

UNIVERSITETSSENTERET PÅ KJELLER (UNIK)

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2027 KJELLER

att: Administrerende direktør Stian Løvold

Enquiries to:

Olaug Råd, +47 22037243
olr@forskningsradet.no

Application received:

11.02.2015

Our ref.: 248113/O70

Oslo, 09.10.2015

Contract dispatched

Project Title: Security in IoT for Smart Grids

Project No.: 248113/O70

Project Manager: Josef Noll

Project Administrator: Stian Løvold

With reference to the application for funding for the above-mentioned project, the programme/activity IKTPLUSS bevilgende utvalg at the Research Council of Norway has at its meeting of 26.06.2015 granted an allocation to the project for 2015. Pledges for subsequent years, if any, as well as the terms that apply to the allocation, are specified in the attached contract.

The project has been assigned the following project number 248113 /O70. Please use this number on all enquiries to the Research Council relating to the project.

Contacts at the Research Council:

Hilde Albech, ha@forskningsradet.no for all reporting and
Olaug Råd, olr@forskningsradet.no for subject-specific questions.

The project will be carried out in collaboration with the following partners:

Organization no.	Partner Institution	From date	To date
952125001	NORSK REGNESENTRAL	01.10.2015	
970937668	HØGSKOLEN I GJØVIK	01.10.2015	
984648855	SIMULA RESEARCH LABORATORY AS	01.10.2015	
986258191	SMART INNOVATION ØSTFOLD AS	01.10.2015	
971644494	FREDRIKSTAD ENERGI AS	01.10.2015	
889497092	MOVATION AS	01.10.2015	

998927854	ESMART SYSTEMS AS	01.10.2015	
981915550	EB NETT AS	01.10.2015	

The contract is comprised of the following documents:

- R&D Project Agreement Document,
- Project description,
- General Terms and Conditions for R&D Projects.
- Any other documents specified in the agreement document.

Please read through the attached contract documents carefully and sign or reject them electronically via “My RCN Web” as soon as possible and at the latest **within three months**. If you choose to reject the contract documents, please provide your reasons.

Please check to ensure that all the data are correct and contact the Research Council immediately if you discover any errors or missing information.

Collaboration agreements with partners must be marked with the assigned project number and uploaded on “My RCN Web”. This must be done before the contract may be signed.

The contract will not formally enter into force and disbursement of funding will not take place until the Research Council has received and approved the signed contract and copies of the collaboration agreements with partners.

The Research Council reserves the right to withdraw the dispatched contract or amend the provisions of the contract if it has not received the signed contract documents within the deadline.

In addition to the reporting obligations that are set out in the General Terms and Conditions for R&D Projects, the Project Owner is required to keep the Research Council apprised of the following:

- the Project Owner's enterprise number (now: 971523425);
- organisational changes carried out at the Project Owner;
- the Project Owner's current mailing address, telephone and telefax numbers, and email address;
- the party to whom the specifications regarding potential automatic disbursement of funds are to be sent: name and email address;
- the bank account number to be used for the Research Council's disbursements.

If the Project Owner has already supplied the above information in connection with other projects, it is not necessary to repeat them in connection with this project. The project administrator should send any new or updated information to the Research Council at okonomi@forskningsradet.no.

If disbursements to the project do not take place as agreed, please notify the Research Council's contact person for the project (see above). The Project Owner is not permitted to send reminder letters to or claim interest from the Research Council of Norway.

This letter has been sent in electronic form to Administrerende direktør Stian Løvold, who has been authorised by the Project Owner to sign the contract with the Research Council on “My RCN Web”.

If the Project Owner has chosen to centralise the responsibility for signing all R&D contracts with the Research Council to a single contract administrator within the organisation, then Stian Løvold as project administrator and Josef Noll as project manager have been included as secondary recipients with read access to the available contract documents on “My RCN Web”.

The Project Owner is responsible for informing the other parties involved in the project about the contract with the Research Council.

The project administrator is responsible for ensuring that all project documents of archival value are stored internally within the organisation. All contract documents may be downloaded from “My RCN Web”.

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More information about Research Council's general terms and conditions for R&D projects may be found on the Research Council's website at: www.forskningsradet.no.

Sincerely yours,

The Research Council of Norway

Director
Division for Innovation

Olaug Råd
Seniorrådgiver
Division for Innovation

Approved and expedited electronically

Attachments

R&D Project Agreement Document

Article 1: Contracting parties

Between

The Research Council of Norway

Enterprise number: 970141669

(hereafter also referred to as the **Research Council**)

and

UNIVERSITETSSENTERET PÅ KJELLER (UNIK)

Enterprise number: 971523425

(hereafter referred to as the **Project Owner**)

a contract has been signed for the following project, described below (hereafter referred to as the **project**).

The following partners will participate in the project:

Organization no.	Partner Institution	From date	To date
952125001	NORSK REGNESENTRAL	01.10.2015	
970937668	HØGSKOLEN I GJØVIK	01.10.2015	
984648855	SIMULA RESEARCH LABORATORY AS	01.10.2015	
986258191	SMART INNOVATION ØSTFOLD AS	01.10.2015	
971644494	FREDRIKSTAD ENERGI AS	01.10.2015	
889497092	MOVATION AS	01.10.2015	
998927854	ESMART SYSTEMS AS	01.10.2015	
981915550	EB NETT AS	01.10.2015	

The Project Owner is under obligation to draw up collaboration agreements with the partners pursuant to Section 2.2 of the General Terms and Conditions for R&D Projects.

Article 2: The project

2.1 Project title: Security in IoT for Smart Grids

2.2 Project no.: 248113/O70

Please specify the project number in connection with all enquiries directed to the Research Council, including on payment documents.

2.3 Objective of the project

The IoTSec project aims at becoming the start-up of a research cluster in security for IoT, industrially applied by members of the NCE Smart. The project will create and consolidate the security framework for IoT, address specific areas of research, and create the basis for growth through future scientific and industrial projects in the domain. The following objectives have been identified to drive the research towards a cluster of projects for secure IoT-powered critical infrastructures:

- 1) Extend the IoTSec project to a research cluster to include at least 14 Professors/Senior IoTSec Security in IoT for Smart Grids 1Researchers, 15 PhD/PostDocs, 30 Master students and create international visibility with at least 12 projects and memberships in 5 networks/clusters.
- 2) Tailor the research towards an operational Security Centre for Smart grids at the NCE Smart, supported by at least 15 companies and identified as an International Centre of Excellence.

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2.4 Project description and project summary

The **project description** for project no. 248113/O70 is provided in the document dated 24.09.2015.

Changes in the project description require the written approval of the Research Council, and will be treated as amendments to the contract, cf. Section 14 of the General Terms and Conditions for R&D Projects.

The following project summary may be published by the Research Council:

IoTSec aims at creating a robust research team being a top international player for security in the Internet of Things with special focus on Smart Grid infrastructures. Academic partners being UiO, Simula Research, UNIK, NR, HiG have established a close collaboration with Smart Innovation Østfold, eSmartSystems, Fredrikstad Energi, EB Nett, and Movation to extend the IoTSec project into an outstanding cluster of projects for impact driven research. The expected outcome is foreseen along four axes being (i) the robustness of the research cluster with a total of 14 Professors/senior researchers and 15 PhDs, (ii) the scientific outcome with more than 12 journal articles, 25 conference papers and 9 workshops, (iii) a cluster of at least 12 national and international projects, and (iv) the industrial impact with the creation of the industrial security centre for Smart Grid, based on the framework and the security models developed through the cluster.

The envisaged focus areas for the research address system description, security modelling, evaluation and industrial applicability.

The system description is driven by the requirements of applications, the measurability of security, and the threat modelling based on anomaly and attack detection. The expected outcome is a semantic description of the infrastructure, services, privacy and security functionality as well as attack surface.

Components of IoT security models focus on adaptive security models being privacy-aware. Through semantic modelling we will address formal methods for semantic provability of system of systems. The application-driven system versus goal analysis will be driven by a Multi-Metrics approach, taking into account security usability and the human/technology interface. Applicability of the security models and modules will be implemented in the security lab hosted by NCE Smart and drives the development of the framework components.

Article 3: Contract documents and rules of interpretation

The contract includes this signed agreement document and as a minimum the following documents:

- **The General Terms and Conditions for R&D Projects** (attached)
- **Project description** (see reference in Article 2.4)

This project will be carried out in collaboration with partners, and a copy of the signed collaboration agreement(s) must be attached to this agreement document.

In the event that the provisions of the various contract documents conflict with one another, they shall apply in the order of precedence listed above.

Amendments agreed between the parties in writing subsequent to the signing of the contract are also part of the contract and will take precedence over other contract documents.

Article 4: Project management – administrative and scientific

4.1 The Project Owner has appointed the following project management:

Project administrator

Name: Stian Løvold

Title: Administrerende direktør

Project no.: 248113/O70

Project manager

Name: Josef Noll

Title: Professor

Any change of project administrator shall be immediately reported to the Research Council. Notification shall be given via "My RCN Web" and must provide all information requested by the Research Council about the individual slated to assume the position as well as specify the date of commencement of duties.

Changes of the project manager require the written consent of the Research Council. Requests for a new project manager must be submitted via "My RCN Web" and must include the name and CV of the desired project manager as well as the desired date of commencement of duties. A new project manager may be considered approved if the Research Council has not responded within 30 days of receipt of the written request from the Project Owner.

Research performance site at the Project Owner:

UNIVERSITETSSENTERET PÅ KJELLER (UNIK)

4.2 The responsible division/unit of the Research Council is: Division for Innovation

The allocation is granted under the following programme/activity: IKTPLUSS

Article 5: Project period and progress plan

The project period is to be:

From the starting date: 01.10.2015

To the date of completion: 30.09.2020

The Project Owner is under obligation to carry out the activities listed in the progress plan:

Main activity	From year	Quarter	To year	Quarter
3 PhD and 2 PostDoc hired	2015	4	2016	2
6 scientific papers submitted	2015	4	2016	3
Establish Collaboration Environment	2015	4	2015	4
Framework established, modules identified	2016	1	2016	2
Security Centre established	2016	1	2016	3
Semantics established for infrastr., attack	2016	2	2016	4
privacy awareness, adaptive security outlined	2016	2	2016	3
1. cycle completed, assessment of models	2016	4	2017	3
workshops performed, roadmaps for modules	2016	4	2017	1
2nd cycle completed, future infrastructure	2017	1	2017	3
future infrastructure semantically described	2017	1	2017	2
industrial feedback on 3rd workshop	2017	1	2017	2
plans for year 3 agreed	2017	2	2017	3
3rd cycle completed, service infrastructures	2018	1	2018	3
plans for year 4 agreed	2018	2	2018	3
4. cycle completed, novel security models	2019	1	2019	3
plans for year 5 agreed	2019	2	2019	3
Project finalised	2020	2	2020	3

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Article 6: Project budgets and funding

6.1 Cost plan

6.1.1 Distribution of project costs by cost category (amounts in NOK 1 000)

The project is to be implemented in accordance with the following cost plan:

	Amount	2015	2016	2017	2018	2019	2020
Payroll and indirect expenses	31 505	875	4 886	7 536	7 166	6 741	4 301
Procurement of R&D services	0	0	0	0	0	0	0
Equipment	0	0	0	0	0	0	0
Other operating expenses	710	4	64	195	185	170	92
Total amount	32 215	879	4 950	7 731	7 351	6 911	4 393

Changes in the cost plan require the written approval of the Research Council, and will be treated as amendments to the contract, cf. Section 14 of the General Terms and Conditions for R&D Projects.

6.1.2 Distribution of project costs by cost code (in NOK 1 000)

Project costs are to be distributed by cost code as follows:

	Sum	2015	2016	2017	2018	2019	2020
Trade and industry	10 505	420	1 996	2 311	2 206	2 101	1 471
Independent research institutes	10 000	400	1 900	2 200	2 100	2 000	1 400
Universities and university colleges	11 710	59	1 054	3 220	3 045	2 810	1 522
Other sectors	0	0	0	0	0	0	0
Abroad	0	0	0	0	0	0	0
Total amount	32 215	879	4 950	7 731	7 351	6 911	4 393

Changes in the distribution between cost codes require the written approval of the Research Council, and will be treated as amendments to the contract, cf. Section 14 of the General Terms and Conditions for R&D Projects.

6.2 Funding plan (amounts in NOK 1000)

The project is to be implemented in accordance with the following funding plan:

	Amount	2015	2016	2017	2018	2019	2020
The Research Council	24 920	657	3 764	6 016	5 719	5 372	3 392
Own financing	7 295	222	1 186	1 715	1 632	1 539	1 001
Public funding	0	0	0	0	0	0	0
Private funding	0	0	0	0	0	0	0
International funding	0	0	0	0	0	0	0
Total amount	32 215	879	4 950	7 731	7 351	6 911	4 393

Changes in the funding plan require the written approval of the Research Council, and will be treated as amendments to the contract, cf. Section 14 of the General Terms and Conditions for R&D Projects.

6.3 Specification of the Research Council's allocations for 2015 and pledges for upcoming years

	Amount	2015	2016	2017	2018	2019	2020
Lump-sum general funding – non-profit	24 920 000	657 000	3 764 000	6 016 000	5 719 000	5 372 000	3 392 000

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organisations							
Total amount	24 920 000	657 000	3 764 000	6 016 000	5 719 000	5 372 000	3 392 000

6.4 Disbursement

The Research Council's allocation for the first year and any pledges for subsequent years will be disbursed in accordance with the conditions set out in this agreement and the General Terms and Conditions for R&D Projects.

The Research Council will disburse funds automatically at four-month intervals, provided the project is in compliance with the progress and funding plans set out in the contract.

Article 7: Reports

The following reports shall be submitted to the Research Council:

7.1 Progress reports

The Project Owner is to submit progress reports annually.

Deadline: **1 October**.

The progress report is to be submitted via "My RCN Web".

Otherwise, please see Section 5 of the General Terms and Conditions for R&D Projects.

7.2 Final report

Deadline: **1 month after the conclusion of the project period**.

The Project Owner is to submit the final report via "My RCN Web".

Otherwise, please see Section 5 of the General Terms and Conditions for R&D Projects.

7.3 Other reports

Reports and publications that are not compulsory that have been drawn up on the initiative of project management shall not be submitted to the Research Council, unless specifically agreed upon. The Project Owner is required to store all technical reports and publications for at least 10 years after conclusion of the project period. The Project Owner shall assign an ISBN/ISSN number to the reports and/or publications, where so required, and ensure that these are sent to the National Library in Mo i Rana.

Article 8: Other special terms of contract and deviations from the General Terms and Conditions for R&D Projects

The following special conditions shall apply to this project:

Projects of relevance for Svalbard:

The Project Owner is required to register and update project information in the **Research in Svalbard (RiS)** database. Enquiries about the database may be sent to the secretariat of the **Svalbard Science Forum** at ssf@rcn.no.

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This contract has been approved and expedited electronically.

For the Research Council of Norway
Oslo, 09.10.2015

Director
Division for Innovation

For the Project Owner:

Stian Løvold
Administrerende direktør

Attachments:

- **General Terms and Conditions for R&D Projects** (valid at date of received application: 11.02.2015)
- **Project description**
- **Copy of signed collaboration agreement(s)**