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NORISK Erasmus Mundus Joint Master: What can we get from Design Measures

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NORISK

Risk Assessment and Management of Civil Infrastructures

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Education and Culture Executive Agency (EACEA). Neither the European Union nor the granting authority can be held responsible for them. Project: 101128171 — NORISK — ERASMUS-EDU-2023-PEX-EMJM-MOB

Outline

- Why this Master and where idea comes from? The beginning ...
- How to tackle it? The Erasmus Mundus Design Measures, our road ...
- In what consists our Master? What we did during EMDM ... The preparation ...
- Where we are? The ongoing works ...

Why an international master on risk assessment and management?

Is there a need?



my.europe EUROPE NEWS

European infrastructure is 'vulnerable' and needs greater protection, says EU commissioner [COMMENTS](#)

By Sandor Zsiros • Updated: 03/10/2022

REUTERS

ESG ENVIRONMENT FEBRUARY 25, 2020 / 4:56 PM / UPDATED 3 YEARS AGO

Europe's infrastructure at "high risk" from climate change: U.N. study

By Emma Farge

[Home](#) / [News](#) / [Technology](#) / EU Commission seeks accelerated defence of critical infrastructure

EU Commission seeks accelerated defence of critical infrastructure

By Molly Killeen | EURACTIV.com 📅 Oct 18, 2022 (updated: 📅 Oct 20, 2022)

Advertisement

EU infrastructure risk project to address potential climate, 'resource' shortage catastrophes

Atos-led group to protect European infrastructure from impact of future pandemics – using Horizon cash

🔴 Dan Robinson

Tue 24 Jan 2023 // 11:47 UTC

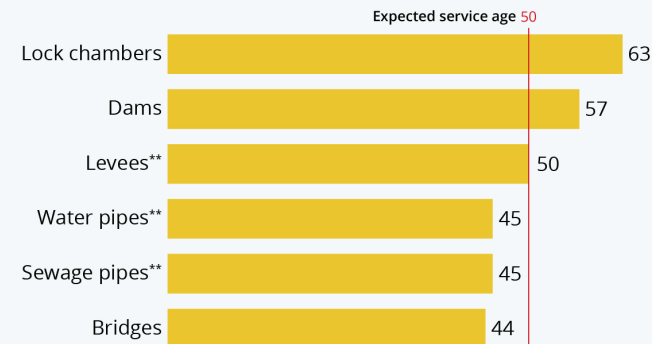


Is there a need?



The Age of American Infrastructure

Average age of different types of infrastructure in the U.S. 2020-2021* (in years)



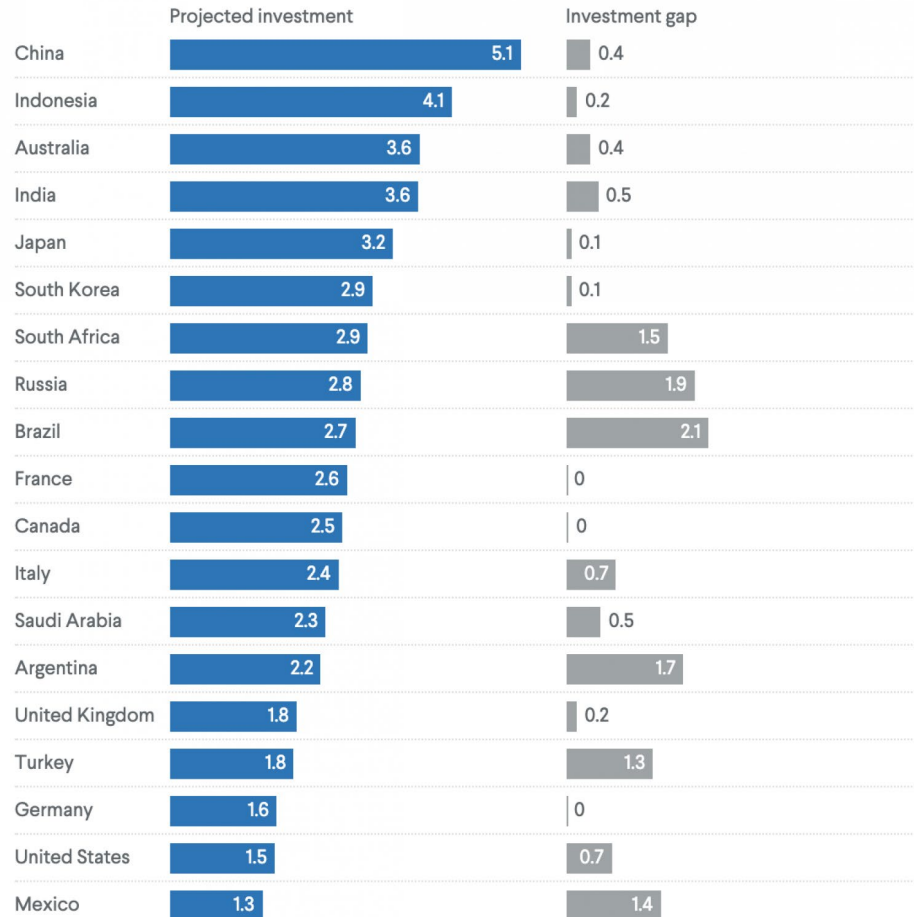
* lock chambers: 2017 ** 50-100 years for some
Sources: American Society of Civil Engineers, U.S. Army Corps of Engineers



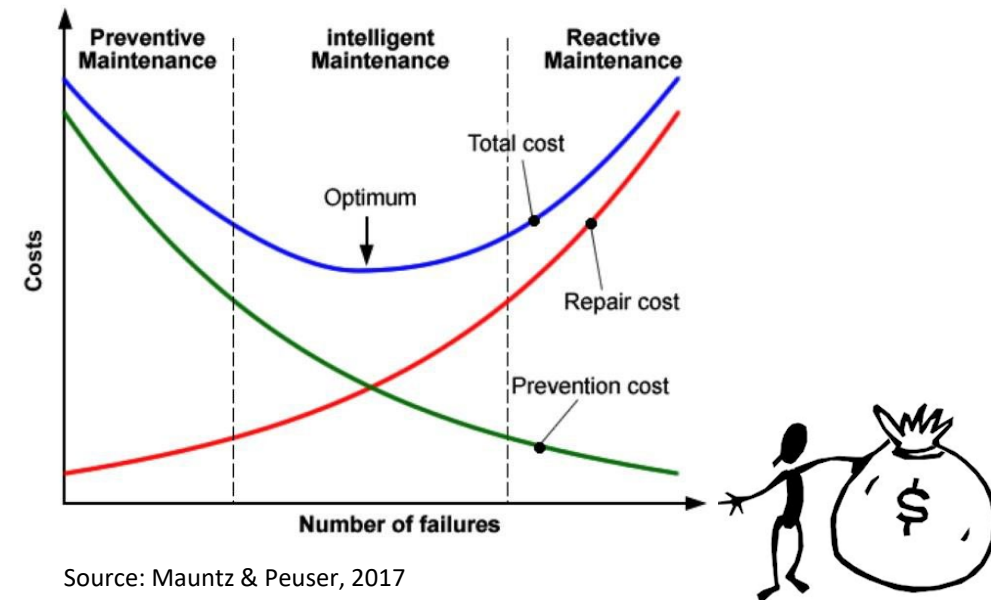
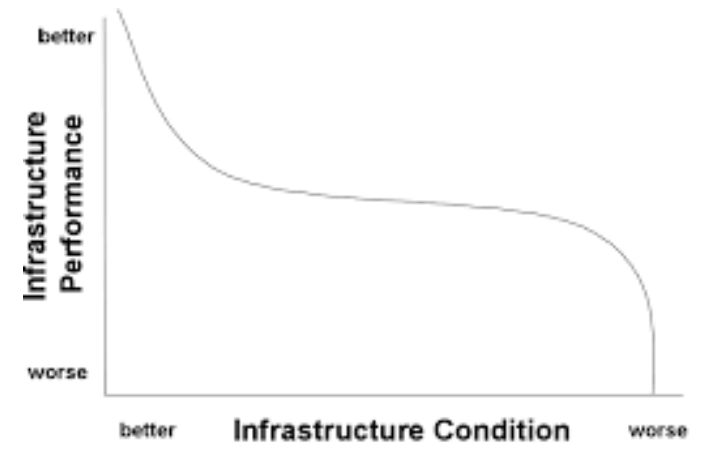
Actions to be taken

G20 Infrastructure Spending by 2040

Projected public and private infrastructure investment as a percentage of gross domestic product (GDP), 2016–2040



Source: Council on Foreign Relations



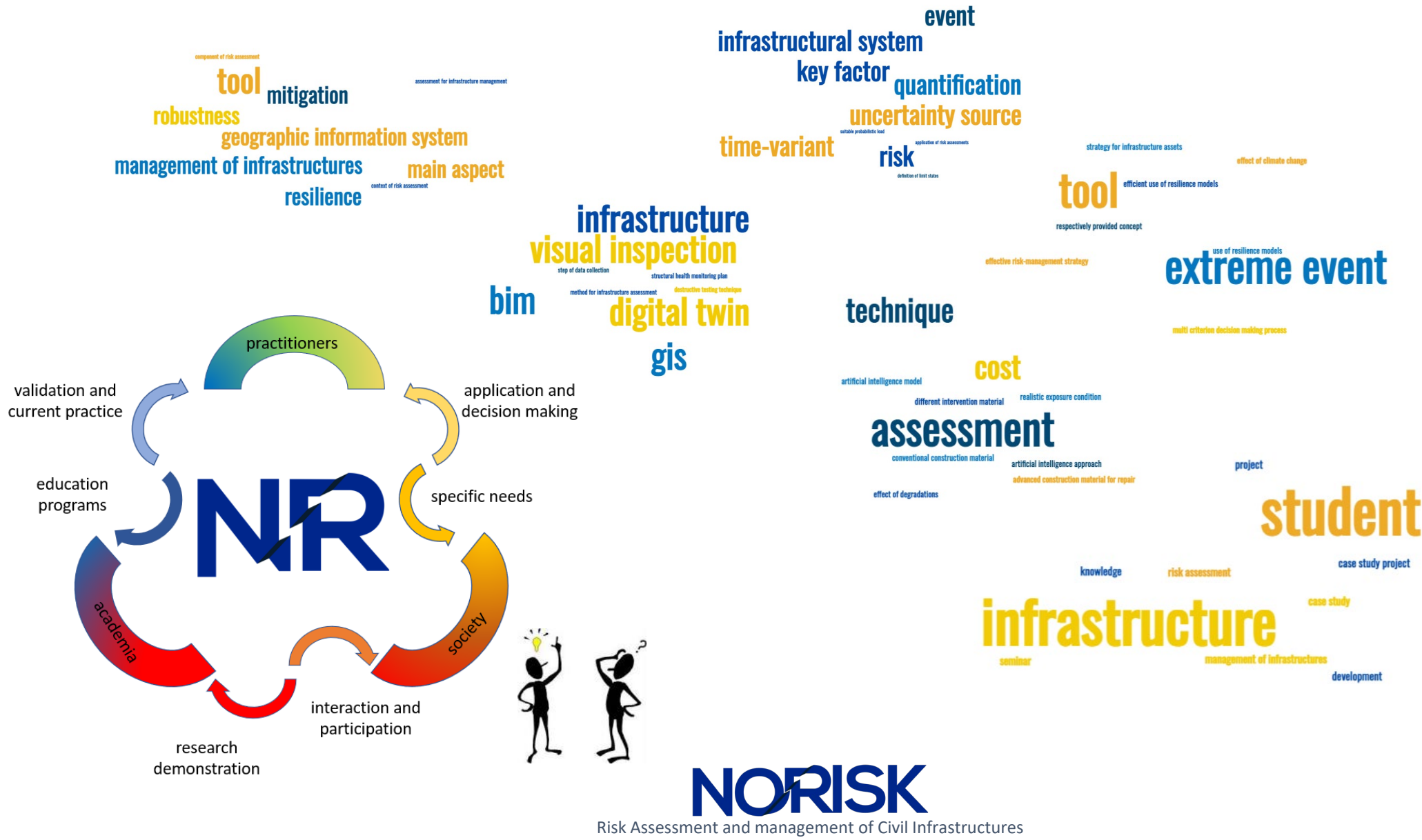
Source: Mauntz & Peuser, 2017

Actions to be taken



How can we move forward with this idea?

How to tackle it



How to tackle it



RISK ASSESSMENT AND MANAGEMENT OF CIVIL INFRASTRUCTURES

info@nrc-norisk.org

About

NORISK focuses on the topic of risk analysis and infrastructure management, which is a subject of high socioeconomic relevance to meet current and future challenges that are posed, in particular, to the public and private sectors of infrastructure management: essential services to society, as well as to institutions responsible for the safety and well-being of the population. Due to the small number of human resources with specialized training in this area, NORISK's objective is to prepare a new generation of technicians with solid basic training and in an integrative and multidisciplinary context that allows them to operate in the risk analysis and infrastructure management markets, exploring the common denominator that exists for all sectors that need it, and for which the general training of existing Bachelors and Integrated Masters cannot reach.

The NORISK consortium will be composed of 4 high education institutions: University of Minho (Portugal), Università di Padova (Italy), La Rochelle Université (France), and Universitat Politècnica de Catalunya (Spain) with complementary expertise. The different phases of the risk management cycle will be scrutinized according the fields of research and specialization of each partner.

NORISK is a very broad course on the topic of risk analysis and management of civil infrastructures in the sense that several of the concepts and tools provided will range from materials, analysis, monitoring, digitalization and sustainability. It is completely in line with the main lines of the European Union, as well as with the needs of many of the stakeholders involved.

Duration: 1 year

CONSORTIUM





CURRICULAR UNITS

SEP - JUL

1. Introduction to risk assessment and management of infrastructures (5 ECTS)
2. Reliability and Risk Analysis of infrastructure (5 ECTS)
3. Infrastructures Management and decision supporting tools (5 ECTS)
4. Monitoring and digitalization of infrastructures (5 ECTS)
5. Assessment and intervention techniques on infrastructures (5 ECTS)
6. Integrated Project within the scope of Risk Analysis and Management of infrastructures (5 ECTS)
7. Dissertation (30 ECTS)

NORISK Project has received funding from the European Union's ERASMUS+ EDU-2021-EMJM-DESIGN under grant agreement No. 101050410.



Key areas

Risk assessment and management

Reliability and resilience

Management and decision-making tools

Monitoring and digitalization

Assessment and intervention



Transversal competences and skills

Critical thinking and capacity of solving problems

Collaborative work in multidisciplinary and multicultural teams

Agility and adaptability to uncertain and highly complex environments

Oral and written communication, to promote structured thinking, persuasion and argumentation skills

Analysis and evaluation of information

Curiosity and imagination

Capacity of developing teamwork virtually

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Keywords and actions

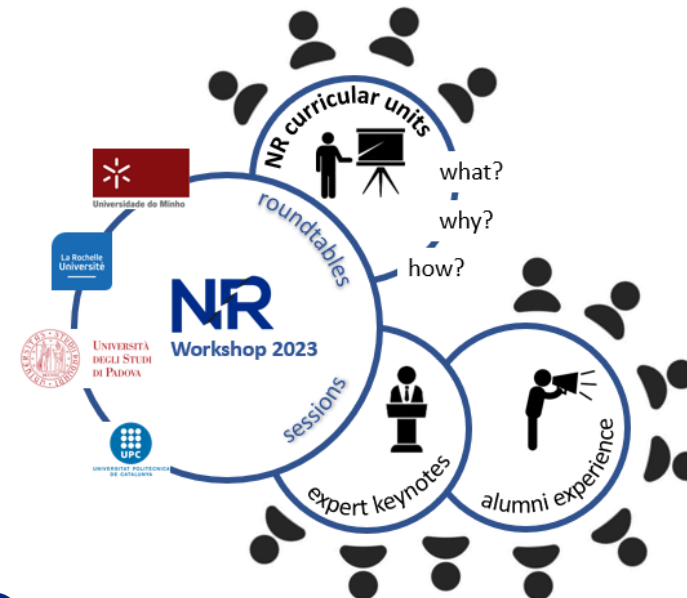
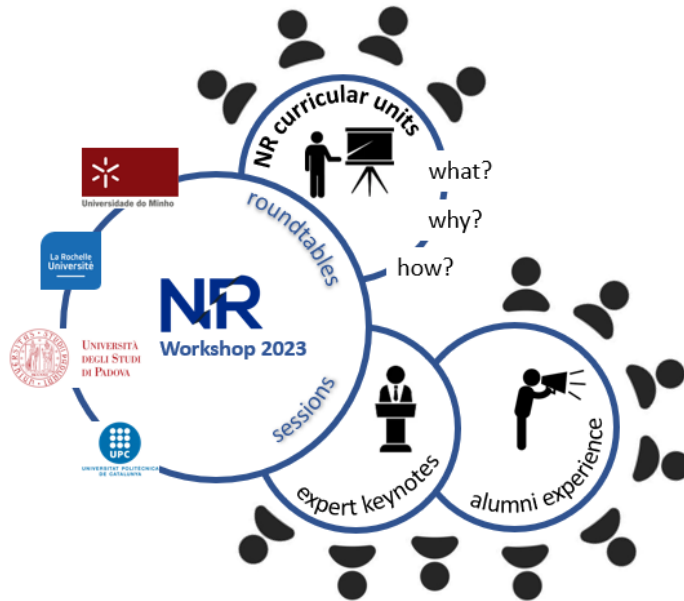


How to tackle it

- 2022-23: NORISK EMDM

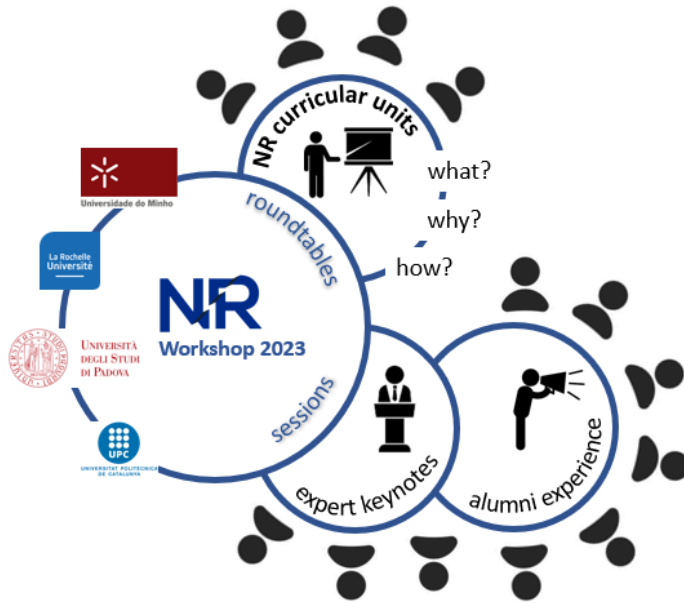
- Application: **June 2021**
- Call: **ERASMUS-EDU-2021-EMJM-DESIGN**
- Start Date: **01 January 2022**
- Duration: **15 months**
- EU Contribution: **55k€**

- March 2023: **1st NORISK Final Workshop (EMDM)**



How to tackle it

- 2022-24: NORISK EMDM



- Use design measures to prepare your Master (don't think if it will be or not funded, just do it!)
- During Design measures it is important to find out who will be real partners (we had one partner who skipped out) and associated partners – fix consortium!
- Very important to also define the partners (and channels) for dissemination (we are still using them ...)
- Do noise!!!
- Discuss and involve society on the discussion about Master program and contents ... Take all notes you can ...
- Meet your project officer, and collect the tips since they do have lot of experience with many masters ...

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*Using EMDM for NORISK EMJM
preparation ... What was done?*

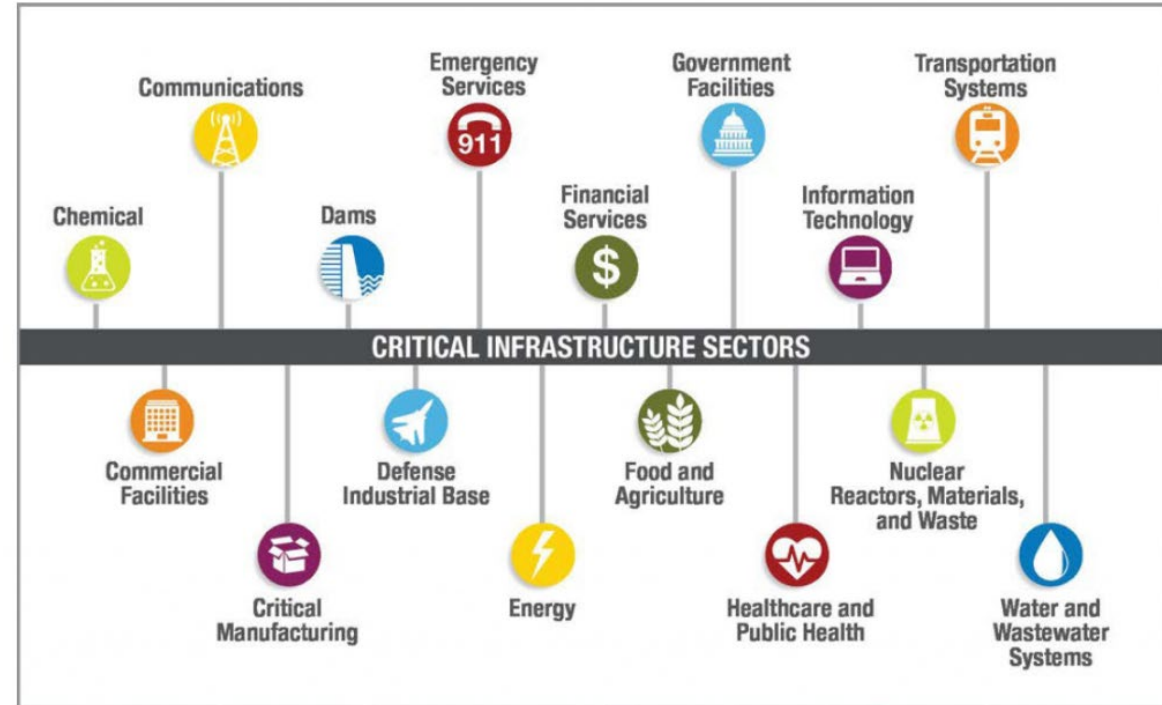
International Masters in Risk Assessment and Management of Civil Infrastructures

NORISK focuses on the topic of risk analysis and infrastructure management.

High socioeconomic relevance to meet current and future challenges to the **public and private sectors** of infrastructure management.

NORISK objective is to prepare a new generation of technicians with solid basic training and in an integrative and multidisciplinary context that allows them to work in the **risk analysis and infrastructure management** market.

General training of existing Bachelors and Integrated Masters cannot reach these aims.



Source: Critical Infrastructure Threat Information Sharing Framework- A reference Guide for the Critical Infrastructure Community, 2016

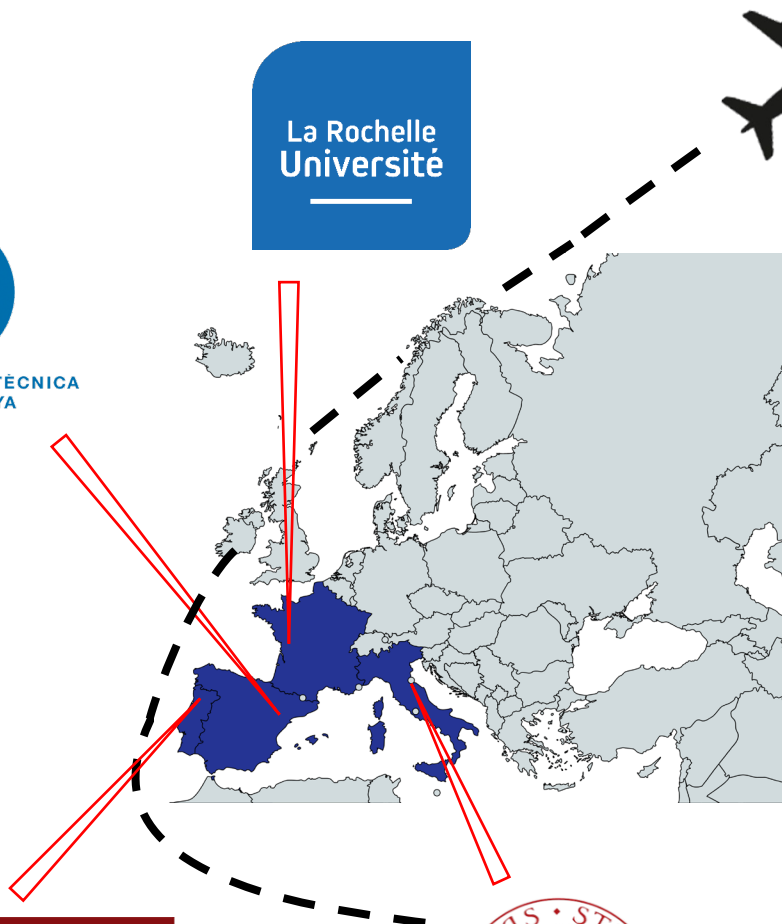
Partnership

NOR

HEIS



La Rochelle
Université



Universidade do Minho



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Guimarães (PT)

Barcelona (ES)

La Rochelle (FR)

Padova (IT)



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DE CATALUNYA

- La Rochelle
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Curricular Units

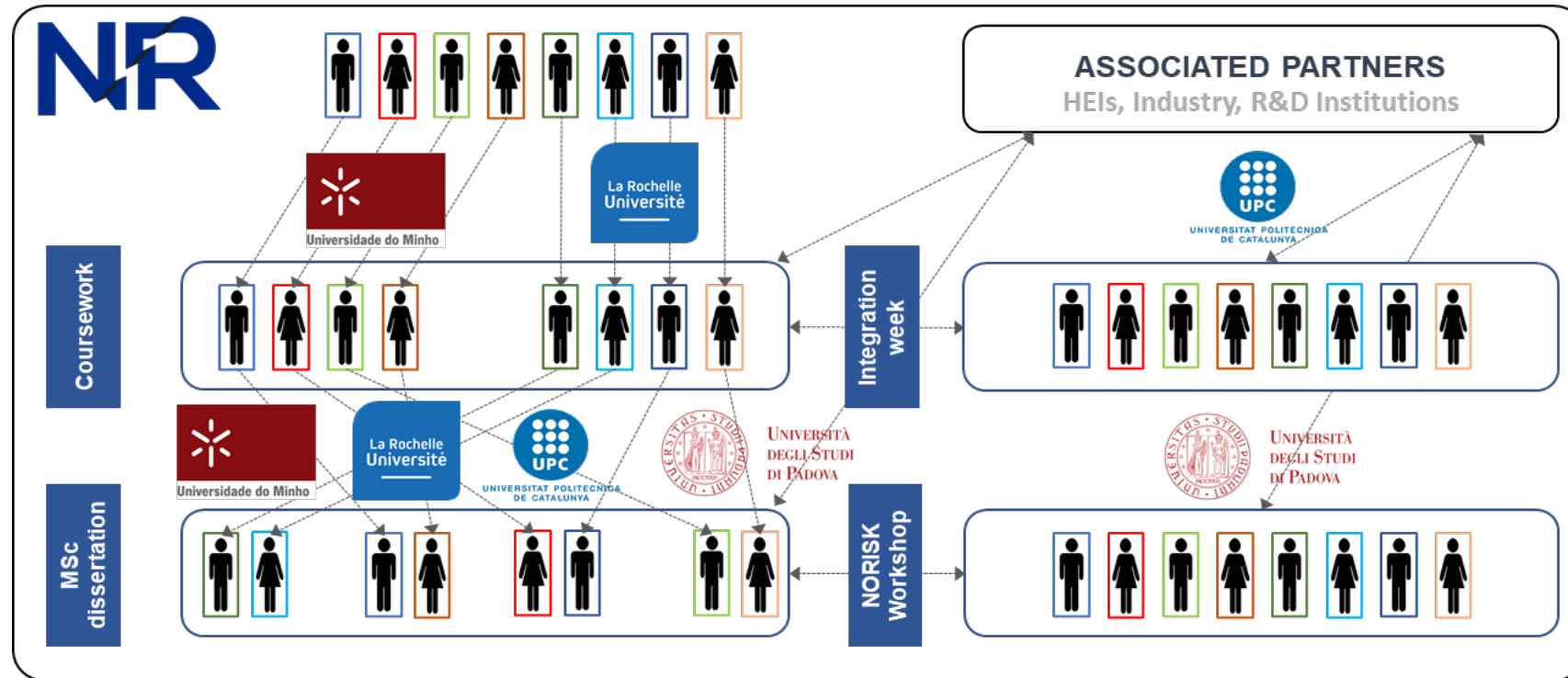
- **NR1:** Introduction to risk assessment and management of infrastructures
- **NR2:** Reliability and risk analysis of infrastructures
- **NR3:** Infrastructures management and decision supporting tools
- **NR4:** Monitoring and digitalization of infrastructures
- **NR5:** Assessment and intervention techniques on infrastructures
- **NR6:** Integrated project in risk analysis and management of infrastructures
- **NR7:** Dissertation

		ECTS
Sep. - Mar.	Units	30
	1	
	2	
	3	
	4	
	5	
Apr. - Jul.	Dissertation	30

Student Mobility

The **NORISK** is organized in two main periods:

- i) the coursework (1st semester, 30 ECTS); and the ii) dissertation (2nd semester, 30 ECTS).



Mobility: 1st mobility - coursework (Mandatory); 2nd mobility - Integration Week (Mandatory); 3rd mobility - dissertation (Mandatory); 4th mobility - NORISK Workshop (Optional).

Diploma

Each HEI will confer to those NORISK students who will have successfully carried out the complete course and have obtained the minimum requirement of ECTS 30 credits at the Institution itself, an **official Degree Diploma**, fully and automatically recognising the ECTS credits obtained in the other HEI, as well as in any other hosting partner.



Master Degree in:

UMINHO	Análise do Risco e Gestão de Infraestruturas Civas
UPC	Máster Universitario Erasmus Mundus en Evaluación y gestión de riesgos de infraestructuras civiles - NORISK
LRU	Master Génie Civil – parcours NORISK
UNIPD	Laurea Magistrale in Ingegneria Civile – “NORISK – Risk Assessment and management of civil infrastructures”



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La Rochelle Université

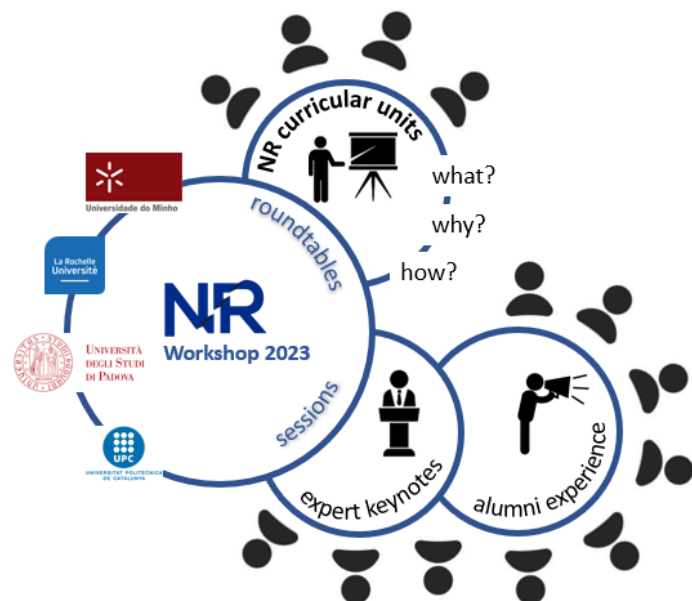


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And now?

Already on the move...

- March 2023: 1st NORISK Final Workshop (EMDM)



- Application: February 2023
- Call: ERASMUS-EDU-2023-PEX-EMJM-MOB
- Start Date: 01 November 2023
- Duration: 74 months
- EU Contribution: 2.931.000 €

- May 2024: NORISK – IPW2024 Roundtable (EMJM)



- 2024/2025: NORISK 1st edition (EMJM) [started October 2024]

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EMJM



Some conclusions ...

- It is important to clearly define well the need, as well as the singularity of the Master (please ask yourself, why an international Master and for what will I need funding ...)
- The preparation and submission for EMDM is not difficult, but it is important if you have, not only the idea, but also the main basis of your Master program ...
- Once you got the EMDM use it as best as you can for ... the Master preparation, submit the proposal, disseminate, set up the Master contents, the partners, the main regulations, the type of degree ...
- Even though, bureaucracies are gorgeous, so please try to fit everything within the design measures period ...
- Do not forget to do as most noise as possible, with meetings with those different stakeholders ...
- Involve the future trainees since very beginning, also hearing them ...
- Submit the EMJM, quite bureaucratic, but submit when everything is settled up !!!
- Time runs very fast ... we were informed end August 2023 about our success proposal, and we were enforced to open first call end year 2023 ... Then things run really fast, and you need to dedicate time to prepare very high-quality material ...



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Questions? Interested?

Contact us at: info@msc-norisk.org

<https://msc-norisk.org/>

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