



*Luís Andrade Ferreira  
ESReDA President  
University of Porto,  
Portugal*

Dear ESReDA Members,

As President of the Board of Directors of ESReDA it is my privilege to address you in this first edition of the ESReDA News bulletin.

Our scientific society has already a long history promoting and sharing knowledge in the areas of Safety, Reliability and Data Analysis. We have been doing so by the work of our members in the Project Groups, publishing their results in books and in seminars that are open to everyone who is interested in the related issues.

However, our work has still a long way to go. In the competitive world like the one we have today, asset and production management plays a very significant role in the survival and success of organizations. For reliable, robust and resilient service and product quality continuity, modern management requires a transparent view of goods, machines, products and personnel under its responsibility. In recent years, a great deal of research has been devoted to improve asset management strategies, whereas companies are looking to use the more recent and intuitive technologies to facilitate their performance in a safer, smarter and sustainable environment.

Through the use of these advanced technologies, the transparency of the productive system can be obtained to help those in charge of management to have the right information at the right time. This information consists of obtaining and processing the equipment data and the production flow. These data effectively enable the knowledge at all times of the general equipment efficiency (OEE) and other significant information to allow forecasting and prevention capabilities. This information allows us to implement cost-effective and just-in-time reliability and maintenance strategies, always looking at the continuous improvement of quality of life for equipment users in general and for asset management in particular.

Systems have also been developed to allow the diagnosis and prognosis of equipment behaviour through the knowledge and analysis of monitoring data, which evaluate the degradation modes, usually invisible in their incipient form. The methods of prognosis and condition control are only possible with the understanding of the mechanisms of degradation/failure and with the sensing of the equipment to obtain data, its treatment and transformation in behaviour patterns by expert knowledge. It is in this context that the areas of science and technology appear in great progress, such as Cyber-physical Systems, Big Data Analytics, Internet of Things, Machine-Learning, etc.

All these concepts are integrated in new Physical Asset Management methodologies, which take into consideration the whole life cycle of equipment and enable to significantly improving the competitiveness of organizations.

We are facing a revolution of data analysis, reliability and safety paradigms, in which at this stage we will have to live with more classic equipment and equipment of the latest generation.

It becomes essential to think and discuss these new paradigms to realize our role today!

It is in this context that we address you to share your knowledge and experience, through your participation in ESReDA activities and we hope to receive your collaboration in this ESReDA News that we start now!

Sincerely,

*Luís Andrade Ferreira*

## Previous ESReDA SEMINARS

### The 50<sup>th</sup> ESReDA Seminar

18-19 May, 2016  
Seville, Spain



Antonio Sola  
INGEMAN, Spain

### *The 50<sup>th</sup> ESReDA Seminar on 25<sup>th</sup> years of ESReDA Seminars Safety and reliability enhancement throughout Europe: Looking back, looking ahead*

was held on the 18<sup>th</sup>-19<sup>th</sup> May, 2016, at the University of Seville (School of Engineering), in Seville (Spain). The Association for the Development of Maintenance Engineering (INGEMAN) was the hosting organization with the coordination by Antonio Sola. The seminar was an ideal platform for both experienced and young experts for discussion on the topics of RAMS, it gave an exceptional opportunity to review the status of reliability and safety engineering disciplines by comparing the past learnings to the nowadays in order to predict the trends of the future. The seminar was attended by 58 participants from 12 countries.



### The 51<sup>st</sup> ESReDA Seminar

20-21 October, 2016  
Clermont-Ferrand,  
France



Alaa Chateaneuf  
Blaise Pascal  
University, France

### **The 51<sup>st</sup> ESReDA Seminar on Maintenance and Life Cycle Assessment of Structures and Industrial Systems**

was held on the 20<sup>th</sup>-21<sup>st</sup> October, 2016. It was the last seminar of ESReDA Project Group ROLCCOST "Reliability-based Life Cycle Cost Optimization of Structures and Infrastructures". It was held in the Pascal Institute, Polytech Clermont-Ferrand, Blaise Pascal University (Clermont-Ferrand, France) and co-ordinated by Prof. Alaa Chateaneuf. There were 21 presentations of high scientific level and fruitful discussions among the experts in the field, along with technical visits in the Technical facilities at Sigma-Clermont and Civil Engineering experimental facilities at Polytech Clermont-Ferrand. The seminar was attended by 35 experts and scientists coming from seven European countries and one country out of Europe.

Two keynote lectures were highly appreciated:

- *Risk management, safety and dependability: looking back from 1990 to 2015, which future?* By André Lannoy (IMdR, France);
- *Maintenance of Renewable Energy Systems: key issues, practices, recent works and remaining challenges*, by Franck Schoefs (University of Nantes, France).

The discussions were held along the seminar underlined the importance of life cycle management of structures and infrastructures, by improving the predictive degradation models, the inspection and monitoring techniques and procedures, and the decision making considering uncertainties, as well as budget and reliability constraints.

Full programme of the 51<sup>st</sup> ESReDA Seminar: "[click to download](#)" (or in [www.esreda.org](http://www.esreda.org) -> News)

The Seminar proceedings will be provided in the section "Seminar proceedings" to download for ESReDA Members soon. Also a few glimpses of the seminar were captured and now being displayed in the [Gallery](#) section of the website.



## New ESReDA MEMBERS

### In 2016

ESReDA warmly welcomes **Romanian Railway Investigating Agency (AGIFER; Romania)** and **Wroclaw University of Technology (Poland)**, who joined us as ESReDA Effective Members in 2016.

## ESReDA PROJECT GROUPS



Mohamed Eid  
CEA, France

ESReDA launched a Project Group “**Critical Infrastructure/Modelling, Simulation and Analysis – Data**” (CI-PR/MS&A-Data) by the end of 2014 to establish the state-of-the-art on the Critical Infrastructure Preparedness & Resilience – Modelling, Simulation & Analysis with an intention to stress on data issues.

The project group succeeded in identifying many European actors and experts in the field of CI-P&R. Some of them had been invited to contribute into ESReDA 1<sup>st</sup> seminar on the CI-P&R that was held on May 28-29, 2015 and hosted by Wroclaw University of Technology, Poland, [1]. The seminar was successful in the sense that it gathered some 22 good papers of different focus, but very few on data and databases. The papers presented in the 48<sup>th</sup> seminar are published in Journal of Polish Safety and Reliability Association (JPSRA, vol. 6-N°3, September 2015) and freely accessible on JPSRA website: “[click to download](#)”

However, the project group could establish a good list of the most cited databases in the field of the CIP. The technical report including the list of the most cited Databases will be put available for free to all the community and should be available on ESReDA website once the new site becomes available with its new functionalities. The report will be distributed internally to all the project group members for their reviewing by the beginning of the year 2017. Hoping it will be available for informal distribution during the 52<sup>nd</sup> ESReDA Seminar, [2]. The 52<sup>nd</sup> ESReDA Seminar organizing committee is examining the extension of the deadline of proposing draft papers to the end of January. An updated Call for Papers will be released soon. All ESReDA members and supporters are invited to propose draft papers.

An annual meeting of the PG is programmed for the 28<sup>th</sup> of May 2017 to monitor progress and to examine a proposal regarding the Creation of an Informal EU-Network to collect data on the distributions of electrical networks, Gas networks and water distribution networks in connection with climatic sever conditions.

[1] 48<sup>th</sup> ESReDA Seminar on “Critical Infrastructures Preparedness: Status of Data for Resilience Modelling, Simulation and Analysis (MS&A)”. May 28-29, 2015, Wroclaw University of Technology, Poland

[2] 52<sup>nd</sup> ESReDA Seminar On “Critical Infrastructures: Enhancing Preparedness & Resilience for the security of citizens and services supply continuity”. 29-31 May 2017, Lithuanian Energy Institute & Vytautas Magnus University, Kaunas, Lithuania.



Nicolas Dechy  
IRSN, France

Previous Project Groups “**Accident Investigations**” and “**Dynamic Learning**” had focused on investigating and learning after the event. Lessons from major accidents and crises had shown that there were early warning signs (EWS) that could have, to some extent, provided useful information and to some extent been “relevant tools” for preventing major events. Project Group “**Foresight in Safety**” was launched in 2015.

Goals of the Project Group are:

- to better define these EWS (e.g. weak signals, precursors, near misses ...);
- to focus on the human and organizational mechanisms for their treatment (e.g. role of whistle blowers, role of organizational learning, active participation in two-way communications, speak-up);
- to link them with vulnerabilities, reliability and resilience of organizations;
- to enable sharp-end operators and organizations to deal with unexpected situations, situations not described by rules and procedures;
- to characterize contrast between and change from apathetic to a foresighted approach;
- to apply a systems perspective regarding life cycle analysis (from design to operations and further) including the synergy between feedback and feed-forward controls;
- to address the need for collaboration between technological and sociological disciplines;
- to articulate them with monitoring of Safety Performance (e.g. KPIs, SPIs ...);
- to make them visible in Data Bases treatment;
- use of scenario techniques and simulation underlying dangerous operations.

Project Group “**Foresight in Safety**” will organize the 53<sup>rd</sup> ESReDA Seminar on the 14<sup>th</sup>-15<sup>th</sup> November, 2017. It will be hosted by JRC Ispra (Italy).

## Forthcoming ESReDA SEMINARS

### The 52<sup>nd</sup> ESReDA Seminar

30-31 May, 2017  
Kaunas, Lithuania

#### The 52<sup>nd</sup> ESReDA Seminar on Critical Infrastructures: Enhancing Preparedness & Resilience for the Security of Citizens and Services Supply Continuity

will be held on the 30<sup>th</sup>-31<sup>st</sup> May, 2017, hosted by Lithuanian Energy Institute & Vytautas Magnus University in Kaunas (Lithuania). It is the 2<sup>nd</sup> seminar of ESReDA Project Group CI-PR/MS&A-Data on the "Critical Infrastructure/Modelling, Simulation and Analysis – Data". The main focus of the project group is to report on the state of progress in MS&A of the CIs preparedness & resilience with a specific focus on the corresponding data availability and relevance. The 52<sup>nd</sup> ESReDA Seminar covers the following topics: threats identifications & specifications, CIs disruptions MS&A, CI's vulnerability MS&A, CIs' dependencies and interdependency MS&A, Data and Databases, Emergency and crises management models & tools, IT inferences on CIs preparedness & resilience, Standards & Ontology in the domain of CI protection (CIP) for various CIs sectors.

The **first call for papers** and instructions to authors are already [online](#).



### The 53<sup>rd</sup> ESReDA Seminar

14-15 November, 2017  
Ispra, Italy

#### The 53<sup>rd</sup> ESReDA Seminar on Enhancing Safety: the Challenge of Foresight

will be held on the 14<sup>th</sup>-15<sup>th</sup> November, 2017 and will be hosted by Joint Research Center in Ispra (Italy). This seminar will be the first seminar on the topic proposed by Project Group "Foresight in Safety", which was launched in 2015.

The **first call for papers** will be available in [www.esreda.org](http://www.esreda.org) soon.

## Forthcoming Conferences



André Lannoy  
ESReDA Honorary  
Member,  
IMdR, France

#### The 10<sup>th</sup> International Conference on Mathematical Methods in Reliability (MMR 2017)

Grenoble, France, on the 3<sup>rd</sup>-6<sup>th</sup> July, 2017.

The MMR conferences serve as a forum for presenting the latest advances of research in the mathematical theory of reliability and risk management (stochastic modelling, statistical inference, optimization, decision support, etc.), as well as their applications (aging, maintenance, degradation, prognosis and health management, monitoring, warranty, lifetime data analysis, etc.). Its objective is to bring together the best international experts in the field, both from academy and various industrial sectors, such as energy, aeronautics, automotive, telecommunication. As a major international forum on reliability, it attracts an increasing number of researchers from all countries of the world.

If you are interested in a contribution in an industrial session concerning reliability, especially in the topics: probability of rare events, structural reliability, survival law and efficiency of maintenance or degradation analysis, you can contact: [andre.lannoy@imdr.eu](mailto:andre.lannoy@imdr.eu)

For more information: [mmr2017.imag.fr](http://mmr2017.imag.fr)

### Other Conferences

**RAMS'17** – the 63<sup>rd</sup> Annual Reliability and Maintainability Symposium  
23-26 January 2017, Orlando, Florida, USA. <http://rams.org/>

**ESRel'17** - the 27<sup>th</sup> Annual European Safety and Reliability Conference  
18-22 June, 2017, Portorož, Slovenia. <http://esrel2017.org/>

ESReDA: European Safety, Reliability & Data Association

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