

THE SYMBIOSE PROJECT : AN INTEGRATED FRAMEWORK FOR PERFORMING ENVIRONMENTAL RADIOLOGICAL RISK ASSESSMENT

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Human health and ecological risk assessments usually require the integration of a wide range of environmental data and modelling approaches, with a varying level of detail dependent on the management objectives, the complexity of the site and the level of ignorance about the pollutant behaviour/toxicity. Like most scientists and assessors did it recently, we recognized the need for developing comprehensive, integrated and flexible approaches to risk assessment. To meet these needs, IRSN launched the Symbiose project (2002-2006) which aims first, at designing a framework for integrating and managing data, methods and knowledge of some relevance in radiological risk to humans/biota assessment studies, and second, at implementing this framework in an information management, modelling and calculation platform. Feasibility developments (currently completed) led to the specification of a fully integrated, object-oriented and hierarchical approach for describing the fate, transport and effect of radionuclides in spatially-distributed environmental systems. This innovative approach has then been implemented in a platform prototype, main components of which are a user-friendly and modular simulation environment (*e.g.* using GoldSim toolbox), and a hierarchical object-oriented biosphere database. Both conceptual and technical developments will be presented here.