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Title

Coping with uncertainties: The new research project CONFIDENCE.

Authors – Please underline corresponding author

W. Raskob[1], O. Isnard[2], C. Woda[3], N.A. Beresford[4], M. Montero[5], C. Turcanu[6], T. Müller[1], T. Duranova[7]

[1]Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen, Germany
[2]Institut de Radioprotection et de Sûreté Nucléaire (IRSN), Paris, France
[3]Helmholtz Zentrum München – German Research Center for Environmental Health (HMGU), Munich, Germany
[4]NERC Centre for Ecology & Hydrology, Lancaster, UK
[5]Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas, CIEMAT, Madrid, Spain
[6]Belgian Nuclear Research Centre (SCK•CEN), Mol, Belgium

[7]VUJE, a.s., Trnava, Slovak Republic

Text

In emergency management and long-term rehabilitation the uncertainty of the information on the current situation, or its predicted evolution, is an intrinsic problem of decision making. To protect the population, conservative assumptions are often taken which may result in more overall harm than good due to secondary causalities as observed following the Chernobyl and Fukushima accidents. Therefore, the reduction of uncertainty where practicable, and approaches to deal with uncertainty, are crucial to improve decision making for the protection of the affected population and to minimise disruption of daily life.

The H2020 CONFIDENCE Project aims to close existing gaps in several areas of emergency management and long-term rehabilitation. It concentrates on the early and transition phases of an emergency, but considers also longer-term decisions made during these phases. The project brings together expertise from all four Radiation Protection Platforms and also from Social Sciences and Humanities, such that it can address the scientific challenges associated with model uncertainties and improve radioecological predictions and emergency management (NERIS and ALLIANCE), situation awareness and monitoring strategies (EURADOS), risk estimation in the early phase (MELODI), decision making and strategy development at local and national levels (NERIS) including social and ethical aspects (Social Sciences and Humanities).

The work-programme of CONFIDENCE is defined to understand, reduce and cope with the uncertainty of meteorological and radiological data and their further propagation in decision support systems, including atmospheric dispersion, dose estimation, foodchain modelling and countermeasure simulations models. Consideration of social, ethical and communication aspects related to uncertainties is a key aspect of the project activities. Improvements in modelling and combining simulation with monitoring will help gaining a more comprehensive picture of the radiological situation and will clearly improve decision making under uncertainties. Decision making principles and methods will be investigated, ranging from formal decision aiding techniques to simulation based approaches. These will be demonstrated and tested in stakeholder workshops applying the simulation tools developed within CONFIDENCE. A comprehensive education and training programme is fully linked with the research activities.

This paper presents the key objectives of the project and highlights the expected improvements for coping with uncertainties for improved modelling and decision making in nuclear and radiological emergency management and long-term rehabilitation.