2 MAIN IMPACTS

By expending the knowledge on tritium management and tritium mitigation strategies, TRANSAT will contribute to the implementation of new legal frameworks and regulatory requirements. At the same time, the project will participate in better protect human health from potential exposures to tritiated materials.

Based on the results of the project, a list of outcomes and recommendations will provide a robust science-basis to European decision-makers and stakeholders.

THE TRITIUM PROFILE

Tritium (3H) is a radioactive isotope of hydrogen with a physical half-life of 12.3 years.

The nucleus of tritium (sometimes called **a triton**) contains one proton and two neutrons.

Tritium comes from two sources:

- Nature (formed by the interaction of the atmosphere with cosmic rays).
- Artifical origin resulting of nuclear fission and fusion activities.

THE TRITIUM CHALLENGE

Tritium is mainly released as tritiated water and hydrogen isotopes into the environment, directly from the sources above or from tritiated waste storage and treatment, which has led to environmental and health issues.

Recently, due to Deuterium-Tritium fusion reactor development studies, new fuel management (especially for GEN IV reactors) and conception choices, **the tritium release into the environment is expected to increase.**

These additional releases combined with the pressure from authorities and the public led to the need for new tritium release impact mitigation strategies and a better understanding of its impacts on human health and the environment.

A 4-YEAR PROJECT

TRANSAT

TRANSversal Actions for Tritium

3 KEY OBJECTIVES

- Technical solutions and new technologies to mitigate the tritium release.
- Improvement of tritiated waste management: thermal treatment, incineration, new concepts for confining drums, among others.
- Refinement of the knowledge on radiotoxicity, radiobiology, dosimetry...

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