Neuromorphic-Enhanced Heterogeneously-Integrated FMCW Lidar (NEHIL)

Duration: 10/2024 – 9/2027 (3 years)
CSIC PI: M.C. Soriano
Total budget: ~3 M€
Budget CSIC: ~300 k€

Type of Project: European
Chips Joint Undertaking / Research and Innovations Actions (RIA) / Joint Call with Republic of Korea

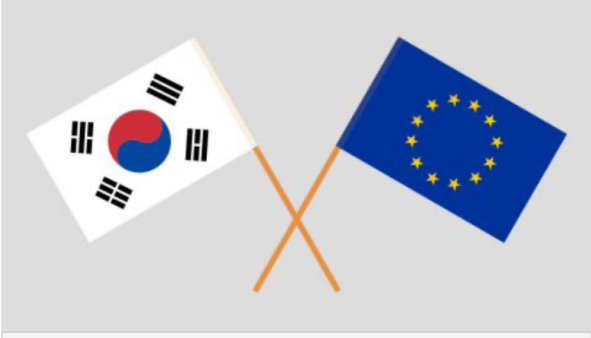
NEWS ARTICLE | Publication 17 July 2024

EU-Republic of Korea Digital Partnership - Joint EU/Republic of Korea Chips Projects announced

The European Union and the Republic of Korea announce support for four jointly funded projects in semiconductors as a deliverable of the EU-Republic of Korea Digital Partnership.

The European Commission on behalf of the European Union (EU) together with the Republic of Korea (ROK) announced the selection of four jointly supported projects in semiconductors. The total investment is around €12 million, of which half comes from the EU and the other half from the National Research Foundation of Korea (NRF).

The projects will advance heterogeneous integration technologies i.e. technologies combining multiple components onto one chip as well as neuromorphic computing technologies i.e. technologies imitating the functioning of the human brain.

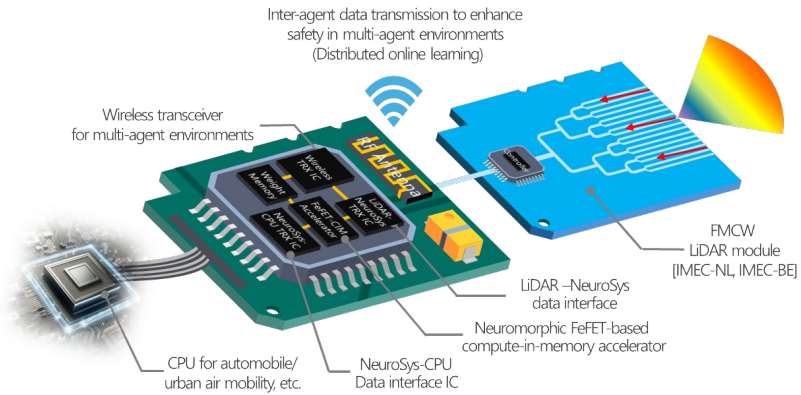


iStock Photo Getty Images +

Making a super-efficient type of LiDAR by using brain-like computing

Objective:
cutting power consumption by 50% enhancing LiDAR's resolution and efficiency

Applications:
automotive, healthcare, telecom, and smart cities



European partners

IMEC* Nederlands
IMEC* Belgium
THALES (France)
CSIC (Spain)

Korean partners

Daegu Gyeongbuk Institute of Science and Technology
Seoul National University
Sogang University

SEOUL NATIONAL UNIVERSITY

*IMEC: Interuniversity Microelectronics Centre

IFISC (CSIC) WP2: Theory, modelling and design	*D2.1 – Improving robustness in neuromorphic hardware* *D2.2 – Exploring emergent distributed learning* *D2.3 – Reservoir computing in LiDAR: feasibility study*

CSIC
Consejo Superior de Investigaciones Científicas

MIGUEL C. SORIANO

LUCAS LACASA

Main tasks:

- Enhance **robustness** to hardware failures in neuromorphic chips
- Enhance **adaptability to input distortions** in neuromorphic systems
- Enabling **emergent distributed learning** in neuromorphic hardware
- Feasibility study on using **reservoir computing** for LiDAR applications

THANK YOU

for your attention

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