



A GOVERNANCE FRAMEWORK FOR NATIONAL CYBERSECURITY STRATEGIES

February 2023



EUROPEAN UNION AGENCY
FOR CYBERSECURITY

ABOUT ENISA

The European Union Agency for Cybersecurity (ENISA) has been working to make Europe cyber secure since 2004. ENISA works with the EU, its member states, the private sector and Europe's citizens to develop advice and recommendations on good practice in information security. It assists EU member states in implementing relevant EU legislation and works to improve the resilience of Europe's critical information infrastructure and networks. ENISA seeks to enhance existing expertise in EU member states by supporting the development of cross-border communities committed to improving network and information security throughout the EU. Since 2019, it has been drawing up cybersecurity certification schemes. More information about ENISA and its work can be found at www.enisa.europa.eu.

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SCOPE, OBJECTIVES & AIM

The EU Cybersecurity Act states that ENISA shall support the Member States in developing national strategies on the security of network and information systems, promote the correct deployment of those strategies and set up a governance framework that ensures the sustainability of national strategies (National Cybersecurity Strategy - NCSS). As part of this mandate, ENISA launched this study to perform a systematic review of the governance models relevant to the deployment of an NCSS to identify and select the most relevant instances, lessons learned, and good practices from the Member States.

This study aims to collect insights on the definition of processes, roles and responsibilities, the subsequent deployment of monitoring measures and what are the main challenges and good practices that the European countries put in place to ensure an effective governance framework for the implementation of current and future NCSSs of the EU Member States.

DEFINITIONS

CYBERSECURITY ACT (CSA)

The CSA establishes a cybersecurity certification framework and introduces rules for EU-wide certification of ICT products, processes and services. Additionally, it grants ENISA a permanent mandate and increased responsibilities and resources to support cybersecurity across the Union.

GOVERNANCE

Governance describes a complex system, defining roles, responsibilities, processes and relationships. Governance includes stakeholders from and covers the private sector, the public administration as well as the civil society and spans over different topics such as economic, social and political priorities.

CYBER GOVERNANCE

“Operation of decision-making processes” which increase and ensure “participation, transparency, and accountability in taking measures related to cyberspace together with the mechanism of international agreements, strategies, laws, measures, regulations, and standards that interlock in the best way” (Efe & Bensghir, 2019).

GOVERNANCE MODEL

A governance model provides a framework to systemise and organise stakeholders, actions, processes, and relationships to reach defined objectives of a policy, strategy or political system. This study assesses governance models based on their political, strategic, operational and technical elements to reach the objectives of the NCSS.

METHODOLOGICAL APPROACH

1

Desk Research: The desk research has been focused on good practices adopted in the EU Member States, while insights collected from around the world complement the analysis.

2

Collection of experts and stakeholders' points of view: In this context, 19 stakeholders from 18 EU Member States have been interviewed. The national stakeholders have all been part of the national authority or government body in charge of the cybersecurity strategy.

3

Analysis of data: The data collected through desk research and interviews was analysed to identify good practices in the design of a governance framework.

4

Definition of good practices for governance: Thereafter, good practices and trends in setting up governance models have been defined and validated by national experts, before publication.

INTERVIEWED MEMBER STATES

18 Member States interviewed

- Austria
- Belgium
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- Germany
- Greece
- Ireland
- Italy
- Lithuania
- Malta
- Netherlands
- Slovakia
- Spain
- Sweden

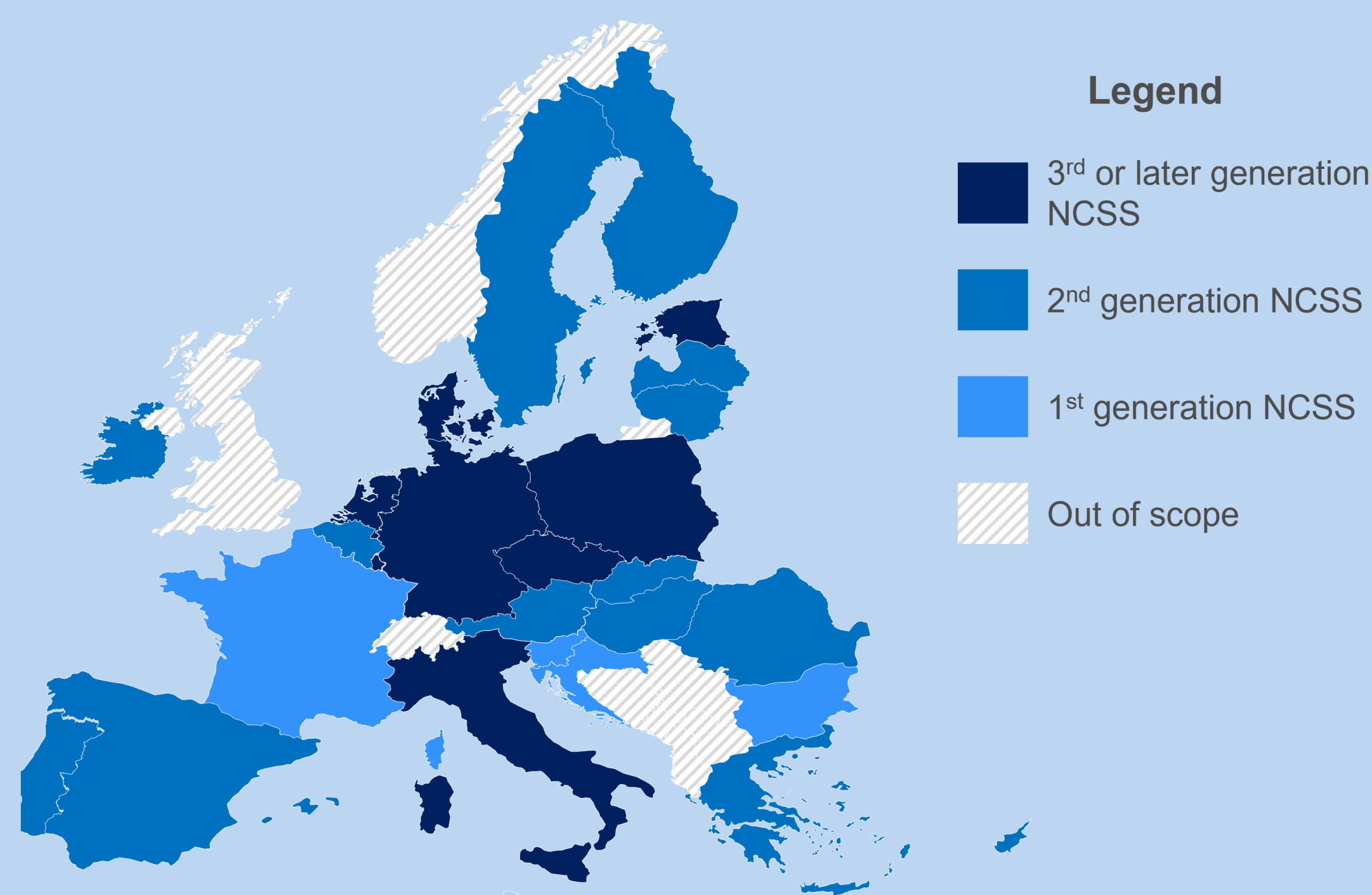


THE NCSSs in the EU

NCSS generation in the EU

Out of the 27 Member States:

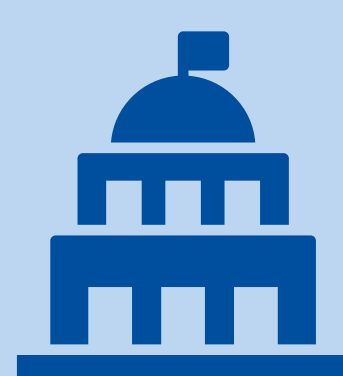
- 8 Member States have 3rd or later generation NCSS;
- 14 Member States have a 2nd generation NCSS;
- 5 Member States are at their first NCSS.



Every EU Member State is obliged, following the NIS Directive, to develop and implement a National Cybersecurity Strategy (NCSS) to ensure fostering security of network and information systems across the Union. Each NCSS aims to set out a plan of actions to improve the security and resilience of national infrastructure systems and services. It aims to provide a high-level top-down approach to cybersecurity and to establish a range of national objectives and priorities.

However, the fast and ever-evolving cyberspace calls for constantly developing and adopting the NCSS and hence consistent monitoring and evaluation of the NCSS is necessary.

Additionally, establishing a functioning and effective governance model for the implementation of the current and future NCSSs is essential to foster cybersecurity across the Union and to reach the national strategies' as well as the institutions' objectives in this relation.



The creation of a central body in charge of the successful deployment of the NCSS is uniquely affected by the type of government or its self-governance.

Some of the factors that play a role in the definition of the mandate of such a body are related to the dimension of the country, stage of maturity and the country's self-governance.

100%

of the interviewed stakeholders have in place a central cybersecurity body.

DEVELOPING AN EFFECTIVE GOVERNANCE MODEL FOR NCSSs



Elements of Political Governance



Overview of the implementation status across the interviewed EU Member States

POLITICAL PROCESSES



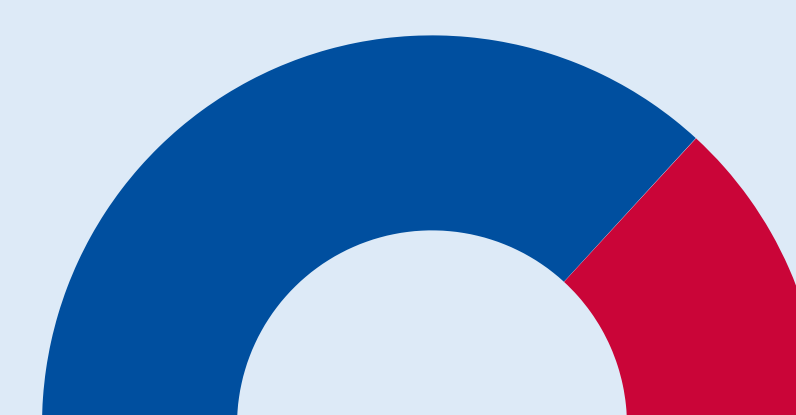
■ In place (100%)

Focus on cooperative and collaborative approaches at international, inter-sectoral and regional levels



■ In place (89.47%)
■ Not in place (10.53%)

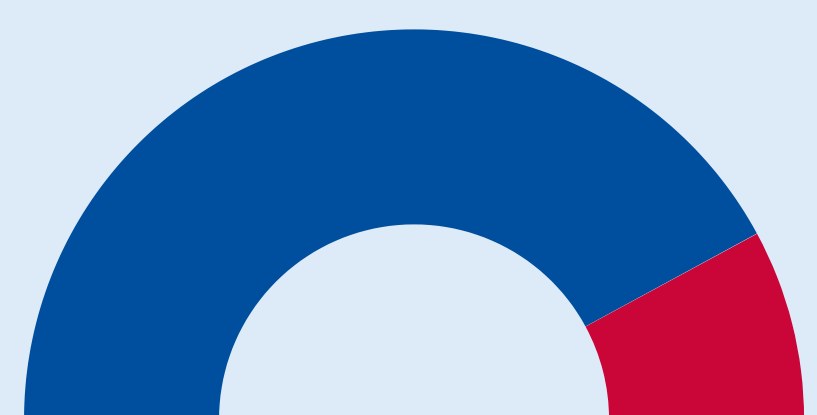
Focus on participatory approaches, including various stakeholder groups



■ In place (73.68%)
■ Not in place (26.32%)

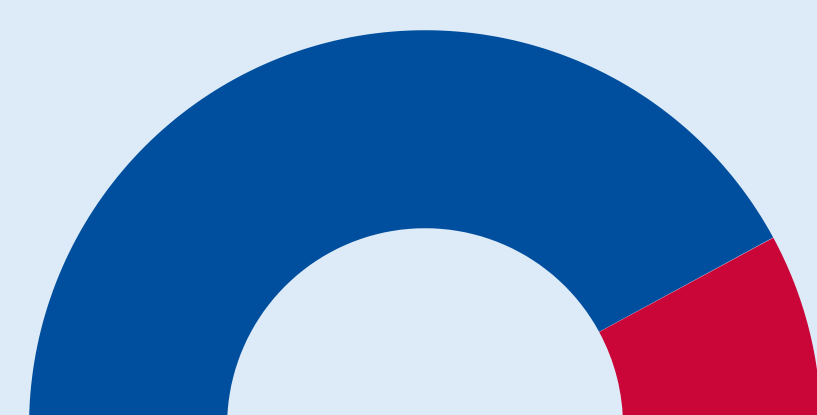
Collaboration with PPPs

ROLES AND RESPONSIBILITIES



■ In place (84.21%)
■ Not in place (15.79%)

Creation of specialised government authorities, bodies and agencies to ensure governance of cybersecurity



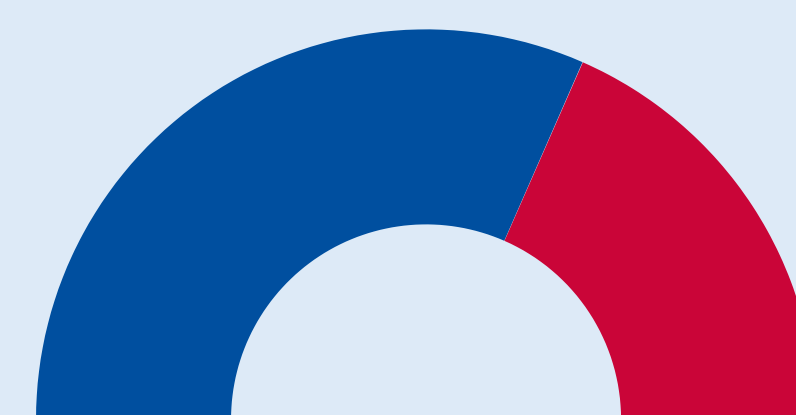
■ In place (84.21%)
■ Not in place (15.79%)

Clear definition of responsibilities, definition of roles and tasks in case of incidents



■ In place (89.47%)
■ Not in place (10.53%)

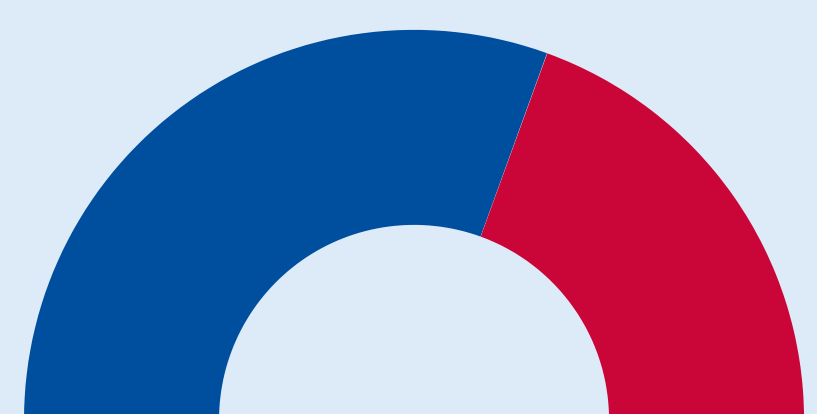
Creation of roles and allocation of responsibilities in relation to international cooperation on cybersecurity



■ In place (63.16%)
■ Not in place (36.84%)

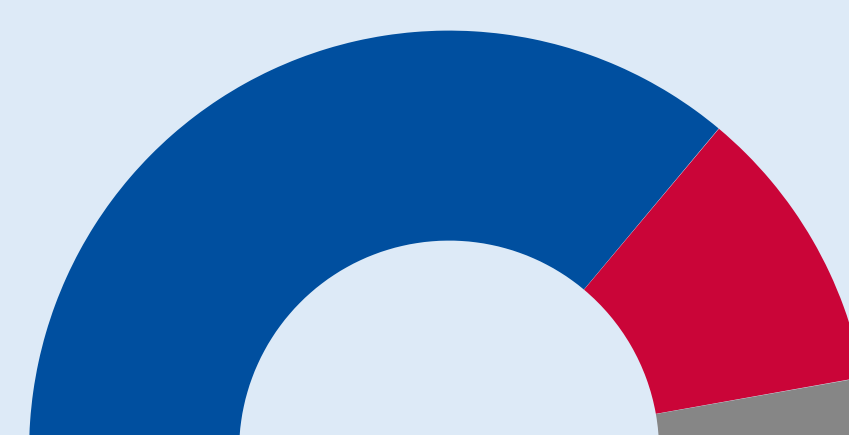
Creation of PPPs

LEGAL MEASURES



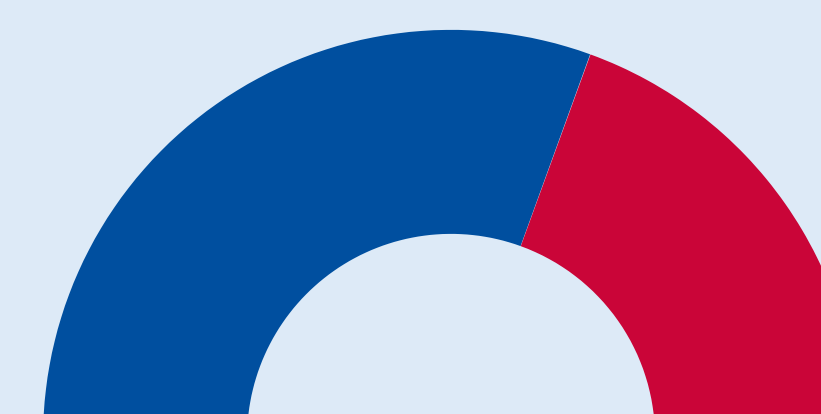
■ In place (61.11%)
■ Not in place (38.89%)

Establishment of a legal governance/legal framework linked to specific legal measures



■ In place (72.22%)
■ Not in place (22.22%)
■ Don't know (5.56%)

International cooperation in relation to legal measures

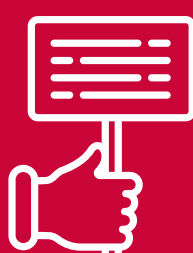


■ In place (61.11%)
■ Not in place (38.89%)

Emphasis on human rights in legal measures/legal framework

Good Practices for Political Governance

Political processes

-  Provide political support in the development and implementation of NCSS and governance models.
-  Ensure adequate coordination and cooperation among the relevant players.
-  Build trust between the different stakeholders.
-  Follow participatory approaches by putting in place platforms of exchange
-  Ensure support from the highest political level in the creation of Public-Private Partnerships.



Involve all stakeholders in the process of developing an NCSS and a governance model (choose the right level of representation for the different stakeholders)



Set up a collaborative platform to monitor the progress of the action plan.



Create a monitoring plan for entities in the domain of cybersecurity.



Define a concrete accompanying Action Plan to set out measures for implementing the objectives of the strategy.

Roles and responsibilities

-  Mandate a single body to ensure the coordination and the implementation of the overall strategy.
-  Precisely define roles and responsibilities of the different stakeholders involved in the governance model in one document.
-  Create PPPs.

Legal measures



Ensure that the governance framework is supported by and defined in accordance with the legal framework.

Elements of Strategic Governance



Overview of the implementation status across the interviewed EU Member States

THE NCSS AND ITS IMPLEMENTATION



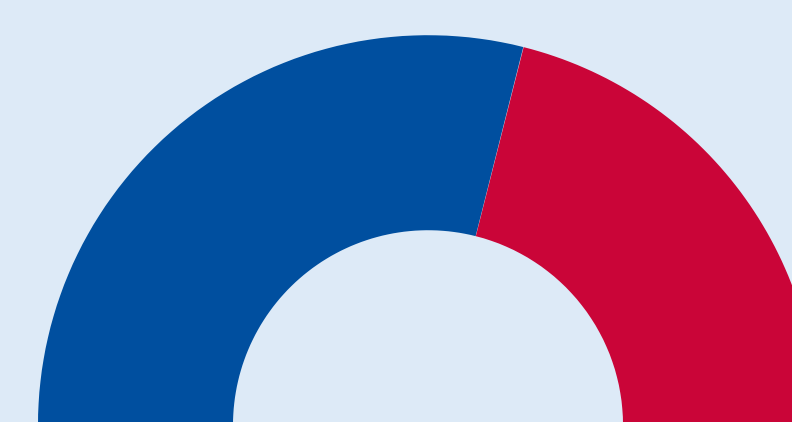
In place (100%)

Pre-defining a governance model for the implementation of the NCSS in parallel to drafting the NCSS



In place (100%)

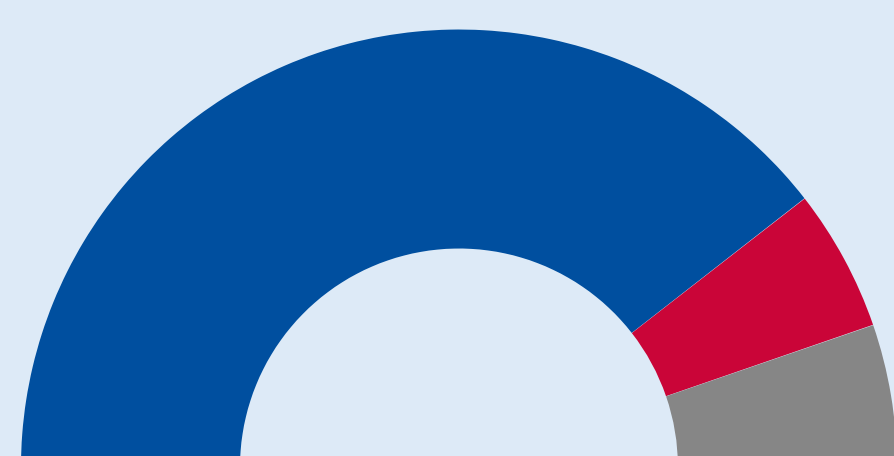
Institutional support foreseen to implement the NCSS



In place (57.89%)
Not in place (42.11%)

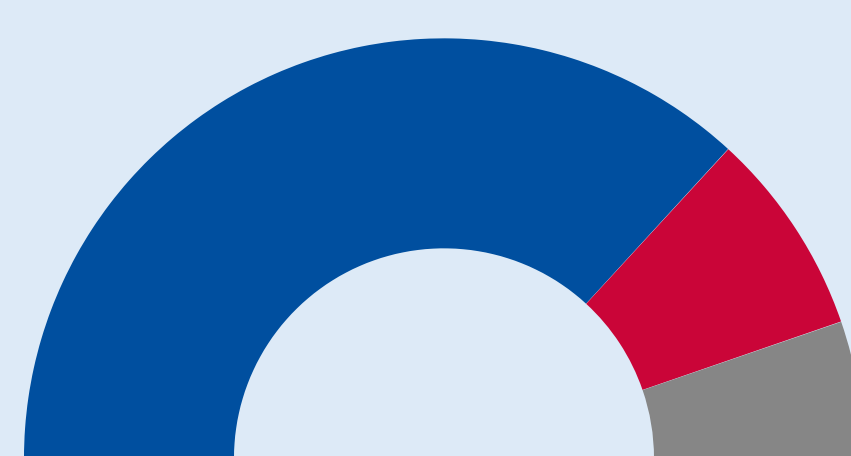
Risk identification and mitigation supported by created agencies

STRATEGIC ASPECTS OF RISK IDENTIFICATION AND MITIGATION



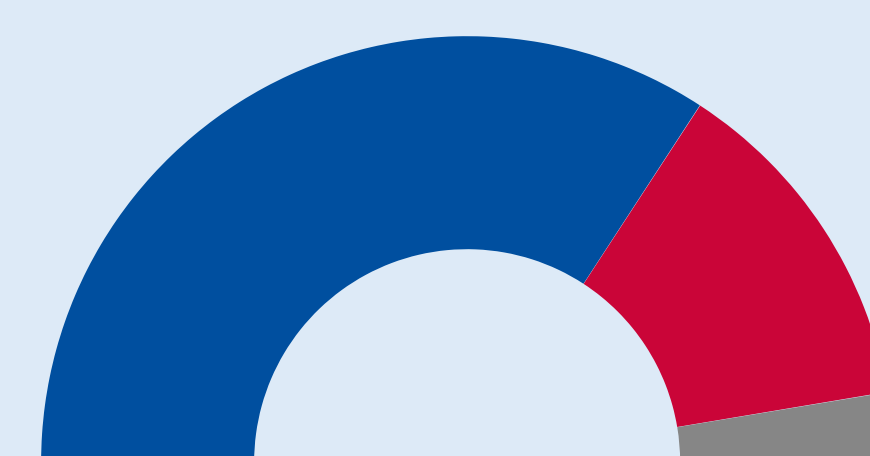
In place (78.95%)
Not in place (10.53%)
Don't know (10.53%)

Planning of allocation of budget and resources and integration of cybersecurity into the use of these



In place (73.68%)
Not in place (15.79%)
Don't know (10.53%)

Coherent approach for risk identification & mitigation across government entities and other critical infrastructure operators



In place (68.42%)
Not in place (26.32%)
Don't know (5.26%)

Mechanisms to ensure accountability, transparency, and human rights during risk identification & mitigation

Good Practices for Strategic Governance

In Relation to the NCSS and its implementation



Develop the budget from bottom to top.



Include a paragraph on financials in NCSS.

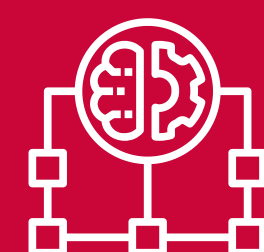


Definition of accountability and transparency rules.



Include legislation ensuring human rights in the NCSS.

Strategic aspects of risk identification and mitigation



Follow a common methodology for risk identification.



Thorough risk identification across different levels.



Early on identification of risks and implementation of risk assessment mechanisms.



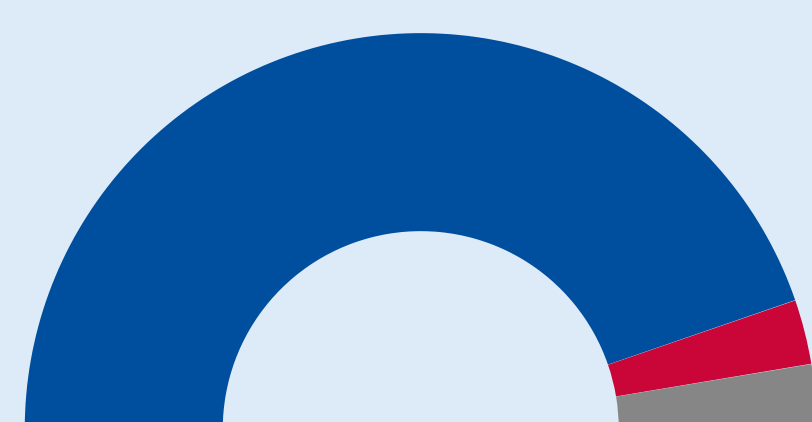
Follow a common framework in case of incidents.

Elements of Operational Governance



Overview of the implementation status across the interviewed EU Member States

AWARENESS RAISING



■ In place (89.47%)
■ Not in place (5.26%)
■ Don't know (5.26%)

Awareness raising, knowledge and capacity building within the complete workforce/population



■ In place (94.44%)
■ Don't know (5.56%)

Awareness raising, knowledge and capacity building within the cybersecurity relevant workforce

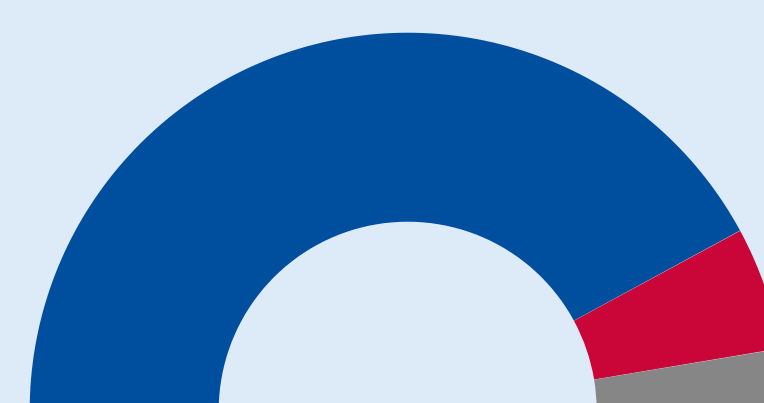
INCIDENT RESPONSE



■ In place (89.47%)
■ Not in place (5.26%)
■ Don't know (5.26%)

Incident response mechanisms and support of CSIRTs/CERTs

INFORMATION SHARING



■ In place (84.21%)
■ Not in place (10.53%)
■ Don't know (5.26%)

Information sharing processes during the incident response (formal and informal)

Good Practices for Operational Governance

Awareness Raising



Tailored awareness raising and training campaigns.

Information Sharing



Centralise information sharing.

Incident Response



Formalise a coordinated approach between CSIRTs.



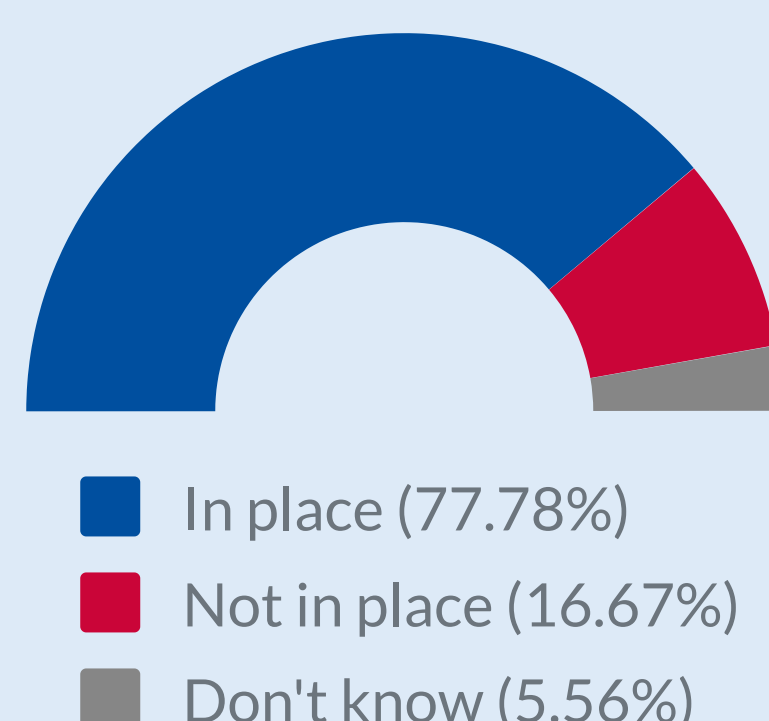
Taxonomy of best practices to ensure coherent processes of information sharing.

Elements of Technical Governance



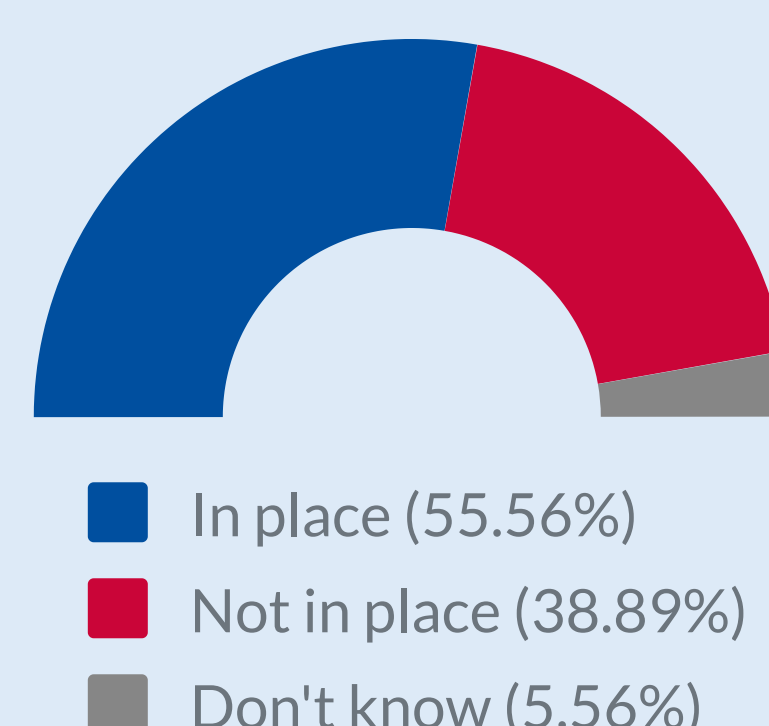
Overview of the implementation status across the interviewed EU Member States

INTERNATIONAL STANDARDS & TECHNICAL GUIDELINES



Technical governance for cybersecurity based on international standards and technical guidelines

USE OF TOOLS, TECHNOLOGY AND CERTIFICATION SCHEMES



Implemented/defined use of tools and technology

Good Practices for Technical Governance

International Standards and Technical Guidelines



Develop in the NCSS and its governance model a section focused on the international standards and technical guidelines. When developing this section, specify which technical standards should be used, and define clear roles and responsibilities.

Use of Tools, Technology, and Certification Schemes



Have in place a body that supervises the compliance of regulated entities with the European and international requirements.



Use certification schemes for ICT products, ICT services and ICT processes, especially for all the services or activities provided by essential entities. The competent authorities should be empowered to apply sanctions consisting of the suspension of a certification or authorisation concerning part or all the services provided by an essential entity.



Put in place in the NCSS action plan a group of tasks focused on using tools and technologies in respect to human rights, particularly to GDPR.



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ABOUT ENISA

The European Union Agency for Cybersecurity, ENISA, is the Union's agency dedicated to achieving a high common level of cybersecurity across Europe. Established in 2004 and strengthened by the EU Cybersecurity Act, the European Union Agency for Cybersecurity contributes to EU cyber policy, enhances the trustworthiness of ICT products, services and processes with cybersecurity certification schemes, cooperates with Member States and EU bodies, and helps Europe prepare for the cyber challenges of tomorrow. Through knowledge sharing, capacity building and awareness raising, the Agency works together with its key stakeholders to strengthen trust in the connected economy, to boost resilience of the Union's infrastructure, and, ultimately, to keep Europe's society and citizens digitally secure. More information about ENISA and its work can be found here: www.enisa.europa.eu.

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