Secure Societies SC7 Calls 2019
Cybersecurity

Cybersecurity in WP2018-2020

Societal Challenge 7: Secure Societies - Protecting freedom and security of Europe and its citizens:

- Digital Security (DS) Call
- INFRA Call

LEIT-ICT – part 5.i Information and Communication Technologies:

- Cybersecurity Call
- Cybersecurity measures embedded in several other topics

SC7 – Digital Security Call - Overview

Topics 2019:

- **SU-DS03-2019-2020:** Digital security and privacy for citizens and Small and Medium Enterprises and Micro Enterprises **(IA, Budget: 18 MEUR)**
- **SU-DS05-2018-2019:** Digital security, privacy, data protection and accountability in critical sectors (subtopic a) Transport, IA, budget: 10 MEUR; Subtopic b **(Healthcare, RIA, budget: 10 MEUR)**

Opening: 14 Mar 2019
Call deadline: 22 Aug 2019

SU-DS03-2019-2020

Digital security and privacy for citizens and Small and Medium Enterprises and Micro Enterprises

Subtopics:

- Protecting citizens' security, privacy and personal data
- Small and Medium-sized Enterprises and Micro Enterprises (SMEs&MEs): defenders of security, privacy and personal data protection

Type of Action: IA
Budget: 18 MEUR

SU-DS03-2019-2020

Specific Challenges

- Need to protect freedom, security and privacy, and ensure personal data protection of Europe's citizens;
- Citizens should be enabled to assess risks of their digital activities and configure their own settings and controls;
- Citizens need to be aware of the need of their informed consent and become capable in providing their permission/consent;
- SMEs & MEs lack sufficient awareness and can allocate limited resources to counter cyber risks, being easier targets;
- Cybersecurity is a complex and fast-evolving field, and security professionals and experts working for SMEs & MEs need to be in a constant learning process;
- Tailored research and innovation should support cybersecurity for SMEs & Mes, as they have a significant economic role in the EU;

SU-DS03-2019-2020

Expected Impact

- Citizens and SMEs & MEs better protected, becoming active players in the Digital Single Market, including implementation of NIS directive and GDPR application.
- Security, privacy and personal data protection strengthened as shared responsibility along all layers in the digital economy, including citizens and SMEs & MEs.
- Reduced economic damage caused by harmful cyberattacks, privacy incidents and data protection breaches.
- Pave the way for a trustworthy EU digital environment benefitting all economic and social actors.

Scope
SU-DS03-2019-2020
Subtopic a) Protecting citizens' security, privacy and personal data

- Innovative solutions, including innovative approaches, techniques and user-friendly tools;
- New applications & technologies, enabling citizens to better monitor and audit their security, privacy and personal data protection, to become more engaged and active in the fight against cyber risks;
- Engage end-users by involving them in design and implementation, ensuring usability and acceptability;
- Assurance and transparency;
- Build bridges/synergies with data protection authorities and CERTs/CSIRTs.

Scope

SU-DS03-2019-2020

Subtopic b) SMEs & Mes, defenders of security, privacy, personal data protection

- Innovative solutions to increase the knowledge sharing across SMEs&Mes, between them and larger providers;

- Support user SMEs & MEs by democratizing access to tools and solutions of varied sophistication level, to allow them benefit from innovative targeted solutions addressing their specific needs and available resources;

- Targeted, user-friendly and cost-effective solutions (dynamically monitor, forecast and assess security, privacy and personal data protection risks; become aware of attacks,
- vulnerabilities and risks influencing business; manage and forecast security, privacy and personal data protection risks in an easy and affordable way; build on-line collaboration between SMEs & MEs associations and with CERTs/CSIRTs);

- Propose tools and processes to facilitate participation of user SMEs & MEs in cyber ranges;

Subtopics:

a) Digital security, privacy and personal data protection in multimodal transport.

Type of Action: IA
Budget: 10 MEUR

b) Digital security, privacy and personal data protection in healthcare ecosystem

Type of Action: RIA
Budget: 10 MEUR

SU-DS05-2019-2020

Specific Challenges

- Cybersecurity technologies deployed in several application domains - aligned to the specific domain needs, linking the demand and supply sides for such cyber technologies.
- NIS Directive – identified critical sectors/subsectors from the point of view of cybersecurity needs;
- Need to facilitate engagement of end-users towards defining and providing sector-specific common requirements about digital security, privacy and personal data protection.
- Building security, privacy and personal data protection by design and by default clearly define principles and standards to protect the critical infrastructures in these sectors and ensure personal data integrity and confidentiality

SU-DS05-2019-2020

Specific Challenge Transport

- Security to be managed pro-actively over the system as a whole - must extend to include interfaces to critical supporting infrastructures (communication networks and satellite systems).

- Complexity of the transport sector:

  - diversity of components that build the solutions in use;
  - very long lifecycle of these components.

- **Main challenge**: to migrate these solutions, systems, and infrastructures to a higher level of cybersecurity.

SU-DS05-2019-2020

Specific Challenge Healthcare

- ICT enables the sector to provide efficient, effective, cross-border top-quality healthcare services improving public healthcare.
- New ways of providing healthcare operations, services and applications, via various interconnected infrastructures, systems, entities and people.
- Personalized medicine as successful approach in treating diseases: increased complexity of the pharmaceutical supply chain and raises the importance of achieving a zero error rate in the supply of personalized medications.
- Cybersecurity is safety critical and novel approaches are needed to ensure traceability and zero error deliveries.
- Health - very sensitive sector take into account requirements related to data protection legislation.

SU-DS05-2019-2020

Expected Impact

- **Short term:** development of the CSIRT Network; identified relevant generic and specific aspects; advanced holistic systems and innovative proof concepts; advances in state-of-the-art analysis of specific aspects; sound analysis of cascading effects of specific related cyber threats within the supply chain of the respective critical domains/sectors; improved cybersecurity information sharing and collaboration among stakeholders, and with CERTs/CSIRTs; more targeted and acceptable security management solutions addressing specificities; trigger the fast adoption of cybersecurity/privacy/personal data protection best practices.

- **Medium term:** better response and recovery technologies and services that will help organizations to significantly reduce the impact of propagated and cascaded threats, vulnerabilities and breaches; enhanced protection against emerging novel advanced threats; improved security governance; greater and more mature EU cybersecurity market; reduce the impact of breaches with various levels of success in penetrating the defenses.

Long term:

- Better cybersecurity for specific standards in the respective critical domains/sectors addressed, that will trigger fast adoption of best practices in the related industry.
- Established trust chains among all entities in the eco-systems of the respective critical domains/sectors addressed.
- Better implementation of the relevant EU legislation (e.g. NIS, eIDAS, GDPR) in the respective critical domains/sectors addressed.
- Companies/organisations in the respective critical domains/sectors addressed are more willing to promote cyber security, privacy and personal data protection in the whole EU specific ecosystem.

Scope
SU-DS05-2019-2020
General

- Treat generic aspects for min. 2 critical sectors in NIS Directive:
  - identify common threats and attacks;
  - develop proof of concepts for managing cybersecurity & privacy risks;
- Treat specific aspects for one sector/domain (transport/healthcare):
  - identify specific vulnerabilities, propagation effects, counter measures;
  - develop and test cyber innovation-based solutions;
  - validate solutions in pilots/demonstrators;
- During conception & development, take into account specificities (complexity of infrastructure and their large scale);
- Pilots/demonstrators: encouraged to use relevant transversal cyber infrastructures & capabilities developed in other projects;
- Deliver specific social aspects of digital security related to training (practical, operational, hands-on training)

Scope for sub-topics
SU-DS05-2019-2020
Tackle on at least two of the following items:

Transport:

1) Secure access management for citizens to all types of vehicles.

2) Assurance and protection in multimodal transport, addressing interconnected threats and propagated vulnerabilities.

3) Standardization (allow quick adoption of best practices).

Healthcare:

1) Develop dynamic vulnerability data basis; build dynamic taxonomies.

2) Deliver dynamic, evidence-based, sophisticated security, privacy and personal data protection risk assessment frameworks & tools.

3) Provide collaborative privacy-aware tools, advise and provide best/good practices about incident handling.

DS Calls

Specific requirements

- Consider the relevant human factor and social aspects when developing innovative solutions.
- Where relevant, proposals should also describe how the gender dimension is taken into account in their content.

(Relevance in particular for SU-DS03-2019-2020.)

- Foresee activities and envisage resources for clustering with other projects funded under the respective topics (applies for both topics SU-DS03-2019-2020 and SUDS05-2018-2019), and with other relevant projects in the field funded by H2020.

Subtopics:

a) Cybersecurity/privacy audit, certification and standardization;

b) Trusted supply chains of ICT systems;

c) Designing and developing privacy-friendly and secure software and hardware;

Type of Action: RIA
Budget: 47 MEUR

Opening: 25/07/2019
Deadline: 19/11/2019

SU-ICT-02-2020

Specific Challenges

- Algorithms, software and hardware systems must be designed taking account from design phase, in a measurable manner, of security, privacy, data protection, accountability, etc.

- Develop mechanisms that measure the performance of ICT systems with regards to cybersecurity and privacy;

- Enhance control and trust of the consumer of digital products and services with innovative tools aiming to ensure the accountability of the security and privacy levels in the algorithms, in the software, and ultimately in the ICT systems, products and services across the supply chain.

SU-ICT-02-2020

Expected Impact

- Improved market opportunities.
- Increased trust by developers using/integrating ICT components and end-users of IT systems and services.
- Protect the privacy of citizens and trustworthiness of ICT .
- Accelerated development and implementation of certification processes.
- Development of advanced cybersecurity products and services, improving trust in the Digital Single Market.
- Use of more harmonized certification schemes, increasing business cases for more reliable cybersecurity services.
- Validation platforms providing assessments with less effort, assuring better compliance with relevant regulations, standards.

Scope
SU-ICT-02-2020
Cybersecurity/privacy audit, certification and standardization

Innovative approaches to:

- Design & develop:
  - automated security validation & testing, exploiting the knowledge of architecture, code, and development environments;
  - automated security verification at code level;
- Develop:
  - mechanisms, key performance indicators and measures that ease the process of certification at the level of services;
  - mechanisms to better audit and analyse open source and/or open license software, and ICT systems with respect to cybersecurity and digital privacy

Creating information bases to measure & assess security of digital assets.

Scope

SU-ICT-02-2020

Trusted supply chains of ICT systems

- Develop advanced, evidence based, dynamic methods & tools for better forecasting, detecting and preventing propagated vulnerabilities;
- estimate dynamically and accurately supply chain cyber security & privacy risks;
- design and develop security, privacy and accountability measures & mitigation strategies for all entities in supply chain;
- design & develop techniques, methods and tools to better audit complex algorithms, interconnected ICT components/systems;
- devise methods to develop resilient systems out of potentially insecure components;
- devise security assurance methodologies & metrics to define security claims for composed systems & certification methods.

Scope

SU-ICT-02-2020

Designing and developing privacy-friendly and secure software and hardware

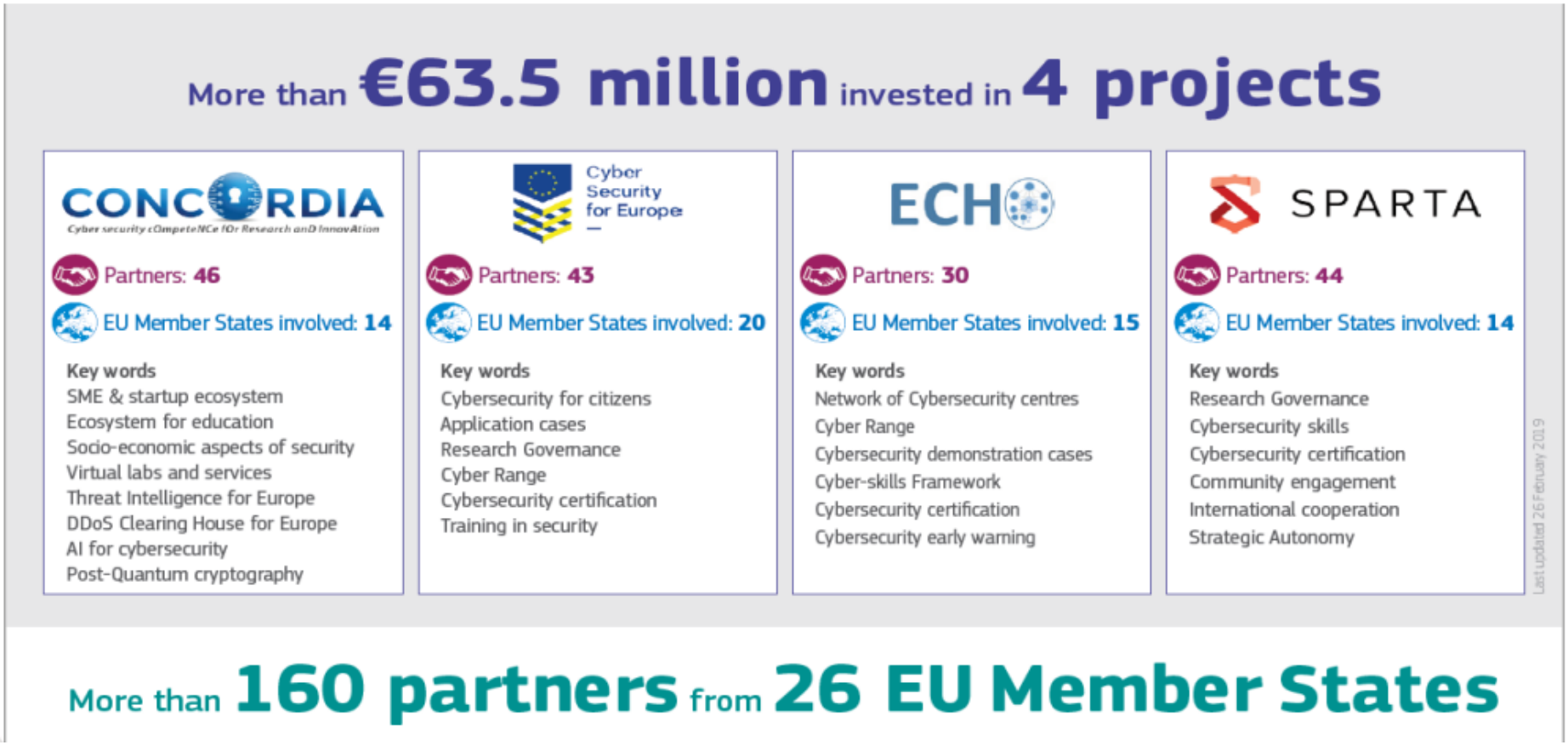
Innovative approaches to establish methods and tools for:

- security and privacy requirements engineering;
- embedded algorithmic accountability;
- system-wide consistency including connection between models, security/privacy/accountability objectives, policies, and functional implementations;
- metrics to assess a secure, reliable and privacy-friendly development;
- secure, privacy-friendly and accountability-enabled programming languages, hardware design languages, development frameworks, secure compilation and execution;
- novel, secure and privacy-friendly IoT architectures.

Other requirements and recommendations

- Consider the relevant **human factor and social aspects** when developing innovative solutions.
- Take account of the **results and work done in other relevant H2020 projects** on cybersecurity/privacy.
- Foresee **actions to collaborate with similar ongoing projects** funded under H2020, in particular with the four projects launched under Horizon2020 LEIT ICT, as a result of the 2018 call for the topic SU-ICT-03-2018 *"Establishing and operating a pilot for a Cybersecurity Competence Network to develop and implement a common Cybersecurity Research & Innovation Roadmap"*

EU pilots to prepare the European Cybersecurity Competence Network



More info at:
https://ec.europa.eu/digital-single-market/en/news/four-eu-pilot-projects-launched-prepare-europeancybersecurity-competence-network

Examples:

- ICT-08-2019: Security and resilience for collaborative manufacturing environments
- ICT-13-2018-2019: Supporting the emergence of data markets and the data economy
- ICT-20-2019-2020: 5G Long Term Evolution
- …and more, as this is a cross-cutting issue

Thank you!
Any Questions?

cnect-h1@ec.europa.eu