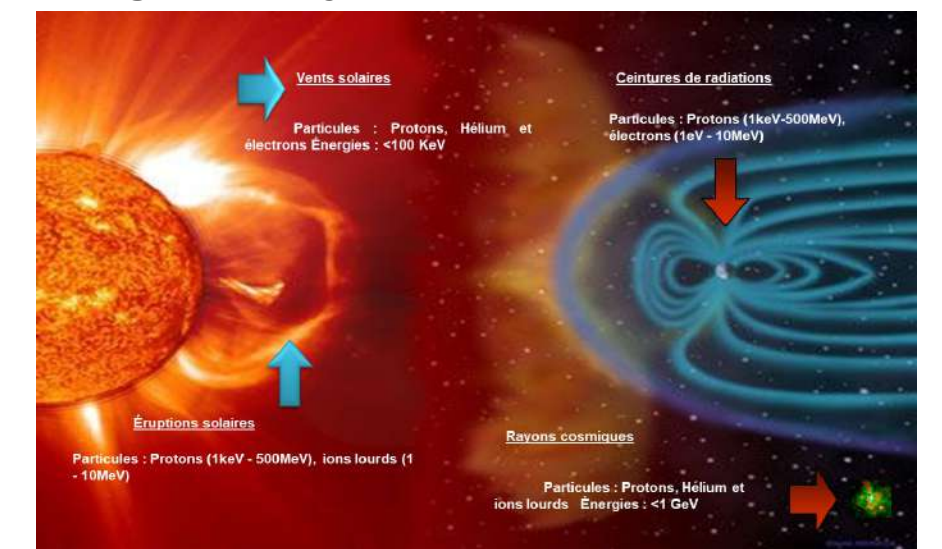


Natural Radiation Immunity Tackling SEE and TID in COTS emerging Technologies

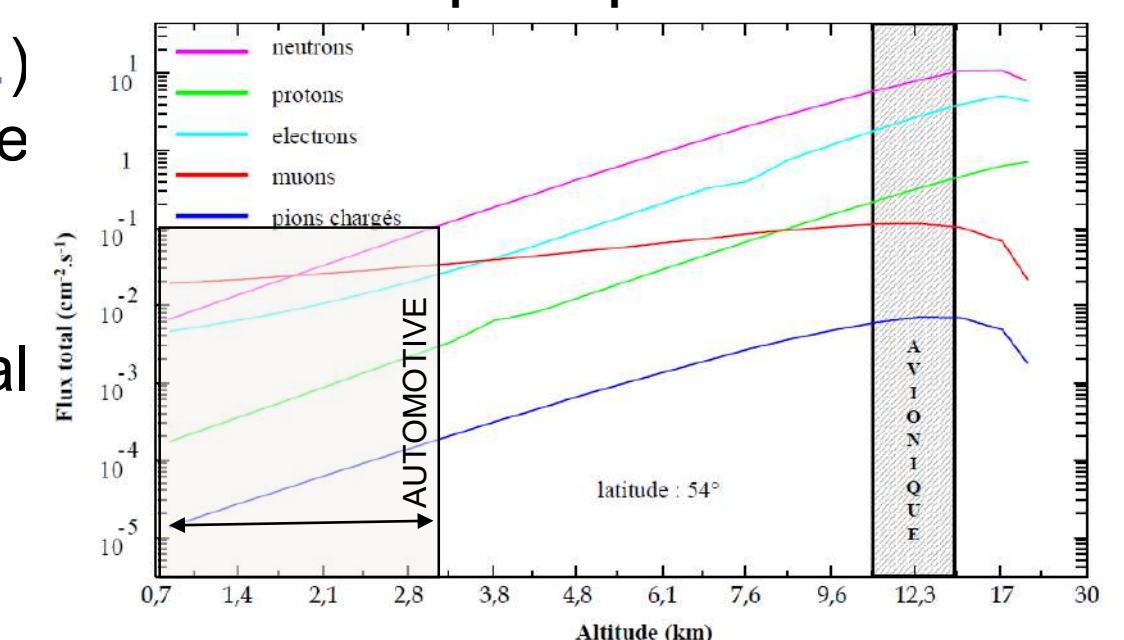
GENERAL CONTEXT & MOTIVATION

- ❖ **MASSIVE INTRODUCTION** of **Commercially Off-The Shelf (COTS)** components **DENSIFICATION** (weight/volume -effectiveness) of **DIGITAL** and **POWER** electronics functions (e.g. Mechatronics)!
- ❖ **Safe Operating Area (SOA)**: It is essential for the Space, Aeronautics and Automotive industries to characterize the radiation robustness of these new Commercial Off-The-Shelf (COTS) components in the operational and environmental conditions of their applications.
- ❖ The present activities aim to.
 - ❖ **Industrial Qualification** : Electrical behaviour of normally-off GaN power transistors under various radiation sources (heavy ion, neutron, proton, Co60,...) test campaign was carried out to assess the sensitivity to cumulative dose effects (TID), determine the safe operating area (SOA) and analysis the mechanism of **Single Event Effects (SEE)** in these devices.
 - ❖ **Applied Research** : We investigated the possibility of using two complementary test techniques (Xray, Laser) to evaluate the sensitivity of commercial HEMT GaN devices to single event effects.

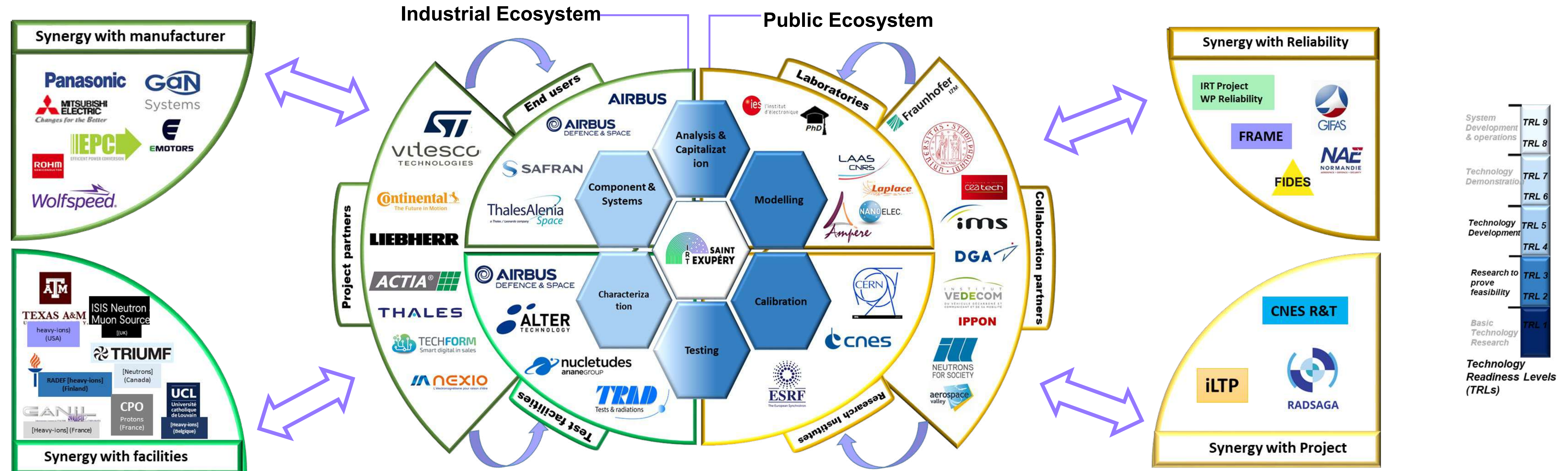
Origin and type of particles in space



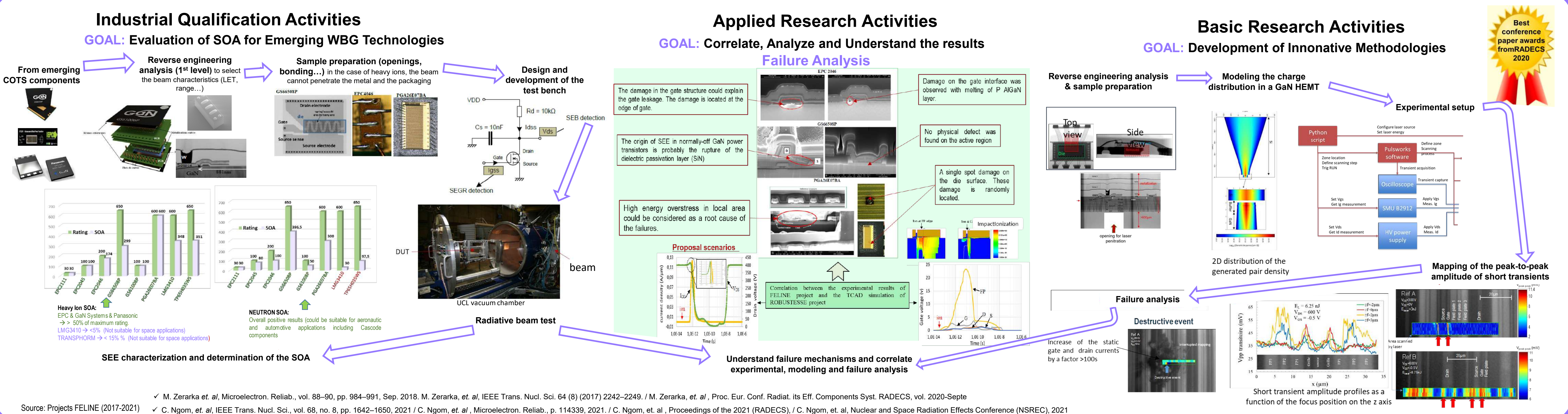
Atmospheric particle flux



R&T ECOSYSTEM

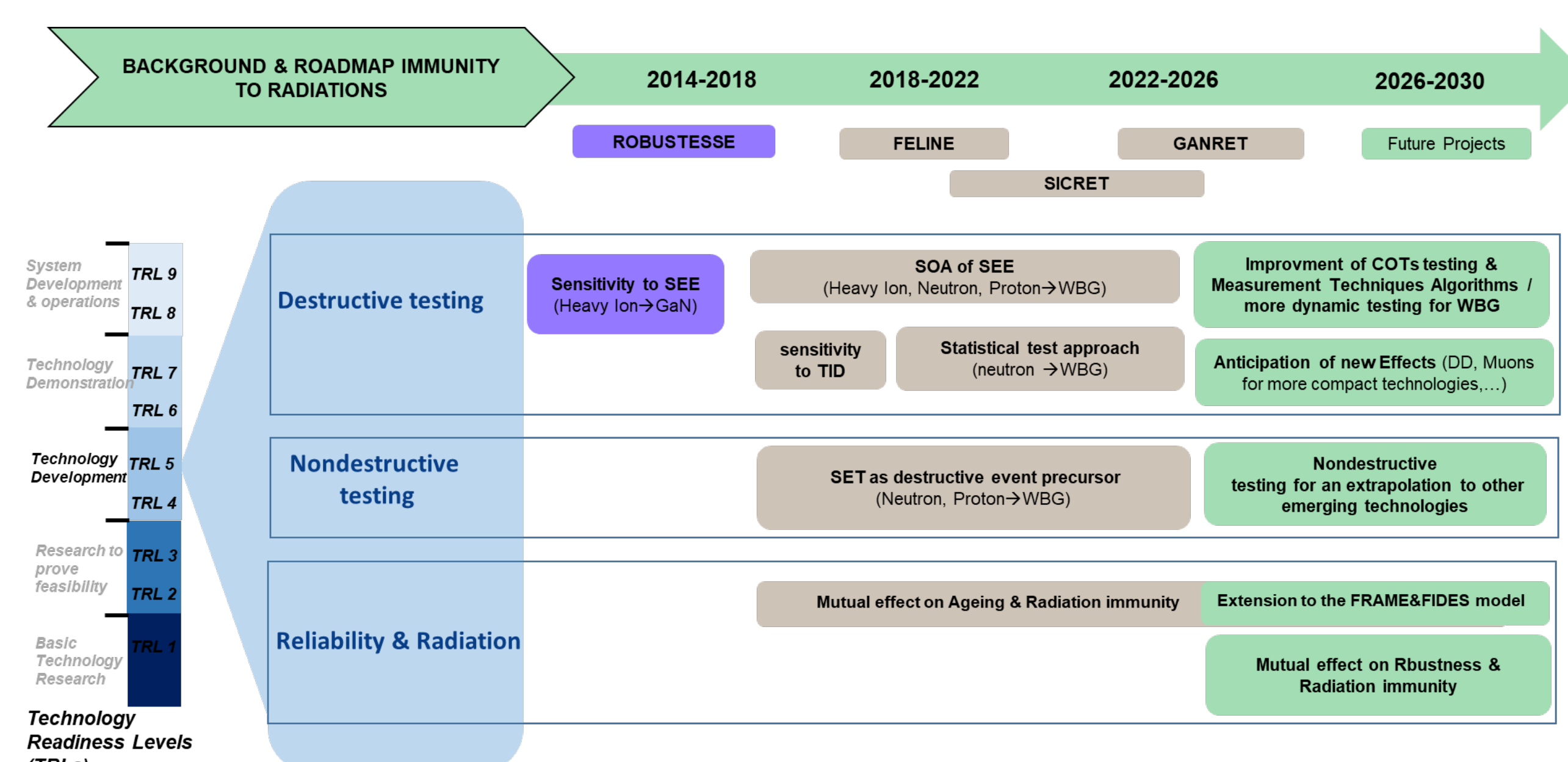


MAIN ACHIEVEMENTS

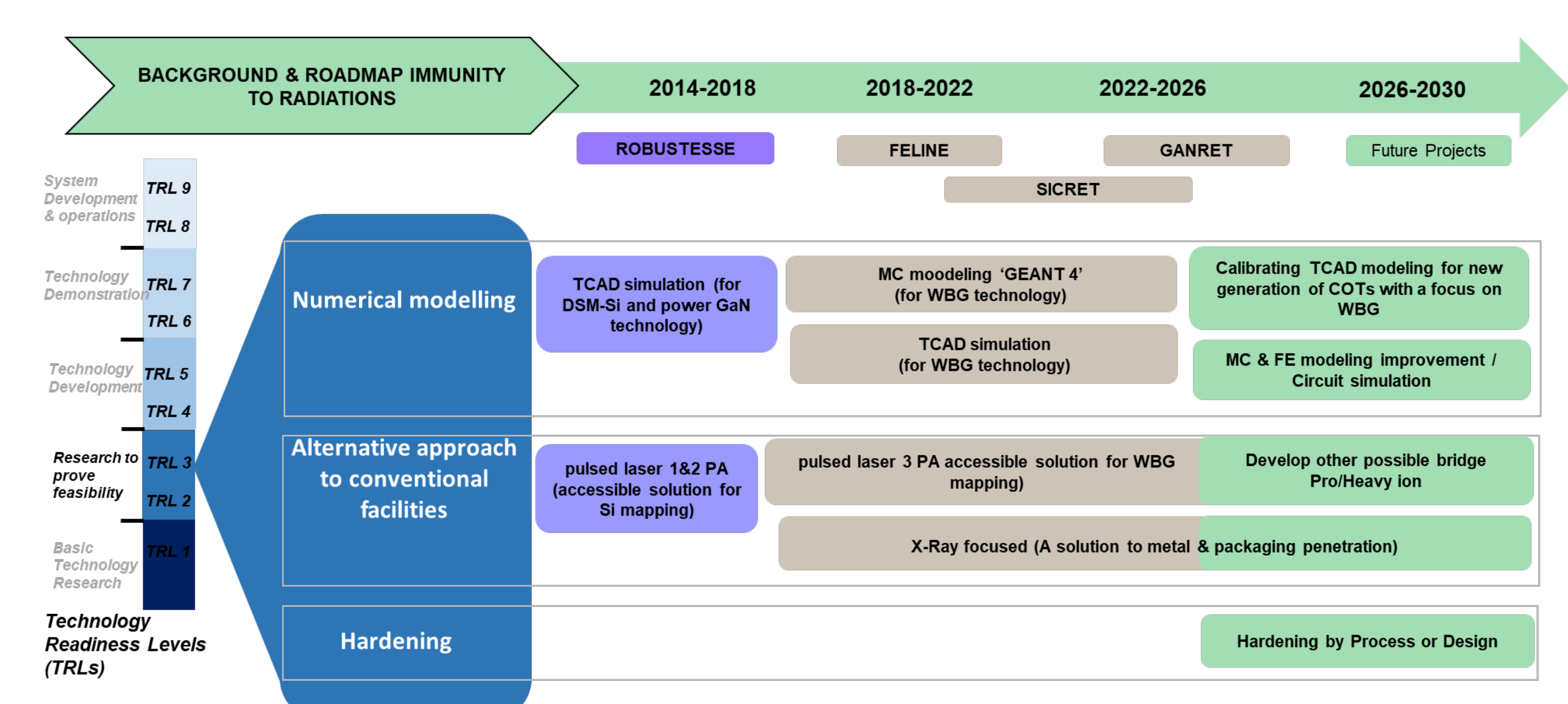


ROADMAP

Roadmap Industrial (Qualification) Activities



Roadmap Applied Research Activities



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