Overview of SANDA WP5 “Validation”

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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

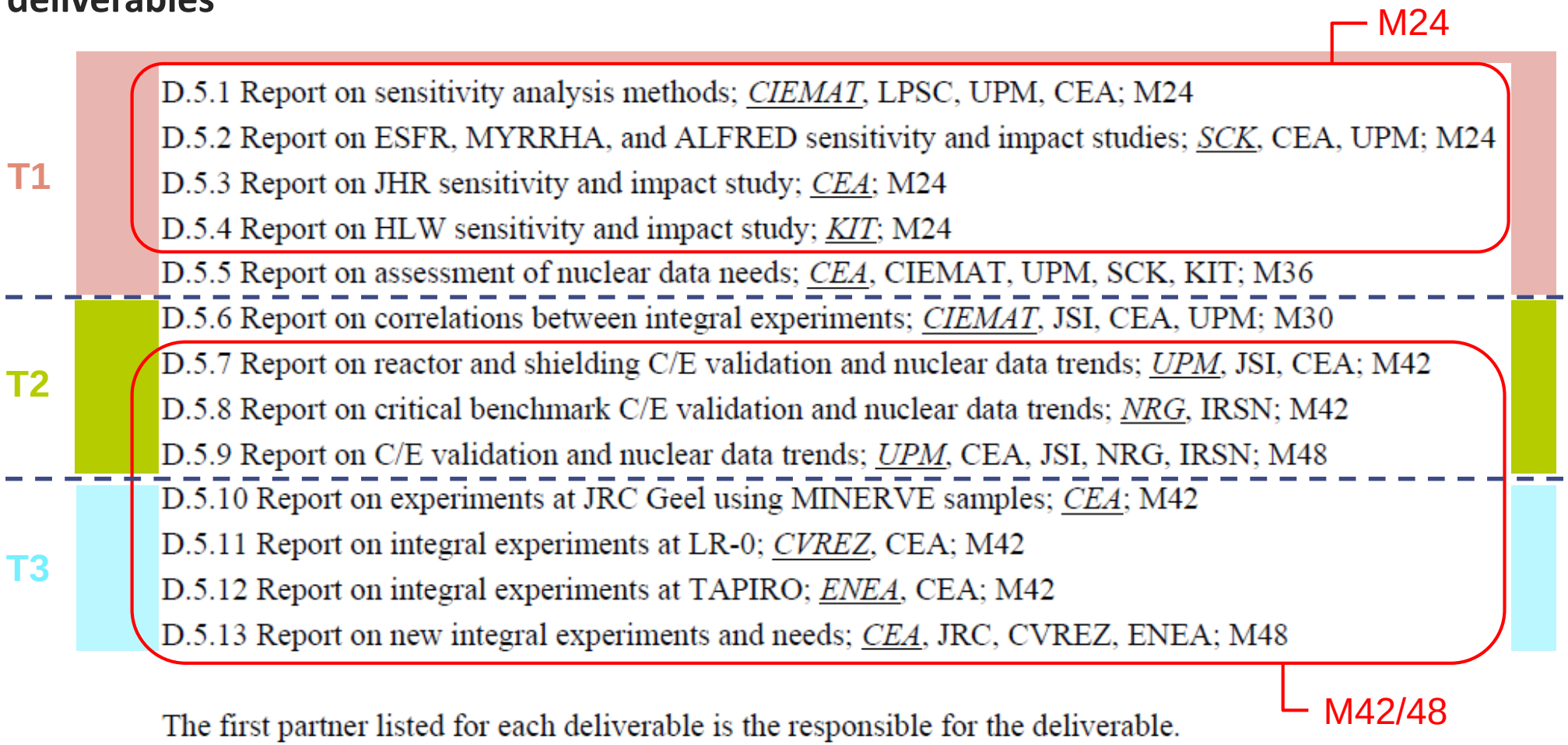
Overview of WP5

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

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



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 an 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

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