

# FASTNET Newsletter

Issue 3

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## *Training on PERSAN, RASTEP and 3D/3P*

Between 28 and 30 May 2018, a training session was held at IRSN premises in Fontenay-aux-Roses, France, on the tools and methods being developed or updated within the project, namely PERSAN, RASTEP and 3D/3P. The goal was to provide partners with preliminary knowledge on the use of such tools for the last part of FASTNET activities. The tools will be distributed soon to partners with a limited-time license. The training session was attended by 30 representatives of project partners and by 8 members of the End Users Group. Training was imparted with some introductory lessons with presentation slides, followed by hands-on activities specialised for each tool/method. Each hands-on activity was followed by interactive and fruitful discussions between participants and tutors on the application of the tools/methods to practical exercises. PERSAN and 3D/3P lectures were given by IRSN, RASTEP lectures were given by Lloyd's Register. After each training module, trainees were given a feedback questionnaire in order to submit anonymously their comments on both tools and training. This feedback will provide further stimuli for further improvements of the tools/method.

On 31 May, participants enjoyed a tour of the current IRSN Technical Crisis Center, and of the new one, currently being prepared and installed. A demonstration of the IRSN mobile units for the analysis of people or of the environment during a nuclear/radiological emergency was also given. These mobile units can be very quickly and efficiently deployed over the French country according to the specific needs.

## ANNOUNCEMENT

### *FASTNET School*



Within the framework of WP5, a School on Emergency Preparedness and Response will be organized by ENEA in Bologna, Italy, in the week 21-25 January 2019. The detailed program (including general lectures or presentations focusing on the project results, round tables and emergency means demonstration) is being finalized. The School is offered at no cost. The number of allowed participants is however limited, and a selection will be made by the FASTNET Management Team shall a too large number of requests be received. For further information, please contact Federico Rocchi at: [federico.rocchi@enea.it](mailto:federico.rocchi@enea.it)



Isabelle Devol-Brown (center) introducing the training on RASTEP imparted by Elisabeth Tengborn (left) and Anders Riber Marklund.



Discussion among participants to a training session on PERSAN.



IRSN mobile unit for people.

## JRODOS for FASTNET

By W. Raskob (KIT)

JRODOS (JAVA based real-time online decision support system) is a tool to assess consequences of radiological or nuclear emergencies. JRODOS considers all exposure pathways to humans and can perform assessments for all countermeasures such as evacuation, sheltering, distribution of iodine tablets, relocation, decontamination and food countermeasures.

JRODOS is also used in the European project FASTNET. Here the tool uses the FASTNET database on source terms to estimate the consequences. Further to this, JRODOS contains a source reconstruction module in its most recent version. Within FASTNET, we intend to test this module with artificial scenarios. This is done using the ASTEC code for generating a representative source term. The source term reconstruction tool will be fed with a “wrong” source term and/or “wrong” weather conditions and performance of this module will be evaluated by comparing the results to the “representative” source term result. Further to this, we intend also to perform scenario calculations with ASTEC. This means that within ASTEC, the boundary conditions for the accident will be changed and again the JRODOS module will be tested to verify if this modification is recognized or not. As our module is still at an experimental stage, we expect many insights into the problem of source term reconstruction that will lead to further research work from our side.

KIT intends to release a new version of JRODOS in spring 2019. This will include improvements of the source term module but also a first estimation of uncertainties of early phase assessments. Besides the source term, this will also consider meteorological parameters, such as wind speed and wind direction. These uncertainties will be assessed within the framework of the European project CONFIDENCE (part of CONCERT). To do this, ensemble calculations will be performed. The uncertainties of the weather prognosis are realized with ensembles from numerical weather prediction models. This typically comprises some 20 – 30 different realizations. The source term is represented by three realizations, describing best estimate, and upper and lower bounds together with their probabilities. Combining both, the source term and the weather,

## NEW IAEA EP&R PUBLICATION

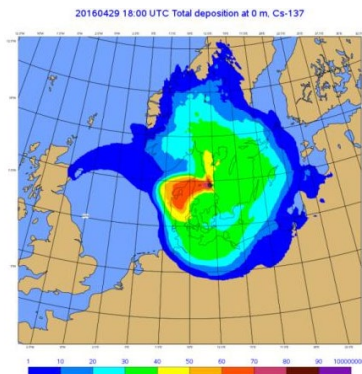
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In March this year, IAEA issued the General Safety Guide 11 (GSG-11, [link to the publication](#)) on “Arrangements for the Termination of a Nuclear or Radiological Emergency”. This publication provides guidance and recommendations on arrangements to be made at the preparedness stage, as part of overall emergency preparedness, for the termination of a nuclear or radiological emergency and the subsequent transition from the emergency exposure situation to either a planned exposure situation or an existing exposure situation. It elaborates the prerequisites that need to be fulfilled so that responsible authorities can declare the nuclear or radiological emergency ended and it gives detailed guidance on adapting and lifting protective actions. This publication, jointly sponsored by 10 international organizations (FAO, IAEA, ICAO, ILO, IMO, INTERPOL, OECD/NEA, UN OCHA, WHO and WMO) is intended to assist Member States in the application of IAEA Safety Standards Series GSR Part 3 and GSR Part 7.

results in about 90 realizations or ensembles. This results finally in 90 different assessments, which will be all fully evaluated within JRODOS. Also countermeasures will be assessed using these ensemble realizations. In the spring release, a first version of this uncertainty assessment will be provided. However, as CONFIDENCE ends at the end of 2019, the JRODOS release for 2020 will contain all results produced within CONFIDENCE.

## **FASTNET at the NKS AVESOME Seminar**

On 12 September 2018, the Seminar “Uncertainties in Decision Support – On the use of meteorological and source-term data in nuclear emergency management” was held at the Danish Meteorological Institute in Copenhagen, within the framework of the Nordic Nuclear Safety Research (NKS) project [AVESOME](#). The Seminar was dedicated to how uncertainties in numerical weather forecasts interplay with Source Term uncertainties in determining composed uncertainty in radiological consequences. Three main themes were touched: meteorological uncertainties, Source Term uncertainties, and decision support systems. Several presentations were given, showing how s.c. *ensemble* forecast sets can be coupled in real-time to Source Terms provided with uncertainties to give a BEPU calculation of radiological consequences in case of emergencies. Presentations on the CONFIDENCE project, as well as on the MUD, MESO and FAUNA NKS projects were given. FASTNET was represented by two presentations given by IRSN, on the project as a whole, and by Lloyd’s Register, on RASTEP, respectively. The Seminar presentations can be downloaded at this [link](#). A report on AVESOME results can be found [here](#). Reports on the other projects can likewise be found on the NKS website.



Map of probability of threshold trespassing for <sup>137</sup>Cs ground deposition (threshold: 100 Bq/m<sup>2</sup>) from the NKS AVESOME Report.

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