

European Network on Cyber Security

NeCS

Carmen Fernández Gago

NICS Lab, Universidad de Málaga

14 December, 2015

A matter of legacy! NESSoS → NeCS



NeCS



Network and Information
Security

WG3: Secure ICT Research and
Innovation

NeCS objectives

- Create an active research and training community in Europe for Cyber Security
- Produce new knowledge in cyber security, in particular in:
 - Security operations
 - Information sharing
 - Risk management
- Produce new training activities, events and tools
- Train at least 15 ESRs (with specific focus on entrepreneurial skills)
 - The more the better
- Build the EUROPEAN community in cyber security
- Disseminate, communicate and exploit the results

Context

- Marie Curie European Training Network from H2020
- Duration
 - 01/09/2015-31/08/2019

Consortium

Consortium Member	Legal Entity Short Name	Academic (tick)	Non-academic (tick)	Awards Doctoral Degrees (tick)	Country	Dept./ Division / Laboratory	Scientist-in-Charge	Role of Partner Organisation
Beneficiaries								
The National Research Council	CNR	P			Italy	The Institute of Informatics and Telematics	Fabio Martinelli	
University of Malaga	UMA	P		P	Spain	Computer Science Department	Javier Lopez	
Technical University of Darmstadt	TUD	P		P	Germany	Department of Computer Science	Neeraj Suri	
University of Trento	UNITN	P		P	Italy	Department of Information Engineering	Bruno Crispo	
University of Kent	UoK	P		P	UK	School of computing / School of psychology / Kent Law School	Eerke Boiten	
ATOS	ATOS		P		Spain	Atos Research and Innovation	Pedro Soria-Rodriguez	
British Telecommunications	BT		P		UK	BT Research and Innovation	Theo Dimitrakos	
Partner Organisations								
PosteItaliane	PI		P		Italy		Rocco Mammoliti	Hosting secondments, specialized training
Unipol	Unipol		P		Italy		Stefano Nanni	Hosting secondments
HP Italia	HP		P		Italy		Claudio Caimi	Specialized training courses
UNITED NATIONS INTERREGIONAL CRIME AND JUSTICE RESEARCH INSTITUTE	UNICRI	P			Italy		Francesca Bosco	Specialized training courses, Hosting secondments
SPANISH NATIONAL CYBERSECURITY INSTITUTE	INCIBE		P		Spain		Raul Riesco-Granadino	Specialised training courses

Distribution of the Work

WP	Work Package Title	Activity Type	Lead Part.	Start	End	ESRs
WP1	Management	Management	CNR	1	48	ALL
WP2	Training Activities	Training	UMA	4	48	ALL
WP3	Cybersecurity Operations Systems & Services	Research	BT	6	42	R3, R9, R10, R11, R13, R15
WP4	Cyber-security intelligence and information sharing	Research	CNR	6	42	R1, R4, R12, R14
WP5	Risk Management for Cybersecurity	Research	UNITN	6	42	R2, R5, R6, R7, R8
WP6	Communication and Dissemination	Exploitation, Dissemination	ATOS	1	48	ALL

ESRs

ESR	Title	Security Operations	Intelligence & Infor. Sharing	Threat & Risk Management
R1	Risk aware data usage control		P	S
R2	Risk assessment for cyber-insurance	S		P
R3	Metrics for cyber-security	P		S
R4	Trustworthy information exchange	S	P	
R5	Dynamic threat assessment & prediction	S		P
R6	Security risk measurement & SLAs	S		P
R7	Risk metrics for vulnerabilities		S	P
R8	Attack vectors & cyber-threats	S		P
R9	Security Operations management systems and services and EU policy compliance	P	S	S
R10	Privacy- and Secrecy- preserving, Secure Processing of Big-Data / EU policy compliance	P	S	
R11	Multi-staged attack & advanced malware	P		
R12	Intelligence & incident information sharing	S	P	S
R13	Run-time adaptation of security	P		S
R14	Usage control for information sharing	S	P	
R15	Modelling and analysing trust and influence in social networks	P	S	

Eligibility of ESR

- The applicants should, at the time of selection, be in the first four years of their research careers (measured from the date when they obtained the degree which would entitle them to embark on a doctorate).
- The applicants should not be in possession of a doctoral degree, but should have the necessary qualifications to embark on a PhD program.
- *The applicants (regardless of their nationalities) must not have resided or carried out their main activities (work, studies, etc.) in the country of the recruiting organization for more than 12 months in the last 3 years.*

Training Plan

- Local and network-wide training
 - a personalized development career plan will be established with each participant to define objectives and roadmap of the 36 months training
- Secondments
 - distinctive NECS aspect of academic-industry coverage by arranging training for each ESR at two organizations and also to encourage cross-visits to benefit from both academic and industrial partnership.
- Tutoring structure
 - Each ESR should have a supervisor at the hosting institution and at the secondment one

Internal Training

- Each ESR has a supervisor from a beneficiary who is in charge of tutoring the ESR Enrolment in the training activities and courses that entitles for a PhD degree
 - At host and, in some cases, at the secondment institutions
- Internal workshops where ESRs will gather and present their research activities
 - Twice a year
- We will monitor all these activities

More on Internal Training

- Personalised training to best fit the profile of each ESR and the emphasis on experiential learning:
 - by means of cyber-security exercises,
 - practical training on ethical hacking and network defence,
 - cyber-security boot-camps and
 - thematic security innovation hothouses.
- “Learning by doing” is recognised by SANS Institute and ENISA as a cornerstone of modern cyber-security training.
- Experiential training is complemented with a selection of taught courses and support actions

External Training

- Workshops for the ESR to discuss the progress of their work
- Summer schools for our ESR to exchange experiences with other students
 - A good opportunity could be to take advantage of exsisting ones: E.g: FOSAD
 - To include some of our research topics in their programme
- Events are classified into three categories:
 - Personal skills development
 - Technical skills
 - Conferences, schools and workshops

The role of industry in the supervision

- To help shorten the path from the idealisation of basic research to the complexity of the deployed practical solutions
 - through secondments of the ESRs hosted by academic partners
- To foster industry-driven research
- ESR will get familiar with with real work in large organisation
- Industry supervisors will help to identify the industry relevant problems, apply the developed ideas in practice and make the theoretical results useful in real settings.
- To develop practical problems raised in their organisation using advanced academic knowledge.

Industrial Training

- To have ESRs get involved in some aspects of the management of research projects in industry, including activities about technology transfer from innovation to customer solutions, and possibly the management of projects themselves.
- Workshops: we want to focus on including NeCS-specific sessions within other industry-related events where NeCS partners participate.
- The focus or objective of these sessions/workshops could be:
 - to expose ESRs to topics of interest for industry in such workshops, so they experience the connections between academic research, applied research and industrial application of such research.

Current State

- At the moment we are in the process of recruitment
- Not technical work has been performed it yet
- We expect to start by Febreaury the earliest