Comments from MELODI to SET plan

Action 10 – nuclear – Issues Paper

2016-05-10

General comment

On p. 12 of the "draft issues paper No. 10" in Challenge 1 Action 3 "Effects of low doses of ionizing radiation" MELODI's programme seems represented.

Question: Do you agree with the targets set in the issue paper?

Yes, MELODI agrees with the targets, in particular the Action 3"Effects of low doses of ionising radiation". The current lack of clear scientific understanding of the mechanisms at the root of the potential effects of low dose radiation exposures is a major obstacle to a better understanding by society at large of the nature and real level of threat represented by such low dose exposures.

Question: Do you think that the level of ambition is correct?

The phrasing of low-dose research in the Action 3 of the Advanced Research Programme is very general. MELODI has developed a Strategic Research Agenda (see: http://www.melodi-online.eu/doc/SRA6.pdf). In addition, MELODI is developing a roadmap, classifying research subjects as a function of feasibility and impact. MELODI is encouraging the development of multidisciplinary research projects that will be needed to resolve the still pending scientific questions. The SRA and roadmap are intended to guide the priorities for national and European research programmes and the preparation of competitive calls at the European level.

Question: Are there any standing issues in the way to reaching the proposed targets/priorities?

Recent scientific developments in biology, such as proteomics, offer new opportunities to radiation protection research. Historically, radiation research was oriented towards observing radiation exposure effects in order to develop science based effective risk management procedures, rather than towards explaining those observed effects. The resolution of questions raised by society about the existence, nature (cancer and other diseases) and level of health risk at very low doses, or the nature of individual factors influencing such risks cannot be answered without new research strategies incorporating physics, biology, medicine, and epidemiology. This necessary strategic evolution of research will take time and cannot be successfully achieved without a clear policy commitment, and the setting up of funding instruments at European level that will be able to encourage and support such multidisciplinary approaches over the medium term.

There is already a close cooperation of MELODI between the radiation research platforms EURADOS, ALLIANCE and NERIS and the medical associations through e.g. the European Joint Programme CONCERT. More cooperation is needed with researchers studying basic mechanism and epidemiology outside the field of radiation. Therefore, MELODI advises that there should also be created a link with other joint programmes from non-nuclear origin. This is explained in the gaps below.

Good dosimetry is a prerequisite in research of effects of low doses. Therefore, e.g. exposure data originating from medical use of ionising radiation, with well-known dosimetry can help the study of low dose effects. Close collaboration with and input from Health is very important. The EURATOM Work Programme 2016-2017 is an initiative building the bridge between MELODI, EURADOS and associations active in medical use of ionising radiation.

If possible identify gaps/barriers & areas of cooperation on the priorities/targets proposed in the issues paper(s)

Identify possible barriers (when not done already in the Integrated Roadmap) related to regulation, cooperation issues, standardisation/industrialisation/manufacturing, socioeconomics etc. /

Identify possible gaps or duplication of efforts in the R&I priorities

Gaps: Individual risk factors for radiation-induced diseases, and possible multiple stressor impact

For example (non exhaustive), → the BBMRI ERIC project does not cover ionising radiation as a stressor. It is important to look at currently the most challenging diseases in a holistic way, including ionising radiation (with well-known dosimetry) as a stressor.

Duplication: /

Identify priorities where there is scope for and benefit in more coordination and/or cooperation across EU, MS, regions, Research Institutions/industry;

The effect of ionising radiation results mainly in diseases similar to diseases resulting from other health stressors. Therefore it is advised to deploy collaboration between non-nuclear health programmes looking at effect of other stressors with similar endpoints, such as cardiovascular diseases, cancer, mental health, inflammatory diseases. This would help putting the effect of ionising radiation in perspective with other stressors. Coordination with non-EURATOM related Health programmes would be beneficial.

The maintenance of competences in radiation research and health risk assessment in the long-term via an integrated European approach for education and training is important.

Identify best practices of past or present coordination and or cooperation that can be used as an example or as a starting point

In radiation protection research, it is important to create a long-term roadmap, accompanied by long-term financing giving the certainty that the roadmap can be implemented. Therefore we refer to OPERRA Deliverable D2.1, paragraph *"5.5.3. Long-term sustainability: Reflection on the optimal funding instrument(s), which made a study on the different coordination initiatives in and outside EURATOM"*. Radiation protection research being a very open research community would benefit from a funding instrument allowing open calls, attracting universities/entities not necessarily having radiation protection as a core activity, but delivering the fundamental knowledge in areas in close relation with radiation protection.