

MUSA IN A NUTSHELL



28
PARTNERS



16
COUNTRIES



4
YEARS



€5,768,452.50
BUDGET

The MUSA project gathers **28 partners** from **16 countries**, among which are non-European institutions (Canada, USA, Japan, China and South Korea).

MUSA is organised in **7 Work Packages**, a **Project Management Office**, an **Advisory Board**, an **Executive Board** and an **End User Group**.

GENERAL
ASSEMBLY

PMO — COORDINATOR — EC

ADVISORY
BOARD

EXECUTIVE
BOARD

END USER
GROUP

MUSA COordination

WP
1

WP
2

Identification & Quantification
of Uncertainty Sources

Review of Uncertainty
Methodologies

WP
3

WP
4

Application of UQ Methods
against Integral Experiments

UQ in the Analysis
& Management of
Reactor Accidents

WP
5

WP
6

UQ & Innovative Management
of SFP Accidents

WP
7

Communication & Results Dissemination

In July 2018 MUSA obtains the **NUGENIA label** that recognises the excellence of the project.

MUSA

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MANAGEMENT AND UNCERTAINTIES OF SEVERE ACCIDENTS

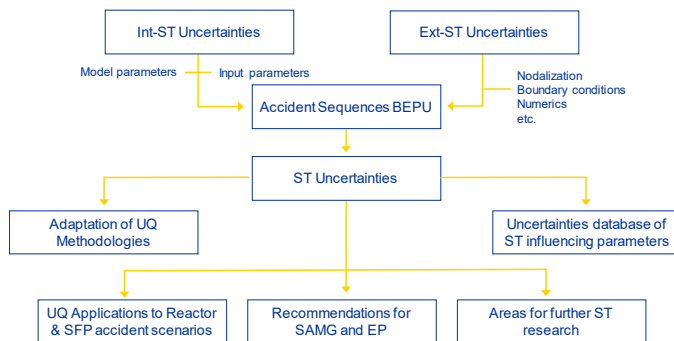
MUSA

A harmonised approach for the analysis of uncertainties and sensitivities associated with severe accident analysis among EU and non-EU entities.

MUSA OBJECTIVE

In the current state of maturity of severe accident (SA) codes, time has come to foster **Best Estimate Plus Uncertainties** (BEPU) application in the SA domain, including Accident Management (AM).

MUSA main objective is to **assess the capability of SA codes** by quantifying the uncertainties associated to their Source Term (ST) estimates when modelling reactor & Spent Fuel Pools (SFP) accident scenarios of Gen II and III reactor designs.



UQ: Uncertainty Quantification
SAMG: Severe Accident Management Guidelines
EP: Emergency Preparedness

Launched in June 2019, the project will:

- > Identify and quantify uncertainty sources in SA analyses.
- > Review and adapt UQ methods.
- > Test such methods against reactor and SFP accident analyses.

MUSA EXPECTED IMPACT

As a first-of-a-kind project addressing Management and Uncertainties of SA analysis in a multinational context, MUSA will:

- ★ **CLOSE-OUT** open issues in the SA area. MUSA characterises the uncertainties in SAs analyses, including some Severe Accident Management (SAM) actions. By doing so, the uncertainties governing the ST estimates are identified so that future researches can be better focused to reduce ST predictions uncertainties.
- ★ **SUPPORT** assessments and **IMPROVE** nuclear power plants' safety.
- ★ **ENHANCE and IMPROVE** emergency response measures and SAM strategies. A more sound assessment of some mitigation actions might shed some light on how & when to better implement them.
- ★ A more realistic & reliable ST evaluation would eventually translate into a **BETTER DEFINITION** of emergency actions.

Substantial dissemination given the truly international dimension of the project.

Sound network on nuclear safety given the diversity of organisations involved.

KNOWLEDGE SHARING

The MUSA project will enhance **dissemination of knowledge in the area of SA codes and Uncertainty tools**. Education and training activities will target PhD/Masters students and young researchers and will include the following:

- 🎓 **A Mobility programme** under which university students and young researchers go to internship programmes.
- 🎓 **Public learning modules** on MUSA major outcomes.
- 🎓 **A lecture on “Uncertainty Quantification in Severe Accident Analyses”** for the different international courses that might be given on Severe Accidents and/or on “uncertainties”.

MUSA CONSORTIUM MEMBERS

