

62nd ESReDA Seminar On
**Managing the unexpected:
designing systems to embrace disorder
for increasing asset reliability**

April 12th – 13rd, 2023, DesignLab - University of Twente, the Netherlands



FINAL PROGRAMME

Tuesday 11th April 2023 <i>Room: Play and Connect, DesignLab</i>		Wednesday 12th April 2023 <i>Room: Inform, Learn-X Or Inspire, DesignLab</i>		Thursday 13th April 2023 <i>Room: Inform, Learn-X Or Inspire, DesignLab</i>	
Project Groups' Meeting		09h00 - 09h30	Coffee and registration	08h30 – 09h00	Welcome coffee
		09h30 - 10h00	Welcome	09h00 – 10h00	Session 3
		10h00 - 11h00	Keynote 1a Marinus Kuivenhoven & Edzo A. Botjes Xebia Security	10h00 – 11h00	Keynote 2 Prof. Ira Helsloot Radboud Universiteit
		11h00 - 11h30	Coffee break	11h00 – 11h30	Coffee break
		11h30 - 12h30	Session 1	11h30 – 12h30	Session 4
		12h30 - 13h30	Lunch	12h30 – 13h30	Lunch
14.00-17.00	Board of Directors	13h30 - 14h30	Keynote 1b Edzo A. Botjes Xebia Security	13h30 – 14h30	Session 5
		14h30 - 15h00	Coffee break	14h30 – 15h00	Seminar close
		15h00 - 16h00	Session 2		
18.30	Free dinner	16h00 - 17h30	ESReDA General Assembly		
		19h00	Seminar dinner		

Scope of the seminar

Dealing with complex systems have certain characteristics that require consideration to be managed successfully. Understanding and dealing with unexpected events and the unknown are a major challenge in asset management.

Unexpected drifts from normal working conditions pose several concerns about the decrease of safety levels as well. Despite the enormous changes and developments in industry in the last decades as ‘an unprecedented fusion between and across digital, physical and biological technologies’, approaches for guaranteeing comparable safety and reliability improvement do not evolve quickly enough to offer adequate solutions in managing the mentioned complexity.

Complex assets require a different approach in dealing with unpredictable events and disorder. Consequently, it appears necessary, during the design phase of a complex system, to use tools and techniques for both withstanding stress (Kriete, 2013) and becoming stronger but without the necessity of predicting every circumstance. Referring to the work of Taleb (2012), reliability professionals are in need for ‘antifragile’ methods for embracing disruptive situations and unknowns.

The aim of the seminar is thus to discuss the state of the art and on-going developments in dealing with unexpected events for complex systems (i.e. infrastructures, energy production), presenting new techniques and methodologies and to discuss their strength, weakness, and uncertainties in order to improve reliability.

The 62nd ESReDA seminar will be held on April 12-13, 2023, hosted by University of Twente, The Netherlands

Topics

- Unexpected events;
- Reliability;
- Resilience Engineering;
- Antifragility Engineering;
- Resilience of infrastructures and equipment;
- Emergency and crises management models & tools

Domains

Among others:

- Power generation & supply
- Process industry
- Gas & Oil production, storage & transport
- ICT networks, data storage & servers
- Medical & health care
- Transport: rail, road, air and maritime
- Supply chain process
- Water supply and water works

Threats

- Extreme disruptions
- Cybersecurity
- Power shortage
- Random failures
- Systemic failures
- Emergency situations
- Asset shortage
- Heavy rain
- Industrial & technological accidents

Chairman of the Seminar

- Dr. Alberto Martinetti, Associate Professor in Maintenance Engineering, University of Twente
- Jan-Jaap Moerman, MSc, University of Twente

Local Organization Committee (LOC)

For practical local information relative to the venue, please, contact: Bianca Dibbelink (b.dibbelink@utwente.nl) with Alberto Martinetti (a.martinetti@utwente.nl), and Antonio Guillen (ajguillen@us.es) with Micaela Demichela (micaela.demichela@polito.it) in Cc.

Relevant dates

- Submission of abstracts: **31 January, 2023**
- Authors notification: Feb 10th, 2022
- Full papers: March 31th, 2022
- Date of seminar: April 12th – 13th, 2023
- ESReDA project group's meetings: April 11th, 2023
- ESReDA Board of Directors meetings: April 11th, 2023
- ESReDA General Assembly: April 12th, 2023
- ESReDA Gala dinner: April 12th, 2023

Registration and Seminar Fee

A registration form and the practical information package will be made available on the ESReDA website. Fees, according to ESReDA's rules, are:

- Speakers : one speaker per accepted paper is exempted.
- ESReDA members : 3 participants/member are taken in charge by the Seminar.
- Others : 300€/participant
- Accompanied persons for Gala dinner: 40€/acc. person.

To be paid by bank transfer to ESReDA account:

Holder : ESReDA
Bank : BNP Paribas Fortis Bank, Boulevard Jamar 1 D, 1060 Brussels, Belgium
IBAN : BE69 0012 3728 1678
BIC : GEBABEBB
Subject : Registration in the 62nd ESReDA Seminar

Seminars Proceedings

The final proceedings of the 62nd Seminar will be edited in the form of Technical Report and e-published with public access. Some elected papers of the 62nd ESReDA seminar will be published in special issue of Reliability Engineering and System Safety Journal (under discussion).

BoD & Project Group Meetings (11 April, 2023) University of Twente

Day 0: Tuesday 11th April, 2023

10h00-12h30	Project Groups' Meeting (TbC)
12h30-13h30	Lunch
14h00-17h00	Board of Directors (<i>Room: Play and Connect @DesignLab</i>)
18.30	Free Dinner

**Day 1: Wednesday 12th April, 2023****Room: Inform, Learn-X Or Inspire @ DesignLab**

09h00-09h30	Registration and welcome coffee
09h30-10h00	Welcome to participants Mohamed Eid - President of ESReDA, Alberto Martinetti – University of Twente - Chairperson of the Conference
10h00-11h00	Keynote lecture 1a: “Embrace Chaos & Antifragility” by Marinus J. Kuivenhoven & Edzo A. Botjes – Xebia Security Chair: Jan-Jaap Moerman
11h00-11h30	Coffee Break
11h30-12h30	Session 1: Safety Chair: Alberto Martinetti
<i>1h</i> <i>(20' each</i> <i>including</i> <i>questions)</i>	“Next Generation Prediction Methodologies and Tools for System Safety Analysis (NxGen) – A Project Overview ” by Kate Sanderson et al.*, *University of Nottingham, UK;
	“Using Automated Vehicles Operational Data to Confirm Safety and Anticipate Threats ” by Riccardo Dona* et al.; *Uni Systems Italy
	“Dynamic safety and degradation analysis of an aircraft internal air system ”, by Silvia* Tolo et al.; *University of Nottingham, UK;
12h30-13h30	Lunch
13h30-14h30	Keynote lecture 1b: “Embrace Chaos & Antifragility” by Edzo A. Botjes – Xebia Security Chair: Jan-Jaap Moerman
14h30-15h00	Coffee Break



15h00-16h00	Session 2: Resilience and Antifragility Chair: Micaela Demichela
1h (20' each including questions)	"How to use antrifagility for improving overall reliability", by Alberto Marinetti* et al.; *University of Twente, The Netherlands
	"Resilience time as a hidden critical factor" by Wim Beukenkamp et al.*; *Delft University of Technology
	"Foresight: from complexity to transparency in (re)designing air-, land- and seaside transitions" by John Stoop* et al.; *Delft University of Technology
16h00-17h30	ESReDA General Assembly
19h00	Seminar Dinner

Day 2: Thursday 13th April, 2023**Room: Inform, Learn-X Or Inspire @ DesignLab**

08h30-09h00	Welcome coffee
09h00-10h00	Session 3: Hazard Identification Techniques Chair: Jan Braaksma
1h (20' each including questions)	"D2T2 Dynamic and dependent Fault Tree analysis ", by John Andrews et al.*; *University of Nottingham, UK;
	"New strategy for learning Hidden Markov Model for estimation of the state of health of an industrial system " by Nesrine Keltoum Khodja* et al.; *University of Orleans, France
	TbC" by Micaela Demichela* et al.; *Politecnico di Torino



10h00-11h00	Keynote lecture 2: Prof. Ira Helsloot Radboud Universiteit Chair: Jan Braaksma
11h00-11h30	Coffee Break
11h30-12h30	Session 4: Hazard Identification Techniques Chair: Antonio J. Guillén Lopez
1h (20' each including questions)	"Importance Measures in dynamic and dependent fault tree analysis (D2T2)" by Sally Lunt* et al.; *University of Nottingham, UK
	"Less Errors Is More Safety" by Sever Paul* et al.; *Romanian Railway Investigation Agency, Romania
	"Application of Dynamic and Dependent Tree Theory (D2T2) to assess the risk of ship collision in open sea " by Clementina Ramirez Marengo* et al.; *University of Nottingham, UK;
12h30-13h30	Lunch
13h30-14h30	Session 5: Chair: Jan-Jaap Moerman
1h (20' each including questions)	"D2T2 Event Tree analysis" by Silvia Tolo* et al.; *University of Nottingham, UK;
	"Technical and management aspects in the safety evaluation of offshore CO2 storage in depleted levels of hydrocarbon cultivation fields" by Romualdo Marrazzo* et al.; *VAL-RTEC, ISPRA, Italy
	"RMMM: Reliability and Maintenance Management Model aligned with Asset Management. Case study: Iron Mine " by Carlos Parra*'et al.; *Escuela de Ingeniería Mecánica, Universidad Técnica Federico Santa María, Chile
14h30-15h00	Seminar Close and Introduction of the 63rd ESReDA Seminar

Keynote Speakers

Marinus J. Kuivenhoven – Xebia Security



TbA

Edzo A. Botjes – Xebia Security



My goal is to apply my more than 30 years of experience in business/IT in organisation to make them a more resilient and most important a human-centred place to work.

My aim is to achieve this via my expertise is that of Antifragility Architect, Variety Engineer and Security Coach and via sharing as much as possible content via blogs, articles, lectures and courses.

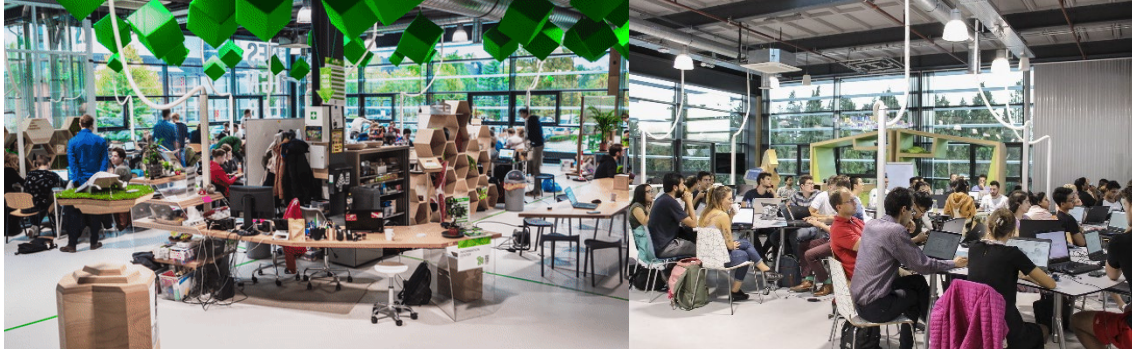
Prof. I. Helsloot (Ira) – Radboud University



Prof. Dr. Ira Helsloot is professor of the Governance of Safety and Security at the Radboud University. Originally promoted as a mathematician, he is engaged in research on crisis management and the governance of safety since 1994. He was professor of Crisis Management and Physical Security at the Vrije Universiteit in Amsterdam from 2006 to 2011 and long term editor of the Journal of Contingencies and Crisis Management (2004-2022).

Venue

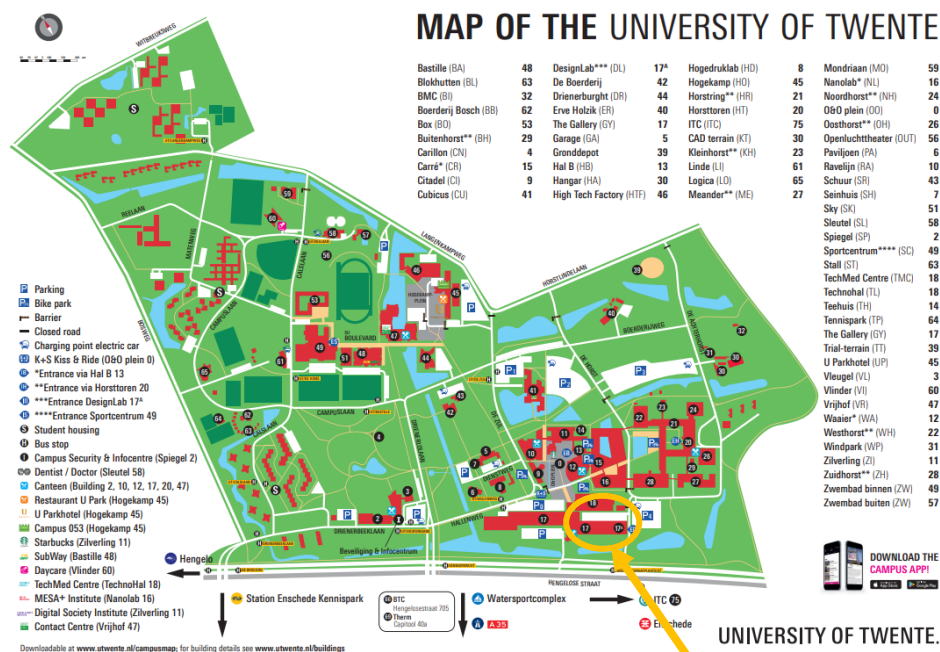
Designlab, University of Twente, Enschede, The Netherlands



How to get to University of Twente?

<https://www.utwente.nl/en/contact/route/#location-campus>

<https://www.utwente.nl/download/campusmap.pdf>



Possible Accommodation

[Intercity Hotel – Enschede \(city center\)](#)

[UPark Hotel \(University of Twente Campus\)](#)

[Fletcher Hotel – Enschede \(in front of the University of Twente Campus\)](#)

Seminar Location @ UT

NOTE: we can have the option to reserve rooms at UPark Hotel, but we need to have the request on time.