### Project Information

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<th><strong>SDN-microSENSE</strong></th>
<th><strong>Funded under</strong></th>
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<td>Grant agreement ID: 833955</td>
<td>H2020-EU.3.7.4.</td>
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<td>1 May 2019</td>
<td>30 April 2022</td>
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<td>€ 10,100,963.21</td>
<td>€ 7,992,462.50</td>
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<tr>
<td>AYESA ADVANCED TECHNOLOGIES SA</td>
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<tr>
<td>Spain</td>
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### Project description

**Security tools for smart energy ecosystems**

The smart energy ecosystem is the next step of the conventional electrical grid, offering increased reliability, augmented service quality and efficient exploitation of existing infrastructures. However, it generates significant security and privacy problems as it contains a combination of heterogeneous, coexisting smart and legacy technologies. The EU-funded SDN-microSENSE project will provide secure, privacy-enabled and resistant-to-cyberattacks tools to ensure electrical power and energy system (EPES) operation and the integrity and confidentiality of communications. The project will adopt an SDN-based technology and implement risk assessment
processes to identify the risk level of each EPES component, self-healing abilities to isolate the critical parts of the network, large-scale detection tools, prevention mechanisms and a privacy protection structure.

Objective

The smart energy ecosystem constitutes the next technological leap of the conventional electrical grid, providing multiple benefits such as increased reliability, better service quality and efficient utilization of the existing infrastructures. However, despite the fact that it brings beneficial environmental, economic and social changes, it also generates significant security and privacy challenges, as it includes a combination of heterogeneous, co-existing smart and legacy technologies. Based on this reality, the SDN-microSENSE project intends to provide a set of secure, privacy-enabled and resilient to cyberattacks tools, thus ensuring the normal operation of EPES as well as the integrity and the confidentiality of communications. In particular, adopting an SDN-based technology, SDN-microSENSE will develop a three-layer security architecture, by deploying and implementing risk assessment processes, self-healing capabilities, large-scale distributed detection and prevention mechanisms, as well as an overlay privacy protection framework. Firstly, the risk assessment framework will identify the risk level of each component of EPES, identifying the possible threats and vulnerabilities. Accordingly, in the context of self-healing, islanding schemes and energy management processes will be deployed, isolating the critical parts of the network in the case of emergency. Furthermore, collaborative intrusion detection tools will be capable of detecting and preventing possible threats and anomalies timely. Finally, the overlay privacy protection framework will focus on the privacy issues, including homomorphic encryption and anonymity processes.

Fields of science

> > >
> > >

Programme(s)

Topic(s)

Call for proposal

H2020-SU-DS-2018
Funding Scheme

IA - Innovation action

Coordinator

AYESA ADVANCED TECHNOLOGIES SA

Address
Calle Gonzalo Jimenez De Quesada 2 Planta 11 Torre Sevilla Torre Pelli
41092 Sevilla
Spain

Activity type
Private for-profit entities excluding Higher or Secondary Education Establishments

EU contribution
€ 484 625

Contact the organisation

Participants (32)

PANEPISTIMIO DYTIKIS MAKEDONIAS

Greece

EU contribution
€ 372 500

Address
Parko Agiou Dimitriou 1
50100 Kozani

Activity type
Higher or Secondary Education Establishments

Website

Contact the organisation

ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS

Greece

EU contribution
€ 462 500

Address
Charilaou Thermi Road 6 Km
57001 Thermi Thessaloniki

Activity type
Research Organisations

Website

Contact the organisation

PREDUZECE ZA TELEKOMUNIKACIJSKE USLUGE REALAIZ DOO BEOGRAD (SAVSKI VENAC)

Serbia

EU contribution
EU contribution
€ 252 875

Address
Mihajla Bogicevica 7
11000 Beograd

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Contact the organisation

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**ATOS SPAIN SA**

Spain

EU contribution
€ 233 380,48

Address
Calle De Albarracin 25
28037 Madrid

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Website

Contact the organisation

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**SCHNEIDER ELECTRIC FRANCE SAS**

France

EU contribution
€ 25 357,28

Address
Rue Joseph Monier 35
92500 Rueil Malmaison

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Contact the organisation

---

**PUBLIC POWER CORPORATION S.A.**

Greece

EU contribution
€ 181 125

Address
Chalkokondyli Street 30
104 32 Athina

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Website

Contact the organisation
<table>
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<td>FUNDACION TECNALIA RESEARCH &amp; INNOVATION</td>
<td>Spain</td>
<td>492 812,50</td>
<td>Parque Científico Y Tecnológico De Gipuzkoa Paseo Mikeletegi 2 20009 Donostia/san Sebastian (Gipuzkoa)</td>
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<td>DIMOS AVDIRON</td>
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<td>INNOVATIVE ENERGY AND INFORMATION TECHNOLOGIES LTD</td>
<td>Bulgaria</td>
<td>505 750</td>
<td>Ul Magnurska School N11 Hay Tek Park By Office 316 1784 Sofia</td>
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<td>ELEKTROENERGIEN SISTEMEN OPERATOR EAD</td>
<td>Bulgaria</td>
<td>103 250</td>
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CEZ DISTRIBUTION BULGARIA AD
Bulgaria
EU contribution
€ 96 250
Address
Tsarigradsko Shouse Blv 159
1784 Sofia
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Contact the organisation

UBITECH LIMITED
Cyprus
EU contribution
€ 285 906,25
Address
26 Nikou & Despinas Pattchi
3071 Limassol
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Contact the organisation

CYBERLENS LTD
United Kingdom
EU contribution
€ 183 750
Address
10 12 Mulberry Green Old Harlow
CM17 0ET Essex
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Contact the organisation
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<td>SIDROCO HOLDINGS LIMITED</td>
<td>Cyprus</td>
<td>€ 262,937,50</td>
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<td>0 INFINITY LIMITED</td>
<td>United Kingdom</td>
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<td>EIGHT BELL LTD</td>
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<td>Agias Paraskevis 23 Strovolos 2002 Nicosia</td>
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<td>INCITES CONSULTING SA</td>
<td>Luxembourg</td>
<td>€ 254,625</td>
<td>130 Route D'arlon 8008 Strassen</td>
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<td>ENERGYNAUTICS GMBH</td>
<td>Germany</td>
<td>€ 134 925</td>
<td>Robert Bosch Strasse 7, 64293 Darmstadt</td>
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<td>NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU</td>
<td>Norway</td>
<td>€ 443 000</td>
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<td>SIAXAMPANIS E.E.</td>
<td>Greece</td>
<td>€ 123 900</td>
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<td>GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER</td>
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<td>Welfengarten 1, 30167 Hannover</td>
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**RAVNA HYDRO LTD**
- Bulgaria
- EU contribution: € 99,750
- Address: Ul. General Karzov 21, 4300 Karlovo
- Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

**FUNDACIO INSTITUT DE RECERCA DE L'ENERGIA DE CATALUNYA**
- Spain
- EU contribution: € 367,187.50
- Address: C/ Jardins De Les Dones De Negre 1, 08930 Sant Adria De Besos
- Activity type: Research Organisations

**ESTABANELL Y PAHISA ENERGIA SA**
- Spain
- EU contribution: € 183,697.50
- Address: Calle Rec 26-28, 08400 Granollers
- Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

**CHECKWATT AB**
- Sweden
- 

Contact the organisation
EU contribution
€ 173 057,50

Address
Marketenterivagen 1
415 28 Goteborg

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Contact the organisation

---

INDEPENDENT POWER TRANSMISSION OPERATOR SA

Greece

EU contribution
€ 177 625

Address
Dyrrachiou Str. & Kifisou 89
10443 Athens

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Website

Contact the organisation

---

SINTEF ENERGI AS

Norway

EU contribution
€ 453 320

Address
Sem Saelandsveg 11
7465 Trondheim

Activity type
Research Organisations

Website

Contact the organisation

---

DIL DIEL

Bulgaria

EU contribution
€ 103 250

Address
8, Boris Hristov Str., Fl. 2, Ap.5
1111 Sofia

Activity type
Private for-profit entities
(excluding Higher or Secondary Education Establishments)

Contact the organisation

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<td>OPTIMIZACION ORIENTADA A LA SOSTENIBILIDAD SL</td>
<td>Spain</td>
<td>€ 122 150</td>
<td>Calle Early Ovington 4 Nave 8 41300 La Rinconada (Sevilla)</td>
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<td>GEIE ERCIM</td>
<td>France</td>
<td>€ 137 500</td>
<td>Route Des Lucioles 2004 Sophia Antipolis 06410 Biot</td>
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<td>France</td>
<td>€ 364 455,22</td>
<td>Rue Joseph Monier 35 92500 Rueil Malmaison</td>
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<td>ATOS IT SOLUTIONS AND SERVICES IBERIA SL</td>
<td>Spain</td>
<td>€ 86 432,02</td>
<td>Ronda De Europa 5 28760 Tres Cantos Madrid</td>
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