NANO components for electronic SMART wireless systems

Fact Sheet

Project Information

<table>
<thead>
<tr>
<th>Project</th>
<th>NANOSMART</th>
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<tbody>
<tr>
<td>Grant agreement ID</td>
<td>825430</td>
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<tr>
<td>Status</td>
<td>Ongoing project</td>
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<tr>
<td>Start date</td>
<td>1 January 2019</td>
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<td>End date</td>
<td>31 December 2021</td>
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Funded under
H2020-EU.2.1.1.
Overall budget
€ 3 999 890
EU contribution
€ 3 999 890

Coordinated by
THALES
France

Objective

In the modern world everything goes wireless and everyone goes mobile. To sustain this trend, higher frequency, smaller, more complex analogue electronics with beam steering capabilities are needed. The objective of NANOSMART is to develop technology for future generation, smart monolithic Transmit / Receive front-end ICs capable of RF switching, power management, high efficiency, at a fraction of the footprint and cost of current solutions. NANOSMART addresses this need by developing a new technological platform based on CNT and 2D material electronics (the two most promising technologies to replace Silicon electronics in the future). NANOSMART develops unique concepts already proven by the consortium such as deep sub-wavelength antennae, CNT NEMS for RF switching, nano electromechanical reconfigurable filters and multiple FET technologies. Monolithic integration of all technologies mentioned above will provide a compact platform including new amplifier architecture, power management, RF switching and antennae on one monolithically integrated chip. Within the front-end IC, three sensor
types (temperature humidity and RF radiation built from novel technology) will also be integrated to provide smart, autonomous system reaction and thus improve accuracy, power efficiency and real-time system health monitoring and on-the-fly response to ambient conditions. The two demonstrators planned are aiming at high end radar and mass market IoT applications providing this level of smart functionality for the first time. NANOSMART encompasses extensive design, modelling and advanced characterization techniques to provide the tools for fast industrial take-up of the developed technology. The project’s interdisciplinary consortium is made up of 10 partners from 7 countries with a wide geographical spread (France, Sweden, Ireland, Italy, Romania, Greece, and Spain) and includes a global industrial player, two SMEs and top EU academic and research institutions.

Field of science

/social sciences/economics and business/business and management/commerce
/natural sciences/computer and information sciences/internet/internet of things
/engineering and technology/electrical engineering, electronic engineering, information engineering/information engineering/telecommunications/wireless
/natural sciences/chemical sciences/inorganic chemistry/inorganic compounds
/engineering and technology/electrical engineering, electronic engineering, information engineering/electronic engineering/analogue electronics
/engineering and technology/electrical engineering, electronic engineering, information engineering/information engineering/telecommunications/radio technology/radar

Programme(s)

Topic(s)

Call for proposal

H2020-ICT-2018-2

Funding Scheme

RIA - Research and Innovation action

Coordinator

THALES

Address | Activity type | EU contribution
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Tour Carpe Diem Place Des | Private for-profit entities | € 910 280
### Participants (9)

<table>
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<tr>
<th>Organisation</th>
<th>Country</th>
<th>EU contribution</th>
<th>Activity type</th>
<th>Address</th>
<th>Website</th>
<th>Contact the organisation</th>
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<tr>
<td>IDRYMA TECHNOLOGIAS KAI EREVNAS</td>
<td>Greece</td>
<td>€ 609 000</td>
<td>Research Organisations</td>
<td>N Plastira Str 100 70013 Irakleio</td>
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<td><a href="#">Contact the organisation</a></td>
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<tr>
<td>INSTITUTUL NATIONAL DE CERCETAREDEZVOLTARE PENTRU MICROTEHNNOLOGIE</td>
<td>Romania</td>
<td>€ 340 000</td>
<td>Research Organisations</td>
<td>Erou Iancu Nicolae Street 32B 077190 Voluntari</td>
<td><a href="#">Website</a></td>
<td><a href="#">Contact the organisation</a></td>
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<td>CHALMERS TEKNISKA HOEGSKOLA AB</td>
<td>Sweden</td>
<td>€ 300 000</td>
<td>Higher or Secondary Education Establishments</td>
<td>41296 Goeteborg</td>
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<td><a href="#">Contact the organisation</a></td>
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<td>SHT SMART HIGH-TECH AB</td>
<td>Sweden</td>
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<td>Address</td>
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<tr>
<td>UNIVERSITA POLITECNICA DELLE MARCHE</td>
<td>Italy</td>
<td>€ 320 000</td>
<td>Piazza Roma 22, 60121 Ancona</td>
<td>Higher or Secondary Education Establishments</td>
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<td>ECOLE SUPERIEURE DE PHYSIQUE ET DECHIMIE INDUSTRIELLES DE LA VILLE DEPARIS</td>
<td>France</td>
<td>€ 300 015</td>
<td>Rue Vauquelin 10, 75231 Paris</td>
<td>Higher or Secondary Education Establishments</td>
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<tr>
<td>RF MICROTECH SRL</td>
<td>Italy</td>
<td>€ 269 975</td>
<td>Via Leone Maccheroni 64, 06132 Perugia</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
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<tr>
<td>UNIVERSITY COLLEGE CORK - NATIONAL UNIVERSITY OF IRELAND, CORK</td>
<td>Ireland</td>
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</table>
EU contribution
€ 430 125

Address
Western Road
T12 YN60 Cork

Activity type
Higher or Secondary
Education Establishments

Website
Contact the organisation

FUNDACIO INSTITUT CATALA DE NANOCIENTENCIA I NANOTECNOLOGIA
Spain
EU contribution
€ 220 495

Address
Campus De La Uab Edifici Q
lncn2
08193 Bellaterra (Barcelona)

Activity type
Research Organisations

Website
Contact the organisation

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