SDN - microgrid reSilient Electrical eNergy SystEm

Fact Sheet

Project Information

**SDN-microSENSE**
Grant agreement ID: 833955

Funded under
Secure societies - Protecting freedom and security of Europe and its citizens

DOI
10.3030/833955

Total cost
€ 10 100 963,21

EU contribution
€ 7 992 462,50

Start date
1 May 2019

End date
31 October 2022

Coordinated by
AYESA ADVANCED TECHNOLOGIES SA
Spain

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

engineering and technology > environmental engineering > energy and fuels > **renewable energy**

engineering and technology > electrical engineering, electronic engineering, information engineering >

electrical engineering > power engineering > **electric power distribution**

natural sciences > biological sciences > ecology > **ecosystems**

Programme(s)

H2020-EU.3.7. - Secure societies - Protecting freedom and security of Europe and its citizens

H2020-EU.3.7.4. - Improve cyber security

H2020-EU.3.7.2. - Protect and improve the resilience of critical infrastructures, supply chains and transport modes
Topic(s)


Call for proposal


See other projects for this call

Sub call

H2020-SU-DS-2018

Funding Scheme

IA - Innovation action

Coordinator

AYESA ADVANCED TECHNOLOGIES SA

Net EU contribution

€ 413 375,00

Address

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

Spain

Andalucía > Sevilla

Activity type

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

Links

Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution

€ 177 160,71
Participants (37)

THIRD-PARTY  
FUNDACION AYESA
Spain
Net EU contribution
€ 36 250,00

Address
Marie Curie 2
41092 Sevilla  📍

Region
Andalucía > Sevilla

Activity type
Research Organisations

Links
Contact the organisation 📝
Participation in EU R&I programmes 📝
H2020 collaboration network 🌐

Non-EU contribution
€ 0,00

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THIRD-PARTY  
ACT SISTEMAS SL
Spain
Net EU contribution
€ 35 000,00

Address
Calle Marie Curie 2
41092 Sevilla  📍

Region
Andalucía > Sevilla

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

Links
Contact the organisation 📝
Participation in EU R&I programmes 📝
H2020 collaboration network 🌐
PANEPISTIMIO DYTIKIS MAKEDONIAS

Greece

Net EU contribution
€ 372 500,00

Address
Parko Agiou Dimitriou 1
50100 Kozani

Region
Γρεβενά > Δυτική Μακεδονία > Βόρεια Ελλάδα

Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 0,00

ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS

Greece

Net EU contribution
€ 462 500,00

Address
Charilaou Thermi Road 6 Km
57001 Thermi Thessaloniki

Region
Θεσσαλονίκη > Κεντρική Μακεδονία > Βόρεια Ελλάδα

Activity type
Research Organisations

Links
Contact the organisation
Website
Participation in EU R&I programmes
PREDUZECE ZA TELEKOMUNIKACIJSKE USLUGE REALAIZ DOO BEOGRAD (SAVSKI VENAC)

Serbia

Net EU contribution
€ 252 875,00

Address
Mihajla Bogicevica 7
11000 Beograd

SME
Yes

Region
Србија - север > Београдски регион > Београдска област

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

Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 108 375,00

ATOS SPAIN SA

Spain

Net EU contribution
€ 29 860,66

Address
Calle De Albarracin 25
28037 Madrid

Region
Comunidad de Madrid > Comunidad de Madrid > Madrid
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
- Contact the organisation
- Website
- Participation in EU R&I programmes
- H2020 collaboration network

Non-EU contribution
€ 12 797,43

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**THIRD-PARTY**

**ATOS IT SOLUTIONS AND SERVICES IBERIA SL**

Spain

Net EU contribution
€ 203 519,82

Address
Ronda De Europa 5
28760 Tres Cantos Madrid

Region
Comunidad de Madrid > Comunidad de Madrid > Madrid

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

Links
- Contact the organisation
- Participation in EU R&I programmes
- H2020 collaboration network

Non-EU contribution
€ 87 222,78

---

**SCHNEIDER ELECTRIC FRANCE SAS**

France

Net EU contribution
€ 0,00

Address
Rue Joseph Monier 35
92500 Rueil Malmaison

Region
**Ile-de-France > Ile-de-France > Hauts-de-Seine**

**Activity type**

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

**Links**

Contact the organisation

Participation in EU R&I programmes

H2020 collaboration network

**Non-EU contribution**

€ 0,00

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**THIRD-PARTY**

**SCHNEIDER ELECTRIC ESPANA SA**

Spain

Net EU contribution

€ 25 357,28

**Address**

Bac De Roda 52 Edif A

08019 Barcelona

**Region**

Este > Cataluña > Barcelona

**Activity type**

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

**Links**

Contact the organisation

Website

Participation in EU R&I programmes

H2020 collaboration network

**Non-EU contribution**

€ 10 867,40

---

**DIMOSIA EPICHEIRISI ILEKTRISMOU ANONYMI ETAIREIA**

Greece

Net EU contribution

€ 181 125,00

**Address**

Chalkokondyli Street 30

104 32 Athina
**FUNDACION TECNALIA RESEARCH & INNOVATION**

Spain

Net EU contribution

€ 492 812,50

Address

Parque Cientifico Y Tecnologico De Bizkaia Astondo Bidea Edificio 700 48160 Derio (Bizkaia)

Region

Noreste > Pais Vasco > Bizkaia

Activity type

Research Organisations

Links

Contact the organisation  Website  Participation in EU R&I programmes  H2020 collaboration network

Non-EU contribution

€ 0,00

---

**DIMOS AVDIRON**

Greece

Net EU contribution

€ 82 250,00

Address
Genisea
67064 Genisea

Region
Ξάνθη > Ανατολική Μακεδονία > Βόρεια Ελλάδα

Activity type
Public bodies (excluding Research Organisations and Secondary or Higher Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 0,00

INNOVATIVE ENERGY AND INFORMATION TECHNOLOGIES LTD
Bulgaria

Net EU contribution
€ 505 750,00

Address
Ul Magnurska School N11 Hay Tek Park By Office 316
1784 Sofia

SME
Yes

Region
Югозападна и Южна централна България > Югозападен > София (столица)

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

Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 216 750,00
ELEKTROENERGIEN SISTEMEN OPERATOR EAD

Bulgaria

Net EU contribution

€ 103 250,00

Address

Bul Tsar Boris lII 201
1618 Sofia

Region

Югозападна и Южна централна България > Югозападен > София (столица)

Activity type

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

Links

Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution

€ 44 250,00

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ELECTRODISTRIBUTION GRID WEST AD

Bulgaria

Net EU contribution

€ 96 250,00

Address

Tsarigradsko Shouse Blvd 159
1784 Sofia

Region

Югозападна и Южна централна България > Югозападен > София (столица)

Activity type

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

Links

Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution

€ 41 250,00
UBITECH LIMITED
Cyprus
Net EU contribution
€ 285 906,25
Address
26 Nikou & Despinas Pattchi
3071 Limassol

SME
Yes
Region
Κύπρος > Κύπρος > Κύπρος
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 122 531,25

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CYBERLENS LTD
United Kingdom
Net EU contribution
€ 183 750,00
Address
10 12 Mulberry Green Old Harlow
CM17 0ET Essex

SME
Yes
Region
East of England > Essex > West Essex
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
SIDROCO HOLDINGS LIMITED

Cyprus

Net EU contribution
€ 262,937,50

Address
Petraki Giallourou 22
1077 Nicosia

SME
Yes

Region
Κύπρος

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

Links

0 INFINITY LIMITED

United Kingdom

Net EU contribution
€ 260,636,25

Address
Office 2 Brook House 209 Cranbrook Road
IG1 4TD London

SME
Yes
Region
London > Outer London — East and North East > Redbridge and Waltham Forest

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

Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 111 701,25

EIGHT BELLS LTD
Cyprus
Net EU contribution
€ 256 375,00

Address
Agias Paraskevis 23 Strovolos
2002 Nicosia

SME
Yes

Region
Κύπρος

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

Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 109 875,00

INCITES CONSULTING SA
Luxembourg
Net EU contribution
ENERGYNAUTICS GMBH
Germany
Net EU contribution
€ 134 925,00

Address
Robert Bosch Strasse 7
64293 Darmstadt

SME
Yes

Region
Darmstadt > Darmstadt, Kreisfreie Stadt

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

Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network
NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU

Norway

Net EU contribution
€ 443 000,00

Address
Hogskoleringen 1
7491 Trondheim

Region
Norge > Trøndelag > Trøndelag

Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 0,00

SIAXAMPANIS E.E.

Greece

Net EU contribution
€ 123 900,00

Address
Kalis Elpidos 26
554 37 Thessaloniki

SME
Yes

Region
Θεσσαλονίκη > Κεντρική Μακεδονία > Βόρεια Ελλάδα

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

Links
GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER

Germany

Net EU contribution
€ 225 307,50

Address
Welfengarten 1
30167 Hannover

Region
Niedersachsen > Hannover > Region Hannover

Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 0,00

RAVNA HYDRO LTD

Bulgaria

Net EU contribution
€ 99 750,00

Address
Ul. General Karzov 21
4300 Karlovo

SME
Yes

Region
Югозападна и Южна централна България > Южен централен > Пловдив
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 42,750,00

FUNDACIO INSTITUT DE RECERCA DE L'ENERGIA DE CATALUNYA
Spain
Net EU contribution
€ 367,187,50

Address
C/ Jardins De Les Dones De Negre 1
08930 Sant Adria De Besos

Region
Este > Cataluña > Barcelona

Activity type
Research Organisations

Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 0,00

ESTABANELL Y PAHISA ENERGIA SA
Spain
Net EU contribution
€ 183,697,50

Address
Calle Rec 26-28
08400 Granollers
CHECKWATT AB
Sweden
Net EU contribution
€ 173 057,50
Address
Marketenterivagen 1
415 28 Goteborg
SME
Yes
Region
Södra Sverige > Västsverige > Västra Götalands län
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network
Non-EU contribution
€ 74 167,50
INDEPENDENT POWER TRANSMISSION OPERATOR SA

Greece

Net EU contribution

€ 177 625,00

Address

Dyrrachiou Str. & Kifisou 89
10443 Athens

Region

Κεντρικός Τομέας Αθηνών > Αττική > Αττική

Activity type

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

Links

Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution

€ 76 125,00

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SINTEF ENERGI AS

Norway

Net EU contribution

€ 453 320,00

Address

Sem Saelandsveg 11
7465 Trondheim

Region

Norge > Trøndelag > Trøndelag

Activity type

Research Organisations

Links

Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution

€ 0,00
DIL DIEL
Bulgaria
Net EU contribution
€ 103,250,00
Address
8, Boris Hristov Str., Fl. 2, Ap.5
1111 Sofia
SME
Yes
Region
Югозападна и Южна централна България > Югозападен > София (столица)
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network
Non-EU contribution
€ 44,250,00

IDENER TECHNOLOGIES SL
Spain
Net EU contribution
€ 122,150,00
Address
Calle Early Ovington 4 Nave 8
41300 La Rinconada (Sevilla)
SME
Yes
Region
Andalucía > Sevilla
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
Links
GEIE ERCIM

France

Net EU contribution

€ 137 500,00

Address

Route Des Lucioles 2004 Sophia Antipolis
06410 Biot

SME

Yes

Region

Provence-Alpes-Côte d’Azur > Provence-Alpes-Côte d’Azur > Alpes-Maritimes

Activity type

Other

Links

Contact the organisation  Website  Participation in EU R&I programmes  H2020 collaboration network

Non-EU contribution

€ 0,00

SCHNEIDER ELECTRIC INDUSTRIES SAS

France

Net EU contribution

€ 284 812,50

Address

Rue Joseph Monier 35
92500 Rueil Malmaison

Region

Île-de-France > Île-de-France > Hauts-de-Seine
THIRD-PARTY

SCHNEIDER ELECTRIC ESPANA SA
Spain
Net EU contribution
€ 79 642,72

Address
Bac De Roda 52 Edif A
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Region
Este > Cataluña > Barcelona

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

Links
Contact the organisation Website Participation in EU R&I programmes H2020 collaboration network

Non-EU contribution
€ 34 132,60

ATOS IT SOLUTIONS AND SERVICES IBERIA SL
Spain
Net EU contribution
€ 86 432,02

Address
Ronda De Europa 5
28760 Tres Cantos Madrid

Region

23 of 24
Comunidad de Madrid > Comunidad de Madrid > Madrid

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

Links
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 37 042,29

EC signature date: 26 April 2019
Last update: 25 July 2022
Record number: 222641

Permalink: https://cordis.europa.eu/project/id/833955

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