

# FASTNET Newsletter

Issue 1

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## What's FASTNET

The objective of the FASTNET project is the qualification of a graduated response methodology that integrates several tools and methods to ensure both diagnosis and prognosis of severe accident (SA) progression, and to estimate the consequences on the surrounding population and the environment in any concept of NPP or Spent Fuel Pool facility in Europe. Integral SA reference simulation codes (MAAP, MELCOR and ASTEC) will be used with complementary results of PSA level 2 available to

***FAST Nuclear Emergency Tools for the reliable prediction of severe accident progression and anticipation of the source term of a nuclear accident***

the project partners to build-up a database of accidental scenarios. The targeted main concepts of NPP implemented in Europe are PWR, EPR, BWR, CANDU, and VVER. The main project's impact will be the share of a common methodology to manage exceptional situations of emergency. Once implemented in most countries in Europe, it will allow them to apply simple, well-validated and reliable tools, as well as favor the cooperation between neighboring countries. Through the realization of several exercises firstly targeting optimal SA management (SAMG) of the NPP or SFP, and secondly targeting protection of the populations, this methodology will allow assessing the currently implemented or foreseen SAMGs. The main results of the project will be (1) a database of accident scenarios, (2) a set of qualified reference tools for diagnosis and prognosis extended to all concepts of European NPPs, (3) improvements of innovative probabilistic tools to be used with reference ones, (4) methodological guidelines for support of SAMG evaluation and improvement, and finally (5) proposals for additional or improved on-site or off-site instrumentation that will help in the diagnosis of accidental situation. The Project implementation is over four years (October 2015 to September 2019) through 6 Work Packages distributed among 20 Partners organized in a Consortium and 1 Third party.

## FASTNET Workshops

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On the 7<sup>th</sup> and 8<sup>th</sup> of November 2016 the First FASTNET Workshop has been held in Bologna, Italy. It was devoted to exchanges of knowledge about models used for calculation of source term, dispersion and dose, by the way of 12 technical presentations given. A total of 37 participants has been recorded.



To boost the interaction between partners and to promote the dissemination of the results cumulated over almost an half-life of the project, a Second FASTNET Workshop is planned in Paris on the 16<sup>th</sup> and 17<sup>th</sup> of October 2017.

## Perspectives of FASTNET, a key approach for Norway

By J. E. Dyve, NRPA

Norway has the right profile of a (almost) non-nuclear country: it does not have any nuclear power plant, has only two research reactors, and the nearest NPP in a neighboring country is about 200 km from the border. If a nuclear accident occurs close or far away from Norway, with or without a threat to Norwegian territory, the Crisis Committee has a responsibility for Norwegian citizens and other interests abroad. In the capacity of Secretariat for the decision making Crisis Committee, the Norwegian Radiation Protection Authority (NRPA) must provide them with information and assessment on the radiological situation. Therefore, NRPA considers FASTNET tools as necessary tools to help them assess the situation and analyse potential consequences.

Available assessment tools include dispersion modelling which requires a source term, preferably based on the current situation at the NPP. NRPA experts have the capabilities to assess the situation, but they do not have the tools necessary to estimate a plausible source term within the timeframe expected by the decision makers. For NRPA, the FASTNET project may provide a shared methodology and tools for a better early estimate of potential source term for a specific reactor and make also available accident scenarios taking into account current reactor designs and safety systems. This can improve trustworthiness of assessment since a common methodology is applied and probable source terms and possible worst-case scenarios are taken into consideration. So the first advantage of the FASTNET approach is to reduce the uncertainty in pre-release assessment, which often is the basis for initial response.

A second application of FASTNET tools concerns preparedness and response planning. FASTNET tools combined with dispersion models and assessment tools give the possibility to analyse consequences based on different weather conditions and accident scenarios. So the second advantage of FASTNET approach is to improve national preparedness and response plans and capabilities.

To summarize, the FASTNET approach will be relevant for NRPA. It will improve NRPA assessments during an emergency and it will help in planning their preparedness and response in the event of an accident taking place at neighboring NPPs.

### WP1 and WP2 Meetings

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On the 23<sup>rd</sup> and 24<sup>th</sup> of January 2017 the joint Meetings of WP1 and WP2 will take place in Stockholm, Sweden. The Swedish radiation safety authority, SSM, will provide full support in the organization. These meetings aim to discuss the state of progress of every deliverables related to WP1 (Scenarios database) and WP2 (Emergency preparedness), overcome some potential difficulties encountered from the start of the project and boost the interaction between these two technical WPs. Participation to the meetings is mainly open to FASTNET partners involved in WP1 and WP2.

## Technical Meeting to Review the IAEA's Assessment and Prognosis Procedures for Nuclear and Radiological Emergencies

From the 28<sup>th</sup> of November to the 3<sup>rd</sup> of December 2016, a TM to review the IAEA's assessment and prognosis procedures for nuclear and radiological emergencies was held in Vienna, Austria. The aims were to review a draft document outlining the IAEA assessment and prognosis process, including the sharing of technical information during the preparedness and response phases of a nuclear or radiological emergency, to provide feedback on the effectiveness of the tools to perform and support assessment and prognosis that have been developed by the IAEA, and to discuss the development of harmonized messages between assessing entities, including the 'Accident State', other Member States and the IAEA. In the very same days and hosting location, the Third Meeting of the Emergency Preparedness and Response Standards Committee was also held. For a list of IAEA-related events on EP&R, see: [here](#).

## FASTNET End Users Group – EUG

To promote the diffusion of harmonized practices and approaches, as well as to encourage the development and utilization of the tools produced within the project, an End Users Group (EUG) has been created, open to Safety Authorities, Technical Safety Organizations, operators or other experts. EUG members may express their needs in the field of fast nuclear emergency tools, benefit from the project outcomes, evaluate the efficiency of the shared methodologies, and participate in the periodic Workshops, training courses and emergency exercises foreseen for the future. Interested parties are encouraged to contact the project Coordinator through the website. Applications will be approved by the Project Steering Committee.

## Aarhus Convention and Roundtable on EP&R in Luxembourg

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On the 29<sup>th</sup> and 30<sup>th</sup> of November 2016 the Roundtable “Emergency Preparedness and Response to nuclear accidental and post-accidental situations” was held in Luxembourg in the framework of the “Aarhus Convention and Nuclear” initiative. The event was co-organized by ANCCLI, EC DG-ENER and the French ASN and IRSN. All the presentations are available for download [here](#)

or, later on, at:

<http://www.anccli.org/>

<https://www.fastnet-h2020.eu/>



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