Framework of key enabling technologies for safe and autonomous drones’ applications

Fact Sheet

Project Information

COMP4DRONES
Grant agreement ID: 826610

Status
Ongoing project

Start date
1 October 2019

End date
30 September 2022

Funded under
H2020-EU.2.1.1.7.

Overall budget
€ 29 691 996,71

EU contribution
€ 8 038 262,86

Coordinated by
INDRA SISTEMAS SA
Spain

Project description

Advanced solutions for safer drone use

The use of drones today is expanding as it reduces costs and offers environmental benefits. However, existing technologies could make drones’ usage harmful for humans, vehicles and properties. SESAR JU, in charge of EU research in air traffic management, suggested that further investments and motivations are needed for the safe use of drones. The ECSEL JU-funded project COMP4DRONES will work on safe software and hardware drone solutions aligned with SESAR objectives. Coordinated by Indra, COMP4DRONES brings together 49 partners from 8 countries aiming to build an ecosystem that will support the systemization and safety of drone platforms, reliable communications, cost-efficient and safe design of drones.
COMP4DRONES will deploy applications in five domains: transport, construction, surveillance and inspection, logistics and agriculture.

Objective

Drones can perform air operations that manned aircrafts struggle with, and their use brings significant economic savings and environmental benefits whilst reducing the risk to human life. Drone-based service and product innovation, as driven by increased levels of connectivity and automation, is limited by the growing dependence on poorly interoperable proprietary technologies and the risks posed to people, to other vehicles and to property. SESAR JU identified that issue has a high impact on European innovation, which demands R&D investments and incentives for the convergence of shared technologies and markets as a remedy. Actions creating globally harmonized, commercially exploitable yet widely accessible R&D ecosystems should be publicly performed. The COMP4DRONES project complements SESAR JU efforts with a particular focus on safe software and hardware drone architectures. COMP4DRONES will bear a holistically designed ecosystem ranging from application to electronic components, realized as a tightly integrated multi-vendor and compositional drone embedded architecture solution and a tool chain complementing the compositional architecture principles. The ecosystem aims at supporting (1) efficient customization and incremental assurance of drone embedded platforms, (2) safe autonomous decision making concerning individual or cooperative missions, (3) trustworthy drone-to-drone and drone-to-ground communications even in presence of malicious attackers and under the intrinsic platform constraints, and (4) agile and cost-effective compositional design and assurance of drone modules and systems. COMP4DRONES will also build an open sustainable ecosystem around public, royalty-free and goal-driven software platform standards that will ease the development of new drone functionalities for multiple application domains. Lead applications driving ecosystem development and benchmarking on the fields of transport, inspection, logistic, precision agriculture, parcel delivery.

Field of science

/social sciences/economics and business/business and management/commerce
/social sciences/sociology/industrial relations/automation
/natural sciences/computer and information sciences/software
/agricultural sciences/agriculture, forestry, and fisheries
/agricultural sciences/agriculture, forestry, and fisheries/agriculture
/natural sciences/biological sciences/ ecology/ecosystems
/engineering and technology/electrical engineering, electronic engineering, information engineering/electronic engineering/ robotics/autonomous robots/drones
Programme(s)

Topic(s)

Call for proposal

H2020-ECSEL-2018-2-RIA-two-stage-1

Funding Scheme

ECSEL-RIA - ECSEL Research and Innovation Action

Coordinator

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Participants (49)

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ECOLE NATIONALE SUPERIEURE DE MECANIQUE ET D’AEROTECHNIQUE

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EU contribution

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ABINSULA SRL

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UNIVERSITA DEGLI STUDI DI MODENA E REGGIO EMILIA

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EU contribution

€ 145,250

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Via Universita 4
41121 Modena

Activity type

Higher or Secondary Education Establishments

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ACCIÓN CONSTRUCCION SA
Spain
€ 72 365,63
Address
Avenida De Europa 18 Parque Empresarial
28108 Alcobendas
Activity type
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HEMAV TECHNOLOGY SL
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28020 Madrid
Activity type
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HI IBERIA INGENIERIA Y PROYECTOS SL
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SMARTMOTION S.R.O.
Czechia
€ 87 187,50

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ATECHSYS ENGINEERING
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AIROBOT
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7521 PH Enschede
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UD’ANET SRL
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€ 246 282,75
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92250 La Garenne Colombes
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<td>Stationsplein 45 Unit A1.205-207 3013 AK Rotterdam</td>
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<td>France</td>
<td>€ 471 587,19</td>
<td>Place Jean Millier 2 92400 Courbevoie</td>
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ALTRAN TECHNOLOGIES

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Last update: 28 November 2020
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