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Nuclear Decay Data Network, M.A. Kellett

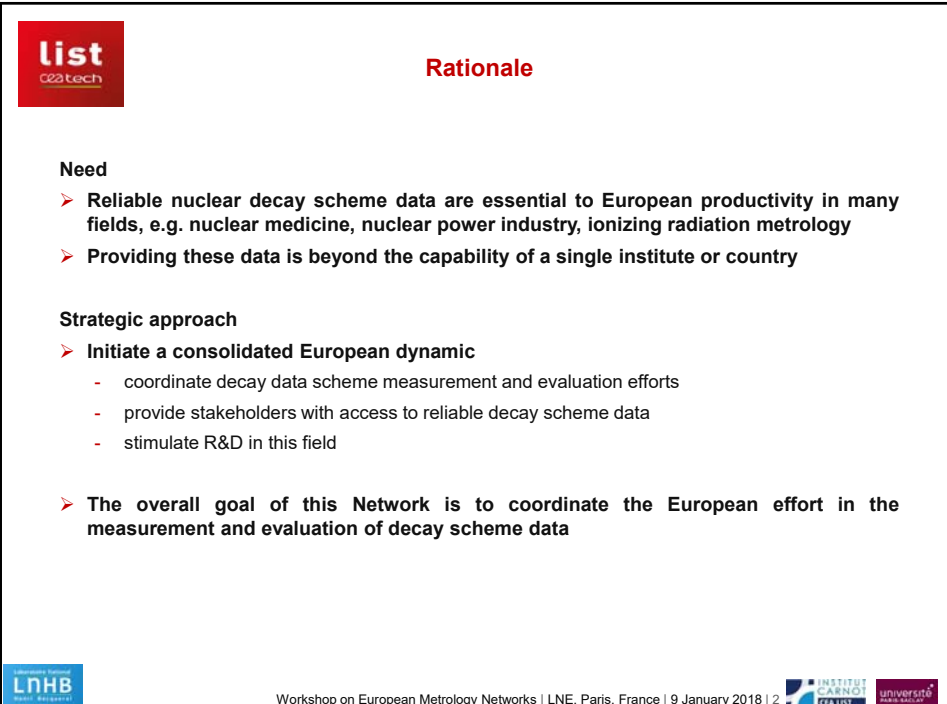
Workshop on European Metrology Networks, LNE, Paris, France, 9 January 2018



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Rationale

Need

- Reliable nuclear decay scheme data are essential to European productivity in many fields, e.g. nuclear medicine, nuclear power industry, ionizing radiation metrology
- Providing these data is beyond the capability of a single institute or country

Strategic approach

- **Initiate a consolidated European dynamic**
 - coordinate decay data scheme measurement and evaluation efforts
 - provide stakeholders with access to reliable decay scheme data
 - stimulate R&D in this field
- **The overall goal of this Network is to coordinate the European effort in the measurement and evaluation of decay scheme data**



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- **The proposed Network has the potential to include all European NMIs and DIs with ionising radiation departments**
 - Academic and industrial institutions may also participate
 - Stakeholders will obtain knowledge transfer in the form of recommended decay scheme data

- **The Network plans to:**
 - Identify cases where new decay scheme data are required, e.g. stakeholder feedback
 - Coordinate the overall measurement and evaluation effort within Europe by developing a strategic research agenda
 - Ensure stakeholders have access to the most accurate decay scheme data

- **The Network will:**
 - Organise training workshops
 - Ensure the availability of an online platform for evaluators
 - Provide evaluation and measurement best practice guidelines
 - Promote scientific collaboration

- **The Network will, first and foremost, provide access to reliable nuclear decay data**
 - A dedicated website will provide easy access to the decay scheme data
 - Human-readable tables will be available
 - Computer-readable files for simulation codes, e.g. PENELOPE, GEANT4, will also be available

- **The Network will ensure the synergy between accurate nuclear decay data measurements and evaluations**
 - Absolute γ -ray emissions intensities through well-calibrated spectrometers
 - Half-life measurements with ionisation chambers and other methods
 - Absolute α -particle emission probabilities
 - Associated atomic decay data, e.g. X-ray and Auger electron emission

- **The Network will**
 - Attract new researchers to the field

Impact

➤ **The European Metrology Network on Nuclear Decay Data will improve the coordination of nuclear decay scheme data related research in Europe**

- It will build on the foundation laid by the informal Decay Data Evaluation Project, but will incorporate measurement activities and ensure its sustainability by developing a more formal structure
- It will ensure improved and targeted decay scheme data are available to the stakeholders
- It will help to strengthen European capabilities and lead to a greater visibility on the world stage
- It will become a world leader in the field and attract collaborators from outside Europe



Thank you for your attention