The MODES_SNMM project aims to carry out technical research in order to develop a prototype for a mobile, modular detection system for radioactive and Special Nuclear Materials (SNM). To maximize the detection capability for SNM, the project will develop new detectors for fast and thermal neutrons, as well as gamma-rays, based on the technology of high pressure scintillation cells using noble gases (as 4-He and Xe) recently developed by ARKTIS. The proof-of-principle of the new detectors has already been recently demonstrated.

The goal of the project is to deliver a tested prototype of a modular mobile system capable of passively detecting weak or shielded radioactive sources with accuracy higher than that of currently available systems. The identification of the gamma-ray emitter is also possible by using the spectroscopic analysis performed by high pressure Xe cells whereas the ratio between fast and thermal neutrons will bring information about the eventual shielding around the source.