EU-HYBNET

FIRST REPORT ON STANDARDISATION RECOMMENDATIONS

DELIVERABLE 4.8

Lead Author : PPHS

Contributors : KEMEA, L3CE, ZITiS; Laurea, Satways
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D4.8 FIRST REPORT ON STANDARDIZATION RECOMMENDATIONS

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Main authors:	Magda Okuniewska, Bartlomiej Ostrowski, Rashel Talukder	PPHS
Contributors:	Maria Kampa	KEMEA
	Egidija Versinskiene Edmundas Piesarskas Evaldas Bružė	L3CE
	Michael Meisinger	ZITiS
	Päivi Mattila, Isto Mattila	Laurea
	Souzanna Sofou	Satways

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TABLE OF CONTENTS

1. INTRODUCTION

1.1 OVERVIEW

As described in "Empowering a Pan-European Network to Counter Hybrid Threats" (EU-HYBNET) Grant Agreement, "the main goal of Work Package (WP) 4 "Recommendations for Innovation Uptake and Standardization" task (T) 4.3 is according to the WP4 T4.3 description to map the current status and identify needs and possibilities for standardisation in the context of innovations that are seen most promising to fullfill the practtioners gaps and needs to counter hybrid threats.

The main objective of this document is present how T4.3 partners have mapped the current status and developed recommendations in the area of standardisation, legal harmonisation and best practices, in regards to gaps and needs identified in WP2 and the most promising innovations identified in the WP3 "Surveys to Technology, Research and Innovations" especially in T3.1 "Definition of Target Areas for Improvements and Innovations" (deliverable 3.1) and WP4, T4.2 "Strategy for Innovation uptake and industrialization" (deliverable 4.4). The task is supported by various partners who have started from the development of methodology on how to conduct work within the task in the next 5 years. Based on this, task 4.3 main partners (PPHS, KEMEA, L3CE and ZITiS) started to work on the reports which are presented in this document.

The figure below shows where Work Package 4 is located on the EU-HYBNET structure of work packages and how it is related with other packages.
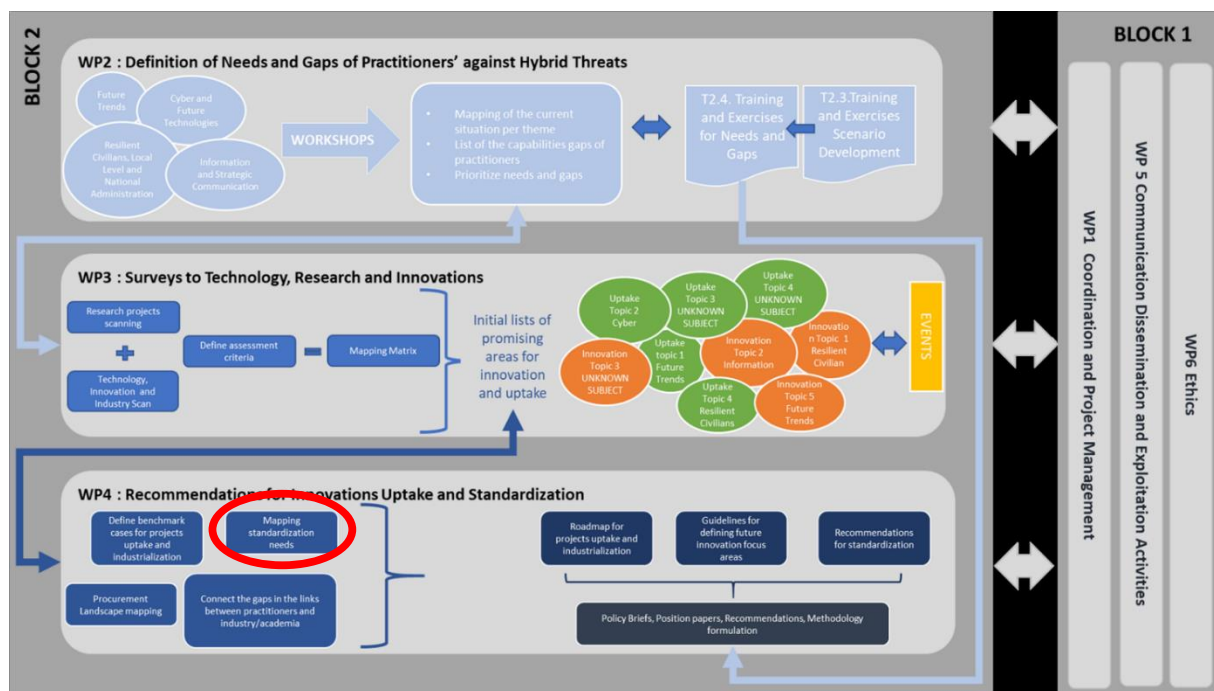
Figure 1 EU-HYBNET Structure of Work Packages and Main Activities

1.2 METHODOLOGY AND MAIN OBJECTIVES OF TASK 4.3

The main objective of Task 4.3 is the description of the current state of play within the selected areas. The selection of areas to focus on was preceded by a thorough analysis done by Task 4.3 partners of the outcomes of WP2 and WP3 with a major emphasis on Deliverables 2.1 and 2.9. Basing on those findings, 6 areas were selected and the work was distributed among partners:
1) Big data (ZITiS)
2) Critical goods and commodities (KEMEA)
3) Cybersecurity (L3CE)

4) Fake news and disinformation (PPHS)
5) Resilient civilians (PPHS)
6) Strategic communication – STRATCOM (PPHS)

Within the aforementioned areas, each partner provided a report which consists of:
- the description of the current state,
- initiatives and documents supported by the relevant links,
- recommendations.

Work on standardisation recommendations reports included also outcomes of T3.1, but especially T4.2 (D4.4 "1st Innovation uptake, industrialisation and research strategy" - the most promising innovations identified in EU-HYBNET).

Recommendations provided are accompanied by a type of recommendation (legal, standard, best practice) and a relevant institution which should receive a given recommendation for their information and possible future actions regarding this area. Moreover, each recommendation is marked with information whether it is most feasible for implementation in the short, medium or long term.

Findings described in this document are a result of ongoing analysis including desktop research, discussion with experts, consultations with consortium partners and network partners within EU-HYBNET project. The reports cover a wide range of valid points, documents, ideas, concepts, initiatives but should not be treated as a complete, finished and exhaustive work. The world of hybrid threats, gaps and needs accompanying them is the environment that is constantly changing. Certain features described in the reports were accurate and up-to-date at the time of reports creation. Some other points which are being raised are an open topic or even highlighted with a question mark. This is mainly due to the fact that some initiatives/documents were planned/published but it is hard to find at which stage they currently are.

Making this deliverable public and sharing it with numerous stakeholders and entities directly marked in the recommendation section will make it possible to establish the progress level of particular recommendations. Additionally, it is expected to be one of the important factors in creating similar reports in Cycle 2 of the project while the focus in the report will be even more in the following EU-HYBNET activities as defined in the EU-HYBNET Description of Action (DoA) PART B. The focus is on following issues:

- Once the most promising innovation and research solutions for countering hybrid threats are identified, they will be delivered to WP 4 which is dedicated to the uptake and standardisation. It will address how the innovation procurement in Europe functions in order to determine a best-fit strategy for uptaking and **standardisation of desired and required solutions for countering hybrid threats**
- In WP 4 we select the most feasible innovations by on the one hand using the output of WP3 and WP4 T4.2 and WP2 T2.4 training and exercise event testing results (a selection of most promising research and innovations (technical and social) in relation to the urgency of gaps and needs) and on the other hand taking into account successful industrialisation and standardisation in European projects and industry. **The combination of both leads us to priorities, recommendations and even a roadmap for standardisation of counter hybrid threat solutions (software, hardware, training, etc.).**
- WP4 to deliver the **recommendations of the most promising innovations uptake (incl. industrialisation).**
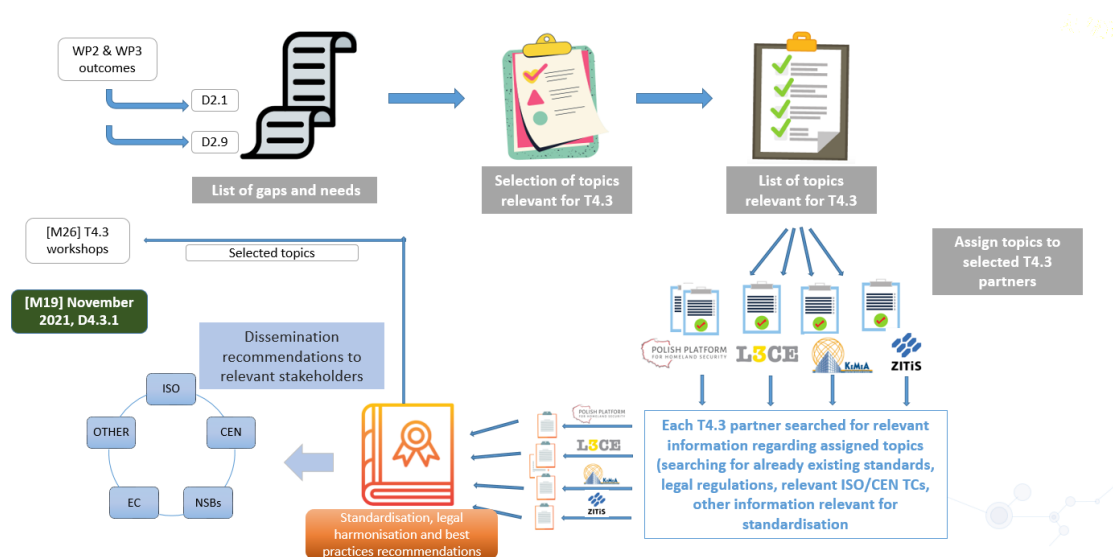
Figure 2 EU-HYBNET workflow within Task 4.3 (Cycle 1)

1.3 STRUCTURE OF THE DELIVERABLE

This document includes the following sections:
- Section 1: In this section an overview together with methodology is presented;
- Section 2: In this section all the reports from 6 main areas are presented (state of the art, most important documents and recommendations);
- Section 3: In this section the process fo dissemination of reports to selected target groups is described;
- Sections 4: In this sections it is described what the links between T4.3 and T4.2 are (indirectly also with T3.1);
- Section 5: In this section it is explained how this deliverable contributes to three lines of actions.

2. REPORTS

2.1 "BIG DATA" REPORT PREPARED BY ZITIS

2.1.1 DEFINING A SET OF REGULATION FOR USING BIG DATA IN POLITICAL CAMPAIGNING

Relevant document/initiative	Description	Links
The EU General Data Protection Regulation	Online political micro-targeting is a relatively new phenomenon, especially for the European political market.	Political Campaigns and Big Data - Harvard University
State of play		
Data-driven decision-making is a form of decision-making that uses information and communication technology (ICT) to leverage new data sources (such as big data and open data) and develop better strategies. Data-driven strategies give hope for innovation in the public sector. Because of the prominent role of big data, this concept caught our attention.		

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Standardisation (medium term)	How to identify useful information in data. How is a representative picture generated from the data and does not lead to a wrong direction.	European Commission Research and innovation Research funding, partners, results and EU action to promote innovation. National Governments Entities responsible for Public Security Issue Coordination

Best Practices (long term)	A broad political education and enlightenment system should be put in place, especially for representatives of publicly trustworthy professions (such as: journalists, civil servants, teachers and opinion leaders). However, this task must also take place in the broader population, through independent media, access to reports, studies and related information material, but also through the aforementioned bodies. To share the required basic knowledge, for example, conferences, summer schools or workshops should be carried out. Relevant topics include big data methods, hazards of data driven decisions, new data sources as well as data and information protection.	European Commission DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC)
Best Practices (long term)	The rise of big data analytics in the political process has sparked official investigations in many countries around the world and is the subject of wide and intense debate. Political micro-targeting has become an important factor in modern day election campaigns because of its potential to influence opinions, mobilise supporters, and ultimately get votes. It shows that the unregulated use of large personal data for political purposes not only violates the privacy rights of voters, but also has the potential to jeopardise the future of the democratic process and proposes reforms to resolve key regulatory and ethical issues, resulting from	European Commission DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC)

	mining, using and storing vast amounts of voter data.	
Legal (long term)	The use of big data methods in political campaigns should be regulated. Common rules help to be aware of disinformation, fake news and political influencing.	European Parliament European Commission DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC)

2.1.2 TO CONSIDER NEW BUSINESS MODELS FOR DATA AGGREGATION WHERE THE INDIVIDUAL IS THE OWNER AND TRADER OF HIS DATA

Relevant document/initiative	Description	Links
The economics of ownership, access and trade in digital data	Despite the rapidly growing volume and economic importance of data in the digital economy, the legal framework for data ownership, access and trade remains incompletely defined in the EU and elsewhere.	The economics of ownership, access and trade in digital data

	De facto data ownership dominates and often leads to fragmentation or anti-commons problems in data. Combined with limited access and trade, this inhibits the realisation of the full economic benefits of non-rival data. It may slow down innovation and affect the efficiency of data markets. We examine three potential sources of data market failures: externalities related to economies of scope in data, strategic behavior of data owners and transaction costs in data exchanges.	
DATA-DRIVEN BUSINESS MODELS IN CONNECTED CARS, MOBILITY SERVICES & BEYOND	Seven in ten of the world's most valuable brands are digital platforms with data-driven business models. While this new phenomenon is transforming the global economy, there is currently little academic research on the subject. To contribute to this nascent field, this study develops a definition of data-driven business models and suggest a first business taxonomy. Interestingly, the world-leading internet platform players are currently all pushing into the automotive and mobility area …	DATA-DRIVEN BUSINESS MODELS
State of play		
The business model should be based on obtaining information from multiple sources and providing value-added analysis. Today, digital business models have become key to separating one's business from competition. These digital business models focus on providing new value propositions based on the use of smart products. The question is no longer whether a train can be operated, but if the train is on time.		

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Standardisation (long term)	Define a set of rules for data acquisition, access, provision and storage. The Standardisation could also include rules for the visualisation of data (e.g. in forms, on websites etc.), so that the customers can identify their data in a simple manner.	World Wide Web Consortium European Commission Research and innovation National Governments Entities responsible for Public Security Issue Coordination
Standardisation (long term)	A view on interoperability of technological systems for information sharing and intelligence fusion is mandatory to guarantee efficient, transparent and fast data exchange. Here, especially the definition of a common interface should be considered.	World Wide Web Consortium European Commission Research and innovation National Governments Entities responsible for Public Security Issue Coordination
Best Practice (long term)	Customers must be integrated in data collection and aggregation process. The complete integration of the customers in the process supports the understanding of the value of their data. Establishing a transparent system for information trading as the consequence is mandatory for decisions on the sharing of the personal and private data. This also supports the awareness of sharing data to several stakeholders.	World Wide Web Consortium European Commission Research and innovation National Governments Entities responsible for Public Security Issue Coordination
Best Practices (medium term)	IT-Security certification (ISO 27001) must become mandatory for all businesses dealing with data of individuals. Critical parts of data security in the emerging European Union system should be based on open	European Commission Directorate-General for Communications Networks,Content and Technology European Commission Directorate-General Migration and Home Affairs

	source software or on trusted (i.e. verified, proprietary) software made in the European Union. System suppliers and distributors are responsible for their products and are continuously checked.	
Best Practices (long term)	The used software should be open source, trusted (i.e. verified, proprietary) or developed in the European Union. By using these types of software, the integrity as well as a save processing of the data can be considered.	European Commission Research and innovation National Governments Entities responsible for Public Security Issue Coordination

2.1.3 NEW CATEGORISING TECHNOLOGIES

Relevant document/initiative	Description	Links
What are the big data technologies?	According to Gartner, the definition of Big Data - "Big data is high-volume, velocity, and variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making."	What is big data?
Operational Big Data Technologies vs. Analytical Big Data Technologies	It indicates the generated amount of data on a daily basis such as online transactions, social media, or any sort of data from a specific firm used for the analysis through big data technologies based software. It acts as raw data to feed the Analytical Big Data Technologies. Few cases that outline the Operational Big Data Technologies include executives' particulars in an MNC, online trading and purchasing from Amazon, Flipkart, Walmart, etc., online ticket booking for movies, flight, railways and many more. **vs**. It refers to advance adaptation of Big Data Technologies, a bit complicated in comparison to Operational Big Data. The real investigation of massive data that is crucial for business decisions comes under this part. Some examples covered in this domain are stock marketing, weather	top-10-big-data-technologies-2020

	forecasting, time-series analysis, and medical-health records.	
Big data storage technologies: a survey	There is a great thrust in industry toward the development of more feasible and viable tools for storing fast-growing volume, velocity, and diversity of data, termed 'big data'. The structural shift of the storage mechanism from traditional data management systems to NoSQL technology is due to the intention of fulfilling big data storage requirements. However, the available big data storage technologies are inefficient …	https://link.springer.com/article/10.1631/FITEE.1500441

State of play

The big data ecosystem is constantly evolving and new technologies are quickly playing a role. Many of them are expanding rapidly according to the needs of the IT industry. These technologies can ensure coordinated work and have good monitoring and compliance capabilities.

Europe's vision will benefit from a stronger focus on the formation of a unified or all-encompassing strategy that takes into account the synergy and interdependence between all related digital infrastructure technologies such as quantum and classic computers (including HPC) including artificial intelligence. Those in the funded HiPEAC Vision 2021 plan are **big data**, machine learning, Internet of Things, 5G, processor technology and robotics.

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Best practices (long term)	Big Data bases on knowledge and technology of several disciplines (e.g. informatics, mathematics, statistics etc.). In order to guarantee a sufficient performance for future tasks, interfaces to further disciplines (e.g. ethics, law) must be established in combination with a view on future technologies (e.g. quantum computing, artificial intelligence, 5G) We are experiencing the largest transformation since the end of the Second World War; after the automation of production and the creation of self-driving cars the automation of society is next. This means that society is at a crossroads, which means great opportunities in terms of optimisation and improvements for industry, trade but also for each individual, but also promises considerable risks in the direction of calculability and influence ability through the deep insights through the data collected, whereby each Instance, be it companies, offices or individuals, can be at risk. If we take the wrong decisions, it could threaten our greatest historical achievements.	European Commission Research and innovation National Governments Entities responsible for Public Security Issue Coordination

Best Practices (medium term)	Data as well as the processing of data can be seen as a critical commodity for the security of a state. IT-Security certification (ISO 27001) must become mandatory in the field of big data. The certification process guarantees compliance with the basic rules for information safety.	European Commission Directorate-General for Communications Networks, Content and Technology European Commission Directorate-General Migration and Home Affairs
Legal (long term)	As data storage increases, there is a risk that we will become more and more transparent people in completely different areas. For example, innovations such as smart meters, which are supposed to digitise the energy transition, are controversial from the point of view of data defenders, since the recording of electricity consumption data essentially enables statements to be made about the lifestyle of citizens. Intelligent electricity meters enable enormous savings in electricity consumption, but make us transparent consumers. This scenario can be mapped to other everyday situations, such as traffic with the storage of vehicle sensor data, consumer behavior in online trading, tracking using sensor data from mobile phones.	European Commission Directorate-General for Communications Networks, Content and Technology European Commission Directorate-General Migration and Home Affairs

2.1.4 ARE PERSONAL INFORMATION PROTECTION REGULATIONS UP TO DATE IN THE EU?

Relevant document/initiative	Description	Links
General Data Protection Regulation (GDPR)	The General Data Protection Regulation (GDPR) is the toughest privacy and security law in the world. Though it was drafted and passed by the European Union (EU), it imposes obligations onto organisations anywhere, so long as they target or collect data related to people in the EU. The regulation was put into effect on May 25, 2018. The GDPR will levy harsh fines against those who violate its privacy and security standards, with penalties reaching into the tens of millions of euros.	GDPR - General Data Protection Regulation
Data protection in the EU	The data protection package adopted in May 2016 aims at making Europe fit for the digital age. More than 90% of Europeans say they want the same data protection rights across the EU and regardless of where their data is processed.	Data protection in the EU
The European Union general data protection regulation: what it is and what it means	This paper introduces the strategic approach to regulating personal data and the normative foundations of the European Union's General Data Protection Regulation ('GDPR'). We explain the genesis of the GDPR, which is best understood as an extension and refinement of existing requirements imposed by the 1995 Data Protection Directive.	what it is and what it means

	State of play	
Big data to maintain public order - In a rapidly changing, increasingly complex and digital society, public administration departments must formulate strategies that can effectively and efficiently solve problems and keep them relevant. Creation of comprehensive services with European data protection standards for the storage, evaluation and analysis of big data as a brand with a positive influence on global competition.		
Recommendation: Legal/Standardisation/Best Practices	**Explanation on recommendation**	**Relevant Institution**
Standardisation (long term)	There are still some research issues that need further study and clarification. Protection of the right of individuals to the protection of their personal data while maintaining a high level of public security. The amount of data sharing and collection is growing exponentially	European Commission Law National Governments Entities responsible for Public Security Issue Coordination
Legal (long term)	Legislation must be adopted to the specific terms of Big Data and personal data protection. Especially, a continuous view on current developments and research must be performed. Everyone has to learn and recognise this fact in the course of data collection (e.g. smart home, smartphones, self-driving cars). For this learning and information process, ways should be created in schools, the media and in every situation in life that convey this fact without fear of these technologies and improvements.	European Commission Law National Governments Entities responsible for Public Security Issue Coordination

Standardisation (long term)	Clear processing conditions must be created to ensure that the individual does not become a mere information object under the conditions of automatic collection and processing of personal data.	European Commission Law National Governments Entities responsible for Public Security Issue Coordination

2.1.5 ETHICAL STANDARDS TO REASSURE THE CONTENT PRESENTED IS NOT TAILORED FOR SPECIFIC GROUPS

Relevant document/initiative	Description	Links
The ethics of Big Data	This study, carried out to support the activities of the EESC, explores the ethical dimensions of Big Data in an attempt to balance them with the need for economic growth within the EU. In the first part of the study, an in-depth review of the available literature was carried out to highlight ethical issues connected with Big Data. Five actions were devised as tools to strike the balance described above. The second phase of the study involved interviews with a number of key stakeholders and conducting a survey that acquired information on the general knowledge of the issues connected to the use of Big Data. Feedback on the proposed balancing actions was also sought and taken into consideration in the final analysis. Attitudes as emerged from interviews and survey most often ranged from concerned to worried, while benefits of Big Data were seldom discussed by the respondents. Benefits are, nevertheless, intrinsic to Big Data, as well as risks, and they are discussed more broadly throughout the study.	The ethics of Big Data

State of play		
From an ethical point of view, the question arises how the increasingly intensive and often almost inconspicuous collection of health-related data affects our self-confidence, our freedom and self-determination: How can individuals, researchers and companies deal with it responsibly, and how can the quality and reliability of complex data assessments be managed? At the same time, the possibility of quickly and effectively evaluating such data and linking it with other data that, when viewed together, can also be relevant to health, such as information on shopping behavior, search queries on the Internet, location data or the analysis of text, voice and video clips, is increasing.		
Recommendation: Legal/Standardisation/Best Practices	**Explanation on recommendation**	**Relevant Institution**
Standardisation (medium term)	The development of a new ethical framework should be the product of a dynamic multi-stakeholder process designed to capture the latest science on privacy, analytical methods, available safeguards, community and social norms, and research ethics best practices understanding.	European Commission Law

National Governments Entities responsible for Public Security Issue Coordination |
| **Best Practices (long term)** | A view on ethical questions in the field of big data as wells as data processing in general plays a minor role in the moment. Hence, it should be best practice to include experts in ethics into research, legislation and standardisation in future. | European Commission Law

National Governments Entities responsible for Public Security Issue Coordination |

2.2 CRITICAL GOODS AND COMMODITIES

2.2.1 MONITORING OF THE INFLUENCE OF THE NATIONAL FDI IN THE SECTOR OF CRITICAL GOODS AND SERVICES

Relevant document/initiative	Description	Links
Framework for the screening of foreign direct investments into the Union	In 2019, the European Union enacted the EU Screening Regulation 2019/452 ("EU Regulation"), which will apply from 11 October 2020 onwards. The EU Regulation does not stipulate that the Member States lacking an FDI screening mechanism would need to introduce one, although its effect will be to encourage that to happen. It rather aims, inter alia, at introducing basic standards to be followed by Member States that have a national FDI screening mechanism, e.g., rules and procedures, timeframes, transparency, nondiscrimination between third countries, opening judicial review against screening decisions;	https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0452&from=EN
Review of national rules for the protection of infrastructure relevant for security of supply	This report draws on information from national reports in 28 Member States and in five selected third countries (Australia, Canada, China, United States and Russia). It also includes information obtained from interviews with foreign investors. Member States legal approaches to control	https://ec.europa.eu/energy/sites/ener/files/documents/final_report_on_study_on_national_rules_for_protection_of_infrastructure_relevant_for_security_of_supply.pdf

	foreign investments in electricity and gas infrastructures (e.g. screening mechanisms, ownership restrictions) are described and a description of relevant electricity and gas infrastructures for security of supply in Member States and their related ownership control are included. Finally, some potential good practices on investment screening mechanism based on the review of such mechanisms adopted in Member States and five non-EU countries as well as the review of policy and academic writings on this topic are presented.	
Foreign Direct Investment Regulatory Restrictiveness Index (FDI RRI)	The Foreign Direct Investment Regulatory Restrictiveness Index (FDI RRI) measures four types of statutory restrictions on foreign direct investment: (i) foreign equity restrictions, (ii) screening and prior approval requirements, (iii) rules for key personnel, and (iv) other restrictions on the operation of foreign enterprises. The FDI RRI is a composite index which takes values between 0 and 1, with 1 being the most restrictive.	https://goingdigital.oecd.org/en/indicator/74/

Hybrid threats in the financial system	The paper analyses the role of the financial system as an enabler, as opposed to a target, of hybrid threats which implies the recognition of the existence of close links between capital movements, industrial developments, state interests and geopolitics, and of the centrality of the financial system as a mediator (intentionally or unintentionally) of these relationships.	https://www.hybridcoe.fi/wp-content/uploads/2020/07/20200630_Working-Paper-8_Web-1.pdf

State of play

The COVID-19 related emergency is having pervasive effects on the economy of the European Union. As part of the overall response, the Commission also singled out the issue of foreign direct investment screening. In this context, the EU's openness to foreign investment needs to be balanced by appropriate screening tools. In the context of the COVID-19 emergency, there could be an increased risk of attempts to acquire healthcare capacities (for example for the productions of medical or protective equipment) or related industries such as research establishments (for instance developing vaccines) via foreign direct investment. https://trade.ec.europa.eu/doclib/docs/2020/march/tradoc_158676.pdf

List of screening mechanisms notified by Member States (30/3/2021) : https://trade.ec.europa.eu/doclib/docs/2019/june/tradoc_157946.pdf

Critical infrastructure (in progress) by European Centre of Excellence for Countering Hybrid Threats: https://www.hybridcoe.fi/coi-vulnerabilities-and-resilience/

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution

| Best Practices

(long term) | Development of a common national approach in screening mechanisms

While the EU Regulation provides a framework, it does not provide for a centralised EU foreign investment screening process, nor does it standardise existing national screening mechanisms.

Key practical implications of FDI restrictions include often lengthy or uncertain review periods, detailed information gathering and possible sanctions for non-compliance. The effects vary between Member States where, for example, review periods can range from 30 business days to 7 months.

Following on from the EU Regulation, several countries - Finland, Latvia, Poland, and Slovenia - have implemented 10-20% thresholds to initiate foreign direct investment screening. Others, like Hungary and Italy have extended existing regulations through February 2021 and 30 June 2021 respectively. | EC TRADE (DG Trade)

https://ec.europa.eu/trade/ |

	Effective 19 November 2020, Spain extended its FDI rules to include investments by EU and EFTA investors and until 30 June 2021, investments, whereby 10% or more share capital is acquired in a Spanish company that operates in a strategic sector will need prior authorisation.	

2.2.2 PUBLIC-PRIVATE PARTNERSHIPS AS A WAY OF SECURING THE PROVISION OF STRATEGIC STOCKS AND SUPPLIES

Relevant document/initiative	Description	Links
GUIDELINES FOR SUCCESSFUL PUBLIC - PRIVATE PARTNERSHIPS	Guidelines focus on four key topics: • ensuring open market access and fair competition; • protecting the public interest and maximising value added; • defining the optimal level of grant financing both to realise a viable and sustainable project but also to avoid any opportunity for windfall profits from grants; • assessing the most effective type of PPP for a given project.	https://ec.europa.eu/regional_policy/sources/docgener/guides/ppp_en.pdf
Recommendation of the Council on Principles for Public Governance of Public-Private Partnerships	Recommendation that Members take due account of the Principles for public governance of Public-Private Partnerships	https://www.oecd.org/governance/oecd-recommendation-public-privatepartnerships.htm
Legal framework for PPP	By 18 April 2016, EU countries had to transpose the following three directives into national law: • Directive 2014/24/EU on public procurement • Directive 2014/25/EU on procurement by entities operating in the water, energy, transport and postal services sectors • Directive 2014/23/EU on the award of concession contracts	Directive 2014/24/EU Directive 2014/25/EU Directive 2014/23/EU

ISO 28002:2011	Security management systems for the supply chain — Development of resilience in the supply chain — Requirements with guidance for use	https://www.iso.org/standard/56087.html
Critical raw materials	European Commission has created a list of critical raw materials (CRMs) for the EU, which is subject to a regular review and update. CRMs combine raw materials of high importance to the EU economy and of high risk associated with their supply. https://erma.eu/	https://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical_en

State of play
Public-Private Partnership (PPP) projects use both the public and the private sector to provide goods and services which are conventionally supplied by the public sector, while easing the budgetary constraints placed on public expenditure. Globally, public-private partnerships (PPPs) have increased in popularity as an alternative procurement model for infrastructure development projects. The sectors that mainly PPPs are used are Energy, Transportation and Water / Sanitation. Their usage in other critical areas should be examined.

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Legal **(long term)**	Regulatory framework enhancements In order to support cooperation between public and private partners there might also be a need to look further to the regulatory framework, building on the EU's own strengths and principles:	DG Grow (https://knowledge4policy.ec.europa.eu/organisation/dg-grow-dg-internal-market-industry-entrepreneurship-smes_en) EU Single Market https://ec.europa.eu/growth/single-market_en)

	Ensure resilience through a strengthening strategically EU Single Market as this is one of the greatest assets and a key element in building supply resilience. The free flow of trade across borders, common rules and standards are needed. Examine the option of more permanent antitrust guidelines concerning limited and temporary cooperation among businesses. Examine the effectiveness of the public procurement procedures and Joint Procurement Agreement (JPA). The 'guidance for public buyers' has helped to ensure rapid and efficient purchases of necessary equipment, but evaluations of national and European level procurement processes should be conducted to examine how the practical modalities, speed of the implementation etc. could be improved.	
Standardisation (long term)	EU regulations should be prepared, introducing minimum standards for the protection of critical infrastructure (CIP) in three areas: physical (including cyber-physical), personal and IT protection for state and private CI operators, modelled on the solutions existing in the nuclear energy sector and civil aviation. Work on the introduction of minimum security requirements for CI facilities has so far been undertaken in selected areas as part of: The European Reference Network for Critical Infrastructure Protection (ERNCIP) with the support of The Joint	The European Reference Network for Critical Infrastructure Protection (ERNCIP) https://ec.europa.eu/jrc/en/network-bureau/european-reference-network-critical-infrastructure-protection-erncip Standards Organization (ISO) the European Committee for Standardization (CEN) (https://www.cencenelec.eu/)

	Research Center (JRC), which is one of the Directorate Generals of the European Commission as well as in the International Standards Organization (ISO), the European Committee for Standardization (CEN), the International Civil Aviation Organization (ICAO). In addition, the implementation of the minimum standards of critical infrastructure protection for state and private CI operators will complement the EU CI protection system established by the Directive of the European Parliament and of the Council on the resilience of critical entities. This proposal will also establishes close synergies with the proposed Directive on measures for a high common level of cybersecurity across the Union; ("NIS 2 Directive") which will replace the NIS Directive in order to address the increased interconnectedness between the physical and digital world through a legislative framework with robust resilience measures, both for cyber and physical aspects as set out in the Security Union Strategy. DIN SPEC 91461 standard tilteld "Stress-testing resilience of critical infrastructures exposed to cyber-physical threats" should be also mentioned here.	

2.2.3 DEFINITIONS AND BEST PRACTICES BASED ON DATA AGGREGATES AS A CRITICAL COMMODITY

Relevant document/initiative	Description	Links
Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)	Law regarding the processing in personal data	https://eur-lex.europa.eu/eli/reg/2016/679/oj
Common European data space	Building on the data protection legislation in force, the Commission proposed a package of measures as a key step towards a common data space in the EU - a seamless digital area with the scale that will enable the development of new products and services based on data. Data is also recognised as an increasingly critical asset for the development of new technologies such as Artificial Intelligence (AI) and the Internet of Things (IoT).	https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0232&from=EN
Free flow of non-personal data	The Commission wants to ensure a free flow of data in the EU allowing companies and public administrations to store and process non-personal data wherever they choose. Specific examples of non-personal data include aggregate and anonymized datasets used for big data analytics, data on precision farming that can help to monitor and optimize the use of pesticides	https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R1807&from=EN

	and water or data on maintenance needs for industrial machines.	
State of play		
The volume of data produced is expanding at a rapid rate. According to IBM, 90% of the data available in the world today was produced in the previous two years. Artificial intelligence (AI), machine learning, and other comparable high-performance computer-driven processes whose true utility and worth are hard to assess today are inexorably heading towards a larger creation of new products and services based on general-purpose technology. All of these technologies rely on data availability and access. In the current economy, data may be the most valuable asset. As a result, they will play an increasingly important role as a competitive criterion, with several implications for today's firms. While data is essential for the creation of future game changers like AI, it is also a vital input to many online services, production processes, and logistics, making it a critical component of the value chain of many businesses. While data is essential for the creation of future game changers like AI, it is also a vital input to many online services, production processes, and logistics, making it a critical component of the value chain of many businesses. As a result, in the debate about competition in the digital age, the phrase "data is the new oil" is heard more and more. A key difference is that although, oil is clearly a finite and non-reusable resource, data can be unlimited and reusable, taking ownership and access rights into consideration. People are increasingly worried about competition in data-intensive markets. They may stem from the natural structure and characteristics of digital markets, competition regulatory barriers, issues related to business practices, or a combination of all of these. A widely controversial way to solve the above-mentioned competition problem is to regulate data sharing, and even enforce it under certain circumstances. As long as privacy and security are protected, sharing data can benefit the wider society.		
Recommendation: Legal/Standardisation/Best Practices	**Explanation on recommendation**	**Relevant Institution**

Standardisation (medium term)	**Framework for data controlling and collection and sharing with private sector** The problem of controlling the collection and use of data must be seen as a regulatory problem rather than a technical one. Possible means to limit which data is collected, how it is used, for what purpose, and how it is traded should be researched.	European Data Protection Board https://edpb.europa.eu/edpb_en
Legal (long term)	Legal Framework to make aggregated personal data about large population groups designated as a critical commodity. Such data is a basis for micro-targeting, and it should be considered as one topic for further research.	The EC and the relevant authorities on national level

2.3 FAKE NEWS AND DISINFORMATION

2.3.1 SUPPORTING MEDIA PLURALISM

Relevant document/initiative	Description	Links
European Democracy Action Plan	The Action Plan is built on 3 pillars and sets out measures to promote free and fair elections, strengthen media freedom and counter disinformation. The document was published 3.12.2020. Next steps: The Commission will gradually implement the European Democracy Action plan until 2023 - a year ahead of the elections to the European Parliament	European Democracy Action Plan – press release European Democracy Action Plan – complete document The European Commission clip The European Commission fact sheet
Journalism Trust Initiative	**The ultimate goal of the "Journalism Trust Initiative" is to support the universal, individual freedom of opinion through access to information and independent, pluralistic media.** By safeguarding professional standards, a more healthy digital media landscape should emerge, from which each citizen and media worker, but also societies at large, could benefit. The scope of this workshop is to outline the operational details to meet that objective in developing the following CEN Workshop Agreements (CWA): > Work Package/CWA I: Identity and Transparency (Tell us who you are.) > Work Package/CWA II: Accountability and Professionalism (Tell us how you work.) > Work Package/CWA III:	CEN/WS JTI - Journalism Trust Indicators

	Independence and Ethics (Tell us what your values are.)	
Opinion of the European Committee of the Regions on 'Tackling online disinformation: a European Approach' (2019/C 168/04)	The European Committee of the Regions comments on tackling disinformation with a special focus on local communities.	https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2019:168:FULL
Media Ownership Monitor	The Media Ownership Monitor project will create a tool to better inform policy and regulatory interventions that support media freedom and pluralism, by clearly delineating where ownership lies, making potential issues more visible and thereby helping to improve the understanding of the media market. Concretely, the Monitor will provide a country-based database containing information on media ownership, assess systematically relevant legal frameworks and identify possible risks to media ownership transparency.	https://digital-strategy.ec.europa.eu/en/funding/call-proposals-media-ownership-monitor
State of play		

- The Commission will put forward further measures to **support media pluralism** and to **strengthen transparency of media ownership** and state advertising, among others, through the new Media Ownership Monitor.
- Better public disclosure of information on **who owns or controls media outlets** and the transparent and fair distribution of state advertising can also protect media pluralism.
- Support EU cooperation between national media councils, other media self-regulatory bodies, independent media regulators and networks of journalists, and initiatives fostering journalistic partnerships and standards.

- By providing the public with reliable information, independent media play an important role in the fight against disinformation and the manipulation of democratic debate.
- The European Committee of the Regions states that due to its diversity, the local media guarantees protection for the plurality of political views and information in any territory or region and that the protection of this plurality should be a priority objective.

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Best Practices (medium term)	Put special emphasis on local media and its plurality as playing an important role in educating local communities and in combating disinformation through various local channels.	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory

		Independent networks: Assembly of European Regions ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR)
Best practices (short term)	Making Media Ownership Monitor one of the main tools which helps in achieving national, local and regional media ownership transparency.	European Commission – DG Competition – Directorate C Markets and cases II Information, Communication and Media European Parliament - Committee on the Internal Market and Consumer Protection European Economic and Social Committee – Section for Single Market, Production and Consumption European Committee of the Regions – thematic commission ECON: Commission for Economic Policy Association of European Journalists European Digital Media Association European Digital Media Observatory

2.3.2 STANDARDS FOR GOOD JOURNALISM

Relevant document/initiative	Description	Links
Europe's Media in the Digital Decade: An Action Plan to Support Recovery and Transformation	The Commission will mainstream the **mentoring practices** that have been emerging as highly successful in the training projects supported in the last years for the audiovisual sector through Creative Europe MEDIA. Such mentoring programs will develop in diverse formats, exploiting all the creative and business opportunities offered by digital technologies. In addition, **a communication campaign** will be launched to foster diversity not only in front of but also behind the camera, in order to improve diversified representations and add new ideas, stories, and voices. • **New mentoring programs for Europe's media talents** • MEDIA boot-camps providing hands-on intensive training for young media professionals • Campaign on diversity in front & behind the camera The document was published 3.12.2020.	[Europe's Media in the Digital Decade](#)

The Media and Audiovisual Action Plan	The Media Action Plan aims to boost European media and help maintain European cultural and technological autonomy in the Digital Decade. One of the goal is: • **fostering European media talents through mentoring and training**, as well as scouting and supporting promising European media start-ups	European Media and Audiovisual Action Plan
CEN/WS JTI - Journalism Trust Indicators (standard)	The ultimate goal of the "Journalism Trust Initiative" is to support the universal, individual freedom of opinion through access to information and independent, pluralistic media. **By safeguarding professional standards, a more healthy digital media landscape should emerge**, from which each citizen and media worker, but also societies at large, could benefit.	CEN/WS JTI - Journalism Trust Indicators
Dealing with Disinformation A Handbook for Journalists	False and manipulated information does not spread on its own – it is disseminated by people. Everyone can help stop fake news by checking its credibility before possibly forwarding it, or unmask it once it has been distributed by other sources. The fight against disinformation should today be regarded as an important part of the journalistic mission and the implementation by the media of the functions of the so-called public watchdog. The Stop Misinformation Guide is designed to make this task easier.	https://panoptykon.org/dealing-disinformation

Pilot Project: Media Councils in the digital age	*"The European Commission has signed a grant agreement with a consortium led by the European Federation of Journalists (EF), to launch a Pilot Project on Media Councils in the Digital age. Press and Media Councils are key actors in promoting respect for media ethical standards and media professionalism.* *Undoubtedly, self-regulatory bodies are crucial in promoting respect for media ethical standards and media professionalism as well as guaranteeing media accountability.* *Media/press councils can also strengthen the cooperation between journalists by promoting knowledge sharing as well as reinforce the trust in journalism by establishing links between citizens and journalists."*	EC information page on the project
On the European democracy action plan	*"Since 2019, the Commission has been co-funding a pilot project on media councils in the digital era, which aims to raise the profile of media self-regulation bodies. As a next step, the Commission will promote stronger cooperation between national media councils, other media self-regulatory bodies, independent media regulators and networks of journalists. The goal will be to identify more clearly the challenges faced and develop policy recommendations to foster journalistic standards in the EU."*	On the European democracy action plan - document

State of play		
The focus on professionalism and accountability of journalistic work has been of great importance. The access to reliable, trustworthy news sources is essential and the current pandemic situation proved how much we need it. Projects developed by the European Commission, official Standard Bodies, independent organizations and other entities set the standards and provide journalists with support they need. But are these options widely known and available to journalists and journalists-to-be?		
Recommendation: Legal/Standardization/Best Practices	**Explanation on recommendation**	**Relevant Institution**
Best Practices (medium term)	CEN/WS JTI - Journalism Trust Indicators (standard) should be a part of mentoring and training programme for journalists planned by the European Commission.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory

Best Practices (short term)	Prepare and promote handbooks and other relevant solutions (training programmes?) for journalists on how to recognize and deal with disinformation.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory
Standard (medium term)	Creating guidelines (standards?) for media self-regulatory bodies.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists

		European Committee of the Regions – CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory

2.3.3 COUNTERING THE MASS OF FAKE NEWS

Relevant document/initiative	Description	Links
Code of Practice on Disinformation	Representatives of online platforms, leading social networks, advertisers and advertising industry agreed on a self-regulatory Code of Practice to address the spread of online disinformation and fake news. The Code of Practice is the first time worldwide that industry has agreed, on a voluntary basis, to self-regulatory standards to fight disinformation. The Code of Practice on Disinformation was published on 26 September 2018. The initial signatories include the main online platforms (Facebook, Google, YouTube, Twitter), providers of software (Mozilla), advertisers as well as a number of trade associations representing online platforms and the advertising industry. Microsoft joined in May 2019, while TikTok signed the Code in June 2020. The Code of Practice should create a more transparent, trustworthy and accountable online ecosystem and protect users from disinformation.	Code of Practice on Disinformation

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - European Commission Guidance on Strengthening the Code of Practice on Disinformation	The commitments of the current Code of Practice are not sufficiently effective in providing a comprehensive response to the disinformation phenomena. There is a need for stronger and more specific commitments in all areas of the Code to address gaps and shortcomings, including new and emerging risks. To ensure that the Code stays a living instrument, signatories should set up a permanent mechanism for its regular adaptation.	https://digital-strategy.ec.europa.eu/en/library/guidance-strengthening-code-practice-disinformation
Coronavirus: EU strengthens action to tackle disinformation	Along with recently-reported progress towards the distribution of COVID-19 vaccines, the topic of COVID-19 vaccines is gaining traction online and so is disinformation about it. The Commission has therefore asked platforms to include in their monthly monitoring reports a specific section highlighting actions taken to fight disinformation and misinformation around COVID-19 vaccines. Signatories have promptly responded, reporting on their actions in their fourth reports.	Fourth set of reports – Fighting COVID-19 disinformation Monitoring Programme
Christopher Wylie "Mindf*ck. Cambridge Analytica And The Plot To Break America"	In 2018, Christopher Wylie became known to the world as the Cambridge Analytica whistleblower when he revealed the truth about the effect the firm's unprecedented data-mining operation had had on both the 2016 presidential election in America and the Brexit campaign in the United	https://www.penguinrandomhouse.com/books/604375/mindfck-by-christopher-wylie/

| | Kingdom. His action prompted the largest data-crime investigation in history. | |

State of play		

- COVID-19 disinformation Monitoring Programme: Platforms report that they have increased efforts, in particular working with public authorities and international organisations like the United Nations and the World Health Organization, to increase public preparedness for vaccines distribution and to build resilience against the spread of disinformation on the subject. They have also updated their awareness-raising tools as well as their terms of service and enforcement guidelines to include vaccines disinformation as grounds for the demotion or removal of content.
- Code of Practice: European Democracy Action Plan published 3.12.2020 states that the European Commission will steer efforts to overhaul the existing Code of Practice on Disinformation into a **co-regulatory framework of obligations and accountability** of online platforms, in line with the upcoming Digital Services Act. To that end, the Commission will issue guidance to enhance the Code of Practice in spring 2021 and set up a more robust framework for monitoring its implementation.

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Legal (long term)	Enhance Code of Practice into a part of the EU law.	European Commission: DG Connect: Directorate I Media Policy European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General

		International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory
Best practices (medium term)	Engage more platforms to sign the Code of Conduct.	European Commission: DG Connect: Directorate I Media Policy European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory

Best practices (long term)	More focus, resources and developments for Code of Conduct. Popularize the principles of the Code in EU Member States. Implementation of the code principle in Member States. Code of Practice currently applies to pan-European platforms. It should be considered if it can be applied also for platforms functioning only locally in relevant countries - joint implementation of the principles of the Code in the Member States in cooperation with public authorities, NGOs, representatives of science and local actors in the digital media market.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory
Legal (long term)	Christopher Wylie says that digital systems should not be released without scrutiny. *"A pharmaceutical lab or an aerospace company cannot bring new innovations to market without first passing safety and efficacy standards so why should digital systems be released any scrutiny?"*	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy

	Products (new technologies) should not be released untested before potential consequences for society are examined. Harm avoidance principle should be a *"central feature in a digital building code. This would require platforms and applications to conduct abusability audits and safety testing prior to releasing or scaling a product or feature. The responsibility rests with tech companies to make sure these products are safe (including ethical aspect) to use by people."*	European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory

Relevant document/initiative	Description	Links
European Democracy Action Plan	The Action Plan is built on 3 pillars and sets out measures to promote free and fair elections, strengthen media freedom and counter disinformation. The document was published 3.12.2020. Next steps: The Commission will gradually implement the European Democracy Action plan until 2023 - a year ahead of the elections to the European Parliament	European Democracy Action Plan – press release European Democracy Action Plan – complete document The European Commission clip The European Commission fact sheet
Addressing the dissemination of terrorist content online	The European Parliament approved a new law on terrorist content takedowns. The regulation *"addressing the dissemination of terrorist content online"* will come into force shortly after publication in the EU's Official Journal. The one-hour rule: a legally binding one-hour deadline for content to be removed following a removal order from national competent authorities. A definition of terrorist content is material that incites or advocates committing terrorist offences, promotes the activities of a terrorist	PREVENTING THE DISSEMINATION OF TERRORIST CONTENT ONLINE Addressing the dissemination of terrorist content online

	group or provides instructions and techniques for committing terrorist offences.

State of Play

- The EU institutions will ensure that their internal coordination on disinformation is strengthened, with a clear protocol for action to pull together knowledge and resources quickly **in response to specific situations**, for example ahead of European Parliament elections. This would build on the approach taken for COVID-19, where a system of reinforced coordination has been set up in response to the tougher challenges. Member States are invited to invest more in the relevant networks and ensure (also at national level) proper coordination between those who represent them in various fora, so as to ensure effective cooperation and coherent, comprehensive responses.
  The EU has steadily improved its abilities to expose information influence methods by foreign actors and has called out perpetrators. However, with the continuously changing threat landscape, the EU needs to use more systematically **the full range of tools in its toolbox for countering foreign interference and influence operations, and further develop them including by imposing costs on the perpetrators, in full respect of fundamental rights and freedoms**.
- Possible ways of doing so range from publicly identifying commonly used techniques (so as to render them operationally unusable) to imposing sanctions **following repeated offences**. The response toolbox needs to be further developed. The Commission and the HR/VP will explore conceptual and legal aspects of devising.
- Appropriate instruments, seeking synergies with the EU's Framework for a joint EU diplomatic response to malicious cyber activities ('cyber diplomacy toolbox').
- According to the document, the work will be done "towards refined common definitions and methodologies in order to address different categories of disinformation and influence activities".

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Best Practices (long term)	Creating a pan-European plan of different actions that should be taken and relevant procedures that should be initiated upon dealing with	European Commission – DG Communication – Directorate C Representation & Communication in the Member States

	misinformation basing on different misinformation categories.	European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory
Legal (medium term)	Investigate the possibility for legal actions (e.g. imposing sanctions) following perpetrators' repeated offences in the field of misinformation.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists

		European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory
Legal (medium term)	Basing on a new law on terrorist content takedowns – thinking about standardizing an obligation of taking down hostile disinformation campaigns and disinformation and fake news that are considered as crime or could lead to a crime.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs;

		Council of Europe: Congress of Local and Regional Authority Secretary General
		International Fact Checking Network
		European Digital Media Association
		Members of the High Level Group on Fake News and Online Disinformation;
		Association of European Journalists
		European Digital Media Observatory

2.3.4 FACT CHECKERS

Relevant document/initiative	Description	Links
Fact checkers	Websites providing fact checking services. Depending on the website, they focus on political or non-political subjects, some of them focus on Kremlin-based fake news, some of them analyze the wider spectrum. Some of the platforms have "Report the fake news" buttons on their websites so that every citizen can report any suspicious information going viral.	FaktaBaari (Finland) Demagog (Poland) https://demaskator24.pl/ (Poland) Propastop (Estonia) The Washington Post Fact Checker (US)
The International Fact-Checking Network	A unit of the Poynter Institute dedicated to bringing together fact-checkers worldwide. The IFCN was launched in September 2015 to support a booming crop of fact-checking initiatives by promoting best practices and exchanges in this field.	The International Fact-Checking Network
Facebook Journalism Project	In 2016, Facebook started a third-party fact-checking program, working with IFCN-certified fact-checkers around the world to rate and review the accuracy of content on Facebook platform.	Facebook Journalism Project -website Facebook Journalism Project -how it works
EUvsDisinfo	EUvsDisinfo is the flagship project of the European External Action Service's East StratCom Task Force. It was established in 2015 to better forecast, address, and respond to the Russian Federation's ongoing disinformation campaigns affecting the European Union, its Member States, and countries in the shared neighbourhood.	EUvsDisinfo

	EUvsDisinfo's core objective is to increase public awareness and understanding of the Kremlin's disinformation operations, and to help citizens in Europe and beyond develop resistance to digital information and media manipulation.	
EUFACTCHECK	An educational fact-checking project adhering to the existing commitments of the Code of Principles of the International Fact-Checking Network (IFCN). A fact-checking project of the European Journalism Training Association (EJTA) that intends to build a sustainable curriculum unit on fact-checking within a European network of Journalism schools.	https://eufactcheck.eu
Creating an independent network of fact-checkers	According to Action Plan against Disinformation (by the European Commission from December 2018): an independent network of fact-checkers is being developed to increase the ability to detect and expose disinformation, and sustained efforts are being made at Union and national level to support media literacy.	Action Plan against Disinformation
New tools which are necessary to detect, analyse and expose disinformation activities	One of the pillars of Action Plan against Disinformation (by the European Commission from December 2018) is improving the capabilities of Union institutions to detect, analyse and expose disinformation. It also entails	Action Plan against Disinformation

	new tools which will be able to detect, analyse and expose disinformation activities	
A digital platform networking independent multidisciplinary fact-checking teams	According to Action Plan against Disinformation *"the Commission will finance a digital platform which will network together the independent national multidisciplinary teams."*	Action Plan against Disinformation
State of Play		

- Fact checker websites are present in more and more countries. However, they should be more widely available to the public. Are citizens aware of that? Do they know what are the fact checking websites available in their countries and the EU websites?
- How many websites and social networking websites cooperate with independent fact checkers to make sure that their social media users are aware that a given content is false or a given image has been altered?
- Is there any **public-private partnership** in the form of fact checkers? Do governments use fact checking websites in order to e.g. make citizens aware if major disinformation campaigns are taking place?

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Best Practices (medium term)	Public–private partnership in fact-checking area.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation

		European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory
Legal (long term)	Obligation for every social media entity operating within the EU to work on fact checking (e.g. by cooperating with independent fact checking portals in order to identify and highlight disinformation).	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs;

		Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory
Best practices (long term)	Widely available and easy to use application/program checking facts or a system that could help citizens assess the source of information.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory

Best practices (short term)	Building awareness among citizens regarding fact checkers.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory
Best Practices (medium term)	Extension of fact-checking platforms activities to local and regional level. Create local and regional platforms. The activities of fact-checking platforms should cover the broader geographical and thematic spectrum. Platforms should also be in place to monitor regional and local self-government	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy

	issues. It is important that platforms also monitor information from the worlds of business, health, social affairs or history.	European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation
		European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society
		European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs;
		Council of Europe: Congress of Local and Regional Authority Secretary General
		International Fact Checking Network
		European Digital Media Association
		Members of the High Level Group on Fake News and Online Disinformation;
		Association of European Journalists
		European Digital Media Observatory
		Independent networks: Assembly of European Regions

		ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR) Demagog – Fact Checking Platform

2.4 CYBERSECURITY

2.4.1 CYBER AND FUTURE TECHNOLOGIES

Relevant document/initiative	Description	Links
'Shaping Europe's digital future'	The Cybersecurity category falls within the EU-HYBNET core theme of 'Cyber and Future Technologies'. The EU technologies of the future, and related services and initiatives include: 5G, artificial intelligence, advanced computing, audiovisual media services, Big data, Broadband Europe, Cloud computing, Cyber-Physical Systems, e-Infrastructures, Micro/Nano-electronics, European Open Science Cloud, Tackling online disinformation, Future and emerging technologies, High Performance Computing, ICT and Standardization, ICT Innovation, Internet of Things, Language Technologies, Next Generation Internet initiative, Online Platforms, Open Access & Open data, Open Innovation 2.0, Open Internet, Photonics, Quantum Technologies Flagship, Robotics, Digitising European Industry, European Strategy for Data, Connectivity for a European Gigabit Society, Investing in network technologies (5G, IoT, cloud computing, next generation Internet), Advancing in digital science	Policies | Shaping Europe's digital future (europa.eu)

	and infrastructures, Smart Cities, WiFi4EU (free for Europeans), Wireless Europe.	

State of Play
In Europe, the varied elements of the category 'Cyber and Future Technologies' itemised above are being developed separately. Forging these into an overall comprehensive and unified cyber strategy would strengthen the approach. The European vision would benefit from greater focus on forming a unified whole, or an all-encompassing strategy that would take into account the synergies and interdependencies that may exist or be established between all the relevant digital infrastructure technologies such as quantum and classical computing (including HPC), artificial intelligence, big data, machine learning, IoT, 5G, processor technology, and robotics such as the one being advocated in the H2020 funded *HiPEAC Vision 2021* initiative identified in more detail below.

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Legal/Standardization **To integrate systems and networks across disciplines through policies and development/implementation plans that encompass all 5S.(CPS)2 technologies.** **Recommendations fall into three categories: Technical; Global policy related; and Societal.[1]** **(long term)**	Technical recommendations embrace 5S.(CPS)[2] which refers to 'Cognitive Cyber and Predictive Physical System of Systems,' involving the key requirements of being Sober, Secure, Safe, Straightforward and Sustainable. Global policy recommendations include open source, International competence centre, continued investigation of emerging technologies, investments in state-of- the-art digital infrastructure (e.g. rapid roll-out of 5G).	Directorate-General for Communication Networks, Content and Technology of the European Commission as regards support of HiPEAC Vision 2021: HIGH PERFORMANCE EMBEDDED ARCHITECTURE AND COMPILATION

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[1] Key Recommendations' are summarized on the very last page of the *HiPEAC Vision 2021* document Vision - HiPEAC (after p. 224); and a lengthier overview can be found further in this report.

	Societal recommendations consist of: Training, increased investments in the creation of an innovation culture at all levels (education, society, industry); and ensuring that EU's value system is integrated into the cyber world as regards issues of digital ethics (privacy, ownership of data, constitutional freedoms, truth, responsibility, liability, sovereignty, sustainability, for example).	

2.4.2 CYBERSECURITY

Relevant document/initiative	Description	Links

Shaping Europe's digital future POLICY Cybersecurity (general)	According to the European Commission: *"Securing network and information systems in the European Union is essential. It safeguards our communication and data and keeps the online society and economy running. The European Union works on various fronts to promote cyber-resilience."* The principal components of the EU Cybersecurity landscape include: New cybersecurity Strategy Legislation and certification Investment: research, capacities, cyber centre and network Policy guidance: Blueprint, Joint Cyber Unit, 5G, elections Skills and awareness Cyber community: ENISA, ISACs, JRC, CSIRTs/ CERTs, ECSO, Women4Cyber Other cyber policy areas: cybercrime, cyber diplomacy, defence, support to third countries	Cybersecurity | ShapingEurope's digital future (europa.eu)

| Shaping Europe's digital future
Policies on Cybersecurity (specific) | EU policies on cybersecurity promote cyber-resilience, while aiming to secure networks and information systems, and safeguarding communications pathways and data to keep online society and the economy running smoothly.

The Cyber Security Strategy aims to bolster Europe's collective resilience against cyber threats and ensure that all citizens and businesses can benefit fully from trustworthy and reliable services and digital tools, including the ever growing number of connected and automated 'things' in their homes, offices and factories. The strategy embraces the following: | Policies on Cybersecurity \| Shaping Europe's digital future (europa.eu) |

Shaping Europe's digital future Policies on Cybersecurity (specific)[cont'd]	The NIS Directive on security of network and information systems reflects EU-wide legislation on cybersecurity; The NIS Cooperation Group ensures strategic cooperation and exchange of information among EU Member States in cybersecurity; EU Cybersecurity Act strengthens the role of ENISA; and establishes an EU wide Cybersecurity Certification Framework for digital products, services and processes.	Policies on Cybersecurity | Shaping Europe's digital future (europa.eu) [cont'd]
NIST White Paper **5G CYBERSECURITY** **Preparing a Secure Evolution to 5G**	Identifies several 5G use case scenarios and demonstrate for each one how to strengthen the 5G architecture components to mitigate identified risks and meet industry sectors' compliance requirements; demonstrates how commercial and open source products can leverage cybersecurity standards and recommended practices for each of the 5G use case scenarios, as well as showcase how 5G security features can be utilised.	5G Cybersecurity: Preparing aSecure Evolution to 5G (nist.gov)
NIST SPECIAL PUBLICATION 1800-33A **5G Cybersecurity (preliminary draft)**		SP 1800-33 (Draft), 5G Cybersecurity | CSRC (nist.gov) 5G Cybersecurity (nist.gov)
	NIST's National Cybersecurity Center of Excellence (NCCoE) has posted forcomment a preliminary draft—the first of three volumes (A,B,C) of an upcoming practice guide on 5G cybersecurity.	

State of play		
The vast number of components of the digital infrastructure (technologies, services, initiatives), put together, at present, do not take into account the cybersecurity domain from the start of the architectural and systems design/development phases through to the implementation of the computer models and applications that will provide secure operations in the Digital Single Market. In certain quarters, however, there are exceptions, as for example in the efforts made by the HiPEAC Vision 2021 initiative, and in the US as seen in NIST's attempts to integrate security concerns in the emerging 5G architectures.		
Recommendation: **Legal/Standardization/Best Practices**	**Explanation on recommendation**	**Relevant Institution**
A. Legal **Shaping Europe's digital future LAW12 September 2018** **Proposal for a Regulation establishing the European Cybersecurity Industrial, Technology and Research Competence Centre and the Network of National Coordination Centres[2]** **(long term)**	The Competence Centre will contribute to the wide deployment of the latest cybersecurity technologies; provide financial support and technical assistance to cybersecurity start-ups and SMEs; support research and innovation based on a comprehensive industrial and research agenda, including large-scale research and demonstration projects in next-generation cybersecurity capabilities; drive high cybersecurity standards in technology and cybersecurity systems, as well as in skills development; and facilitate cooperation between civil and defence spheres.	European Commission Directorate-General for Communications Networks, Content and Technology
B. Best Practices **Shaping Europe's digital future**	These 4 Horizon 2020 funded projects will implement a pilot for a EuropeanCybersecurity	European Commission Directorate-General for Communications Networks, Content and Technology

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[2] i) https://ec.europa.eu/digital-single-market/en/news/proposal-regulation-establishing-european-cybersecurity-industrial-technology-and-research
ii) https://ec.europa.eu/digital-single-market/en/european-cybersecurity-industrial-technology-and-research-competence-centre

Four EU pilot projects – CONCORDIA, ECHO, SPARTA and CyberSec4Europe – aim to establish the European Cybersecurity Competence Network[3] (medium term)	Competence Network and develop a common European Cybersecurity Research & Innovation Roadmap that will strengthen the EU's cybersecurity capacity and tackle future cybersecurity challenges for a moresecure Digital Single Market.	

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[3] https://ec.europa.eu/digital-single-market/en/news/four-eu-pilot-projects-launched-prepare-european-cybersecurity-competence-network

C. Standardization HiPEAC Vision 2021[4] Recommendations involve issues of integration of cybersecurity features into HW/SW, design and architectures, program specifications and source code; as well as legacy code vulnerabilities, certification, open source vs. EU-made HW/SW, and liability/accountability. (long term)	Control over hardware and software is mandatory for achieving Cybersecurity sovereignty. Design and architectural components of future advanced systems, e.g. 5S.(CPS)[2], as well as lower level programs in both specifications and sourcecode, need to include cybersecurity features from day one. Tools that are able to analyse legacy code and find vulnerabilities and unwanted behaviour, and automatically circumvent or mitigate these, are needed.	European Commission Directorate-General for Communications Networks, Content and Technology
	Security certification must become mandatory. The critical parts for cybersecurity of EU emerging systems should be based either on open-sourcesoftware and hardware, or on EU-made, trustable hardware or software (i.e. audited, proprietary). Providers and resellers of systems should be made liable and accountable for their products.	European Commission Directorate-General Migration and Home Affairs
D. Standardization Cybersecurity of 5G Networks[4] (long term)	A new legislative instrument intended to regulate the development of 5G technologies which will enable future digital services and serve as a priority forthe Digital Single Market strategy.	

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[4] Vision - HiPEAC, O. Zendra and B. Coppens. Cybersecurity must come to IT systems now. In M. Duranton et al., editors, HiPEAC Vision 2021, pages 74-79, Jan 2021.

	(For ISO/IEC, CEN/CLC related entries on cybersecurity, see section on 'Standards: International, European' in the attached document, pp. 6-7)	

2.4.3 HYPER-CONNECTIVITY

Relevant document/initiative	Description	Links

Hyper-connectivity & IoT	The European Commission has outlined the emerging trends in hyper-connectivity, including the role of computing resources virtualisation, quantum computing, 5G networks, as well as mobile communication networks, and the digitalisation and connectivity of everything (e.g. Internet of Things). IoT especially is considered one of the enablers of a hyper-connected society, in the context of an infrastructure of devices and networks connecting the physical and the digital worlds.	Hyperconnectivity & IoT | Knowledge for policy (europa.eu)
ENISA THREAT LANDSCAPE FOR 5GNETWORKS Updated threat assessment for the fifth generationof mobile telecommunications networks (5G) DECEMBER 2020	The ENISA document provides an elaborate vulnerability assessment, not only in relation to 5G network design and architecture and its components, but to a wider context that includes policy considerations, target audience, stakeholders, security on a broad scale, asset classification, the CIA triad, and, significantly, the threat landscape and taxonomy of threats.	Updated ENISA 5G Threat Landscape Report to Enhance 5G Security — ENISA(europa.eu)
State of play		

The emerging concept of hyper-connectivity embraces a slew of unpredictable uses that may include multiple devices supporting various means of communication such as person-to-person, person-to-machine or machine-to-machine that remain constantly connected to social networks and wide-ranging streams of information such as email, instant messaging, telephone mediated, face-to-face contact and Web 2.0 information services. Due to the enormity of devices and means of communication involved, at present, hyper-connectivity suffers from a lack of interoperability across platforms.

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
A. Standardization **Consideration of The World Wide Web Consortium's Web of Things initiative – W3C WoT.** **(medium term)**	EC claims that IoT suffers from a lack of interoperability across platforms. As aresult, developers are faced with data silos, high costs and limited market potential. W3C Web of Things (WoT) seeks to counter the fragmentation of the IoT by using and extending existing, standardized Web technologies. By providing standardized metadata and other re-usable technological building blocks, W3C WoT will enable straightforward integration across IoT platforms and application domains.[5]	World Wide Web Consortium
B. Legal/Standardization **In the context of design and architectural considerations, the ENISA threat landscape for 5G networks advocates associating vulnerabilities directly with threats and risks in relation to owners and assets, attack vectors, threat agents, and countermeasures.** **(long term)**	An elaborate set of vulnerabilities for all related components are described in ENISA's document and these include relevant security considerations. The large number of vulnerabilities are grouped, with highlights of the assessed weaknesses included, and details of individual vulnerabilities are presented in a corresponding Annex (see Appendix 1 in the attached document, pp. 22-23) that include associated assets, threats exploiting the vulnerability, security controls to remove/reduce the exploitation surface, stakeholder responsible	ENISA (European Union Agency for Cybersecurity)

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[5] Home - Web of Things (WoT) (w3.org)

	for the implementation of controls, as well as references to relevant sources.	

2.4.4 QUANTUM COMPUTING

Relevant document/initiative	Description	Links
Shaping Europe's digital future The Quantum Technologies Flagship	The Quantum Technologies Flagship reflects the European Commission's principal objective as regards its strategic direction for quantum computing over the next decade: to establish a world-leading European quantum technology ecosystem by 2030. Its Strategic Advisory Board has compiled a series of key performance indicators (KPIs) and recommendations that consist of the following technological and topical pillars: Ecosystem, Quantum Communication, Quantum Computing, Simulation, Quantum Sensing and Metrology, as well as Education, Training, Diversity and Equity.	https://ec.europa.eu/digital- single-market/en/blogposts/quantum-technologies-flagship-story-so-far-and-quantum-future-ahead
C. Standardization Gamrat. Towards operational quantum computing? Or: thinking beyond qubits. In M. Duranton et al., editors, HiPEAC Vision 2021, pages 116-121, Jan 2021.	The HiPEAC Vision embraces the classical/quantum duality, which implies that a quantum computer architecture will be made up of a set of quantum operators acting on qubits tightly coupled with a set of classical processors realizing a hybrid computing architecture. Furthermore, quantum computing has to maintain a close coupling between quantum and machine learning techniques and algorithms, what is referred to as the quantum-AI hybridization.	https://www.hipeac.net/vision/2021/

IBM's roadmap for building an open quantum software ecosystem	IBM's roadmap for building an open source quantum software ecosystem identifies 3 levels of development: Quantum kernel developers create high-performance quantum circuitswitch timing and pulse-level controls (the lowest level); Quantum algorithm developers rely on these circuits to develop ground-breaking quantum algorithms that aim to provide an advantage over present-day classical computing solutions; Quantum model developers apply these algorithms to real-world use cases in order to develop quantum models for chemistry, physics, biology,machine learning, optimization, finance (the highest level).	https://www.ibm.com/blogs/research/2021/02/quantum- development-roadmap

State of play
The visions for quantum computing as expressed by industry leaders such as IBM, as well as strategies advocated in leading edge H2020 projects such as HiPEAC, exhibit much more aggressive and integrated approaches to architectural structures and hybrid systems in their plans for the development of quantum computing systems than those of the EU. The Flagship Programme and KPIs for the latter consist of important, yet disparate components of an overall non-integrated quantum system that seems to advocate a strategy of competing and outdoing conventional computing systems rather than engaging in a symbiotic relationship with classical and legacy systems.

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
A. Legal/Standardization **Increased support for R&D in the field of architecture and software stacks for quantum computing.** **(medium term)** **B.** **Promote the development of a European cloud-based hybrid classical/quantum computing capability tied to machine learning techniques and algorithms (Quantum-AI Hybridization) supported by high performance computing (HPC) infrastructures.** **(medium term)**	Quantum computing should function in hybrid mode exploiting advances in the fields of classical and quantum computing, as well as artificial intelligence (AI) and High Performance Computing (HPC), in a context whereby all of these emerging technologies enrich each other.	European Commission Directorate-General for Communications Networks, Content and Technology

2.4.5 DEEPFAKES IN THE CONTEXT OF 'SYNTHETIC MEDIA'

Relevant document/initiative	Description	Links
PERCEPTION INCEPTION **Preparing for deep fakes and the synthetic media of tomorrow**	DeepFakes fall under the wider category of AI-generated 'synthetic media',[6] that is 'audiovisual information in digital form [… which is] a composite of multiple pieces of information synthesised to produce a substantially new informational artefact'. (p. 7-8)	https://www.lawfoundation.org.nz/wp-content/uploads/2019/05/2018_ILP_5_RESEARCH-_REPORT_Perception-Inception-Report-EMBARGOED-TILL-_21-May-2019.pdf
State of play		

The phenomenon of Deepfakes represents a revolution in the creation process of synthetic media. Whereas previously significant time, money, and expertise was required to generate realistic synthetic outputs, Deepfakes or AI-generated synthetic media automate these processes in a fraction of the time, and with increasingly realistic results.

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[6] Augmented Reality (AR) interweaves physical reality with the digital world and generates experiences that are immersive, interactive and feel real. Virtual Reality (VR) enhances that experience by creating an artificial environment. Applying AI-generated synthetic media into VR gives rise to entirely novel synthetic realities (SR).

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Legal/Standardization **Synthetic media are an important avenue for freedom of expression; but could be used to generate harmful impacts. In this context, a short list of recommendations include:** • **distinguishing specific harms and capabilities of synthetic media; (short term)** • **in considering standards to deal with the harms of synthetic media, it is necessary to take the concepts and drafting of existing laws as a starting point; (medium term)** • **enforceability of laws related to synthetic media is a separate issue which requires more comprehensive treatment; (long term)** • **social media platforms should be exploited for their capabilities in exerting a much greater degree of control over a much wider range of content than State-level actors. (medium term)**	The extent to which the harms of synthetic media are already subject to regulation, and the extent to which these regulations are able to actually set reliable and specific standards to allow for effective intervention, should be assessed first. It is questionable whether or not any specific proposals for regulation would do a better job at dealing with the kinds of harms being caused by synthetic media than those already incorporated into existing legal systems. Indeed, increased governmental regulation can also have the effect of creating barriers to innovation and competition. Any suggestions about the role of the law as it relates to digital democracy, synthetic media, fake news and disinformation need to address these challenges.	BRAINBOX Emerging Tech, Legal Research The LAW Foundation: New Zealand Supporting Independent Legal Thinking[7]

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[7] https://www.lawfoundation.org.nz/wp-content/uploads/2019/05/2018_ILP_5_RESEARCH-REPORT_Perception-Inception-Report-EMBARGOED-TILL-21-May-2019.pdf

2.5 RESILIENT CIVILIANS

2.5.1 INCREASING MEDIA LITERACY

Relevant document/initiative	Description	Links
Media literacy in Finland	The Guardian: With democracies around the world threatened by the seemingly unstoppable onslaught of false information, Finland – recently rated Europe's most resistant nation to fake news – takes the fight seriously enough to teach it in primary school." Multi-platform information literacy and strong critical thinking have become a core, cross-subject component of a national curriculum (from 2016).	CNN article The Guardian article
Media literacy – comparative overview in the EU countries	Document describing the state of media literacy across the EU Member States.	Mapping of media literacy practices and actions in EU-28 Media literacy in the EU (2019) – the map
JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Report on the implementation of the Action Plan Against Disinformation	Strengthening societal resilience through media literacy: A high level of media literacy is key to enabling citizens to make informed decisions in the digital age. It is a pre-requisite for a vibrant, modern democracy. To scale up media literacy initiatives across the EU and highlight best practices, in particular at regional and national level, the Commission organised the first European Media Literacy Week. In line with the	https://eeas.europa.eu//sites/default/files/joint_report_on_disinformation.pdf

	new audio-visual media services directive, Member States will have to bolster media literacy measures in their national frameworks, in close cooperation with regulators and other stakeholders.	
Lie Detectors initiative	Lie Detectors is a non-profit that helps teenagers and pre-teens learn how to spot and resist the growing volume of manipulative media crowding their Facebook, Instagram and Snapchat accounts as they start to forge an independent world view.	Lie Detectors website
Open letter from journalists to the EU	In an open letter to the EU journalists write that "every schoolchild in Europe must become a news reporter if the EU is to defeat online disinformation– and governments need to help make it happen".	Open Letter from journalists to the EU

State of play

The ability of media consumers to think critically and the habit of verifying the reliability of a source of information by consumers of digital and social media is one of the key conditions for the effective fight against disinformation. Citizens must be aware that every piece of information needs to be verified. Digital and social media users should also have the tools available to support them in finding reliable information in the chaos of the web.

- Media literacy index is different across all the European countries. Media literacy segments are written into some countries' school curriculum whereas they are not in others.
- Finland regularly tops the annual media literacy index of the European countries measuring resistance to fake news. This may be attributed to many factors, one of which is the emphasis on media literacy education among different age groups starting from kindergarten children.
- Lie Detectors - as part of 200 journalist volunteers for media literacy campaign Lie Detectors, the signatories visit classrooms either by video or in person and run training courses for pupils on using reporting techniques to expose media fakes and bias, and to understand how journalism works.
- Journalists in Germany, Austria and Belgium who have visited school classrooms across Europe to warn pupils about online disinformation amid threats to democracy say their approach has been vindicated by the EU's recently-published plans to safeguard democracy. And they urge EU institutions and governments to make urgent progress on these plans.

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Standardisation (long term)	European governments should make critical media literacy a permanent part of the school and university curriculum and of all teacher trainings.	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament – Committee on Culture and Education European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC)
Best Practices (long term)	Media-literacy teaching should be stretched across all age groups including kindergarten groups and seniors. It can take different forms – lectures, discussion panels, workshops, awareness campaigns etc. with age and education-appropriate tools. A broad training system should be set up especially for representatives of public trust professions: journalists, officials, teachers or	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC)

	opinion leaders. Entrepreneurs should also be reached through chambers of commerce or clusters.	European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) European Chamber of Commerce European Aging Network Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory Independent networks: Assembly of European Regions ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR)
Best Practices (long term)	More activities and money should be spent by the European Union, national governments and local authorities on media literacy.	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory

Relevant document/initiative	Description	Links
European Media and Audiovisual Action Plan (by the European Commission)	The Media Action Plan aims to boost European media and help maintain European cultural and technological autonomy in the Digital Decade.	European Media and Audiovisual Action Plan
Action Plan against Disinformation (by the European Commission)	One of the pillars of the plan is "Raising awareness and improving societal resilience". According to the plan, *"To increase public awareness and resilience, the Commission will further step up its commitment and current activities in relation to media literacy to empower Union citizens to better identify and deal with disinformation (such activities will include a Union online media literacy library and learning centre as well as other media literacy tools). Member States should rapidly implement the provision of the revised Audio-visual Media Service Directive requiring them to promote and develop media literacy skills."*	Action Plan against Disinformation Action Plan against Disinformation - document Audio-visual Media Service Directive
EU Media Literacy Expert Group	As written in the group's description, *"The mission of this group is to - Discover, bring to the light, document and extend good practices in the field of media literacy; - Facilitate networking between different stakeholders, with the aim of cross-fertilisation; - Explore synergies between different EU policies and media literacy initiatives."*	Media Literacy Expert Group info

State of play
Tackling disinformation requires the involvement of multiple institutions and individuals active in social media. Each institution and individual citizen should be able to access guides and anti-disinformation tools. It is important to strive for a situation where the dissemination of fake news is not due to a lack of awareness or knowledge of tools. • One of the goals of European Media and Audiovisual Action Plan is: enhancing media literacy, aimed at empowering citizens, with a toolbox and guidelines for Member States regarding the new media literacy obligations of the AVMSD, and supporting the creation of independent alternative news aggregation services capable of offering a diverse set of accessible information sources. • Media Literacy Expert Group: what were the media literacy actions taken by the group in the past and what actions are currently taken? • There was the European Media Literacy Week hosted by the European Commission in 2019. What were the outcomes of the event? Was there a similar event organised in 2020 and is there any event planned for 2021?

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Standardisation (medium term)	Where can we find the list of activities prepared for enhancing media literacy? How can we check what media literacy enhancing process looks like in particular Member States? How can these activities and their success be evaluated?	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory European Digital Media Association

Standardisation (medium term)	According to Audio-visual Media Service Directive, *"Member States shall promote and take measures for the development of media literacy skills."* Is there any more specific information on what it means, or how to do it? Any guidelines, tips, or best standards?	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory European Digital Media Association
Best Practices (medium term)	What are the actions taken currently by the European Union in order to promote media awareness and media literacy among EU citizens? Awareness campaigns connected with disinformation should be organised across all the EU but adapted to local conditions.	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation

		European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory European Digital Media Association
Best Practices (medium term)	Are there any EU handbooks ready which are focused on educational standards dealing with critical thinking and disinformation among all age groups?	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory European Digital Media Association

Best Practices (long term)	Creating guides tailored to selected target groups – social and digital media users. Guides in a practical and understandable way should inform on how to recognise fake news and what can be done in this case. In addition, developing applications available for each user of social and digital media, which facilitate the identification of fake news, marking fake news and reporting them to fact checking platforms.	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Parliament – Committee on Culture and Education European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory European Digital Media Association International Fact Checking Network

2.5.2 INCREASING SOCIETAL RESILIENCE AGAINST FAKE NEWS

Relevant document/initiative	Description	Links
Action Plan against Disinformation (by the European Commission)	With a view especially to the 2019 European elections, but also to the longer term, the **Commission and the High Representative, in cooperation with the Member States, will organise targeted campaigns for the public** and trainings for media and public opinion shapers in the Union and its neighbourhood to raise awareness of the negative effects of disinformation.	Action Plan against Disinformation Action Plan against Disinformation - document Audio-visual Media Service Directive
EUvsDisinfo	EUvsDisinfo is the flagship project of the European External Action Service's East StratCom Task Force. It was established in 2015 to better forecast, address, and respond to the Russian Federation's ongoing disinformation campaigns affecting the European Union, its Member States, and countries in the shared neighbourhood. EUvsDisinfo's core objective is to **increase public awareness and understanding of the Kremlin's disinformation operations**, and to help citizens in Europe and beyond **develop resistance to digital information and media manipulation**.	EUvsDisinfo
Social Observatory for Disinformation and Social Media Analysis (SOMA)	SOMA project has been launched by the Commission to provide support to a European community, called "European Observatory against Disinformation", that will jointly fight disinformation.	https://www.disinfobservatory.org/the-observatory/

	SOMA facilitates networking, knowledge exchange and development of best practices among independent fact checkers. A first group of 14 European fact-checking organisations have access to SOMA, which is also launching multidisciplinary centers for research on disinformation.	
Christopher Wylie "Mindf*ck. Cambridge Analytica And The Plot To Break America"	In 2018, Christopher Wylie became known to the world as the Cambridge Analytica whistleblower when he revealed the truth about the effect the firm's unprecedented data-mining operation had had on both the 2016 presidential election in America and the Brexit campaign in the United Kingdom. His action prompted the largest data-crime investigation in history.	https://www.penguinrandomhouse.com/books/604375/mindfck-by-christopher-wylie/

State of play
The issue of disinformation has different faces, changes, adapts to trends in the digital world. New sources of disinformation are emerging. This can be compared to a virus that mutates and immunities against hitherto effective treatments. Hence the need for continuous monitoring of disinformation, the development of new strategies and a tool to combat disinformation. In order to strengthen the social resilience to disinformation, it is necessary to develop various methods of action, take a look at them from different approaches. This task requires the cooperation of institutions from a wide range of sectors.

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Best Practices (long term)	Creation of centres of excellence and observatories for analysing trends in disinformation and developing social resilience strategies. There needs to be constant cooperation between representatives of different sectors:	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy

	media, science, business, public authority, civil society. Cooperation should aim at monitoring disinformation and developing strategies, recommendations and a tool to strengthen social resilience.	European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) European Digital Media Association Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory
Legal (long term)	According to Christopher Wylie, "a new digital regulatory agency should be established to enforce (…) the new digital regulatory framework with statutory sanctioning powers. In particular, these agencies should contain technically competent ombudsmen empowered with rights to conduct proactive technical audits of platforms on behalf of the public. We should also use market-based reinforcement mechanisms such as the requirement of Internet utilities to hold insurance for harms incurred from data misuse".	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Commission: DG Connect: Directorate I Media Policy European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) European Digital Media Association Association of European Journalists

		Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory

2.5.3 THE GENERAL TREND OF A GREATER CONCENTRATION OF COMPETENCES AT A LOCAL LEVEL

Relevant document/initiative	Description	Links
Local Action Groups (LAG)	A Local Action Group is a non-profit group consisting of public and private organisations from rural regions having a broad representation from different socio-economic sectors. The main objective of the local development strategies is to deliver support to their respective rural areas especially through the implementation of small-scale projects. Through this approach, LAGs can target better the particular needs and priorities of their territory since they are part of the territory itself.	Implementing LAGs and Local Strategies LAG Database
Opinion of the European Committee of the Regions on 'Tackling online disinformation: a European Approach' **(2019/C 168/04)**	The European Committee of the Regions comments on tackling disinformation with a special focus on local communities.	https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2019:168:FULL
European Code of Conduct for all Persons Involved in Local and Regional Governance (corruption handling)	The document provides codes of conduct regarding corruption handling for Local and Regional Elected Representatives.	European Code of Conduct for all Persons Involved in Local and Regional Governance - document

	State of play	
Currently it is difficult to evaluate what is being done on a local level to counter disinformation and what local initiatives are being introduced.		

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Legal (long term)	Education initiatives should be based on the local level for local communities. The European Committee of the Regions "declares its willingness to support local and regional authorities in this area, including by gathering experience from all EU Member States and by launching the development of codes of good practice"[8]. Examine the possibility of Local Action Groups to be engaged in information and education initiatives on disinformation which are aimed at local communities, e.g. in the form of regional-based projects.	European Commission: DG Connect: Directorate I Media Policy European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory

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[8] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2019:168:FULL

		Independent networks: Assembly of European Regions ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR)
Best Practices (medium term)	Involve fact-checking third sector organisations to fight disinformation and educate communities on a local level. The European Committee of the Regions "points out that it is precisely local and regional authorities that have the capacity to provide such support in various forms: competitions for grants, preferential lets of premises and other forms of aid" and "draws attention to the potential of the Committee of the Regions to play a coordinating role, define best practices and facilitate the exchange of experiences"[8].	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory Independent networks: Assembly of European Regions ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR)

Legal (medium term)	Creating a document similar to Code of Conduct on corruption but dealing with disinformation handling on a local level.	European Commission – DG Communication – Directorate C Representation & Communication in the Member States European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation Association of European Journalists European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs European Economic and Social Committee – TEN Section for Transport, Energy, Infrastructure and the Information Society Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network European Digital Media Association Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory

2.5.4 PROVIDING ASSISTANCE TO MARGINALIZED PARTS OF SOCIETY

Relevant document/initiative	Description	Links
Harnessing globalisation for regions and local authorities - briefing	The briefing documents describes globalisation – its challenges and possible solutions – in local and regional context (mainly economic aspect but it translates to other fields as well).	Harnessing globalisation for regions and local authorities - document
Opinion of the European Committee of the Regions on 'Tackling online disinformation: a European Approach' **(2019/C 168/04)**	The European Committee of the Regions comments on tackling disinformation with a special focus on local communities.	https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2019:168:FULL
Workshops for local and regional media journalists on fake news	The Polish Press Group, publisher of dozens of regional newspapers in Poland, organises workshops for journalists of local and regional media on fake news. The project is funded by the Democratic Council from the USA.	https://gazetakrakowska.pl/warsztaty-dla-dziennikarzy-mediow-lokalnych-i-regionalnych-na-temat-fake-newsow/ar/c1-14799526
State of play		

Nobody can deny the huge impact globalisation has - both positive and negative. In order to minimise the negative effects, it is essential to work closely with local communities and addressing their needs – it is a priority. It is recognised by the EU and needs to be done on numerous fields – economic, technologic, societal and others.

Hybrid threats, particularly disinformation and manipulation connected with it, cannot be omitted in this context. Marginalised parts of society (being marginalised due to various reasons) are most vulnerable to disinformation campaigns. There is definitely a lack of support for marginalised groups in tackling disinformation which can lead to various detrimental situations and may have long-lasting effects.

As The European Committee of the Regions notices, *"disinformation is detrimental to communities in a variety of ways: it not only results in political decisions that are based on false assumptions, but can also incite hatred and aggression, expose citizens to (material) losses, and lead to threats to human life and health."*

Recommendation: Legal/Standardisation/Best Practices	Explanation on recommendation	Relevant Institution
Best Practices (long term)	Do national governments make sure that disinformation and hybrid threats related topics are not only discussed and taken care of on a national, central level but are also addressed in an adequate level on a local level? We should create a support strategy for marginalised groups and develop support tools tailored to the needs of such groups. There is a need to work out ways to reach marginalised groups of society. Access to these groups is not easy, so the strategy must be deeply thought out and pragmatic. It is important to work with organisations that support marginalised groups on a daily basis and are reliable for the end-user. Tools for working with marginalised groups must be tailored to their needs, understandable and practical.	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Commission: DG Connect: Directorate I Media Policy European Parliament – Committee on Culture and Education European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory European Digital Media Association Council of Europe: Congress of Local and Regional Authority Secretary General Independent networks: Assembly of European Regions ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR)

Best Practices (long term)	The European Committee of the Regions "encourages the European Parliament to propose that the European Social Fund for 2021-2027 include a priority on creating an informed society, resilient against propaganda and with the necessary competences to be able to verify information that is disseminated via the internet". Has this advice been taken into account? Has there been any educational programme created regarding informed, local societies resilient against disinformation?	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Commission: DG Connect: Directorate I Media Policy European Parliament – Committee on Culture and Education European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory European Digital Media Association Council of Europe: Congress of Local and Regional Authority Secretary General
Best Practices (medium term)	The European Committee of the Regions emphasizes the importance of civic education in the process of countering disinformation campaigns.	European Commission – DG EAC – Education, Youth, Sport and Culture - EAC.B YOUTH, EDUCATION AND ERASMUS+ European Commission: DG Connect: Directorate I Media Policy

	In the document[9] it "declares its willingness to support local and regional authorities in this area, including by gathering experience from all EU Member States and by launching the development of codes of good practice". Has there been any follow-up on this since May 2019?	European Parliament – Committee on Culture and Education European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) European Committee of the Regions: Commission for Social Policy, Education, Employment, Research and Culture (SEDEC) Association of European Journalists Members of the High Level Group on Fake News and Online Disinformation; European Digital Media Observatory European Digital Media Association Council of Europe: Congress of Local and Regional Authority Secretary General

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[9] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2019:168:FULL

2.6 STRATEGIC COMMUNICATION (STRATCOM)

2.6.1 REINVENTING THE PRACTICE OF PUBLIC OUTREACH

Relevant document/initiative	Description	Links
Action Plan against Disinformation (by the European Commission)	Published in 2018. One of the pillars of the plan is "Strengthening coordinated and joint responses to disinformation" -> **Rapid Alert System.**	ACTION PLAN AGAINST DISINFORMATION ACTION PLAN AGAINST DISINFORMATION - DOCUMENT RAPID ALERT SYSTEM – FACT SHEET
European Democracy Action Plan (by the European Commission)	The Action Plan is built on 3 pillars and sets out measures to promote free and fair elections, strengthen media freedom and counter disinformation. The document was published 3.12.2020. Next steps: The Commission will gradually implement the European Democracy Action plan until 2023 - a year ahead of the elections to the European Parliament	EUROPEAN DEMOCRACY ACTION PLAN – PRESS RELEASE EUROPEAN DEMOCRACY ACTION PLAN – COMPLETE DOCUMENT THE EUROPEAN COMMISSION CLIP THE EUROPEAN COMMISSION FACT SHEET
Special Report Disinformation affecting the EU: tackled but not tamed – European Court of Auditors	The purpose of the audit was to assess whether the EU action plan against disinformation was relevant when drawn up and delivering its intended results. The audit covered the period from the run-up to the adoption of the EU action plan against disinformation in December 2018 until September 2020. This report is the first comprehensive, independent assessment of its relevance and the results achieved.	HTTPS://WWW.ECA.EUROPA.EU/LISTS/ECAD OCUMENTS/SR21_09/SR_DISINFORMATION_ EN.PDF

	Overall, we conclude that the EU action plan was relevant but incomplete, and even though its implementation is broadly on track and there is evidence of positive developments, some results have not been delivered as intended	
State of play		
As the document states: **Rapid Alert System** will be set up to provide **alerts on disinformation campaigns in real-time through a dedicated technological infrastructure**. This will facilitate sharing of data and assessment, to enable common situational awareness, coordinated attribution and response and ensure time and resource efficiency. **The Action Plan against Disinformation should facilitate information sharing among the EU and Member States and other relevant institutions (like NATO).** It describes how the Rapid Alert System should work, what should be done from the Union and from the Member States regarding disinformation campaigns.		
Recommendation: Legal/Standardization/Best Practices	**Explanation on recommendation**	**Relevant Institution**
Best Practices (medium term)	Does Rapid Alert System work in all the EU countries? Is it effective? What about citizens? After the information on disinformation/disinformation campaign is distributed via Rapid Alert System – is this information in any way shared with the public to make citizens aware of circulating disinformation? Are disinformation campaigns addressed by the officials and explained to the public?	European Commission – DG HOME – Unit HOME.F Audit & Situational Awareness; National Governments – Entities responsible for Public Security Issue Coordination, in Poland: GOVERNMENT CENTER FOR SECURITY

Best Practices (long term)	Rapid Alert System works only on a governmental level. It would be much needed to extend this system so that essential disinformation alerts reach to local authorities as well.	European Commission – DG HOME – Unit HOME.F Audit & Situational Awareness; European Parliament - SPECIAL COMMITTEE ON FOREIGN INTERFERENCE IN ALL DEMOCRATIC PROCESSES IN THE EUROPEAN UNION, INCLUDING DISINFORMATION European Committee of the Regions – thematic commission CIVEX: COMMISSION FOR CITIZENSHIP, GOVERNANCE, INSTITUTIONAL AND EXTERNAL AFFAIRS; COUNCIL OF EUROPE: CONGRESS OF LOCAL AND REGIONAL AUTHORITY SECRETARY GENERAL
Best Practices (long term)	A central hub (platform) would be needed which would gather all the data connected with disinformation threats (including campaigns) that are currently happening or that are predicted to happen. From this hub, information could be distributed on a central level to governments, to relevant institutions, on a regional level to local authorities and then, as the next step, distributed to citizens both on a national and local level. This central hub could be a public-private collaboration.	INTERNATIONAL FACT CHECKING NETWORK EUROPEAN DIGITAL MEDIA ASSOCIATION Members of the HIGH LEVEL GROUP ON FAKE NEWS AND ONLINE DISINFORMATION; ASSOCIATION OF EUROPEAN JOURNALISTS EUROPEAN DIGITAL MEDIA OBSERVATORY

2.6.2 STANDARDS OF COMMUNICATION BETWEEN NATIONAL GOVERNMENTS AND LOCAL AUTHORITIES

Relevant document/initiative	Description	Links
European Communication Strategy	Published In February 2021, the communication strategy focuses on primary objectives in order to solidify communications between the European Union and member states' citizens.	European Communication Strategy
Public Trust and Integrity in Europe	The Relevant document published in 2015 focuses on analyzing the trust scored based off widespread survey results which took place annually to measure the trends in civilians trust to; National Government, Local Government, EU.	Public Trust and Integrity in Europe PDF
A multi-dimensional approach to disinformation - High Level Expert Group on Fake News and Online Disinformation	Disinformation as defined in this report includes all forms of false, inaccurate, or misleading information designed, presented and promoted to intentionally cause public harm or for profit. It does not cover issues arising from the creation and dissemination online of illegal content (notably defamation, hate speech, incitement to violence), which are subject to regulatory remedies under EU or national laws, nor other forms of deliberate but not misleading distortions of facts such a satire and parody. The multi-dimensional approach recommended by the HLEG is based on a number of interconnected and mutually reinforcing responses. These responses rest on five pillars designed to:	https://digital-strategy.ec.europa.eu/en/library/final-report-high-level-expert-group-fake-news-and-online-disinformation

	1. enhance transparency of online news, involving an adequate and privacy-compliant sharing of data about the systems that enable their circulation online; 2. promote media and information literacy to counter disinformation and help users navigate the digital media environment; 3. develop tools for empowering users and journalists to tackle disinformation and foster a positive engagement with fast-evolving information technologies; 4. safeguard the diversity and sustainability of the European news media ecosystem, and 5. promote continued research on the impact of disinformation in Europe to evaluate the measures taken by different actors and constantly adjust the necessary responses.	
Rebuilding trust between political leaders and the public	Trust in political leaders (local and national) is seriously faltering and steps should be taken to reverse this trend. Here's one of the sources which gives useful information on what steps can be undertaken in order to achieve it. In this website, there is a leadership assessment one can take, information about how an organization can operationalize its values,	https://daretolead.brenebrown.com/

recommended podcasts where more information can be found, books, leaderships trainers etc.	

State of play
• The general trend is that trust to national government is decreasing due to a change between local and national level priorities. • Regional citizens trust to political leaders is dropping due to their lack of presence on a local scale, local leaders have more trust on average as they have closer ties with people living there. • The platforms used to connect local and national levels are weak and need to be re-evaluated. • Goal to connect with people locally by addressing them in their national or local settings through their favorite media. • The standards of communication between the EU and the Member States are sufficiently well described. There are also standards of conduct adopted by private actors in the digital media market. On the other hand, there is a lack of standards of communication between national governments and local authorities. It is to identify the problem of cooperation between governments and local authorities as a gap in the anti-disinformation system.

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Best Practices (long term)	Coordination of priorities between local and national government in order to develop a basis on what can be covered by whom. Additionally, cooperation on mutual objectives is essential.	European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs Council of Europe: Congress of Local and Regional Authority Secretary General International Fact Checking Network Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists European Digital Media Observatory

		Independent networks: Assembly of European Regions ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR)
Standardization (long term)	Creating standards of communication between national governments and local authorities. Creating a platform for debate between government and local authorities. Standards should take into account the needs and the competences of local authorities. Their development should serve to draw the attention of local authorities to the problem of disinformation. At present, disinformation seems to be seen as an international and national problem. The local context is missing. Standards should be developed in cooperation with representatives of local authorities and organisations of local authorities at international and national level.	European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation; European Commission: DG Connect: Directorate H Digital Society, Trust & Cybersecurity European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs; Members of the High Level Group on Fake News and Online Disinformation; International Fact Checking Network; Association of European Journalists European Digital Media Observatory Council of Europe: Congress of Local and Regional Authority Secretary General European Digital Media Association Independent networks: Assembly of European Regions ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR)

Best Practices (long term)	The need of rebuilding trust between political leaders and citizens (local and national level). There is a need to start programs with political leaders that address their leadership skills and how to rebuild that broken trust with their public.	European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Commission: DG Connect: Directorate H Digital Society, Trust & Cybersecurity European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs European Economic and Social Committee: Section for Employment, Social Affairs and Citizenship (SOC) Council of Europe: Congress of Local and Regional Authority Secretary General Independent networks: Assembly of European Regions ALDA – European Association for Local Democracy Council of European Municipalities and Regions (CEMR)

2.6.3 ESTABLISHING OFFICIAL AND WELL-KNOWN COMMUNICATION PLATFORMS

Relevant document/initiative	Description	Links
The European Citizens' Initiative	The European citizens' initiative, foreseen in the Treaty on European Union, allows EU citizens to participate directly in the development of EU policies by calling on the European Commission to make a legislative proposal. To be considered by the Commission, an initiative must gather the support of at least one million EU citizens from at least seven member states. The Commission must decide whether or not to make a legislative proposal, and explain the reasons for that choice.	THE EUROPEAN CITIZENS' INITIATIVE WEBSITE
What Europe Does For Me #EUandME	The website describes what the EU does for citizens living in all the EU member countries. It presents a series of short notes exploring EU deliveries and actions from the individual's point of view. In a one-page format, these notes are available to read, share or reuse. And if anyone wants to dig deeper, they may take a look at longer briefing papers on EU policies in focus.	WHAT EUROPE DOES FOR ME PORTAL
Citizens' App: Europe in the palm of your hand	A mobile application, designed by the European Parliament to help citizens to discover what the EU has done, is doing and plans to do.	CITIZENS' APP: EUROPE IN THE PALM OF YOUR HAND INFO

Europe Direct - answering your questions about the EU	The Europe Direct Contact Centre is run by the European Commission. They answer any question from the public about the European Union, via phone or email. The staff includes native speakers of all the EU's 24 official languages. The services do not cost anything, people can call from anywhere in the EU. They also have an option of written contact by completing a form on the website.	EUROPE DIRECT WEBSITE
The EU and social network	The EU is present on different social media accounts – Facebook, Twitter, Instagram and more	THE EU AND SOCIAL NETWORK INFO

State of play
The EU reaches to citizens in all Member States using different channels and giving all sorts of relevant information in an accessible form. Are all these channels also used to fight disinformation, to make people aware what disinformation is, what disinformation campaigns they can come across? Are any e-learning tutorials offered on how to differentiate between fake and real news, how to check sources etc.?

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Best Practices (long term)	More emphasis should be placed on promoting all the actions on a local/regional level to make sure all the essential info regarding the EU actions, initiatives and possibilities are known and advertised to local communities through local authorities.	European Commission: DG CONNECT: DIRECTORATE H DIGITAL SOCIETY, TRUST & CYBERSECURITY European Committee of the Regions – thematic commission CIVEX: COMMISSION FOR CITIZENSHIP, GOVERNANCE, INSTITUTIONAL AND EXTERNAL AFFAIRS;

		COUNCIL OF EUROPE: CONGRESS OF LOCAL AND REGIONAL AUTHORITY SECRETARY GENERAL Members of the HIGH LEVEL GROUP ON FAKE NEWS AND ONLINE DISINFORMATION; INTERNATIONAL FACT CHECKING NETWORK; ASSOCIATION OF EUROPEAN JOURNALISTS EUROPEAN DIGITAL MEDIA ASSOCIATION EUROPEAN DIGITAL MEDIA OBSERVATORY Independent networks: ASSEMBLY OF EUROPEAN REGIONS ALDA – EUROPEAN ASSOCIATION FOR LOCAL DEMOCRACY COUNCIL OF EUROPEAN MUNICIPALITIES AND REGIONS (CEMR)
Best Practices (medium term)	Using all the available channels to inform and educate people on disinformation (theory) but also making them aware what kind of disinformation news is currently circulating and what fake news people can come across. Additionally, citizens should be given the ability to practice distinguishing disinformation from facts (perhaps through e-learning modules integrated into the above mentioned platforms and apps).	INTERNATIONAL FACT CHECKING NETWORK; EUROPEAN DIGITAL MEDIA ASSOCIATION Members of the HIGH LEVEL GROUP ON FAKE NEWS AND ONLINE DISINFORMATION; ASSOCIATION OF EUROPEAN JOURNALISTS;

2.6.4 PREPARING SIMPLIFIED BLUEPRINTS OF POLITICAL COMMUNICATION WITH THE GENERAL PUBLIC

Relevant document/initiative	Description	Links
OECD: Effective Communications Between the Public Service and the Media	The relevant document reviews different nations around the world (Including EU member states) and their methods of communication. Although the document was published in 1996 and the specific state of play described there may not be the case anymore, it still contains a lot of tips and observations which are very much relevant today. OECD document states: the credibility of the government and the acceptance of public policies depends on the degree to which it is open with the media. A relationship that stresses a free flow of information between government and the media is necessary from the inception of a public policy. When the public is allowed to understand the development of a policy, it is then easier for government to build support and implement it and underlying objectives - such as reform of the public administration. It stresses the need for a coordinated governmental communication policy linked from the beginning to the process of formulating, adopting and implementing a policy. For a democracy to operate effectively, the government must communicate with the citizens of the country. They have the right to	[OEDC](#)

	know what government ministries and other public sector bodies are doing, and why administrative decisions are made. The information provided by government must be credible and timely. In order to reach large numbers of people, the government must rely on the media, which filters and analyses information provided to the public electronically or in print. Every effort must be made to build confidence between the public administration, the citizenry at large, and the media. The media acts as a channel of communication and as an active participant in the reform process. The question for government is how to convey its message to the media, which wields a great deal of power in every democracy.	
The National Association of Government Communicators (US)	Members of the National Association of Government Communicators (US) are dedicated to achieve better communication, understanding and co-operation among the government and the citizens. The members of the association strongly believe that the public has the right to have the access to information and actions undertaken by the government. As the website states: Members of the NAGC are dedicated to the goals of better communication, understanding,	NAGC website NAGC Code of Ethics

	and cooperation among all people. We believe that truth is sacred; that providing public information is an essential civil service; and that each citizen has a right to equal, full, understandable, and timely facts about the activities, policies and people of the agencies comprising his or her government. NAGC members' professional conduct must comport with the association's Code of Ethics.	
eGov - Using technology to improve public services and democratic participation	European Initiative to digitalize strategic communications by introducing an online governance system. Performance is measured by 4 main aspects. 1: User Centricity. 2: Transparency, 3: Key Enablers, 4: Cross-Border Mobility. Implemented well, eGovernment enables citizens, enterprises and organisations to carry out their interactions with government more easily, more quickly and at lower cost.	eGovernment

State of play
- Developed public administrative sector with digital services available to most EU member states   - EU overall performance has improved by 5% from 2018, now sitting at 68% overall performance   - Some of the main gaps include online availability between business-related services and services targeting citizens and Cyber security breaches   - Development of new business models and cross sector industries (Public Private Partnerships)   - Weak communication between national governments and the citizens regarding new initiatives and actions being undertaken especially at the very beginning of new processes being created. Usually citizens are informed about the new policy after it is being created with no proper introduction and explanation

Recommendation: Legal/Standardization/Best Practices	Explanation on recommendation	Relevant Institution
Best Practices (medium term)	Are there any blueprints on the EU level which can be used whenever public administration introduces any changes/reforms in order to ensure effective communication between public administration and the media, which in turn will enhance complex and thorough media coverage of the upcoming reform?	European Commission: DG Connect: Directorate H Digital Society, Trust & Cybersecurity European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs International Fact Checking Network European Digital Media Observatory Members of the High Level Group on Fake News and Online Disinformation; Association of European Journalists
Best Practices (long term)	Do we have any initiative similar to NAGC in the EU which would facilitate the communication between the public and official bodies?	European Commission: DG Connect: Directorate H Digital Society, Trust & Cybersecurity European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs Members of the High Level Group on Fake News and Online Disinformation; International Fact Checking Network Association of European Journalists European Digital Media Association European Digital Media Observatory

Best Practices (medium term)	eGovernment and digital government are terms used to describe the application of information and communication technologies (ICTs) to improve public services and to increase citizen participation in democratic government. Such portals operate on a national level in different EU member states. To which extent are these portals used also to convey most important information, to give access to facts and to debunk fake news? Can eGovernment space also be used for a potential cooperation between public bodies and fact checking community?	European Commission: DG Connect: Directorate H Digital Society, Trust & Cybersecurity International Fact Checking Network European Digital Media Association European Digital Media Observatory Members of the High Level Group on Fake News and Online Disinformation
Best Practices (short term)	Specific protocols should be created and activated each time disinformation must be addressed on a national or the EU level.	European Commission: DG Connect: Directorate H Digital Society, Trust & Cybersecurity European Parliament - Special Committee on Foreign Interference in all Democratic Processes in the European Union, including Disinformation European Committee of the Regions – thematic commission CIVEX: Commission for Citizenship, Governance, Institutional and External Affairs Members of the High Level Group on Fake News and Online Disinformation International Fact Checking Network European Digital Media Association European Digital Media Observatory Association of European Journalists

3. DISSEMINATION OF RECOMMENDATIONS TO RELEVANT STAKEHOLDERS

As part of task 4.3, 6 thematic reports were prepared: In each of the reports, specific recommendations were developed for actions to be taken at the level of the European Union and Member States. The purpose of developing the recommendation is to indicate particularly important aspects in each of the topics, which will be affected by the reports.

Each recommendation was addressed to one or more of the institutions operating at the EU level. The selection of institutions to which the recommendations are addressed was made using two basic criteria.

The first criterion is the substantive area to which the recommendation relates. In this case, it was necessary to identify the content related area of the institution's operation, so as to match the recommendation to the area of the institution's activities.

It was important to identify the addressee of the recommendation as concretely and precisely as possible. Hence, within the framework of large institutions such as the European Commission or the European Parliament, the idea behind was to identify particular unit or committee. So that the reports reach people who deal with a given topic on a daily basis. This approach was aimed at avoiding a situation in which reports would be sent to people dealing with other areas of interest or sent to general addressees, from where it would have to be redirected to the persons responsible for the substance.

The second criterion taken into account in the process of identifying groups of recipients of substantive reports was the criterion of diversity of entities. It was important that the reports reached the institutions from different sectors. First of all, to representatives of public authorities, both legislative and executive powers. But we also wanted to reach out to the entities of the broadly understood civil society, opinion leaders and all kinds of expert bodies, networks and representations of the sectorial interests. The purpose of such addressing the recommendation was to contribute to the discussion on the substantive issues tackled in the reports in the public debate. At the same time, we wanted to reach out to experts and representatives of various lobbies and group of interests. Apart from this, by submitting the reports, we wanted to define entities from different sectors that could be interested in the EU-HYBNET project, as well as be interested in joining as affiliates of the project.

The reports were sent to the identified institutions by Laurea University, coordinator of the EU- HYBNET project, and by the Polish Platform for Homeland Security - the leader of Task 4.3 Recommendations for Standardization. Both institutions will monitor feedback from institutions that have received reports with recommendations. Feedback will be consulted among the partners of Task 4.3 and its content will be taken into account, as far as possible, in further project work.

4. LINKS WITH T4.2 - STRATEGY FOR INNOVATION UPTAKE AND INDUSTRIALISATION

There are several links between T4.3 outcomes in first project cycle and outcomes of T4.2. The deliverable D.4.4 "First report on strategy for innovation uptake, industrialisation and research" provide information about selected most promising innovations:

1) **Innovation: Public-private information sharing groups developing colaborative investigations and collective actions** (page 41-46 of D4.4)

T4.3 identified relations in D4.8:

- p. 28-29: "Regulatory framework enhancements: In order to support cooperation between public and private partners there might also be a need to look further to the regulatory framework, building on the EU's own strengths and principles." (Critical goods and commodities)
- p. 57: "Public–private partnership in fact-checking area." (Fake news and disinformation)
- p. 92-93: "Creation of centres of excellence and observatories for analysing trends in disinformation and developing social resilience strategies. There needs to be constant cooperation between representatives of different sectors: media, science, business, public authority, civil society. Cooperation should aim at monitoring disinformation and developing strategies, recommendations and a tool to strengthen social resilience." (Resilient Civilians)
- p. 105: "A central hub (platform) would be needed which would gather all the data connected with disinformation threats (including campaigns) that are currently happening or that are predicted to happen. From this hub, information could be distributed on a central level to governments, to relevant institutions, on a regional level to local authorities and then, as the next step, distributed to citizens both on a national and local level. This central hub could be a public-private collaboration." (Stratcom)

The above examples encompass a wider perspective seeing the need of public-private partnership also in the spheres of protecting Big Data (which we recommend here to include into critical commodity group). Additionally, public-private partnership is an essential factor in buidling social resilience through the cooperation eg. in the fact-checking area.

2) **Innovation: Debuking of fake-news** (page 47-52 of D4.4)

T4.3 identified relations in D4.8:

- p. 92-93: "Creation of centres of excellence and observatories for analysing trends in disinformation and developing social resilience strategies. There needs to be constant cooperation between representatives of different sectors: media, science, business, public authority, civil society. Cooperation should aim at monitoring disinformation and developing strategies, recommendations and a tool to strengthen social resilience." (Resilient Civilians)
- p. 104: "Does Rapid Alert System work in all the EU countries? Is it effective?
  What about citizens? After the information on disinformation/disinformation campaign is distributed via Rapid Alert System – is this information in any way shared with the public to make citizens aware of circulating disinformation? Are disinformation campaigns addressed by the officials and explained to the public?" (Stratcom)
- p. 105: "A central hub (platform) would be needed which would gather all the data connected with disinformation threats (including campaigns) that are currently happening or that are predicted to happen. From this hub, information could be distributed on a central level to governments, to relevant institutions, on a regional level to local authorities and then, as the next step, distributed to citizens both on a national and local level. This central hub could be a public-private collaboration." (Stratcom)

There is definitely a need to have a solution for monitoring, sharing and analysing disinformation campaigns. In the reports presented in this deliverable, a question is raised regarding Rapid Alert System which was set up also to provide alerts on disinformation campaigns in real-time. Does it serve its function?

The tool that should be designated for this purpose should be a countermeasure against disinformation campaigns, as described in D4.4, can be a platform that will be extremely valuable for informing and educating people on disinformation putting special emphasis on what kind of disinformation news is currently circulating and what fake news people can come across. It can constitute one of the greatest factors in bulding the resilience of society when it comes to disinformation campaigns. As the next step, specific protocols can be created and activated each time disinformation must be addressed (as described in Stratcom report in this Deliverable).

3) Innovation: Training application for media literacy (page 53-58 of D4.4)

T4.3 identified relations in D4.8:
- p. 84: "European governments should make critical media literacy a permanent part of the school and university curriculum and of all teacher trainings." (Resilient civilians)
- p. 84: "Media-literacy teaching should be stretched across all age groups including kindergarten groups and seniors. It can take different forms – lectures, discussion panels, workshops, awareness campaigns etc. with age and education-appropriate tools." (Resilient civilians)

Media literacy and critical thinking teaching are one of the foundations for improving the resilience of society regarding disinformation campaigns. This topic is mentioned numerous times in this deliverable. Training application is one of the ways of how it can be put into practice and a much needed solution to be applied.

4) Innovation: Guides to identify fakes (page 59-62 of D4.4)

T4.3 identified relations in D4.8:
- p. 60: "Widely available and easy to use application/program checking facts or a system that could help citizens assess the source of information." (Fake news and disinformation)
- p. 61: "Building awareness among citizens regarding fact checkers." (Fake news and disinformation)
- p. 91: "Creating guides tailored to selected target groups – social and digital media users. Guides in a practical and understandable way should inform on how to recognise fake news and what can be done in this case. In addition, developing applications available for each user of social and digital media, which facilitate the identification of fake news, marking fake news and reporting them to fact checking platforms." (Resilient civilians)

The more awareness campaigns the better. If those campaigns are accompanied by guides to identify fakes, this is definitely an added value which gives a precise manual for citizens on how they can verify content that they are presented with on a daily basis (text, image, video, audio). Currently there are different fakes detection tools, but these are not known to or used by a wider public on a regular basis. A guide would definitely help them navigate through those and give them the ability to choose the ones they find most suitable for their own use. The guides should be tailored for different groups, including journalists, and can be grouped due to their level of focues (eg. guides to detect media fakes, as described in D4.4).

To summarize, T4.3 will continue to focus on the above mentioned, T4.2 idetified most promising four innovations and the recommendations for their standardization. However, during the second project cycle, T4.3 will also focus on the most promising identified innovations (technological and non-technological) that are mapped to the second project cycle identified most important gaps and needs.

5. THE THREE LINES OF ACTION

The EU-HYBNET needs to report to the EC on Three Lines of Action. Each deliverable should state and explain how it contributes and have provided input and results to the *EC Three Lines of Action*. Below you will find Task 4.3 contribution:

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

D4.8 contribution: During development of standardisation recommendations in the first EU-HYBNET cycle, partners of T4.3 were analysing also what research and innovation projects are bringing to the practitioners. Many of recommendations or identified best practices are based on research and innovation projects and activities, conducted in Europe but also outside Europe. This analysis is a relevant input to the EU-HYBNET's Objective 4 goal 4.3. in order to develop a mapping matrix connecting gaps and needs of European actors to areas that highlight the most promising innovations in different domains.

D4.8 contributes also to the EU-HYBNET's Objective 4 goal 4.1. T4.3 recommendations refer also to the industrialisation and to public procurement. These recommendations are an important input conserning the appraise of best innovations (both technical and non-netchnical).

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

D4.8 contribution: Many of described above recommendations are related to social and (non)technical innovations. It should be underlined that even best practices from one country can be innovative in many others. The work conducted in D4.8 highlights the EU and EC policy framework for innovation uptake for identified gaps and needs to counter hybrid threats. D4.8 contributs also to the EU-HYBNET's Objective 2, goal 2.4. enabling to define common requirements for new research and innovation possibilities that can fill knowledge gaps, and enhance capabilities endeavours concerning hybrid threats. Above recommendations suggested key focus research, innovation areas and actions for the future in the field of countering hybrid threats.

3) priorities as regards of increasing knowledge and performance requiring standardisation.

D4.8 contribution: Many of described above recommendations are related to increasing (disseminating) knowledge and performance related to standardization, also non-technological and technological innovations linked to the increase of knowledge and skills. It is not necessary to list all examples here, as it would be repeating what was written and decribed in this deliverable standardisation recommendations reports.

6. CONCLUSION

6.1 SUMMARY

In this document we have described the 6 main areas selected to focus on in this deliverable and to construct the reports around them. In Section 2 we provide the most important aspects connected with selected areas happening currently together with offered recommendations linked to the innovations recommendations for standardization. Section 3 offers insight on who the reports were shared with at this stage.

6.2 FUTURE WORK

In the next project cycle, the state of play will be reviewed and updated according to the outcome of the review. This input together with the updated Gaps & Needs and especially identified most promising innovations from EU-HYBNET T3.1 and T4.2 to the second cycle gaps and will be studied. It will help us verify if the 6 areas selected for this deliverable will still be the basis for innovation standardization recommendation reports prepared within the next cycle.

Additionally, in the forthcoming months, Task 4.3 partners will select one of the specific innovation (technological and non-technological) topics and prepare a workshop to discuss it in more depth with consortium partners, network members and external experts (M26 in Hague) on the most promising innovation recommendations for standardization. Morover, T4.3 partners will discuss about posibility of development of policy papers for selected innovation topic or topics already identified within T4.3.

After all the focus in EU-HYBNET Task 4.3 that delivers the update of the D4.2 is according to the EU-HYBNET Description of Action (DoA) PART B following:

- Once the most promising innovation and research solutions for countering hybrid threats are identified, they will be delivered to WP 4 which is dedicated to the uptake and standardisation. It will address how the innovation procurement in Europe functions in order to determine a best-fit strategy for uptaking and **standardisation of desired and required solutions for countering hybrid threats**
- In WP 4 we select the most feasible innovations by on the one hand using the output of WP3 and WP2 T2.4 training and exercise event testing results (a selection of most promising research and innovations (technical and social) in relation to the urgency of gaps and needs) and on the other hand taking into account successful industrialisation and standardisation in European projects and industry. **The combination of both leads us to priorities, recommendations and even a roadmap for standardisation of counter hybrid threat solutions (software, hardware, training, etc.).**
- WP4 to deliver the **recommendations of the most promising innovations uptake (incl. industrialisation).**