

## Press Release 17/12/2025

The ePerfect project has been funded by the EDF.

Many of the components used in defence applications originate from outside Europe today. This dependence on external component suppliers is not really acceptable for the European defense industry, where critical components could be withheld or delayed for strategic reasons by foreign governments. In an attempt to provide an alternative solution for Europe, in the development of advanced RF CMOS based Systems on a Chip, the **e-Perfect** project has been funded. This funding has been provided in response to a call from the **European Defence Fund** for the creation of an ITAR free supply and value chains for advanced, radiation hard, fine geometry, RF CMOS Technologies within Europe. This technology capability will be used for the creation of Advanced Systems on a Chip (SoC) for space and defence applications.

The ePerfect project aims to formulate a strategy for the development and ownership of an advanced RF-CMOS supply chain within Europe, that will address the requirement for a high-performance CMOS technology platform for space and defence applications. To achieve the overall project aims, European end users (OEMs) with different technology requirements and product ranges will engage with European design groups and technology suppliers to create components for the defence electronics industry for the coming decades.

The main target of ePerfect is to develop a fine pitch European RF-CMOS supply chain that can produce high-performance RF components such as transceivers and processors. These components will be validated and incorporated into next-generation digital AESA Radar as well as wide-band and narrow-band communication systems. Furthermore, a first review of novel 3D RF systems packaging approaches will be undertaken as a precursor to future miniaturization and greater integration levels.

The core capability that this programme will exploit is the HPDP 80 data processing chip which is a flagship technology from the Greek circuit design company ISD. HPDP80 is a highly flexible and reconfigurable data processing system that is capable of extracting relevant data from a data stream and perform concurrent analysis of it in real time. This platform is highly suited to the requirements of RF systems and the development of high performance mixed signal RF processors and transceivers.

It is the intention of ePerfect to share the capabilities and performance of the RF-Processor and RF-Transceivers to be developed within the project with the whole European OEM community. This will ensure maximum awareness of the process technology and its capabilities through an OEM information exchange forum. This will create critical mass in Europe around the core elements of the supply chain.

The ePerfect project gathers 15 partners representing 9 EU Member States (Greece, France, Germany, Italy, Ireland, Belgium, Spain, Sweden, and Finland). Of these 15 partners: Seven are large enterprises: STMicroelectronics, Rheinmetall Italia, Sener, HMK Atlas Electronics, Intersoft Electronics, Leonardo and Safran: three are RTOs: NKUA, Tyndall, IKTS and four are SMEs: ISD, ISD Aerospace, Asygn, Frontgrade Gaisler and Spinverse



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