



## Previous ESReDA SEMINARS

### The 58<sup>th</sup> ESReDA Seminar



Kaisa Simola  
EC JRC Petten,  
The Netherlands



Zdenko Simic  
EC JRC Petten,  
The Netherlands

### The 58<sup>th</sup> ESReDA Seminar on Using Knowledge to Manage Risks and Threats: Practices and Challenges

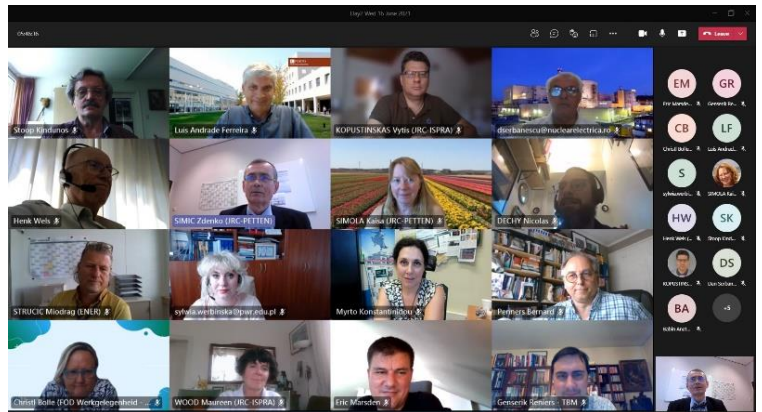
**Updated dates: 15-16 June 2021, Alkmaar, The Netherlands**

The 58<sup>th</sup> ESReDA Seminar on Using Knowledge to Manage Risks and Threats: Practices and Challenges was virtually organized by [European Commission Joint Research Centre \(EC JRC, https://ec.europa.eu/jrc/en/about/jrc-in-brief\)](https://ec.europa.eu/jrc/en/about/jrc-in-brief) and ESReDA as an effort of the two project groups (former [Foresight in Safety](#) and current [Risk, Knowledge and Management](#)).

The Seminar was two days online event held on 15 and 16 June 2021 at MS Teams platform. The seminar was well attended and it went without any larger problems. MS Teams platform proved satisfactory for event with less than 100 participants. Defined team for the seminar was also very helpful for preparatory activities (e.g. communication, uploading of presentations etc.).

The Seminar agenda had five keynote lectures, one forum to discuss main theme and 20 regular presentations (distributed in five sessions). There was total of 58 participants from more than 20 countries. Interestingly, one keynote presenter, prof. Jan Hayes, was from Australia. The participants were coming from different domains (e.g. nuclear, railway, aviation, telecommunication etc.) and different types of stakeholders (i.e., industry regulators and research).

Feedback about seminar, collected by online poll, is very positive in respect to organization, presentations, discussions and takeaways. The seminar has already inspired one proposal for the new project group and it will most certainly help continuation of the work for the related project group "Risk, Knowledge and Management".



## New ESReDA Members

### In 2021

ESReDA warmly welcomes a French company **MAD-Environnement** (France), who joined us as ESReDA Effective Members in 2021. Equally, ESReDA is proud to propose a title of Honorary President for Luís Andrade Ferreira (previous ESReDA president).



Luís Andrade Ferreira  
University of Porto,  
Portugal

Luís Andrade Ferreira has been a member of ESReDA – European Safety, Reliability and Data Association since November 2008, representing the University of Porto. In 2010 he was appointed to the Board of Directors. From May 2012 to May 2014 he was Vice President of the Board of Directors. From May 2014 until October 2020 he was Chairman of the Board of Directors. On June 2021 he was named Honorary President of ESReDA.

His main research interests as a member of the Department of Mechanical Engineering at the Faculty of Engineering of the University of Porto, Portugal, have been: Life-cycle analysis of equipment and its management; Reliability analysis of mechanical equipment and Data analysis and its importance for reliability, maintenance and safety analysis of industrial equipment.



Sébastien Delmotte  
MAD-Environnement,  
France

**MAD-Environnement** is a French company on behalf of decision-making at the different levels of companies and institutional organizations based on risk analysis and data sciences. This company was created in 2007 by Florent Arrignon and Sebastien Delmotte, just after obtaining their ph.D. respectively in agent-based modelling and reactive-transport modelling.

Since its creation, MAD-Environnement has worked for public institutes and private companies in various domains like aeronautical and space industry, food industry, healthcare and environmental management. The projects could go from simple consulting support for a technological project to the complete conception and implementation of an AI system.

Currently, MAD-Environment reinforces its global approach coupling risk management and AI on two major axis: (i) the digital transformation and (ii) the ecological transition. MAD-Environnement supports its clients on their digital transformation projects, from the definition of the global strategy to the design and implementation of AI systems in a secure framework. This support is carried out on: leadership, identification and removal of the levers of success, locks and uncertainties, innovative design, technical realization and training. A typical project starts with the analysis of existing data and knowledge and then in iteratively building AI models for prediction and decision. Each of these different models become the bricks of a more global AI system that is finally implemented in the form of Software As A Service. The project safety and security are ensured by multi-levels risk analysis, from the analysis of the algorithms in itself to the cybersecurity analysis and the management of the global risks of the digital project. Aside this consulting and engineering activity, MAD-Environnement develops R&D projects dedicated to the risk management and modelling in the environmental field. In this domain, understanding complexity and dealing with diluted governances are huge challenges to deal with. As an example, we were recently strongly involved in a national research project funding by the ANR (French research agency) about the risk management and modelling of an invasive species in the context of climatic changes.

More generally, MAD-Environnement is interested in the bridges between decision-making processes under uncertainty and unknowable, risk management and AI modelling. ESReDA is the right place to develop such multidisciplinary research projects at an international scale.

Contact: Sébastien Delmotte, [delmotte@mad-environnement.com](mailto:delmotte@mad-environnement.com)

## Forthcoming ESReDA SEMINARS

### The 59<sup>th</sup> ESReDA Seminar



Agnieszka Tubis  
Wroclaw University of  
Science and Technology,  
Poland

### The 59<sup>th</sup> ESReDA Seminar on Creating Safe and Resilient Logistic Systems

26-27 October 2021, Wroclaw, Poland

The 59<sup>th</sup> ESReDA Seminar on Creating Safe and Resilient Logistic Systems will be held on 26-27 October 2021, hosted by Wroclaw University of Science and Technology. In a case Covid19 situation prevents full physical meeting, hybrid and fully virtual options will be considered.

The Seminar aims to discuss theories, concepts, and experiences of enhancing the use of knowledge for better reliability, resilience, and risk management.

The presented research results, operational proposals, and case studies will respond to enterprises' managerial staff's current problems throughout Europe. Thus, this Seminar will bring together researchers, practitioners, specialists, and decision-makers to discuss strategies and practical experiences in the given field of research. The main topics include (but are not limited):

- Designing reliable logistics networks;
- Risk assessment and decision theory in transport and logistics systems;
- Safety and quality in transport and logistics;
- Supply Chain Risk Management;
- Physical asset management under risk and uncertainty;
- Resilience of logistic systems and supply chain;
- Threats in Logistics 4.0.

The **call for papers** is available on the [ESReDA website](#).

The registration to be opened soon and will be available till 30 September 2021. A registration form and information package for the venue will be made available on the ESReDA website. Contact email address for all questions about seminar is [sylvia.werbinska@pwr.edu.pl](mailto:sylvia.werbinska@pwr.edu.pl) or [emilia.skupien@pwr.edu.pl](mailto:emilia.skupien@pwr.edu.pl).



Tomasz Nowakowski  
Wroclaw University of  
Science and Technology,  
Poland

## The 60<sup>th</sup> ESReDA Seminar



Rasa Remenyte-Prescott  
University of  
Nottingham, UK



John Andrews  
University of Nottingham,  
UK

## The 59<sup>th</sup> ESReDA Seminar on Advances in Modelling to Improve Network Resilience 4-5 May 2022, Grenoble, France

The 60<sup>th</sup> ESReDA seminar will be a forum for exploring issues related to engineering resilience against different threats, such as failures of aging infrastructure, natural disasters and climate change, intentional attacks (cyber-security and terrorism), and emerging threats, met by different industries, critical infrastructures and urban settlements. We aim to discuss theories, concepts, and experiences of methods for improved network resilience. Authors are invited to present their research and experience and discuss challenges in enhancing resilience through modelling.



The 1<sup>st</sup> Call for Papers is now available to view [here](#) and we welcome contributions from a wide range of stakeholders, from practitioners to researchers (industrialists, regulators, safety boards, universities, R&D organisations, engineering contractors and consultants, training specialists) which could address a wide variety of sectors:

- Transport: rail, road, air and maritime
- Critical infrastructure: electricity, water, telecommunications, information systems
- Urban planning and management
- Public sector and government

The seminar will be held in the beautiful city of Grenoble, hosted by the Universite Grenoble Alpes, 4<sup>th</sup> – 5<sup>th</sup> May 2022. We look forward to seeing you there.

## New Project Groups Proposals

### New Project Group proposal taking shape: Machine Learning for Safety Reporting



Jorge Tanarro Colodron  
EC JRC  
Petten, The Netherlands

The field of natural language processing is currently accomplishing impressive achievements driven by the continuous growth of data freely available on the Internet coded as text and the latest developments of deep learning and Artificial Intelligence that allow processing and making use of it. Transformer models such as BERT or GPT-3 are deep neural networks used for machine learning specifically in the field of natural language processing which can be fine-tuned to specific tasks such as text classification at very low cost facilitating its wider implementation.

The application of these tools to enhance safety reporting allows a more accurate and systematic analysis of the related text based datasets, obtaining quantitative and visual representations of the nature of its overall composition and the undergoing trends behind the text.

The project group will focus its efforts in studying how effective Transformer models are at facilitating safety expert work right now (Do they work?) as well as considering how the related processes and systems could be improved to optimize and expand their application (What else could they do?).

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### Automotive sector meets safety 1.0: new PG proposal on In-Service Monitoring for Automated Vehicles



Maria Cristina Galassi  
EC JRC  
Petten, The Netherlands

Driving automation is bringing new challenges to the automotive sector: how to define what a safe automated vehicle (AV) is? How to assess AV safety before granting the homologation that will allow market introduction? And how to make sure that the AV performs safely in real world during its whole lifetime? A new assessment method is under development, complementing the conventional physical testing with the audit of the manufacturer safety management system, the assessment of the safety demonstration submitted by the manufacturer in the form of the report, and the in-service monitoring of the AV safety performance. And the operational experience feedback will play a crucial role also in improving the AV safety level, through the identification of new safety-critical situations to be addressed by manufacturers during the development and through the sharing of lessons learned.

The next step will be setting up a common framework for data reporting and sharing of safety recommendations. Expertise already built in other sectors could provide a good background and help the automotive sector to move faster and more effectively in that direction. The ESReDA forum, gathering together reliability and safety specialists from different fields, represents a unique opportunity to promote exchange of knowledge and foster the development of the In-Service Monitoring framework for Automated Vehicles.

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## Project Groups



Rasa Remenyte-Prescott  
University of  
Nottingham, UK



John Andrews  
University of Nottingham,  
UK

### Project group on Resilience Engineering and Modelling of Networked Infrastructure

Joint Project group Leaders:

- Dr Rasa Remenyte-Prescott, University of Nottingham,
- Professor John Andrews, University of Nottingham.

Project group Secretary – Kate Sanderson, University of Nottingham.

Many of the critical infrastructure systems on which modern society is so dependent are networks. These include transport networks (rail, metro, highway, air traffic and shipping routes), utilities (electricity, gas, water) and communications (mobile phone, land line phones, internet). The disruption of such systems can have a big impact on the communities that they serve. The nature of the threats to these systems is also changing and includes failures, especially of aging infrastructure, natural disasters, the effects of climate change and deliberate acts such as terrorism. Such critical systems need to be resilient.

This project group, now in its third year, and with a base of 35 members, is focussing on the transport and utilities networks to keep the project manageable over three years. For these sectors we are looking at the characteristics of each of the networks and the methods which exist to model their resilience and identify the weaknesses where the most effort should be expended to protect the performance of the network.

Findings from the project group will soon be published in a book entitled “Modelling the Resilience of Infrastructure Networks”, edited by Rasa Remenyte-Prescott and Vytis Kopustinskas. The final seminar will be held at the Universite Grenoble Alpes, 4<sup>th</sup> – 5<sup>th</sup> May 2022.

## Forthcoming Conferences & Seminars

### Special Session ESREL 2021 “Advancements in Resilience Engineering of Critical Infrastructure”

**19–23 September 2021, Angers, France**

The ESReDA Project Group on Resilience Engineering and Modelling of Networked Infrastructure and members of the ESRA Technical committee on Critical Infrastructure, will be leading a Special Session at ESREL 2021, Angers, France, 19<sup>th</sup> – 23<sup>rd</sup> September 2021. This session (WE1J 08:30 – 10:10 Wednesday 22<sup>nd</sup> September) will focus on highlighting and disseminating current state-of-the-art methods and their practical applications in resilience engineering of critical infrastructures. For more information and to view the Special Session program please visit the [ESREL 2021 program website](#).

For more information on the project group or any of the events above please contact: [Kate Sanderson](#).

### Other Conferences and Seminars

#### SSARS 2021 – 15<sup>th</sup> Summer Safety & Reliability Seminar

5-9 September 2021, Ciechocinek, Poland. More about at the [SSARS website](#).

#### ESREL 2021 – the 31<sup>st</sup> European Safety and Reliability Conference

19-23 September 2021, Angers, France. More about at the [ESREL 2021 website](#).

#### CRITIS 2021 – the 16<sup>th</sup> International Conference on Critical Information Infrastructures Security

27-29 September 2021, Lucerne, Switzerland. More about at the [CRITIS 2021 website](#).

ESReDA Members, you are kindly invited to contribute to the ESReDA newsletter sharing news, announcement of events, your experiences, ideas, etc. You are supposed to elaborate proposals to create new Project Groups, host ESReDA Seminars or initiate collaborative activities.

**ESReDA: European Safety, Reliability & Data Association**

Association internationale sans but lucratif, régis par la loi Belge du 27 Juin 1921-Titre III (Registration N°: 0452522618 - Siret:E00005802)

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