D2.6 - Statistical analysis of the Cybersecurity and Privacy ecosystem

Author(s)	M. Drescher & D. Wallom, UOXF
Status	Final
Version	V1.0
Date	6 Aug 2020

Dissemination Level

X	PU: Public
	PP: Restricted to other programme participants (including the Commission)
	RE: Restricted to a group specified by the consortium (including the Commission)
	CO: Confidential, only for members of the consortium (including the Commission)

Abstract:

This deliverable offers an analysis of the landscape of EU funded projects in the Cybersecurity and Privacy research community using well-known statistical analysis methodologies. It compares the results for a full set of projects funded in the past with a subset of projects that at the time of writing are still active. The results are then condensed into a proposed clustering of active projects Cyberwatching.eu may further engage with in more tailored and focused communication.

Document identifier: Cyberwatching.eu – WP2 – D2.2

Deliverable lead	**UOXF**
Related work package	**WP2**
Author(s)	**M. Drescher & D. Wallom, UOXF**
Contributor(s)	**-**
Due date	**30/04/2020**
Actual submission date	**06/08/2020**
Reviewed by	**M Martinez (AEI), M Miller (CPT)**
Start date of Project	**01/05/2017**
Duration	**48 months**

Revision history

Version	Date	Authors	Notes
V0.1	27/07/2020	M Drescher (UOXF)	Final draft
V0.2	30/07/2020	M Ramírez (AEI)	Internal review
V0.3	05/08/2020	M Miller (CPT)	Internal review
V1.0	06/08/2020	M Drescher (UOXF) N Zazzeri (Trust-IT)	Quality check and final version

Executive Summary

With more than 260 projects funded by the European Commission over the course of the FP7 and Horizon 2020 framework programmes in the cybersecurity and privacy sector over the course of a decade, it becomes increasingly challenging to maintain oversight of the state of play, and the landscape at large.

This deliverable continues the work started in its predecessor, D2.4 Statistical analysis of the Cybersecurity and Privacy ecosystem, conducted in October 2019. It uses the same statistical methodologies and applies them to a now larger pool of current and past projects. It will cross-compare results across deliverables, and make suggestions to amend or change existing clusters of projects.

Table of Contents

LIST OF FIGURES

1   Introduction

Cyberwatching.eu's mission is to "become *the* European observatory of research and innovation in the field of cybersecurity and privacy". Part of this mission is to create mechanisms and tools by which the EC and member states' supported projects can come together to share outputs, methods and best practices.

This deliverable continues the work initiated in its predecessor deliverable, D2.4 Statistical analysis of the Cybersecurity and Privacy ecosystem. The statistical foundations remain the same but are applied to a much larger pool of projects that Cyberwatching.eu has gathered since then. Of specific interest in this deliverable is the large number of projects that ended late 2019. In the previous deliverable, these were still counted as active projects. In *this* deliverable, they will no longer be part of the analysis of active projects. Given the large number of projects that ended in December 2019 (31 projects), it will be interesting to see how this might impact the composition of clusters.

For reference and details of the underpinning statistical methodology, we refer to the predecessor deliverable; it will not be repeated here.

1.1   Glossary of Terms

Term	Description
CS & P	Cybersecurity and Privacy
Dendrogram	A dendrogram is a visual representation of a hierarchical clustering. The horizontal axis refers to the distance between two projects or clusters of projects (usually calculated as a numerical value using the Euclidian distance). The smaller the number hence the further to the right a dendrogram node is located, the more similar or close two projects are.
Eigenvalue analysis	A statistical analysis in Principal Component Analysis (PCA) determining which components are stable hence significant.
H2020	Horizon 2020

2   The Cybersecurity & Privacy Research Landscape in the EU

At the time of writing, 261 projects have been registered in the repository. The full list of projects can be found in Appendix 1.

Of these, 187 projects (71%) ended before 1 July 2020; and 13 projects started since writing the predecessor deliverable. Two projects started most recently, in January 2020 (1-SWARM and UP2DATE, both from call ICT-01-2019).

Following the benchmark set by the predecessor deliverable, we will compare the statistical analysis of all 261 projects with the results of analysing only the 74 active projects. We will also cross compare the results from both deliverables to analyse

changes we may see in the CS & P landscape. For ease of reading, we will reference to results discussed in D2.4 using "August 2019", and results discussed in this deliverable using "July 2020" (where appropriate).

	August 2019	July 2020
Projects in the repository	177	261
Active projects	67	74

Table 1: Comparison in number of projects

Understanding and interpreting the results of the multivariate analysis of the EU cybersecurity and privacy research landscape requires a reduction of dimensions involved – in this case six, stemming from the second level of the Cyberwatching.eu taxonomy – to a meaningful set of two dimensions (perhaps three) that can be visualised for further analysis.

The result of this first analysis are the two biplots presented below; these are presenting the mapping of the six-dimensional full landscape onto a two-dimensional representation respectively, for all 261 projects in our project database (left) and the 74 active projects (right):
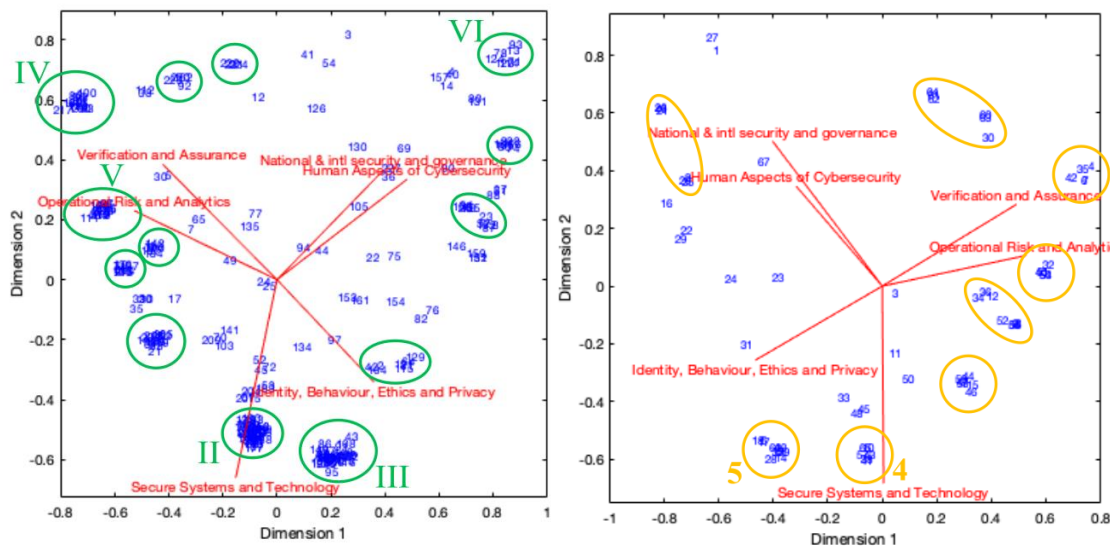
Figure 1: Biplot of 261 EU funded projects. Numbers correlate with clusters from D2.4

Figure 2: Biplot of 74 still active projects, Numbers correlate with clusters from D2.4

Across the now 261 projects (see Figure 1), "Secure Systems and Technology" appears as the most dominating factor, even though the eigenvalue analysis (not shown) presents a second dominant factor. Compared to August 2019, eigenvalue analysis shows overall the same picture albeit with a slightly more articulated separation of dominant factors from the remainder.

Moreover, all clusters except cluster I identified in August 2019 are still present, and in almost the same location.

Looking at the biplot for 74 still active projects Figure 2 we observe that the most dominant factors are "Secure Systems and Technology" and "National and international security & governance", which is supported by the eigenvalue analysis (not shown here) with slightly stronger separation of dominant factors from the remainder.

Only two biplot clusters (4 and 5) from the August 2019 analysis are still present in July 2020. Given that 31 projects finished in December 2019 alone, only 41 projects remain the same between the total of 107 projects among them. With 60% of the data set changing, it is no surprise that the statistical analysis will change, too.

The relative cluster locations across both biplots for July 2020 (i.e. for all projects, and still active projects) are consistent in forming some form of corona around the centre of the CS & P aspects formulated in the Cyberwatching.eu taxonomy. This is notably different from the biplots produced in August 2019.

In any case, across all four biplots produced so far in August 2019 and July 2020, correlations between taxonomy terms remain very stable with the three groups:

1. Operational Risk and Analysis, and Verification and Assurance;
2. National & int'l security and governance, and Human Aspects of Cybersecurity
3. Secure Systems and Technology, and Identity, Behaviour, Ethics and Privacy

These correlations, sometimes stronger than at other times, accurately reflect the two-tier nature of the Cyberwatching.eu CS & P taxonomy. All three correlation groups appear orthogonal to each other without any direct antagonists, except when looking at individual aspects:

- "Verification and Assurance" and "Identity, Behaviour, Ethics and Privacy", and
- "Secure Systems and Technology" and "National & int'l security and governance"
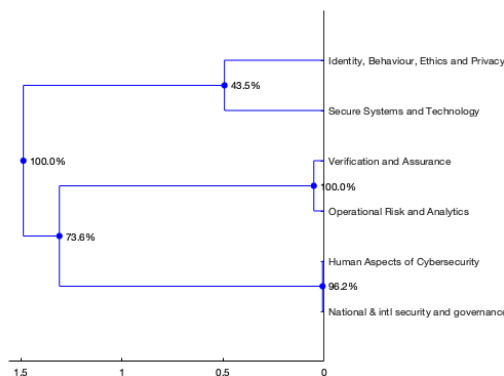
Figure 3: Dendrogram of correlation of CS & P aspects across all 261 projects
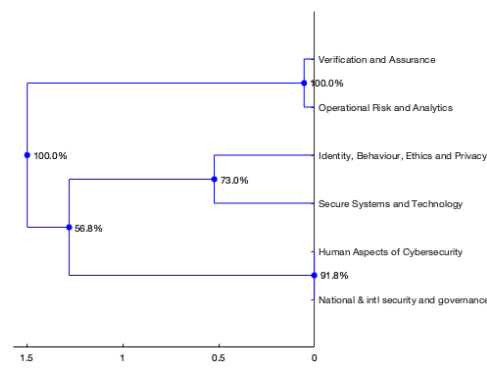
Figure 4: Dendrogram of correlation of CS & P aspects across 76 still active projects

Looking at the dendrograms for all projects (Figure 3), cohesion within the three correlation groups remains strong. It is even stronger when looking at the dendrograms for the active projects in Figure 4. In fact, correlation between "Secure Systems and Technology" and "Identity, Behaviour, Ethics and Trust" strengthens among still active projects. Cohesion within the other two correlation groups remains strong to the point of no degree of freedom of choice: They appear entirely inseparable in the eye of project proposers and sponsors.

Compared to August 2019, cohesion within correlation groups is now much stronger among the still active projects. However, the secondary correlation dynamics have changed: While in August 2019, group 3 (Secure Systems and Technology, and Identity, Behaviour, Ethics and Privacy) was the one with the biggest degree of freedom in choice of secondary aspects, it is now in July 2020 correlation group 1 (Operational Risk and Analysis, and Verification and Assurance) that appears to be combined with aspects from the other two groups.

Lastly, the cluster tree for all active projects in July 2020 suggests partitioning the tree into six clusters of projects that are sufficiently close in the overall assessment:
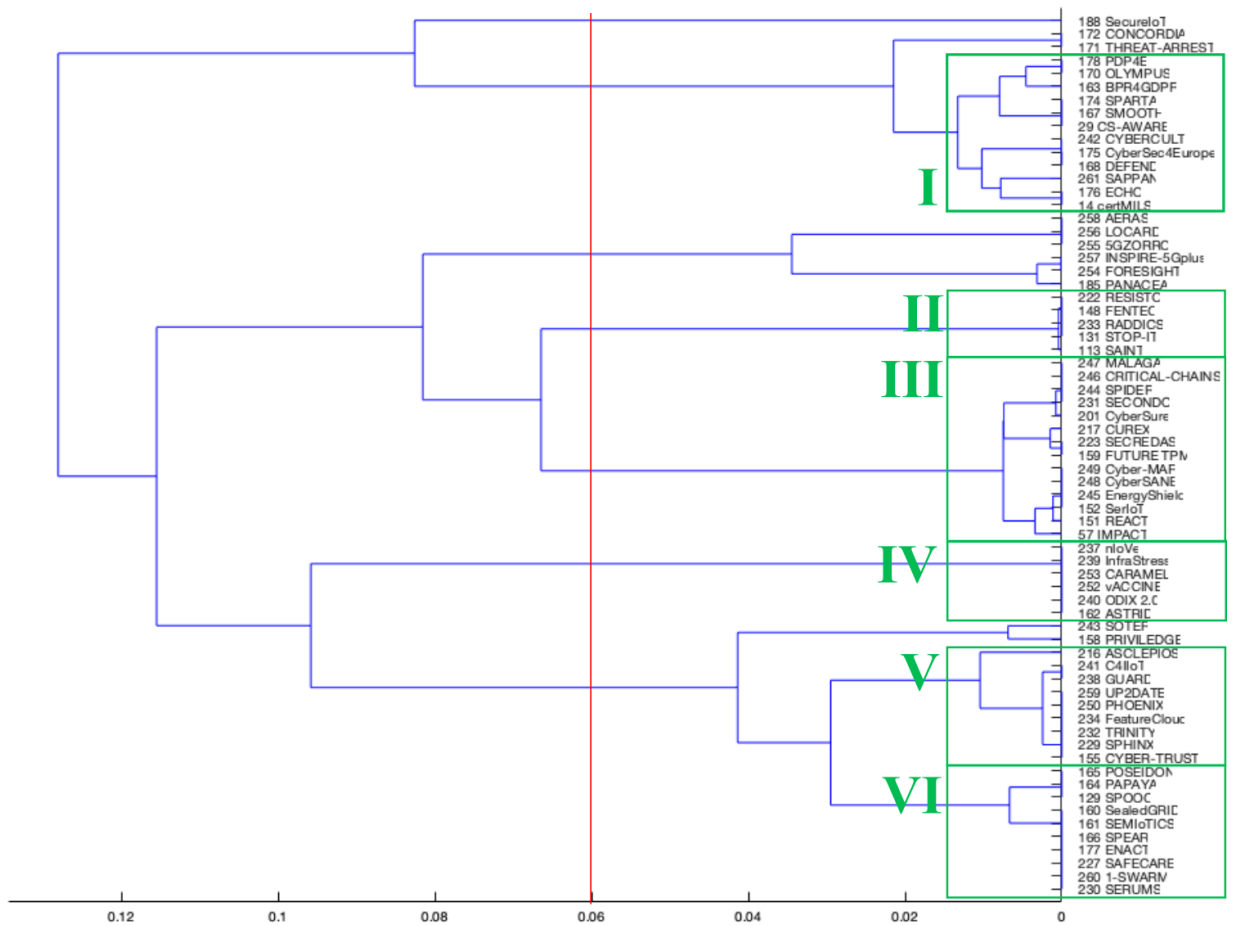
Figure 5: Cluster tree of 76 active projects in July 2020. Red line denotes cluster threshold for August 2019 (D2.4) as comparison.

While July 2020 edition of the statistical analysis also suggests forming six clusters, this edition does so with a significantly improved relative cluster distance. Compared to August 2019, cluster distance criterion of about 0.06 (red line in Figure 5) July 2020's threshold resides at less than 0.02 relative cluster distance to form six clusters of reasonable size.

Given that still active projects saw a massive turnover of new projects being added (only 40% of active projects feature in both analyses), we do not expect to see strong consistency in the clusters resulting from this year's analysis.

3   Commentary & next steps

This edition of the project clustering report confirms the results of the previous edition (D2.4):

- Clusters are stable in the long term.
- The Cyberwatching.eu taxonomy is stable and representative.

Notable, however, is that cluster I (relative to all projects) which still featured in the August 2019 analysis, appears to have vanished in the biplot for projects in July 2020. This is mirrored by cluster 1 (relative to active project), still identified in August 2019, which appears to no longer exist in July 2020. Both clusters were loosely defined, and

were located close to the origins of the respective biplots in August 2019. Both represented projects that were very broadly positioned in a "capture all" manner. Their disappearance in the biplots for this year **reflect the Commission's drive for projects to improve their focus, hence positioning and value proposal**.

The strong correlation of the level 2 terms of the Cyberwatching.eu taxonomy along the lines of their level 1 parent terms is confirmed and consistent across both editions (D2.4 and this deliverable) as well as across all projects considered compared with still active projects.

The correlations are strong to the point of no degree of freedom in choosing CS & P aspects for project proposals:

- "Human aspects of Cybersecurity" and "National and international security and governance" appear almost inseparable.
- "Verification and Assurance" and "Operational Risk and Analysis" appear entirely inseparable.

Compared with August 2019 this correlation has strengthened, even though the terms are describing distinct aspects of cybersecurity and privacy.

This second cluster analysis of the projects confirms the trend postulated in the previous edition, that **projects are becoming more specific and differentiated in which topics they cover, and which they do not**: While correlation across level 2 terms of the taxonomy strengthened, **correlation across level 1 terms weakened** one year on.

While previously, 92% of the projects chose to combine "Apps and user-oriented systems" with other CS & P aspects, one year on only 73.6% of the projects chose to do so. While this is still a significant correlation, the change has been driven by the influx of nearly 100 new projects in our database.

This change is much clearer, visible when looking at the dendrogram for still active projects in July 2020: Where previously the same analysis across still active products broadly mirrored the results for all projects, this is not so for this second analysis: The dendrogram for still active projects in July 2020 shows the following significant changes compared to all projects:

- Correlation among "Secure Systems and Technology" and "Identity, Behaviour, Ethics, and Privacy" is stronger; from 43.5% to 73%
- Combining aspects across level 1 aspects is significantly less; from 73.6% to 56.8%
- The driving force for combining with other aspects in the CS & P landscape has changed from "Apps and user-oriented systems" to Foundations of technology & risk management".

In summary, the changes in the EU-funded project landscape can be given as follows:

The trend of compartmentalisation along the boundaries of the level 1 taxonomy terms has increased, with projects ever more sharply differentiating their positioning.

3.1   Clustering projects

As previously stated, this edition of the project landscape cluster analysis provides a much sharper definition of project clusters.

The clusters indicated by this deliverable are (roman numbers behind projects denote cluster allocation in D2.4):

Cluster I (12 members):

Cluster II in D2.4; membership mostly stable.
Largely driven by (inter-)national policy, certification and intergovernmental collaboration.

- 178 PDP4E
- 170 OLYMPUS
- 163 BPR4GDPR (II)
- 174 SPARTA (II)
- 167 SMOOTH (II)
- 29 CS-AWARE (II)
- 242 CYBERCULT
- 175 CyberSec4Europe (II)
- 168 DEFEND (II)
- 261 SAPPAN
- 176 ECHO (II)
- 14 certMILS (II)

Cluster II (5 members):
One segment of the previous cluster IV in D2.4, which appears to have split into two clusters now.

- 222 RESISTO
- 148 FENTEC (IV)
- 233 RADDICS
- 131 STOP-IT (IV)
- 113 SAINT (IV)

Cluster III (14 members):
The second segment of the previous cluster IV in D2.4, which appears to have split into two clusters now.

- 247 MALAGA
- 246 CRITICAL-CHAINS
- 244 SPIDER
- 231 SECONDO
- 201 CyberSure
- 217 CUREX
- 223 SECREDAS
- 159 FUTURE TPM (IV)
- 249 Cyber-MAR
- 248 CyberSANE
- 245 EnergyShield
- 152 SerIoT (IV)
- 151 REACT (IV)
- 57 IMPACT

Cluster IV (6 members):
A splinter of former cluster IV formed a new cluster.

- 237 nIoVe
- 239 InfraStress

- 253 CARAMEL
- 252 vACCINE
- 240 ODIX 2.0
- 162 ASTRID (IV)

Cluster V (9 members):
Appears to be a continuation of former cluster (I).
Strong focus on securing technology and IT systems. Very technical projects.

- 216 ASCLEPIOS
- 241 C4IIoT
- 238 GUARD
- 259 UP2DATE
- 250 PHOENIX
- 234 FeatureCloud
- 232 TRINITY
- 229 SPHINX
- 155 CYBER-TRUST (I)

Cluster VI (9 members):
Previous cluster V; stable membership with some newcomers.
Strong focus on privacy. With the GDPR now in force a very popular topic.

- 165 POSEIDON (V)
- 164 PAPAYA (V)
- 129 SPOOC (V)
- 160 SealedGRID (V)
- 161 SEMIoTICS (V)
- 166 SPEAR (V)
- 177 ENACT (V)
- 227 SAFERCARE
- 260 1-SWARM
- 230 SERUMS

Clusters I (former cluster II) and cluster VI (former cluster V) are remarkably stable in their makeup. Former cluster IV has split into two clusters, now clusters II and III, with both covering the "Foundations of technology & Risk Management" aspect of the Cyberwatching.eu research taxonomy.

Clusters IV and V appear to be formed from splinters of the former cluster IV, and I, respectively.

Cluster III in D2.4 has entirely disappeared, reflecting the increased differentiation and positioning of projects in the EU funded cybersecurity and privacy landscape.

Cyberwatching.eu will continue working with our partners, and the clustered projects supporting their journey until completion. As previously stated, the clusters have been used for more targeted outreach activities, and we will continue to do so. The ongoing collection of MTRL scores for projects, and more tailored support for projects on similar MTRL levels in July 2020 (two webinars delivered by Task 2.3) have been delivered with huge success. We will use these success stories to further refine our support message and portfolio to these projects.

3.2   Next steps

Taking the August 2020 cluster report [1] into account, T2.3 identified two groups of projects that have similar MTRL scores, and organized a set of support webinars to these two groups. These sparked engagement from the participating projects (more details are provided in the Activity Report).

This pattern of collaboration will continue and, given the success so far, intensified over the remainder of the Cyberwatching.eu project. We are considering working together with the still active projects on the following, depending on their feedback and engagement:

- Common workshops, webinars, live conferences
- Collaborative contributions to policies (e.g., GDPR, compliance, inputs to ECSO)
- Sharing information: People have a limited view on project results (many deliverables are not public, and in any cases scarcely read beyond the authors and Commission/reviewers). Clusters can be used to capture important scientific information from the projects in a consistent way.
- Learning lessons: Clusters can be used to gather lessons learned (good and bad) from projects, which are usually never captured anywhere.
- Contribute to and plan "Technology Deep Dive" workshops to map existing solutions with priority areas and enable common approaches to similar challenges and facilitate re-use of research results;
- Contribute to white-papers focussing on challenges in Cybersecurity & Privacy, to be also addressed by future Work Programmes;
  Attend and participate as a cluster in industrial events.

4   Appendix 1: EC funded projects reference

The following projects were included and analysed in this deliverable, in alphabetical order:

#	Project	Call	Type	Start	End
1	AARC2	EINFRA-22-2016	RIA	May 2017	Apr 2019
2	ABC4Trust	ICT-2009.1.4	CP	Nov 2010	Feb 2015
3	ADDPRIV (F)	SEC-2010.6.5-2	CP	Feb 2011	Mar 2014
4	AEGIS	DS-05-2016	CSA	May 2017	Apr 2019
5	ANASTACIA	DS-01-2016	RIA	Jan 2017	Dec 2019
6	ARIES	FCT-09-2015	RIA	Sep 2016	Feb 2019
7	ARMOUR (F)	ICT-12-2015	RIA	Feb 2016	Jan 2018
8	ASAP (F)	ERC-AG-PE6	ERC-AG	Oct 2012	Sep 2018
9	ATENA	DS-03-2015	IA	May 2016	Apr 2019
10	BEACON (F)	ICT-07-2014	RIA	Feb 2015	Jul 2017
11	BIOSEC (F)	FP7-PEOPLE-IOF-2008	MC-IOF	Mar 2009	Feb 2012
12	C3ISP	DS-04-2015	IA	Oct 2016	Sep 2019
13	CANVAS	DS-07-2015	CSA	Sep 2016	Aug 2019
14	certMILS	DS-01-2016	IA	Jan 2017	Dec 2020
15	CHOReVOLUTION (F)	ICT-09-2014	RIA	Jan 2015	Dec 2017
16	CIPSEC	DS-03-2015	IA	May 2016	Apr 2019
17	CITADEL	DS-03-2015	IA	Jun 2016	May 2019
18	CLARUS (F)	ICT-07-2014	RIA	Jan 2015	Dec 2017
19	CloudSocket (F)	ICT-07-2014	RIA	Jan 2015	Dec 2017
20	CloudTeams (F)	ICT-07-2014	IA	Mar 2015	Feb 2017
21	COCKPITCI (F)	SEC-2011.2.5-1	CP-FP	Jan 2012	Dec 2014
22	COEMS	ICT-10-2016	RIA	Nov 2016	Oct 2019
23	COLA	ICT-06-2016	IA	Jan 2017	Jun 2019
24	COMPACT	DS-02-2016	IA	May 2017	Oct 2019
25	CONSENT (F)	SSH-2009-3.2.1.	CP-FP	May 2010	Apr 2013
26	CREDENTIAL (F)	DS-02-2014	IA	Oct 2015	Sep 2018
27	CROSSMINER	ICT-10-2016	RIA	Jan 2017	Dec 2019
28	CryptoCloud	ERC-AG-PE6	ERC-AG	Jun 2014	May 2019

#	Project	Call	Type	Start	End
29	CS-AWARE	DS-02-2016	IA	Sep 2017	Aug 2020
30	CYBECO	DS-04-2016	RIA	May 2017	Apr 2019
31	CyberWiz (F)	DRS-17-2014	SME-2	Sep 2015	Aug 2017
32	CYCLONE (F)	ICT-07-2014	IA	Jan 2015	Dec 2017
33	CYRail (F)	S2R-OC-IP2-01-2015	Shift2Rail-RIA	Oct 2016	Sep 2018
34	DAPPER (F)	FP7-PEOPLE-2013-CIG	MC-CIG	Apr 2014	Mar 2018
35	DECODE	ICT-12-2016	RIA	Dec 2016	Nov 2019
36	DEFENDER	CIP-01-2016-2017	IA	May 2017	Apr 2020
37	DISCOVERY (F)	ICT-38-2015	CSA	Jan 2016	Dec 2017
38	DiSIEM	DS-04-2015	IA	Sep 2016	Aug 2019
39	DITAS	ICT-06-2016	RIA	Jan 2017	Dec 2019
40	DOGANA (F)	DS-06-2014	IA	Sep 2015	Aug 2018
41	DSSC	MSCA-COFUND-2016	MSCA-COFUND-DP	May 2017	Apr 2022
42	e-Sides	ICT-18-2016	CSA	Jan 2017	Dec 2019
43	ECRYPT-CSA (F)	ICT-32-2014	CSA	Mar 2015	Feb 2018
44	ECRYPT-NET	MSCA-ITN-2014-ETN	MSCA-ITN-ETN	Mar 2015	Feb 2019
45	ENCASE	MSCA-RISE-2015	MSCA-RISE	Jan 2016	Dec 2019
46	EU-SEC	DS-01-2016	IA	Jan 2017	Dec 2019
47	EUNITY	DS-05-2016	CSA	Jun 2017	May 2019
48	FIDELITY (F)	SEC-2011.3.4-1	CP-IP	Feb 2012	Jan 2016
49	FORTIKA	DS-02-2016	IA	Jun 2017	May 2020
50	FutureTrust	DS-05-2015	IA	Jun 2016	May 2019
51	GenoPri (F)	MSCA-IF-2015-EF	MSCA-IF-EF-ST	May 2016	Apr 2018
52	GHOST	DS-02-2016	IA	May 2017	Apr 2020
53	HEAT (F)	ICT-32-2014	RIA	Jan 2015	Dec 2017
54	HECTOR (F)	ICT-32-2014	RIA	Mar 2015	Feb 2018
55	HERMENEUT	DS-04-2016	RIA	May 2017	Apr 2019
56	HIPS	ERC-CG-2013-PE6	ERC-CG	Oct 2014	Sep 2019
57	IMPACT	ERC-2013-SyG	ERC-SyG	Feb 2015	Jan 2021
58	KONFIDO	DS-03-2016	RIA	Nov 2016	Oct 2019

#	Project	Call	Type	Start	End
59	LAST (F)	ERC-SG-PE6	ERC-SG	Oct 2009	Sep 2014
60	LIGHTest	DS-05-2015	IA	Sep 2016	Aug 2019
61	LV-Pri20 (F)	MSCA-IF-2014-EF	MSCA-IF-EF-CAR	Jun 2015	Jun 2017
62	MAMI (F)	ICT-12-2015	RIA	Jan 2016	Jun 2018
63	MAPPING (F)	SiS.2013.1.2-1	CSA-SA	Mar 2014	Feb 2018
64	MAS2TERING (F)	ICT-2013.6.1	CP	Sep 2014	Aug 2017
65	MATTHEW (F)	ICT-2013.1.5	CP	Nov 2013	Oct 2016
66	MELODIC	ICT-06-2016	RIA	Dec 2016	Nov 2019
67	mF2C	ICT-06-2016	RIA	Jan 2017	Dec 2019
68	MH-MD	ICT-18-2016	RIA	Nov 2016	Oct 2019
69	MIKELANGELO (F)	ICT-07-2014	RIA	Jan 2015	Dec 2017
70	MITIGATE (F)	DS-06-2014	IA	Sep 2015	Feb 2018
71	MUSA (F)	ICT-07-2014	RIA	Jan 2015	Dec 2017
72	NECOMA (F)	ICT-2013.10.1	CP	Jun 2013	Mar 2016
73	NeCS	MSCA-ITN-2015-ETN	MSCA-ITN-ETN	Sep 2015	Aug 2019
74	OCGN	MSCA-IF-2015-EF	MSCA-IF-EF-ST	May 2017	Nov 2018
75	OCTAVE (F)	DS-02-2014	IA	Jun 2015	Jul 2017
76	OPENREQ	ICT-10-2016	RIA	Jan 2017	Dec 2019
77	OPERANDO (F)	DS-01-2014	IA	May 2015	Apr 2018
78	P5 (F)	SEC-2012.2.3-1	CP-FP	Aug 2013	Oct 2016
79	PaaSword (F)	ICT-07-2014	RIA	Jan 2015	Dec 2017
80	PACT (F)	SEC-2011.6.5-2	CP-FP	Feb 2012	Jan 2015
81	PANORAMIX (F)	DS-01-2014	IA	Sep 2015	Aug 2018
82	PARIS (F)	SEC-2012.6.1-2	CP-FP	Jan 2013	Feb 2016
83	PASS (F)	PEOPLE-2007-4-3.IRG	MC-IRG	Dec 2008	Nov 2012
84	PATS (F)	SiS-2008-1.2.2.1	CSA-SA	Aug 2009	Mar 2012
85	PICOS (F)	ICT-2007.1.4	CP	Feb 2008	Jun 2011
86	PQCRYPTO (F)	ICT-32-2014	RIA	Mar 2015	Feb 2018
87	PRACTIS (F)	SiS-2009-1.1.2.1	CP-FP	Jan 2010	Mar 2013
88	PRECIOSA	ICT-2007.6.2	CP	Mar 2008	Aug 2010

#	Project	Call	Type	Start	End
89	PRESCIENT	SiS-2009-1.1.2.1	CP-FP	Jan 2010	Mar 2013
90	PreserviX	ICT-37-2014-1	SME-1	May 2015	Oct 2015
91	PrEstoCloud	ICT-06-2016	RIA	Jan 2017	Dec 2019
92	PrimeLife	ICT-2007.1.4	CP	Mar 2008	Jun 2011
93	PRIPARE	ICT-2013.1.5	CSA	Oct 2013	Sep 2015
94	PRISM	ICT-2007.1.4	CP	Mar 2008	May 2010
95	PRISM CODE	FP7-PEOPLE-2012-CIG	MC-CIG	Nov 2012	Oct 2016
96	PRISMACLOUD	ICT-32-2014	RIA	Feb 2015	Jul 2018
97	PRISMS	SEC-2011.6.5-2	CP-FP	Feb 2012	Jul 2015
98	PRIVACY FLAG	DS-01-2014	IA	May 2015	Apr 2018
99	Privacy.Us	MSCA-ITN-2015-ETN	MSCA-ITN-ETN	Dec 2015	Nov 2019
100	PRIVACY4FORENSICS	FP7-PEOPLE-2013-IIF	MC-IIF	Feb 2015	Mar 2018
101	ProBOS	SMEInst-13-2016-2017	SME-2	Oct 2016	Sep 2018
102	PROTECTIVE	DS-04-2015	IA	Sep 2016	Aug 2019
103	Ps2Share	ICT-35-2016	RIA	Jan 2017	Dec 2017
104	RAPID	ICT-07-2014	RIA	Jan 2015	Dec 2017
105	REASSURE	DS-01-2016	RIA	Jan 2017	Dec 2019
106	ReCRED	DS-02-2014	IA	May 2015	Apr 2018
107	REDSENTRY	H2020-SMEINST-1-2016-2017	SME-1	Jul 2017	Dec 2017
108	RESPECT	SEC-2011.6.1-5	CP-FP	Feb 2012	May 2015
109	REVEN-X1	ICT-37-2015-1	SME-1	Jul 2015	Dec 2015
110	SafeCloud	DS-01-2014	IA	Sep 2015	Aug 2018
111	SAFEcrypto	ICT-32-2014	RIA	Jan 2015	Dec 2018
112	SAFERtec	DS-01-2016	RIA	Jan 2017	Dec 2019
113	SAINT	DS-04-2016	RIA	Mar 2017	Feb 2021
114	SAURON	CIP-01-2016-2017	IA	May 2017	Apr 2019
115	SCISSOR	ICT-32-2014	RIA	Jan 2015	Dec 2017
116	SCOTT	ECSEL-2016-2-IA-two-stage	IA	May 2017	Jun 2020
117	SCR	SMEInst-13-2016-2017	SME-1	Jul 2016	Dec 2016
118	SecIoT	INNOSUP-02-2016	CSA	Sep 2017	Aug 2018

#	Project	Call	Type	Start	End
119	SERECA	ICT-07-2014	RIA	Mar 2015	Feb 2018
120	SHARCS	ICT-32-2014	RIA	Jan 2015	Dec 2017
121	SHiELD	DS-03-2016	RIA	Jan 2017	Dec 2019
122	SHIELD	DS-04-2015	IA	Sep 2016	Feb 2019
123	SISSDEN	DS-04-2015	IA	May 2016	Apr 2019
124	SMESEC	DS-02-2016	IA	Jun 2017	May 2020
125	SocialPrivacy	FP7-PEOPLE-2011-IOF	MC-IOF	Sep 2012	Aug 2015
126	SODA	ICT-18-2016	RIA	Jan 2017	Dec 2019
127	SPECIAL	ICT-18-2016	RIA	Jan 2017	Dec 2019
128	SpeechXRays	DS-02-2014	IA	May 2015	Apr 2018
129	SPOOC	ERC-CoG-2014	ERC-COG	Sep 2015	Aug 2020
130	STAMP	ICT-10-2016	RIA	Dec 2016	Nov 2019
131	STOP-IT	CIP-01-2016-2017	IA	Jun 2017	May 2021
132	STORM	EE-13-2014	RIA	Mar 2015	Aug 2018
133	SUNFISH	ICT-07-2014	RIA	Jan 2015	Dec 2017
134	SUPERCLOUD	ICT-07-2014	RIA	Feb 2015	Jan 2018
135	SurPRISE	SEC-2011.6.5-2	CP-FP	Feb 2012	Jan 2015
136	SysSec	ICT-2009.1.4	NoE	Sep 2010	Nov 2014
137	TOREADOR	ICT-16-2015	RIA	Jan 2016	Dec 2018
138	TREDISEC	ICT-32-2014	RIA	Apr 2015	Mar 2018
139	TRUESSEC.EU	DS-01-2016	CSA	Jan 2017	Dec 2018
140	TYPES	DS-01-2014	IA	May 2015	Oct 2017
141	U2PIA	SMEInst-13-2016-2017	SME-1	Nov 2016	Mar 2017
142	UNICORN	ICT-06-2016	IA	Jan 2017	Dec 2019
143	VESSEDIA	DS-01-2016	RIA	Jan 2017	Dec 2019
144	VIRT-EU	ICT-35-2016	RIA	Jan 2017	Dec 2019
145	VisiOn	DS-01-2014		Jul 2015	Jun 2017
146	WISER	DS-06-2014	IA	Jun 2015	Nov 2017
147	WITDOM	ICT-32-2014	RIA	Jan 2015	Dec 2017
148	FENTEC	H2020-DS-LEIT-2017	RIA	Jan 2018	Dec 2020
149	SAWSOC	FP7-SEC-2012-1	CP-FP	Nov 2013	Apr 2016

#	Project	Call	Type	Start	End
150	PROMETHEUS	H2020-DS-LEIT-2017	RIA	Jan 2018	Dec 2019
151	REACT	H2020-DS-SC7-2017	RIA	Jun 2018	May 2021
152	SerIoT	H2020-IOT-2017	RIA	Jan 2018	Dec 2020
153	YAKSHA	H2020-ICT-2017-1	IA	Jan 2018	Jun 2020
154	DECODE	H2020-ICT-2016-1	RIA	Dec 2016	Dec 2019
155	CYBER-TRUST	H2020-DS-SC7-2017	RIA	May 2018	Apr 2021
156	DOGANA II		IA	Jan 2017	Dec 2019
157	CYBECO II	H2020-DS-SC7-2016	RIA	May 2017	Apr 2019
158	PRIVILEDGE	H2020-DS-LEIT-2017	RIA	Jan 2018	Dec 2020
159	FUTURE TPM	H2020-DS-LEIT-2017	RIA	Jan 2018	Dec 2020
160	SealedGRID	H2020-MSCA-RISE-2017	MSCA-RISE	Jan 2018	Dec 2021
161	SEMIoTICS	H2020-IOT-2017	RIA	Jan 2018	Dec 2020
162	ASTRID	H2020-DS-SC7-2017	RIA	May 2018	Apr 2021
163	BPR4GDPR	H2020-DS-SC7-2017	IA	May 2018	Apr 2021
164	PAPAYA	H2020-DS-SC7-2017	IA	May 2018	Apr 2021
165	POSEIDON	H2020-DS-SC7-2017	IA	May 2018	Oct 2020
166	SPEAR	H2020-DS-SC7-2017	RIA	May 2018	Apr 2021
167	SMOOTH	H2020-DS-SC7-2017	IA	May 2018	Oct 2020
168	DEFEND	H2020-DS-SC7-2017	IA	Jun 2018	May 2021
169	CE-IoT	H2020-MSCA-RISE-2017	MSCA-RISE	Jul 2018	Jun 2022
170	OLYMPUS	H2020-DS-SC7-2017	IA	Sep 2018	Aug 2021
171	THREAT-ARREST	H2020-DS-SC7-2017	IA	Sep 2018	Aug 2021
172	CONCORDIA	H2020-SU-ICT-2018-2	RIA	Jan 2019	Dec 2022
173	OCRE	H2020-INFRAEOSC-2018-1	RIA	Jan 2019	Dec 2021
174	SPARTA	H2020-SU-ICT-2018-2	RIA	Feb 2019	Jan 2022
175	CyberSec4Europe	H2020-SU-ICT-2018-2	RIA	Mar 2019	Jul 2022
176	ECHO	H2020-SU-ICT-2018-2	RIA	Mar 2019	Feb 2023
177	ENACT	H2020-IOT-2017	RIA	Jan 2018	Dec 2020
178	PDP4E	H2020-DS-SC7-2017	IA	May 2018	Jan 2021
179	CYBERWISER.EU	H2020-EU.3.7.4	IA	Sep 2018	Feb 2021
180	PROTASIS	H2020-MSCA-RISE-2015	MSCA-RISE	May 2016	Apr 2020

#	Project	Call	Type	Start	End
181	FAR-EDGE	H2020-FOF-2016	RIA	Oct 2016	Oct 2019
182	SOFIE	H2020-IOT-2017	RIA	Jan 2018	Dec 2020
183	SPECS	FP7-ICT-2013-10	CP	Nov 2013	Apr 2016
184	SWITCH	H2020-ICT-2014-1	RIA	Feb 2015	Jan 2018
185	PANACEA	H2020-SC1-FA-DTS-2018-1	RIA	Jan 2019	Dec 2021
186	symbIoTe	H2020-ICT-2015	RIA	Jan 2016	Dec 2018
187	CREATE-IoT	H2020-IOT-2016	CSA	Jan 2017	Dec 2019
188	SecureIoT	H2020-IOT-2017	RIA	Jan 2018	Dec 2020
189	CAPITAL	ICT-2013.1.5	CSA	Oct 2013	Sep 2015
190	IPaCSO	ICT-2013.1.5	CSA	Nov 2013	Oct 2015
191	PANOPTESEC	ICT-2013.1.5	CP	Nov 2013	Oct 2016
192	SERENITI	FP7-PEOPLE-2013-CIG	MC-CIG	Mar 2014	Feb 2018
193	SecureCloud	EUB-1-2015	RIA	Jan 2016	Dec 2018
194	ASCEMA	SMEInst-01-2016-2017	SME-1	Jun 2016	Nov 2016
195	LipVerify	SMEInst-13-2016-2017	SME-1	Jul 2016	Dec 2016
196	ConnectProtect	SMEInst-13-2016-2017	SME-1	Jul 2016	Dec 2016
197	ThreatMark	SMEInst-13-2016-2017	SME-1	Aug 2016	Nov 2016
198	Eye-O-T	SMEInst-13-2016-2017	SME-1	Aug 2016	Dec 2016
199	PerfectDashboard 2.0	SMEInst-13-2016-2017	SME-1	Oct 2016	Dec 2016
200	CHINO	SMEInst-13-2016-2017	SME-1	Jan 2017	Jun 2017
201	CyberSure	MSCA-RISE-2016	MSCA-RISE	Jan 2017	Dec 2020
202	LIMPET	SMEInst-09-2016-2017	SME-1	Feb 2017	Jul 2017
203	LocationWise	SMEInst-13-2016-2017	SME-1	Mar 2017	Aug 2017
204	PROOFY	SMEInst-01-2016-2017	SME-1	May 2017	Aug 2017
205	cyberwatching.eu	DS-05-2016	CSA	May 2017	Apr 2021
206	UNFRAUD	SMEInst-13-2016-2017	SME-1	Jun 2017	Sep 2017
207	CLTRe	SMEInst-01-2016-2017	SME-1	Jun 2017	Nov 2017
208	3ants	SMEInst-13-2016-2017	SME-1	Jul 2017	Dec 2017
209	GO 4G	SMEInst-13-2016-2017	SME-1	Jul 2017	Dec 2017
210	SAFETY 4.0	SMEInst-02-2016-2017	SME-1	Aug 2017	Nov 2017
211	TFence	SMEInst-13-2016-2017	SME-1	Aug 2017	Nov 2017

#	Project	Call	Type	Start	End
212	UltraFiBi	SMEInst-13-2016-2017	SME-1	Oct 2017	Mar 2018
213	ProtonSuite	SMEInst-13-2016-2017	SME-1	Dec 2017	Mar 2018
214	RPS	SMEInst-10-2016-2017	SME-1	Jan 2018	May 2018
215	SecureHospitals.eu	SU-TDS-03-2018	CSA	Dec 2018	Jan 2021
216	ASCLEPIOS	SU-TDS-02-2018	RIA	Dec 2018	Nov 2021
217	CUREX	SU-TDS-02-2018	RIA	Dec 2018	Nov 2021
218	V-SPHERE	SMEInst-13-2016-2017	SME-1	Feb 2018	May 2018
219	AF-Cyber	MSCA-IF-2016	MSCA-IF-EF-ST	Feb 2018	Jan 2020
220	SIGAGuard	SMEInst-13-2016-2017	SME-1	Apr 2018	Jul 2018
221	TrueProactive	EIC-SMEInst-2018-2020	SME-1	May 2018	Aug 2018
222	RESISTO	CIP-01-2016-2017	IA	May 2018	Apr 2021
223	SECREDAS	ECSEL-2017-2	ECSEL-RIA	May 2018	Apr 2021
224	ELIoT Pro	EIC-SMEInst-2018-2020	SME-2	Jun 2018	May 2020
225	CYBERSECURITY	MSCA-IF-2017	MSCA-IF-EF-ST	Aug 2018	Jul 2020
226	Blocknetwork	EIC-SMEInst-2018-2020	SME-1	Sep 2018	Feb 2019
227	SAFECARE	CIP-01-2016-2017	IA	Sep 2018	Aug 2021
228	ADVERSARY	EIC-SMEInst-2018-2020	SME-1	Nov 2018	Feb 2019
229	SPHINX	SU-TDS-02-2018	RIA	Jan 2019	Dec 2021
230	SERUMS	SU-TDS-02-2018	RIA	Jan 2019	Dec 2021
231	SECONDO	MSCA-RISE-2018	MSCA-RISE	Jan 2019	Dec 2022
232	TRINITY	DT-ICT-02-2018	IA	Jan 2019	Dec 2022
233	RADDICS	ERC-2018-COG	ERC-COG	Jan 2019	Dec 2023
234	FeatureCloud	SU-TDS-02-2018	RIA	Jan 2019	Dec 2023
235	SamurAI	EIC-SMEInst-2018-2020	SME-1	May 2019	Aug 2019
236	D-FENCE	EIC-SMEInst-2018-2020	SME-1	May 2019	Aug 2019
237	nIoVe	SU-ICT-01-2018	IA	May 2019	Apr 2022
238	GUARD	SU-ICT-01-2018	IA	May 2019	Apr 2022
239	InfraStress	SU-INFRA01-2018-2019-2020	IA	Jun 2019	May 2021
240	ODIX 2.0	EIC-SMEInst-2018-2020	SME-2	Jun 2019	Jun 2021
241	C4IIoT	SU-ICT-01-2018	IA	Jun 2019	May 2022

#	Project	Call	Type	Start	End
242	CYBERCULT	MSCA-IF-2018	MSCA-IF-EF-ST	Jul 2019	Jun 2021
243	SOTER	SU-DS05-2018-2019	IA	Jul 2019	Oct 2021
244	SPIDER	SU-DS01-2018	IA	Jul 2019	Jun 2022
245	EnergyShield	SU-DS04-2018-2020	IA	Jul 2019	Jun 2022
246	CRITICAL-CHAINS	SU-DS05-2018-2019	IA	Jul 2019	Jun 2022
247	MALAGA	MSCA-IF-2018	MSCA-IF-EF-ST	Sep 2019	Oct 2021
248	CyberSANE	SU-ICT-01-2018	IA	Sep 2019	Aug 2022
249	Cyber-MAR	SU-DS01-2018	IA	Sep 2019	Aug 2022
250	PHOENIX	SU-DS04-2018-2020	IA	Sep 2019	Aug 2022
251	DAN	EIC-SMEInst-2018-2020	SME-1	Oct 2019	Mar 2020
252	vACCINE	JTI-CS2-2018-CfP09-SYS-01-11	CS2-IA	Oct 2019	Sep 2021
253	CARAMEL	SU-ICT-01-2018	IA	Oct 2019	Mar 2022
254	FORESIGHT	SU-DS01-2018	IA	Oct 2019	Sep 2022
255	5GZORRO	ICT-20-2019-2020	RIA	Nov 2019	Apr 2022
256	LOCARD	SU-FCT02-2018-2019-2020	RIA	May 2019	Apr 2022
257	INSPIRE-5Gplus	ICT-20-2019-2020	RIA	Nov 2019	Oct 2022
258	AERAS	MSCA-RISE-2019	MSCA-RISE	Dec 2019	Nov 2023
259	UP2DATE	ICT-01-2019	RIA	Jan 2020	Dec 2022
260	1-SWARM	ICT-01-2019	RIA	Jan 2020	Dec 2022
261	SAPPAN	H2020-SU-ICT-2018	IA	May 2019	Apr 2022