



## Introduction to The European DoReMi Programme on Low Dose Risk Research

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In 2009, the European High Level and Expert Group (HLEG) identified key policy and scientific questions to be addressed through a strategic research agenda for low dose radiation risk. This initiated the establishment of a European Research Platform, called MELODI (Multidisciplinary European Low Dose Research Initiative). In 2010 the DoReMi Network of Excellence was launched in the Euratom 7th Framework Programme. DoReMi has acted as an operational tool for the sustained development of the MELODI platform during its early years. A long term Strategic Research Agenda for European low dose radiation risk research has been developed by MELODI. Strategic planning of DoReMi research activities is carried out in close collaboration with MELODI. The DoReMi research program focuses on three areas identified by the HLEG as being the most promising in terms of addressing/resolving the key policy questions. These are: the shape of dose response curve for cancer, individual susceptibilities and non-cancer effects. The program on the shape of the dose-response for radiation carcinogenesis has two overarching aims: (i) to improve knowledge of the dose dependency of cancers induced by low doses/dose rates in humans and the processes that drive the development of such cancers and (ii) to improve low dose/dose-rate risk projection models through improved integration of the knowledge of these biological processes. The program on individual sensitivity aims to determine the contribution of individual variations in sensitivity to modifying the risk of developing cancer following exposure to low doses/dose rates. The influences of inter-individual differences are addressed at three levels, using population studies, animal models and in vitro models. The program on non-cancer effects focuses on vascular effects, lens opacities and cognitive effects. While some epidemiological studies indicate that such effects could arise as late effects of low dose irradiation or contamination, there is almost complete lack of knowledge on the mechanisms contributing to these effects at low doses/dose-rates. The DoReMi research program is supported by focussed programs for education and training and development of radiation research infrastructures.