other than radiation (including metabolic or chemical stress), whenever possible, with the help of suitable molecular biomarkers



MELODI the way forward:

1. **SRA**: continuous priority setting in the field of radiation research (guidance and interaction with other related European initiatives)
2. **Promotion of Education and Training**: maintenance of expertise and new recruitment
3. Ensuring the **maintenance of key infrastructures for R&D** in Europe
4. **Dissemination and knowledge management**
5. Increase involvement of **representation of national authorities and universities and research institutes in RP research**
6. Adapt **Statuts of the MELODI association** to its role now in active radiation research in Europe with a proper funding mechanism (in Horizon 2020).
7. Increase **coordination and interaction** with scientific, industrial and medical actors and the public in particular with stakeholders, also on the international level.



The way forward

- > **Proper SRA updating**: revise and/or update the version on the basis of the last MELODI-2012 workshop in Helsinki taking into account as much as possible new information from other sources (dedicated WS, congresses etc.).
- > **Proposal of a short MELODI 2012 statement** (on the basis of the revised version of the SRA) with indications for possible future calls and MELODI activities.
- > You are invited to express your views, comments and suggestions in order to improve the SRA document, in terms of consensus basis and of quality in its scientific vision. Please send your comment by electronic mail to comments_melodi@bfs.de.

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4. Did you already use the SRA to prioritize research projects in your organisation/institute/research group?

1. Yes, we consulted the SRA very intensely	16,3%
2. Yes but only slightly	53,1%
3. No, it was not of interest for us	30,6%

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5. Will you use the SRA to prioritize future research projects in your organisation/institute/research group?

1. Yes, because we focus on this topics	34,0%
2. Yes, because we have a higher chance to get funding ..	51,5%
3. No, it's not interesting for us	14,6%

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MELODI Award
The Board of the MELODI Association has decided to reward annually a young researcher by offering a MELODI Award, to be officially announced at the annual MELODI Workshop.

Objectives
To raise more attention for research in the domain of low doses of ionising radiation in a broader sense, and to stimulate young researchers to be active and to publish in this domain of activities.

The MELODI Award
The Award will consist of 4.000 € (amount fixed annually by the MELODI Board).



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Policy Matters

- Approval of new members (CREAL, Spain, DUTH, Greece, NCRRP, Bulgaria)
- Approval of the constitution of the Scientific Committee
- Election of members of the Board (Vice chair: Th. Jung)
- MELODI Award 2012
- Approval of the draft Internal rules
- MELODI position with respect to Horizon 2020

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How MELODI can contribute to Horizon 2020

S. Weisler
Head of Unit
DG-Research & Innovation
European Commission

* Performance indicators for assessing results & impacts: e.g. under the heading 'Foster radiation protection', the indicator is: "%age of funded projects likely to have a demonstrable impact on regulatory practice regarding radiation protection"

MELODI has to:

- ✓ reinforce its governance, statutes & procedures in view of a possible role in the implementation of part of the Euratom programme
- ✓ reinforce focus and European convergence of the SRA
- ✓ build bridges with research on emergency preparedness and radioecology

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Towards a new concept for a project proposal

A new acronym, to symbolize openness and the wider field, as well as continuity

OPERRA

Open Project for the European Radiation Research Area



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The 5th MELODI Workshop will be organised by SCK-CEN in Belgium. Venue of this workshop will be the Royal Academy in the heart of Brussels.

8-11 October 2013



<http://www.melodi2013.org/>



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Thank you for your attention!