ECHO

EUROPEAN NETWORK OF CYBERSECURITY CENTRES AND COMPETENCE HUB FOR INNOVATION AND OPERATIONS

D3.3 GOVERNANCE MODEL DESCRIPTION

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Submission date: 31 January, 2021

PUBLIC DOCUMENT

The work described in this document has been conducted within the ECHO project. This project has received funding by the European Union's Horizon 2020 research and innovation programme under grant agreement No. 830943

Title	European network of Cybersecurity centres and competence Hub for innovation and Operations
Acronym	ECHO
Number	830943
Type of instrument	Research and Innovation Action
Topic	SU-ICT-03-2018
Starting date	01/02/2019
Duration	48
Website	www.echonetwork.eu

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Work package	WP3 ECHO Governance Model
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Version	V1.0
Due date	31/01/2021
Submission date	31/01/2021

Dissemination level

X	PU: Public
	CO: Confidential, only for members of the consortium (including the Commission)
	EU-RES. Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)
	EU-CON. Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)
	EU-SEC. Classified Information: SECRET UE (Commission Decision 2005/444/EC)

Version history

Revision	Date	Editor	Comments
0.1	19/12/2020	Georgi Penchev (IICT)	Structure of the document and key theses
0.2	29/12/2020	Georgi Penchev (IICT)	Chapter 2 and 3
0.3	14/01/2020	Georgi Penchev (IICT)	Chapter 3 and 4
0.4	15/01/2021	Velizar Shalamanov (IICT) Irena Mladenova (IICT)	T3.3 Internal Review
0.6	25/01/2021	Georgi Penchev (IICT) Velizar Shalamanov (IICT) Irena Mladenova (IICT)	Updates and improvement T3.3 Internal Review
0.8	26/01/2021	Michael Cooke (NUIM) Luis Angel Galindo Sanchez (TME)	Internal Review and QA checks
1.0	29/01/2021	Matteo Merialdo (RHEA)	Internal Review and QA checks

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Keywords

Governance Model, Business Process Analysis, Business Process Management, Organisational Design

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Executive summary

This document is the next step in designing the optimal Governance model for the ECHO Network, based on selected most suitable alternative in *D3.2: Governance Alternatives* and is to inform the transition planning process to deliver the Transition Plan as *D3.4: Governance implementation plan*. The document describes Governance and Management model in high-level of details in order to communicate to ECHO Partners and external Stakeholders the main results and direction of development of the future ECHO Collaborative Networked organisation (CNO).

The purpose and scope of this document is to create the initial design of the four key processes and three organisational structures. The implementation of the Strategic planning process shall demonstrate the operation of the Governance and Management (GM) model. The structure of the document is presented to include Introduction, four chapters and conclusion highlight the relation to other work in the project – mostly *D3.1: Governance needs and objectives, D3.2 and D3.4* as well as work performed under *WP1 Project coordination and management* in the elaboration of legal arrangements for ECHO CNO, *WP9 Dissemination, exploitation, and Innovation Management* in the set-up of a processes for Catalogue and Innovation Management, Business Management, Business Planning. Another important follow-up for the further development of the Governance and Management (GM) model is the work under *WP8 Demonstration cases* in testing the GM model during the implementation of demonstration cases. This document serves as an input for the development and execution of the task T3.4 Governance operation. The T3.4 is dedicated to the assessment of the maturity of GMs operations at *Initial Operating Capability* (IOC – in project month M36 – January 2022) and at *Final Operating Capability* (FOC in M48 – January 2023) within the *D3.5: ECHO Operations status report* (repeatedly updated 2020-2023). This deliverable also supports the *T3.5: New partner engagements* to extend the partnership network of the ECHO Project. Applicable and reference documents are highlighted within the text.

The first chapter provides a brief overview of the overall design framework to start with process design and through RACI Matrix[1] to contribute to the organisational design with related roles and responsibilities. The full implementation of the framework will be reached at project's months M36 and M48 and will be reflected in the updates of D3.3 – D3.12 and D3.13. The results from D3.3 updates will be used to develop the Standard Operating Procedure (SOP) and Charter for the ECHO Network with WP1, WP8 and WP9 support.

Chapter two on process discovery and design is focussed on the processes landscape description and initial processes discovery, using COBIT[2] as a framework. This is a core chapter to present design for the key processes, selected in D3.2 as follows:

- Strategic Planning Process;
- Partnership Development Process;
- Catalogue Management and Customer Relations Management process description;
- Innovation (R&D) Process description.

[1] RACI - Responsible, Accountable, Consulted, Informed matrix
[2] COBIT - Control OBjectives of Information and related Technologies

The third chapter defines the organisational design framework with the use of the RACI Matrix approach along the line of analysis of the defined processes in the second Chapter. This can be considered as a preparation of the planned work to continue during next two years under T3.4 when processes and organisational structures will be implemented, audited and assessed in the CMMI[3] framework to achieve level 3 (M36) and level 4 (M48) of CMMI maturity levels.

Chapter four is about organisational design, using the RACI Matrix for the Strategic Planning process. The Chapter demonstrates the approach and prepares for engaging the decision-makers from all partners in a structured discussion in focus groups, questionnaires, interviews, culminating in strategic planning simulation games during D3.4 development. The presented design is related to the Central Hub (ECHO Group) with identifying the Strategic Planning Process high-level procedures, specific procedure related to the core processes and defining the Central Hub RACI matrix, followed by the description of roles and responsibilities.

The next type of organisational structure design along the Strategic planning process model is for the National Hubs (ECHO Chapters), following the same model.

The last type of organisational structure designed is the Service Group (Virtual organisation) in general. Further details will be added in cooperation with WP2,3,5,6, when the key E-Assets (E-MAF, E-CSS, E-CCS, E-EWS, E-FCR, E-GCS) will be defined. In collaboration with assets "owners" during the development of D3.12. and D3.13 detailed design could be provided, based on experience during WP8 implementation of the demo cases.

The main findings and summary for the development of the governance model and the way forward are defined in Section 6.3 Tasks, updates and schedule.

Annexes support the text in the main body and provide a deeper understanding of the document, but are not necessary for the presentation and assessment of the content of the deliverable.

D3.3 will be used as a baseline for the White Paper on Governance in collaboration with other three cybersecurity H2020 pilots and ECSO under the Focus Group "Governance". The simulation game will be proposed in order to test the procedures of White Paper with Focus Group "Governance" participants.

[3] CMMI - Capability Maturity Model Integration

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1. Introduction

1.1 Purpose and scope of the document

The purpose of this document is to provide the initial design of the ECHO Network (as CNO) Governance and Management model set-up agreed in D3.2: *Governance alternatives*. The decision made and explained in D3.2's Chapter Nine includes the following four key processes:

- Strategic Planning Process;
- Partnership Development Process;
- Catalogue Management and Customer Relations Management Process;
- Innovation (R&D) Process.

The above four processes should be developed and described within the three main organisational bodies of future ECHO CNO – *ECHO Central Hub (ECHO Group), ECHO National Hubs (NHs – ECHO Chapters) and ECHO Service Groups (SGs or optionally Virtual Organisations - VOs)*.

The design principles should be based on building flexibility, trust and effectiveness of the processes and organisational activities.

The scope of the document falls within a general high-level description of processes and organisations. The main focus is the Strategic planning process (SPP) which envelopes the other three key processes in one framework of organisation activities.

The SPP identification is used in the description of main interactions and roles of the organisational bodies and description of roles and responsibilities within RACI matrices.

The use of COBIT[4] framework does not have the purpose of detailed description (or future certification) of processes. The framework is used as a reference model – the source of good practices and main activities for process identification in Chapter 3 and for a key type of structure in Chapter 5 with respective RACI Matrixes.

During the processes identification and description important informational relationships were discovered and initial requirements for establishing the internal Governance and Management Information System (GMIS) are presented in Chapter 4 to be further detailed in D3.12 (M36 update of D3.3.).

The identification of all solutions is tentative. The goal is to demonstrate the operation of the Governance and Management (GM) model. It can be considered as an option for discussion, as a basis for further detailed development, agreement and approval in the process of testing proposed solutions during demo cases. Feedback will be used in the updates D3.12.and D3.13. for the final design of the GM model.

It is important to note that the description of processes, organisations and roles in this document emerged in the discussion within expert groups with minimum possible details. The expert group work results were presented, discussed and agreed on Workshop on Governance Model Description, 17-18 December 2020, Telco Meeting.

[4] ISACA, *COBIT 2019 Framework Governance and Management Objectives*, 2019.

1.2 Structure of the document

The document is structured in introduction (as a first section), four chapters (in sections numbered from 2 to 5) and conclusions (as a sixth section).

The first chapter presents inputs to the D3.3 in relation to selected key processes and organisations. The place and scope of other inputs and outputs of the D3.3 document are briefly described and the overall methodology framework is presented.

The second chapter provides the initial identification of four key processes with focus on Strategic planning process, as well as the main relations and implications for other three key processes – Partnership Development (PD) Process; Catalogue Management and Customer Relations (CMCR) Management Process and Innovation (R&D) Process (IM).

The third chapter is dedicated to description of organisational structure of future ECHO CNO – *ECHO Central Hub, ECHO National Hubs (NHs) and ECHO Service Groups (SGs)*. The development and description of Standard Operating Procedure (SOP) for the first phase of SPP is given as an example how organisational procedures and structure will be developed within D3.3 updates and M48.

Chapter four presents the initial tentative roles and responsibilities identification within the ECHO Collaborative Networked Organisation.

1.3 Relation to other work in the project

The relations with other work in the project is provided in Figure 1.

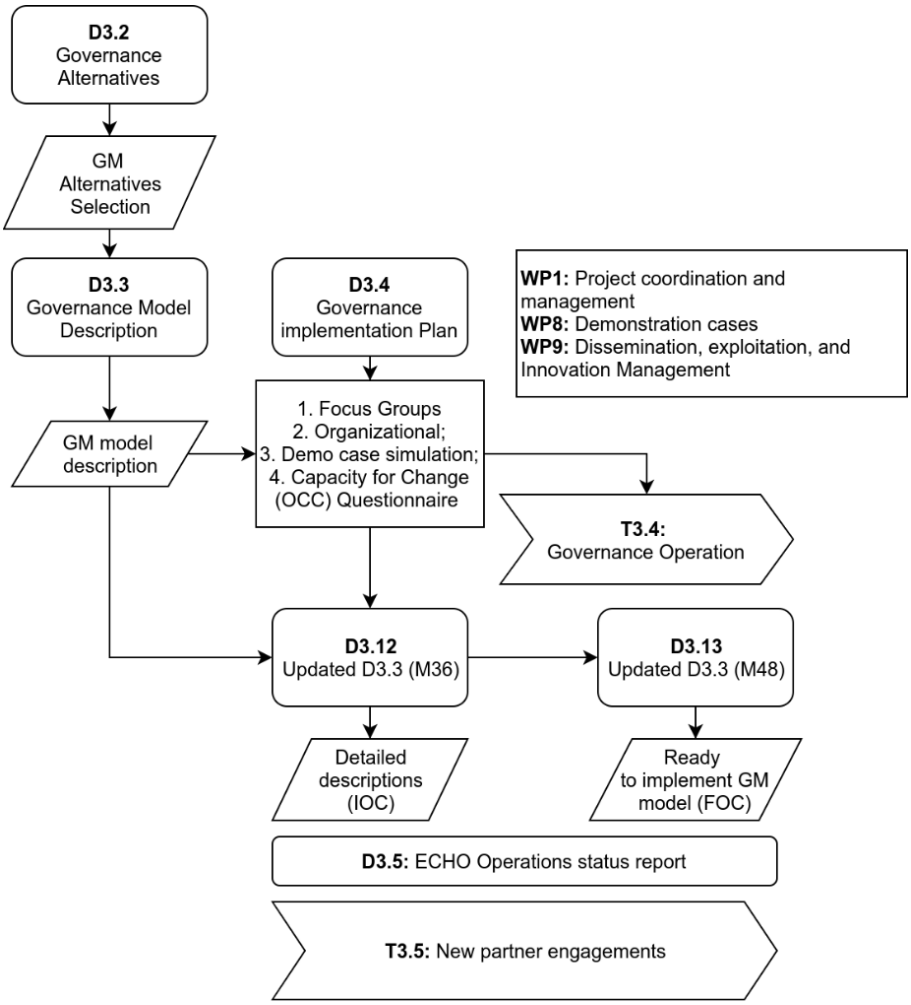


Figure 1: Relations to other work in the project

The input for D3.3: *Governance model description* is D3.2: *Governance alternatives*, which provided selected most suitable option for further development of the Governance and Management model. The D3.3 results will be used in D3.4: *Governance Implementation plan*. In the same time the results from D3.4 will re-used in M36 (January 2022) and M48 (January 2023), when D3.3 will be updated with more detailed version of process GM models.

1.4 Applicable and reference documents

The following documents contain requirements applicable to the generation of this document:

Reference	Document Title	Document Reference	Version	Date
[GA]	Grant Agreement 830943 – ECHO	-	1.0	02/04/2019
[PH]	D1.1 Project Handbook	ECHO_D1.1_v1.42	1.42	20/10/2019
[PQP]	D1.3 Project Quality Plan	ECHO_D1.3_v1.3	1.3	31/05/2019

Table 1: Applicable documents

The following documents have been consulted for the generation of this document:

Reference	Document Title	Document Reference	Version	Date
[D1]	D1.1 Project Handbook	ECHO_D1.1_v1.41	1.41	02/05/2019
[D2]	D1.2 Data Management Plan	ECHO_D1.2_v2.0	2.0	04/04/2020
[D3]	D1.3 Governance needs and objectives	ECHO_D3.1_v1.1	1.1	03/02/2020
[D4]	D1.3 Project Quality Plan	ECHO_D1.3_v1.3	1.3	31/05/2019
[D5]	D1.4 First Project Activity Report	ECHO_D1.4_v1.0	1.0	29/02/2020
[D6]	D10.1 H Requirement no. 1	ECHO_D10.1_v1.0	1.0	31/05/2019
[D7]	D10.2 POPD Requirement no. 2	ECHO_D10.2_v1.0	1.0	31/05/2019
[D8]	D10.3_NEC_ Requirement no. 5	ECHO_D10.3_v1.0	1.0	31/05/2019
[D9]	D2.1 Sector Scenarios and Use Case Analysis	ECHO_D2.1_v1.0	1.0	31/10/1019
[D10]	D2.2 Derivation of Multisector Assessment Framework	ECHO_D2.2_v2.4	2.4	18/06/2020
[D11]	D2.2 Derivation of Multi-sector Assessment Framework	ECHO_D2.2_v1.0.15	1.015	13/11/2019
[D12]	D2.3 Transversal cybersecurity challenges and opportunities	ECHO_D2.3_v1.0	1.0	31/10/1019
[D13]	D3.2 Governance alternatives	ECHO_D3.2_v1.0	1.0	31/07/2020
[D14]	D3.6 Information Sharing Models	ECHO_D3.6_v1.0	1.0	31/10/2019
[D15]	D4.1 Transversal technical cybersecurity challenges report	ECHO_D4.1_v1.0	1.0	18/06/2020
[D16]	D4.2 Inter-sector technical cybersecurity challenges report	ECHO_D4.2_v1.0	1.0	18/06/2020
[D17]	D4.3 Inter-sector cybersecurity technology roadmap	ECHO_D4.3_v1.0	1.0	31/08/2020
[D18]	D4.6 Inter-sector Prototype Verification Plan	ECHO_D4.6_v1.0	1.0	29/10/2020

Reference	Document Title	Document Reference	Version	Date
[D19]	D5.1 E-EWS High-level design	ECHO_D5.1_v1.2	1.2	31/10/2019
[D20]	D5.2 E-EWS Prototype	ECHO_D5.2_v1.0	1.0	05/05/2020
[D21]	D5.3 E-EWS Verification Plan	ECHO_D5.3_v2.2	2.2	31/07/2020
[D22]	D5.5 Update - E-EWS High-level design	ECHO_D5.3_v3.4	3.4	31/07/2020
[D23]	D6.1 E-FCR High-level design	ECHO_D6.1_v1.1	1.1	31/10/2019
[D24]	D6.2 E-FCR Prototype	ECHO_D6.2_v1.0	1.0	31/05/2020
[D25]	D6.3 E-FCR verification plan	ECHO_D6.3_v1.2	1.2	31/08/2020
[D26]	D9.1 Project Leaflets	ECHO_D9.1_v1.0	1.0	13/09/2019
[D27]	D9.10 Yearly review of project objectives and market needs/opportunities	ECHO_D9.10_v1.1	1.1	31/01/2020
[D28]	D9.11 Procedure for internal IP reviews	ECHO_D9.11_v1.1	1.1	31/01/2020
[D29]	D9.12 IP awareness trainings	ECHO_D9.12_v1.1	1.1	31/01/2020
[D30]	D9.16 Communication and Stakeholders Engagement Plan	ECHO_D9.16_v0.9	0.9	31/07/2019
[D31]	D9.17 - Web Platform	ECHO_D9.17_v1.0	1.0	13/09/2019
[D32]	D9.18 Communication collateral social media channels set-up	ECHO_D9.18_v1.1	1.1	31/05/2019
[D33]	D9.2 Dissemination Strategy	ECHO_D9.2_v1.0	1.0	31/07/2019
[D34]	D9.3 Stakeholder Mapping	ECHO_D9.3_v1.0	1.0	31/07/2019
[D35]	D9.4 Interim dissemination reports	ECHO_D9.4_v1.0	1.0	05/02/2020
[D36]	D9.5 Event Calendar	ECHO_D9.5_v1.0	1.0	31/01/2020
[D37]	D9.6 Market Analysis	ECHO_D9.6_v1.0	1.0	14/05/2020

Table 2: Reference documents

1.5 Intellectual Property Rights

Based on the legal framework provided in the ECHO Grant Agreement and the Consortium Agreement, ECHO specific IPR procedures have been established to protect the innovations and knowledge developed within this deliverable.

1.6 Glossary of acronyms

Acronym	Description
ADKAR	Awareness, Desire, Knowledge, Ability, Reinforcement
BoD	Board of Directors
CCC	Cybersecurity Competence Centre
CMCR	Catalogue Management and Customer Relations
CMMI	Capability Maturity Model Integration
CNO	Collaborative Networked Organisation
COBIT	Control OBjectives of Information and related Technologies
COM	Current Operating Model
ECSO	European Cyber Security Organisation
ECSCON	EU Cyber Security Collaborative Network
FOC	Full Operating Capability
GA	General Assembly
GIMS	Governance Information Management System
GM	Governance and Management
KPI	Key Performance Indicator
IOC	Initial Operating Capability
I&T	Information and Technology
IPR	Intellectual Property Rights
ITR	Internal Technical Report
NCIA	NATO Communications and Information Agency
NHs	ECHO National Hubs
PD	Partnership Development
R&D	Research and Development
RACI	Responsible, Accountable, Consulted, Informed matrix
SGs	ECHO Service Groups
SLA	Services Level Agreement
SPP	Strategic Planning Process
SOP	Standard Operating Procedure
ToC	Table of Contents
TOM	Target Operating Model
VBE	Virtual organisations Breeding Environment
VO	Virtual Organisation

Acronym	Description
WP	Work Package
ECHO Governance Model related acronyms	
ECHO	European network of Cybersecurity centres and competence Hub for innovation and Operations
AC	Audit Committee
MSIEC	Multi-Sector Innovation and Exploitation Committee
E-CCS	ECHO Cybersecurity Certification Scheme
E-CSF	ECHO Cybersecurity Skill Framework
E-EWS	ECHO Early Warning System
E-FCR	ECHO Market Place for Cyber Range providers
E-GCS	ECHO Governance Consultancy Services
E-GM	ECHO Governance Model
E-MAF	ECHO Multi Assessment Framework
GA	General Assembly
IA	Internal Audit
ECHO Work Packages, Tasks and Deliverables related acronyms	
D3.1	Deliverable 3.1 (of T3.1): Governance needs and objectives
D3.2	Deliverable 3.2 (of T3.3): Governance Alternatives
D3.3	Deliverable 3.3 (of T3.3): Governance model description
D3.4	Deliverable 3.4 (of T.3.3): Governance model implementation plan
D3.5	Deliverable 3.5 (of T3.4 and T3.5): ECHO Operations status report (repeatedly updated 2020-2024)
D3.6	Deliverable 3.6 (of T3.2): ECHO Information sharing models
FAR	First Annual Report (of T3.4, D3.5, see [D3])
T3.3	Task 3.3: Governance models definition
T3.4	Task 3.4: Governance Operation
T3.5	Task 3.5: New partner engagements
WP1	Project coordination and management
WP2	Multi-sector needs analysis
WP3	ECHO Governance Model
WP4	Inter-sector Technology Roadmaps
WP5	ECHO Early Warning System
WP6	Federated Cyber Range
WP7	Network-wide integration, installation and test
WP8	Demonstration Cases
WP9	Dissemination, Exploitation, and Innovation Management
WP10	Ethics requirements

Table 3: Glossary of acronyms, initialisms, and abbreviations

2. Processes Design Methodology

2.1 Baseline

The overall methodology framework was described in the D3.2, *Chapter 4: Methodology Description*. The planned activities for D3.3 according to the overall T3.3 methodology framework are as follows:

"Activities leading the development of D3.3 will begin after the submission of D3.2. These activities are structured within the framework of several approaches' application logically structured in the following sequence:

1. *Business Process Management analysis with identification of the organisational landscape and detailed process description;*
2. *The application of parts of COBIT (Control Objectives for Information and Related Technologies) framework for:*
    a. *Definition of the Design Baseline;*
    b. *Goals cascade*[5]*;*
    c. *Development of Responsible, Accountable, Consulted, Informed (RACI) matrices.*
3. *Process and network analysis, using tools such as Business Process Management Notation (BPMN) and application of social network analysis algorithms."*

The process of D3.3 development reveals the need for these initial activities to be limited.

During the Workshop on Governance Model Description, 17-18 December 2020, Telco Meeting a decision to limit the scope of analysis was taken. The main items of the decision are as follows:

- The form of agreements and legal status of National Hubs (NH) and Service Groups (SGs) will be discussed and updated in D3.12 (M36);
- The funding sources to be identified as follows, but not limited to: Fees; External programme funding; Revenues from services and products delivery. The financial part to be detailed in D3.3. updates in cooperation with WP9.
- Limit the level of details to high-level for SOP and Charters, as well as for processes of Catalogue Management and Customer Relations Management and Innovation (R&D) Management Process;
- The detailed development of these two will be the goal of D3.3 updates, after receiving related project deliverables and common understanding from WP9.

[5] The goals cascade is an important concept in COBIT. It supports the translation of stakeholder needs into actionable strategy. The mechanism is used to translate these needs into customized enterprise goals, IT-related goals, and enabler goals. The goals cascade is a top-down approach.

2.2 Business Process Management framework

2.2.1 Business process definition

The business processes can be defined as a sequence of events, activities, and decisions within an organisation. The aim of the business process is to deliver a service or a product to its customers.

Events are occurrences that happen in surrounding or internal environment of the process atomically and have no duration. An event can trigger an activity – as an example – receiving a ticket for possible cybersecurity threat within an IT system is the event, which will trigger the activity of checking the ticket by the system administrator.

The process includes decision points or process gateways. These are points in time when a decision is made that affects the way the process is executed. A decision point determines forking and merging of paths, depending on the conditions expressed within a decision. Considering the above example – the decision which will be made by the system administrator in regard to the severity of the threat has two paths possible "Yes" or "No" to take action. In the former case – the administrator will engage on a procedure for preventing the threat and in the latter case – the ticket will be just marked as "read".

A process also involves:

- Actors, including human actors or organizations, which can make their own decisions. Actors can be internal or external.
- Physical objects, such as equipment, materials, products, paper documents.
- Informational objects, such as electronic documents and electronic records.

The process is defined by its inputs and outputs – the product, services, documents, object, etc. which are supplied respectively at the start and at the end of the process activities sequence. The process transforms its inputs to its required outputs. If there are well-defined stages of transformation of the input to the output (intermediate inputs-outputs) then the sequence of tasks which transforms one intermediate input to intermediate output can be grouped in sub-processes.

The analysis of the business processes is supported by the standard of Business Processes Modelling Notation (BPMN), which provides a graphical notation for specifying business processes in a diagram. The main notation elements of the BPMN are given in Table 11, Annex 1.

2.2.2 Business Process Management analysis and lifecycle

The Business Process Management (BPM) framework is a popular and proven methodology for organisational analysis, design and improvement. The BPM is a body of principles, methods, and tools to

discover, analyse, redesign, implement, and monitor business processes[6]. The BPM also includes as a main concept of organisational management a cyclic self-monitored and self-improved process with five main phases shown in Figure 2.

The BPM foundations are based on processes models and performance measures which have to assist the managers in achieving managed processes. It can be argued that BPM is also supported and is "related" to other process-based disciplines, such as Lean Production, Six Sigma, Total Quality Management, Balanced Score Cards, COBIT and others.

The process analysis scheme displayed in Figure 2 which presents the full cycle of the Business Process Management (BPM) approach for designing, modelling, implementing and improving the business processes within organisation.

Full description of the framework – its origins, methods and other elements is not possible (and not needed) here. Only selected concepts and tools for the needs of the D3.3 are presented and are described briefly below.

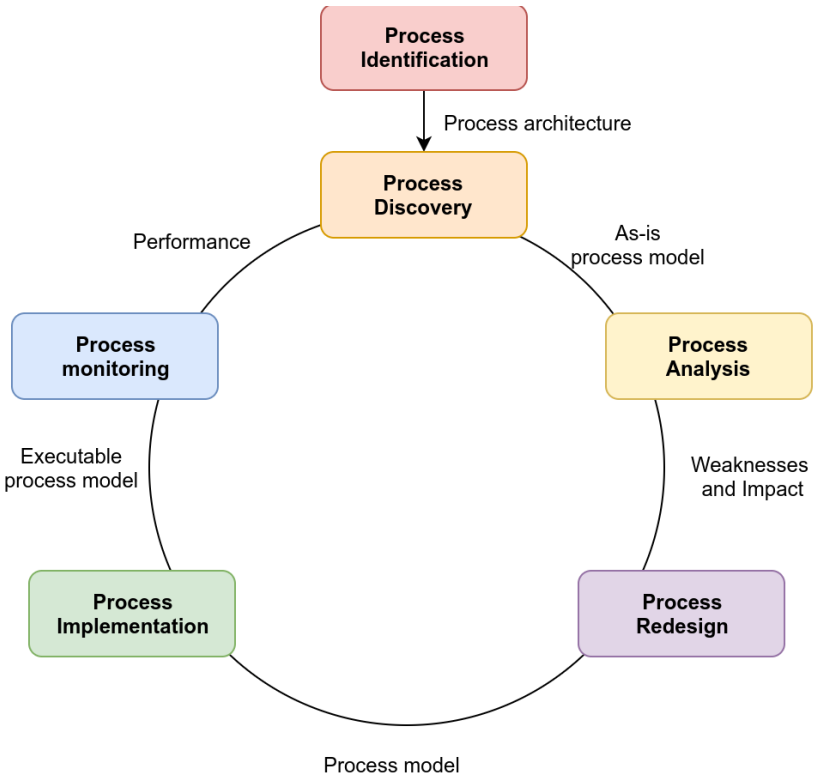


Figure 2: The Business Processes Management framework scheme

[6] Marlon Dumas et al., *Fundamentals of Business Process Management*, 2nd ed. 2018 (Berlin, Heidelberg: Springer Berlin Heidelberg : Imprint: Springer, 2018), https://doi.org/10.1007/978-3-662-56509-4.

The BPM starts with the phase of **Process Identification** – this is a non-repeatable phase for initial identification and selection of processes to analyse, implement and improve. In established organisations, this is done by analysing which processes are important for the management or need improvement. The scope of D3.3 falls completely within the phase of the Process Identification phase and prepares the process architecture of the future ECHO CNO for further establishment.

In general, the following Process Identification steps are implemented in D3.3:

- *Context definition* - The context of the processes was defined in general during the work of WP3: Governance model and T3.3's Governance methodology framework. The part of the first phase Process Identification was completed during the work on D3.2: Governance Alternatives. The baseline provided by D3.2 Chapter 9 is a statement of the design principles and importance of the selected processes. The baseline also provides an initial definition of processes' organisational landscape.
- *Scope and process categories definition* – breaking processes complexity by identifying the scope of activities, involved organisational actors and by categorisation of processes;
- *Analysis of process relations* – defining main inputs and outputs of the processes in terms of documents and identifying the relationships among them. During this step of the analysis the relationships among organisational bodies are considered;
- *Use of reference models* **-** use of ready standardised processes reference model as a basis for process identification. The reference model in the use of D3.3 is the COBIT 2019, and its application is explained below in Section 2.3.

Processes Identification in existing organisations can be made by analysis of their documents, interviews with managers and employees engaged and other managerial and organizational design technics. Usually, the selection criteria reflect the strategic importance, health and feasibility of the processes. The processes are measured according to their previous performance and metrics.

In a to-be-established, future organisation the important part of structures, documents and procedures do not exist and should be initially identified. Therefore, the Process Identification for ECHO CNO within the D3.3 cannot be considered as a fully accomplished phase, but rather as a guidance to be further refined during implementation.

The scope and categories are well-described for the Strategic Planning Process (SPP) and for Partnership Development Process (PD), but there are some uncertainties about the other two processes of Catalogue Management and Customers Relations Management (CMCR) and Innovation (R&D) Management (IM), which will be resolved with the accomplishment of project deliverables related to innovations and assets strategies in WP9.

These uncertainties reflect also on the level of detail of the description of the processes activities and organisational roles.

In order to resolve the structures and to provide starting point for more detailed description tentative procedures for ECHO CNO entities were introduced through simple analogy to COBIT 2019 reference model

in Section 4.2. Roles and responsibilities were assigned and possible solution for organisational design was developed.

The full Process Identification will be accomplished in D3.12 update in M36, with use of the D3.4 results derived from the work of Focus Groups on organisational development, Organisational Capacity Survey and with use of deliverables from other packages related to IM and CMCR.

In D3.12 first detailed models of SPP and PD will be introduced and upon agreement on the documents the remaining three processes will also be modelled.

The **Process Discovery goal** *is to gather data and information for processes execution according to developed process models in Process Identification phase***.**

After transition from ECHO Project to ECHO CNO the next phase has to be executed in order to analyse the state of the process model implementation and its results (key performance indicators – KPI).

During the **Process Analysis** gathered information from the Process Discovery Phase is analysed qualitatively and quantitatively in order to receive the "picture" of resources, time and efforts used by the processes**.**

In case of the future ECHO CNO the developed models in month M36 will be considered as time, efforts, cost and personnel needed for modelled activities. This information will be available in some extent after D3.4 and after simulation of use cases. Other deliverables dedicated on market analysis and assets management can be used for D3.13. at M48.

The **Process Redesign** phase aims at optimisation of the modelled and analysed processes.

Two phases of analysis and redesign will be finished and described in D3.13 in M48.

The preparation for **Process Implementation** phase will overlap in several activities with Process Analysis and Redesign phases during the updates of D3.3 in months M36 and M48. It can be considered as a part of T3.4: Governance Operation, and covered during the development of D3.4: Governance model implementation plan.

The **Process Monitoring** is also part of T3.4. during this phase KPI will be developed and change plan for processes maturisation will be implemented as part of the internal audit missions.

The actual start of the Process Implementation phase will start M30 as part of demo cases and will be a subject of internal audit missions, but real life implementation will be after the Project end, when ECHO Project will continue as ECHO Network.

2.3 Use of reference models.

It is difficult during the process analysis to identify processes of an organisation and the levels of a process architecture starting from scratch. Many times the organisational change is done by ad-hoc decisions and new structures and activities are introduced without solid analysis. It might be helpful to use reference

models as an aid. It is even more helpful to use reference models in cases of establishment of new organisations.

There are many reference models developed by a range of industry consortia, non-profit associations, government research programs, and academia. The best-known examples are the Control Objectives for Information and Related Technologies (COBIT)[7], Information Technology Infrastructure Library (ITIL)[8], Process Identification AXELOS[9], the Supply Chain Operations Reference Model (SCOR)[10] among others.

Reference models standardise the diversity of what can be seen as different processes on the basis of good practices for Business Process Management. The standardisation is applied to characteristics, delivering of products, and how processes performance can be measured.

The use of reference models provides several benefits.

First, reference models can serve as a starting point to identification and classification of major process areas, thus directly supporting the identification of strategic, regulatory or high-level industry-related processes.

Second, reference models may be useful in providing inventory check of existing processes. For example, an organization can use COBIT 2019 to make a processes inventory in use, to mark those they do not use, and to add its own unique or specific processes.

Third, reference models provide a standardised vocabulary that is useful for labelling processes, providing common understanding of governance and management terms, metrics and products within the organisation.

The selected reference model for D3.3 is the COBIT 2019 Framework, which is described in brief, below.

2.4 Brief description of COBIT 2019 Framework

One of the most comprehensive framework for analysing enterprise governance and management models is the Control Objectives for Information and Related Technologies (COBIT) framework, developed by Information Systems Audit and Control Association (ISACA)[11].

[7] ISACA, *COBIT 2019 Framework Governance and Management Objectives*.

[8] Norita Ahmad and Zulkifli M. Shamsudin, "Systematic Approach to Successful Implementation of ITIL," *Procedia Computer Science* 17 (2013): 237–44, https://doi.org/10.1016/j.procs.2013.05.032.

[9] AXELOS, "What Is AXELOS," About Us, AXELOS, accessed January 18, 2021, https://www.axelos.com/about-axelos.

[10] APICS, "SCOR Supply Chain Operations Reference Model," SCOR Framework, accessed January 18, 2021, http://www.apics.org/apics-for-business/frameworks/scor.

[11] ISACA, *COBIT 2019 Framework Governance and Management Objectives*.

The COBIT 2019 also can be considered as a very comprehensive process reference model which can be used for Process Identification.

COBIT (as most of the industry frameworks) is a good practices based framework which is oriented toward good governance of IT related activities within an organisation and the framework is in development since 1996.

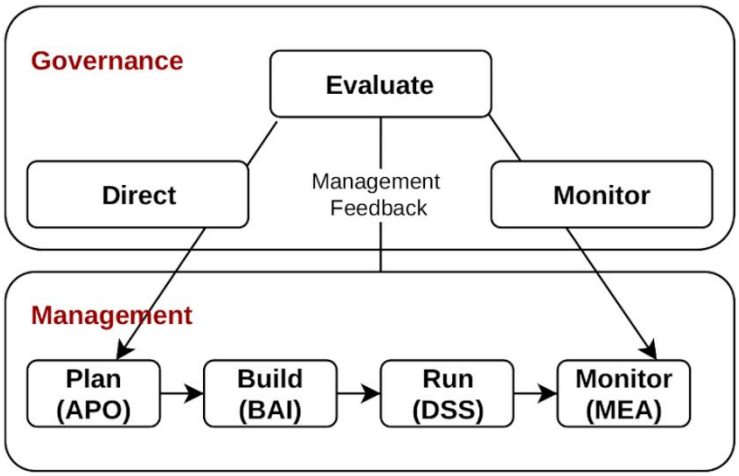


Figure 3: Governance and management objectives relationships (COBIT)

It comprises of five main principles and many interconnected sub-frameworks for implementing the principles and for managing IT processes.

The COBIT framework divides the processes into governance and management areas. The two areas contain a total of 40 objectives in 5 domains, organized as follows:

1. Evaluate, Direct and Monitor (EDM);
2. Align, Plan and Organize (APO);
3. Build, Acquire and Implement (BAI);
4. Deliver, Service and Support (DSS);
5. Monitor, Evaluate and Assess (MEA).

The domain relationships with the governance and management of the enterprise are given on Figure 3 (The source of the figure is COBIT 2019 Framework: Governance and Management Objectives ISACA, *COBIT 2019 Framework Governance and Management Objectives*, 2019.). Each governance or management objective supports the achievement of alignment goals that are related to main enterprise goals. The main enterprise goals are mapped through specific “cascade” to align to the COBIT objectives, which is also the first element of COBIT.

COBIT 2019 defines the following components in order to build the organisation's governance model and system: goals cascade, processes, organisational structures (and responsibilities – in RACI matrix), policies and procedures, information flows, culture and behaviour, skills, and infrastructure[12].

Components of the governance model can be either generic or modification of the generic component. Generic components are described in the COBIT Core Model and can be applied in principle to any situation with appropriate customisation.

Focusing on processes' components, each governance and management objective includes several process practices. Each process has one or more activities. Example metrics accompanies each process practice, to measure the achievement of the practice and its contribution to the achievement of the overall objective[13].

The organisation implementing COBIT principles can choose (and modify according to the generic standard) process component in order to implement initiative for their monitoring and improvement. Thus, applying practical guide and measures toward implementation of organisational change, while staying within good practices standard.

The process component in COBIT also has its implementation part – monitoring and improvement of performance, which can be done by defining and controlling for processes' maturity. Here COBIT evaluation is based on use of Capability Maturity Model Integration (CMMI) levels. The use of COBIT Framework and CMMI is already discussed within the Project in ECHO First Annual Report. An excerpt of the report can be seen in Annex 3.

2.5 Use of COBIT 2019 in D3.3 Process Identification

The use of the COBIT 2019 is as a general framework with other related ISACA documents introducing design, performance, implementation and tailoring to the IT goals and processes.

The specific aspects will be analysed in following D3.3 updates if the need is identified to stay close to the standard.

The Figure 4 presents the use of COBIT Framework components as source for Process Identification and other phases described in Section 2.3.

[12] In COBIT 5 the seven components were called "enablers".

[13] ISACA, "COBIT 2019," 2019, http://www.isaca.org/cobit/pages/default.aspx.

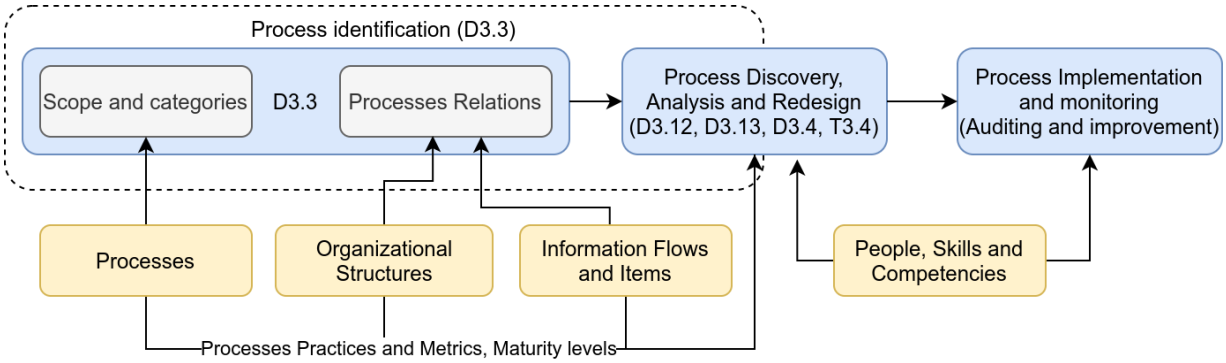


Figure 4: COBIT Components and process analysis phases.

2.6 The Team Organisation

As already mentioned in previous sections the Process Identification is not an ordinary task and requires both certain level of knowledge about the methodology of the analysis and certain level of experience within the organisation and with its processes. Thus two fundamental roles were defined in a process identification: The Process Designer (the process analyst) and the Process Owner (the process domain expert).

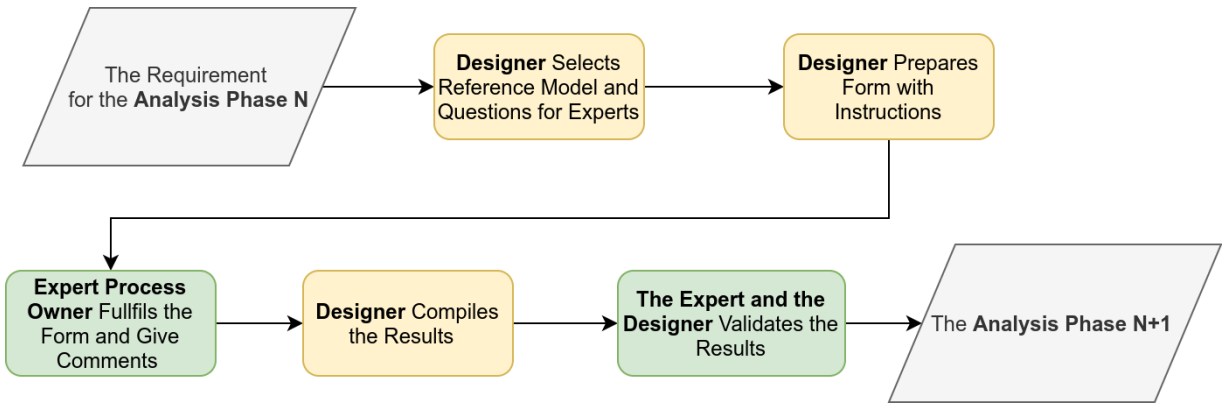


Figure 5: Workflow for gathering and use of Experts Processes Owners' Opinion

The process of developing forms and performing the interviews is shown on Figure 5.

The main issue for organising the teams is the process analysis knowledge needed. It could not be provided by several meeting, thus the forms and clear guidance should be provided to the teams by experts. At the same time after 20 months of ECHO implementation the expectation is that Process owners have good understanding of the respective processes and people involved from other WPs are well aware of COBIT, ITIL, Enterprise Architect and BPMN.

The structured interview type of the identification task was chosen. The interviews were based on forms developed by the Designers. Forms include requirements for description, which then can be compiled in description of each phase results.

The interviews were performed in close cooperation with the Process owner, but was led by the Process designer.

3. Processes Identification

Process Identification aims to define the relations between processes in general and structure them within the framework of governance and management.

The Strategic Planning Process (SPP) is the main process which envelopes all other three processes of Partnership Development (PD), Catalogue Management and Customer Relations (CMCR) Management and Innovation (R&D) Management (IM) processes. Each of the three processes – PD, CMCR, IM provides functional strategic planning documents, execution and monitoring activities within overall strategic planning process of the ECHO CNO. The sections bellows present these activities in more details.

The main SPP is defined according to the common understanding for strategic planning within five stages as it is shown on Figure 6.

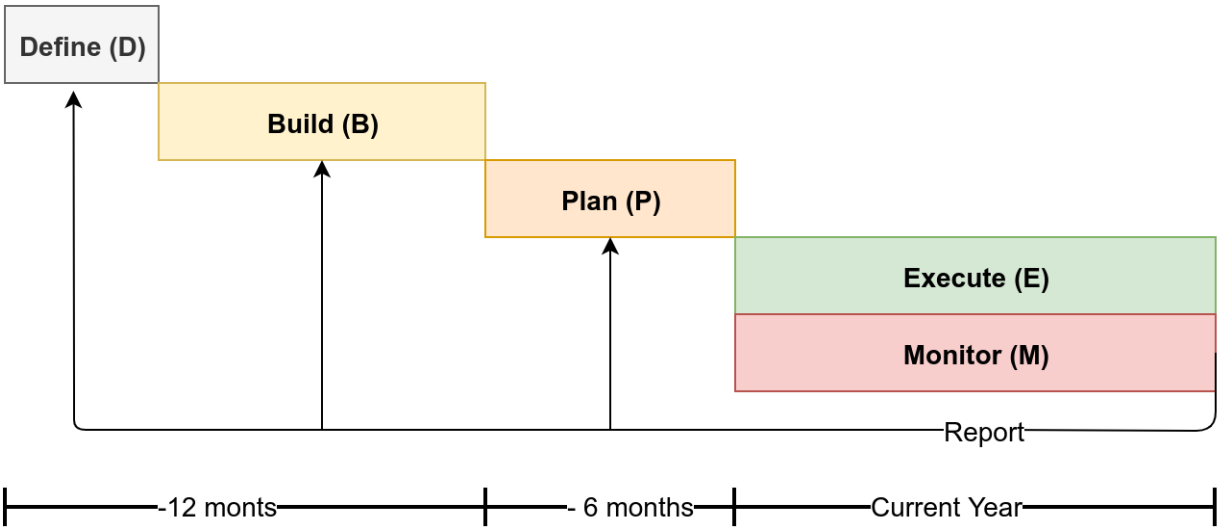


Figure 6: Strategic Planning Process framework

The Products of five phases are the following documents:

- Define – Planning Guidance;
- Build – Strategic Plan and Change Management Plan;
- Plan – Business Plan for the next year
- Execution and Monitoring phases are executed in parallel and at the end, the Annual Report is prepared.

Define and Build phases are moved 18 months before the start of the year of one year of Execution phase in order to have enough time for preparation of the yearly Business Plan.

The SPP formally finishes with preparation and approval of the Business Plan, but the results of the Execution and Monitoring are also included, because the Annual Report provides an important input for the planning for the next cycle of the SPP, as well as for change management and improvement.

3.1 The Processes Landscape

From an organisational point of view the processes landscape should be considered as it is shown on Figure 7. The composition of the ECHO Collaborative Networked Organisation (CNO) was agreed in D3.2.

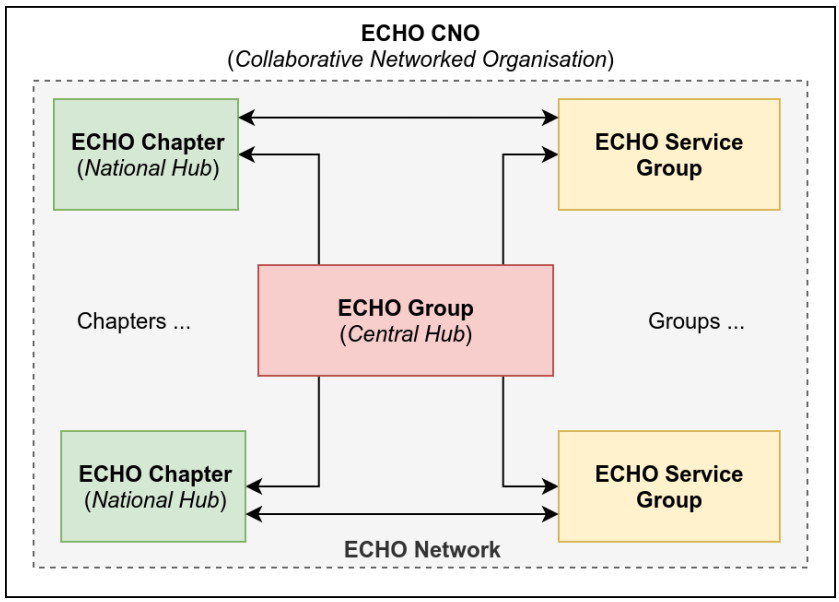


Figure 7: ECHO CNO

The ECHO Collaborative Networked Organisation (CNO) can be considered as a matrix Virtual Breeding Environment with National Hubs having the main responsibilities for resources and membership management on one side, and the other side – Service Groups, formed on EU level for providing services within the ECHO Catalogue. The E-WS, E-FCR, FCSF, etc. can be considered as a base for the future service groups.

Another organisational snapshot of the ECHO is provided by Figure 8, which shows in more details the relations between ECHO Group and other multiple elements of the ECHO Network.

In regard to organisational landscape, the SPP main phases are further divided on main activities and data required for strategic planning as follows:

- ***Define**:* During this stage, following issues should be resolved and data should be gathered for:
  - Strategic Position: Market and Customers;
  - Resource Framework;
  - Main Policies and Programmes within 3-5 years horizon;
  - Priorities of Programme areas (trade-offs);
  - Provide guidance for the process of Planning within organisational units (ECHO entities).

- ***Build the Framework:***
  - Collect opinion and data from National Hubs and Services Groups;
  - Plan on National and Service Level;
  - Compile the Strategic Plan for 3-5 years period;
  - Communicate to Members and Stakeholders;
  - Approve the Strategic Plan.
- ***Plan*** *for the next year, approve the Business Plan and sign Operation Level Agreements with National Hubs and Service Groups.*
- ***Monitor*** *the performance, update the documents and change management plans.*

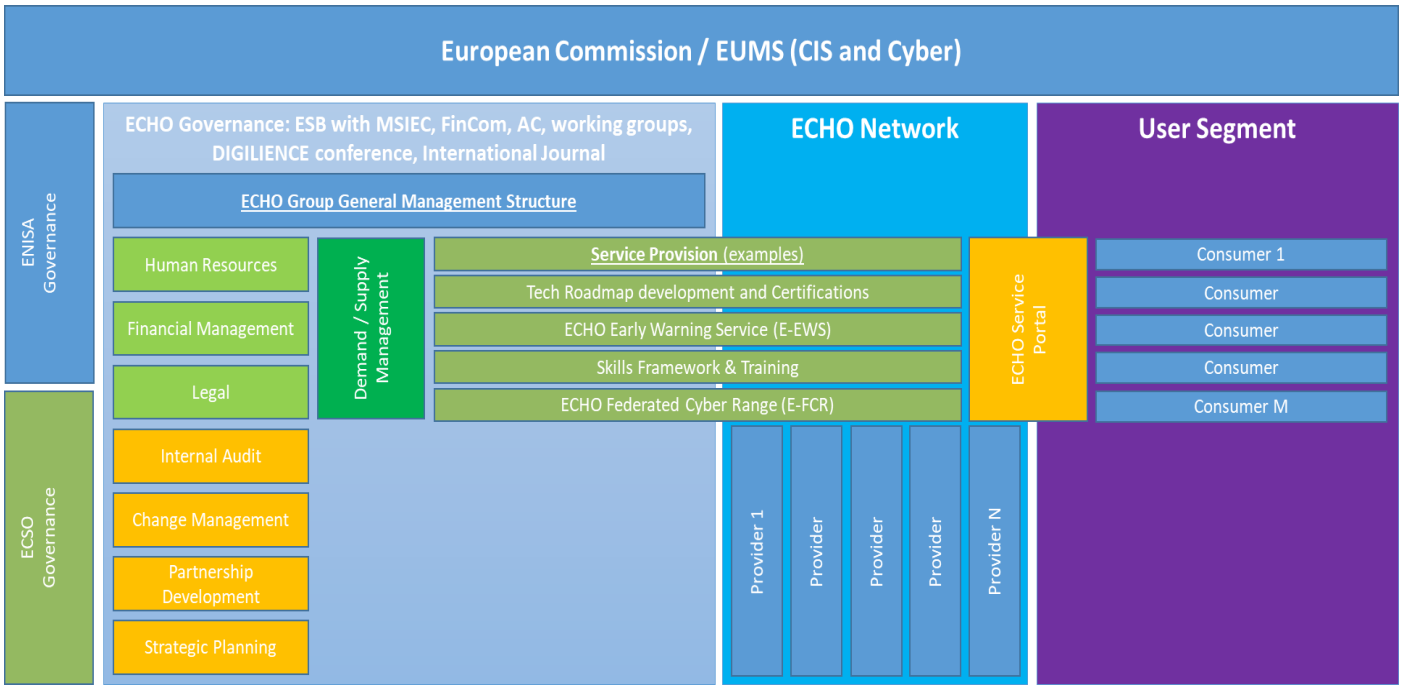


Figure 8: ECHO Target Operating Model

In order to follow the requirement to design a flexible and responsive to the environment Collaborative Networked Organisation the SPP Build and Plan phases includes coordination between ECHO Central Hub, National Hubs and Service Groups. The Planning phase finished with agreements between the Central Hub and the NHs, as well as between the Central Hub and the SGs. Thus, providing transparency and accountability among parties.

3.2 Initial Processes Identification

The SPP can be classified as a core process, which add value to the value chain of providing effectiveness to the CNO. The Figure 9 presents the framework of the initial process identification.

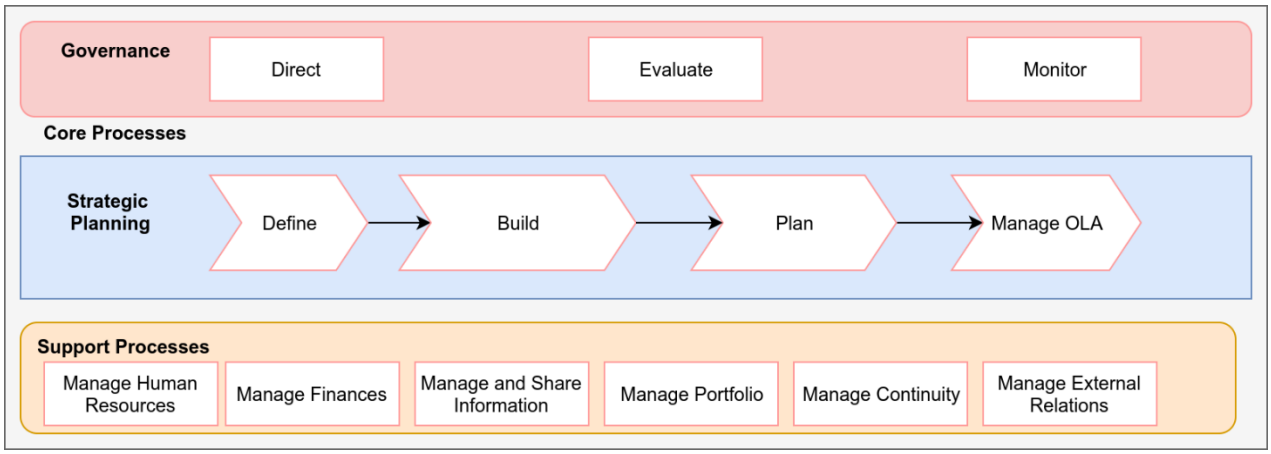


Figure 9. Initial process discovery

The core process of SPP is described as a set of phases. The governance and supporting processes are given according to the COBIT reference model and are detailed in following sections.

The initial identification in Figure 9 does not provide organizational prospective. This perspective is shown in process diagram in Figure 10.

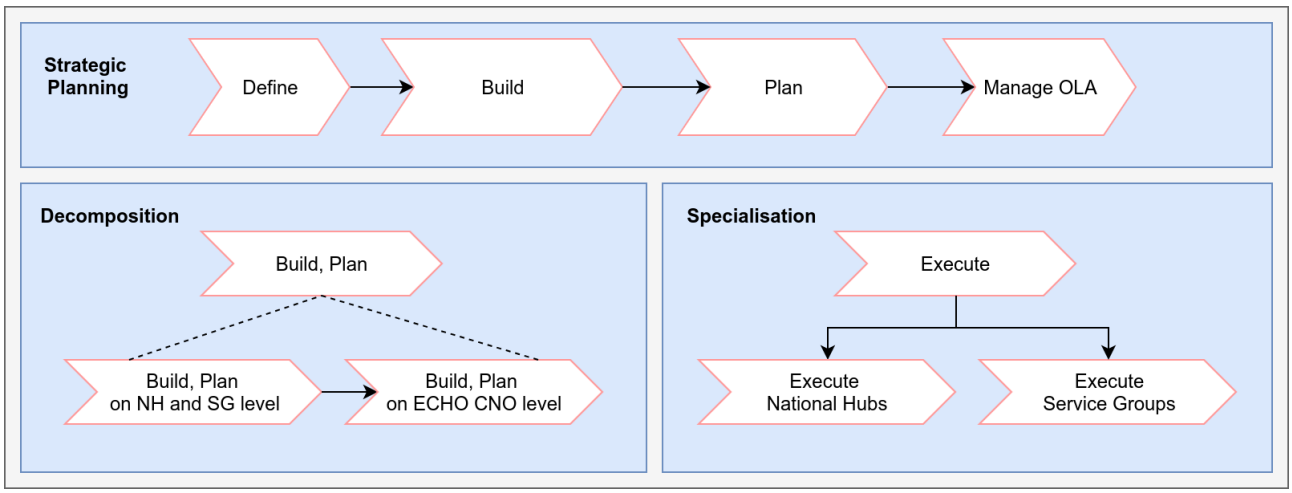


Figure 10: Decomposition and Specialisation of processes

Both Build and Plan phases of the SPP are decomposed in two sub-phases passing first on National and Service level of ECHO CNO. The NHs and SGs are specialised during the Execution Phase according to the specifics of these two organisational bodies.

3.3 Strategic Planning Process

The purpose of Figure 11 is to present the main phases of the Strategic Planning Process (SPP). The process landscape as a structure of general organisational bodies is also considered, as well as possible mapping of ECHO Project documents and deliverables to the future main strategic documents of the ECHO CNO.

The goals and the resource framework are identified within the list of the ECHO documents for the first year cycle, given in the figure of the overall SPP. After the first planning cycle these documents will be updated on the basis of the monitoring reports and marketing positioning.

The **Define and Build Phases** are forming a **Strategic Stage -** specific stage - it has to be conducted as a standalone stage during the establishment of ECHO CNO, when the overall strategy and Strategic Framework are accepted.

The Strategic Framework has to be build and can be mapped to the ECHO Deliverables and Task as they are listed in the rectangle below the Planning Guidance.

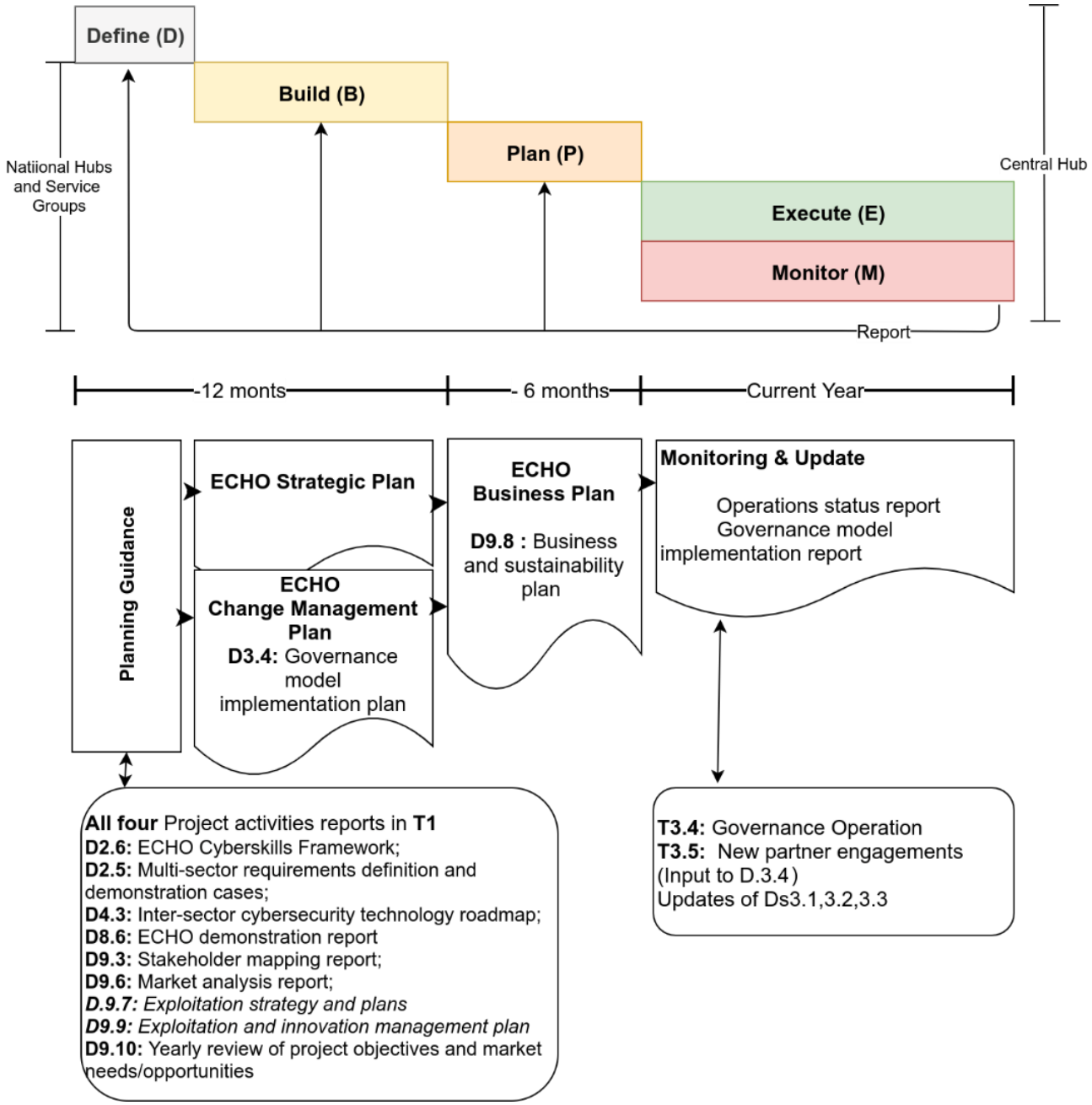


Figure 11. Strategic Planning Process description

After the initial set-up and first year plan implementation, the execution of the two phases – Define and Build should repeat each year.

The information from the **Monitoring Phase** from the current year is used as input for the next year planning.

Having in mind **the structure of ECHO CNO,** the SPP is starting at ECHO Central Hub with definition and approval of Guidance and is passed to the National Hubs and Services Groups (multiple elements of the ECHO Network).

The **SPP is top-down first, followed by bottom-top involvement** approach with main actors of National Hubs and Services Groups under the coordination of the ECHO Central Hub.

The Planning Guidelines, Strategic, Change Management and Business Plans are agreed in Central Hub through voting of representatives in GA and Advisory Committees (the structure of the Central Hub and the list of its supporting Committees are given below in Section 3.1).

Involvement of National Hubs and Services Groups to the Business Plan is accepted by agreement between ECHO Central Hub and each National Hub and Services Group.

The monitoring of the **Execution** is done by **Monitoring System** and on its output the Annual Reports for each National Hub and Service Group are prepared and then accepted by the ECHO Central Hub. The ECHO CNO Annual Report is provided by the ECHO Central Hub.

Time frame

If the timeframe is accepted the Transition Planning from consortium organisation to the ECHO CNO should be ready and the transition should start with the **Design and Build Phases *12 months before the end of the ECHO Project - M36 or even M30.***

The Figure 10 presents more detailed diagram of the SPP . It should be noted that the ECHO Central Hub, National Hubs and Services Groups are considered to be autonomous with relatively high level of freedom to take their own decision within the coordinated framework of the Planning Guidance and other ECHO CNO documents. Thus they are presented on different paths.

3.4 Strategic Planning and other processes

The SPP envelopes other three key processes identified in D3.2, Chapter 9. The scheme of the relationship is given in Figure 12

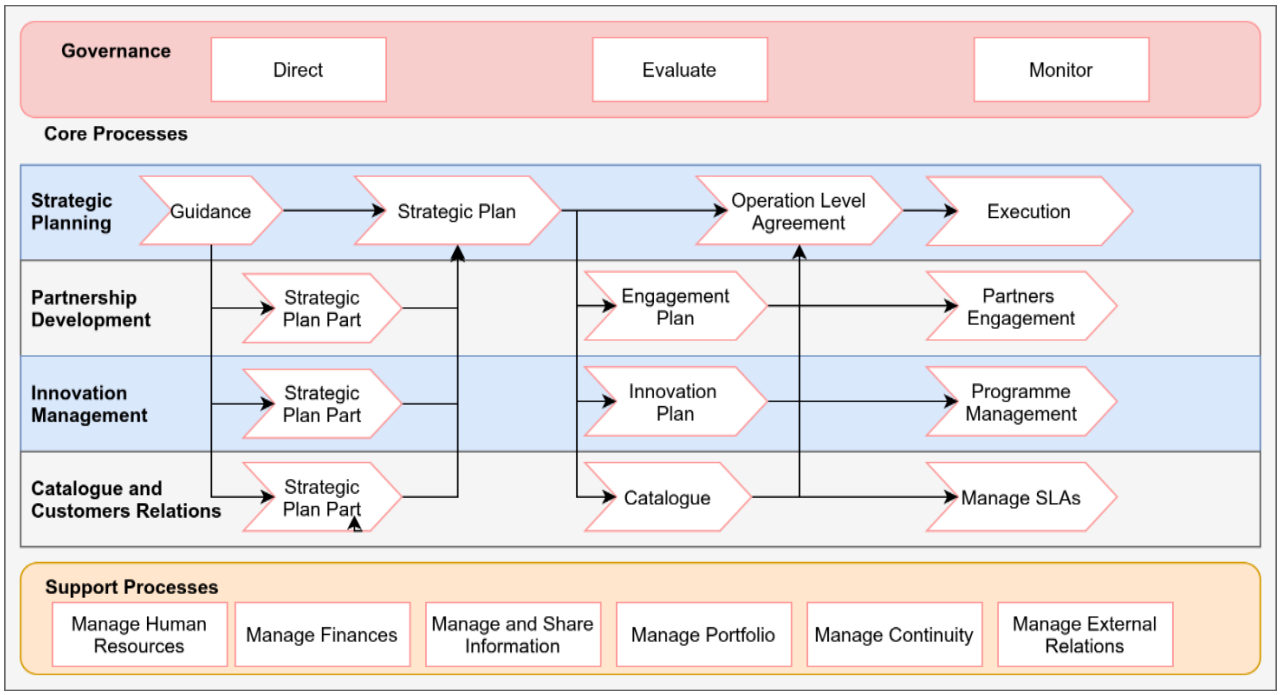


Figure 12: Key processes relationships

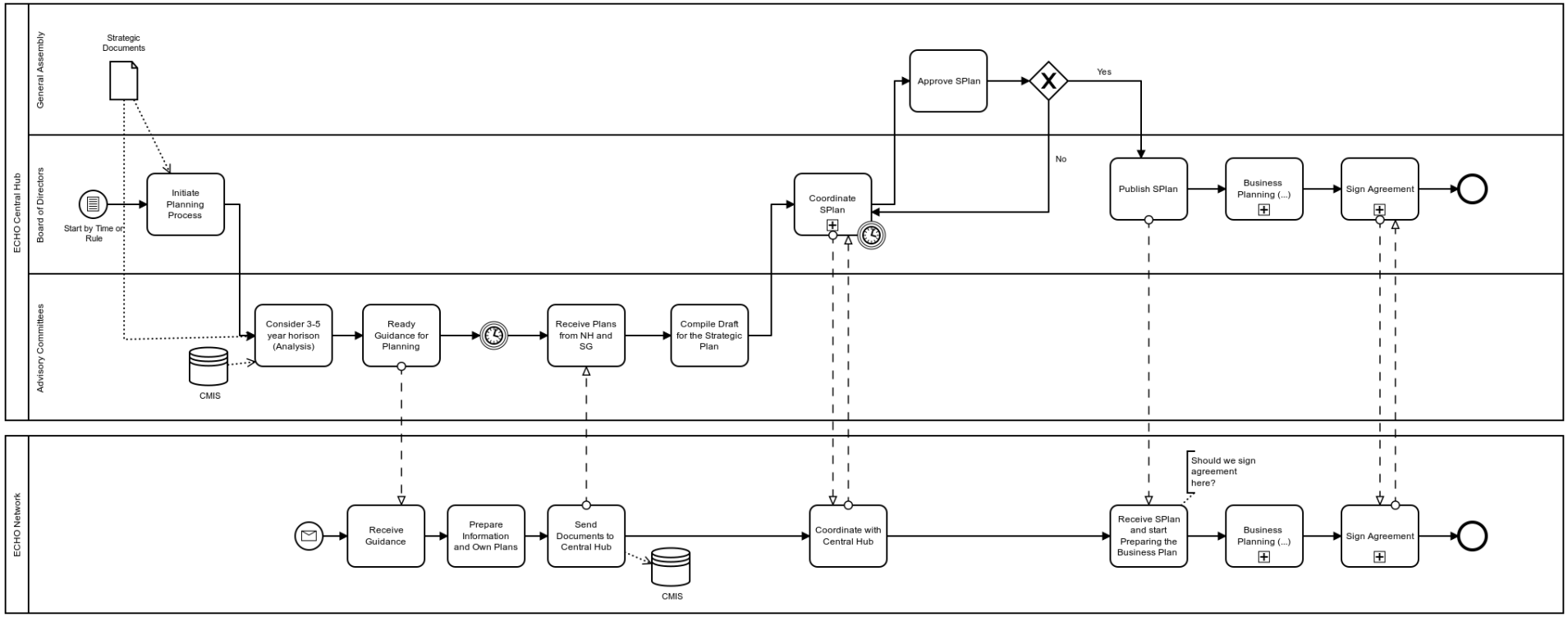


Figure 13: Strategic Planning Process Diagram

All processes provide functional parts of the Strategic Plan in their respective areas. For the Business Plan they also provide needed inputs.

It can be argued that the functional parts of the Strategic Plan and the Business plan have to be managed through the ECHO Central Hub Advisory Committees as leading party, with coordination to NHs and SGs.

3.5 Partnership Development Process

The Partnership Development process general scheme is presented on Figure 14 and its main documents and activities are mapped to the main Strategic Planning Process phases (D-Define, B-Build, P-Plan, E-Execute, M-Monitor and Update).

Inputs from Strategic Planning Process

The process of Partnership Development (PD) has its inputs from the ECHO Strategy and Goals, Catalogue Management and Customer Relations (CMCR) processes and from PD needs and reports, provided by the National Hubs and Service Groups.

Process inputs as ECHO Deliverables

Following Deliverables and Tasks can be identified as inputs to the PD:

- T3.5: New partner engagements
- D9.16: Communication and Stakeholder Engagement Plan **[D30]**;
- D9.3: Stakeholder mapping report **[D34];**
- D9.6: Market analysis report **[D37];**
- D9.10: Yearly review of project objectives and market needs/opportunities **[D27];**

The ECHO Central Hub

The strategic activities, important for the ECHO CNO, as a whole, are guided, discussed and approved within the units of the Central Hub.

Partners Engagement Strategy is a functional strategy, part of the ECHO general strategy and it is focused on how ECHO CNO engages, accepts and certifies its potential partners, by providing transparency and publicity of the benefits received and efforts required for the ECHO membership.

The partnership strategy is developed in a same way as the general strategy during the Design and Build Phase.

Certification Requirements give the metrics for certification of new members for each type of membership – it is designed and built according to the ECHO Strategy as a guidance and as practical recommendations from National Hubs and from Service Groups.

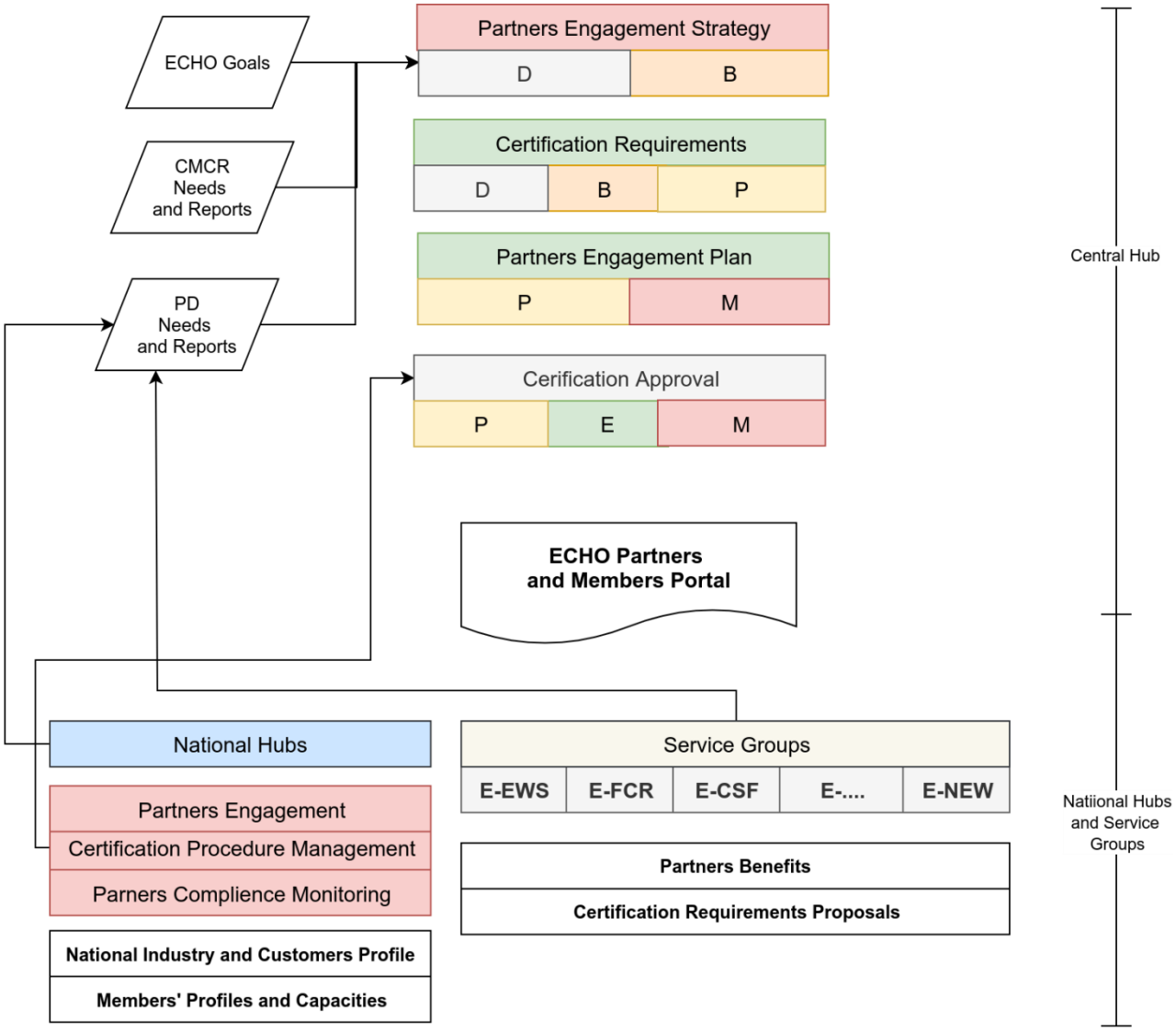


Figure 14. Partnership Development process description

The **Certification Requirements and Partners Engagement Plan** is prepared as a part of the Business Plan for each year.

The **certification procedure** is prepared by the National Hubs, but it is **approved** by the Central Hub and the membership agreement is signed with the certified partner.

The following process activities can be addressed to the NHs in regard to COBIT Framework:

- EDM02.01: Evaluate value optimisation;
- EDM04.01: Evaluate resource management;
- EDM05.01: Evaluate stakeholder reporting requirements.

The ECHO Partners and Membership Portal are maintained by the Central Hub. The Portal contains all documents related to the Partnership Engagement and to the Certification Procedure. The Portal can be used also for monitoring the membership status, activities and compliance to the capabilities dedicated to the ECHO CNO.

The National Hubs

National Hubs execute plans for Partnership Engagement, manage Certification Procedure according to the ECHO CNO requirements and monitor the membership status of participating organisations from the respective Nation.

The following process activities can be addressed to the NHs in regard to COBIT Framework:

- APO02.01: Understand enterprise direction.
- APO08.01: Understand business expectations.
- APO11.01: Establish a quality management system (QMS).
- APO12.01: Collect data.
- MEA01.01: Establish a monitoring approach.
- MEA02.01: Monitor internal controls.

The Hubs also maintain within the Portal the profiles of its participants, as well as profiles for the National Industry and potential partners and customers. This information is used also in strategic positioning during the SPP.

The work on Partners Engagement documents and processes is on-going within the ECHO. Engagement Team in close coordination of Multi-Sector Innovation and Exploitation Committee (MSIEC) and WPs is working on Partners Engagement Strategy, description of main processes and roles of organisational bodies. The need of additional requirements for membership in the ECHO Assets (e.g. E-FCR, E-EWS, E-GCS) are identified and capability level assessment is in its final draft. The types of membership, benefits and partners' commitment are given in Annex 2 as an excerpt from ECHO Partnership Handbook

The Service Groups

Services Groups provide information about the market position (strategic and current) of the ECHO CNO on services markets, capacity needed for meeting the demand and for service customers' satisfaction. The possible membership benefits and requirements are cleared for strategic and annual horizon.

The following process activities can be addressed to the SGs in regard to COBIT Framework:

- APO02.01: Understand enterprise direction.
- APO05.01: Establish the target investment mix.
- APO08.01: Understand business expectations.
- APO10.01: Identify and evaluate supplier relationships and contracts.
- APO11.01: Establish a quality management system (QMS).

- BAI04.01: Assess current availability, performance and capacity and create a baseline.
- MEA03.01: Identify external compliance requirements.

3.6 Catalogue Management and Customer Relations Management process description

The CMCR process general scheme is presented on Figure 15 and its main documents and activities are mapped to the main Strategic Planning Process phases (D-Define, B-Build, P-Plan, E-Execute, M-Monitor and Update).

Inputs

The CMCR process has its inputs from the ECHO Strategy and Goals, CMCR process itself and from Partnership Development (PD) needs and reports, provided by the National Hubs and Service Groups (e.g. ECHO Network).

Process inputs as ECHO Deliverables

Following Deliverables can be identified as inputs to the CMCR:

- D9.3: Stakeholder mapping report **[D34]**;
- D9.6: Market analysis report **[D37]**;
- D9.7: Exploitation strategy and plans *(ready in M42)*;
- D9.9: Exploitation and innovation management plan *(ready in M24)*;
- D9.10: Yearly review of project objectives and market needs/opportunities **[D27]**;
- D3.4 Governance model implementation plan *(ready in M30)*;

The Central Hub

The strategic activities, important for the ECHO CNO, as a whole, are guided, discussed and approved within the units of **the Central Hub**.

ECHO Catalogue Planning is a functional planning process, part of the ECHO general strategy **of services delivery.** It is focused on how ECHO CNO manage the mix of provided services and their capacity.

The Catalogue Plan is developed in same way as the general strategy during the Design and Build Phase.

Catalogue Planning is based on inputs from the goals of strategic planning, change management plans and functional feedback from the possible Partners engagement and by the CMCR process feedback. The key input is from ECHO Assets to be transformed in ECHO SGs/VOs around set of services (portfolio of services in development, active services and retired services – active services being the actual Catalogue).

The similar COBIT Framework process activities to be referred are as follows:

- EDM02.01: Evaluate value optimization;

- EDM04.01: Evaluate resource management;
- EDM05.01: Evaluate stakeholder reporting requirements.

Based on customer needs, possible enhancement of services capacity and ECHO overall strategy the Catalogue is established and Service-level Agreements (SLAs) are signed with Service Groups' Customers.

The Catalogue is published in members' on-line space and capacity of services are monitored.

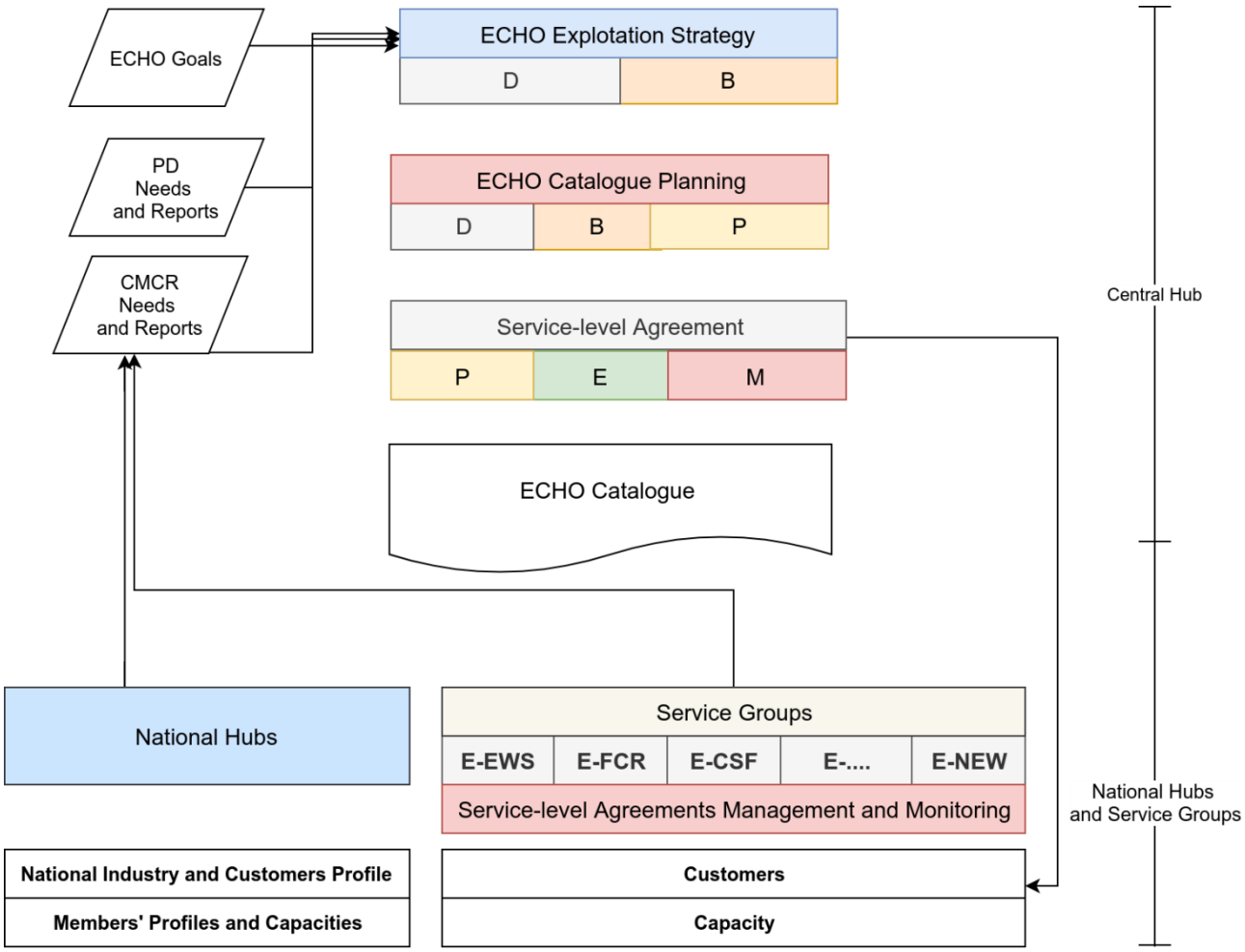


Figure 15. Catalogue Management and Customer Relations process description

The National Hubs

The possible COBIT Framework process activities which can be referred to the SPP on national level are as follows:

- APO02.01: Understand enterprise direction.
- APO08.01: Understand business expectations.
- APO12.01: Collect data.
- MEA01.01: Establish a monitoring approach.

- MEA02.01: Monitor internal controls.

National Hubs have the same activities like these described in Partnership Development Process. The important part for the CMCR is the Industry profiles as possible customer to the Catalogue Services, as well as potential partners in services development.

The Services Groups

Services Groups provide information about the market position (strategic and current) of the ECHO CNO on services markets, capacity needed for meeting the demand and for service customers' satisfaction. The possible membership benefits and requirements are cleared for strategic and annual horizon.

The possible COBIT Framework process activities are as follows:

- APO02.01: Understand enterprise direction.
- APO08.01: Understand business expectations.
- APO10.01: Identify and evaluate supplier relationships and contracts.
- APO11.01: Establish a quality management system (QMS).
- BAI01: Manage Programmes and Projects
- BAI02: Manage Requirements Definition
- BAI03: Manage Solutions Identification and Build
- BAI04: Manage Availability and Capacity
- BAI05: Manage Organisational Change Enablement
- BAI06: Manage Changes
- BAI07: Manage Change Acceptance and Transitioning
- BAI08: Manage Knowledge
- BAI09: Manage Assets
- BAI10: Manage Configuration
- MEA01: Monitor, Evaluate and Assess Performance and Conformance
- MEA02: Monitor, Evaluate and Assess the System of Internal Control
- MEA03: Monitor, Evaluate and Assess Compliance with External Requirements

The management of SLAs is one of the main function of the Service Groups.

3.7 Innovation (R&D) Process description

The Innovation (R&D) Management (IM) process general scheme is presented on Figure 15 and its main documents and activities are mapped to the main Strategic Planning Process phases (D-Define, B-Build, P-Plan, E-Execute, M-Monitor and Update).

The COBIT Framework process activities to be referred are very similar to the CMCR process:

- EDM02.01: Evaluate value optimization;
- EDM04.01: Evaluate resource management;

- EDM05.01: Evaluate stakeholder reporting requirements.

Inputs

The process of IM has similar inputs like CMCR process, but the focus here is on innovation potential evaluation, establishing of innovation mix (or portfolio) and planning for future R&D activities.

The specific inputs for IM process are D9.11 Procedure for internal IP reviews and D9.12 IP awareness trainings.

The Central Hub

The strategic activities, important for the ECHO CNO, as a whole, are guided, discussed and approved within the units of **the Central Hub**.

ECHO Innovation Planning is a functional planning process, part of the ECHO general strategy**.** It is focused on how ECHO CNO manage the mix of provided services, their capacity and innovation activities needed in order to establish ECHO as a market and services leader.

The **ECHO Innovation and Research Agenda** is a suggested high-level strategic document.

The Innovation Plan is developed in same way as the general strategy during the Design and Build Phase.

The Innovation Activities

The suggested classification of Innovation activities is as follows:

- **Incubation of new services** - e.g. new Services Groups, delivering new services or products to the customers - this should be done in close cooperation between the ECHO Central Hub and newly established Service Group organisation for service incubation. Currently this is the main focus of WP2 and WP4;
- **Improvement of existing service** – a project for implementation of innovative technologies, practices and knowledge - this also should be done in close cooperation between the ECHO Central Hub and the Service Group organisation implementing the innovation;
- **Innovative projects** - projects for service incubation, service improvement or educational events and activities. These projects can be longer or shorter than a year, they are based on the ECHO Strategic Plan and can be started by a Partner (or group of Partners). It is under development by WP4 as a technology roadmap;
- **Innovation events and entrepreneurships education** – education courses and events for discussion and demonstration of ECHO cybersecurity innovation potential to the stakeholders, partners and customers - this has to be done with close cooperation with the National Hubs. It is under development by WP9 and WP2 area of cyber skills framework;
- **Knowledge Management System –** suggested in order to implement a knowledge base related to the IT research, standards and projects. The Knowledge Management System can be part of more

general Governance and Management Information System to be developed in close coopration with WP4 and WP9.

The National Hubs

The nature of NHs role here is almost similar to the NHs roles in CMCR, that's way there are similarities in reference model activities:

- APO02.01: Understand enterprise direction.
- APO08.01: Understand business expectations.
- APO12.01: Collect data.
- MEA01.01: Establish a monitoring approach.
- MEA02.01: Monitor internal controls.

National Hubs propose during the planning period and executes educational events, courses, etc. in close cooperation with ECHO Group and other multiple entities of the ECHO Network.

The NHs monitor the membership status of National Hub participating organizations. The NHs also maintain the profiles of its participants, as well as profiles for the National Industry and potential partners and customers. This information is used also in strategic positioning during the SPP planning in innovation and R&D area.

The Services Groups

Services Groups provide information about the market position (strategic and current) of the ECHO CNO on services markets, capacity needed for meeting the demand and for service customers' satisfaction. The possible membership benefits and requirements are cleared for strategic and annual horizon.

4. Organizational design framework

This chapter presents the organizational design resulting from the application of the process analysis and process discovery outlined in previous chapters. The resulting organizational design further details the option selected in D3.2. and reflects the level of agreement and understanding of the ECHO partner organizations at this stage of the project implementation.

4.1 Organisational structure

The organizational design on the three levels – ECHO Central Hub (ECHO Group), ECHO Chapters and ECHO Service groups – provides enough detail and consensus to allow for the preparation for the planning of the implementation of the GM model (D3.4.). The transition from project to collaboration network organization involving the initial partner organizations and growing simultaneously with newly joining partners is expected to result in further refinement and amendment of the proposed organizational design, and will be reflected in subsequent updates of D3.3. as deliverables at M36 and M48.

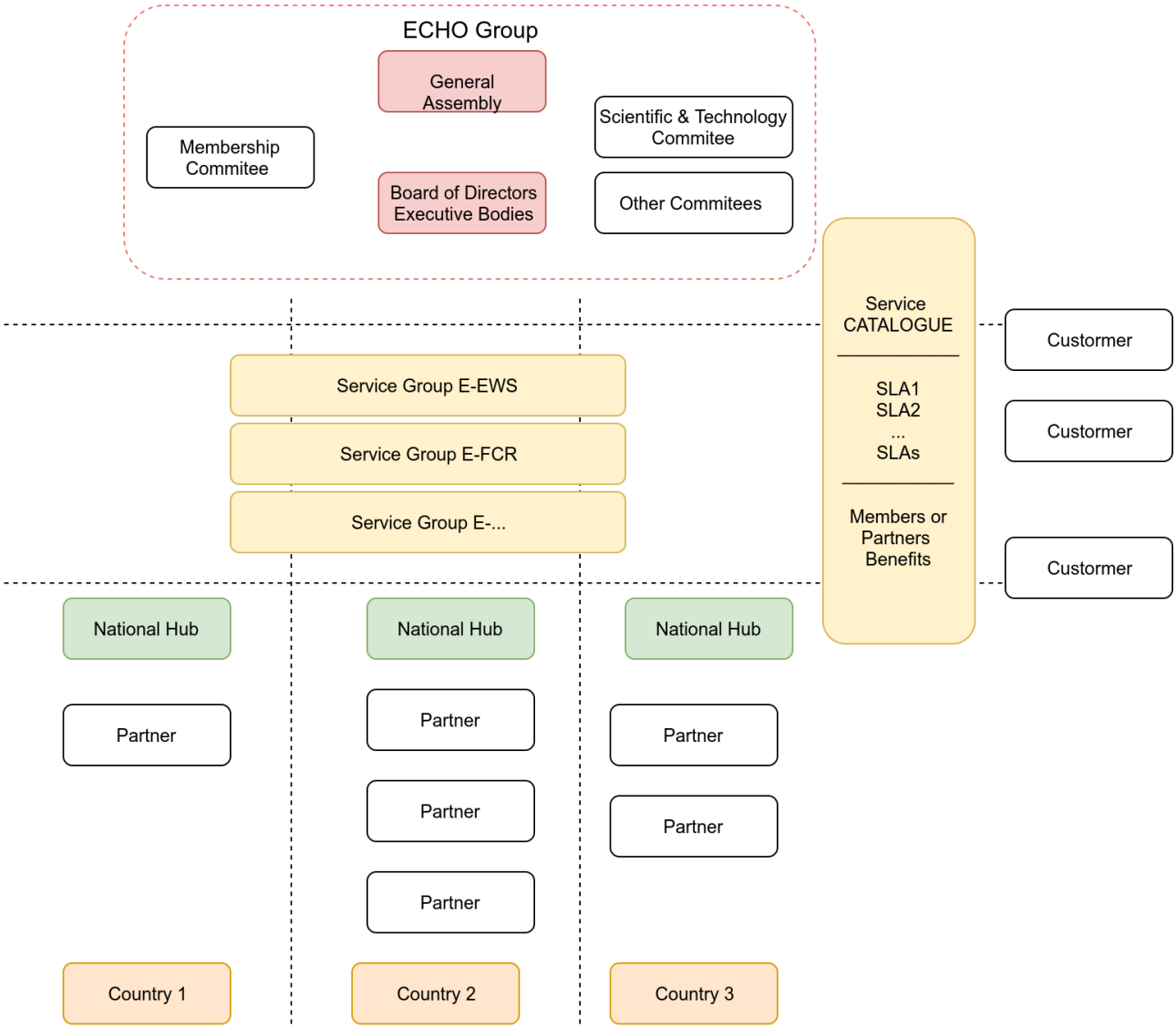


Figure 16. ECHO CNO structure initial identification

The general scheme of the ECHO CNO organisational bodies and their relationships is presented on Figure 16. It envisages the establishment of three types of bodies.

The *Central Hub* (ECHO Group) is the overall governing and coordination level for the whole collaborative network organization

The *National Hubs* are established and gather ECHO partners and members on national level, and provide for contact point and alignment with relevant national authorities and organizations, such as NCC, governments with regards to national cybersecurity strategies, national-level customers etc.

The *Service Groups* are formed internationally on the basis of service development and delivery and reflect the specialisation and capabilities in certain areas. The available services are presented to potential customers through the Service Catalogue, which is the basis for provisioning the service delivery through the

Service-level Agreements (SLA). It is important to define also the benefits for ECHO members and partner for use of ECHO services.

4.1.1 ECHO Group (Central Hub)

The ECHO Group provides overall governance and coordination for the virtual network organization. The envisaged bodies on this central hub level are designed to enable the implementation of such governance and coordination functions, and support the effective and efficient operation of the network.

- *General Assembly* (GA) – is the "legislative" body of the ECHO Group (Central Hub) with all responsibilities for strategic direction, approval of the strategic framework and monitoring of all other governance and management bodies of ECHO CNO. All ECHO partner organizations are represented in the General Assembly. The decision-taking process and procedures will be defined in legal documents (outside the scope of this deliverable)
- *Board of Directors* (BoD) – is responsible for steering, coordination and monitoring of the strategic planning process. BoD is accountable to GA and is supported by Secretariat of the BoD (or Executive Board) which consists of Chief Executive Officer, Chief Financial Officer and other chief officers with responsibilities for functional areas). The BoD is elected by the GA, and has representative functions to stakeholders, partners and key customers – such as European Commission, ECC, etc.

The work of GA and BoD are supported also by special committees to be established on ECHO Group level. The advisory committees identified are Membership Committee and Technology and Innovation Committee. The D3.2 Alternative 0 suggested also to have Financial Committee and Audit Committee. During the analysis the Stakeholders Committee was suggested as a connection to important international stakeholders, which can provide funds and know-how.

The special committees (*Advisory Committees*) are formed with a special purpose and could be permanent or bounded by certain time period (i.e. exist until achieving a defined goal or completion of a defined task). These are created by request of either GA or BoD, with the approval of the GA

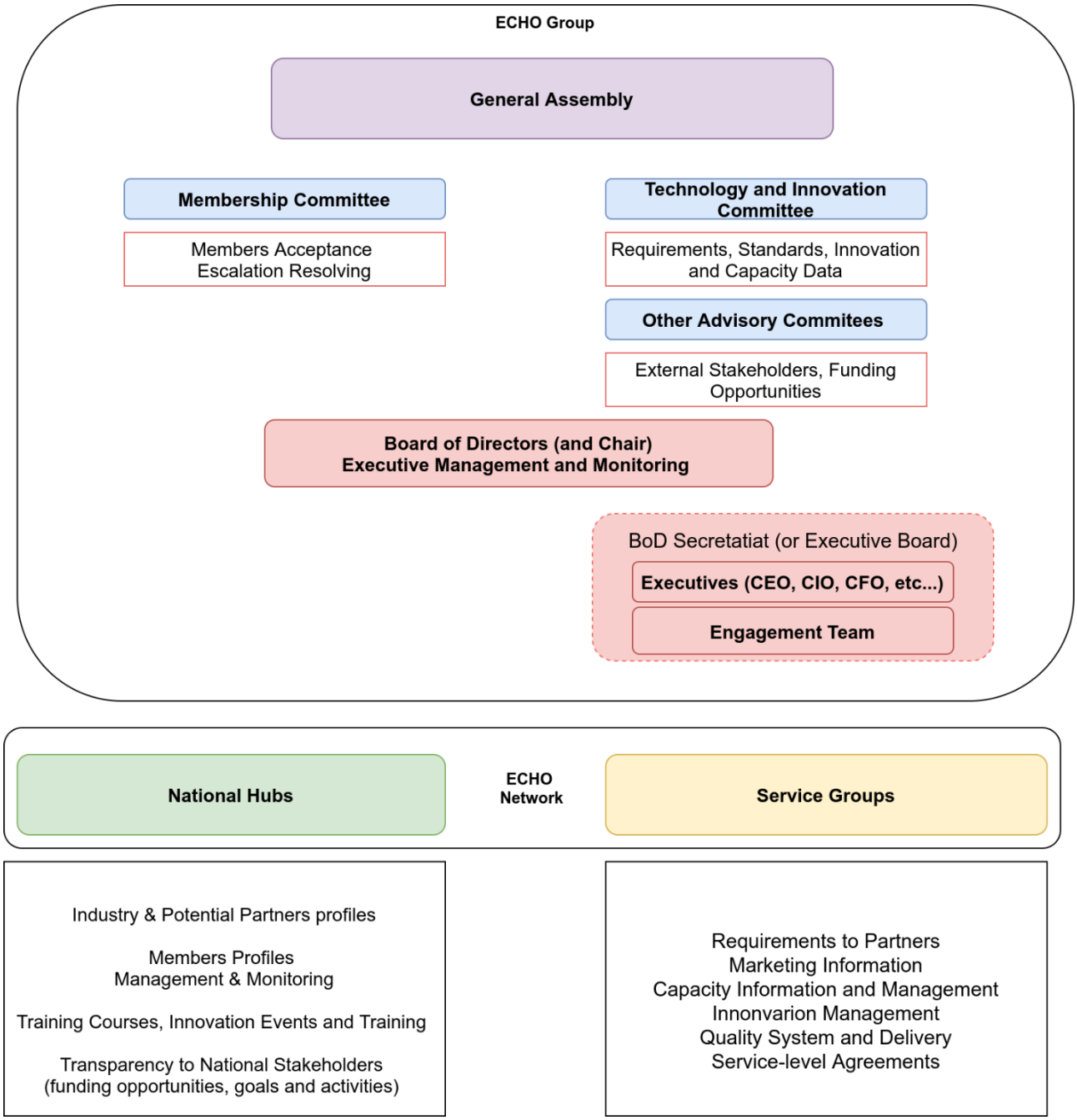


Figure 17. Process areas of governance and management

- The *Membership Committee* plays role in member acceptance, evaluation and certification. During the execution and monitoring phases, the Committee should also be the main actor in settling the conflicts between members and ECHO CNO in Escalation procedure. The Membership Committee is a permanent advisory committee supporting the work of BoD and GA.
- The *Technology and innovation Committee* proposes and advises on the Group level requirements and standards with regards to technology and solutions. The Committee is active in scientific research and innovation creation, as well as its dissemination amongst the ECHO members. The

Technology and innovation Committee is a permanent advisory committee supporting the work of BoD, and actively interacting with Service Groups.

- The *Stakeholders Committee* plays a role in establishing and maintaining partnerships and relations with relevant stakeholders on each level – Central Hub, National Hubs and Service Groups with EC, ECC, ENISA, relevant national and international organizations, including NGOs. The Stakeholder Committee is a permanent advisory committee supporting the work of BoD and actively interacting with National Hubs and Service Groups.

4.1.2 ECHO National Hubs and Service Groups

The National Hubs and Service Groups have important roles for the definition and delivery of services. Figure 17 presents the main areas of management activities and data selected for these organisational bodies (see the rectangles below National Hubs and Services Groups).

- The *National Hubs* organise ECHO members on country-level. They have a role in identifying national-level stakeholders, customers, and partners, as well as potential new members. The National Hubs have inputs for the development and implementation of ECHO Group strategy and business plan and translate these to local specifics.
  The National Hubs develop industry and potential partner's profiles, and manage and monitor new members' performance according to the ECHO Group standards and requirements. They are active in providing training courses, innovation events and training for their members, as well as for customers and other stakeholders on national level.
  The National Hubs are responsible to providing transparency in regards to national stakeholders, follow potential funding opportunities and align with national-level cybersecurity and other relevant strategies, policies and initiatives, and disseminate information to members.
- The *Service Groups* are formed around the development and delivery of specific services. Their focus is on actively identifying and engaging customers on national and multinational level. The Service Groups have inputs for the development and implementation of ECHO Group strategy and business plan, and translate these to the specific service area.
  The Service Groups develop marketing information on the specific services provided. They are defining the requirements for partners to ensure consistent and quality service delivery to customers. Service Groups define their quality system and delivery, innovation management process, as well as Service Level Agreements (SLA).

The National Hubs and Services Groups have similar organizational structures, as defined in D3.2.:

- Strategy Committee;
- Director or Coordinator (Chief Executive Officer);
- Secretariat (Executive Management):
  a. Chief Financial Officer (CFO);
  b. Project Management Officer (also acting as liaison for planning and reporting committees);
  c. Appointed contacts (Liaisons) for partnership development and membership management.

4.2 Example of Standard Operating Procedure Development

This section of the document describes the Strategic Planning Process (SPP) and its first Define phase, identified during the Process Analysis as well as organisational structure, responsibilities and procedures.

Note: Here the processes and procedures within all SPP Phases are considered in general.

Description

During the Define Phase the analysis of the results from previous periods are analysed, the strategic position of the CNO is identified and guidance for strategic planning is prepared, based on EU Cyber Security Strategy for the digital decade[14]. The guidance is sent from ECHO Group (Central Hub) to the other ECHO Network entities – National Hubs and Service Groups.

The Phase is dedicated also to communication of the strategies, issues and opportunities to all CNO's organisational elements and stakeholders.

The coordination is provided mainly within the ECHO Group's Board of Directors (BoD), which is the main body responsible for the Phase. The ECHO Group advisory committees serve as consultation bodies, which also provide connections to the ECHO Network through representation.

Scope reference

Following COBIT, the object which is relevant to the Define phase:

- Governance Objective: EDM01 — Ensured Governance Framework Setting and Maintenance

The most appropriate governance practice, which envelopes all activities within Define phase is as follows:

- EDM01.01 Evaluate the governance system. Continually identify and engage with the enterprise's stakeholders, document an understanding of the requirements, and evaluate the current and future design of governance of enterprise I&T[15].

[14] JOINT COMMUNICATION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL The EU's Cybersecurity Strategy for the Digital Decade

[15] The I&T is the abbreviation for Information and Technology in COBIT 2019 Framework.

The Process Diagram

The process contains activities presented as a flow diagram on Figure 18.

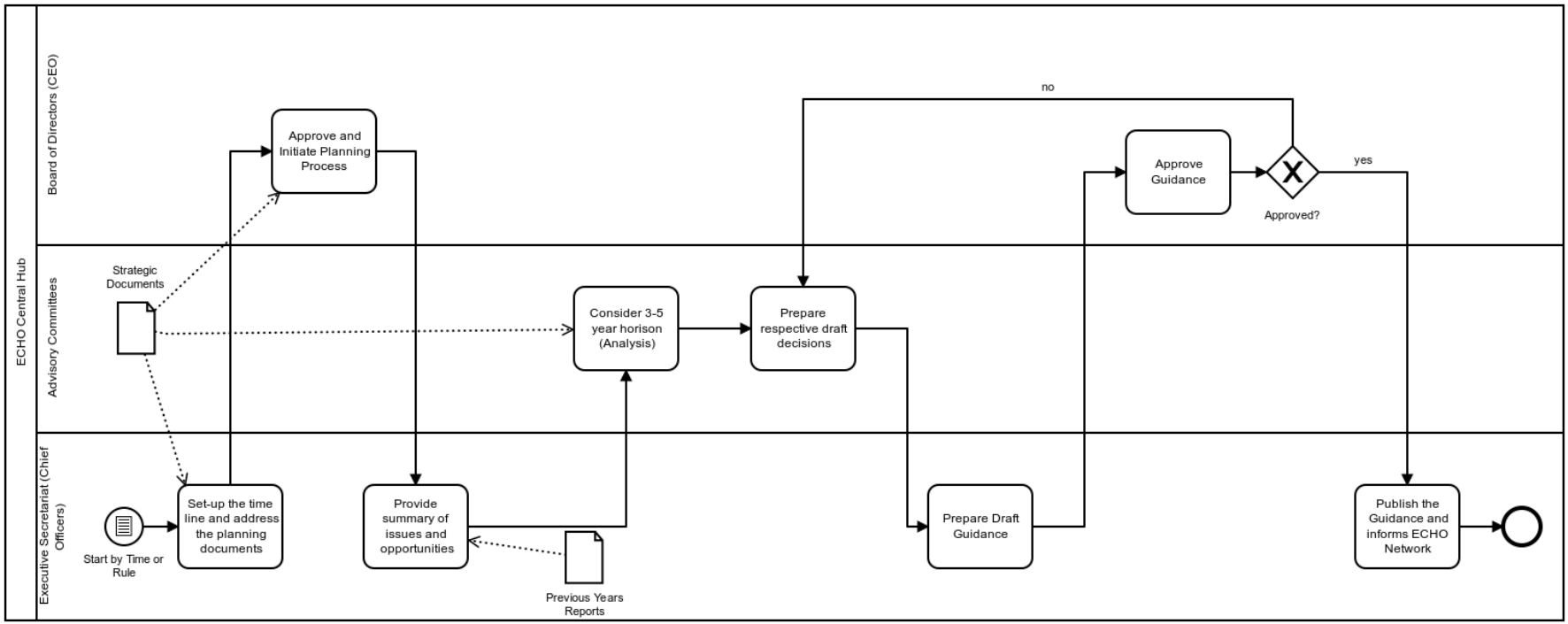


Figure 18: SPP's Define phase flow diagram

The Figure 18, actually represents the first part of the Figure 13.

Responsibilities

The EDM01.01 practice contains following activities according to the CBIT Framework:

A. Analyse and identify the internal and external environmental factors (legal, regulatory and contractual obligations – PEST analysis) and trends in the business environment that may influence strategic plan and changes in the governance design;
B. Determine the significance of I&T and its role with respect to the business;
C. Consider external regulations, laws and contractual obligations and determine how they should be applied within the governance of enterprise I&T;
D. Determine the implications of the overall enterprise control environment with regard to I&T;
E. Align the ethical use and processing of information and its impact on society, the natural environment, and internal and external stakeholder interests with the enterprise's direction, goals and objectives;
F. Articulate principles that will guide the design of governance and decision making of I&T;
G. Determine the optimal decision-making model for I&T;
H. Determine the appropriate levels of authority delegation, including threshold rules, for I&T decisions;

The activities identified during the Process Identification and shown in Figure 18 are as follows

1. Set-up the timeline and address the strategic issues and opportunities on the basis of previous year report; (A to F)
2. Initiate planning process and approve the procedure and timeline;
3. Provide analysis and decisions in respective scope of expertise; (A to E)
4. Suggest changes needed in CNO's Governance and Management model; (F to G)
5. Prepare Planning Guidance;
6. Approve and communicate the Planning Guidance. (G)

Involved organisational structures

The Definition phase falls within the ECHO Group and following organisational structures are explicitly involved:

Activities and functions	General Assembly	Board of Directors	Secretariat	Membership Committee	All Advisory Committees
1. Set-up the timeline and address the strategic issues and opportunities on the basis of previous year report;		A	R		
2. Initiate planning process and approve the procedure and timeline;		R	A	I	I

Activities and functions	General Assembly	Board of Directors	Secretariat	Membership Committee	All Advisory Committees
3. Provide analysis and decisions in respective scope of expertise;		C	A	R	R
4. Suggest changes needed in CNO's Governance and Management model;		C	A	R	R
5. Prepare Planning Guidance;		A	R		
6. Approve and communicate the Planning Guidance.		A	R	I	I

Table 4: SPP's Define phase RACI matrix

Procedure

Having activities and roles we can summarise the procedure as follows:

The Strategic Planning Process (SPP) starts with preparation of Guidance for strategic planning.

The Secretariat prepare the Communication which describes time-line, main strategic issues and opportunities and required changes.

The Communication is based on following documents:

1. *The EU Cyber security strategy, ECHO CNO Charter, PEST and SWOT Analysis, Strategic Plan and other strategic documents;*
2. *Decisions and reports of General Assembly (GA) and Board of the Directors (BoD);*
3. *Documents from the National Hubs and Service Groups;*
4. *Reports from previous years;*

The BoD approves the Communication and the Secretariat introduces the approved document to the Advisory Committees.

On the basis of the analysis and draft decisions provided by the Advisory Committees the Secretariat prepares the Draft Planning Guidance.

The Draft Planning Guidance is presented to the BoD for approval.

Approved Planning guidance is published by the Secretariat and is coordinated with National Hubs and Service Groups.

The Planning Guidance contains following sections:

1. *ECHO CNO long-term goals, priorities and targets.*
2. *Demand and Resource framework for 3-5 year period;*
3. *Technology roadmap and innovation opportunities;*

4. *Methodology for long-term planning, including key performance indicators.*

The BoD monitors and steers the preparation of the Planning Guidance. The BoD also have power to resolve the conflicts that may inflict during the process and is accountable to GA.

In order to cover all aspects of the Standard Operating Procedure we should add description of following standard topics:

Purpose

Measures of success (KPI)

Applicable Documents and Standards

<Developed procedure>

Who to consult

The Maturity Level perspective

Having this Standard Operating Procedure, developed in general for the Define phase, we have the initial phase description. It gives entry for the first Initial level of CMMI where the processes are "performed", but are not exclusively tailored to goals, managed and monitored according to the quality, costs and schedule. Description of CMMI standard and its relation to the COBIT can be seen in Annex 3.

In order to achieve the maturity level 2 – Managed process, all mentioned documents in SOP should exist and should provide methodology for developing the Strategic Plans, as well as qualitative and quantitative assessment for goals implementations.

The procedures for Advisory Committees work should be detailed and rules for BoD decisions also should be applicable.

Having this detailed procedures and overview of their implementation through annual reporting and change management plans will lead to maturity level 3 – Defined – of the process, where the general and specific goals will be achieved. If we go in details a little bit further – the general goal of the Define phase is to provide Guidance for strategic and business planning and specific goal could be to timely and effectively organise the Guidance preparation through the use of GMIS and broader involvement of NHs and SGs during this phase.

The *COBIT 2019* references required maturity levels for activities of the EDM01.01 as level 2 for activities from A to D and as level 3 for activities E-G. Therefore, the organisational procedures for development and approval should be "manageable", but activities which forms the methodology, goals and resource identification should be well defined with quantitative and qualitative measures.

In terms of transition from ECHO Consortium to ECHO CNO this means that in M36 initial level of the Define phase should be achieved by developing of detailed SOP (at least for 2 processes with other 2 for M48 – and tested through simulation games with the first one focused on the SPP) . The deliverables which are related

to the Define phase should be identified. In M48 maturity level 2 can be achieved with referencing the documents for Guidance development containing procedures for Advisory Committees and BoD decision-making. Further improvement and maturisation of the Define phase can be delivered during first and second years of the ECHO CNO functioning.

4.3 The Governance and Management Information System

The management of the information flows is an important area of establishment and successful governance of collaborative networked organisations in regard of trust and coordination among their members. Having the initial Process Identification described in general in previous chapters it is possible to identify main areas of information and data required, as well as to assign roles in general for maintenance and availability of the information.

The type of suggested GMIS is the communication-driven decision support system[16] with shared space for documents database and tools for communication and group work. Such kind of system can be easily implemented with the capabilities provided by the MS SharePoint.

It can be argued that communication driven decision support system is already implemented in ECHO Consortium and it can be adapted to ECHO CNO system with an additional amount of efforts under WP3/T3.2. and WP4.

The future GMIS, based on SharePoint has to have following main goals:

- To provide reliable and well grained access control to the information and documents;
- To track the decision-making process – or to record the information used for the decision, as well as the decision itself;
- To track, monitor and report execution of planned activities and use of resources;
- To track, monitor and report members' compliance to their agreements or members' status changes;
- To maintain standardised form for input and output data according to the decision-making procedures.

The GMIS then can be divided in four main modules (or in terms of SharePoint – four main folders): Decision Tracker; Resource Tracker; Final Decisions and Reports; and Archive.

The Decision Tracker main folder have to contain all data used during the decision making process and records for intermediate (if there are any) decisions, as well as minutes of meetings in which the decision is made. The points of recording information in GIMS will be identified during the detailed process diagram development. These points are tentatively acknowledged on Figure 18 and Figure 13 process diagrams.

[16] Daniel Power, "Decision Support Systems: Concepts and Resources for Managers," *Faculty Book Gallery*, January 1, 2002, https://scholarworks.uni.edu/facbook/67.

When final decision is reached it will be transferred to the Final Decision and Reports folder.

The Resource Tracker folder will contain forms for tracking the resource use, planned activities status reporting and risk reporting. The responsible organizational bodies for execution of the planned activities will fill these forms on a regular basis (quarterly, six-months and annually). The full annual reports will be transferred to the Final Decision and Reports folder.

The processes of inserting data and documents from the Decision and Resource Tracker folders to the Final Decision and Reports folders are given in Figure 19 and Figure 20.

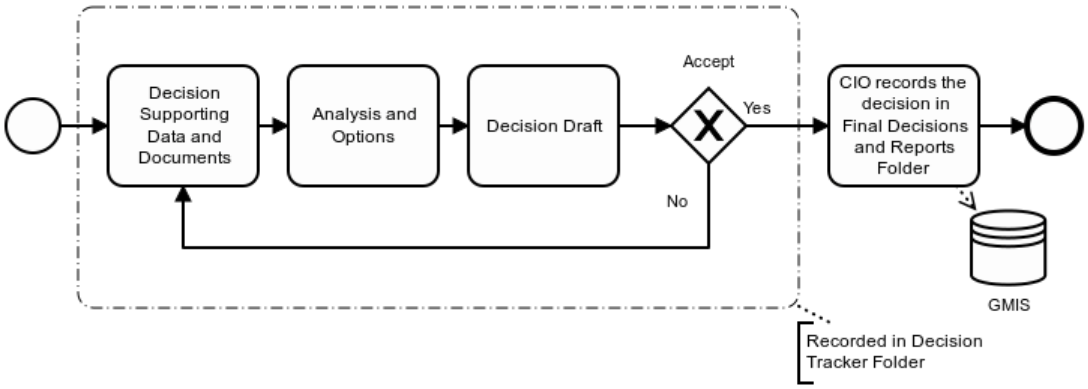


Figure 19: Decision Tracker Folder

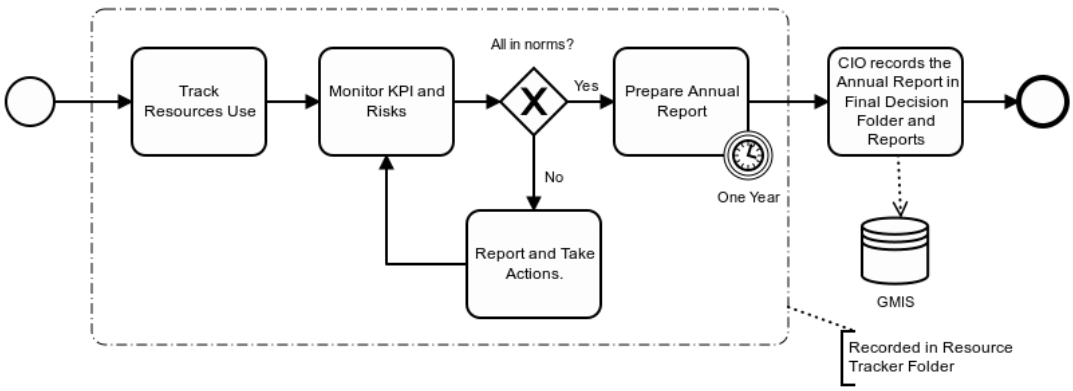


Figure 20: Resource Tracker folder

The two processes in above diagrams suggest specific responsibility and role of the Chief Executive Officer for managing Final Decisions and Reports folder. The specific CIO's right to create and modify this folder will ensure that information is reliable and stable.

In order to support the operations and to provide access levels and trust among parties the sub-directories for Central Hub, National Hubs and Services Groups in each of the three main folders should be created with specific rights to view, create, modify and update the information.

All data and information in GMIS should be considered as ECHO CNO members space and should be restricted only to ECHO CNO Partners.

The Central Hub should be considered as owner of following directories containing following documents and related decisions:

- Planning Guidance;
- Strategic Plan of the ECHO CNO;
- Business Plan of the ECHO CNO;
- Membership related decision;
- Catalogue of Services;
- Innovation Agenda;
- Full Annual Report of the ECHO CNO;
- NHs and SGs Agreements;
- Partners' Operational Agreements;
- NHs and SGs Strategic and Business Plans;
- Proposal for Changes to the BoD.

All these folders have to be created, modified and updated by the executive management of the Central Hub, e.g. CEO, CFO, CTO and other chief executive officer in the Secretariat, by supervision of the BoD.

The Proposal for Changes to the BoD folder is related to the change management and improvement and all partners and organisational bodies should have full access in order to create a proposal. Once the proposal is created the CEO should register the proposal in strategic planning folder.

The overall consultation and coordination roles falls to the Advisory Committees. General Assembly has the right to oversee the process and to settle possible disagreement among parties.

Each National Hub should own its own directories and respective documents as follows:

- National Industry Profiles;
- Members' Profiles;
- Monitoring of Members' Compliance;
- NH Strategic and Business Plans.

The user space of Service Groups can include following folders and documents:

- Customers' Profiles;
- SG Members' Requirements;
- Service-level Agreements;
- Capacity and Delivery Tracker.

The individual folders of NHs and SGs should be visible only to their management. The executive management of the Central Hub should have also right to view these folders, but without rights to change, modify or delete them.

The discussion above the possible GMIS structure and organisation should be considered from the time perspective. The proposal is based on the one-year time frame. The described directory (documents) structure of the GIMS should be archived on annual or longer time-frame basis. The 3-5 years frame of Strategic Planning Process can be used.

The coordination of each decision can be done through Calendar events, e-mails and Teams meetings, using data and information in respective directories.

Making one step further than identification of main requirements for GIMS as coordination-driven SharePoint based decision support system, we can suggest development of applications for aggregation of data about KPIs, risks, budgets, etc. and other important organisational measures. The application development is possible in SharePoint, but requires well-structured forms for input of data and data meta-model.

In future development of the GMIS further requirements, meta-data models and interaction have to be considered from the point of view of the results of the D3.6: ECHO Information sharing models and possible interactions between the GMIS and ECHO web platforms development – such as portal and marketspace, planned around ECHO services (see Figure 8).

5. Process Description and RACI Matrix – Strategic Planning Process, core processes

This chapter is dedicated to the description of the ECHO CNO RACI Matrix along the SPP. The processes and activities described in previous two chapters are used. These processes are referred in general into the first three sections of this chapter and then responsibilities for their execution are assigned and illustrated by a RACI matrix.

The Strategic Planning Process is selected for detailed presentation in this document for several reasons. The process role for initiating and implementing the transition from project organization to higher-level integration is crucial. The transition plan (to be developed within D3.4.) focuses on defining the steps and activities to lead the change to ECHO Network, and the engagement of partners in this depends highly on proper identification of the Current Operating Model (COM), Target Operating Model (TOM), what is the ECHO strategy and the gaps that need to be addressed. That is why the Strategic Planning Process was selected for detailed description within this document, and for testing during D3.4. in order to develop a shared first draft of the ECHO CNO Strategy.

The example of development of Standard Operating Procedure (SOP) and RACI matrix is given in previous Chapter 4 as an approach. The use of reference model of COBIT is also shown in this example. The reference model and processes profiles will be used in detailed development of SOPs and Charters of ECHO CNO in next two D3.3 updates in M36 and M48. In order to develop overall framework of the Organisation only high-level procedures are used.

The first three sections below describe procedures and roles of Central Hub, National Hubs and Service Groups in the Strategic Planning Process. First, the overall framework of the Strategic Planning Process is given. Second, the specific procedures and documents for other three processes are presented, as well as other important procedures are discussed. Then the RACI matrix is developed and is summarized to the organisational bodies. Finally, consideration for transition from ECHO Project to ECHO CNO are given as structures and documents.

The fourth section considers further change management from the point of view of the change implementation and change management plan through focus groups and case scenarios.

5.1 The Central Hub

The Central Hub is already considered in Chapter 3 and it has following organisational structures according to the decision described in Chapter 9 of D3.2:

1. General assembly (GA);
2. Board of Directors (BoD) with a Secretariat;
3. Committees reporting to the BoD (and GA):
   a. Membership Committee;
   b. Technology and Innovation Committee;

c. Stakeholder Committee;
d. Financial Committee;
e. Audit Committee;

4. Executive Management:
   a. Chief Executive and Chief Operational Officer (CEO/COO);
   b. Chief Financial Officer (CFO);
   c. Chief Partnership Officer (CPO);
   d. Chief Technology Officer (CTO);
   e. Chief Customer Officer (CCO).

The roles of the NHs and SGs are also introduced here.

5.1.1 The Strategic Planning Process - high-level procedures

The Strategic Planning Process (SPP) consists of five phases and the main high-level procedures within these phases are identified as procedures and documents as follows:

Define:

- The Strategic Planning Guidance development (setup goals and resource framework) – as it is shown in Chapter 3 the procedure is in solely responsibility of the Central Hub. The output of the procedure is the Guidance sent to the National Hubs (NHs) and Service Groups (SGs).

Build:

- Positioning and NHs and SGs strategic plans preparation;
- Coordination of the Strategic Plan;
- Approval of the Strategic Plan.

Plan:

- Business planning of NHs and SGs;
- Business planning for the Central Hub – as resources and activities;
- Coordination of the Central Hub, NHs and SGs business plans;
- Approval of business plans;
- Signing Operational Level Agreements for the next budget year.

Execution:

- Execute Business Plans and Operational Agreements;

Monitor:

- Report KPI on monthly, quarterly and yearly basis;

- Annual reporting.

5.1.2 Specific procedures related to the core processes

The specific procedures related to the core processes in regard to the governance and management scope of the Central Hub are as follows:

Partnership Development:

- Partners engagement;
- Partners acceptance and certification of the membership status;
- Partners monitoring.

Catalogue Management and Customers Relations Management:

- Service catalogue management;
- Service-level agreement management;

Innovation (R&D) Management:

- Portfolio management of investments;
- Programme, project and events management.

5.1.3 Specific procedures related to the organisational set-up

The following procedures are not related to the processes identification, but are important for the set-up and changes of the ECHO CNO and its organisational bodies:

- Establishment and change of NHs and SGs;
- Election of BoD and Advisory committees;
- Appointment of the Management (secretariat of the GA/BoD and at the NHs, SGs);
- Escalation procedure for members – what will happen if unwanted changes in Partners' status occurs or if a Partner appeal to ECHO CNO.
- Escalation procedures for customers;
- Development and maintenance of Governance and Management Information System.

The status of these procedures will be further discussed in Section 5.5 below dedicated to transition.

5.1.4 Central Hub RACI matrix

It should be mentioned that NHs and SGs can be considered as autonomous bodies outside the structure of the Central Hub and their activities and decisions are coordinated on the agreements basis, but they are included in the RACI matrix here in order to show their networking role in the organisation, as well as a bridge to further NHs and SGs description.

The meaning of the abbreviation in the matrix are as follows: **R** – Responsible, **A –** Accountable, **C –** Consulted and **I –** Informed.

Procedures	General assembly	Board of Directors	NHs and SGs	Membership Committee	Technology and Innovation Committee	Financial Committee	Audit Committee	Risk Management Committee	Chief Executive	Chief Financial Officer	Chief Partnership Officer	Chief Technology Officer	Chief Customer Officer
Strategic Planning Guidance development		A		R	R	R	R	R	R	R	R	R	R
Positioning and NHs and SGs strategic plans preparation		A	R										
Coordination of the Strategic Plan		A	R	C	C	C	C	C	R	R	R	R	R
Approval of the Strategic Plan	R	A											
Business planning of NHs and SGs			R						A				
Business planning for the Central Hub		I							A	R	R	R	R
Coordination of the business plans		A	R	C	C	C	C	C	R	R	R	R	R
Approval of business plans	R	A		C	C	C	C	C	C	C			
Signing Operational Level Agreements		A	R						R	R	R	R	R
Execute Business Plans and Operational Agreements		I	R						A	R	R	R	R
Report KPI on monthly, quarterly and six-moth basis		I	R						A	R	R	R	R
Annual reporting	R	A	R						A	R	R	R	R
Partners engagement	I	A	C	R	C	C	C	C	R		R		
Partners acceptance and certification in membership status		A	C	R	C	C	C	C	R				
Partners monitoring	I	I	R	R					A	C	R	C	C
Service catalogue management	I	I	R	C	C	C	C	C	A	C	C	C	R
Service-level agreement management	I	I	R	C	C	C	C	C	A	C	C	C	R
Portfolio management of investments	I	I	R	C	C	C	C	C	A	C	C	R	C
Programme, project and events management	I	I	R	C	R	C	C	C	A	C	R	C	R
Establishment and change of NHs and SGs	R	A	R	C	C	C	C	C	R	R	R	R	R
Election of BoD and Advisory committees	R		C	C	C	C	C	C	A	R	R	R	R
Appointment of the Executive Management officers	I	A								R			
Escalation procedure for members		A	R	C			R	C		R	R		
Escalation procedures for customers		A	R	C			R	C		R	R		
Development and maintenance of GMIS		A	R	R	R	R	R	R	R	R	R	R	R

Table 5: RACI matrix of the Central Hub

The summarisation and description of roles and responsibilities is given in the next section.

5.1.5 Description of roles and responsibilities

The description of the roles and responsibilities below is tentative and do not contain or consider representation and voting rules for different bodies or budgeting and resource aspects.

The General Assembly (GA):

- Establishes National Hubs and Service Groups by accepting their Charters.
- Elects five members of the Board of Directors for two-year mandate by the proposals of GA members;
- Approve the selection of the Chief Executive Officer (CEO) and members of the Advisory Committees;
- Approve ECHO CNO Strategic Documents – ECHO Strategy and the Strategic Plan;
- Approve Annual Budget and Business Plan for the next year;
- Approve Annual Report and goals for the changes and improvement.

The Board of Directors (BoD):

- Steer and oversee the preparation of NHs and SGs Charters and submit them to the GA;
- Elect Chairman of the BoD among its members. The Chairman is responsible for organising of the Board's meetings and registering them into the GMIS;
- The BoD takes its decisions by simple voting rule;
- Propose the appointment or changes of the ECHO CEO and Advisory Committees to the GA.
- Organise and monitor preparation of the ECHO Strategic Planning Documents, Annual Report and Change Management Plan, as well as their submission to the GA;
- Approve the Strategic Planning Guidance;
- Organise and monitor the preparation and submission to the GA of the Annual Budget and the Business plan;
- Approves all Executive Management positions;
- Approves new Partners, members' certification and changes in membership status type;
- Decides on issue related to conflicts resolution;
- Direct and oversee the development, improvement and maintenance of the GMIS;
- Direct and oversee the Operational-level agreements establishment with NHs and SGs.

The Advisory Committees

The Advisory Committees provides scientific and methodological support for decision-making in their respective area of expertise.

The Advisory Committees provides support to the BoD and executive management in following areas:

- Membership requirements for different types of partnerships;
- Resource framework establishment;
- Identification of the strategic position of the ECHO CNO;
- Set-up of KPI;

- Risk management and auditing;
- Development of organisational procedures.

The Committees also can suggest activities and measures for organisational improvement and change.

The Chief Executive Officer (with support from Executive Management officers)

- Represents the ECHO CNO in all external relations and signs agreements on behalf of the organisation;
- Organises and leads the development of the Strategic Planning Documents with support from other executives;
- Is responsible for preparation and submission of following documents to the BoD and GA:
    - Strategic Plan,
    - Business Plan,
    - Annual Budget of the Central Hub;
    - Annual Report;
    - Risk Management and Auditing;
    - Change Management Plan;
- Signs membership agreements with new Partners after membership approval of the BoD.
- Signs Operational Agreements with NHs and SGs;
- Is involved in development and maintenance of the GMIS and is accountable for its management.

The CEO and other chief officers steer, support and monitor procedures and activities related to service management and portfolio mix of investments and technology development, but they are not directly responsible for these activities. The NHs and SGs are the main actors of management and delivery of services and new products and technologies. The following two sections describes these roles and responsibilities.

5.2 The National Hubs

The minimum required organisational bodies for the National Hubs described in Chapter 9 of the D3.2 Governance alternatives are as follows:

1. Strategy Committee;
2. Director or Coordinator (Chief Executive Officer);
3. Secretariat (Executive Management):
    a. Chief Financial Officer (CFO);
    b. Project Management Officer (also acting as liaison for planning and reporting committees);
    c. Appointed contacts (Liaisons) for partnership development and membership management.

In regard to analysis in previous chapters it is suggested the name “Strategy Committee” to be replace both for NHs and SGs bodies, with the name Partners Assembly. It can consist of all Partners, which are members of the NHs and can also act as management steering committee which directs and monitor the executive management.

The main focus of the NHs is gathering and management the cybersecurity resources into network on the National Level within the EU member states. The emphasis fells on Partnership Development and Partners Engagement and membership monitoring and management.

The important point within the NH goals is to become main centres for approaching important Stakeholders from government, administration and industry and to seek opportunities for involvement in national policymaking, mutual cybersecurity projects, events and training.

Last, but not least the publicity and marketing for ECHO CNO activities to the general public is also central for NHs.

5.2.1 The Strategic Planning Process - high-level procedures

The following procedures can be attributed to the Strategic Planning Process (SPP) and its phases within the NHs:

Define:

The NHs are not involved in Define phase – they are only receiving the Strategic Planning Guidance.

Build:

The participation of NHs to this phase is related to the activities described in COBIT reference model as APO 02: Manage Strategy and the main high-level procedures can be identified as follows:

- Understand enterprise context and direction
- Assess current and target capabilities
- Gap analysis.
- Define and build the strategic plan and road map for the NHs.

Plan:

- Prioritise and allocate resources
- Prepare budget and NHs Business Plan for the next year

Execution:

- Sign Operational Agreement with Central Hub;
- Execute and manage the Agreement.

Monitor:

- Report KPI on monthly, quarterly and yearly basis;
- Maintain, update and monitor Members' Profiles
- Annual reporting.

5.2.2 Specific procedure related to the core processes

The specific procedures related to the core processes in regard to the governance and management scope of the NHs are as follows:

Partnership Development:

The NHs are involved in this process as Sponsors for ECHO Membership candidate organisations and individuals.

The Sponsor is the Appointed contact from NHs members which support the candidate through the Partners Engagement and Partnership Acceptance Procedures. It can be considered as national level withes to the Central Hub.

Catalogue Management and Customers Relations Management:

Participation to this process is the same as to the Partnership Development – sponsoring members for participation to the SG and respectively to the change of Membership status of the candidate to Full Partner and certification as Service Group member.

Innovation (R&D) Management:

- Manage participation to ECHO Programmes, projects and events related to innovation and R&D.

5.2.3 Specific procedures related to the organisational set-up

The specific procedures for NHs are similar like this of the Central Hub and not be described additionally. Detailed description will be provided with development of SOPs in M36 and M38.

The participation of the NHs to the procedure of Development and maintenance of Governance and Management Information System (GMIS) is important and includes registering and updating data about following documents:

- NH Members Profiles – containing all data acquired and decisions made during the Partner Engagement and Approval procedures, as well as data about Partner current status and capabilities.
- Industry profiles – results from marketing analysis and from analysis of the NH external environment about national industry related to the cybersecurity.
- National stakeholders and partner's engagement opportunities, containing also information for funding opportunities for programmes and projects on national level.

5.2.4 RACI matrix for the National Hub

The developed NH RACI matrix is shown in

Procedures	Partners Assembly	Director	Chief Financial Officer	Project Management Officer	Sponsors	Partner (NH Member)
Understand enterprise context and direction	C	A	R	R		
Assess current and target capabilities	C	A	R	R		
Gap analysis	C	A	R	R		
Define and build the strategic plan and road map	C	A	R	R		
Approve and sent NH strategic documents to the Central Hub	R	A	C	C		
Prioritise and allocate resources	C	A	R	R		
Prepare budget and NHs Business Plan	C	A	R	R		
Sign Operational Agreement with Central Hub	A	R				
Execute and manage the Agreement	I	A	R	R		
Report KPI on monthly, quarterly and six-month basis	I	A	R	R		R
Maintain, update and monitor Members' Profiles		A	C	C	R	R
Annual reporting	C	A	R	R		
Member candidates sponsoring	I	A			R	
Manage participation to ECHO Programmes, projects and events related to innovation and R&D	I	A	C	R		

Table 6: RACI matrix for National Hub

The meaning of the abbreviation in the matrix are as follows: **R** – Responsible, **A –** Accountable, **C –** Consulted and **I –** Informed.

5.2.5 Description of roles and responsibilities of the National Hub

The roles and responsibilities of the National Hubs and its organisational bodies are summarised in brief below.

Note: All partners from all countries are accepted and certified by the Central Hub, but their participation to the network governance and management is fulfilled through the National Hubs.

The Partners Assembly:

- Consists of all Partners members of the National Hub;
- Steers the strategic and business planning of the NH;
- Approves NH's strategic and business plans;
- Elects Sponsors for Partnership Engagement procedures among its members;
- Approves Annual Report.

The Director (CEO):

- Represents the National Hub and ECHO CNO to the national authorities and business;
- Facilities and supports signing the agreements between ECHO CNO and national organisations;
- Is responsible for strategic and business planning of the NH throughout all phases;
- Prepares and submits for approval NH's Strategic and Business Plan;
- Signs the agreements between Central Hub and National Hub;
- Appoints all executive officers and NH's staff;
- Monitors and reports NH activities;
- Sets-up, monitors and updates Member Profiles;
- Manages participation to ECHO Programmes, projects and events related to innovation and R&D;
- Prepares and submits for approval the Annual Report.

The Director is supported by other executive officers and can appoint additional staff if it is needed, planned and agreed with Partners Assembly.

The Sponsor is responsible for facilitating the engagement procedure for the new Partners, providing coordination and support both for the candidate and for the Central Hub.

The Partners participates in decision-making process through the Partners Assembly and are responsible for adequate and timely reporting for changes in their profiles.

5.3 The Service Groups

In regard to the Strategic Planning Process, the NHs and SGs are almost similar as activities.

The SGs are established to deliver services and this is the reason to suggest that their structure will be different to NHs.

Therefore, the minimum required organisational bodies and roles of NHs, already identified in previous section, have to be extended with minimum two additional roles – Chief Technology Officer and Service Manager.

5.3.1 The Strategic Planning Process - high-level procedures

The SPP procedures of SGs are similar to the NHs. The similarity can be found in steps and methodology of strategic and business planning. Differences can be found in subjects of planning – in contrast to NHs, SGs have to plan for activities related to management and delivery of services.

5.3.2 Specific procedure related to the core processes

The specific procedures related to the core processes in regard to the governance and management scope of the SGs are as follows:

Partnership Development:

The membership requirements for SG participations are specific and are proposed by the management of the group.

Catalogue Management and Customers Relations Management:

- Service-level agreement management;
- Managed continuity, availability and capacity;

Innovation (R&D) Management:

- Implementing technology roadmap;
- Manage participation to ECHO Programmes, projects and events related to innovation and R&D.

5.3.3 Specific procedures related to the organisational set-up

The specific procedures for SGs are similar to the Central Hub's specific procedures and thus are not described again here. More detailed description will be provided with development of SOPs in M36 and M38.

The participation of the SGs to the procedure of Development and maintenance of Governance and Management Information System (GMIS) is important and includes registering and updating data about following documents:

- Service requirements definition repository;
- Quality management plan;
- Partners Acceptance Criteria, Partners capacity and capability tracker;
- Customers profiles and Customer satisfaction surveys.

5.3.4 RACI matrix for the Service Group

The developed SG RACI matrix is shown below

Procedures	Partners Assembly	Director	Chief Financial Officer	Project Management Officer	Chief Technology Officer	Service Manager
Understand enterprise context and direction	C	A	R	R		
Assess current and target capabilities	C	A	R	R		
Gap analysis	C	A	R	R		

Procedures	Partners Assembly	Director	Chief Financial Officer	Project Management Officer	Chief Technology Officer	Service Manager
Define and build the strategic plan and road map	C	A	R	R		
Approve and sent SG strategic documents	R	A	C	C		
Prioritise and allocate resources	C	A	R	R		
Prepare budget and SGs Business Plan	C	A	R	R		
Sign Operational Agreement with Central Hub	A	R				
Execute and manage the Agreement	I	A	R	R		
Report KPI on monthly, quarterly and yearly basis	I	A	R	R		
Annual reporting		A	C	C		
Maintain, update and monitor members' information of capacity and capabilities	C	A	R	R		
Service-level agreement management;	I	A	R		R	R
Managed continuity, availability and capacity of services		A			R	R
Manage participation to ECHO Programmes, projects and events related to innovation and R&D	I	A	C	R		

Table 7: RACI matrix for Service Group

5.3.5 Description of roles and responsibilities of the Service Group

The responsibilities and roles within Service Group are similar to the National Hub in regard to the strategic and business planning, representation to Partners Assembly, signing the agreements with the Central Hub and Partners. Nevertheless, the nature of the processes and work of the SGs and membership procedure make the Service Groups very different from the National Hubs.

The main task of SGs is to sell and to deliver service and this requires implementation of additional management processes at minimum Service-level agreement management and Managed continuity from the COBIT 2019 Framework objects Deliver Service and Support. Future development of the GM model in D3.4 and D3.3 updates, when the vision for services delivery and innovations management will be clearer within ECHO, probably will include other process from COBIT objects of Build Acquire and implement related to development of new services and managing the innovation portfolio mix.

Therefore, it can be argued that the complexity of the SG management is higher than in NH.

The requirements to the Partners onboarding SG should also be higher than requirements for participation to NH. The candidates should provide evidence that they have required experience, capacity and capabilities for delivery of service. Estimation of Partner's capacity is also important from the management point of view – this is an important variable in service delivery. Therefore, SG's Partners have to be Full Active Partners according to the current ECHO classification (See Annex 2).

Therefore, requirements management is also important part of SG's management and it should be considered shared responsibility between each SG and the Central Hub's Advisory Committees. The reason to involve Central Hub is to provide discussion, transparency agreement and stability of network-wide requirements.

Specifics in work and processes, on the other hand, requires at minimum two more roles related to technology and service delivery – these of the Chief Technology Officer and Service Manager.

5.4 Comparison of ECHO Consortium and ECHO CNO documents and structure

Full list of current (until M24) and future (M24-M48) ECHO deliverables is given in Table 14, Annex 4.

Analysing of Table 14 we can conclude that main documents for strategic positioning and planning for ECHO Services are or will be in place until M48. Documents for requirement management, design, validation and monitoring of services are also available.

Partnership and stakeholder's relations strategic and operational documents are already developed. Engagement Team soon will finish the operational and procedural documents for full implementation of Partnership Development Process within ECHO Consortium.

Innovation and R&D documents related to positioning and planning are available and until M38 strategic planning and operational management deliverables will be available.

In relation to Catalogue planning and SGs' management documents for Assets Exploitation strategy will be available in M45 as a strategic planning guidance.

The missing part is the overall Strategic Planning Framework – as methodology, procedures and organisational roles. This part of documents will be developed in D3.4 and D3.3 updates.

In regard of organisational structure similarity of the ECHO Consortium and future ECHO CNO we can find high level of compatibility in regard to ECHO CNO's Central Hub. The list of ECHO Consortium and ECHO CNO structures are given in Table 15, Annex 5.

Many of the Advisory Committees already exists, as well as many of Chief Officers' roles. The NHs and SGs structure have to be considered, developed and established until M48.

5.5 Transition from project organization to collaborative network organization

The implementation of the governance model and selected processes described in this document is part of project work under D3.4. The governance model implementation envisages transition to a different type of organization with higher level of integration.

- The current *ECHO project organization* is characterized as ad-hoc formed partnership between organizations, with different legal status (companies, research institutions.), own strategies and structures, with varying national and organizational cultures.
- The targeted closer integration envisages the establishment of a collaborative network organization (*ECHO Network*), with its own legal status, strategy (first draft to be developed under D3.4.) and structure (central hub, regional chapters and service groups), and certain level of alignment of organizational cultures.

Thus, the transition process to network organization represents a major organizational change at several levels:

- *Partner organizations*: current – as well as newly joining – partner organizations willing to further integrate into the ECHO Network will need to take decisions to be reflected in their own strategies and structures.
- *Newly established network organization*: in essence, the transition will result in the establishment – including legal registration – of a new organization, with its own strategy, structure and processes.

This major change at (at least) two levels needs to be planned and implemented carefully, with consideration of the current starting point at partner organizations, the environment and ultimate goals to be achieved. In order to prepare the transition plan, the development team for D3.4. needs to consider the following:

1) Current state – **Current operating model (COM)**, defined in a number of preceding project deliverables, reflecting project organization and procedures

Current operating model
Ad-hoc project organization combining the expertise and efforts of 30 ECHO consortium partner organizations in 16 countries. The internal management procedures of the project, such as the consortium governance, project monitoring and project reporting are described in D1.1. (Project Handbook). Assessment of the maturity of the COM made under T3.4. as an Annual report on Governance Model (GM) operation for 2019 and 2020.

2) **ECHO vision** – approved by the partner organisations

2023 AND BEYOND
Develop and establish the ECHO Network as an NGO with Chapters and Central Hub to be the ECHO CCC after the end of the project, supporting evolving ECHO service groups around the assets to be exploited.

3) Targeted state – **Target operating model (TOM)**

Target operating model
Organizational structure, processes and requirements in order to establish the ECHO Network as a model of EU Cyber Security Collaborative Network (ECSCON) with a central hub, regional chapters and functional entities to provide interface with institutional partners and market customers. The governance and management model of ECHO Network are defined in this document.

4) Environment imperatives – **cyber-security strategy and landscape on EU level**

There are a number of important strategic documents and partners on the EU cyber security landscape we need to consider and actively seek alignment with.

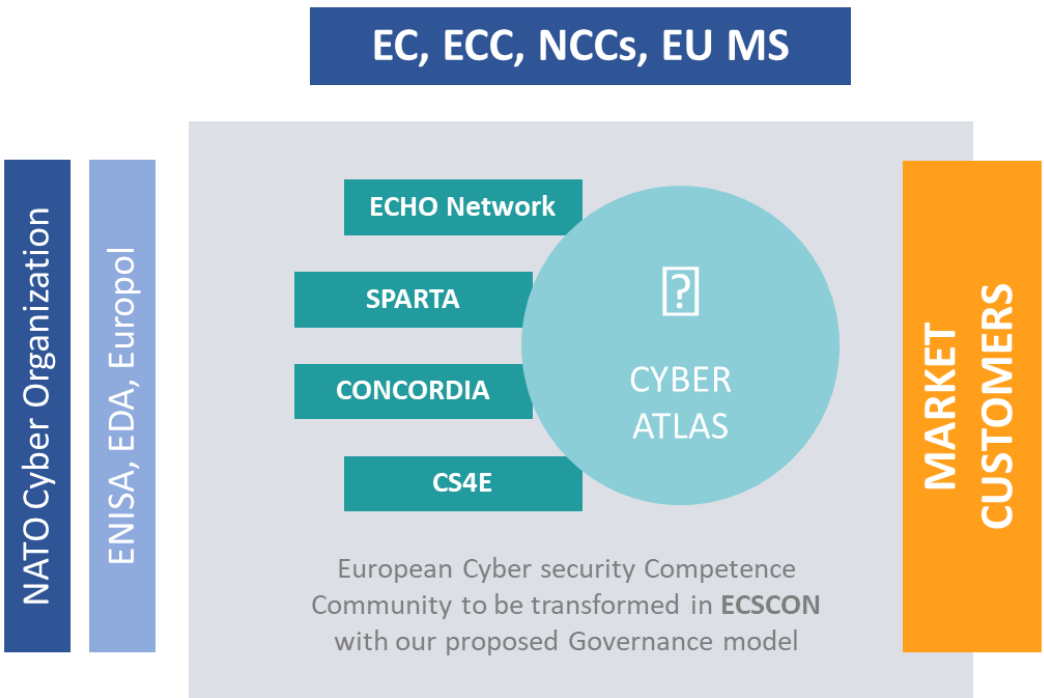


Figure 21: EXCON and EU cyber security context

The EU's Cybersecurity Strategy for the Digital Decade[17] is a key guidance for the development of ECHO Network strategy and operations.

[17] Adopted on 16.12.2020

5.5.1 Implementation Plan

The development of the implementation plan will address the above requirements, and will envisage maximum engagement of all partner organizations in order to ensure successful transition from COM to TOM. The implementation plan should answer two important questions:

a) what are the steps needed in order to reach the desired to-be (TOM) state starting from the as-is (COM) from September 2021 to January 2023 passing through IOC end of 2021 and FOC at the end of 2022;
b) how to manage the process to ensure the success of the transition (achieving maturity level 4 by CMMI for the key processes and structures defined in D3.3.).

Setting up a Collaborative Network Organization (CNO) through the transition from a project organization poses various challenges that need to be addressed during the preparation for – and implementation of – the transition plan. Among these are ensuring buy-in in the various project organizations and aligning to a single model regarding: organizational structure, decision making, performance metrics, responsibilities and authorities. Managing the change from COM to TOM is a critical activity, and is the focus of this D3.4. Resulting CNO has to be able to engage with ECC and NCCs for funding under HE/DE on cyber security as well as to exploit the market opportunities identified in WP9 after January 2023.

Managing and guiding change in organizations is a proliferous area of scientific and practitioners' focus, and could inform the development of this transition plan. Clarity of the goal and sharing information among all project participants affected by the change, as well as affirmative leadership and dedicated and empowered change management team are among the key factors we will focus on. Leadership for change is provided by PC and PIC, supported by E-GCS (WP3 team) asset under T3.4/T3.5. and validated through WP8 demo of GM functions.

It is important to note the number and differences in experience, ambitions, structures and capabilities of the consortium partner organizations. Preparation of the transition to ECSCON should thus allow for individual assessment of the organizations' preparedness and readiness to proceed with deepening integration, as well as to identify the necessary actions to ensure alignment and smooth transition.

The Transition Plan will:

- Detail the transition plan with specific activities, responsibilities, timeline and milestones (input for T3.4 and to T3.5. bringing new partners to strengthen our capabilities and capacities);
- Address the key success factors through embedding change management process and techniques. This will be informed by ADKAR methodology.

5.5.2 Development of ECHO Strategic Plan (first draft)

The above detailed Strategic Planning Process will be applied to develop a first draft of ECHO Strategic Plan during the activities of D3.4. This will be used as a demo case and will pursue two important goals:

- *Test and refine the process*. The process will be tested through a simulation game, with individuals from the ECHO partners stepping into the roles and functions as defined above. Through a simulation game, they will do a first run of the process, and the feedback will be used for further refinement (to be reflected in future updates of this deliverable)
- *Develop first draft of ECHO Strategic Plan*. It is vital for the transition process to have a certain level of detail with regards to how to achieve the vision, and this will be provided through the first draft of the Strategic Plan.

The Strategic Plan should define:

- The ECHO strategic objectives and how they link to one another; the links and contributions of objectives on the different levels of the organization – ECHO Central Hub, ECHO Chapters, Service groups. This will be done through Strategic Maps;
- The performance metrics to ensure effectiveness of the processes in achieving the ECHO strategic objectives. This will be done through the Balanced Score Cards methodology;
- Implications for each of the project partners, and requirements to activate the ECHO Strategic Plan.

Based on the experience of the Strategic Planning process implementation through a simulation game to involve all partners the next step is to organize similar exercise for the Partnership development process under T3.5. and both SPP and PD process to be reflected in D3.12.

For 2020 under T3.4. and with WP9 the other 3 key processes – CMCRM and IM will be further developed through simulation games and reflected in D3.13. at M48.

The assessment of the level of maturity of the 4 key processes and established organizational entities of the ECHO network will be reflected in D3.5. at M48 under T3.4.

6. Conclusions

This document provides an opportunity for the ECHO project leadership to discuss, consult and decide, what may be the future of ECHO project and the vision of ECHO Network. Those discussions will be facilitated by the Strategic Planning simulation, prepared by several focus groups, questionnaires and interviews and used in the development of D3.4 Governance model implementation plan.

Generally speaking, when it comes to the continuation of ECHO activities beyond the time of project end in 2023, there are four options to choose from:

1. *Do nothing* – no joint activities between partners after the closing of ECHO project;
2. *Register joint ventures* around assets to be exploited – E-EWS, E-FCR, E-MAF, E-CCS, E-CSF, E-GCS, …;
3. *Merge with ECSO and other pilot projects* in one organization to exploit the results of ECHO project by partners in forming ECSCON along the Governance White paper agreed by the Commission (under HE/DE funding);
4. *Develop and establish the ECHO Network* as an NGO with Chapters and Central Hub to be the ECHO Cybersecurity Competence Centre after the end of the project, supporting evolving ECHO service groups around the assets to be exploited

Based on discussion at the Workshop on Governance Model Description, 17-18 December 2020, **our intention is to explore the implementation of *Option 4***.

6.1 The Concept

The potential selection of *Option 4* is leading us to opportunity to consult and agree on a vision for joint development *of EU Cyber Security Collaborative Network (ECSCON)*.

Key decisions for the ECHO network activation (along ECHO project and beyond) and transition planning are as follow:

1. ECHO Network with a Bylaws as NGO to regulate components and relations among them (for WP1);
2. ECHO Group as an executive body, central hub for ECHO Network;
3. ECHO Chapters on national level, separate legal entities under the Bylaws;
4. ECHO Service Groups – based on agreement between partners around ECHO assets;
5. Relations with EC, ECC and NCC, ENISA, EUROPOL, EDA, EUMS;
6. Relations with NATO;
7. Relations with the Market – European and Global (for WP9);
8. Relations with other pilots and ECSO, JRC (Cyber-Atlas);
9. Relations with other stakeholders in Cyber world.

These decisions will be further discussed at the Focus group meeting in January 2021 as part of the development of D3.4.

Based on the agreement for the vision, starting with the approved EU Cyber security strategy, decision for the establishment of ECC in Bucharest and NIS 2.0. directive under development, the T3.4 development team prepared the Strategic planning simulation game. The purpose of the game is to test the Strategic planning process and provide clarity on further steps in the design of the other key processes and organizational structures to be reflected in D3.12. (M36) and D3.13. (M48).

In this document the main elements (as presented in Table 8) of the Governance model are described in order to provide guidance to responsible teams to test the agreed solutions during the demo cases under WP8.

Processes		Central Hub	National Hubs	Service Groups
Strategic Planning		1	2	3
Change Management		1	2	3
Partnership development		3	1	2
Innovation Management		3	2	1
Catalogue Management		2	3	1
	Structures	GA	PA	PA
		BoD	Director	Director
		Committees	Executives	Executives
		CEO	Partners	Partners
		Secretariat	National	International
		Stakeholders		
		Partners Representation		
Legend:		1 – Lead; 2 – Support; 3 – Consult.		

Table 8: Process and organisational design summary

6.2 The Transformation

Testing of governance model elements' implementation through the demo cases in WP8 is to facilitate the transition process from WPs to ECHO-Assets and as a next step to ECHO service groups/virtual organisations along the process of establishment of ECHO Group (Central hub, in coordination with European Cybersecurity Competence Centre in Bucharest) and ECHO Chapters (National Hubs in coordination with the respective National Coordination Centres) as presented in Table 9.

WPs	Asset	ECHO Network	Function
WP1		ECHO Group	CEO, COO, CTO, CPO, FC, HR, LA, CSO
WP2	E-MAF	ECHO Group/VO	Operational analysis, Risk Management
WP2	E-CCS	ECHO Group/VO	Certification planning / management
WP2	E-CSF	ECHO Group/VO	Training and certification management

WPs	Asset	ECHO Network	Function
WP3	E-GCS	ECHO Group/VO	Strategic planning and change management
WP4		ECHO Group	Capability (technology) planning, CTO
WP5	E-EWS	ECHO FSG EWS	EWS service provision / capability development
WP6	E-FCR	ECHO FSG FCR	FCR service provision / capability development
WP7		ECHO Group	Demo planning
WP8		ECHO Group	Demo management
WP9		ECHO Group	Business planning, Innovation & Catalogue management, Strategic Communications (PR)
Partners		NHs	Partnership development
Partners		SGs	Capability development and service provision
Timeline			
2019-2020	**2021**	**2022-2023**	

Table 9: Transformation of ECHO project to ECHO Network as a CNO

The process of testing will provide input to Internal Audit Missions under T3.4. to assess the level of maturity of established processes and structures. It will also provide an information to develop recommendations to be implemented under corrections plans, provided by the owners of assets in support of the transition to the Service Groups / Virtual organizations and of course for Chapters and even Central Hub / ECHO Group.

6.3 Tasks, updates and schedule

With D3.3. delivery we make a critical step from a more theoretical and consultation process to practical planning of the transition (transformation) and testing of the Governance model. The design and Transition plan will be documented in updates of this document, *D3.4 Governance model implementation plan* and *D3.5 ECHO Operations status report*. The latter will report at the end of the project the development of Governance model operation and assessment of the maturity of the key processes and structures as well the status of partnership development to grow the future ECHO Network.

Months	Tasks						
	T3.1	**T3.6**	**T3.3**			**T3.4**	**T3.5**
M9		**D3.6**					
M12	**D3.1**						
M18			**D3.2**				
M24				**D3.3.**			
M30					**D3.4**		
M36	**D3.8**		**D3.10**	**D3.12**	**D3.14**		
M48	**D3.9**		**D3.11**	**D3.13**	**D3.15**	**D3.5**	**D3.5**
Phases	*Study*		*Assessment, Design and Planning*			*Implementation*	

Table 10: The way ahead for Governance model development in ECHO project

The delivery of D3.3 half-way through the project and its acceptance by the EC presents a crucial milestone in transition from the phase of Study to the Implementation phase (see Table 10).

The project team has performed a thorough assessment and design and is at the onset of the move to planning for implementation phase. Even though according to the schedule, task *T3.3 governance model definition* finishes at the time of publication of this deliverable, remaining work and deliverables in WP3 will be undertaken under *T3.4 Governance operations*, starting with the development of D3.4 Governance model implementation plan due in July 2021.

The same way the teams from WP5/6 will continue their work under WP8. The collaborative environment of demonstration cases will provide even better integration between WPs and build closer collaborative relations between the teams of different WPs and Partners.

As outlined in the Grant Agreement, D3.2 has presented the selection of the most suitable alternatives for the governance model. D3.3 has built on that research (especially Chapter 9) and provides a detailed description of the envisioned alternative, its structure and processes. D3.3 extends to support the transition to D3.4 Governance model implementation plan that was supported with the Workshop on Governance Model Description, 17-18 December 2020, Telco Meeting and is the focus of the kick-off / focus group meeting on 21 Jan 2021.

6.4 Key lessons learned

The key lessons from the D3.3. development are as follows:

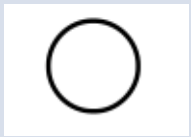
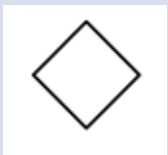
1. Early agreement on the ToC is essential;
2. Forming a development team from all involved partners with named resources is a prerequisite for successful kick-off;
3. Following adapted for document development SCRUM methodology using ToC as a product backlog is essential with at least one Sprint every 2 weeks in the beginning;
4. Well defined roles and tasking in the development team is a key responsibility of the document owner
5. WP leader as a SCRUM Master is essential to escape any serious deviation of the development plan agreed in the beginning (at the kick-off);
6. Proper escalation to the Project Implementation Coordinator on monthly basis is required if problems not resolved at 2 consecutive sprints;
7. Engagement of larger constituency of stakeholders, even from other 3 pilots, ECSO, ENISA and others is desirable (in case of D3.4. and further engagement with ECC, NCCs is important as well).

Annexes

Annex 1 – BPMN Modelling Elements

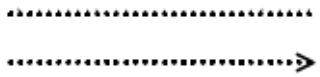
The Business Process Modelling Notation is a standard for process analysis and representation developed by Object Management Group[18]. The notation consists of main elements shown in Table 11. These elements are used to form process diagram which presents the process flow and actors.

Table 11 shows an excerpt from the BPMN v2.0.2 standard (pp. 56-58)[19]

Element	Description	Notation
Event	An Event is something that "happens" during the course of a Process (see page 235) or a Choreography (see page 339). These Events affect the flow of the model and usually have a cause (trigger) or an impact (result). Events are circles with open centers to allow internal markers to differentiate different triggers or results. There are three types of Events, based on when they affect the flow: Start, Intermediate, and End.	
Activity	An Activity is a generic term for work that company performs (see page 149) in a Process. An Activity can be atomic or non-atomic (compound). The types of Activities that are a part of a Process Model are: Sub-Process and Task, which are rounded rectangles. Activities are used in both standard Processes and in Choreographies.	
Gateway	A Gateway is used to control the divergence and convergence of Sequence Flows in a Process (see page 147) and in a Choreography (see page 335). Thus, it will determine branching, forking, merging, and joining of paths. Internal markers will indicate the type of behavior control.	
Sequence Flow	A Sequence Flow is used to show the order that Activities will be performed in a Process (see page 95) and in a Choreography (see page 320).	

[18] OM Group, "About Us," accessed January 25, 2021, https://www.omg.org/about/index.htm.

[19] OM Group, "Business Process Model and Notation (BPMN), Version 2.0," January 12, 2021, 538.

Element	Description	Notation
Message Flow	A Message Flow is used to show the flow of Messages between two Participants that are prepared to send and receive them (see page 113). In BPMN, two separate Pools in a Collaboration Diagram will represent the two Participants (e.g., Partner Entities and/or Partner Roles).	
Association	An Association is used to link information and Artifacts with BPMN graphical elements (see page 65). Text Annotations (see page 69) and other Artifacts (see page 64) can be Associated with the graphical elements. An arrowhead on the Association indicates a direction of flow (e.g., data), when appropriate.	
Pool	A Pool is the graphical representation of a Participant in a Collaboration (see page 113). It also acts as a "swimlane" and a graphical container for partitioning a set of Activities from other Pools, usually in the context of B2B situations. A Pool MAY have internal details, in the form of the Process that will be executed. Or a Pool MAY have no internal details, i.e., it can be a "black box."	
Lane	A Lane is a sub-partition within a Process, sometimes within a Pool, and will extend the entire length of the Process, either vertically or horizontally (see on page 304). Lanes are used to organize and categorize Activities.	
Data Object	Data Objects provide information about what Activities require to be performed and/or what they produce (see page 204), Data Objects can represent a singular object or a collection of objects. Data Input and Data Output provide the same information for Processes.	
Message	A Message is used to depict the contents of a communication between two Participants (as defined by a business Partner Role or a business Partner Entity—see on page 91).	

Element	Description	Notation
Group (a box around a group of objects within the same category)	A Group is a grouping of graphical elements that are within the same Category (see page 68). This type of grouping does not affect the Sequence Flows within the Group. The Category name appears on the diagram as the group label. Categories can be used for documentation or analysis purposes. Groups are one way in which Categories of objects can be visually displayed on the diagram.	
Text Annotation (attached with an Descriptive Text Association)	Text Annotations are a mechanism for a modeler to provide additional text information for the reader of a BPMN Diagram (see page 69).	

Table 11: BPMN Basic Modelling Elements

Annex 2 – Membership categories

This is the excerpt from the Partnership Handbook (ECHO Partnership Handbook v1.2.docx) developed by the ECHO Partner Engagement Team, pp. 14-16.

4. Collaboration Opportunities

The project will develop and operate under an ECHO Governance Model, by which the efforts across the EU Network of Cybersecurity Competence Centres can be coordinated and optimized to provide lasting and sustainable excellence in cybersecurity skills development; research and experimentation; technology roadmaps delivery; and certified security products for improved cybersecurity resilience.

Whilst we are still early in the Project we are keen to begin growing our network of interested parties, stakeholders and potential new partners, and are constantly looking for new and exciting opportunities to refine and improve the project results.

With this in mind we have identified the following ways in which interested parties could be involved in the Project.

Category	Who can apply?	Engagement	Effort
ECHO Club Member	Individuals/Organisations	Passive, receive regular newsletters etc.	No commitment of effort required
ECHO Participant	Individuals/Organisations	Active, engage in activities, attend demonstrations and more (can be tailored).	Commitment of effort (can be tailored)
ECHO Partner	Organisations	Active, engage in R&D activities, become a member of ECHO services & more (can be tailored).	Commitment of effort/funding (can be tailored)

Figure 22: Collaboration Opportunities - Overview

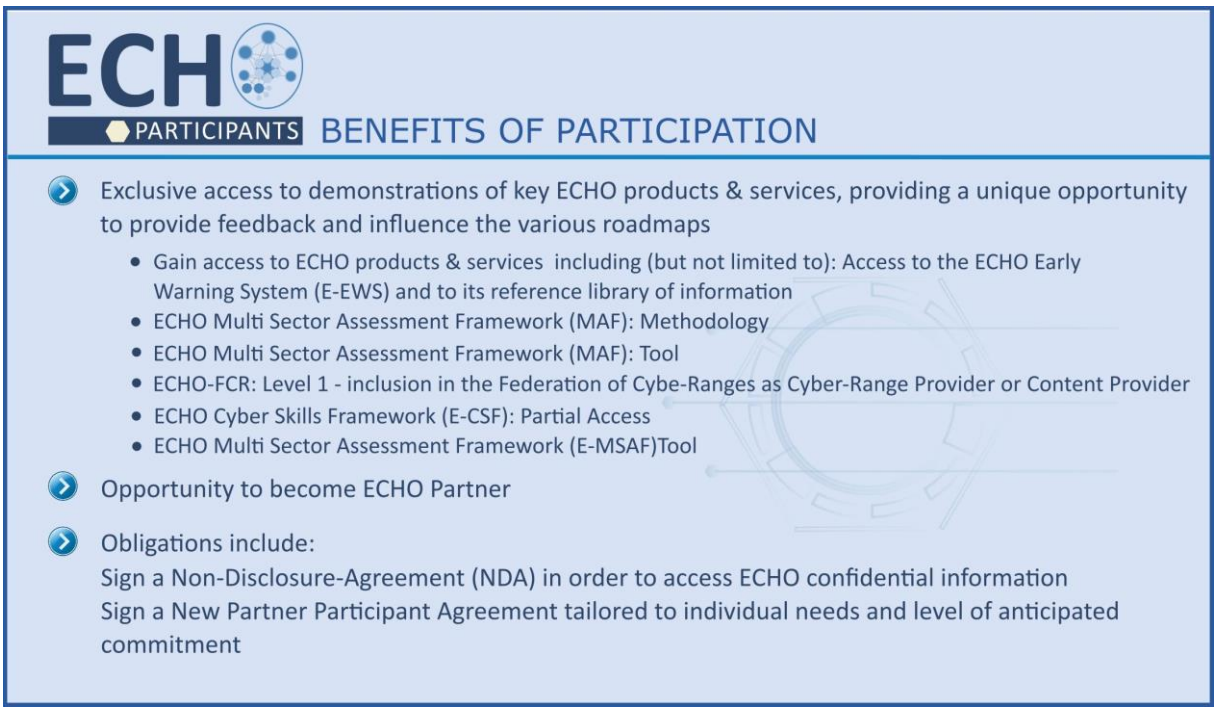
Become an ECHO Club Member

ECHO Club Members are classified as parties interested in the outcomes of the project, but do not contribute in anyway, and as such are not considered beneficiaries. Therefore, they are not bound by the Grant Agreement, Consortium Agreement or New Partner Agreement, nor are they committed to specific tasks. However, there remain a myriad of opportunities to be affiliated with the Project.

Become an ECHO Participant

ECHO Participants are interested in more actively collaborating in the Project by providing support, effort, feedback and participation in studies and demonstrations, and have the opportunity to gain full access to specific topics (e.g. the ECHO EWS). ECHO Participants are not beneficiaries, and are not bound by the Grant. However, in order to contribute to R&D and Network activities participants shall be bound by a simple New Partner Agreement and an the Consortium Agreement.

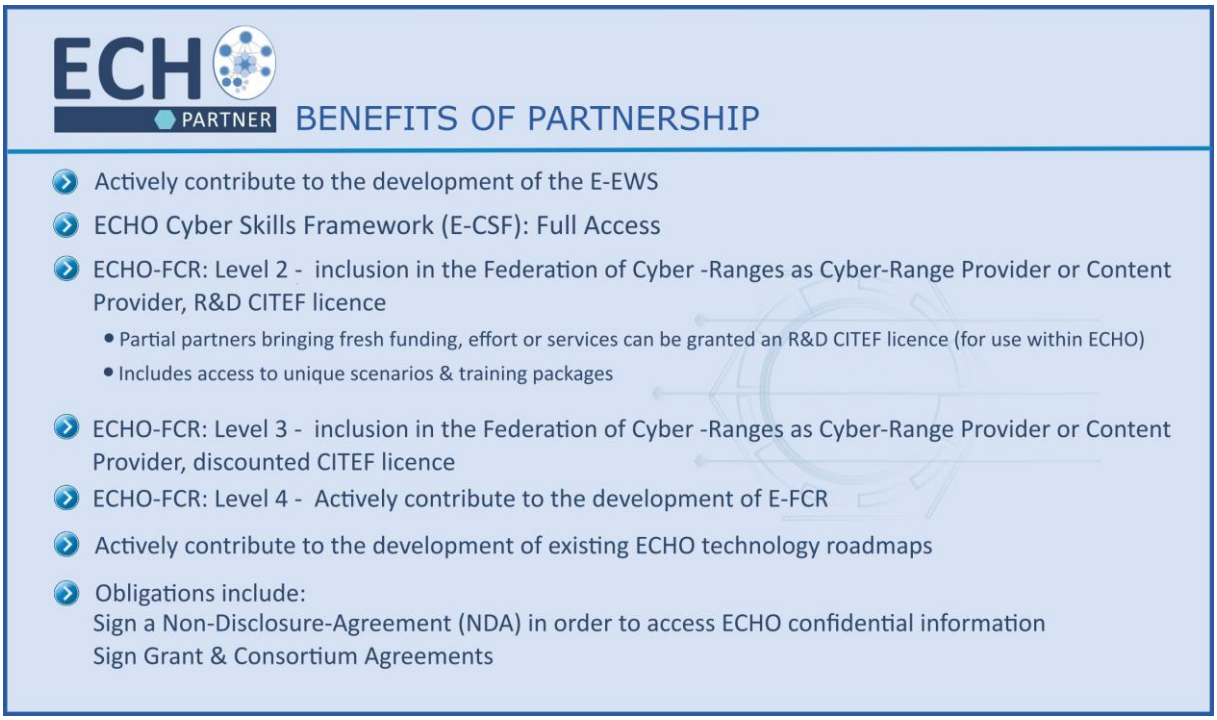
Benefits of becoming a participant include (but are not limited to):



Become an ECHO Partner

ECHO Partners are parties interested in becoming fully contributing partners, by providing fresh funding or effort they would be able to influence the project and its activities, such as identifying and developing additional Technology Roadmaps and gain full access to all topics, as such, an amendment to the Grant and Consortium Agreements is needed, requiring a vote of the ECHO General Assembly.

Benefits of becoming an ECHO Partner include (but are not limited to):



There are of course many ways in which you can be involved with varying degrees of commitment to suit your needs and we are always keen to hear new ideas. Therefore should you have already identified opportunities for potential collaboration please contact us so that we can discuss how the ECHO Project could be involved.

Annex 2 – COBIT and CMMI

COBIT (Control OBjectives of Information and related Technologies) is a framework that provides an end-to-end business view of the governance and management of enterprise IT and reflects the central roles of information and technology in creating value for enterprises.

The COBIT framework makes a clear distinction between governance and management. These two disciplines encompass different types of activities, require different organisational structures and serve different purposes.

Governance ensures that stakeholder needs, conditions and options are evaluated to determine balanced, agreed-on enterprise objectives to be achieved, setting direction through prioritisation and decision making, and monitoring performance and compliance against agreed-on direction and objectives.

In most enterprises, overall **governance is the responsibility** of the board of directors under the leadership of the chairperson. Specific governance responsibilities may be delegated to special organisational structures at an appropriate level, particularly in larger, complex enterprises.

Management plans, builds, runs and monitors activities in alignment with the direction set by the governance body to achieve the enterprise objectives.

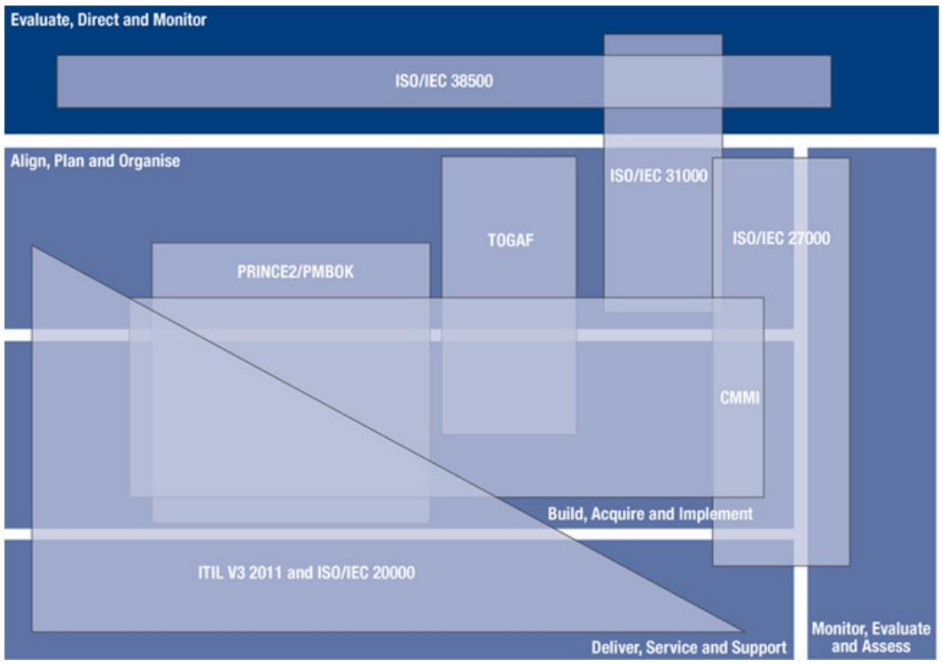
In most enterprises, **management is the responsibility** of the executive management under the leadership of the chief executive officer (CEO).

Key processes and practices for Governance and Management are divided in five domains, as it is shown in Table 6.

Domain	Title	Description
EDM	Evaluate, Direct and Monitor	Governance processes and practices that provide for directives from governors to establish what the enterprise is meant to do and to monitor their accomplishment of those directives.
APO	Align, Plan and Organize	Management processes and practices that provide for resource planning and alignment with enterprise objectives
BAI	Build, Acquire and Implement	Management processes and practices that provide for building IT-enabled investments and putting them into service
DSS	Deliver, Service and Support	Management processes and practices that provide for operation of IT-enabled investments
MEA	Monitor, Evaluate and Assess	Management processes and practices that provide for the measurement and communication of the performance of IT-enabled investments.

Table 12: Key domains of COBIT

One of the important features of COBIT still is the facility with which other guidance (such as regulations, other frameworks, and best practices) can be used effectively in conjunction with COBIT.



Source: ISACA, COBIT 5, USA 2012

Figure 23: COBIT coverage of other standards/frameworks

Within ECHO, COBIT will be used for the design of the ECHO Governance Model and the CMMI framework will be used to assess the maturity level of the Governance and to plan a roadmap for improvements. Indeed, CMMI is to be used in already established organizations when grounding ideas are very clear.

Capability Maturity Model Integration (CMMI) is a process level improvement training and appraisal program. Administered by the CMMI Institute, a subsidiary of ISACA, it was developed at Carnegie Mellon University (CMU). CMMI provides a set of practices for improving processes, resulting in a performance improvement system that paves the way for better operations and performance. The relations of approaches and standards included and used within COBIT five domains are shown on Figure 3.

CMMI is structured in *Capability Areas, Practice Areas,* and *Practices*, as it is depicted on Figure 24. It should be noted that the most relevant connection points between the COBIT and CMMI models are Practices.

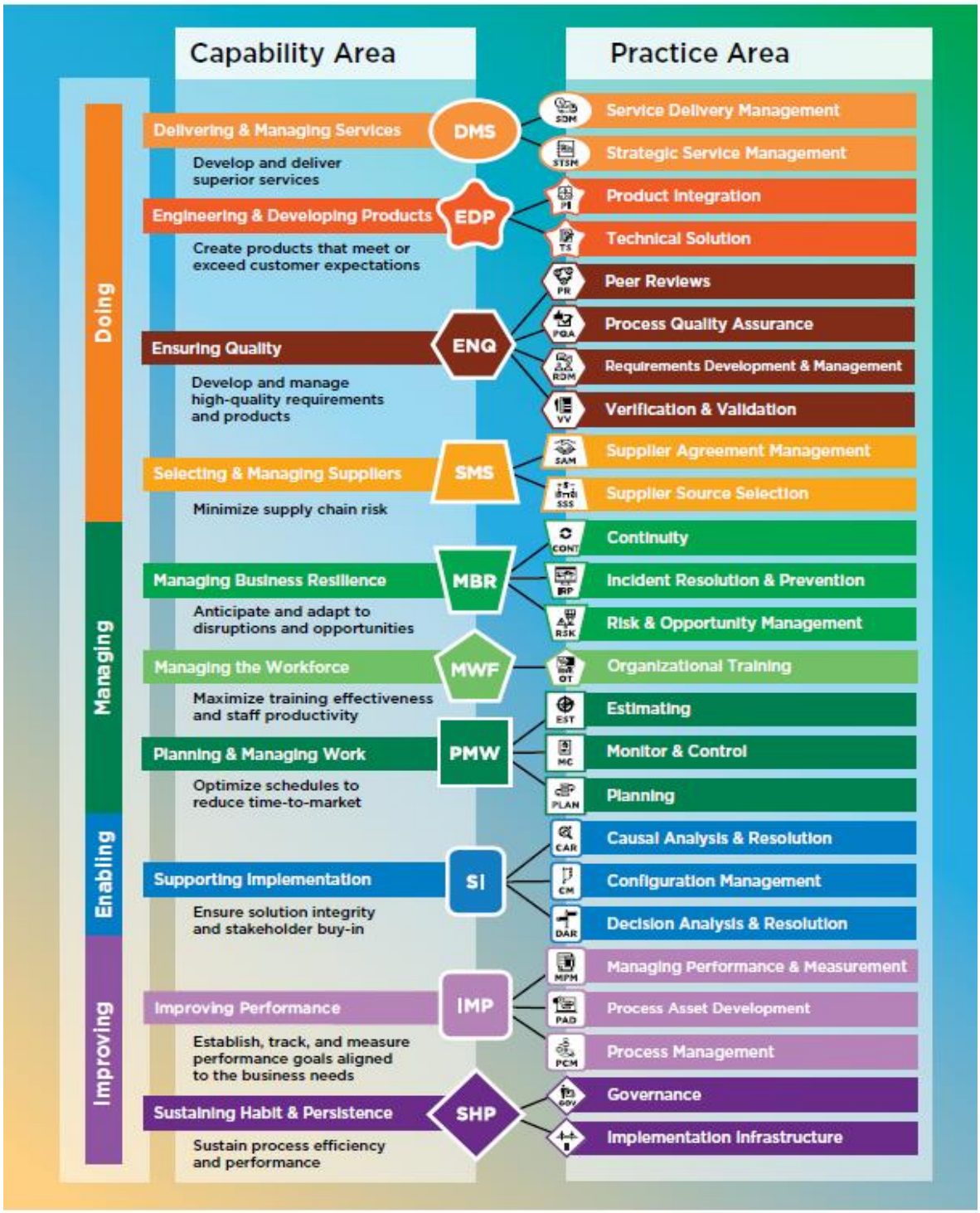


Figure 24: CMMI overview from CMMI-V2-0-Model-At-A-Glance_Digital_ENG_2019-04-29

The CMMI [https://cmmiinstitute.com] involves following five aspects:

- **Maturity Levels**: a 5-level process maturity where the uppermost (5th) level is a notional ideal state where processes would be systematically managed by a combination of process optimization and continuous process improvement. Maturity levels are: *Initial, Managed, Defined, Quantitatively Managed, and Optimizing*;

- **Key Process Areas**: A Key Process Area identifies a cluster of related activities that, when performed together, achieve a set of goals considered important;
- **Goals**: the goals of a key process area summarize the states that must exist for that key process area to have been implemented in an effective and lasting way. The extent to which the goals have been accomplished is an indicator of how much capability the organization has established at that maturity level. The goals signify the scope, boundaries, and intent of each key process area;
- **Common Features**: common features include practices that implement and institutionalise a key process area. There are five types of common features: *commitment to perform, ability to perform, activities performed, measurement and analysis, and verifying implementation*;
- **Key Practices**: The key practices describe the elements of infrastructure and practice that contribute most effectively to the implementation and institutionalization of the area.

Each process area is defined by a set of goals and practices. There are two categories of goals and practices as follows:

- **Generic goals and practices** – part of every process area.
- **Specific goals and practices** – specific to a given process area.

A *process area goals are satisfied* when the processes of a company cover all of the generic and specific goals and practices for that process area.

The determination of a maturity level (ML) rating is straightforward and is derived from the ratings assigned to process areas. The ML determined is the **highest level at which all process areas contained within the ML**, and within all lower MLs, are rated as "satisfied" or "not applicable." Thus, capability levels are cumulative, i.e., a higher capability level includes the attributes of the lower levels. The Table 7, below, defines the basis for capability level ratings:

Capability Level	Process Area
0 Incomplete	An "incomplete process" is a process that is either not performed or partially performed. One or more of the specific goals of the process area are not satisfied and no generic goals exist for this level since there is no reason to institutionalize a partially performed process.
1 Performed	A "performed process" is expected to perform all of the Capability Level 1 specific and generic practices. Performance may not be stable and may not meet specific objectives such as quality, cost, and schedule, but useful work can be done.
2 Managed	A "managed process" is planned, performed, monitored, and controlled. Managing the process achieves both the model objectives for the process as well as other objectives, such as cost, schedule, and quality.
3 Defined	A "defined process" is a managed (capability level 2) process that is tailored from the organization's set of standard processes according to the organization's tailoring guidelines,
4 Quantitatively managed	A "quantitatively managed process" is a defined (capability level 3) process that is controlled using statistical and other quantitative techniques. Quantitative

Capability Level	Process Area
	objectives for quality and process performance are established and used as criteria in managing the process.
5 Optimizing	An optimizing process is a quantitatively managed process that is improved, based on an understanding of the common causes of process variation inherent to the process. It focuses on continually improving process performance through both incremental and innovative improvements.

Table 13: Process Area capability levels

Annex 4 – ECHO Deliverables and ECHO CNO documents

ECHO Document Title	Reference ECHO CNO process areas	Methodology	Management area	Service Management
D1.1 Project Handbook	Organisational Procedures	Procedures Set-up	Overall Management	
D1.3 Project Quality Plan	Quality Management	Data related Strategy	Process Management	
D1.2 Data Management Plan	Data related Strategy	Positioning	Data Management	Data Acquisition
D1.3 Governance needs and objectives	Strategic Analysis	Decision Making		
D3.2 Governance alternatives	Strategic Analysis	Positioning		
D9.2 Dissemination Strategy	Information Strategy	Positioning	Marketing, Customers	
D3.6 Information Sharing Models	Strategic Analysis	Procedures Set-up	Information Management	
D9.6 Market Analysis	Strategic Guidance	Market Positioning, SWOT	Marketing	Requirements
D9.10 Yearly review of project objectives and market needs/opportunities	Strategic Report	Innovation Positioning, Planning and Monitoring	Guidance	Positioning
D4.6 Inter-sector Prototype Verification Plan	Innovation and Technology Strategic Planning	Positioning	Portfolio Mix	Build, Plan, Organise
D6.3 E-FCR verification plan	Innovation and Technology Strategic Planning	Product Positioning	Verification and Verification	Development
D4.3 Inter-sector cybersecurity technology roadmap	Innovation and Technology Strategic Planning	Innovation Planning	Planning	Requirements Management
D5.3 E-EWS Verification Plan	Innovation and Technology Strategic Planning		Verification and Verification	Development
D4.1 Transversal technical cybersecurity challenges report	Innovation and Technology Strategic Planning			Requirements

ECHO Document Title	Reference ECHO CNO process areas	Methodology	Management area	Service Management
D4.2 Inter-sector technical cybersecurity challenges report	Innovation and Technology Strategic Planning			Requirements
D9.11 Procedure for internal IP reviews	Innovation and Technology Strategic Planning	Innovation Planning and Monitoring	IPR related strategy	
D9.12 IP awareness trainings	Innovation and Technology Strategic Planning	IPR Training	Training Evaluation	
D9.4 Interim dissemination reports	Report		Monitoring	
D1.4 First Project Activity Report	Reporting		Monitoring	
D9.18_Communication collateral social media channels set-up	Customer and Partnership	Planning	External and Internal Relations	
D9.5 Event Calendar	Customer and Partnership		External Relations	
D9.17 - Web Platform	Customer and Partnership		External Relations	Web-site Design
D9.1 Project Leaflets	Customer and Partnership		External Relations	
D10.1 H Requirement no. 1	HR, Ethics, Data			
D10.2 POPD Requirement no. 2	HR, Ethics, Data			
D10.3_NEC_ Requirement no. 5	HR, Ethics, Data			
D9.16 Communication and Stakeholders Engagement Plan	Partnership and Stakeholders Management	Requirements Analysis	Strategic and Operational Planning	
D9.3 Stakeholder Mapping	Partnership and Stakeholders Management	Partnership planning	Auditing	
D6.1 E-FCR High-level design	Service Management	Design	Build	Design
D6.2 E-FCR Prototype	Service Management	Design	Build	Design
D2.1 Sector Scenarios and Use Case Analysis	Catalogue and Services Planning	Positioning, Scenario Anaysis	Plan	Requirements
D2.3 Transversal cybersecurity challenges and opportunities	Catalogue and Services Planning	Positioning, Technology Planning	Planning	Requirements

ECHO Document Title	Reference ECHO CNO process areas	Methodology	Management area	Service Management
D2.2 Derivation of Multisector Assessment Framework	Catalogue and Services Strategic Planning	Global Technology Positioning	Planning	Requirements
D5.1 E-EWS High-level design	Service Management	Design	Build	Design
D5.2 E-EWS Prototype	Service Management	Design	Build	Design
D5.5 Update - E-EWS High-level design	Service Management	Design	Build	Design
Deliverables after the D3.3 – after project month M24				
	Area of the document		*Month of delivery*	
D1.5 Second Project Activity Report	Report, Monitoring		M24	
D1.6 Third Project Activity Report	Report, Monitoring		M36	
D1.7 Fourth Project Activity Report	Report, Monitoring		M48	
D2.6 ECHO Cyberskills Framework	Service Positioning and Planning		M24	
D2.7 Training content and tools	Design and Build of Service		M36	
D2.11 ECHO Multi-sector Assessment Framework	Strategic Analysis and Planning		M45	
D2.12,13 Update – Transversal cybersecurity challenges and opportunities	Service Planning and Design		M42,M45	
D2.15 Update - Multi-sector requirements definition and demonstration cases	Service Planning and Design		M45	
D4.9, 10 Update - Inter-sector technical cybersecurity challenges report	Innovation and Service Planning		M45, M48	
D8.1-7 Demonstration surveys and reports	Customers satisfaction		M27-M48	
D9.7 Exploitation strategy and plans	Strategic Planning of Catalogue		M42	
D9.8 Business and sustainability plan	Business Planning		M48	

ECHO Document Title	Reference ECHO CNO process areas	Methodology	Management area	Service Management
D9.9 Exploitation and innovation management plan	Catalogue Management		M24	

Table 14: Deliverables and ECHO CNO documents

Annex 5 – ECHO Consortium organisations and ECHO CNO structure

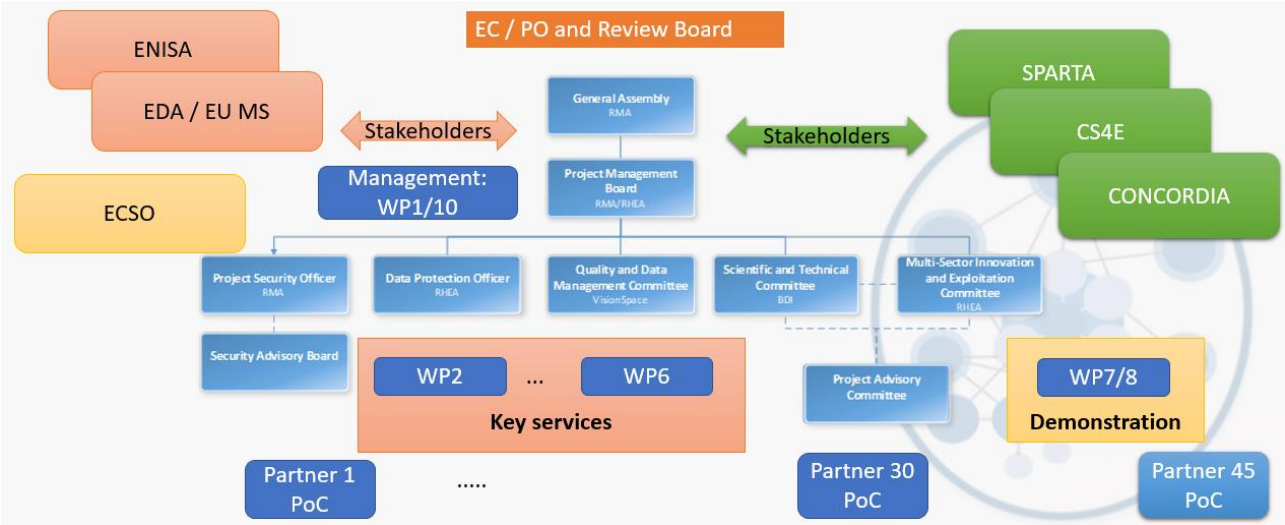


Figure 25: Organizational structure for the ECHO Consortium

ECHO Consortium Organisation	Positions	Responsibilities	ECHO CNO
Project Management Board (PMB)	Composed by A Project Manager designated from each Partner of the Consortium, co-chaired by the Project Coordinator and the Project Implementation Coordinator	• Financial Management; • Legal Management; • Information Management; • Administrative Management; • Contractual Management; • Quality Management. • Resource management	**Board of Directors**
General Assembly	One duly authorised representative from each partner, chaired by Project Coordinator	• Decision making and conflict resolution; • Approval of changes in the consortium constitution (entries and withdrawals of partners) and management bodies; • Contracts' amendments management.	**General Assembly**
Scientific and Technical Committee (STC)	Technical staff selected from the Consortium partners, chaired by the Scientific and Technical Management Coordinator	• Collection and organisation of inputs concerning technical summaries for the interim and periodic reports; • Protection of ECHO's Intellectual Property Rights	**Technology and Innovation Committee**

		(IPR), complying with both the provisions of the EC contract and of the Consortium Agreement; • Scientific Publications • Coordination and monitoring of technical activities.	
Multi-Sector Innovation and Exploitation Committee (MSIEC)	Political and technical advisors from main European partners and bodies, including as an example ESA, ESI, and EASA. Chaired by Multi-sector Innovation and Exploitation Coordinator.	• Foster continuous improvement and consolidation of cross-sectorial collaboration, through dedicated multi-lateral initiatives, meetings, papers also aimed at enlarging participation of new public/private entities in the scoped sectors; • Encourage participation of representatives from new sectors, through orchestration of communication campaigns and identification of vertical opportunities or partnerships, also with other security-related organizations and other consortia active on the same call; • Identify, prioritize, report to GA the emerging cross-sectorial external trends, public or private opportunities, initiatives and major threats; • Build and update the overall business exploitation plan for the ECHO consortium, also identifying benefits brought by the project activities to the general EU social/financial/technological landscape • Support innovation management from a business-development angle: continuously assess market	**Membership Committee** **Technology and Innovation Committee**

		trends and needs to adjust development of technological roadmaps and support services from the ECHO network accordingly;	
Quality and Data Management Committee (QDMC)	Technical staff selected from the Consortium partners, chaired by the Quality and Data Management Coordinator.	• Defining a strategy to balance between openness of data and preservation of IPR, privacy and security • Defining priorities, policies, best practices and standards for governing data definition, collection, reporting, and analysis; • Developing consistent processes for collecting, matching, aggregating, quality assuring, securing and distributing data throughout the Consortium Partners; • Ensuring that the research data will be findable, accessible, interoperable and re-usable (FAIR) during the project duration and after its completion; • Defining strategies and procedures for data curation and presentation, according the main available standards; • Ensuring compliance with GDPR when dealing with personal information handling; • Defining a quality management program and procedures applicable overall to all consortium activities; • Feeding a continuous improvement process to increase efficiency of ECHO, and quality of the deliverables; • Supporting the ECHO Governance model optimization.	**Technology and Innovation Committee** **Financial Committee** **Audit Committee**

Project Advisory Committee (PAC)	15-20 security experts external to the Consortium	The Project Advisory Committee (PAC) is going to be composed of at least 15 (and maximum 20) dynamic, high-level opinion leaders at European and global level, with a proven career record. The PAC members shall all be recognised experts in the cybersecurity domains, representing different stakeholder groups including the industry, policy and regulatory views. Participants to the PAC have a significant interest in the ECHO outcomes and represent non-beneficiary members of the ECHO Network.	**Stakeholder Committee**
Project Coordinator (PC)	Chairman of the General Assembly and co-chairman of the Project Management Board		**Chief Executive Officer (CEO)**
Deputy Project Coordinator (DPC)	Assistant to the PC		**Deputy and close Assistant to the CEO and Chief Informaiton Officer (CIO)**
Project Implementation Coordinator (PIC)	Co-chairman of the Project Management Board. PIC is dealing with the roles of the Financial Controller and Legal Adviser		**Chief Operating Officer (COO)**
Scientific and Technical Management Coordinator (STMC)	Chairman of the Scientific and Technical Committee		**Chief Scientific Officer / Chief Technology Officer (CTO)**
Multi-sector Innovation and Exploitation Coordinator (MSIEC)	Chairman of the Multi-sector Innovation and Exploitation Committee		**Chief Innovation Officer/Chief technology officer (CTO)**
Quality and Data Management Coordinator (QDMC)	Chairman of the Quality and Data Management Committee.		**Chief Quality Management Officer**

Data Protection Officer (DPO)			**Chief Data Officer (CDO)**
Project Security Officer (PSO)			**Chief Security Officer (CSO)**
Work Package Leaders (WPL)	The Leader of each Work Package (WP).		**Potential lead for SGs or VOs**
Task Leaders (TL)	The Leader of each Task.		**None (Head Development teams in SGs/VOs)**
PPoC for the Partner (Partner PM and resource Manager) -	Each Partner participating to the Consortium has appointed a Project Manager and resource manager.		**Representatives in GA, NHs assembly**
Capability & Service Manager (following the Catalogue of services)	For each ECHO exploitable asset and service, there is a capability and service manager to be appointed		**COO of the Service Group**

Table 15: ECHO Consortium and ECHO CNO structures