

PROJECT FACTSHEET

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NEOD

NEOD consist in designing and training Generative AI models for the detection of Near-Earth Objects from radio data by using the MeluXina supercomputer.



Inspiration

Space objects detection from the ground is a critical aspect of space research, astronomy, satellite tracking. However, the presence of noise from human activities, atmospheric interference, sensor artefacts and light pollution makes this task challenging.

Innovation

The NEOD project consists in training GenerativeAI models for the detection of Near-Earth Objects (NEO) from radio data, captured in live by a dedicated network operated by Royal Belgian Institute for Space Aeronomy (BIRA-IASB) from Belgium and Luxembourg. The computations (i.e. data processing, AI models training, AI models evaluation) will be optimized and parallelized on MeluXina (the supercomputer provided by LuxProvide) in order to benefit of efficient multi-GPU and multi-CPU features. Trained models will be deployed and tested on limited-resources devices like smartphones and tablets.

Impact

The resulting technologies will be used for Space Situational Awareness, with the potential to be licensed to interested public/private partners on a royalty basis, and may be adapted for other space-related purposes.

Partners

Non contracting partner: Royal Belgian Institute for Space Aeronomy (BIRA-IASB)

Financial Support

Luxembourg Institute of Science and Technology

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