SDN - microgrid reSilient Electrical eNergy SystEm

Fact Sheet

Project Information

SDN-microSENSE

Grant agreement ID: 833955

DOI
10.3030/833955

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

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
- electrical engineering
- electronic engineering
- information 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
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Region

Andalucia > Sevilla

Activity type

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

Links

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Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution

€ 177 160,71
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
Non-EU contribution
€ 15 000,00

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
Participation in EU R&I programmes

H2020 collaboration network

Non-EU contribution

€ 0,00

PREDUZECE ZA TELEKOMUNIKACIJSKE USLUGE REALAIZ DOO BEOGRAD (SAVSKI VENAC)

Serbia

Net EU contribution

€ 252 875,00

Address

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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
**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

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

**Non-EU contribution**

€ 12,797,43

**SCHNEIDER ELECTRIC FRANCE SAS**

France

Net EU contribution

€ 0,00

Address

Rue Joseph Monier 35
92500 Rueil Malmaison

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

**Non-EU contribution**

€ 87,222,78
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

SCHNEIDER ELECTRIC ESPANA SA

Spain

Net EU contribution

€ 25 357,28

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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

PUBLIC POWER CORPORATION SA

Greece

Net EU contribution

€ 181 125,00

Address

Chalkokondyli Street 30
104 32 Athina
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Non-EU contribution
€ 77 625,00

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)

Non-EU contribution
€ 0,00

DIMOS AVDIRON
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Net EU contribution
€ 82 250,00

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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

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Bul Tsar Boris Iii 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
Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network
Non-EU contribution
€ 112,687,50

0 INFINITY LIMITED
United Kingdom
Net EU contribution
€ 260,636,25
Address
Office 2 Brook House 209 Cranbrook Road
IG1 4TD London
SME
Yes
London > Outer London — East and North East > Redbridge and Waltham Forest

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

EIGHT BELLS LTD

Cyprus

Net EU contribution

€ 256 375,00

Address

Agias Paraskevis 23 Strovolos
2002 Nicosia

Yes

Region

Κύπρος

Activity type

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

INCITES CONSULTING SA

Luxembourg

Net EU contribution

€ 109 875,00
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

Non-EU contribution
€ 109 125,00
NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU
Norway
Net EU contribution
€ 443 000,00
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Hogskoleringen 1
7491 Trondheim
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Norge > Trøndelag > Trøndelag
Activity type
Higher or Secondary Education Establishments
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Non-EU contribution
€ 0,00

SIAXAMPANIS E.E.
Greece
Net EU contribution
€ 123 900,00
Address
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Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
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GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER
Germany
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€ 225 307,50
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Niedersachsen > Hannover > Region Hannover
Activity type
Higher or Secondary Education Establishments
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Participation in EU R&I programmes
H2020 collaboration network
Non-EU contribution
€ 0,00

RAVNA HYDRO LTD
Bulgaria
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€ 99 750,00
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Yes
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Югозападна и Южна централна България > Южен централен > Пловдив
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

€ 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

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Este > Cataluña > Barcelona

Activity type

Research Organisations

Links

Contact the organisation
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H2020 collaboration network

Non-EU contribution

€ 0,00

ESTABANELL Y PAHISA ENERGIA SA

Spain

Net EU contribution

€ 183 697,50

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Calle Rec 26-28
08400 Granollers
CHECKWATT AB
Sweden
Net EU contribution
€ 173 057,50
Address
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SME
Yes
Yes
Region
Södra Sverige > Västsverige > Västra Götalands län
Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
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Contact the organisation
Participation in EU R&I programmes
H2020 collaboration network
Non-EU contribution
€ 74 167,50
INDEPENDENT POWER TRANSMISSION OPERATOR SA
Greece
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€ 177 625,00
Address
Dyrrachiou Str. & Kifisou 89
10443 Athens
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Κεντρικός Τομέας Αθηνών > Αττική > Αττική
Activity type
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Links
Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network
Non-EU contribution
€ 76 125,00

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
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H2020 collaboration network
Non-EU contribution
€ 0,00
DIL DIEL
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€ 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
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Participation in EU R&I programmes
H2020 collaboration network
Non-EU contribution
€ 44 250,00

IDENER TECHNOLOGIES SL
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€ 122 150,00
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Yes
Region
Andalucía > Sevilla
Activity type
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H2020 collaboration network

Non-EU contribution

€ 52 350,00

GEIE ERCIM

France

Net EU contribution

€ 137 500,00

Address

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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

Ile-de-France > Ile-de-France > Hauts-de-Seine
**THIRD-PARTY**

**SCHNEIDER ELECTRIC ESPANA SA**

- Spain
- Net EU contribution: € 79,642.72
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- Region: Este > Cataluña > Barcelona
- Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

**ATOS IT SOLUTIONS AND SERVICES IBERIA SL**

- Spain
- Net EU contribution: € 86,432.02
- Address: Ronda De Europa 5, 28760 Tres Cantos Madrid
- Region:
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: 14 June 2022
Record number: 222641

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

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