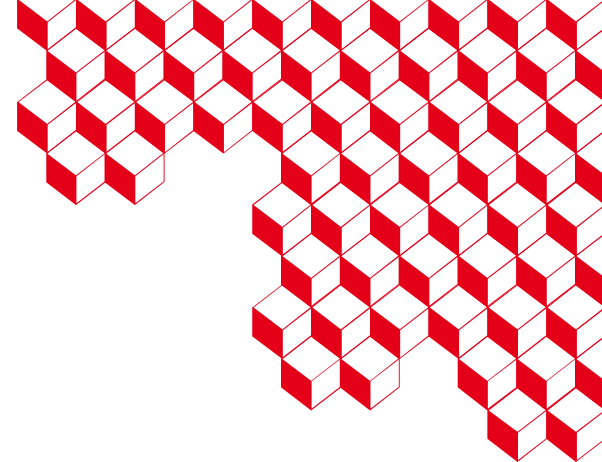




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## **Overview of SANDA WP5 “Validation”**

R. Jacqmin

# Overview of WP5

## Objective

- Perform impact studies and S/U analyses in order to relate (JEFF) ND improvements to end-user validation needs for selected applications
- Validate ND by analysing available integral experiments
- Perform new validation experiments in existing experimental facilities

## Practical goal

- Assess impact on **selected nuclear systems** (reactors and fuel cycles) → End-user needs + missing experiments
- Impractical to aim for a “catch-all” validation, following a formal VVUQ process: too many applications, very different sensitivities, missing covariances,... ⇒ In practice:
  - ✓ Validate **nuclear data** (actinides, coolants, structurals, FPs) for **some applications** = a set of selected nuclear systems for which significant pre-design work has already been done
  - ✓ Focus on data/reaction for which the past (JEFF-3) validation efforts were inconclusive or showed some shortcomings

## Overview of WP5

WP5 tasks, subtasks, partners, deliverable due dates as initially planned

	Tasks / Subtasks	Partners	Deliverables
<b>T5.1</b>	<b>Impact studies, sensitivity analyses, and assessment of needs</b>	<b>CIEMAT, CEA/DES, CNRS/LPSC, SCK-CEN, JSI, KIT, UPM, IRSN</b>	
T5.1.1	Impact studies and sensitivity analyses		M24
T5.1.2	Assessment of (JEFF) nuclear data needs		M36 (milestone)
<b>T5.2</b>	<b>Validation studies (using existing expts)</b>	<b>UPM, CEA/DES, CIEMAT, JSI, KIT, NRG, IRSN</b>	
T5.2.1	Assessing correlations in integral expts.		M36
T5.2.2	C/E validation and trends		M42, M48
<b>T5.3</b>	<b>New integral experiments</b>	<b>CEA/DES, CVREZ, ENEA, JRC</b>	
T5.3.1	Experiments at GELINA		M42
T5.3.2	Experiments at LR-0		M42, M48
T5.3.3	Experiments at TAPIRO		M42

# Overview of WP5

## 13 deliverables

Task	Deliverable	Responsible Partner
T1	D.5.1 Report on sensitivity analysis methods; <u>CIEMAT</u> , LPSC, UPM, CEA; M24	M24
	D.5.2 Report on ESFR, MYRRHA, and ALFRED sensitivity and impact studies; <u>SCK</u> , CEA, UPM; M24	M24
	D.5.3 Report on JHR sensitivity and impact study; <u>CEA</u> ; M24	M24
	D.5.4 Report on HLW sensitivity and impact study; <u>KIT</u> ; M24	M24
	D.5.5 Report on assessment of nuclear data needs; <u>CEA</u> , CIEMAT, UPM, SCK, KIT; M36	M36
T2	D.5.6 Report on correlations between integral experiments; <u>CIEMAT</u> , JSI, CEA, UPM; M30	M30
	D.5.7 Report on reactor and shielding C/E validation and nuclear data trends; <u>UPM</u> , JSI, CEA; M42	M42
	D.5.8 Report on critical benchmark C/E validation and nuclear data trends; <u>NRG</u> , IRSN; M42	M42
	D.5.9 Report on C/E validation and nuclear data trends; <u>UPM</u> , CEA, JSI, NRG, IRSN; M48	M48
T3	D.5.10 Report on experiments at JRC Geel using MINERVE samples; <u>CEA</u> ; M42	M42
	D.5.11 Report on integral experiments at LR-0; <u>CVREZ</u> , CEA; M42	M42
	D.5.12 Report on integral experiments at TAPIRO; <u>ENEA</u> , CEA; M42	M42
	D.5.13 Report on new integral experiments and needs; <u>CEA</u> , JRC, CVREZ, ENEA; M48	M48

The first partner listed for each deliverable is the responsible for the deliverable.

## Overview of WP5

Deliv #	Theme	Resp. Partner	Deliv. Status
D.5.1	Sensitivity analysis methods	CIEMAT	Completed
D.5.2	ESFR, MYRRHA, ALFRED sensitivity and impact studies	SCK	Completed
D.5.3	JHR sensitivities and uncertainties	CEA	Completed
D.5.4	HLW sensitivities and impact	KIT	Completed
D.5.5	Nuclear data needs (in connection with the above studies)	CEA	Completed
D.5.6	Correlation between integral experiments	CIEMAT	Completed
D.5.7	Reactor and shielding validation studies and ND trends	UPM	Completed
D.5.8	Criticality benchmark studies and ND trends	NRG	Completed
D.5.9	C/E validation and ND trends (in connection with the above studies)	UPM	Under proofreading
D.5.10	Experiments at GELINA using MINERVE samples	CEA	Completed
D.5.11	Integral experiments at LR-0	CVREZ	Completed
D.5.12	Integral experiments at TAPIRO	ENEA	July 2024
D.5.13	New integral expts and needs (in connection with the above results)	CEA	July 2024

# Overview of WP5

## Conclusion

- Considerable amount of work done, much valuable information for JEFF-4 (see separate presentations)
- Out of 13 deliverables, 10 completed, 1 under proofreading, 2 pending
- Difficulties with experimental activities(T3), issues with facilities which could not operate as/when expected, no easy way around them
- Delays with many deliverables, but most reports ultimately completed, several of them very recently
  
- Thanks to all contributors, especially to Vicente, Oscar, Nuria, David