FP7 Grant Agreement N° 312450

CIPRNet

Critical Infrastructure Preparedness and Resilience Research Network

Project type: Network of Excellence (NoE)

Thematic Priority: FP7 Cooperation, Theme 10: Security

Start date of project: March 1, 2013 Duration: 48 months

D8.212 CIPRNet cooperation meeting ESReDA

Due date of deliverable: 31/05/2014
Actual submission date: 14/07/2014

Revision: Version 1

Commissariat à l'Energie Atomique et aux Energies Alternatives (CEA)

Project co-funded by the European Commission within the Seventh Framework Programme (2007–2013)		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Security Assessment	Erich Rome (Fraunhofer)
Approval Date	14.07.2014
Remarks	No issues

The project CIPRNet has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 312450.

TABLE OF CONTENTS

1 Rationale of the document

In the CIPRNet WP8 called "Dissemination and spreading of excellence", the second task has the objective to promote and organise cooperation workshops on CIP and CIP MS&A with other partners [DoW]. The activities of ESReDA are similar to the research activities in the CIPRNet project. The D8.212 document provides report on the first CIPRNet cooperation meeting with ESReDA members. The meeting took place in Torino, Italy on May 29th 2014. In the next sections a presentation of ESReDA is given, followed by the modalities of the cooperation. The agenda and the list of participants of the cooperation meeting are in Annex 1, while Annex 2 contains information on the next ESReDA seminar which is the 47th.

2 What is ESReDA?

European Safety, Reliability & Data Association (ESReDA) is a European association established in 1992 to promote research, application and training in Reliability, Availability, Maintainability and Safety (RAMS). The Association provides a forum for the exchange of information, data and current research in Safety and Reliability and a focus for specialist expertise.

The Safety and Reliability of processes and products are topics which are the focus of increasing interest Europe wide. Safety and Reliability Engineering is viewed as being an important component in the design of a system. However, the discipline and its tools and methods are still evolving and expertise and knowledge dispersed throughout Europe. There is a need to pool the resources and knowledge within Europe and ESReDA provides the means to achieve this.

ESReDA was formed from the combined forces of EuReDatA (European Reliability Data Bank Association) and ESRRDA (European Safety and Reliability Research and Development Association), in 1992. The integration of the two associations provides a strong basis for furthering the understanding, development and dissemination of RAMS research and methods throughout Europe.

ESReDA aims to:

- Promote research and development, and the applications of RAMS techniques.
- Provide a forum to focus the resources and experience in safety and reliability dispersed throughout Europe.
- Foster the development and establishment of RAMS data and databases.
- Harmonise and facilitate European research and development efforts on scientific methods to assess, maintain and improve RAMS in technical systems
- Provide a source of specialist knowledge and expertise in RAMS to external bodies such as the European Union.
- Provide a centralised and extensive source of RAMS data
- Further and contribute to education in Safety and Reliability.
- Contribute to the development of European definitions, methods and norms

ESReDA conducts two kinds of parallel and interconnected activities:

- Project Groups: ESReDA Project Groups (ESReDA-PG) are continuously created in order to provide studies on the state-of-the-art of different themes related to systems safety. Proposals to create ESReDA-PG should be supported at least by four ESReDA members and receive the approval of the ESReDA Board of Directors (BoD). Once the BoD gave its approval, the proposal is presented to the ESReDA General Assembly for voting. ESReDA-PG's membership is opened to all experts with no obligation to be an ESReDA member. ESReDA-PG should provide a comprehensive report on

the state-of-art within 3-4 years and should hold at least one ESReDA seminar on the subject to share its findings within the community.

- Seminars: ESReDA organises twice a year thematic seminars which are generally proposed and conducted by its PGs. ESReDA seminars last for 2 days and have a single session, they are organised all around Europe.

3 Convergence between CIPRNet and ESReDA

ESReDA is triggering a new Project Group (PG) with the objective of establishing the state-of-the art on "Critical Infrastructure Preparedness and Resilience: Data for Modelling, Simulation & Analysis - CI-PR / MS&A-Data". The proceedings of the PG's seminar(s) will be published in an EU Technical Report edited by EC-JRC/ISPRA and referenced at the EC level. Due to the of the research topics between this ESReDA PG and CIPRNet, CEA proposed to CIPRNet experts to contribute to this ESREDA PG and to deliver a joint EU technical report (ESReDA- CIPRNet). This joint activity could be also reported at one of the next CRITIS conference in one or two years. Mohamed Eid from CEA (who is both involved in ESReDA and CIPRNet) would coordinate the collaboration between ESReDA and CIPRNet.

4 Outcomes of the cooperation meeting

A kick-off meeting of the project group on "CI-PR/MS&A-Data" has been organise in May 29th 2014, 14:00-16:00. The 18 participants were present - 14 from ESReDA and 4 from CIPRNet (see Annex 1). During this meeting, the subjects listed in the agenda of Annex 1 have been discussed. The following list of points has been agreed between the members of ESReDA and CIPRNet:

- A short description of the project (see section 4) was given and this proposal was approved by ESReDA General Assembly.
- The layout of the EU technical document to be produced by the end of 2017 (3 years); "the state of the art on data for CI-PR/MS&A-Data". It was approved that this will be a joined EU-Technical report produced with CIPRNet collaboration and possibly with other EU Networks, like the European Reference Network for Critical Infrastructure Protection (ERNCIP)[1].
- A 2-day seminar will be organised by the end of May 2015 in Wroclaw, Poland. It could be a joint ESReDA-CIPRNet event in association with other EU-networks that we have identified during the meeting.
- The next meeting for the PG will be held in October 14th, 2014, in Warsaw, PL, during the 47th ESReDA seminar.

5 ESReDA project group on Critical infrastructures preparedness & resilience

5.1 Target

The Project Group (PG) "Critical infrastructures preparedness & resilience - data for modelling, simulation & analysis" (CI-PR/MS&A-Data) will establish a comprehensive technical

[1] http://ipsc.jrc.ec.europa.eu/index.php/ERNCIP/688/0/

document on the existing data and models that have been developed and are used in the fields of CIP. Establishing a comprehensive state-of-the-art should lead to gaps and needs for data and models, as well as identification of lacks measures needed in order to complete missing data. This technical document will be published with a EU Technical Report.

5.2 Technical Description

The project will be divided into tasks defined as:

T1: The emergence of the concept "Critical Infrastructures"

T2: Major crises involving CI's

T3: Database(s) and available data

T4: Existing models & tools

T5: Assessment of the state-of-the-art

T6: Synthesis & Conclusions

The starting point (T1) is an introductory task focusing on the emergence of the concept of the Critical Infrastructures (CI). The task will highlight the pioneering works and original concerns in the field of the CI Preparedness & Resilience (CI-PR). Existing data and missing data will be identified. The types of data concerned in this task are: basic CI-related concepts and definitions, national or international legislation, regulation and policies, conclusions and recommendations delivered by experts.

The 2nd task (T2) will review many major crises involving CI that are considered as landmarks in the development of the awareness of decision makers and the civil society. The outcome of this task will be a descriptive table for each crisis with an analysis, which will allow the comparative analysis of these crises.

The 3rd task (T3) will establish the inventory of existing databases that are oriented towards CI-PR. A technical sheet will be established for each of them with a dedicated attention to EU cases. The corresponding data and their structure should be equally described. The focus will be availability of the data in order to model and simulate dependencies and interdependencies of critical infrastructures. Such data would be reports on: failures, restorations, diagnostics, prognostics, structure aging, geo-physics, demographic distributions, and others etc.

The 4th task (T4) will establish the inventory of the existing models and simulations that are used in CI-PR activities. Like in T3, a technical sheet will be established for each of them and a specific attention will be on EU cases. The corresponding validation activities and studies will be identified.

The assessment of the state-of-the-art, T5 aims to assess the fields of application, the spread and the complexity of the CIP data and the models. T5 will also assess the major needs (gap analysis) in the field of CIP. The unavailable elements will be identified and if possible ranked according to their degree of importance and their criticality.

The last task (T6) is an overall synthesis that will be drawn in order to enable major actors in the CIP field to identify the real state-of-the-art in available data and models, the needs in the field with their criticality. It should provide many directions for future R&D activities in CIP development.

5.3 Project Group creation

As mentioned above, ESReDA's Project Group (PG) creation is possible when (at least) 4 of ESReDA valid members propose its creation and receive the support of the Board of Direc-

tors (BoD) and the approval of ESReDA's General Assembly. An ESReDA project group is created for 3-4 years. The project is led by one of the PG's founding members. Having been created, the project group calls for EU-experts contributions and forms the project group PG. The PG elaborates within its first meetings: the working plan, the structure of the technical report and the activities sharing.

Aside the project leadership that is restricted to one of ESReDA founding members, the other responsibilities sharing is unrestricted. The project will be divided into tasks and subtasks and managing responsibilities will be shared between the members without distinguishing between ESReDA and non-ESReDA members.

5.4 Financial aspects

The approval of ESReDA General Assemble for the creation of a project group (3-4 years) implies the allocation of an annual subvention (= 5-7 k€) for the operation of the new project group.

The financial support is dedicated to facilitate the PG running and it is decided collegially within the respect of ESReDA's internal rules.

5.5 Outcomes

ESReDA PG produces technical reports that are commercially published and distributed. The choice of the publisher is decided inside the PG. ESReDA Board of Directors (BoD) may suggest a publisher if the PG demands. Each experts participating in the PG will receive a free copy of the published report for free (ESReDA member or not).

ESReDA PG is equally invited to organise 1-2 ESReDA's seminars in order to disseminate their and collect additional expertise. ESReDA seminars are semi-annuals and scheduled over 2-3 days. The proceedings of the ESReDA seminars are registered as EU-Technical Report and are published and freely distributed by EC-JRC/Ispra.

ANNEX 1: AGENDA and List of Participants of the CIPRNet – ESReDA cooperation meeting

Politecnico di Torino, Torino, Italy
Mai 29th 2014, 14:00-16:00
Aside of the 46th ESReDA Seminar
"Challenges in Structural Safety and Risk Analysis"

Agenda	
1.	Welcome & Project Frame Introduction
2.	Participants presentation (who is whom)
3.	Establishing the Tentative Plan of the Technical Document & the Working
4.	Preliminary guess on disseminating and joint actions: nature (ESReDA seminar, Workshop, Technical sessions in Int. Conferences, publications in journals, …), dates and places.
5.	Next meeting (date, place)

List of Participants			
ESReDA & Non-ESReDA		**CIPRNet**	
Mohamed EID	(FR) – ESReDA	Mohamed EID	(FR) CEA
Alaa Chateauneuf	(FR) – ESReDA	Dimos Charmpis	(CY) University of Cyprus
Luis Ferreira	(PT) – ESReDA	Alessandro Lazari	(IT) EC JRC / Ispra
Kortner Kortner	(NO) – ESReDA	Marianthi Theocharidou	(IT) EC JRC / Ispra
Luísa Pestana	(PT) – ESReDA	Marco Tesei	(IT) Un. Di Roma
John Stoop	(NL) – ESReDA		
Nikitas Nikitakos	(GR) – NON-ESReDA		
Samira Shafie	(SE) – ESReDA		
Micaela Demichela	(IT) – ESReDA		
Simona Mancini	(IT) – NON-ESReDA		
Miroslav Sykora	(CZ) – ESReDA		
Eric van kleev	(NL) – NON-ESReDA		
Mohammad Raza	(CH) – ESReDA		
Alessandro de Stefano	(IT) – ESReDA		
Gintautas Dundulis	(LI) – ESReDA		
Inmaculada Castro	(ES) – NON-ESReDA		
Mauricio Sanchez-Silva	(ES) – NON-ESReDA		

ANNEX 2: 47th ESReDA seminar

ESReDA
European Safety, Reliability & Data Association

Narodowe Centrum Badań Jądrowych Świerk

47th ESReDA Seminar

Fire Risk Analysis

15-16th October 2014, Otwock-Świerk, Poland

Announcement and Call for papers

Scope of the seminar

The general aim of fire risk analysis is to identify and characterize the fire risks of concern and provide information for fire risk management decisions.

The most important steps in the fire risk analysis process are identifying the objectives of the risk assessment, the measures that will be used to express risk, and how the risk measures will be presented or communicated for decision making purposes.

Available methods to estimate the potential impact of fire can be divided into two categories: risk-based and hazard-based. Both types of methods estimate the potential consequences of possible events. Risk-based methods also analyse the likelihood of scenarios occurring, whereas the goal of hazard-based methods is to determine the expected outcome of a specific fire scenario. The risk-based methods require reliability data for fire frequencies, components and systems (e.g. for fire detecting and firefighting systems) which could be derived from plant specific experience or can be of generic data sources.

47th ESReDA Seminar

The 47th ESReDA Seminar will cover all these aspects of fire related risk analyses from deterministic hazard analyses and consequence analyses up to probabilistic fire risk analyses, where the areas range from chemical, nuclear and energy industry, to transport and to structures.

The following topics are intended to be addressed in the frame of the seminar:

- Methods for determination and evaluation of fire hazards in facilities and buildings,
- Fire prevention measures,
- Methods for fire risk analyses,
- Active measures for fire detection and firefighting,
- Data generation for fire specific,
- The national existing standards and regulations for fire protection,
- Fire protection in the field of renewable power generation plants,
- Fire risk assessment of chemical process installation and storage facilities
- Computer simulations of fire events sequences.

The 47th ESReDA seminar will be a forum for exploring these topics. We aim to discuss theories, concepts, and experiences with fire risk analyses in various sectors and to identify future needs in safety research and training. This seminar will bring together scientists, engineers and specialists on safety analysis, decisions makers in the field of fire risk analysis, safety risk managers and training specialists in order to present and discuss innovative methodologies and practical applications related to fire risk analysis.

Target groups and domains of application

Papers for the seminar are invited from various stakeholders (industrialists, regulators, safety boards, universities, R&D organisations, engineering contractors and consultants, training specialists) and could address different sectors:

- Energy sector: nuclear, fossil, hydro, wind power plants and networks,
- Process industry: oil and gas, chemical and petrochemical facilities,
- Transport (rail, road, air and maritime): supply and distribution network, operation,
- Aerospace industry,
- Public sector and government.

Seminar organisation

- **Location**:
  National Centre for Nuclear Research (NCBJ), Otwock-Świerk, Poland
- **Organization**:
  The Seminar is jointly organised by ESReDA and NCBJ

47th ESReDA Seminar

Chairman of the Seminar

- **Henrik Kortner** – ESReDA President, Senior Principal Engineer, Safetec Nordic AS
- **Tomasz Jackowski** – Head of Nuclear Energy Division, NCBJ

Technical Programme Committee (TPC)

- **Micaela Demichela** – Politecnico di Torino, Italy (micaela.demichela@polito.it)
  ** Technical Programme Committee chairman*
- **Mieczysław Borysiewicz** – National Centre for Nuclear Research, Poland
- **Hartmut Schmaltz** – AREVA GmbH, Germany
- **Marina Röwekamp** – Gesellschaft für Reaktorsicherheit, Germany
- **Heinz-Peter Berg** – Bundesamt für Strahlenschutz, Germany
- **Ryszard Grosset** – High School of Management and Law, previously ex-rector of The Main School of Fire Services, Poland

Local Organization Committee

- **Mieczysław Borysiewicz** – NCBJ, Poland (mieczyslaw.borysiewicz@ncbj.gov.pl)
  ** Local Organizing Committee chairman*
- **Karol Kowal** – NCBJ, Poland (k.kowal@ncbj.gov.pl)
- **Sławomir Potempski** – NCBJ, Poland (slawomir.potempski@ncbj.gov.pl)

Relevant dates

Authors wishing to present a paper are invited to submit an abstract by e-mail to Micaela Demichela at: micaela.demichela@polito.it. People wanting to present a poster can contact her as well according to the following schedule:

- Submission of abstracts: **before 27th June 2014**,
- Notification to the authors: **by 11th of July 2014**,
- Full submission of camera ready papers: **5th of September 2014**,
- Date of seminar: **15th and 16th October 2014**.

The abstracts should state in 400 words and address:

- Objectives of the paper,
- Relevance for the Seminar,
- Novelty,
- Methods and findings.

The working language of the seminar is English. Guidance for authors and speakers can be downloaded from the ESReDA website: http://www.esreda.org/

Registration and Seminar Fee

Registration will be accepted until 1st of October 2014. A registration form and information package for the venue will be made available on the ESReDA website.

- One speaker per accepted paper is exempted.
- ESReDA members' fees (3 participants/member) are taken in charge by the Seminar.
- The registration fees are 300 € to be paid by bank transfer to ESReDA account:

  Holder : ESReDA – "47th Seminar"
  Bank : BNP Paribas Fortis Bank, Boulevard Jamar 1 D, 1060 Bruxelles, Belgique
  IBAN : BE69 0012 3728 1678
  BIC : GEBABEBB

National Centre for Nuclear Research (NCBJ)

National Centre for Nuclear Research (NCBJ) with approximately 1,000 employees is one of the largest research institutes in Poland. The new Institute started operations on September 1, 2011 in result of a Polish Government decision to merge POLATOM Institute for Atomic Energy (IAE) and Soltan Institute for Nuclear Studies (IPJ). The nuclear centre operates in Świerk near Warsaw since 1955. NCBJ large research facilities include the MARIA 30MW research nuclear reactor. The Centre's strategic tasks include:

- to support Polish nuclear power programme;
- to conduct basic research in physics in collaboration with world leading laboratories;
- to construct high-tech devices (mainly accelerators and detectors) for research, industry and medicine.

In eighties the first efforts had been devoted to the nuclear risk assessment and emergency management of nuclear power stations including preoperational deterministic and probabilistic safety assessment of the NPP which was planned to be operated.

Since 2002, when existing in the frame of NCBJ Centre of Excellence for Management of Health and Environmental Hazards (MANHAZ) was established, these activities have been expanded into the realm of hazards analysis and its applications to conventional plants of high risk of major industrial accident risk. The main achievements in this field have been:

- Development of methods, models, computer programs and databases for assessing health and environmental risks related to major accidents of stationary nuclear and chemical processing installations and other facilities connected with the use and/or transportation of dangerous substances (by road, railways and pipelines).

- Development of standalone computer codes and real-time computer-aided emergency decision support systems for complex technical facilities (nuclear power plants, chemical process installations, pipelines etc.), and for industrial areas.
- Preparation of guidelines and training materials for assessment of risk from industrial installations, and for Security Vulnerability Analysis.

Now, with the advent of the new national nuclear programme the activities of the new established, Nuclear Energy Department of NCBJ, in the area of SRA, assessment and management of risk, relevant for nuclear installations have got new forms and significant spin.

It in particular concerns:

- Methods for SRA of complex systems, suitable for HPC, including MC, MCMC and Bayesian techniques.
- Risk Informed Decision Making.
- Participation in relevant EU programmes for maturing methods and uses of PSA, e.g. Advanced Safety Assessment Methodologies: Extended PSA (FP7) and NUGENIA: AREA 1- Plant Safety and Risk.
- Supporting National Atomic Energy Agency on PSA methods and uses.

For more information about NCBJ please visit the website: http://www.ncbj.gov.pl/

European Safety, Reliability & Data Association (ESReDA)

European Safety, Reliability & Data Association (ESReDA) is an European Association established in 1992 to promote research, application and training in Reliability, Availability, Maintainability and Safety (RAMS). The Association provides a forum for the exchange of information, data and current research in Safety and Reliability.

ESReDA membership is open to organisations, privates or governmental institutes, industry researchers and consultants, who are active in the field of Safety and Reliability.

Membership fees are currently 1000 EURO for organisations and 500 EURO for universities and individual members. Special sponsoring or associate membership is also available.

For more information on ESReDA, contact:

ESReDA General Secretary, Mohammad Raza, ALSTOM Power,
7, Brown boveri strasse, 5401, Baden, Switzerland

Mohammad.Raza@power.alstom.com

Phone: +41562059743
Mobile: +41795925653

ESReDA address: European Safety, Reliability & Data Association, an International Non-Profit Scientific Association under the Belgium law (June 27, 1921, Title III). Headquarter: ESReDA, rue Gachard 88 Bte 14, B-1050 Bruxelles, Belgium, Siret:E00005802.
Any interested party is welcome to contribute to ESReDA project groups.

47th ESReDA Seminar

http://www.esreda.org

ESReDA Project Group on Fire Risk Analysis

This ESReDA project group was founded in 2006 to work on how to disseminate results obtained in event investigations of high-risk events (accident and near-misses). The project group has organised the 36th ESReDA Seminar "Lessons learned from accident investigations" at EDP in Coimbra in 2009. This Project Group is continuing from the work done by the ESReDA Working Group on Accident Investigation.