

MetroDECOM 2

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The challenge



- To decommission, safely and cost-effectively, more than 200 legacy nuclear reactors and fuel reprocessing plants (estimated cost 150 billion Euros)
- Three priorities identified: improved capability for rapid, on site, measurements; improved harmonisation and quality assurance; improved sharing of best practice

Differences with MetroDECOM

Emphasis on:

- Higher Technology Readiness Levels
- On-site use of the new technologies
- Traceability and measurement uncertainties
- Establishing new, large scale, capabilities
- Knowledge transfer

MetroDECOM 2 will address metrology challenges at each stage in the decommissioning process – from on-site characterisation through to safe waste disposal.



Objective 1: Development and implementation of rapid methods for measuring the radioactivity content of materials on a nuclear site

Topic	DECOM 2
Mapping of gamma emitters	Quantitive measurements, validated on site
Mapping of alpha emitters	Robust pre-production instrument, validated on site
Mapping of dose rate	Innovative approach – proof of concept
Rapid automated radiochemistry	Validation of a new approach

Objective 2: Development and implementation of a novel automatic measurement system to check whether waste packages are safe for disposal or must be treated as radioactive waste

Topic	DECOM 2
Automatic waste package clearance	Full implementation of background suppression and validation on a decommissioning site (CIEMAT)

Objective 3: Development and implementation of a sophisticated radioactive waste characterisation system, suitable for use as a waste repository acceptance system for very low, low and intermediate level radioactive waste

Topic	DECOM 2
Waste acceptance measurement system	Validated on-site, traceable to national standards (ISPRA)

Objective 4: Development and implementation of (on site) measurement systems and methods for monitoring the condition of radioactive waste repositories, including airborne radioactivity and temperature/strain.

Topic	DECOM 2
Airborne radioactivity measurement (bubbler system)	On-site validation and extension to activity-in-water
Airborne radioactivity measurement (laser spectroscopy)	Robust pre-production instrument validated on site.
Temperature and strain measurement	Development of a calibration protocol for fibre optic sensors, extension to strain measurement and on-site validation.

Knowledge transfer

- Website, including training materials and pages aimed at the general public
- Presentations at conferences, summer schools and workshops
- Good practice guides and contributions to standards committees
- Training courses at the new facilities being set up
- Exploitation plan – opportunities for license agreements / partnerships for the new instruments being tested

The consortium

Nuclear industry



Instrumentation



NMIs



Joining the consortium as a collaborator

- Once the consortium members have signed the 'Grant Agreement', other organisations can join as a self-funded Collaborator.
- This gives access to most of the project documentation, and enables the organisation to participate in the work.
- The administrative process is easy – an exchange of letters which set out conditions on confidentiality and describe what the organisation will do.

Impact

Better for the industry

- Faster and cheaper measurements
- Robust regulatory compliance
- Cost effective waste disposal

Better for the workforce

- Reduced radiation dose
- Safer working practices
- Improved training resources

WP5: Achieved through

- New large scale facilities for training and knowledge transfer
 - New instruments
 - Workshops
 - ISO standards
- New network for best measurement practice

Safer for society

- Safe consignment of radioactive waste
 - Confidence in the industry
 - Harmonised measurements

Thank you for listening



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