FISA And	EURAD-2 WP09 InCoManD: Innovative and new
EURADWASTE	Container/canister materials under disposal field conditions:
2 0 2 5	Manufacturing feasibility and improved Durability
european Partnership	AURELIEN DEBELLE ^{1*} , BOJAN ZAJEC ² , ANDREA CHERKOUK ³ , HOLGER VÖLZKE ⁴ , PATRICK GANSTER ⁵ , FABRICE ROSSIGNOL ⁶ , URSULA ALONSO ⁷ , MOHAMED MERROUN ⁸ , ANDRESSA TRENTIN ⁹ , JANNE PAKARINEN ⁶ ¹ Andra, DISTEC, 4-6 Chemin Croix Blanche, 92298 Châtenay-Malabry Cedex, France, ² Slovenian Nat. Building and Civil Engineering Institute (ZAG), Dimičeva 12, SI-1000 Ljubljana, Slovenia ³ Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Inst. of Resource Ecology, 01324 Dresden, Germany, ⁴ Bundesanstalt für Materialforschung und -prüfung (BAM), 12200 Berlin, Germany ⁵ Mines Saint-Étienne, Université de Lyon, CNRS, LGF, 158 Cours Fauriel 42023, Saint-Étienne, France, ⁶ CNRS, University of Limoges, Institute of Research for Ceramics (IRCER), UMR 7315, European Ceramics Centre, 87068 Limoges, France, ⁷ CIEMAT – Physical Chemistry of Actinides and Fission Products Unit, Avenida Complutense 40, 28040, Madrid, Spain, ⁸ Department of Microbiology, Univ. of Granada, Campus Fuentenueva s/n

× InCoManD: PARTICIPANTS

26 Partners (9 countries)

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Short name of participant	Andra (FR)	BAM (DE)	BASE (DE)	CIEMAT (SP)	Galtenco (FR)	GNS (DE)	GRS (DE)	HZDR (DE)	EMSE (FR)
Short name of participant	IRCER (FR)	KIT (DE)	NSC KIPT (UA)	ONDRAF (BE)	🕇 Posiva (FI)	SIIEG NASU (UA)	IMT Atlantique (FR)	SÚRAO (CZ)	TUL (CZ)
Short name of participant	» UGR (SP)	VJV (CZ)	NM (PT)	(DE) TUH (DE)	* UPM (SP)	VSCHT (CZ)	VTT (FI)	(IS) SYZ	

6 Associated Partners

(3 coutries)

x InCoManD: A BIT OF SEMANTICS

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- Innovative: solutions (materials and/or processes) never implemented or tested.
- → New: more traditional solutions (materials and/or processes) that need to be optimized, improved, tested in more realistic conditions...
- → Container and canister: same meaning, can be referred to as "component"



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x InCoManD: EXPECTED IMPACT AND ADDED VALUE

- WP that will be implementation-oriented (input data about several GDF concepts already provided)
- Innovation and/or optimization of material solutions, including the assessment of the material durability (and analysis of the economical implications)
- Better description and understanding of material degradation mechanisms (pushing the state-of-the-art beyond the current one by implementing as realistic as possible conditions), building of comprehensive predictive models.



- Synergy through a cooperative project involving several countries across Europe sharing a common goal.
- Capitalise on ConCorD results, but also, develop common methodologies, encourage *Round Robin experiments and benchmarking to provide more confidence on the results* produced by each partner.
- Significant effort in attracting and training new scientists (lectures at the Master and Doctorate levels).

¤ InCoManD: ORGANISATION IN 5 TASKS

group (ERG



Subtask 3.1: *Improve* recently selected innovative, bulk and

Subtask 4.1: Evaluate the durability (*i.e.*, corrosion resistance under transients) of the materials, implementing lab-scale experiments, in systematic and parametric studies (irradiation, pH, temperature,...), to *identify* the main degradation mechanisms and associated important parameters

Subtask 4.2: Development of dedicated complex (even in situ) experiments to mimic accelerated field conditions (necessity to build devices with which stress factors can be coupled)







Subtask 5.1: *Evaluate and study* joint mechanical-corrosion degradation modes, and *determine* the threshold stresses for



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