

Spin Defender

Spin-based neural networks for RF processing and learning at the edge

SELECTED PROJECTS EUROPEAN DEFENCE FUND (EDF) 2025

CALL TITLE:

Disruptive EDF research actions

TOPIC TITLE:

Non-thematic research actions targeting disruptive technologies for defence

DURATION OF THE PROJECT:

36 Months

TYPE(S) OF ACTIVITIES:

Generating knowledge, Integrating knowledge, Studies

ESTIMATED TOTAL COST:

€ 3,907,395.63

MAXIMUM EU CONTRIBUTION :

€ 3,907,395.63



SHORT DESCRIPTION OF THE PROJECT:

Spin Defender proposes a radically new way to process radio frequency (RF) signals. It substitutes digitization by spin-based learning, providing massive advantages for defence operations.

The project aims to develop a digitisation free radio frequency (RF) spectrum analysis system, based on arrays of spintronics nanodevices incorporating in-hardware advanced AI processing (RF AI chip). The advantages for defence operations are a large instantaneous bandwidth, small size, high speed processing, low power consumption and adaptability to changing environments.

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**Members of the consortium and
country of establishment:**



|  NAME OF THE ENTITY |  COUNTRY |
|--|--|
| (Coordinator) THALES | France |
| CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS | France |
| HARP TECHNOLOGIES OY | Finland |
| INTERNATIONAL IBERIAN NANOTECHNOLOGY LABORATORY | Portugal |
| SIGNALGENERIX LIMITED | Cyprus |
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