Agenda for cybersecurity cooperation EU-Japan EUNITY Recommendations

Hervé Debar

Institut Mines-Télécom

herve.debar@telecom-sudparis.eu

The information in this presentation is heavily summarized from EUNITY deliverables 3.2, 4.1 and 4.2. The interested reader is refered to the eunity-project.eu website for the complete version of the deliverables (to be published july 2019). The EUNITY consortium can be contacted by email for further information.

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Challenges – Legal and Policy

Area	Legal and policy
EUROPE	• Cyberdefence: lack of cooperation with policy and third parties; • Criminal law: different law provisions and treaties; • AI and IoT software: lack of security and need for certification
JAPAN	• Lack of cybersecurity accelerators and academic cybersecurity centres; • Lack of contractual public-private partnership; • Cross fertilization: need to interoperate additional features of IT systems;

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Challenges – Research and Innovation

Area	Research and innovation
EUROPE	• Growth of spam, web-based attacks, ransomware and botnets; • New frontiers of R&I: cryptocurrencies, blockchain, IoT and AI; • Threats to trust management in the digital society;
JAPAN	• Cybersecurity integration with different areas of expertise (e.g. human, design, etc.) • Holistic security expertise; • Cybersecurity education;

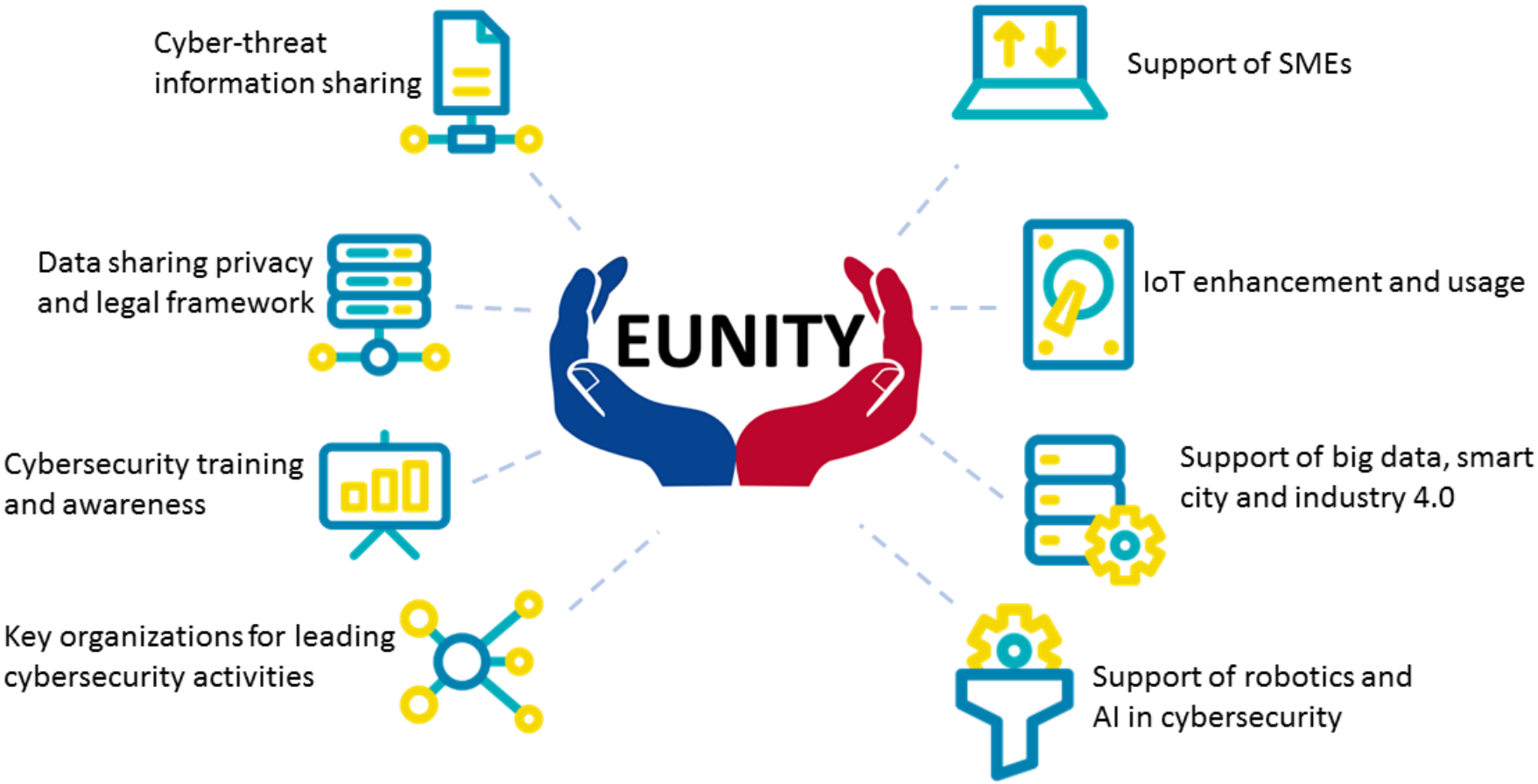
EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Challenges – Industry and Standardization

Area	Industry and standardization
EUROPE	• Cybersecurity market controlled by global suppliers with headquarters outside of Europe; • European industrial policies not yet addressing specific cybersecurity issues; • Established standards and processes for deploying business models or new technologies;
JAPAN	• Low mobility of experts across technology suppliers and adopters; • Making latest technology offers available to all type of companies; • Difficulties for organization to adopt cybersecurity naturally in their business;

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Summary of EUNITY areas of interest



Cyber-threat information sharing

- Context
  - Promoting threat and vulnerability information exchange (MISP platform)
  - Building situational awareness
  - Legal support
- Scope
  - Design and development of common tools, methodologies and data formats involving all type of actors (private and public organizations and sizes)
  - Assurance of data exchange by both areas
  - Harmonization of legal frameworks in both regions
  - Alignment with civil liberties and rule of law
  - Support of privacy-preserving exchange mechanisms
  - Access control to information (granularity and abstraction)
  - Machine-to-machine interfaces for data processing
- Expected Impact
  - Increase greatly the cooperation between organizations in Europe and Japan in the cybersecurity area
  - Creation of the common model of data and methodology

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Data sharing privacy and legal framework

- Context
  - Sharing and aggregation of data
  - Support robust collaboration between EU and JP
- Scope
  - Creation of tools and processes offered in a common platform for European and Japanese organizations that homogenize their work in a transparent way
  - Definition of privacy-preserving and data-centred security methodologies for data sharing
  - Allow owners of data the ability to control it
  - Creation of motivating schemes for industry for sharing data
  - Define specific format and methodology for data sharing involving all types of industry and size
  - Alignment of the sharing rules with cross-regional policies and rules for Europe and Japan
- Expected Impact
  - Legal certainty on data exchange
  - Policies for data exchange
  - Increase in business development

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Cybersecurity training and awareness

- Context
  - Overall lack of cybersecurity training
    - particularly law and policy makers, law enforcement bodies and judicial entities (prosecutors, judges and magistrates), as well as private solicitors and attorneys
  - Need for cross-fertilization between regions for capacity building
- Scope
  - Creation of coordinated training programs for legal, research, education and industry between the two regions (vertically, horizontally and beyond)
  - Courses for development of strong trained experts (design of knowledge, updating, etc.)
  - Development of cybersecurity training and awareness for all the layers of an organization, from technical to management
  - Design and development of lightweight and open solutions for training and cyber-exercises
  - Creation of a cyber-range for common exercises and compete
  - Design of attack scenario with the participation of actors from public and private organizations
- Expected Impact
  - Improve general cybersecurity level in users
  - Increase collaboration
  - Deliver more trained personnel

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Establish key organizations for leading cybersecurity activities in both areas

- Context
  - Requirement for international cooperation
  - Stimulate mutual recognition to assess and certify products and services
- Scope
  - Definition and selection of two permanent authorities that lead legal, technical, research and innovation discussions between Europe and Japan
  - Creation and maintenance of joint activities, certification schemes, design of policies and networks of competences
  - Establishment of a joint portal for sharing information about research, integration and development projects
  - Monitoring of international cyber-threats
  - Design of protocols for communication
  - Definition of a short-, medium-, and long-term strategy for collaboration in both areas
  - Training and support of points of contact in Europe and Japan to help organizations in networking and access new markets or opportunities
- Expected Impact
  - Cyber-crisis readiness and response
  - Mutual recognition of certification schemes

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Support of SMEs

- Context
  - SMEs are prevalent in EU and JP
  - SMEs have difficulties finding the right tools and people
- Scope
  - Creation of a platform for SMEs that can be used for accessing cybersecurity solutions
  - Easy access to funding opportunities in both areas and as joint participation
  - Design and support of specific training material (assets, tools, knowledge)
  - Common cybersecurity framework for cyber-hygiene and support for legal compliance
  - Creation of incentives for SMEs to participate in research and innovation programs
- Expected Impact
  - Better operation of the digital society
  - New business opportunities

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

IoT enhancement and usage

- Context
  - IoT market is increasing
  - They are pervasive in many application areas and critical infrastructures
- Scope
  - Development of IoT cybersecurity information database and information sharing
  - Creation of common protocols and policies for trusted usage of IoT devices
  - Design of a common classification of IoT devices
  - Definition of machine-to-machine catalogue of IoT functions
  - Creation of common privacy-preserving solutions for IoT devices
  - Definition of common methodology and tools for assessment of IoT systems and their security
- Expected Impact
  - Joint standardization and certification frameworks
  - New uses and services
  - Economic development

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Support of big data, smart city, and industry 4.0

- Context
  - Development of digital activities in many sectors
  - Heterogeneity and complexity of the ecosystem
- Scope
  - Creation of processes and tools for integrating cybersecurity naturally in these technologies
  - Research and integration of human-oriented approaches in these areas of application
  - Design of joint regulatory exercises and guidelines for creating privacy-enabled common data systems
  - Common solutions for access control and authentication
  - Creation of secure data management and computation schemes of data
  - Creating privacy-oriented mechanisms according to data protection laws
- Expected Impact
  - New business and collaboration opportunities
  - Common legal and certification framework

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Support of robotics and AI in cybersecurity

- Context
  - Robotics and AI increasingly present (particularly in Japan)
  - Very fast growth and deployment
- Scope
  - Creation of privacy preserving solutions focused in obtaining and using data according to the needs of Europe and Japan in these technologies
  - Definition of common cybersecurity principles and rules for enabling a safe usage of AI in different technologies
  - Development of guidelines for attacks and countermeasures in robotics
  - Establishment of safety measures for preventing exploitation of flawed AI-based decisions
  - Research and development of resilient and innovative intrusion detection techniques
  - Conception of solutions for mitigation of exploits and attacks in robotics
- Expected Impact
  - Legal framework harmonization
  - AI regulation
  - Efficient handling of threats and vulnerabilities

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

General framework for EU-Japan collaboration

- Cooperation Framework for promoting two-way investment
- EU-Japan Business Round Table,
  - which allows for a dialogue and exchange of views between EU and Japanese businesses
- Executive Training Programme and EU Gateway
  - Programme that encourages European enterprises to penetrate the Japanese market and gives them assistance
- EU-Japan Centre for Industrial Cooperation,
  - which promotes all forms of industrial trade and investment cooperation between the two areas and business exchange experience
- Remarks
  - Not cybersecurity-specific
  - SMEs in scope
  - Strong US presence in Japan

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Engagement with Japanese cybersecurity communities

- Policy-oriented organization: National center of Incident readiness and Strategy for Cybersecurity (NISC)
- Research-oriented organization: Japan Society for the promotion of Science (JSPS)
- Japanese industrial training: ICS-CoE
- Key recommendation
  - Understand the society 5.0 vision of Japan
    - Technical and human
    - Ubiquitous

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.

Questions ?

Deliverables will be available shortly through the EUNITY website

EUNITY (GA No 740507) receives funding from the @EU_H2020 Research and Innovation Programme (H2020-DS-2016-2017/DS-05-2016). The information reflects only the views of the project owner.