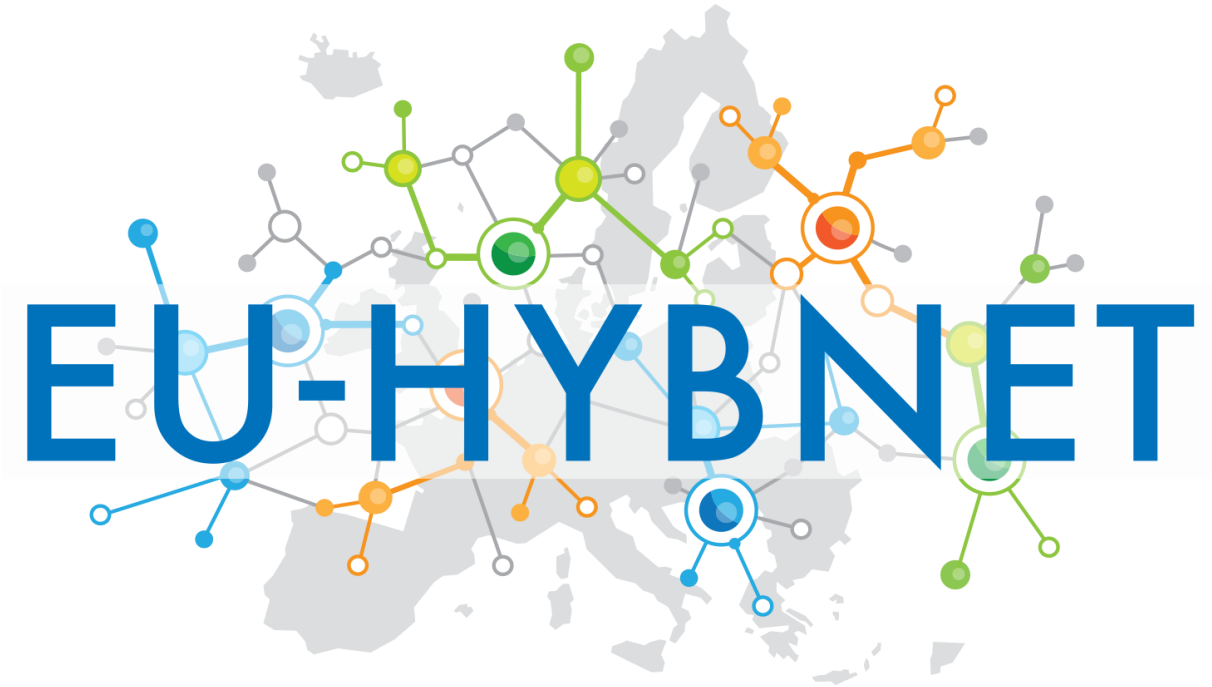


SECOND SIX MONTH ACTION REPORT

DELIVERABLE 1.3

Lead Author : Laurea

Contributors: JRC, Satways, TNO, L3CE, EOS, KEMEA, RISE, PPHS, PLV, Hybrid CoE, UiT, URJC, L3CE

Deliverable classification: PU

This project has received funding from the European Union's Horizon 2020 – Research and Innovation Framework Programme, H2020-SU-SEC-2019, under grant agreement No. 883054

D1.3 SECOND SIX MONTH ACTION REPORT

Deliverable number	**1.3**	
Version:	**1.0**	
Delivery date:	**14/06/2021**	
Dissemination level:	**Public (PU)**	
Classification level:	**Public**	
Status	**Ready**	
Nature:	**Report**	
Main authors:	**Päivi Mattila, Isto Mattila, Janel Coburn**	**Laurea**
Contributors:	**Monica Cardarilli/ JRC** **Souzanna Sofou/ Satways** **Rick Meessen, Okke Lucassen/ TNO** **Rimantas Zylius/ L3CE** **Elodie Reuge/ EOS** **Maria Kampa/ KEMEA** **Rolf Blom/ RISE** **Magda Okuniewska, Rashel Talukder, Steven Ormston/ PPHS** **Ivan Luis Martinez Villaneuva/ PLV** **Gunhild Hoegens-Gjorv/ UiT** **Ruber Arcos/ URJC** **Evaldas Bruze/ L3CE** **Maxime Lebrun, Hanna Smith, Emma Lappalainen/ Hybrid CoE**	

DOCUMENT CONTROL

Version	Date	Authors	Changes
0.1	16/03/2021	Janel Coburn, Päivi Mattila/ Laurea	First draft
0.2	23/4/2021	Monica Cardarilli/ JRC Souzanna Sofou/ Satways Rick Meessen, Okke Lucassen/ TNO Rimantas Zylius/ L3CE Elodie Reuge/ EOS Maria Kampa/ KEMEA Rolf Blom/ RISE Magda Okuniewska, Rashel Talukder, Steven Ormston/ PPHS Päivi Mattila, Isto Mattila, Janel Coburn/ Laurea Gunhild Hoegens-Gjorv/ UiT Ruber Arcos/ URJC Evaldas Bruze/ L3CE Maxime Lebrun, Hanna Smith, Emma Lappalainen/ Hybrid CoE	Contribution to the content
0.3	05/05/2021	Päivi Mattila/ Laurea	Updated content
0.31	10/05/2021	Päivi Mattila/ Laurea	Updated content
0.32	17/5/2021	Päivi Mattila/ Laurea	Updated content
0.33	23/5/2021	Päivi Mattila/ Laurea	Updated content
0.34	27/5/2021	Päivi Mattila/ Laurea	Updated content
0.35	30/5/2021	Päivi Mattila/ Laurea	Updated content
0.36	3/6/2021	Päivi Mattila/ Laurea	Updated content
0.37	5/6/2021	Päivi Mattila/ Laurea	Updated content
0.4	7/6/2021	Päivi Mattila/ Laurea	Text editing for internal review
0.5	7/6/2021	Janel Coburn/ Laurea	Review

0.6	14/6/2021	Ivan Luis Martinez Villaneuva/ PLV	Review
0.7	14/6/2021	Päivi Mattila/ Laurea	Text editing and final version for submission
1.0	14/6/2021	Päivi Mattila/ Laurea	Document for submission

DISCLAIMER

TABLE OF CONTENT

TABLES

FIGURES

1. INTRODUCTION

1.1 OVERVIEW

The goal of the *Empowering a Pan-European Network to Counter Hybrid Threats* (EU-HYBNET) project deliverable (D) 1.3 "*Second Six Month Action Report*" in project month (M12) (April 2021) is to describe how the project has proceeded from M6 through M12 of the project (November 2020 – April 2021) according to the European Commission (EC) defined, *"three lines of action*" which are mandatory to report according to the Horizon2020 Secure Societies Programme/General Matters-01-2019 funded projects. The *"three lines of action*" are:

1) Monitoring of research and innovation projects with a view to recommending the uptake or the industrialisation of results

2) Common requirements regarding innovations that could satisfy gaps and needs

3) Priorities regarding the increase of knowledge and performance requiring standardisation

Furthermore, D1.3 also highlights what actions and results are expected from EU-HYBNET during the next six month period (May- October 2021).

1.3 STRUCTURE OF THE DELIVERABLE

This document includes the following sections:

- Section 1. Provides an overview to the document content.
- Section 2. Describes the importance of deliverable D1.3 to the whole project and its' proceeding will be explained.
- Section 3. Describes how the project activities from months 7-12 have contributed to the EC's requested "three lines of action" activities.
- Section 4. Conclusion and next steps for the upcoming 6-month period of the project (May-October 2021).

2. SIX MONTH ACTION REPORT AND IMPACT TO THE PROJECT

2.1 CONTRIBUTION TO THE PROJECT

The EU-HYBNET deliverable (D)1.3 "*Second Six-Month Action Report*" is part of EU-HYBNET Work Package (WP) 1 «*Coordination and Project Management* » Task (T) 1.1 «*Administrative, Financial Planning and Coordination* ». Generally speaking, the EU-HYBNET six-month action reports are mandatory progress reports to EC. The reports support both the EC and the project itself to estimate if the project delivers consistent results according to the project's core activities, the Grant Agreement (GA) and the Description of Action (DoA).

The EU-HYBNET six-month action reports, such as the D1.3, have no specific project objective or key performance indicator(s) (KPI) to answer. However, the importance of D1.3 is to provide a general update on how the project reaches the results mentioned in the project objectives and KPIs. We have highlighted this in the flow chart below, showing the role of WP1 to support and guide project WPs 2-4 where the main project activities take place and the core project results are achieved.

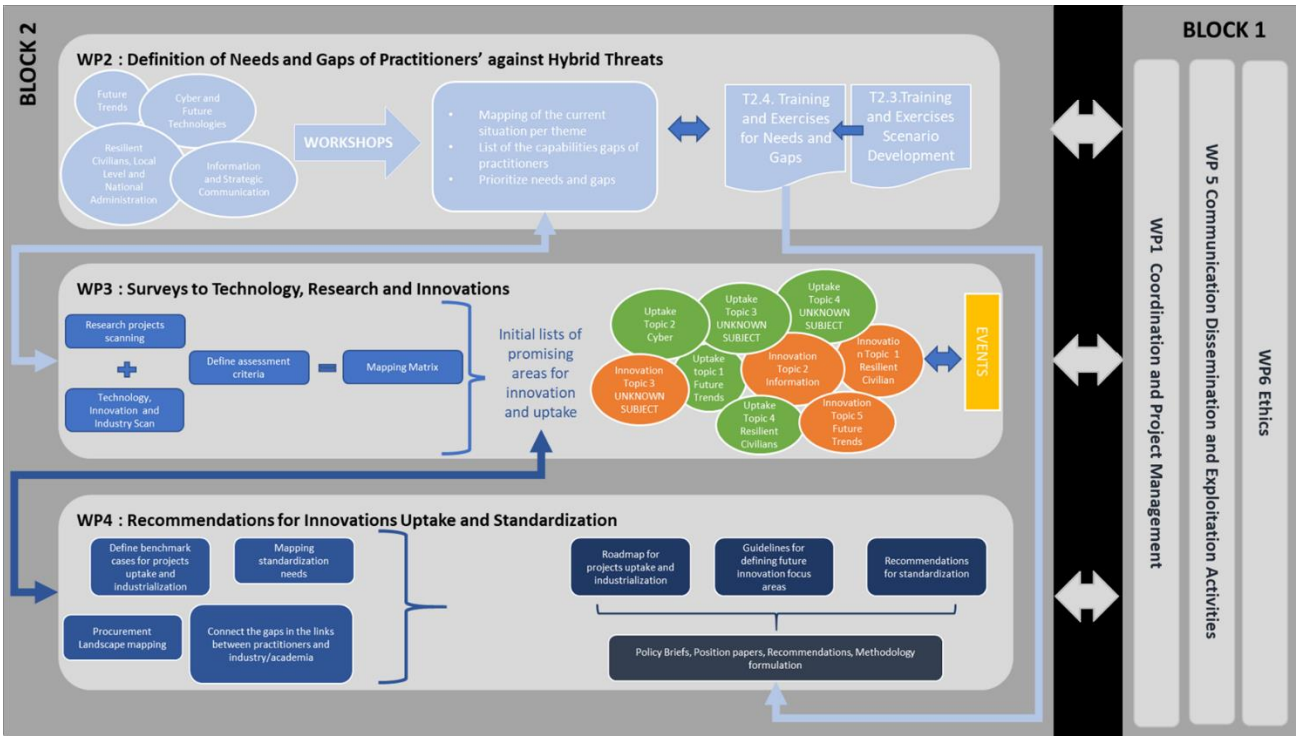


Figure 1 EU-HYBNET Structure of Work Packages and Main Activities

In addition, the project results and findings described in D1.3 are linked to the project milestones (MS) achieved during the last six month period. The milestones relevant to D1.3 are following:

Milestone No.	Milestone (MS) name	MS related Task	Due project month
21	Cycle of Innovation and Knowledge exchange events is started	T3.4	9
16	First cycle of mapping gaps and needs on the innovations and research completed and shortlist of solutions handed over to WP4	T3.1, T3.2, T3.3	11
19	Taxonomy for innovations monitoring has been developed	T3.2	12
20	Taxonomy for innovations and research projects monitoring has been developed	T3.3	12
22	Cycle of Future Trends Workshops is started	T3.4	12

2.2 SIX MONTH ACTION REPORT CONTRIBUTORS

The Six-Month Action Report (D1.3) main author is Laurea, the organization responsible for the delivery of D1.3. However, EU-HYBNET work package (WP) and task (T) leaders have also provided information on the tasks they are responsible for and have been working on during the second six-month period of the EU-HYBNET project. In addition, the EU-HYBNET Project Manager and Innovation Manager have contributed to D1.3 by providing general remarks on the project's general progress and innovation uptake.

3. THREE LINES OF ACTION REPORTING

This chapter describes EU-HYBNET's activities, especially in Work Packages (WPs) and Tasks (T) relevant to the Three Lines of Action during the project's second six months (November 2020 - April 2021). According to the EC's request, EU-HYBNET should report according to the following Three Lines of Action:

1) Monitoring of research and innovation projects with a view to recommending the uptake or the industrialisation of results

2) Common requirements as regards innovations that could fill in gaps and needs

3) Priorities as regards of increasing of knowledge and performance requiring standardisation

The subchapters below describe one by one, EU-HYBNET's contribution to the each of the Three Lines of Action.

3.1 MONITORING OF RESEARCH AND INNOVATION PROJECTS WITH A VIEW TO RECOMMENDING THE UPTAKE OR THE INDUSTRIALISATION OF RESULTS

EU-HYBNET project activities were launched in Tasks (T) 2.1 "Needs and Gaps Analysis in Knowledge and Performance" and T2.2 "Research to Support Increase of Knowledge and Performance", the identification of practitioners'[1] and other relevant actors' (industry, SMEs, academia, NGOS) gaps and needs which included vulnerabilities to counter hybrid threat. The work conducted in T2.1 and T2.2 contributed to D2.9 "Deeper analysis, delivery of short list of gaps and needs" (M5/ September 2020) where the most important pan-European practitioners' and other relevant actors' gaps and needs to counter hybrid threats were listed.

D2.9 signified the starting point for the EU-HYBNET project to start monitoring and mapping technical and non-technical/human-science based innovations, solutions from existing research and innovation (R&I) projects and other possible sources or providers (e.g. industry, academia) to cover the identified gaps and needs and with a goal of recommending the uptake or the industrialization of results.

This work has mainly been conducted in Work Package (WP) 3, "Surveys to Technology, Research and Innovations" and WP4 "Recommendations for Innovations Uptake and Standardization". However,

[1] A practitioner is defined in EU-HYBNET as the following (DoA Part B, Chapter 3.3): *A practitioner is someone who is qualified or registered to practice a particular occupation or profession in the field of security or civil protection*." In addition, practitioners in the context of hybrid threats are expected to have a legal mandate to plan and take security measures, or to provide support to authorities countering hybrid threats. Accordingly, EU-HYBNET practitioners are categorized as follows: I) *ministry level* (administration), II) *local level* (cities and regions), III) *support functions to ministry and local levels* (incl. Europe's third sector).

activities in WP2 "Gaps and Needs of European Actors against Hybrid Threats", WP5 "Communication, Dissemination and Exploitation Activities" and WP1 "Coordination and Project Management" have also provided input to WP3 and WP4 work. The results achieved from all named WPs according to the three lines of actions topic "*Monitoring of research and innovation projects regarding the uptake of recommendations or the industrialisation of results*" are described in the following subchapters.

3.1.1 EU-HYBNET WP3 "SURVEYS TO TECHNOLOGY, RESEARCH AND INNOVATIONS"

From WP3 "Surveys to Technology, Research and Innovations" side, the monitoring of R&I projects to find results that address EU-HYBNET's identified gaps and needs, is conducted especially in T3.3 "Ongoing Research Projects Initiatives Watch" (lead by L3CE). However, WP3 T3.2 "Technology and Innovations Watch" (lead by Satways) and T3.4 "Innovation and Knowledge Exchange Events" (lead by EOS) also provide material to R&I projects monitoring. Additionally, T3.1 "Definition of Target Areas for Improvements and Innovations" (lead by TNO) supports EU-HYBNET to focus on the most relevant R&I projects' findings to recommend innovation uptake or industrialisation. Next subchapters present findings from the mentioned WP3 Tasks 3.1-3.4.

T3.3 "Ongoing Research Projects Initiatives Watch"

During the second EU-HYBNET six month project period (M7-M12, November 2020 – April 2021) T3.3 conducted vast research on R&I projects and research initiatives to discover innovations and results of the identified gaps and needs which EU-HYBNET could start to analyze and eventually recommend for uptake or industrialization. The research was accomplished in line with the EU-HYBNET four core themes (Future Trends of Hybrid Threats; Cyber and Future Technologies; Resilient Civilians, Local Level and National Administration; Information and Strategic Communication) and the identified gaps and needs to each of the four core themes. T3.3 scanned relevant EU research projects and identified potential innovative solutions.

One of the relevant EC funded projects identified was e.g. MI-ICT (" ICT Enabled Public Services for Migration", No. 822380 https://www.miict.eu/) that could provide a technical innovation to cover a gap identified within the EU-HYBNET core theme "Resilient Civilians, Regional Level and National Administration" - gap "Social outcasting, intolerance".This technical innovation exists as a *"bi-lingual web-based platform that consists of a database and an intelligent analytics system that captures the specific socio-cultural, economic and legal contexts of migrants that is shared with public authorities. The platform will enable effective management of migrant's' integration into the EU labour market by providing the means to better understand individual contexts, allowing individuals to seek opportunities for skills development, employment and enabling public authorities to automatically match their access to services such as education, welfare, employment and healthcare in host countries*". In short, the platform that supports migrants' integration into society and may prevent polarization between the migrants and locals due to increased daily interaction and similar input to the society.

Aside from MI-ICT, there are also other projects discovered which could possibly deliver solutions to the EU-HYBNET gaps and needs identified in T3.3. However, T3.3 also identified many innovations (technical and non-technical/ human science based) with various of levels of maturity coming from general research initiatives - the findings are described in detail in T3.3/ D3.7 "First report on Innovation and Research Project monitoring" (M7/ November 2020). An important finding in T3.3/ D3.7 was to start collaboration between EU-HYBNET and the EC DG HOME funded Network of Practitioners (NoP) project INCLUDING (No. 833573 https://including-cluster.eu/) because INCLUDING's focus on CBRNE threats is very important to EU-HYBNET due to the cross-disciplinary nature of hybrid threats. This notion has lead the INCLUDING project and EU-HYBNET /WP1 to cooperate in INCLUDING CBRNE training event scenario planning in early 2021. Because the INCLUDING training scenario will include hybrid threat references, it is possible that it will include innovation testing and may also provide recommendations for EU-HYBNET on R&I project innovations that could be **recommended for uptake or industrialization in the future.**

Because cooperation with the INCLUDING project has been very fruitful, EU-HYBNET has continued in WP1 T1.3 "EU-HYBNET Community Extension" to cooperate with other NoP projects to increase collaboration with subject focused projects relevant to hybrid threats, innovation mapping and innovation uptake recommendations. The cooperation took place with I-LEAD project (No. 740685 https://cordis.europa.eu/project/id/740685) to solve EU and EU MSs procurement landscape. In addition, EU-HYBNET has been invited to MEDEA's (No. 787111 https://www.medea-project.eu/) event to learn about MEDEA's proceeding with the recommendation of innovations uptake or industrialization of results alike procurement activities; this provides a fruitful basis for EU-HYBNET and MEDEA to share results on identified innovations from R&I projects and their uptake or industrialization plans. Furthermore, EU-HYBNET has established cooperation with SPARTA (No. 830892 https://www.sparta.eu/) to monitor innovations that the project recommends as future solutions to cover cyber security threats; these innovations can be taken under analysis in T3.3 during the 2nd EU-HYBNET project cycle (starting in M18/ October 2021).

T3.2 "Technology and Innovations Watch"

Similar to T3.3, T3.2 also conducted analysis on innovations that could be seen as solutions to identified gaps and needs. However, T3.2 focused mainly on technical innovations delivered by industry. These innovations are described in detail in D3.3 "First report on Improvement and innovations" (M7/ November 2020). In T3.2, a total of 23 promising innovations were identified as follows:

CORE THEME	PRIMARY CONTEXT	IDEA/ INNOVATION PROPOSED
1. FUTURE TRENDS OF HYBRID THREATS	1.1 Trend: Official strategic communication losing power	Guides to identify fakes
		Hybrid online dilemma game
	1.2 Trend: Big data as a new power source	Countering disinformation with strategic personalized advertising
		Automated detection of hate speech in social media
	1.3 Trend: increasing strategic dependency of critical services	A blockchain-based real-time information management and monitoring system
		A crawler and real-time search engine for investors
2. CYBER AND FUTURE TECHNOLOGIES	2.1 GAME CHANGERS: QUANTUM AS A DISRUPTIVE TECHNOLOGY	Open European Quantum Key Distribution Testbed (OPENQKD project)
		Future Proofing the Connected World: A Quantum-Resistant Trusted Platform Module
	2.2 HYPER CONNECTIVITY AS AN IMPACT MULTIPLIER OF CYBER	Efficient cyber threat information sharing through Hyper Connectivity networks
		Cross sector cyber threat information sharing
		Public-private information-sharing groups developing collaborative investigations and collective action
	2.3 THE INDIVIDUAL AS A DIGITAL ENTITY	Fake news exposer
		Factcheckers communities
3. RESILIENT CIVILIANS, LOCAL LEVEL AND ADMINISTRATION	3.1 DISTRUST AND STRESS IN POLITICAL DECISION-MAKING	Resilient democracy infrastructure platform
	3.2 RELIANCE ON CRITICAL SERVICES AND TECHNOLOGICAL SYSTEMS	Early or Rapid Damage Assessment System
		Smart message routing and notification service for sharing the operational picture to every agency involved in the response at every level of coordination
	3.3 GLOBALIZATION VS. LOCALISATION	Tool that monitors and detects the population's response to the information being published and is able to identify the dominant emotion occurring in social networks
4. INFORMATION AND STRATEGIC COMMUNICATIONS	4.1 GOING VIRAL	Journalism trust initiative
		Debunking of Fake News
		Non-partisan native-language news channels for most interdependent abroad regions
	4.2 DIGITAL MONOPOLIES AND MASSIFICATION OF DATA	Fair Trade Data Program
	4.3 DETERIORATION OF THE QUALITY OF CONTENT	Training application for media literacy
		Automated fact-checker

During the past six months, both T3.2 and T3.3 prepared a taxonomy for innovations and R&I projects monitoring that will support T3.2 and T3.3 to have a more detailed approach for innovation mapping in the forthcoming years of the EU-HYBNET project. The taxonomy described in T3.2/ D3.3 and T3.3/ D3.7 and the approaches, are in-line with the identified gaps and needs in EU-HYBNET. The development of taxonomy in T3.2 and T3.3 ensured that EU-HYBNET milestones (MS) MS19 "Taxonomy for innovations monitoring has been developed" (M12) and MS20 "Taxonomy for innovations and research projects monitoring has been developed" (M12) have been reached.

T3.4 "Innovation and Knowledge Exchange Events"

In WP3, Task 3.4 "Innovation and Knowledge Exchange Events" also has the goal to deliver information according to the first of the three lines of action, "Monitoring of research and innovation projects regarding the uptake of recommendations or the industrialisation of results". T3.4 is responsible for arranging events according to DoA Part A:

> *"Task 3.4 will deliver annual events for practitioners (and stakeholders in general) to facilitate exchange of information on innovations and knowledge and increase the likelihood of uptake. The first event will introduce the EU-HYBNET project and existing network as an innovation exchange arena for the extended network. It allow practitioners to become aware of innovation possibilities via the EU-HYBNET project and network activities. ... Special attention is required for the unknown threats and the low-tech threats (based on surprising and creative tactics), which are often not in direct focus and attention of practitioners. Therefore a workshop in which also out-of-the-box, non-confirmist and creative thinkers attend, will be organised, with the aim to find new threats or manifestations of hybrid threats. … 3 events on "Innovation and Knowledge Exchange" ... The T3.4 will also be in charge of the organisation of the five (5) Future Trends Workshops. The workshops should*

also address expected future manifestation and evolution of hybrid threats so that we not only look into innovations and solutions for today but also for tomorrow.".

T3.4 arranged an Innovation Knowledge Exchange Event (IKEW) (on M9/ Jan 2021) and a Future Trends Workshop (FTW) on M11 (DL M12/ April 2021); IKEW and FTW program are attached in ANNEX III. The findings from the FTW will be reported in D3.14 "1st Future Trends analysis Workshop Report" in M13 (May 2021) and they will be taken into notice in the Third Six Month Action Report D1.4 (M18/ October 2021). Because the scope of the first IKEW event according to DoA Part A was "*..to introduce the EU-HYBNET project and existing network as an innovation exchange arena for the extended network. It allowed practitioners to become aware of innovation possibilities via the EU-HYBNET project and network activities"* IKEW's goal was to invite research and innovation projects and standardization bodies with the objective of collecting their feedback. Valuable feedback was provided during IKEW and the results from IKEW are described in detail in D3.11 "1st Innovation and Knowledge exchange events report" (M10/ Feb 2021). The key findings from IKEW concerning the research and innovation projects and recommendations to innovations were, some to mention, following:

- Since hybrid threats do not necessarily limit to one country only, there is need to have more cross-border cooperation for pan-European solutions and connecting dots together. This means that there in the future there needs to be more awareness to recognize and counter hybrid threats and to cooperate in achieving this.
- To enable joint actions and cooperation common and shared languages, procedures, rules and standards are needed. Common situational awareness is the area of the Joint Framework where there is the most pressing need for standardization and the creation of a common language and understanding.
- Importance to conduct regular intelligence collection and analysis efforts when it comes to science and technologies (e.g., assessment of vulnerabilities and of adversary capabilities and intentions). This should be done both at the national and international level, where Member States and allies should cooperate through existing structures and whole-of-government approach.
- In the contemporary society information can be deliberately used for a malign activity to produce cognitive, affective, and behavioural effects, and hence there is urgent need to foster innovations assisting the democratization of image, video, audio forensic and verification
- Offensive systems could be used to counter hybrid threats. e.g. offensive intelligence, preparedness, advanced reconnaissance and exploitation techniques against systems, tools and methodologies that are commonly used for offensive operations targeting with accuracy cyber-threat actors' assets.
- Reporting and cross-border gathering of electronic evidence was seen as an important process that could be helpful in countering hybrid threats
- Innovative solutions should not only bound to look one existing legislated environment but to various in order to be able to answer to hybrid threats. In EU-HYBNET the project four core themes answer almost all possible considerations being them civilian or defense, public or private, national or EU level, when countering Hybrid threats.

- The innovations and solutions to counter hybrid threats need to have strong focus on legal, ethic and conformity issues.

After the work of monitoring R&I projects and innovations in T3.2, T3.3 and T3.4, the next steps in the project were to provide a **view to recommend the uptake or the industrialization of results, innovations**. This work is currently taking place in WP3 T3.1.

T3.1 "Definition of Target Areas for Improvements and Innovations"

The many innovations identified in T3.3 and T3.2 have been analyzed in T3.1, and the 27 most promising innovations (or innovative solutions) for countering hybrid threats were identified and further reviewed. These 27 most promising innovations to gaps and needs are clustered within "target areas" as follows:

- ✓ Crisis Management & Critical infrastructures protection: 7 innovations
- ✓ Micro-targeting and Influencing: 4 innovations
- ✓ Education and Training: 3 innovations
- ✓ Disinformation: 8 innovations
- ✓ Cyber and Quantum security: 5 innovations

The 27 innovations of each cluster are named in the table below:

Clusters of innovations	Specific innovations
Crisis Management & Critical infrastructures protection	Resilient democracy infrastructure platform
	Early/Rapid damage assessment system
	Smart message system for sharing interagency OP
	A blockchain-based real-time information management and monitoring system
	A crawler and real-time search engine for investors
	Establish Data Embassies or E-embassies
	European Smart and Sustainable City Award
Microtargeting and Influencing	Tools monitoring population's response to information
	Non-partisan native-language news channels for most interdependent abroad regions
	Fair Trade Data Program
	Countering disinformation with strategic personalized advertising
Education and training	Training application for media literacy
	Hybrid online dilemma game
	Generic Operational Scenarios
Disinformation	Fake news exposer
	Factcheckers communities
	Journalism trust initiative
	Debunking of Fake News
	Automated fact-checker
	Guides to identify fakes
	Automated detection of hate speech in social media
	Government & social media cooperation framework in countering election interference
Cyber and Quantum security	Open European Quantum Key Distribution testbed
	A Quantum-Resistant Trusted Platform Module
	Efficient cyber threat information sharing through Hyper Connectivity networks
	Cross sector cyber threat information sharing
	Public-private information-sharing groups developing collaborative investigations and collective action

All 27 innovations have been integrated in the EU-HYBNET Innovation Arena (IA) platform and are easily accessible by the consortium partners, stakeholders and new network members to provide further detail and feedback on the usability of the innovations. Additionally, to ensure a sound project **view to recommend the uptake or the industrialization of results, innovations** assessment of the 27 innovations has a dual track approach. First, the innovations were assessed by expert EU-HYBNET project partners who provided their analysis on the innovations via a template that included an assessment methodology and criteria. The template was created in T3.1 and is described in the forthcoming chapter of the second Three Lines of Action, "Common Requirements as Regards of innovations that Could Fill in Gaps and Needs". The Second track of the T3.1 analysis was the DTAG game format used in WP2 T2.4 "Training and Exercises for Needs and Gaps" training event. The DTAG and WP2 results are described in the next sub-chapter.

Because T3.1 is to deliver the final analysis of the most promising innovations and to combine relevant information from other EU-HYBNET WP Tasks to this work, T3.1 has planned the following three Step approach to ensure that all relevant project information is imbedded in its analysis and research work. This ensures T3.1's important and central contribution to the Three Lines of Action "*Monitoring of research and innovation projects regarding the uptake of recommendations or the industrialisation of results"*. T3.1's three step approach includes the following actions and links with other EU-HYBNET WPs and Tasks:

Step 1: Mapping, which includes:

- Mapping the potential solutions derived from research, technology and innovations onto the identified gaps and needs;
- Performing an initial analysis of the produced mapping;
- Looking for additional innovative solutions, based on presumed white spots.

Step 2: Assessment, which includes:

- Assessing availability and quality of data for each innovative solution;
- Reviewing and refining all solutions, driven by the outcomes of the data check;
- Assessing the potential solutions based on Excellence, Impact and Implementation, leading to scores and shortlisting;
- Collecting and synthesizing recommendations for improving innovative solutions that are not on the shortlist (will be fed to Task 3.2/3.3 to proceed with in the 2nd project cycle (M18 - M34/ October 2021 – March 2023).

Step 3: Defining target areas, which includes:

- Defining target areas (clusters) of solutions, based on the previous assessment and shortlisting, These target areas serve as input and guidance for WP4 (plans and recommendations for uptake);
- Writing a synthesis of the main assessment findings that will support WP4 in their follow-on actions. The synthesis will also include some results and findings from T2.4, in which several innovations have been tested in a game setting.
- Delivering (interim) report.

The three step approach is characterised by an iterative process, in which WP2, WP3 (in particular T3.2 and 3.3) and WP4 will be actively involved, since some innovations, gaps and needs, or the combined mappings might require further consideration (e.g. adding and reviewing data) before we can pull these through the assessment. The picture below describes the process of work and the links with other EU-HYBNET WPs.

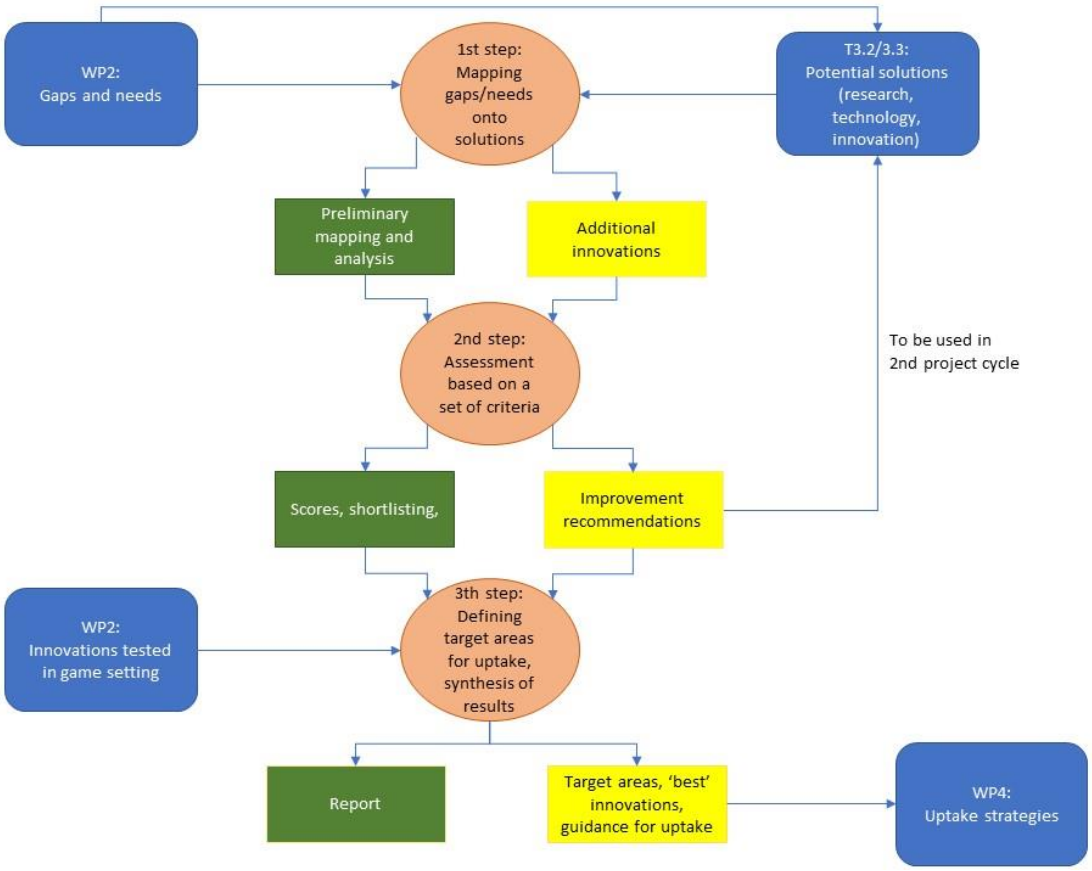


Figure 2: Task 3.1 activities and their interrelations with other WPs and Tasks

3.1.2 EU-HYBNET WP2 "GAPS AND NEEDS OF EUROPEAN ACTORS AGAINST HYBRID THREATS"

The WP3, T3.1 deeper analysis of innovations benefits from the results of innovations testing conducted during the EU-HYBNET training event arranged in WP2 "Gaps and Needs of European Actors against Hybrid Threats", T2.4 "Training and Exercises for Needs and Gaps" (Led by L3CE) – the innovations for T2.4 were selected in cooperation withT3.1 and T2.3 "Training and Exercises Scenario Development" when the scenario and four injects for the training were created (lead by KEMEA). In addition, more background information about pan-European practitioners and other relevant actors' needs for certain types of innovations were highlighted in research articles delivered in T2.2 "Research to Support Increase of Knowledge and Performance" (Led by JRC) for T3.1 analysis.

T2.3 "Training and Exercises Scenario Development"

T2.3 "Training and Exercises Scenario Development" created a scenario and four injects according to the EU-HYBNET four core themes of the T2.4 training event. Each of the injects focused on training the event participant to plan measures of the identified gaps and needs to counter hybrid threats

and to test those previously identified innovations which were seen relevant as counter measures. The training scenario and injects are described in detail in D2.17M "Training and Exercise, Scenario delivery" M10 (February 2021). T2.3 selected the innovations for each inject from among the most promising 27 innovations identified by T3.1. However, in some of the cases, innovations from T3.3 D3.7 were selected to increase the amount of human-science based innovations for T2.4 testing. These kinds of innovations were highlighted as possible promising solutions to the injects written in relation to the EU-HYBNET core theme "Resilient civilians, local level and national administration" – the innovations suggested to be tested were:

- A civil-military cooperation concept that supports societal resilience against hybrid threats; especially in the event it is needed to prevent citizens from being targeted as actors who then destabilize social coherence.
- An organization's understanding that cyber security is not only achieved by using technology but also through expertise and experts in the organization. The key is that organizations should pay great deal of attention to their organizational issues, human capital and skills next to technology to enhance their cyber security measures.

T2.4 "Training and Exercises for Needs and Gaps"

The DTAG game was used during the T2.4 "Training and Exercises for Needs and Gaps" training event where the game enabled pan-European practitioners and other relevant actors (industry, academia, NGOs) from the EU-HYBNET consortium and Stakeholder Group to test and assess the innovations in a realistic scenario and inject setting. T2.4 used the scenario and injects from T2.3 D2.17. However, though a majority of the innovations listed in T2.3 injects, not all were eventually introduced to the training participants. Furthermore, the training participants were asked to test only some of the introduced innovations to have a more profound discussion on their usability within the inject context, and to conduct a more thorough analysis on the selected innovations usability. The table below describes which of the innovations were selected for the testing and how they were rated (scale: 1/lowest score – 10/ the highest score).

No. of vignette	Inject	Selected IoS on the 22nd of April	Selected IoS on the 29th April	The 22nd of April Score	The 29th of April Score
1	Inject 1	Cyber Information sharing system	Resilient democracy infrastructure platform	-	-
	Inject 2	Resilient democracy infrastructure pla tform	Resilient democracy infrastructure platform	-	-
2	Inject 1	OPENQD	Blockchain	7,6	8
	Inject 2	Public-Private information sharing groups developing collaborative investigations and collective action	Hyper connectivity	8,2	8,2
3	Inject 1	Public-Private information sharing groups developing collaborative investigations and collective action	Resilient democracy infrastructure platform	5,3	6,3
	Inject 2	Smart message routing and notification service for sharing the operational picture to every agency involved in the response at every level of coordination	Resilient democracy infrastructure platform	7	6,3
4	Inject 1	Debunking fake news	Non-partisan native-language news channels and debunk fake news platform	-	7
	Inject 2	A guide to identifying fakes	Automated fact checker	-	7,3

The innovation evaluation scale followed rating plan created by T3.1 to ensure coherent innovation analysis throughout the project's different WPs and Tasks. In addition, the T2.4 innovation testing is to support T3.1 to easily utilize the evaluation results for their final and thorough innovation analysis. The scale used in the T2.4 innovation testing follows the PND (Pain-Need-Desire) approach. The table below, also tells how many times the training participants selected certain innovation (IoS) to be tested, and how many participants eventually conducted the evaluation of the innovation to very end.

Most selected IoS:

IoS	Selected	PDN	Rank	Voters
Resilient democracy infrastructure platform	5	N	N	N
Public-Private information sharing groups developing collaborative investigations and collective action	2	DESIRE	2	1
Cyber Information sharing system	1	PAIN	4	1
OPENQD	1	DESIRE	3	1
Blockchain	1	DESIRE	3.3	3
Hyper connectivity	1	D / P	4	2
Smart message routing and notification service for sharing the operational picture to every agency involved in the response at every level of coordination	1	DESIRE	2	1
Debunking fake news	1	D / P	4	2
Non-partisan native-language news channels and debunk fake news platform	1	N	N	N
A guide to identifying fake	1	D / P	3.5	2
Automated fact checker	1	N	N	N

The results of the innovation evaluation are described in detail in T2.4 D2.20 "1st Training and Exercises Lessons Learned Report" during project M12 (April 2021), however the table above highlights that there were three innovations that were seen important to have because they seem to answer to the need – these innovations are labelled with P/Pain and they area:

- Cyber information sharing system
- Hyper connectivity
- Debunking fake news
- A guide to identify fake

The evaluation of the innovations was critical to learn which of the innovation practitioners and other relevant actors (industry, academia, NGOs) countering hybrid threats saw as most important for the EU-HYBNET project to focus during the innovation *uptake or industrialization recommendations.*

While T2.4 results are imbedded into the T3.1 final analysis of the most promising innovations that will be delivered in D3.1 "First interim-report mapped on gaps and needs" M16 (August 2021), WP4 also benefitted from T2.4 evaluation results for their innovation uptake and standardization recommendation analysis - this is described in the next subchapter dedicated to WP4 Task activities.

T2.2 "Research to Support Increase of Knowledge and Performance"

In T2.2, research was conducted by collecting state-of-the-art knowledge to investigate solutions to identified gaps and needs under each of the project's core themes. Each of project's core themes

delivered a research article naming the important and major findings of the research, these findings are described in detail in D2.12 "Articles and publications on themes and measures" (M12/ April 2020). In relation to the three lines of action, "*monitoring of research and innovation projects with a view to recommending the uptake or the industrialisation of results*" an article from the EU-HYBNET core theme "Information and Strategic Communication", conducted extensive analysis of scientific literature, empirical observations and real-life case scenarios on the response to digital disinformation. An article from the EU-HYBNET core theme "Resilient Civilians, Local Level and National Administration" focused on the role of "ordinary" civilians to counter hybrid threats through the development and uptake of research results. This information is not only to support T3.1 to define the most promising innovations to the gaps and needs, but also to provide insights for T3.1, and especially for WP4, to recommend the uptake or the industrialisation of results.

3.1.3 EU-HYBNET WP4 "RECOMMENDATIONS FOR INNOVATIONS UPTAKE AND STANDARDIZATION"

The WP4 "*Recommendations for Innovations Uptake and Standardization*" and its four tasks, T4.1 "*Mapping on the EU Procurement Landscape*" (lead KEMEA), T4.2 "*Strategy for Innovation uptake and industrialization*" (lead RISE), T4.3 "*Recommendations for Standardization*" (lead PPHS), T4.4 "*Policy Briefs, Position Paper, Recommendations on Uptake of Innovations and Knowledge*" (lead Hybrid CoE) contribute to the first of the Three Lines of Action "***Monitoring of research and innovation projects regarding the uptake of recommendations or the industrialisation of results***". However, WP4 T4.1's input is especially central to the above mentioned line of action. While T4.2 provides more input to the second of the Three Lines of Action "Common Requirements as Regards Innovations that Could Fill in Gaps and Needs". Moreover, T4.4 and T4.3 contribute to the third of the Three Lines of Action "Priorities as Regards of Increasing of Knowledge and Performance Requiring Standardization". The following sub-chapter describes the present status of the innovation uptake and industrialization recommendations work conducted in WP4 T4.1, while the work in the Task will continue until M13 (May 2021), and hence the final results will be reported in the forthcoming D1.4 "Third Six Month Action Reports" M18 (October 2021).

T4.1 "*Mapping on the EU Procurement Landscape*"

T4.1 is to deliver D4.1 "1st Report on the Procurement Environment" in M13 (May 2021) that focuses on the EU procurement landscape for promising innovations to solve the identified gaps and needs to counter hybrid threats. In addition, D4.1 identifies innovation uptake challenges and possibilities and describes success stories and factors for the national and EU innovation uptake and industrialization. Furthermore, D4.1 lists recommended financial tools to utilize during procurement – the tools are:

- Fast Track to Innovation
- EIC Accelerator Pilot
- EU Funded PCP/PPI

- National initiatives

Furthermore, a key discovery in D4.1 was that procurement, innovation procurement software environments and public procurement legislation and procedures do vary among European Union Members States (EU MS) but this does not prevent EU MSs from joint procurement in the case of hybrid threats related innovations. In addition, T4.1 describes recommendations for EU-HYBNET innovation uptake strategy that includes 12 identified elements. Since the majority of the solutions proposed by EU-HYBNET seem to be based on ICT technologies, T4.1 D4.1 pays special attention to innovation procurement possibilities in the following two areas:

- Disinformation
- Cyber and Quantum Security

Finally, a key finding in T4.1 D4.1 was that innovationswhich fit to the gaps and needs of countering hybrid threats are not always technical but also derive from human science (non-technical innovations). Therefore, human science based innovations (e.g. training measures, empowering media literacy) industrialization or procurement measures do not have that well of a defined path in the EU or EU MS procurement process, even though the human science based innovations uptake, would also request investments and funding. T4.1 will increase its research efforts to include the human science based innovation procurement EU landscape in forthcoming project months and years, and the findings will be reported accordingly in T4.1 deliverables.

3.1.4 EU-HYBNET WP5 "COMMUNICATION, DISSEMINATION AND EXPLOITATION ACTIVITIES"

Even though the main contribution of the EU-HYBNET project is to deliver results to the Three Lines of Action "Monitoring of research and innovation projects with a view to recommending the uptake or the industrialisation of results" is conducted in WP2-4, WP5 "Communication, Dissemination and Exploitation Activities"/ T5.1 "Dissemination and Communication Strategy and Plan",T5.2 "Dissemination and Communication Material and Measures" and T5.3 "Project Annual Workshops for Stakeholders" contribute to the topic.

T5.1 "Dissemination and Communication Strategy and Plan"

T5.1 "Dissemination and Communication Strategy and Plan" is responsible for creating the EU-HYBNET Dissemination, Communication and Exploitation (DCE) Plan and strategy. The DCE Plan and strategy are described in detail in D5.1 "Dissemination, Communication and Exploitation Plan" M3 (July 2020). EU-HYBNET DCE activities have been conducted according to D5.1 DCE plan and strategy. At present, the DCE plan and strategy is under review and will be updated to D5.2 "Midterm Project Dissemination Impact Assessment Report 1." M16 (August 2021). The update will include the DCE plan and strategy review and a list of research and innovation projects which have involvement within EU-HYBNET. In addition, the DCE will study the standardization opportunities. Therefore, in the following "Third Six Month Action Report" M18 (October 2021) cooperation between EU-HYBNET

and relevant EC funded research and innovation projects will be described with a special focus on the projects' research results, uptake recommendations and results for standardization opportunities.

T5.2 "Dissemination and Communication Material and Measures"

T5.2 is dedicated to dissemination and communications measures and hence T5.2 shares key information about the EU-HYBNET project activities and findings via the project website , Twitter and Linked-In accounts. An information sharing goal is to inspire other EC funded projects to interact with EU-HYBNET if they share similar interest and activities. The interaction with other projects, also supports one of the Three Lines of Action, "Monitoring of research and innovation projects with a view to recommending the uptake or the industrialisation of results" and will be descried in T5.1 next deliverable (D5.2) as mentioned in the subchapter of T5.1 above.

In addition, T5.2 has provided an *Innovation Arena* platform for EU-HYBNET consortium partners, Stakeholder Group members and network members, not only to announce their gaps and needs to counter hybrid threats but also to describe existing or wanted solutions to cover the identified gaps and needs. The information provided in the Innovation Arena is noted and benefitted by T3.1..

T5.3 "Project Annual Workshops for Stakeholders"

T5.3 is dedicated to the arrangement of the Annual Workshop, which was arranged in M12 (April 2021).

According to DoA Part A, T5.3 Annual Workshop event is arranged:

> "*… to disseminate project findings for large scale of stakeholders and to ensure vivid interaction with industry, academia and other providers of innovative solutions outside of the consortium with a view to assessing the feasibility of the project findings and possible recommendations to innovations uptake (incl. industrialisation) and standardisation (as requested in the GM-01 call, special conditions nr. 1, 3). Moreover, Annual Workshops will foster network activities, raise awareness of the project and bring together relevant practitioners and stakeholders who may to join to the EU-HYBNET network and its activities. Eventually the goal of the T5.3 is to bring sustainability of the project activities (incl. industrialisation and standardisation) and increase relevant members in the network*".

Due to one of the EU-HYBNET Annual Workshop goals, to focus on innovation uptake and recommendations related to it, in M12 (April) the first Annual Workshop included own session dedicated to the innovation pitches. Furthermore, months before the Annual Workshop EU-HYBNET announced the possibility for innovative solutions providers to suggest their innovation(s) as a measure to counter hybrid threats. This resulted in seven suggestions regarding different innovations that varied from training needs to technical innovations. Eventually, the three most promising innovations were selected for presentation during the Annual workshop – the selected three technical innovations and the providers were:

1. Provider: The Austrian Institute for Technology. Innovation: HYDRATE/ A technology-oriented approach to determining the credibility of online media and Open Source Intelligence
2. Provider: NORSECON. Innovation: Joint Human and Artificial Capabilities in Edges Operations
3. Provider: MALDITA. Innovation: a WhatsApp chat bot to detect, measure and combat disinformation

After the pitches, Annual Workshop participants had an opportunity to address questions to the innovation providers to learn more on the innovations and their promising nature. The participants were also requested to assess and rate the innovations innovations' uptake possibilities via questionnaire which was sent to them. The assessment criteria in the questionnaire originated from T3.1 and focused on the following three elements: 1) Excellence, 2) Impact and 3) Implementation; scale 1-5 (1: lowest, 5: highest). The use of the T3.1 assessment criteria in the questionnaire was to ensure that the results could be easily imbedded into T3.1 analysis work on most promising innovations. According to the questionnaires results, the ratings were as follows – the results are also described in ANNEX II:

Excellence

- According to the assessment, Innovation No. 1 and No. 3 received equal and high scores. Both of the innovations, No.1 and No. 33, received 38% to "excellent" in rating.
- Innovation No.2 received 28% to "excellent" in rating

Impact

- According to the assessment, Innovation No. 1 and No. 3 both received good scores, whereas No. 1 was rated a bit higher receiving 38% to "very impactful" in rating.
- The innovation No.3 received c. 28% to "very impactful" in rating.
- The innovation No.2 received c. 18% to "very impactful" in rating.

Implementation

- According to the assessment, Innovation No. 1 received 10% to "Very Doable" and 80% "Doable" in rating.
- The innovation No.3 received 70% to "Very Doable" and 13% "Doable" in rating.
- The innovation No.2 received 0% to "Very Doable" and 28% "Doable" in rating.

The Annual Workshop innovation presentations and assessment from the audience pointed out that developed innovations from projects (Innovation No.1, case of HYDRATE) and innovation development actions (No3. case Maldita and No.2. case Norsecon) do offer solutions to the identified gaps and needs to counter hybrid threats. Therefore, the identified and recommended solutions are also to be delivered for uptake and will continue, if possible, their industrialization and procurement activities. A more thorough analysis on the named innovations' usability will be delivered during T3.1 in their forthcoming deliverable D3.1 "First interim-report mapped on gaps and needs" M16 (August 2021).

3.2 COMMON REQUIREMENTS AS REGARDS INNOVATIONS THAT COULD FILL IN GAPS AND NEEDS

As mentioned in chapter 3.1, EU-HYBNET project activities were launched by identification of practitioners'[2] and other relevant actors' (industry, SMEs, academia, NGOS) gaps and needs and vulnerabilities to counter hybrid threats, in EU-HYBNET Tasks (T) 2.1 "Needs and Gaps Analysis in Knowledge and Performance" (lead by Hybrid CoE) and T2.2 "Research to Support Increase of Knowledge and Performance" (lead by JRC). The work conducted in T2.1 and T2.2 resulted in D2.9 "Deeper analysis, delivery of short list of gaps and needs" (M5/ September 2020) where the most important pan-European practitioners' and other relevant actors' (industry, academia, NGOs) gaps and needs to counter hybrid threats were listed.

The identified gaps and needs in D2.9 provide the basis for other EU-HYBNET Tasks to proceed in their work related to innovation mapping to gaps and needs, finding most promising innovations and to compile recommendations for innovation uptake and standardization.

What comes to the second Three Lines of Actions focus area, namely "Common requirements as regards innovations that could fill in gaps and needs" the research activities and results are delivered from a common requirements point of view in T3.1 "Definition of Target Areas for Improvements and Innovations" (lead by TNO), T2.4 "Training and Exercises for Needs and Gaps" (lead by L3CE) and T4.2 "Strategy for Innovation uptake and industrialization" (lead by RISE). On the whole, T2.4 has also provided input to T3.1's proceeding because it delivers material and support for T3.1 analyses. In addition, the situation is the same in the case of T3.1 and T4.2 where T3.1 has delivered material for T4.2 analysis. Furthermore, T2.2 "Research to Support Increase of Knowledge and Performance" has also delivered results that support T3.1, T2.4, T4.2, to proceed. The results from each of the named EU-HYBNET Tasks are described in the forthcoming sub-chapters.

3.2.1 EU-HYBNET T3.1 DEFINITION OF TARGET AREAS FOR IMPROVEMENTS AND INNOVATIONS

The T3.1 goal is to find the most promising innovations to gaps and needs. Therefore, T3.1 has prepared an assessment methodology to conduct a profound analysis about the common requirements of innovations that may fill identified gaps and needs. A key element in the assessment is a rating that supports the categorization of the suggested innovations from each other and finds

[2] A practitioner is defined in EU-HYBNET as the following (DoA Part B, Chapter 3.3): *A practitioner is someone who is qualified or registered to practice a particular occupation or profession in the field of security or civil protection*." In addition, practitioners in the context of hybrid threats are expected to have a legal mandate to plan and take security measures, or to provide support to authorities countering hybrid threats. Accordingly, EU-HYBNET practitioners are categorized as follows: I) *ministry level* (administration), II) *local level* (cities and regions), III) *support functions to ministry and local levels* (incl. Europe's third sector).

the most promising ones to address further investigations. The **rating methodology and approach to conduct the innovation assessment includes the following elements:**

General rating

- Excellence, Impact and Implementation (incl. sub-criteria)

Scoring

- Scores 1-5, using a score card; including explanation, remarks, recommendations. (1: lowest score, 5: highest score)

Additional assessment by consortium partners

- For each innovation, 3 consortium partners assigned for assessment (the 'Assessors')
- Max. 4 innovations (in same target area) per assessor, all consortium partners involved
- Assessors have not yet been involved in the innovation (nor initiating, nor reviewing)
- Mix of assessors: 1-2 specialists in a particular area and 1-2 process/proposal reviewers

Before the rating and assessment described above, T3.1 had selected the 27 most promising innovations for deeper analysis conducted with the assessors. The 27 innovations were described in the earlier subchapter dedicated to the first of the Three Lines of Action. The goal of the assessment was to reduce the 27 most promising innovations to a smaller focus group. The assessment was successful in that eventually about ten (10) innovations were assessed as (very) promising due to the use of criteria: Excellence, Impact and Implementation.

Next to the innovation assessment, T3.1 has identified certain qualities that the 10 most promising innovations possess. The nominators are:

- Most solutions are technology based (85%), but require organizational changes
  - ✓ E.g. Open European Quantum Key Distribution testbed
  - ✓ Focus on cyber and ICT
- Artificial Intelligence (AI) identified as the most critical (enabling) technology; other key technologies are cyber, big data, quantum and ICT
- For all solutions, the ministry level of practitioners were considered to play an important role
  - ✓ E.g. policy making, legislation, international cooperation/agreements, users
- All solutions are aimed at improving resilience and defence

- ✓ No offensive (counter-attack) innovations have been identified
- ✓ Legal and ethical issues?

- For 50% of the solutions the expected time-to-market is less than 2 years
  - ✓ Some are already on the market but not yet fully exploited (for countering hybrid threats)
  - ✓ Only 2 solutions were estimated to have a time-to-market longer than 5 years?

Results from T3.1 are described in detail in D3.1 "First interim-report mapped on gaps and needs" M16 (August 2021) , as mentioned above it is seen that innovations' common requirements to fill gaps and needs, but practitioners' innovation uptake on technological solutions also plays a key role. Many of the innovations are close to market up-take and hence their uptake and final investments could be recommended. Furthermore, technological development, especially in the field of IA, quantum computing, and cyber are key enablers to certain innovations. This will not only request development of technology but also the skills required to use the modern technology. According to T3.1, the most challenging part of innovations uptake will be in implementation. In short, many of the assessed innovations seem to provide high impact and added value in countering hybrid threats but simultaneously seem to face implementation challenges such as: costs, manpower, societal acceptance, legal and ethical restrictions, and multinational alignment.

3.2.2 EU-HYBNET T2.4 TRAINING AND EXERCISES FOR NEEDS AND GAPS

As described in earlier in chapter 3.1, Task 2.4 " "*Training and Exercises for Needs and Gaps*" delivered material for T3.1 because T2.4 training activities included selected innovations assessment by the training event participants. The innovation assessment results are summarized and reported under the chapter 3.1, sub-chapter WP2 T2.4. The innovation assessment in T2.4 is also important for WP4, and especially for T4.2 "Strategy for Innovation uptake and industrialization". The input of T4.2 for the Three Lines of Action "Common Requirements Regarding Innovations that Could Fill in Gaps and Needs" is reported in the next subchapters.

However, T2.4 general finding to the Three Lines of Action "Common Requirements Regarding Innovations that Could Fill in Gaps and Needs" is that those innovation which were most mature, were not always selected for innovation testing alike non-technical innovations to technical innovations were seen alike important to have to counter hybrid threats. Therefore, innovations' common requirements to fill gaps and needs to counter hybrid threats will target both mature innovations and those innovations that are still in development phase. In addition, innovations that are non-technical are regarded as valuable and different types of common requirements apply to them. E.g. innovation on "Debunking on Fake News" may also ask human intelligence and skills for definitions.

3.2.3 EU-HYBNET T4.2 STRATEGY FOR INNOVATION UPTAKE AND STANDARDIZATION

The Task 4.2 ”Strategy for Innovation uptake and industrialization” is according to DoA Part A to:

> *[…] define a concrete strategic approach for innovation uptake and industrialisation. The strategy will cover the four project core themes. Furthermore, other topics indicated as being of high importance by the practitioners will be included. The task will identify benchmark cases for innovation uptake in other sectors based on T4.1 results and assess them to understand the mechanisms behind good practices and where pitfalls may occur. Then, based on the gaps and ongoing research and industrial development as identified by T3.1 and T3.2, new approaches and procedures for innovation uptake will be formulated. For each project cycle an innovation uptake strategy for the most promising areas will be developed. Special attention will be given to innovation procurement, as it is a crucial step towards breaching the gap between the buyers group and the industry. Furthermore, the most promising areas for future PCPs or PPIs will be identified and a roadmap developed including timeframes, actors and recommended procedures to be followed. The strategy prepared under T4.2 will be fed in T4.4 for the preparation of relevant publications on the strategy and methodology for innovation uptake and industrialisation*

Even though T4.2 contributes also to the first of the three lines of action (“Monitoring of research and innovation projects with a view to recommending the uptake or the industrialisation of results”), T4.2 activities have major input to the second of the Three Lines of Action: innovations common requirements to fill in gaps and needs. This is especially highlighted in the innovation uptake canvas that T4.2 has been developing.

The innovation uptake canvas has strong relation to EU-HYBNET WP2 and WP3 results. In short, T4.2 is dependent on T2.2 definition of the most important gaps and needs to counter hybrid threats, alike T3.1 and T2.4, the most promising innovations selection and innovations assessment. When the research results regarding the most promising and wanted innovations is gained, the Innovation Canvas in T4.2 solves following (1.) technological, (2.) organizational and (3.) environmental common requirements of innovations to fill gaps and needs. Each of the three mentioned focus areas is planned to include sub-themes to define common requirements for the innovation uptake – they are following:

Technology

- Technology characteristics (basics)
- Alternative solutions (if existing, what is missing)

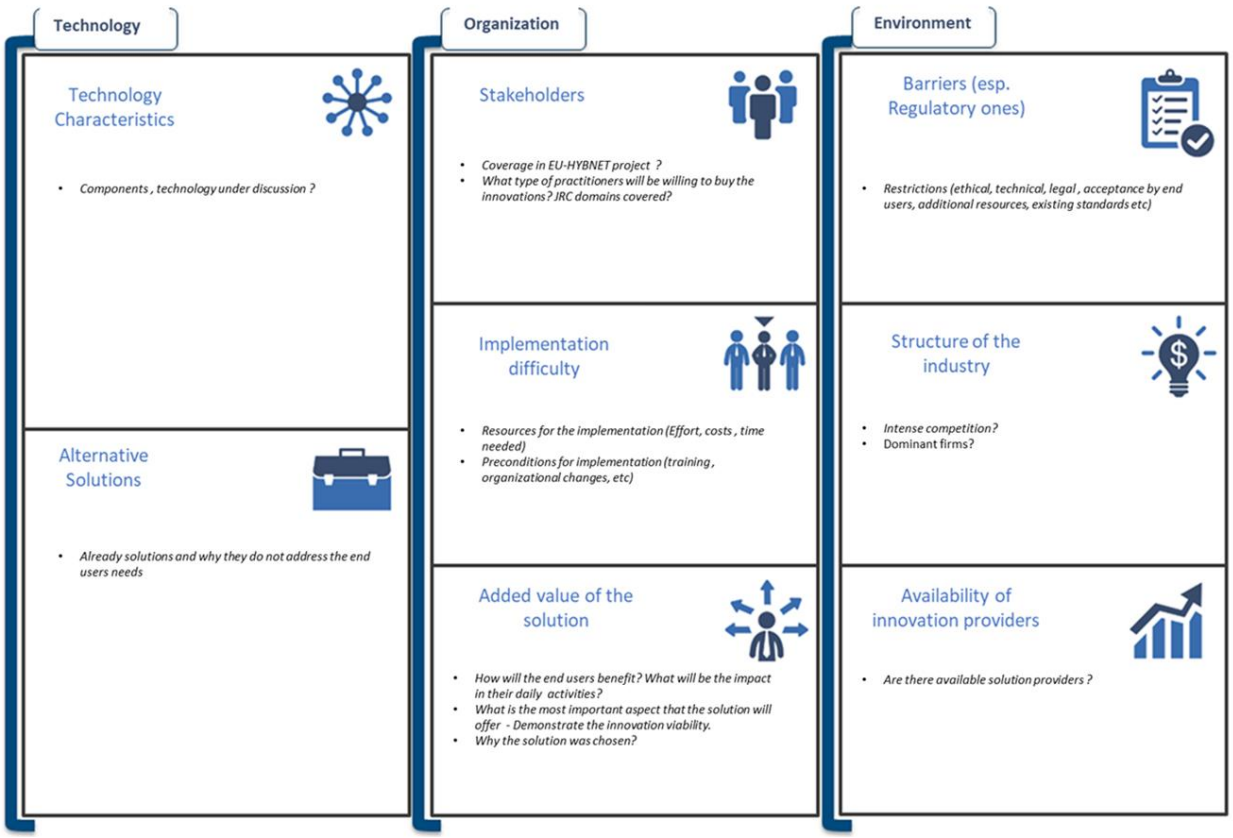
Organizations

- Stakeholders (Who are they? What domain is in question?)
- Implementation difficulty (What are the common requirements that the innovation uptake asks? Skills? Cost? Time?)
- Added value of the solutions (Impact to daily activities? Benefit of use?)

Environment

- Barriers (Technical, ethics etc. restrictions to take the innovation into use? Additional resources needed?)
- Structure of the industry? (Do providers exist already?)

The T4.2 present Innovation Canvas plan (draft) is described in the picture below:



T4.2 will prepare an Innovation Canvas from each of the EU-HYBNET project four core themes and most the promising innovations to describe the common requirements and basis of the innovations to fill gaps and needs. Furthermore, the next step in T4.2 is to focus on procurement procedures (special attention to innovation procurement), benchmark cases, pitfalls, and procurement obstacles regarding the procurement of innovative solutions. This alike the canvas will support delivery of recommendations on the innovation uptake and industrialization. T4.2 results will be reported in D4.4 “1st Innovation uptake, industrialisation and research strategy” M17 (September 2021), and hence the key findings from T4.2 to the second of the Three Lines of Acton will be summarized in the next “Third Six Month Action Report” D1.4 in M18 (October 2021).

3.2.4 EU-HYBNET T2.2 RESEARCH TO SUPPORT INCREASE OF KNOWLEDGE AND PERFORMANCE

In T2.2 “Research to Support Increase of Knowledge and Performance” research was conducted by collecting state-of-the-art knowledge to investigate solutions to identified gaps and needs under

each of the project's core themes. Each of project's core themes delivered a research article, the major findings of which are described in detail in D2.12 "Articles and publications on themes and measures" (M12/ April 2020). In relation to the second of the Three Lines of Action, "Common Requirements as Regards Innovations that Could Fill in Gaps and Needs" a research article from the core theme "Cyber Future Technologies" pointed out emerging vulnerabilities caused by new technologies and significant innovations, such as quantum computing. In the article a thorough framework is provided on potential disruptive applications, post quantum security impacts and dynamics. The research contributes to the common understanding of the interaction between cyber and hybrid threats and contributes to the recommendations of solutions for European actors. WP4 T4.2 and T4.3 will benefit from the research findings in their work to finalize the common innovation requirements to fill in gaps and needs.

3.3 PRIORITIES AS REGARDS OF INCREASING OF KNOWLEDGE AND PERFORMANCE REQUIRING STANDARDISATION

In EU-HYBNET the main tasks which contribute to the third of the Three Lines of Action "Priorities as Regards of Increasing of Knowledge and Performance Requiring Standardisation" are T4.3 "Recommendations for Standardization" (lead by PPHS) and T4.4 "Policy Briefs, Position Paper, Recommendations on Uptake of Innovations and Knowledge" (lead by Hybrid CoE); however, also WP2 T2.2 "Research to Support Increase of Knowledge and Performance" (lead by JRC), T2.3 "Training and Exercises Scenario Development" (lead by KEMEA) and T2.4 "Training and Exercises for Needs and Gaps" (lead by L3CE) also provide input to the issue. Following subchapters describe the contribution from each of the named task.

3.3.1 EU-HYBNET T2.2 RESEARCH TO SUPPORT INCREASE OF KNOWLEDGE AND PERFORMANCE

In T2.2 "Research to Support Increase of Knowledge and Performance" research was conducted by collecting state-of-the-art knowledge to investigate solutions to the identified gaps and needs under each of the project's core themes. Each of project's four core themes delivered a research article, the major findings of which are described in detail in D2.12 "Articles and publications on themes and measures" (M12/ April 2020).

In relation to the third of the Three Lines of Action, "Priorities as Regards of Increasing Knowledge and Performance Requiring Standardization" a research article from the core theme "Future Trends of Hybrid Threats" analysed a variety of ways, means and effects of intelligence analysis on the decision-making and influencing process, which can lead to prioritization schemes in relation to knowledge and performance. This information benefits T4.4 in the creation of EU-HYBNET policy briefs and position papers.

3.3.2 EU-HYBNET T2.3 TRAINING AND EXERCISES SCENARIO DEVELOPMENT

T2.3 "Training and Exercises Scenario Development" contributes to the third of the Three Lines of Action "Priorities as Regards of Increasing Knowledge and Performance Requiring Standardization" from a knowledge and performance point of view because T2.3 is dedicated to developing the EU-HYBNET training and exercises scenarios and injects. The first EU-HYBNET training event took place in M12 (April 2021).

T2.3 formulated the scenario and the injects to support innovation testing and to learn the measures to counter hybrid threats according to the four core themes. The innovations to test were recommended by WP3 to T2.3, while T2.3 needed to focus on the most promising innovations. After all, not all of the discovered 40+ innovations could be imbedded to the injects. Furthermore, the injects

focused on the identified pan-European practitioners and other relevant actors (industry, academia, NGOS) gaps and needs discovered in T2.2 D2.9. The goal of the injects was to provide a basis for the training that supports the participants to learn and gain the skills needed in the measures to counter the presently identified hybrid threats. To ensure that the injects would provide new skills for the training audience and the innovations to be tested would empower the skills and measures to counter hybrid threats, the following planning template was used in T2.3:

Core Theme	Targeted Need(s)

Target Audience	Prior knowledge

Innovation Focus

Training objectives/ impact	*Knowledge*	
	Skills	

Scenario description

Material / Preparatory activities

Methodology for measuring whether the impact was achieved

Proposed Training

Instructional method: ☐ Demonstration ☐ Lecture ☐ Gamification ☐ … Training Duration: Tools:

To ensure the training focused on the increasing of pan-European knowledge and performance, T2.3 and EU-HYBNET Stakeholder Group member, European Security and Defence College (ESDC) cooperated in the training approach planning. In addition, ESDC supported the review of some of the training injects to ensure the injects would have novel touches. According to the cooperation between ESDC and T2.3, the EU-HYBNET training decided to follow a "people – processes -

technology" approach to ensure skills and knowledge focused training and to deliver sound innovation testing and assessment.

The training scenario was selected to focused on pandemics because of the present Covid-19 pandemic has caused challenging situations for many EU MSs which have benefitted hybrid attacks on Europe. Therefore, the skills and knowledge of hybrid threats in the case of pandemics was seen as a priority. The injects that were built around the scenario followed the EU-HYBNET four core themes. This is to ensure that EU-HYBNET delivers non-stop solutions, skills and information to the present pan-European challenges to counter hybrid threats within the four project focus areas which are: Future Trends of Hybrid Threats; Cyber and Future Technologies; Resilient Civilians, Local Level and National Administration; Information and Strategic Communication.

Each of the four core themes contributed three injects and the topics were selected to deliver training according to priorities to increase pan-European knowledge and performance requiring Standardization on the most important fields for society.

Core theme "Future Trends of Hybrid Threats"

Vignette1. Strategic inter-agency coordination – need for damage assessment and contingency management at strategic level.

- Inject 1. coordinated attack on hospital and arson on migrant camp, confusing governmental communication
- Inject 2: supply-chain disruption following attack on automated power grid time management devices
- Inject 3: political hyper-personalized advertisement

Core theme: Cyber and Future Technologies

Vignette 2: Attacks on financial sector, vaccine chain and individual data – need for responses.

- Inject 1: financial sector attack and massive bank and individual data breach
- Inject 2: vaccination supply chain attack through phishing of supplies
- Inject 3: fake news / disinformation

Core theme "Resilient Civilians, Local Level and National Administration"

Vignette 3: Sanitary restrictions and regionalized protest and movement – need for integration

- Inject 1: Governmental trust building
- Inject 2: Marginalized groups used as a tool to harm stability in society
- Inject 3: Critical supply chain authority notices failure in its critical supply chain(s)

Core theme "Information and Strategic Communication"

Vignette 4: Stratcom and state-citizen-Media trust

- Inject 1: Regional crises

- Inject 2: Deep fakes in social media
- Inject 3: Regional neglect

The training scenario and injects are described in detail in D2.17 “Training and Exercise, Scenario delivery” M10 (February 2021). Due to D2.17, T2.3 provided a hand over of the training content and event planning to the T2.4 “Training and Exercises Scenario Development”; T2.4 is the EU-HYBNET Task were the trainings are arranged and the increase of knowledge and performance will concretely takes its place.

3.3.3 EU-HYBNET T2.3 TRAINING AND EXERCISES FOR NEEDS AND GAPS

T2.4 “Training and Exercises for Needs and Gaps” is responsible for training arrangements and innovations assessment according to the T2.3 plans. The results of the innovation assessment are described in this deliverable under chapter 3.1 sub-chapter T2.4.The training participants feedback on the event’s success to enhance knowledge of hybrid threats and to empower skills and training participants’ performance to counter hybrid threats is reported in the subchapter below. The thorough report on the training event is delivered in T2.4 D2.20 “Training and exercises delivery on up-to-date topics” M12 (May 2021).

According to the assessment of the training arrangements and content of the training itself, participants saw the training as important and that they learned a lot from it. It was also mentioned that the training contributed to understanding the complexity of hybrid threats and the need for large scale cooperation among different authorities and actors in the society. However, according to the assessment, an improvement to the training could be to offer more detailed presentation on the innovations that will be tested during the training. This can be done in the next EU-HYBNET training event, however, the innovations tested during the first training event were seen as valuable and to answer to the priorities and needs.

Due to the positive training assessment, T2.3 and T2.4 have been successful to select the themes and innovations to the training that are seen to answer to the present needs to counter hybrid threats and to contributed to the priorities as regards of increasing knowledge and performance requiring standardization.

3.3.4 EU-HYBNET T4.3 RECOMMENDATIONS FOR STANDARDIZATION

The EU-HYBNET T4.3 “Recommendations for Standardization” has a central role in delivering results to the third of the Three lines of Actions “Priorities as Regards of Increasing Knowledge and performance Requiring Standardization” focusing on areas and innovations that recommend the scope of countering hybrid threats for standardization. A note to T4.3 research, is that T4.3 does not focus on standards development or standards creation. Therefore, T4.3 has solved the key existing

features, including EU policies that support recommending the identified, most promising EU-HYBNET areas and innovations for standardization.

On the basis of T3.1s' 27 most promising innovations identified and T2.2 D2.9 "Deeper analysis, delivery of short list of gaps and needs", T4.3 has conducted research and discovered six (6) priority areas of increasing knowledge, performance and innovations requiring standardization. The six priority focus areas are in line with the EU-HYBNET project four project core themes. Still, some additional and more detailed focus areas have been raised into analysis because they are seen to highlight present needs to prioritize knowledge and performance in standardization. The six *focus areas* in prioritizing knowledge and performance that require standardization are:

1. Big data
2. Critical Goods and Commodities
3. Cyber Security
4. Fake News and Disinformation
5. Resilient civilians
6. Strategic Communication

Next to the focus areas, T4.3 has started research for deeper analysis on standardization environment and needs. The template includes four themes where collected research information is analyzed in seven sub-fields (i-vii). The four research themes are (1) definition of regulation; (2) new business models; (3) new categorizing technologies, (4) information protection. The use of this approach is described below in the context of "Big Data" case study:

Theme 1. "Defining a set of regulation for using *big data* in political campaigning"

i. Relevant document initiative,
ii. Description,
iii. Links,
iv. State of Pay,
v. Recommendation: Legal/ Standardization,
vi. Explanation on recommendation,
vii. Relevant Institutions

Theme2. "To consider new business models for data aggregation where the individual is the owner and trader of his data"

i-vii sub-fields to analyze

Theme3. "New Categorizing Technologies"

i-vii sub-fields to analyze

Theme4. "Are personal information protection regulation up to date in the EU"

i-vii sub-fields to analyze

The research of the seven knowledge, performance and innovation area context is conducted according to the four research themes and seven sub-fields, of which the final results of the research

will be reported in D4.8 "1st Report for standardisation recommendations" M19 (December 2021). However, T4.3 has already recognized the importance to connect the recommendations for standardization to the existing and the latest EU policies. The focus is to ensure that the knowledge, performance and innovation areas prioritized and recommended for standardization in the context of hybrid threats, has acknowledged the existing EU policies.

Therefore, EU policies will support measures to proceed in standardization priority recommendations to increase knowledge and performance to counter hybrid threats.

3.3.5 EU-HYBNET T4.4 POLICY BRIEFS, POSITION PAPERS, RECOMMENDATIONS ON UPTAKE OF INNOVATIONS AND KNOWLEDGE

According to the EU-HYBNET DoA Part A, T4.4. "Policy Briefs, position paper, recommendations on uptake of innovations and knowledge" will start on M15 (July 2021). However, according to the EU-HYBNET Objective (OB.) 7 and its key performance indicator (KPI) 7.4 a position paper needs to be delivered from the project already during the first project year, M12 (April 2021), at latest. The OB7. and KPI7.4 is described below:

OB7. To create a basis for establishing effective synergies with existing European, national and sub-national networks of practitioners and other actors countering hybrid threats			
Goal		**KPI description**	**KPI target value**
7.4	To inform EU MS national policymaking bodies and other European actors with EU-HYBNET results	Events directed at policy makers and related parties organized; position papers on project results written up	-At least 2 yearly events where project results are shared -A position paper per year on project results

Due to the need to deliver the first Position Paper or Policy Brief from the project, T4.4 activated already in M12 (April 2021) to deliver the document. The format was selected a Policy Brief which would address "Framing the information domain vulnerabilities" and highlight "Priorities as Regards of Increasing of Knowledge and Performance Requiring Standardisation". The Policy brief is linked to the legislative and policy developments of the Digital Services Act and the European Democracy Action Plan. The topic of the policy brief, "Framing the information domain vulnerabilities" was selected due to its importance not only to authorities but also to citizens in the context of hybrid threats, hybrid attacks and hybrid influencing.

In general, it is seen that the gradual development of a different kind of information circulation has unsettled the dynamics of information and cognitive security. With reference to this, EU-HYBNET has identified the present business models in journalism's to weaken democratic barriers against manipulated information. Furthermore, there is a need for citizens and authorities to better understand the circulation of disinformation, misinformation and manipulated information to recognize its hybrid influence and to be less vulnerable to it. In addition, it is seen that private individual data has become a central product of a market from which consumers are largely excluded. Therefore, the following priorities in knowledge and performance are suggested:

- Definition of harmful information content is needed
- Solid categorization of manipulative practices of information circulation asks more research, and citizens and authorities should be informed on the general manipulation practices
- Algorithms that will support counter-disinformation in real time is needed
- Practices centered on debunking “fake news” must be based on scale and the constitution of networks and pools of experts.
- Deconcentrating fact checking should be privileged to take advantage of and connect expertise, while retaining a margin of maneuver for proactive approaches.
- Potential target groups of information manipulation should be warned

With reference to the lines above, they include many identified priorities regarding the increase of knowledge, performance l and innovations, requiring standardization. Therefore, the information is important not only for EU-HYBNET to carry on, but also for European decision makers, EU MSs and other relevant EU projects to see as key focus areas in the future to counter hybrid threats.

4. CONCLUSION

4.1 SUMMARY

We have now described how the EU-HYBNET project activities from the second six project months (November 2020 - April 2021) contributed to the Three Lines of Action. In addition, the document has highlighted how the work in the Tasks will continue and what kind of results EU-YBNET is expected to achieve in the Three Lines of Action during the next six months.

In Section 2. we explained the importance of the Six Month Action Report to the project proceeding and quality control. In addition, we gave a short description of the contributors to the Six Month Action Report.

In Section 3. we showed how the EU-HYBNET project tasks and project actors have contributed and will contribute in the next six months to the Three Lines of Action to reach the set project goalsg.

In Section 4. we provided a summary of the deliverables and explained their importance to the project's proceeding and what are the next actions to follow.

4.2 FUTURE WORK

During the second six month action reporting period, all EU-HYBNET project tasks have started their work and contributed to the Three Lines of Action which will continue in the next reporting period. During the next project period, the following eleven (11) deliverables and two (2) milestones will be delivered:

Deliverables (D):

Task (T) 4.3 Innovation and Knowledge Exchange Events

- Deliverable (D) 3.14 First Future Trends Analysis Workshop Report (Hybrid CoE), month (M) 13

T4.1 Mapping on the EU Procurement Landscape

- D4.1 First report on the procurement environment (KEMEA), M13

T5.3 Project Annual Workshops for Stakeholders

- D5.10 Annual Workshop Report 1 (Hybrid CoE), M13

T2.4 Training and Exercises for Needs and Gaps

- D2.23 First Training and Exercises Lessons Learned Report (HCOE), M14

T3.1 Definition of Target Areas for Improvements and Innovations

- D3.1 First Interim Report Mapped on Gaps and Needs (TNO), M16

T5.1 Dissemination and Communication Strategy and Plan

- D5.2 Midterm Project Dissemination and Impact Assessment Report 1 (URJC) M16

T4.2 Strategy for Innovation Update and Industrialization

- D4.4 "1st Innovation Uptake, Industrialization Research Strategy (RISE), M17

T2.4 Training and Exercises for Needs and Gaps

- D2.26 "Training and exercises scenario& training material" (KEMEA), M17

T1.1 Administrative and Financial Planning and Coordination

- D1.4 "3rd Six Month Action Report" (Laurea), M18

T2.1 Needs and Gaps Analysis for Knowledge and Performance

- D2.5 Second Gaps and Needs Event (Hybrid CoE) 18

T5.1 Dissemination and Communication Strategy and Plan

- D5.3 Updated DCE Plan (EOS), M18

Milestones (MS):

- MS13/ II Project Cycle will start, month (M) 18
- MS23/ Strategy started for innovation uptake and industrialisation will be ready, M17

As the deliverables and milestones highlight, the EU-HYBNET project will deliver many more results to the Three Lines of Action in the forthcoming months. The aim and value of the Six Months Action report is to track the results and to highlight their importance for the project proceeding, and to empower the pan-European measures and extension of the pan-European network to counter hybrid threats

ANNEX I. GLOSSARY AND ACRONYMS

Table 1 Glossary and Acronyms

Term	Definition / Description
EU-HYBNET	Empowering a Pan-European Network to Counter Hybrid Threat –project, No. 883054
EC	European Commission
GA	Grant Agreement
DoA	Description of Action Part A and B
D	Deliverable
WP	Work Package
T	Task
M	Month
MS	Milestone
OB	Objective
KPI	Key Performance Indicator
NoP	Network of Practitioners project
RI	Research and innovations
EU MS	European Union Member State
INCLUDING	INNOVATIVE CLUSTER ON RADIOLOGICAL AND NUCLEAR EMERGENCIES; EC funded project
CBRN-E	Chemical, biological, radiological, nuclear – explosives
I-LEAD	Innovation – Law Enforcement Agency's Dialogue; EC funded project
MI-ICT	ICT Enabled Public Services for Migration; EC funded project
MEDEA	Mediterranean and Black Sea Security Practitioners Network; EC funded project
SPARTA	Cybersecurity Competence Network ;EC funded project
DTAG	Game format used in EU-HYBNET training event
IoS	Selected Innovations for testing
ESDC	European Security and Defence College
Satways	EU-HYBNET partner
TNO	Nederlandse Organisatie voor Toegepast Natuurswetenschappelijk Onderzoek, EU-HYBNET partner
JRC	Joint Research Centre/ European Commission, EU-HYBNET partner
EOS	European Organization for Security, EU-HYBNET partner
Hybrid CoE	The European Centre of Excellence for Countering Hybrid Threats, EU-HYBNET partner
PLV	Velencia Local Police, EU-HYBNET partner
L3CE	Lietuvos Kibernetiniu Nusikaltimu Kompetenciju ir Tyrimu Centras, EU-HYBNET partner
PPHS	Polish Platform for Homeland Security, EU-HYBNET partner
KEMEA	Kentro Meleton Asfaleias, EU-HYBNET partner
URJC	Univeristy of Rey Juan Carlos, EU-HYBNET partner
Maldita	EU-HYBNET partner

RISE	Research Institutes in Sweden, EU-HYBNET partner
UiT	Arctic University in Norway, EU-HYBNET partner
Laurea	Laurea University of Applied Sciences, EU-HYBNET coordinator

ANNEX II. REFERENCES

[1] European Commission Decision C (2014)4995 of 22 July 2014.

[2] Communicating EU Research & Innovation (A guide for project participants), European Commission, Directorate-General for Research and Innovation, Directorate A, Unit A.1 — External & Internal Communication, 2012, ISBN 978-92-79-25639-4, doi:10.2777/7985.

ANNEX III. WORKSHOP PROGRAMS

T3.4 Innovation and Knowledge Exchange Workshop - Program

Time	Topic	Speaker(s)
10.00-10.10	Opening remarks	Mr. Paolo Venturoni, CEO, EOS
10.10-10.30	Welcome & Introduction	Dr. Päivi Mattila, the Director of Security Research Program Laurea, EU-HYBNET Coordinator
10.30-11.00	Intervention on the EU policy framework on hybrid threats	Mr. Max Brandt, Policy Officer, DG HOME, European Commission Mr. Maciej Szymański, Policy Officer, DG DEFIS, European Commission
11.00-11.40	The extension of the European Network against hybrid threats and its sustainability Q&A	Dr. Hanna Smith, Director of Research and Analysis Hybrid CoE
11.40-11.50	**Break**	
11.50-12.00	Critical gaps and needs in knowledge and performance in relation to innovations Q&A	Dr. Rick Meessen, Principal Advisor Defence, Safety and Security, TNO
12.00-13.00	**Lunch**	
13.00-14.30	**Roundtable I** *Industry view to innovations answering Pan-European practitioners and other relevant stakeholders' needs countering hybrid threats, in relation to:* •*Resilient civilians, local level, and administration* •*Cyber and future technologies* •*Information and strategic communications* •*Future trends of Hybrid Threats*	**Moderator:** Ms. Maria Chiara Properzi, Policy Manager, EOS Speakers: • Antoine-Tristan Mocilnikar, General Mining Engineer, (Ministère de la Transition, écologique, France) • Radu Pop, Head of Infrastructures and Frontier Security Solutions Sales, (Airbus) • Dr. Shahid Raza, Director of Cybersecurity Unit, (Research Institutes of Sweden – RISE) *TBC*
14.30-14.40	**Break**	
14.40-16.10	**Roundtable II** *Unknown threats and low-technology threats – status of the art, and future challenges, in relation to:* •*Resilient civilians, local level, and administration* •*Cyber and future technologies* •*Information and strategic communications* •*Future trends of Hybrid Threats*	**Moderator:** Ms. Elodie Reuge, Crisis Management Project Manager Speakers: • Mr Athanasios Grigoriadis, Senior Cyber Security Expert, Kentro Meleton Asfaleias (KEMEA) • Mr. Vito Morreale, Director of the Industry and Security Technology, Research, and Innovation (IS3), Lab, (Engineering) • Dr. Rubén Arcos Martín, Risk Lecuter and researcher of Communication sciences, (Universidad Rey Juan Carlos)
16.10-16.20	**Break**	
16.20-17.00	Closing remarks & Wrap Up	Isto Mattila, RDI director Laurea, EU-HYBNET Innovation Manager

T3.4 Future Trends Workshop - Program

Agenda

Time (CET)	Topic	Speaker(s)
08.00	Introduction	**Teija Tiilikainen**, Director of the European Centre of Excellence for Countering Hybrid Threats.
08.15	Keynote speech	**Jyrki Katainen**, President of The Finnish Innovation Fund Sitra
08.45	Q&A from the audience	
09.00	**Coffee Break**	
09.15	Panel discussion: Megatrends and European security	**Jaana Tapanainen-Thiess** Secretary General Government Foresight Group 2020-2023 Prime Minister's Office, Finland **Ilmars A. Lejins** Brigadier General (OF-6 LV) Assistant Chief of Staff - Joint Force Development NATO Strategic Allied Command Transformation **Dimitri Lorenzani** Member of Cabinet of Maroš Šefčovič, Vice-President for Inter-institutional Relations and Foresight European Commission
10.45	**Coffee Break**	
11.00	Breakout sessions (including 10-minute break)	1.Intelligent infrastructures – new IT and smart cities 2.New geography – changing identities and power relations 3.New drivers of the information domain – platforms ownership, flows and influence
13.00	**Lunch**	
14.00	Closing panel (inputs from the breakout sessions)	**Gunhild Hoogensen-Gjørv**, Professor, Critical Peace and Conflict Studies, Centre for Peace Studies, UiT The Arctic University of Norway **Ruben Arcos**, Lecturer and researcher in Communication sciences, Rey Juan Carlos University in Spain **Hanna Smith**, Director of Research and Analysis, European Centre of Excellence for Countering Hybrid Threats, Hybrid CoE **Evaldas Bruze**, Lithuanian Cybercrime Center of Excellence for Training Research and Education
15.00	Closing remarks	
15.15	**End of the day**	