



This project has received funding from the European Union's Preparatory Action for Defence Research - PADR programme under grant agreement No 882407 [CROWN]



## European active electronically scanned array with Combined Radar, cOmmunications, and electronic Warfare fuNctions for military applications (CROWN)



Under the Preparatory Action on Defence Research (PADR), the grant for the Research Action call on the topic 'Electromagnetic Spectrum Dominance' was signed on 28 June 2021. The awarded project, called CROWN, is led by Indra Sistemas SA (Spain). The consortium encompasses a total of 11 participants from 7 countries. The project, which has a duration of 30 months, will receive an EU grant of roughly €10 million.

<b>PADR Call EMS-03-2019 – Information on the awarded project</b>	
<b>Name of the project</b>	European active electronically scanned array with Combined Radar, cOmmunications, and electronic Warfare fuNctions for military applications
<b>Short name</b>	CROWN
<b>Summary of the project</b>	
<p>CROWN project includes two main and connected activities as first step towards an EU programme for a multifunction RF (radar, EW, communication) AESA-based system, using technology without end-user restrictions in TRL7, for a single aerial platform by 2027:</p> <ol style="list-style-type: none"> <li>1. R&amp;D assessment and recommendations on critical technologies key for the development of future European multifunction RF AESA systems, establishing roadmaps and priorities avoiding dependencies from non-EU suppliers.</li> <li>2. R&amp;T activities on system and component level. These activities will be based on the requirements identified from the main stakeholders and on the architecture study fulfilled. Demonstrators for the different levels, system, and component, will be developed taking in consideration the inputs of the R&amp;D assessment to avoid as much as possible non-European technologies for CROWN demonstrators. A broadband antenna, wideband digital beam former (DBF) (electronic scan with multibeam capability in transmission and reception in a HW platform) and an advanced SW resource manager (RSM) (key for the multifunction coordination of the system) will be produced for the system level. At component level research activities will be done for Transmit/Receive modules (TRMs). High power, bandwidth, frequency and tunability are key objectives for the TRMs. Two different open and trustable EU foundries, being one of them part of the consortium, will be used for TRM design, manufacturing and test. SWaP-C, packaging, cooling and ilities (reliability, manufacturability, etc) are also aspects that will be included at both levels. The objective for these activities is intended to target at least TRL 4.</li> </ol> <p>In addition, a small-scale prototype will be also designed, manufactured, and tested in a laboratory environment. Laboratory results will be conveniently scaled to the system level through modelling. System modelling will integrate models from the main building blocks studied (antenna, TRMs, DBF and RSM) to assess the performance of the defined system upon different scenarios.</p>	
<b>Project duration</b>	30 months
<b>Starting date</b>	01 July 2021



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<b>Maximum foreseen EU Contribution</b>		<b>€ 9.999.688,75</b>	
<b>List of participants</b>			
#	Name of the entity	Country	EU Contribution requested by the entity <sup>1</sup>
1	Indra Sistemas SA	Spain	€ 1,874,587,50
2	Thales DMS France SAS	France	€ 1.154.205,00
3	Office National d'Etudes et de Recherches Aérospatiales	France	€ 723.375,00
4	Hensoldt Sensors GmbH	Germany	€ 956.095,25
5	Fraunhofer Gesellschaft zur Förderung der Angewandten Forschung e.V	Germany	€ 710.212,50
6	SAAB AB	Sweden	€ 682.762,50
7	Totalforsvarets Forskningsinstitut	Sweden	€ 773.583,75
8	Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek TNO	Netherlands	€ 879.598,50
9	Leonardo S.p.A	Italy	€ 1.066.700,00
10	Elettronica S.p.A	Italy	€ 787.000,00
11	Baltijos Pazangiu Technologiju Institutas	Lithuania	€ 391.568,75

<sup>1</sup> The amount of EU contribution as included in the Grant Agreement. Final amounts need to be confirmed at the end of the project.

<https://www.eda.europa.eu/what-we-do/activities/activities-search/pilot-project-and-preparatory-action-for-defence-research>