Project Acronym: PROteuS

Project title: Promoting security and safety by creating a MED cluster on Maritime Surveillance

Grant Agreement number: **1MED15_1.1_M12_148**

D.3.4.1

MED National Nodes' Methodology

WP n°:	3
Task n°:	3.4.1 MED National Nodes' Methodology
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Type:	R = Report, Document
Dissemination level:	CO = confidential
Revision:	
Due Date:	31/10/2017
Date of submission:	8/01/2018

Executive Summary

The deliverable "**3.4.1. National Nodes' Methodology**" aims at defining the guidelines for the formation of the PROteuS national nodes at a national level (National Nodes) through specific activities and processes. In particular, this deliverable proposes the main enabling factors to design implement and monitor the results of the National Nodes. The above methodology ensures the common understanding of the implementation of common policies of National Nodes and the success of its objective

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Introduction

In the process of devising any operational plan, the first step is to identify the current situation. The Nation Nodes could be no exception. Therefore, in the first chapter of this deliverable, a Mapping of **Current State Situation of Maritime Surveillance** is presented, based on the up-to-date research. Key sectors, challenges, threats, opportunities were identified, along with the key stakeholders and best practices so far.

From that point on, the deliverable aims to provide insight in relevance with the National Nodes (NN) themselves. The **main Enabling Features** of the Nation Nodes are identified, such as vision, strategy and competitive advantages, and at the next step, their **Structure.** The latter is described in terms of NN Type and legal form, while Structure Scheme (*i.e. organization chart*) is proposed, along with the proper **Communication Channels**, and suggestions for effective managing.

After proposing the design and structure of the NN, main **activities and responsibilities** of its members are described, so as to present the general idea of the course of action. In order to monitor and evaluate the performance and operation of the NN, certain **Key Performance Indicators (KPIs)** are proposed and presented as a basis for success measuring. Finally, in the deliverable, the development of Nation Nodes' **Action Plan** is described through their dissemination activities, sustainability and follow-up activities.

1 Mapping of Current State Situation of MS

1.1 Identified Key MS Sectors

1.1.1 Border Control

One of the most important MS sectors is the one of border control. Border control is concerned with the prevention of illegal immigration and cross-border crime at EU external borders, and thus, includes the Mediterranean Sea. Since 1999 the European Union and especially, the Council on Justice and Home Affairs has taken several steps towards strengthen cooperation in the area of migration, asylum and security.

Aiming at improving procedures, working methods and efficiency in the field, on the 14th of September 2016, the FRONTEX was established as the European Border and Coast Guard Agency. FRONTEX operates in the framework of the European Patrol Network (EPN) to establish a permanent regional border security concept. Since 2006, FRONTEX carries out a series of joint operations in the area for the purposes of addressing illegal immigration.

1.1.2 Maritime Safety and Security

Another key MS sector concerns the maritime safety and security. More specifically, it is concerned with protecting shipping and port facilities against threats of intentional unlawful attacks (safety) and prevention of pollution caused by ships (security)

Maritime industry constitutes a vital pillar of the European Union economy and it is directly connected with economic development, employment and prosperity. Therefore, its wellbeing in terms of safety and security needs to be dealt with. The EU focuses its efforts to improve maritime safety and security by developing systems to improve maritime surveillance capabilities and to collect information about maritime accidents. The research focuses on investigating the value and usage of raw data on the movement of containers, previously not systematically used by customs authorities. For example, only 2% is physically inspected by customs authorities, opening the possibility for illicit activities.

Each member of the EU is organized differently in this matter. Some use civilian authorities for surveillance and law enforcement, such as Coast Guards, while other make use of their military force (i.e. Navy) Cooperation at sea between all actors involved has a positive effect.

The major threats regarding Maritime Safety and Security:

1. Piracy and armed robbery at sea.
2. Terrorist acts involving shipping.
3. Offshore installations and other maritime interests.
4. Illicit trafficking in arms and weapons of mass destruction, narcotic drugs and psychotropic substances.
5. Smuggling and trafficking of persons by sea.
6. Illegal, unreported and unregulated fishing and intentional and unlawful damage to the marine environment (analysed below).

The above mentioned make rather clear that Maritime Security and Safety is a complex and difficult procedure. For some actors, Maritime Safety and Security issues might be primarily associated with economic dimensions, while for others might be an issue of national security or safety.

1.1.3 Fisheries Control

Fisheries control mainly targets to tackle illegal, unreported and unregulated (IUU) fishing. In several EU regions the fishing sector plays a crucial role for employment and economic activity – in some European coastal communities as many as half the local jobs are in the fishing sector and the four countries with the highest levels of employment (Spain, Italy, Greece and Portugal) make up around 70 %.

Illegal fishing is a major threat to global marine resources, as well as local and international economies. It depletes fish capacity, destroys marine habitats, distorts competition by putting fishers at an unfair competition race, and destroys economically coastal communities, particularly in developing countries. EU losses from IUU fishing is in the billions area, while the employment takes a hit costing thousands of jobs.

As the world's largest importer of fisheries products, the EU has adopted an innovative policy to tackle illegal fishing, by prohibiting fisheries products to access the EU markets unless they are certified as legal. One means of dealing with the problem is through maritime surveillance.

1.1.4 Marine Environment

Protecting the marine environment is among the European Union's concerns, in the last years. For this purpose, implements strategies so as to be prepared to response and tackle challenges for the marine environment.

Even though shipping is perceived to be the cleanest mode of transport, mainly in terms of CO_2 emissions, the associated pollution caused from miscellaneous maritime shipping activities is considered rather high, affecting air and water quality as well as marine biodiversity.

While, other modes of transport have improved their energy and environmental performance, the shipping sector has not made remarkable progress. It is a long way ahead until it reaches the long term objective of 'zero-waste, zero-emission' maritime transport in line with European environmental and transport policy.

The different types of ships, operational profiles, cargoes carried, maintenance and disposal of fuels consumed, materials used and control systems make the surveillance of the ships in terms of impact on marine environment rather difficult. Port waste, waste of ships, ship recycling activities, air pollution (SOx, NOx) and emission methods need to be closely monitored, in order to achieve the minimization of marine environment issues.

1.1.5 Defense

Maritime surveillance plays an important role to fight against piracy and terrorism threats through sea. Great amounts of resources are spent every year on defense issues. One of the goals is to maximize effectiveness and use of available technologies, data and information, to enhance cooperation of military and civil agencies that could reduce costs, increase support and maximize safety and security.

The scope of the defense programs is the exchange of information and manually sharing maritime surveillance information in order to prevent or deal with threats. This framework is expected to improve maritime situational awareness, produce and share maritime situational awareness information, improve co-operation between EU military and civilian maritime authorities and other international maritime actors.

1.1.6 Customs

The customs in the EU external borders protects trade and economic interests of the European Union. A further integration and optimization of maritime surveillance and security has potential to tackle more effectively illegal activities and prevent economic losses to the EU. For instance, through customs evading and smuggling, counterfeit and contraband products are entering the European economy and markets evading therefore import duties.

Seizures of all counterfeit products are worth hundreds of millions. In addition, other illegal activities (partly) implemented through maritime trade such as cigarette smuggling, signal great economic losses for the EU Member States. Europol estimates that the losses to national and EU economies resulting from the smuggling and tax evading are in the area of €10 billion per year.

1.1.7 Law and enforcement

Finally, the prevention of any criminal/illegal activity and police administrative activities can use the services of maritime surveillance. At the EU level, Europol operates as the general law enforcement agency and in the sea. Mainly, it serves as a support center for law enforcement operations, criminal information hub, and source for law enforcement expertise.

Europol's role as a facilitator in the exchange of information among countries law enforcement authority, helps the surveillance activities. Among others, Europol supports certain law enforcement activities of Member States and takes part in their maritime surveillance and security, such as the fight against various types of trafficking, illegal immigration networks and terrorism. The framework of operation is mandatory and common for all EU countries making the EU consistent versus the threats EU faces.

1.2 Identified Common Threats & Challenges

The chapter presents common challenges, threats and weaknesses related to MS in countries that will host the national nodes. The below mentioned challenges are the most important and they are mostly common for the countries involved. However, each country still faces its own threats and challenges deriving from its geographical position, political and cultural differences, as well as technological ones

❖ **Challenges**

European Union has to face strong competitors at European and world level and from different countries. These competitors have usually technological advantages, as well as fewer limitations due to state regulations. At the same time there is a high level of inter-port competition in the Mediterranean area, making the MS much more difficult, as the marital authorities and other involved parties often seem reluctant to share information. It is not, therefore, paradox, that Information, effort and resources are being duplicated, reducing the overall efficiency of the MS. The latter, makes the challenge of broadening the currently limited private and public networking, even more urging and important. Increased networking will lead in sharing of more information between relevant parties, increasing efficiency and more resource-saving

Another challenge is to align the legal framework of MS, with the one of other sectors. Due to the fact that the Maritime Surveillance per se is a rather new concept, the legal framework often is vague. Despite having common elements with other related sectors, a great deal of legal problems appears.

❖ **Threats**

Countries participating in the project have also various common threats to deal with. The Mediterranean Sea, with its special geographical location is considered very vulnerable to illegal entries, especially immigrants, from nearby countries, especially these undergoing war or economic instability. Europe's internal maritime borders are much less defined and easy to cross

Thus, the need for border control is increased, as the maritime security threats are increased in a global level. However, EU countries have to face additional threats and deal with them, such as the increase in the cost of vessels incorporating new technologies. The need of stat-of-the-art technology in combination with the need for high level specialists to operate and maintain this technology increases the overall costs, making often certain projects or operations not feasible. In addition to that, the second-hand market of vessels, does not offer lower costs.

Finally, the overall economic situation in Europe and especially in the southern countries (Greece, Spain, and Italy) could turn out to be a dissuasive factor, as it is often that there is not state funding, due to the actual lack of resources for research purposes

1.3 Identified Best Practices and Initiatives

At this stage, best practices and initiatives related to MS that take place in the areas of reference, are presented.

❖ **The Common Information Sharing Environment (CISE)**

European Commission in order to improve maritime safety and security developed one of the best practices in MS; the CISE (Common Information System Environment). It is important to understand that effective maritime surveillance requires providing the relevant authorities with ways to exchange information and data. Sharing data will make surveillance much more cost-effective and more effective.

Currently, EU and national authorities responsible for different aspects of surveillance, e.g. border control, safety and security, fisheries control, customs, environment or defence, collect data separately and often do not share them for a number of reasons. As a result, the same data may be collected more than once. Under the CISE, existing surveillance systems and networks provide all those authorities concerned with the necessary information for their operations. The CISE will make different systems integrated so that data and other information can be exchanged easily.

❖ **Regional Fisheries Management Organizations (RFMOs)**

Another one of the best practices is considered to be the RFMOs. These organizations are formed by countries with aligned interests in the fishing sector in a same area. Within these organizations, countries collectively define catch and/or fishing effort limits, technical measures and set obligations to encourage fair competition and sustainability of the shared marine resources.

Currently, RFMOs cover the majority of the world's waters, and deal with specific regions or species. For example, there are RFMOs that regulate highly migratory fish stocks, like tuna. In the case of tuna, stocks have improved significantly over the past few years, after the founding of the RFMOs and this is mainly thanks to the dedication and hard work of people in these organizations. Represented by the European Commission, the European Union plays an active role in RFMOs (e.g. the Agreement on the International Dolphin Conservation Program).

❖ **Fleet Capacity Management (FCM)**

Fleet Capacity Management is a tool for controlling and ensuring the sustainable exploitation of fisheries stocks. The fishing fleet of all EU countries has a great range, with vessels ranging from under 6m to over 75m. According to the EU laws the total capacity of the fishing fleet may not be

increased and any reduction of fleet capacity obtained through public support (grants, funding etc) must be permanent. Smaller fleet, leads to fewer chances of depleting stocks, which in turn, contributes to a more sustainable fishing industry.

1.4 Identified Key Stakeholders

Due to the fact that the countries taking part in this project are members of the European Union, the EU itself funds the project; it makes sense that the main stakeholders are directly related to the EU. Committees and agencies created within the EU, whose purposes not only include Maritime Surveillance, but also are totally depended on it are primarily identified as the key stakeholders of the PROteuS project. As such, bodies concerned with maritime security such as the **Joint Research Centre**, consisting of the European Commission and the EU Science Hub, the Combined Maritime Forces, the European Maritime Safety Agency (**EMSA**) and the International Maritime Organization (**IMO**) play a key part in the project, expect outcomes that will be in their use and, thus, are able to influence, guide and support such projects in cluster level.

In the NN level but in a similar fashion, and as far as the General Law Enforcement is concerned, **Coastguard** plays an important part in its sector. With appropriate tools, knowledge and information Coastguard's contribution to the seas could be much greater and more effective. Therefore, Coastguard could encourage clusters and NNs to conduct research that serves its goals and purposes.

Likewise, the Local or Regional Fishery Control Agency and for example, is identified as the key stakeholders in the Fisheries Control sector. They regulate the fishery sector; they strive to maintain its sustainability, affecting the maritime environment and also the wellbeing a massive amount of people.

In the sensitive and many challenges-facing sector of Defense, **Navy** plays a critical part. Alignment of regulations on MS, international affairs, networking and collaboration between Mediterranean countries maximizes the power and the effectiveness in terms of national and European Defence.

Finally, in Border Control, there is the Organization for Security and Co-operation in Europe, (**OSCE**) and of course **Frontex** (European Border and Coast Guard Agency). These two agencies, in times of immigration crises have a great deal of responsibility. Due to the fact that their capacity can be enhanced through proper collaboration with NNs, they claim to have a decisive role. Any outcomes that improve MS, can definitely be of great use by OSCE and Frontex, making them, too, key stakeholders of the project.

1.5 Identified common challenges and opportunities for synergies in MED area

Countries participating in the PROteuS project face, among others, some common challenges and also opportunities for synergies are presented, such as the support and development of new maritime surveillance activities, in particular those related to the exploitation of maritime resources, within an environment of safety and security. As mentioned before, the demand for security products have risen because of an increase in threats over the last decade, including piracy, illicit drug trafficking and terrorism, presenting a new challenge for NN members

Another opportunity stemming from MS is Networking and Cooperation between actors to benefit from synergies (e.g. between ports). Such networking could result in awakening political interest and development of Maritime Clusters to foster innovation in maritime security. Additionally, there are opportunities to increase availability of knowledge and information. Especially in countries with long maritime tradition, there is plenty of room for companies to offer surveillance services and products

Another challenge is to increase cooperation between the Mediterranean countries, as there is an increase in the transport of goods between Europe and Asia, especially, due to the rapid growth of China & India. Through this collaboration, revenue for the country can be created in the sector per se, but also can secure revenues in other economic activities, by creating high qualified jobs to increase employment, new strategic partnerships, quick integration of new technologies through open innovation schemes between Large enterprises and SMEs, including small-scale fisheries, modernization of the fishing fleet and strengthening of fishing ports equipment;

❖ **Proposed Synergies**

In order to exploit those opportunities that are presented and analysed above, synergies must be formed, in order to ensure the long term commitment of the relevant parties.

The successful model of operation and structure of the sea innovation cluster "Pole Mediterranean" and global security cluster "SAFE Cluster", indicate ways to further exploit the outcomes of the PROteuS project. Other synergies should focus on the factors that create jobs in MS. In particular, cross-border cooperation and exchanging of knowledge and best practices between MED cluster countries. This exchange should include exchange of legal practices and regulations, in order to deal with the inconsistencies of existing legal frameworks and, ultimately, assist the creation of a favorable investment environment for the innovation related to MS.

Synergies also must be formed in order to improve capacity of the identified stakeholders/actors related to MS through the exchange of the existing knowledge and experience and expertise. The creation of knowledge could contribute to the maximization of the private and public funding, leading to further development of the MS sector.

2   Main Enabling Features of the National Nodes

The PROteusS National Nodes are considered as innovation ecosystems henceforth they are expected to be both top down designed and bottom up self-organized as dynamic, purposive communities with strong relationships based on collaboration, trust and co-creation of value and sharing complementary technologies or competencies (Durst and Poutanen, 2013). National Nodes are considered to be created primarily around a central organizational entity, preexisting and evolving or a new, currently emerging one; and necessary and sufficient socio-economic and political-cultural conditions that will bring key stakeholders together so as to interrelate and work together. As innovation ecosystems nowadays have been tested in real life in terms of several levels of organization, PROteuS works on defining and designing both the National Node level and the MED level MS cluster as national and regional innovation ecosystems, respectively. PROteuS National Nodes are considered as "cluster initiatives" or "cluster organizations" that represent deliberative, possibly politically driven, or industry driven endeavors to support national but also regional strongholds, namely the emerging maritime digital security technology sector, in particular the maritime surveillance technology and entrepreneurship.

2.1   Vision

Against this background a PROteuS MS National Node Vision is expected to articulate, communicate and continuously adapt and enforce each individual National Node's unique strengths and differentiation points as an important entity interacting and mutually forming the PROteuS regional MS cluster.

A PROteuS MS National Node Vision refers to the node as a collective entity, the mission of which defines the fundamental purpose of the node organization itself, i.e., what are the main driving forces and justification of its existence and what its role is in achieving the node vision. For example, a National Node is expected to create a vibrant collaborative environment in the MS national "cluster" by bringing necessary and sufficient cluster participants together, facilitating strategic training and promoting entrepreneurship.

In that sense, an articulation of PROteuS MS National Node Vision is to constitute the leading entity in bringing together, orchestrating and monitoring (a) the necessary MS knowledge infrastructure, (b) the institutional environment as regards in particular trust, openness, stability and accountability ensuring the efficient and sustainable operation of the node (c) the policy, economics and management interventions necessary throughout the whole lifecycle of the cluster. PROteuS National Nodes are expected to create high value for enterprises and society in the form of maritime surveillance related, science and technology based innovation, new knowledge creation and sharing, economic growth, international collaboration and attraction of investments and solutions to societal challenges, such a security and wellbeing for all citizens and people.

2.2   Strategy and Competitive Advantages

MS National Node strategy refers to the long-term action plan in order to realize the Node vision. MS National Node strategy typically covers the following six elements:

1. Direction: where the node is trying to get in the long term, as regards in particular its role in the national economy of PROteuS National Node and their contribution in the innovation, entrepreneurship and overall growth orientation of the country; also its relationship and importance to the MED MS Cluster;

2. <u>Scope</u>: what the key activities that the MS National Node should focus on;
3. Competitive advantage: what the key strengths of the node are and how those can be best utilised;
4. <u>Resources</u>: what resources (i.e., skills, assets, financing, market, business and research relationships, technical competence, facilities, support systems) are required to realize the node vision and the feasibility to acquire the above a;
5. <u>Climate</u>: what external factors are likely to affect node's development (e.g., political, economic, legal factors);
6. <u>Stakeholders</u>: what the drivers, values and expectations of the key node stakeholders are and how those can affect node's development.

MS National Node strategy needs to be operationalized into a set of node objectives. The following three key types of node objectives can be distinguished:

<u>Strategic objectives</u>, i.e., the objectives related to the long-term effects of the node (e.g., improved visibility and reputation of the node; attractive investment climate; entrepreneurial culture).

<u>Specific objectives</u>, i.e., the objectives related to the results of node activities (e.g., the amount of venture capital attracted to the node, nr of new spin-offs, employment growth etc.).

<u>Operational objectives</u>, i.e., the objectives related to the immediate outputs of the node (e.g., nr of networking events, nr of collaboration projects etc.).

As regards the above, primarily, National Nodes are expected to assess the existence, degree and threshold value of the following determinants as necessary and/or sufficient pillars for the MS node creation and operation (Porter' clusters prerequisites):

❖ <u>Knowledge linkages</u> within the region are necessary by nurturing both fruitful internal linkages and external connections so that regions remain open for new ideas and materialize their internationalization orientation. Combining regional innovation opportunities with global linkages has been a positive characteristic of many successful regional economies
❖ <u>highly skilled human resources and related infrastructures</u>
❖ <u>availability of supportive financing and funding conditions</u> such as favorable bank loans, public grants, monetary funding schemes, venture capital, crowd-funding opportunities or a network of business angels
❖ existence of <u>favorable regulatory framework/government policies and programs</u>
❖ presence of strong <u>social capital and entrepreneurial culture</u> and business networks that bind the innovation actors together and can trigger positive dynamics
❖ existence of <u>demand conditions</u>, that serve as motors to the system, and that includes customers of the MS products and services to be produced
❖ existence of <u>dynamic local context and support structures</u> that favours investment, upgrading (of processes and products), and a national industrial policy that promotes competition-cooperation-and knowledge sharing
❖ existence of <u>dynamic processes</u> so that industries and actors can constantly evolve and <u>renew with cross-sectoral reconfigurations</u>

Furthermore, as only a number of general objectives can be clearly defined in the beginning, the MS methodology considers approaches to achieve those objectives will gradually evolve during implementation. The National Node Strategy should also identify and consider the main risks for its operation:

<u>Risks </u>that National Node may encounter and have to managed accordingly include:
❖ the continuity of commitment of the key stakeholders
❖ financial instability

- ❖ changes in technological and regulatory fields;
- ❖ external competition
- ❖ market developments
- ❖ political or cultural barriers

In addition, the PROteuS National Node Strategy can be formulated along:

1. the <u>common, core strategic priorities for National Nodes,</u>
2. the <u>diversification and differentiation strategic positioning</u> of National Nodes vis a vis the taken as a whole MED MS Cluster strategy; National Nodes are expected to differ in their focus and "smart specialization' orientation, also their size, synthesis in terms of categories and types of members included, level and complexity of interactions, degree of openness and their drivers and local capabilities
3. the assessment of the <u>National Node's Stage in the National Node Life Cycle Model</u> and associated adjustments to be enacted

3   National Nodes Structure & Communication Channels

National Node management can be defined as the organization and coordination of the activities of a node in accordance with certain strategy, in order to achieve clearly defined objectives. National Node management represents a continuous activity of a cyclical nature. It is a complex, interactive and non-linear process. The main stages of the National Node management cycle can be split into (1) Define; (2) Design; (3) Implement, (4) Monitor, (5) Evaluate, and (6) Revise.

Node management goes beyond management of an individual organization. It implies mediating and facilitating the relationships of multiple node members. Each of the node members has own agenda, and a key challenge for node managers is to make sure those agendas are united into common objectives and collective actions, that conflicting interests are resolved, and the relevant organizations perceive added value from their participation in node activities and are henceforth adequately incentivized.

NN governance refers to the intended collective actions of node stakeholders to advance the node and develop a sustainable competitive advantage. Node governance thus represents the interests of node stakeholders (e.g., universities and research institutes, large and small companies, government, supporting structures etc.), while node managers strive to serve the needs of node stakeholders.

The key pillars of excellence in NN management include a regular review of both NN objectives, 'trying out' various types of actions and learning from the results of those actions, as well as constant monitoring and regular evaluation, adaptive performance measurement systems and active engagement of node stakeholders at all stages of the management cycle (i.e. via related KPIs).

In the report, we review and present various examples of good practices related to both node management and node governance. However it is postulated that not only do different NN require different approaches, but even the same node is likely to require new approaches as it passes through various stages of its development, or in response to various determinant factors.

Node management operates in a highly complex environment. To survive in such unpredictable environment, adaptive management structures are needed.

3.1   National Node Type

National Nodes may consider the typology of clusters developed by Markusen (1996), who distinguished various types and role of the cluster members and their interactions, in order to determine their strategic positioning and competitive advantage, based on the national context and their specific strengths and opportunities lined with the MS sector attractiveness and development potential.

- ❖ *Marshallian cluster model* – In this model, clusters are homogenous and made up by small firms who both collaborate and compete, but where none of the firms has power to control the cluster
- ❖ *Hub and spoke cluster model* – In this model, a few firms dominate, around which other smaller companies are linked. Examples are for instance cluster in the automotive industry.
- ❖ *Satellite platform model* – In this model, some multinational companies and their local branches are influencing the development of the region and provide opportunities for local suppliers, but where the regional companies are not necessary connected with each other.
- ❖ *State anchored cluster model* – In this model, the government's endeavours influence the region and fosters or sometimes impedes the economic relation between the members of the cluster.

In addition, National Nodes may consider the following types of organizing, as regards the relative power and governance configurations of Quadruple Helix stakeholders assumed and the targeted comparative advantage:

❖ *Industry-driven*: In such clusters, there is a presence of large, international groups of companies who are investing in R&D. SMEs are connected to these companies as suppliers or local drivers of knowledge.
❖ *R&D-driven*: Such clusters are driven by a university or research centre around which companies, start-ups, spin-offs, larger companies are gathered. There is a strong and dynamic entrepreneurial activity ongoing. Technological parks, science campuses can play an important role.
❖ *Collaboration-driven*: Such clusters are characterised by intensive and balanced collaboration between public and private sectors. The public sector plays an active role in fostering cluster development. Entrepreneurship is supported by investment funds of large industrial groups present at the local level.

3.2   Proposed Structure Scheme

3.2.1   NN General Assembly

Theoretically, is the supreme governance body of the National Node. However, its power is limited to the control and final evaluation of the actions of the Board of Directors (*see below*). The General Assembly helps ensuring accountability and transparency for all represented members, sectors and interests for the duration of the operations of the NN. Additionally, all members are represented and their will is expressed during the General Assembly (GA) meeting. To this extent, it serves as the highest ranked instrument in the NN.

The GA is composed by the members of every party involved in the NN operation. This includes, but is not limited to, local stakeholders, members of the NN with no administrative role, SMEs and sponsors. In general, the GA is to perform overseeing of the NN Board of Directors and the NN itself, in terms of alignment with the vision and the goals agreed. It does not exercise actual power, in day to day management, or even policy making and objectives setting for the NN. However, is responsible at the final stages of a given project to examine and evaluate it.

3.2.2   Board of Directors

The Board of Directors (BoD) coordinates, manages the NN and holds any responsibility and liability towards it. The Board, under the supervision of the General Assembly, defines and implements the strategy, along with all the necessary intermediate steps. The Board provides additional support to members and the Thematic Committees (*see below*) to achieve strategic objectives and revises running and recently delivered projects. At the end of a specified period, prepares and presents a report to the General Assembly, analyzing the course of action of the NN throughout this period of time.

The BoD Defines and implements National Nodes' strategy; as such, it processes (identifies, selects and evaluates) the NN program of activities to be submitted to the Assembly, pursuing the statute objectives, and it supports and encourages, in the appropriate locations and forms, the project proposals coming from the members. Additionally, decides on critical issues, such as the legal form of the Node or funding schemes and of course is responsible during crises periods.

In terms of assisting in intermediate stages, provides and requests feedback from all relevant parties through proper channels evaluates and guides project proposals submitted by the NN members, and assesses the admission of new members to the NN. Moreover, controls whether all policies set were followed, objectives were met and proceeds with the necessary course of action for improvement in case of failing to meet these objectives.

Board of Directors (BoD) is recommended to consist of X+1 members, one from each Thematic Committee and the NN Board of Directors Coordinator, which will be assigned in rotation. This structure will be followed in order to ensure that all thematic committee and their respective opinions, ideas and wishes are officially expressed and taken into consideration, as well as for the BoD to include all relevant to the NN expertise and, thus, make optimized decisions

Proposed Activities:

- Decide the legal form of the National Node.
- Identify possible funding sources.
- Prepare an annual NN report containing an overview of NN members, vision, mission, activities that were undertaken, financial statements for the year reported, achievements and failures, as well as outstanding results.
- Identification of research initiatives, bids and management of research and collaboration projects.
- Development and coordination activities that are related with the NN strategic objectives (support to internationalization, R&D, new investments, human capital).

3.2.3 Board of Directors Coordinator

The **BoD Coordinator** will serve as the Head of the NN Board of directors and, as already mentioned, will be assigned in rotation every 24 months. The rotation helps the transparency and accountability even for the Head of the NN. The **BoD Coordinator** will be responsible for the establishment, coordination and implementation of the PROteuS MS National Node under the framework of the project. Among others, **the Coordinator** will be responsible for the overall coordination, support and evaluation of the performance of the participating parties. This requires constant feedback giving, optimised allocation of resources and communication with all relevant parties. The latter might as well be outside of the NN, potential new members and strategic counterparts, making clear that among other responsibilities the Coordinator should focus in the building of a network of contacts for the NN.

Moreover, the Coordinator should encourage, facilitate and manage information and knowledge exchange among NN members, committees and stakeholders while making sure that these parties not only collaborate with each other, but also work towards the achievement of the NN's goals and objectives

Proposed Activities:

- Effectively coordinate all the activities and processes of the NN.
- Facilitate the interactions among the members of the NN Committees and Board of Directors.
- Overall management and monitoring of the NN.
- Performance evaluation of the participating parties.
- Encourage information sharing and networking among the members of the NN.
- Communication, collaboration and coordination among all NN involved.
- Information Management.
- Report on a regular basis to the Board of Directors about the progress of the NN development and implementation.
- Serves as the contact point of the NN, respond to inquiries from government officials, representatives of other NN and other stakeholders.
- Coordinate the management of Nation Nodes' juridical issues and the consecutive operational procedures.

Taking into consideration the complexity of the nature and the role of the BoD Coordinator, the candidate must possess certain skills and professional background, relevant to the position.

The **BoD** Coordinator should be an individual with experience in the field of Maritime Surveillance, as well as in project managing and of course, they should be more than familiar with the cluster/node development process, especially in the Mediterranean area context. The coordinator must be able to think strategically, communicate their vision (which must be aligned with the NN's) to all parties involved, from members of the NN, to political parties exhibiting strong leadership, communication and mentoring skills.

3.2.4 Thematic Committees

These Committees may be sector or (preferably) thematic orientated. Each group should be assigned with different task, depending on its role.

For example, working groups could contribute to the dissemination of the results of the PROteuS project and in general the publicity of the project. Broadening the base of operation (i.e. every participant in this project plays an important role and not only the management for example), will result in these parties to want their results become largely known, so as to receive the respective credit. Thus, working groups can be a means to raise awareness and improve public image of the project. This in turn will lead to stronger engagement, acceptance and perceived usefulness of the project in local communities.

Thematic Committees should have minimum 4 to maximum 8 members (1 member representing each Helix of the Project Framework, i.e. Industry, Research, Public and Civil society). It is significant, however, to maintain the TC flexible and easy to manage, as it is the lowest level in the operational Hierarchy. Making it complex will result in forcing the Coordinator to interfere more regularly, distracting them from more important issues.

Additionally, due to their everyday operating nature, these groups can discover new factors that should be taken into consideration (e.g. as mentioned above, local communities acceptance) when devising the project operations and strategy as well. Therefore has to be, thus, a flexible structure that will allow these opportunities to be identified and the relevant information to be circulated and effectively used.

Proposed Activities:

- Support the BoD in the strategic orientation of the NN to current and future markets and technology requirements.

- Evaluate the NN development and implementation methodology, and propose implementation changes in a National context.

- Evaluate the NN's performance during the implementation of its activities in terms of acceptance, benefits for the member and suggest new activities.

- Develop comprehensive policy recommendations together with the members of the NN that will support the business and the innovation environment in the MS sector on a regional level.

- Dissemination of results

3.3 Formalization

3.3.1 Legal Form

National Nodes should be performing under a legal status. This may prove crucial in their bid to attract funds, regardless of the source (e.g from corporate sponsors or EU grants). However, it is not uncommon for national nodes to face problems concerning local regulations and bureaucracy in their attempt to gain a legal status. Therefore, it is proposed that a local member of the node that has both legal status and experience in submitting applications for EU funding, or EU co-funded programs. These members act on behalf of the node (due to their legal status), take up all the necessary paperwork (with their experience) and, among other responsibilities, they allocate the funding to every member.

Unfortunately, there is no solid and consistent legal framework under which the national nodes should operate, and as a result the national legislation of any member state or a country determines and regulates the operation status. As a result, there cannot be a legal status that can be considered the most suitable throughout the EU.

Choosing the most suitable legal form is of critical importance, as mentioned above, as the Node includes members and partners (e.g Public Universities) that must operate within the legal framework set. For example, in Greece they could be held liable for violating regulations, if they receive any type of grant from a private corporation, unless the framework of the project is clear and in accordance with the Greek regulations over Education Institutes Funding. Therefore, once the projects' strategy, objectives, goals and wished way of operation any National Node, the legal formation must be defined, after receiving with legal support on the matter. Some possible legal forms for PROteuS MS National Node are:

- ❖ **Association (non-profit or for-profit):** This the most common used legal form of a Cluster within EU. This form is used when the focus of Cluster organization is to provide "soft" services to its members, such as support to networking and specialization, training or up-grading Cluster members' skills and capabilities, presentation of a Cluster at international conferences, organization of international conferences to make Cluster known to the international community, lobbying, market intelligence or other not for profit activities. As a non-profit organization, Cluster and Cluster members are eligible to receive national and/or EU grants.
- ❖ **Cooperative:** The focus of this legal form is on the promotion of individual and joint economic interest of all members. Membership is voluntary and open to everyone. It can undertake commercial activities for itself but also for the members. It cannot receive the EU grants when cooperative makes profit. It is VAT liable and subject to corporate taxation.
- ❖ **Partnership:** Formally it is not a legal entity but a set of entities.
- ❖ **Private limited company:** Organized with the purpose of undertaking commercial i.e. profit oriented activities Cluster organization takes this legal form if Cluster members are or would like to be engaged in commercial activities. It is subject to value added tax and taxation. It can access national grants (differs according to the countries' rules) and in some cases also EU grants.
- ❖ **Hybrid forms:** Mix of association and public or private limited company. Hybrid is the form in which some or exceptionally all Cluster (association) members have been involved and own (owners as members not as association as legal entity) a limited liability company. In majority of the cases hybrid form refers to both: (i) Clusters registered as association for conducting non-profit activities and (ii) business organizations primarily LLC for conduction profit oriented activities. The hybrid form is considered the most cost – effective one, because it allows for a combination of commercial and non - commercial activities.
- ❖ **Economic interest group:** Cluster organization takes this legal form when its activities concentrate on providing "soft" services to Cluster members. Cluster companies remain independent business

entities. Economic interest group is registered at a court, activities and operations of Cluster organization and Cluster members are regulated by the founding contract/statute. It is a legal form which provides easy entry of new members into a Cluster and excellent environment for open innovation. Cluster activities can be funded by national and/or EU grants. This form is quite similar with association form.

3.4   Communication Roles, Flow and Monitoring Tools

One of the main purposes of the PROteuS project is for knowledge and information to be shared among members of the National Nodes. In the duration of the project, the volume of information and knowledge generated is enormous and, thus, has to be properly managed and monitoring in order for the whole project to be successful. Eventually, an information and communication management system should be devised. This system has to be designed in a way that allows, encourages and facilitates the flow of information, but in a structured, clear and effective manner.

The BoD coordinator will assign a member of the staff of the National Node as the person responsible for the communication activities of the NN. This person will work closely with the respective Thematic Committee in order to carry out the tasks assigned. At the same time, this person will facilitate the exchanging of information, knowledge and expertise generated or acquired by the NN to and from the Board of Directors Coordinator. Simultaneously, there will be establishment of a system and processes for effective, real-time identification, communication and accountability of members of TC members as well as the NN Board of Directors. This system will be including contact list, work calendars, gantt charts and task assignments proof in order to be able to identify, in simple words, who is responsible for what, and how and when we can reach them in order to evaluate the progress of the task assigned. The system could include scheduled meetings, capacity building and demonstration events, standard forms, feedback, file sharing systems, newsletters etc. In each instance, the preferred medium of communication will be selected by the person responsible, in collaboration with the BoD Coordinator and the respective TC. Information and communication management applies to both internal and external framework of reference.

Efficient internal information and communication management is vital to the success of the NN. From its everyday operations, to result dissemination, every message must be properly managed and ultimately reach its target, using specific and predefined tools and rules. The NN BoD Coordinator should be responsible for coordinating, encouraging and facilitating internal communication. Tools to support internal communication could be a) Face-to-face meetings (when possible) or remote conferences (e.g. Skype calls) between NN Board of Directors that could serve to ensure alignment with strategy, current status of the project, sharing of results of past activities, planning new ones etc. The NN Coordinator plays a leading role through facilitation in these meetings, gives feedback, assesses input from participants and summarizes the meeting by sending a short report after; b) internal reports related to activities and results are also recommended, especially from each Thematic Committee to the NN Board of Directors, before, during and after each assigned activity or task. The topics in these reports will be clear and associated with the respective task; c) dissemination tools such as Presentations, newsletters, and CC'ing all members in announcing results, changes in plans, feedback received etc. Through these tools the gathering and dissemination of information, is facilitated, clarity and transparency is ensured, along with more effective knowledge sharing. Additionally, everyone involved will be up-to-date with the progress, will have the opportunity to provide input and feedback on the results.

External communication system is, as already mentioned, equally, if not even more. Important to the internal communication system. External communication should be subject to a specific and clear framework. The design of this framework should take into consideration several factors in order to achieve its scope. Therefore, the following tasks should be materialized. First of all the person responsible for the communication activities should compile a Contact list of major parties, stakeholders and/or other key factors (e.g. journalists, media, political parties, local and national associations in maritime business etc.). The list will be regularly updated and enriched with new entries in order for the NN to be able to communicate in a broader basis. Recipients in this list will receive, at regular intervals, the newsletters, presentations, press releases and any dissemination material produced by the NN in order be kept informed about issues regarding the NN. Additionally, any news, results, announcements, activities information etc, will be posted and regularly updated on the PROteuS project's website, as well as on other news, informative and maritime websites. Among others, the NN will organize conferences and events on Maritime Surveillance, in order to bring together all the associated parties, both internal and external. Through these events a photo-library will be created. Material from this library (photos, footage, slides etc.) will be included and presented in the aforementioned events, press releases, web posts etc.

Through the internal and external information and communication management process, an additional load of data will be created. This data needs to be stored properly, in order to be easily accessed by any member of the NN. For example the deliverables of the intermediate projects should be stored (either physically or electronically) in separate folder, with clear signs. This way, Photos from events, texts, press releases, innovation profiled etc. can be available to anyone (authorized). Moreover, there should be a list of members of the NN Thematic Committee, stakeholders and other major parties with contact details, properly stored in an electronic database. Finally, evaluation reports from all levels of hierarchy, feedback on NN activities and action Plans on National level should be available in order to ensure that past errors, miscalculation and bad practices will not re-occur.

4 Activities and Responsibilities

4.1 Identifying and Finalising Key features of the NN

Key Parties Meeting: The number of the meetings in this first stage depends on the effectiveness and consensus of the attendants. However, it is proposed that the first key parties meetings will work on as follows. Therefore, the first meeting will be an introductory one, with the sole purpose of participants to get to know each other, present themselves formally and exchange basic information. In the next two meetings, (which will take place within a month from the first one) the main enabling features of the National Nodes will be decided upon and finalised, namely Vision, Mission, Strategy and Key Goals. (More details provided below). There will be a third meeting, as soon as the objectives of the first two are accomplished, co-attended by at least one tax expert and one lawyer in order to provide their input in the critical decision of the legal form of the NN. This particular decision could take up to two weeks to be finalized. At the final meeting, the NN should be able to officially initiate its course of action.

Define Vision, Mission, Strategy and Key Goals: There will be a task assigned to participants after the first meeting; they will have to provide input concerning *Vision, Mission, Strategy and Key Goals*. The input should be in the form of short proposals from each one of the participants. Finally, the major points from all proposals should be fused and shape the *Vision, Mission, Strategy and Key Goals* of the NN

Decision on legal form: Choosing the most suitable legal form is of critical importance, as mentioned above, as the Node includes members and partners (e.g. Public Universities) that must operate within certain legal framework set, including national corporate, tax and labor law, as well as EU funding regulations. Therefore, once the projects' strategy, objectives, goals and wished way of operation any National Node, the legal formation must be defined, after receiving with legal support on the matter in terms of under which legal status the National Node is considered to be more probable to acquire access to funding for the purposes and goals of the project.

Some possible legal forms for PROteuS MS National Node are: Association (non-profit or for-profit), Private limited company, Economic interest group, Cooperative and/or Hybrid Form. However, the experience has shown that a hybrid form of registering the Node is also the most cost – effective one, because it allows for a combination of commercial and non - commercial activities.

Devise Management Structure: Depending on the above (i.e. definition of Vision, Mission, Strategy and Key Goals, as well as legal form) the Management Structure should be decided. For example, it is required to define a person as Administrator for matters concerning tax and law. This person could not be in the official hierarchy, meaning that they would not have managing authority. Similarly, depending on the legal form, such responsibilities should be assigned. Apart from that, it is proposed that the structure should take place as such: NN General Assembly, Board of Directors, Board of Directors Coordinator and Thematic Committees

Execute necessary paperwork for official founding of the NN: After that, the tax expert and the lawyer should have about two weeks to complete the necessary paperwork for official founding of the NN. In total, the first stage should not last more than 2 months.

4.2   Building the NN

Elect Board of Directors: The Board of Directors would be composed of 9 persons in total, namely the Head of the BoD, Vice-Chair, Treasurer, General Secretary and five members, which, in rotation should be assigned with the role of Board of Directors' Coordinator. The number is proposed to be odd in order to ensure facilitation in decision – making process. The Board will meet once a month (actual meeting, with physical presence) and remotely every two weeks, in order to examine the progress of the tasks at hand and, of course, the long-term goals.

Select Board of Directors' Coordinator: The BoD Coordinator will serve as the Head of the NN Board of directors and will be assigned in rotation every 6 months. Given the complexity of the nature and the role of the BoD Coordinator, the candidate must possess certain skills and professional background, relevant to the position. Therefore, **the first BoD** Coordinator should be the person with the most experience in the field of Maritime Surveillance, in order to set the NN and its norms optimally. From there on, BoD Coordinators, chosen from the pool of BoD members, should possess project managing skills and of course, they should be more than familiar with the node development process, especially in the Mediterranean area context.

Define Committees: Thematic Committees should be thematic orientated. Each committee should be assigned with a different task, depending on its role. For example, a thematic committee could contribute to the dissemination of the results of the project and in general the publicity of the project. Similarly, other TCs concerning different aspects of the NN should be defined (e.g. Technology Committee, Legal Committee etc.)

Attract Thematic Committees' Members: The BoD Coordinator should contact at this point the organizations identified by the researching of potentially interested parties for the PROteuS Project.

Attempt to make an initial contact via email. Include an introductory text and maybe a brochure presenting the purpose of PROteuS and its potential usefulness to the recipient's organization activities. The email should encourage them to contact the BoD Coordinator or the NN headquarters for more information concerning the project. It is equally important to make a follow-up phone call, within the next 3 days, in order to establish personal contact with the person in charge and approach them in a more personal, friendly, while still professional manner.

4.3   Identify and Approaching potential TC members

Contact them: The BoD Coordinator will contact the National organizations identified. This identification can be achieved by researching potentially interested for the PROteuS Projects parties, on relevant fields of the triple Helix.

The initial contact should be made through email including an introductory text presenting the purpose of PROteuS and the usefulness of NN's operation to their organization activities. The email should encourage recipients, except of course to take part in a TC, to contact the BoD Coordinator or the NN headquarters for more information concerning the project. Attached to this email should be an expression of interest formal document (to be filled by those interested to join the Committees of the NN).

It is of great significance to enhance this email, with a follow-up phone call, within the next 3 days, in order to instigate personal contact with the person in charge, as well as express the NN's will to attract new TC members. Even in the case of negative response, the receiver should be encouraged to sign-up for the NN's newsletter in an attempt to keep contact and increase of a future collaboration.

Communication Process: Despite the NN's wish to attract new TC members, the consistency and timeframe of the project, along with certain dynamics must be kept intact. So, in order to ensure that the timeframe of the project is kept the potential members will be given a strict deadline in order to respond to the proposition for entering the NN. During this period of time, the NN must provide the potential new member with all the necessary information, making it a two-way process, and not just waiting for the new member to complete the process.

Final list of NN members: After the first two processes are successfully completed, the BoD Coordinator will prepare a list of the actors that replied positively in the request. A confirmatory email will be send to each recipient, stating the fact that they are, for then on, a member of the respective TC, along with their commitments, role and privileges. This final list will be announced to the BoD, General Assembly and, of course, to the thematic committees. This way, the dissemination of information would be optimized, each relevant party would be aware of the changes that take place and the consistency of the NN would be maintained

4.4   Selecting the Thematic Committee Members

The previously mentioned process will not be carried on forever. The BoD will be responsible to select up to 8 organizations from the compiled list ensuring that different groups of Helix model will be represented in the National Node. In order to maximize the positive impact that the Thematic Committees will have on the NN, maintaining the flexibility of the TC at the same time. Limiting the new members to 4-8 a certain level of standards, added value and commitment is ensured. Broadening way too much a TC can have a negative effect on the TC and the NN itself.

The data derived from this process will be, as always, shared among the GA, BoD and of course the TCs.

4.5   Engaging Thematic Committee Members

Selecting and officially announcing new TC members does not mean that the Coordinator's or the NN's in general, part is over. Some specific actions must be made in order to make the TC members feel welcome and accepted, as well as motivating them into giving 100% towards the NN's goals.

First of all, the NN and its members must build relationships with the members. The BoD Coordinator himself/herself must invite them to the upcoming NN Meeting, in order to present them to the BoD and the members of the G.A and the other TCs. A more regular contact will be established this way, which is element of great importance in the long run. This contact and communication should be maintained at a certain level, so as to serve the purposes of both sides (*i.e.* BoD and TC members)

Additionally, exchanging of knowledge with the new member must be established. Therefore, it is necessary to share current status and results of intermediate activities, notifying and inviting them to upcoming events, ensure information flow etc. Apart from that, the TC members should be encouraged and even asked to provide input, give feedback to their superiors, disseminate relevant information and express their expectations. Only by treating them as partners, TC member will be motivated and perform optimally. Since the NN can be a non-formal association, an informal but equally strong commitment to the goal must be achieved between the NN and the thematic committee members.

4.6   Roles and Responsibilities of the members

Each Thematic Committee plays its role depending on its nature and its field of expertise. As already proposed there will be at least 4 different TCs, each one with a different objective. For example, the Technical and Industrial Innovation Committee, bears the responsibility to gather, coordinate and parties of entrepreneurial nature. Later, this TC will help in developing strategies for research, development and industrial innovation, as well as in project monitoring, under the framework of the NN.

Similarly, the Dissemination Committee plays an important role in the dissemination of the results obtained, knowledge produced, capacity building and generically, the whole process of information and knowledge sharing both inside the NN and externally, e.g to the local community.

The Public Research Committee works towards Coordination of universities and research centers under the PROTEUS project research goals. Additionally, proposes alternative or additional research strategies related with MS technology, assigns tasks and sub-projects to the universities and research centers or even third-party external partners/subcontractors.

The Territorial Development Committee plays the role of intermediate entity between regional local policies and different levels of the country and the MED level Cluster activities. Despite the fact that each are has different needs, restrictions and opportunities synergy and consistency among all MED level Cluster should be ensured. In any other case, the whole meaning of working and participating in a Cluster is no longer of any use.

Despite the difference in role of the respective TCs, they share some general responsibilities. Their actions, must serve the purpose, vision and goals of the NN. They have to act under the guidance of the Coordinator, comply with their recommendations and guidelines and making the necessary changes. Their main responsibility, therefore, is to operate and make sure that also their members operate in the same manner; the one suggesting that they are part of a team (*i.e. the National Node*).

4.7 Decision-making processes

In every organization regardless of its nature, structure, goal, size and other factor, there must be a clear, communicated and compelling decision-making process. There are handful decision-making processes suggested by literature, each one with its pros and cons.

For the purpose of this project it is suggested a typical Top-Bottom approach, with a slight, but crucial differentiation. Technically, the General Assembly is the ultimate governance body of the NN. However, its power is limited to ensuring the input of everyone involved in the NN as well as the evaluation and control of the BoD, in terms of achieving the agreed-upon goals and acting in alignment with the vision of the NN. The G.A., thus, does not have any authority to interfere with BoD decisions, as long as they do not violate the principles and the vision of the NN.

As already mentioned, the BoD ultimately makes decisions. However, it should be noted that that both the TCs and the Coordinator themselves, not only they can provide input, but also it is in their "job-descriptions" to do so. More specifically, TCs in their regular meeting with the Coordinator can provide input based on their work, experience and evaluation of the current status. The Coordinator takes it into consideration in the upcoming BoD meeting when and where any decision is made.

This, however, does not mean that there cannot be any flexibility in the decision making process. TCs have their own frameworks of action that are agreed with the Coordinator, which include pre-defined specific responsibility and authority. Therefore, any decision that is included in this framework, can and should be made by the TC.

To summarize, even though there is delegation of responsibility and authority to Coordinator and Committees, in order to ensure the necessary flexibility, the BoD ultimately rules on important issues. Similarly, any input from Committees or the General Assembly, even though is encouraged and even some times critical, its materialization requires approval from the board.

5 Synergies with Related Clusters and on-going Projects

This section is divided in two parts. The first part identifies and proposes synergies and collaborations with on-going projects of Interreg Med Programme 2014-2020 (first call/Blue Growth sector) & clusters related to Blue Economy that they could create synergies and collaborations with the MED MS Cluster and National Nodes. The second part presents an approach of collaboration and operation of the MED MS Cluster with the National Nodes (NN).

5.1 Identified on-going projects & clusters related to Blue Economy / Growth for synergies

Tables 8 & 9 propose several identified synergies and initiatives with ongoing projects and existed clusters by taking into consideration the MED Ms Cluster's objectives, the identified key MS Sectors (section 1), the proposed main activities (section 3) and the sector of interest (Blue Economy/Blue Growth) of the MED MS Cluster.

Table 1. Identified EU projects for synergies

Projects for synergies	Brief Project Description	Sector	Potential synergies/initiatives/collaborations
MAESTRALE	The project Maestrale intends to lay the basis for a maritime energy deployment strategy in the Mediterranean. https://maestrale.interreg-med.eu/	Blue Growth	Several synergies and collaborations can arise with PROtueS project as the overall objective of the MAESTRALE project is to promote the development of blue energy in the Mediterranean area as a key sector for sustainable growth, by fostering the creation and the transnational networking of innovative clusters. Although MAESTRALLE project focuses mainly to Blue Energy sector, joint issues and objectives could be identified such as this of the creation and transnational networking of innovative Clusters. Besides, since both project are involved with Blue Economy (Blue Growth) sector and they focus in the same area of reference (Mediterranean basin), several synergies/collaborations and initiatives between the 2 Clusters and their members can arise.
iBLUE	Investing in sustainable blue growth and competitiveness through 3-pillar business model (3-PBM). https://iblue.interreg-med.eu/	Blue Growth	iBLUE project contributes (among others) to the sustainable blue growth and competitiveness. In this context, there could be joint initiatives and collaborations with PROteuS project.
PELAGOS	Promoting innovative networks and clusters for marine renewable energy synergies in Mediterranean coasts and islands. https://pelagos.interreg-med.eu/	Blue Growth /Cluster	PELAGOS and PROteuS projects share similar objectives and activities. Both projects aim to increase the innovation capacities and cooperation in MED area as well as promote entrepreneurship and innovation. This will be achieved through the establishment of transnational Clusters/Nodes consisted of actors from the quadruple helix that are related with Blue Economy-Growth. Both Clusters/Nodes aim to promote novel technologies and provide a mix of support activities to the members, bringing them together in order to develop a shared understanding of the challenges and collectively devise workable solutions. Both project will contribute to Blue Economy, fuelling economic growth in coastal regions and create new, high-quality jobs. In this context, the 2 Clusters can

Projects for synergies	Brief Project Description	Sector	Potential synergies/initiatives/collaborations
			exchange experiences, develop synergies, knowledge sharing, and develop joint collaborative concepts.
InnoBlueGrowth	Horizontal communication & capitalization project for innovation in blue growth at Mediterranean level. https://blue-growth.interreg-med.eu/	Blue Growth	InnoBlueGrowth is a Horizontal Communication & Capitalization project for Innovation in Blue Growth at Mediterranean level. The objective of InnoBlueGrowth is to increase transnational activity of innovative clusters to develop smart and sustainable growth in the Mediterranean area. InnoBlueGrowth shall build a real community of modular projects, dealing with Blue Growth. This innovative community will allow the reinforcement of the cross-cutting and integrated approach between modular projects and transnational key stakeholders, which is a sine qua non condition to support Mediterranean clusters in their transnational activities processes. Through InnoBlueGorwth, PROteuS project will have the opportunity to get in contact with other transnational clusters related to Blue Growth/Economy, ensure its communication and capitalization activities and enhance cluster's performance.
GREENOMED	Mediterranean trans-regional cooperation for green manufacturing innovation. https://greenomed.interreg-med.eu/	Green Growth /Cluster	Although the sector of GREENOMED is not Blue Growth but this of Green Growth, GREENOMED project shares several common objectives and issues with PROteuS in terms of innovation and entrepreneurship while both focus in the same area of reference. Once the key target groups of GREENOMED are regional clusters and actors of quadruple helix (e.g. business support organisations, SMEs, Regional policy makers, general public, research and technology centres, large companies, National policy makers), it is proposed the partner consortium of PROteuS to get in contact with this of GREENOMED, exchange experiences and discuss potential synergies/initiatives and collaborations in order to promote innovation and entrepreneurship.

Table 2. Identified Best Practice Clusters for synergies

Country	Identified key Clusters	Proposed synergies/initiatives/collaborations
France	▪ Pôle Mer Méditerranée	▪ Learn from their experiences & gain knowledge / knowhow skills regarding the succesfull organization, coordination and operation of a Cluster.
Greece	▪ ECOMASYN ▪ STRATEGIS ▪ Hellenic Space Technologies and Satellite Applications Cluster (si-Cluster)	▪ Identify pros & cons of each legal form based on the type of their members. ▪ Identify possible collaborations for the development of the joint projects in MS sectors. ▪ Learn from their experiences in the organization and the design of technical seminars/workshops/events.
Italy	▪ Maritime Technology Cluster FVG S.c.ar.l.	▪ Identify and record their member capabilities building up a database in order to match potential collaborations with the member of MED MS National Node.
Spain	▪ CTN - Marine Technology Centre ▪ Cluster Marino Marítimo de Canarias	▪ Invite them to participate in the MED MS National Node. NN as members of a transnational Cluster that will be focus not just in national level but in the whole Mediterranean region. Move from national to transnational collaborations.
Portugal	▪ Fórum Oceano – Associação da Economia do Mar	▪ Exchange experiences and knowledge on how to address joint issues related to Cluster sustainability (performance indicators, financial schemes, key points etc.)

5.2 Harmonization process

The collaboration between the National Nodes (NN), the MED MS Cluster and other related to Blue Economy Clusters is a complex and dynamic issue due to the transnational character of the involved actors/members. In particular, the potential members will be actors of different type (quadruple helix) and from different countries (Cyprus, France, Greece, Italy, Spain, Portugal), having different legal forms and needs/requests. Thus, these features constitute the transnational collaboration a challenge and for this reason the establishment of an harmonic mechanism of operation and collaboration is a vital issue.

In this context, the following steps of harmonisation between the NN and other initiatives – projects are proposed. These steps are indicative and can be modified accordingly.

Step 1: Identification of important, ongoing blue growth initiatives, fora and projects by the NNs

This step could be similar with the one presented on subsection 7.1. The governance scheme of the NN can identify important, ongoing blue growth initiatives, projects and clusters that could develop synergies, initiatives and collaborations with.

Step 2: Report from NN Coordinators to Head Coordinator of Cluster concerning the aforementioned initiatives, fora and projects

After identifying similar or potential mutually beneficiary projects, the local NN Coordinators should devise a report mentioning the specific type of project(s) (i.e. initiatives, fora or projects per se) that could lead to collaboration. In this report, the NN Coordinator should, at first, describe extensively why the respective project is relevant to PROteuS. Additionally, and more importantly, they should explain and analyse the added value that could be acquired, the importance of it, and, of course, the ways that this added value could be produced. Moreover, an initial proposition of the kind of collaboration (e.g simple knowledge sharing, joint actions) between the two parties (or among more) should be mentioned in the report.

Step 3: Assessment of the reports by the Head Coordinator and identification of opportunities for synergies, collaboration and harmonization

Upon receiving the report from the NN Coordinators, the Head Coordinator bears the responsibility to assess it and, ultimately, make the decision concerning whether this collaboration will take place. The HC must examine the benefits that will occur from any given collaboration of the kind, along with the cost/benefit ratio. Additionally, the actual potential and facilitation of the collaboration, as well as the type of it must be considered, taking, at the same time, into account the necessary elements (available resources, alignment with goals of the PROTEUS project etc.). Finally, the HC must devise an initial proposed joint action plan.

Step 4: Initial Communication between the NN and the respective initiative, forum or project

Given that the HC and the Board of Directors agree to proceed in the collaboration with other projects, then they should attempt an approach to the collaboration party. An initial introduction concerning the PROteuS project must be communicated, along with the results from the previous 2 steps (e.g. proposed type of collaboration, potential mutual benefit, proposed actions etc.). Should the opposing party be reluctant to such collaboration, the HC could ask for the rationale behind this reluctance and attempt to overcome it, as there will be mutual benefits, worth the effort. On the contrary, if the other party is open to such collaboration, then proceed to step 5

Step 5: Coordinators meeting: Setting up the framework

The number of the meetings in this first stage depends on the difficulty and the complexity concerning the collaboration. It is proposed that the first key parties meetings will work on an introductory meeting, with the sole purpose of participants to get to know each other, present their projects in detail, exchange basic information, set up the framework of the collaboration and name a person as Joint Project Coordinator. The focus on the next meeting, which should take place within two months from the first one, should be on the identification and expression of goals, objectives and action plan derived from this collaboration.

Step 6: Joint Actions

In this step, the actual collaboration will take place and the mutual benefit should begin to occur and be of use to the relevant parties. During this step, the two (or more) parties involved in the collaboration/synergy should organize conferences, meet-ups and workshops with the purpose of sharing knowledge produced by each party. Additionally, joint workgroups should be composed, for taking up joint projects, or assisting the other party (parties). Joint research should also be conducted, managed and of, course, disseminated as of Step 7

Step 7: Dissemination and Publicity Activities

A critical part of the whole collaboration/synergy is the dissemination of the information acquired, knowledge produced and technologies used, regardless of the party that has actually materialized them. At any given time in the duration of the project, there is knowledge, technologies and information flow and, thus, there is the need of disseminating either internally (i.e. serving the purpose and goals of the collaboration/synergy) or externally (e.g. publicity). The dissemination can take place through various activities and events, similar to the ones proposed for each project.

Step 8: Evaluation of the synergy/collaboration/harmonisation

The last part of this joint project, should take place about a year from the launching of the project and should be concerned with the assessment and evaluation of progress, the clarification of whether objectives have been fulfilled or not, reasons behind either occasions and generally evaluation of the synergy/collaboration/harmonisation as a whole. At that point,

the relevant parties should provide the Join Project Coordinator with input concerning ideas and activities, implementation or any other type of input. The Head Coordinators of each project then, should decide, along with the respective Boards of Directors, whether this joint project is effective and, therefore, decide on the continuation of it or not.

6 Performance Indicators for the operation of the National Node

A key development area is to define the strategic objectives of the National nodes and connect them with key performance indicators. At this point we propose a number of quantitative and qualitative indicators to monitoring NN Operations. Based on the discussions between the Members of the Thematic Committees a variety of new indicators will be revealed. BoD Coordinator should organize and manage a systematic procedure to monitoring and evaluate the following KPIs.

Quantitative KPIs

Members/Impact	Engage to the NN	Participate in Projects	Collaboration Projects	Networking
SMEs	*Number*	*Number*	*Number of Proof of Concepts*	*Number of participants in these B2B events*
Startups	*Number*	*Number*	*Number of Proof of Concepts*	*Number of participants in these B2B events*
Spinoff	*Number*	*Number*	*Number of Spin Offs created through collaborative projects*	
Large firms	*Number*	*Number*	*Number of Proof of Concepts*	*Number of technology based opportunities/projects promoted to Large firms*
Research Institutions/Technology Centers/Universities	*Number*	*Number*	*Number of Proof of Concepts*	
Regional Authorities	*Number*	*Number*		
National Goverments	*Number*	*Number*		

NGOs	*Number*	*Number*		

Qualitative KPIs

Based on the economic sectors of PROteuS National Nodes each Thematic Committee should measure the % of the desired target of their goals such as

- Accelerate innovation processes
- New competence
- Reduce time-to-market
- Change of business revenue structure
- Replace outdated products or processes
- Diversity of the actors involved
- Balance of maritime sectors involved
- Intensity of Maritime Technical Innovation Orientation
- Intensity of Maritime Market Innovation Orientation

Performance indicators

- Total number of projects undertaken by NN
- Number of collaborative projects undertaken by NN
- Number of research-technology bodies working in NN projects
- Spending on the financing of the activity of the NN (excluding collaborative contracts) borne by the member companies
- Number of organized events/conference/exhibitions and the participants in these
- Number of organized workshops and the participants in these

7 Development of National Nodes' Action Plan

7.1 Dissemination Activities

An integral part of the whole project is the dissemination of the information, knowledge, technologies and, of course, the results of the project regardless of the stage. At any given time in the duration of the project, all of the above are produced and thus, there is the need of disseminating them. The dissemination can take place through various activities and events, with the most important of them analyzed below.

7.1.1 NN demonstration events

The most common way to disseminate results (mainly), inform the public, or any other interested party, is through a demonstration event. In these events all the relevant parties associated with the National Node and the project itself, are invited in an event hall or hotel or any other suitable venue. Attention must be given in the invitation list, in order not to leave out any key partner and/or local stakeholder. After all, they are the ones interested, making efforts for and sometimes even funding the project.

During the demonstration event there will be presentation of the project. Depending on the given stage of the project, the main focal points could be the vision, goals and purpose of the project (first event, launch of the program) or the current objectives, knowledge and information produced (intermediate stage) and of course the announcement and presentation of results and deliverables in the final stage of the project.

Before, during and even after the event, due to the fact that people of all relevant parties (partners, stakeholders etc.) will be attending the event, there is the opportunity for networking, exchange of information and knowledge and expertise both under formal and informal framework. Emphasis should be given especially in the informal framework.

Finally, through these events, and especially through the above mentioned networking, there can be opportunities for engaging new members for the National Node, and thus, broadening it, securing additional resources and, indirectly, receiving positive feedback for the given progress.

We can summarize the importance and the function of the NN demonstration events, as a dissemination activity in the table below.

NN Demonstration Events

- Invitation of key partners and local stakeholders
- Presentation of the project (vision, objectives, goals, etc)
- Networking
- Engaging new members

7.1.2   NN Thematic Committee

Next on the list of the Dissemination activities is the NN Thematic Committee meeting. There are some important differences with the demonstration events. First of all, these meetings are private. The Board of Directors Coordinator summons the meeting, which could either require physical appearance, or could be organized and coordinated electronically (e.g Skype call) after taking into account the availability of the potential participants. The latter should be limited to the members of the thematic committee (*see above in 3.2.4)*. Due to the nature of the Thematic Committee, as well as its role, it presents no added value, to involve any other party in such a meeting. The whole discussion and exchange of information are managed by the BoD Coordinator and serve the purpose of the meeting which is described in the agenda. There is no need to broaden the framework of discussion to other issues concerning.

The agenda once again is proposed by the BoD Coordinator. It is rather specific, clear and relative to the purpose and point of interest of the thematic committee.

The last part of the meeting should be the discussion and evaluation of progress so far. Check whether objectives have been fulfilled or not, reasons behind either occasions, and generally evaluation of the progress made. At that point, thematic committee members should provide the BoD Coordinator with input concerning new ideas and activities, current methodology and implementation as well as ways of dissemination of the results, both internally (other thematic committees and members of the NN) and externally (press releases, events and generally enhancing public Image).

Role of NN Thematic Committee Meeting

- Organized and coordinated by the BoD Coordinator
- Clear agenda
- Discussion and evaluation of progress

7.1.3   SMEs Innovation Profiling

A major scope of NN is to encourage, identify, assist and promote innovation. Therefore, there must be a framework in which potential innovators should be able to present their ideas to the nodes and continue accordingly.

The first stage should be the identification and selection of a maximum of 20 ideas - potential innovations that emerged within the function of the Nodes and the people associated with them wish to share them within the NN.

Afterwards, the potential innovators should pitch their ideas to the respective thematic committee, in order to determine if the idea has a basis to rely on and proceed. The pitching event should be a simulation of a regular investors'-pitching event in order to ensure that the level of the participants is high, as well as providing them with the necessary experience. These events will be attended by the BoD Coordinator to enhance the status and credibility of the event and the whole process.

Based on the selection of the first stage and the pitch of the second, the thematic committee must make an initial decision concerning the innovation itself. It should determine whether

innovation exists and properly identify it. If the proposed idea is truly innovative, then the next step is to evaluate its readiness in terms of chances of success in an investors pitching event, and therefore the usefulness of the proposed innovation to the NN. If there is actual use and added value to the idea, the thematic committee proceeds in proposing of implementing the chosen idea, in the next thematic committee meeting. In case of lacking several success factors, the NN assists in improving them up to the point that the idea transforms into an actual outcome.

<u>SMEs Innovation Profiling</u>

- Selection of up to 20 ideas
- Briefly Describe the ideas
- Identify the innovation associated
- Evaluate readiness

7.1.4 Capacity Building Workshops

Part of the exchanging of knowledge, information and innovation can take place through enhancing members' skills and encouraging them to contribute to this exchanging. This can be achieved through Capacity Building workshops. There will be two thematic Capacity Building workshops. One on Entrepreneurship & Technology Transfer and one for Capacity Building on Markets & MS Technology applications.

The form and structure of these workshops will fully serve the purpose of actual knowledge transfer and will far exceed a typical demonstration event. These workshops will mainly begin with some shot lectures concerning the issues and subjects at hand. The lectures could be carried out by the Head of a thematic committee or a member of the NN with the relevant expertise. At certain occasions, guest lecturers and facilitators (outside the NN) could be invited to coordinate these workshops and provide further expertise, not only to the participants, but also the members of the NN attending the workshop, which could be themselves trainees.

Apart from the lecture part, which is considered necessary, there will be experiential workshops and exercises. During these, the participants will have the opportunity to communicate and work with each other, to solve problems, examine case studies etc. More details will be provided later on, in the respective section.

What needs to be noted is that due to the nature of these experiential workshops (interaction, collaboration, case studies etc.), there must be a limit to the number of participants. Ideally, the trainees' team would be composed of 25 people, and should not exceed 40.

<u>Capacity Building Workshops</u>

- Lecture
- Experiential Workshps
- 25-40 Participants
- Guest Lecturers and facilitators (Outside the NN)

At this point, it is important to specify the characteristics of each thematic Capacity Building Workshop. Mainly, there will be two types of workshops.

7.1.4.1 Capacity Building on Entrepreneurship & Technology Transfer

The first thematic workshop would include elements of Entrepreneurship & Technology Transfer. Entrepreneurship capacity-building would enhance the SMEs chance of succeeding, as well as the NN's possibility of using the proposed innovation and serve its purpose. Therefore, business elements, such as devising a business plan and Financial Management will definitely be included in this workshop. The business plan is the base upon the innovation will be built, while financial management is necessary for the sustainability of the SME.

The second part of this thematic workshop will, among others, include the so-called soft skills that contribute to the enhancing Technology Transfer, as well as processes that secure this Technology Transfer process. There will be Cooperation and Collaboration workshops, in which participants will improve the respective skills and understand their importance. They will be subject to make decisions, resolve conflicts and exchange knowledge, under different circumstances.

As far as the processes of this exchange of knowledge process per se is concerned, there will be case studies, patents and licensing lectures, commercial law updates etc., in order to provide participants with the necessary knowledge in order to secure that there will not face any legal issues with competitors, customers and suppliers.

Capacity Building Workshops on Entrepreneurship & Technology Transfer

- Devising a business plan
- Introducing new business models
- Introducing new revenue streams models
- Presenting best practised and new projects
- Elaborate on Legal issues like patents and licensing

7.1.4.2 Capacity Building on Markets & MS Technology applications

The second type of Capacity Building workshop will be concerned with Markets and MS Technology Applications. The purpose of this workshop is to help members of the NN, as well as the NN itself, to turn the theoretical outcomes of the processes conducted by the NN into practical, actual and realistic scenarios.

The first step will be to identify and target Markets, as well as getting familiar with Maritime Surveillance Technology current status. This first step will help the participants to understand where they are standing in the Market, their relative position in it, the dynamics existing and the ways that they can currently contribute to the NN. Through this analysis, relevant gaps could be identified helping move forward to the next step, which is to attempt to anticipate future needs in the field of MS and applications of Technology that could help the MS and ways to supply them in the Market.

This anticipation can be achieved by examining the external, political and economic environment and the impact that has on MS. Once identifying this association, it becomes much easier to spot new trends and thus new needs that will emerge. To this end, case studies of good practices, with identification of the reasons behind their success could be of great assistance in the duration of the workshop.

This particular workshop should be conducted and coordinated by either a member of the Board of Directors, or the Coordinator himself/herself.

<u>Capacity Building on Markets & MT Technology applications</u>

- Update Market and MS Technology Scientific status
- Global Trends and Needs
- Presenting best practised and case studies

7.2 Sustainability

The funding of the NN is one of the main factors for its sustainability. The budget of the NN should be exclusively dedicated to the governance, its operational activities and the associated costs in terms of salaries and non-staff costs. Once the NN has a dedicated team to support the member's activities (BoD Coordinator, Thematic Committees etc.), sources of funding are required for its operation. These resources could be:

- Funds from banks
- Venture Capital
- Business Angels
- Public funding (including operational programs)
- Membership fees
- Fee-based services (services offered to node members or outside)
- Private sources of funding as in-kind (non-cash) contributions (e.g. seconded staff from members)

7.2.1 Evaluation of performance indicators

The assessment of the performance of the National Nodes should be based on a review of defined quantitative and qualitative indicators (see section 5) addressing categories such as: Formalization of economic, technological & scientific objectives

- Number & quality of the actors involved
- Business-research-training synergies
- National visibility & National projects
- Human Resource & Training

The evaluation of the performance indicators will extract useful conclusions regarding the performance of the National Nodes and will define whether the Board of Director and the BoD Coordinator need to take action and proceed to any modifications. Generally, the evaluation process of the Nodes should provide answers to the following questions:

- What progress has been made in terms of anticipated activities?
- Has the Node reached its goals in terms of desired results and deadlines? What has gone well and what not well?
- Does the Board of Directors have enough information and data to measure and evaluate the node's performance?

- To what extent members of the Nodes are satisfied with Node's results?

7.3 Follow Up Activities

The partners of the PROteuS project should proceed with the elaboration of special agreements (this is planned to be undertaken during project implementation) aiming at ensuring the continuation of their cooperation after the project's end as well as their interaction at transnational level within the MED Cluster. These activities should focuses on the MED Maritime Surveillance Cluster, setting specific set of actions and framework that will foster the continuation of its successful operation. The members of the PROteuS project should establish special agreements in the form of a **protocol**, in order to ensure their cooperation at national level. Among others, the protocol should include the responsibilities and the privileges of Cluster's members and the terms of the membership including details about member's fee, participation in cluster's regular meetings, conferences, training seminars etc.

A **declaration of participation** should be designed and signed by the MED MS National Node members regarding their official commitment and agreement as Node's members.

Sample:

DECLARATION FORM (indicative template)

Participating Organization
Organization Name:
……………………………………………………………………………………………………..
Address/City:
……………………………………………………………………………………………………….

Organization's Representative
First name:
……
Surname:……
Position: ……
E-mail: ……
Tel. No.:……

I hereby declare that the organization I represent will participate in MED Maritime Surveillance National Node, coordinated by ……………………..

Terms of membership:

Article 1: Membership annual fee: ....

Article 2: Responsibilities/Obligations: ....

Article 3: Benefits: ....
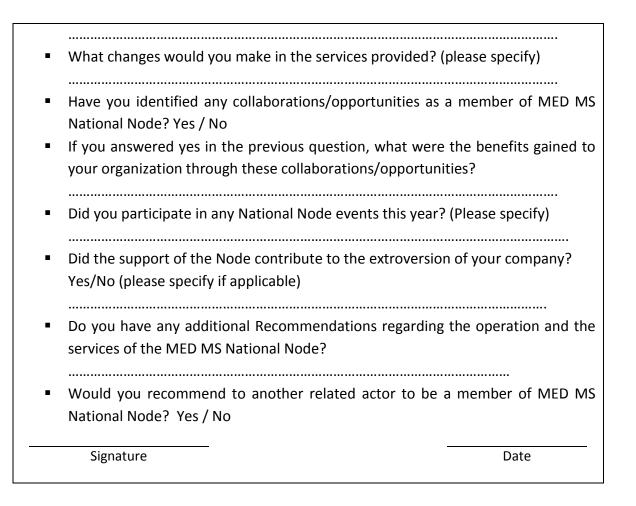

_____	_____
Signature	Date

Additionally, **a sustainability plan** is strongly recommended to be elaborated once the Node is officially established. This plan will outline the goals, the progress and areas of future focus in accordance with the identified critical success factors and key characteristics that were presented in section 5.

A **questionnaire regarding the member's satisfaction** regarding the Node's services should be provided at annually basis in order to be taken into consideration by the management team and the node coordinator and to proceed to any changes if this is necessary. In the questionnaire should be allowed from the members to provide any request or proposal regarding node operation and provided services.

Sample:

<div align="center">

Indicative member's satisfaction questionnaire

</div>

Participating Organization
Organization Name: …….
Address/City: …….
Organization's Representative
First name: ……
Surname:………Po sition: ………
E-mail: …….
Tel. No……

- Are you generally satisfied by being a member of MED MS National Node: Yes / No
  If you answer no, please specify:
  ………

- Level of satisfaction from 1 (very unpleased) – 5 (very satisfied)?
- What changes would you make? (please specify)
  …….

- Are you generally satisfied with National Node's Services? Yes / No
  If you answer no, please specify:
  …….

- Level of satisfaction from 1 (very unpleased) – 5 (very satisfied)?
- Please describe which one you consider the strongest and the weakest activity of the Node.

……….

- What changes would you make in the services provided? (please specify)

……

- Have you identified any collaborations/opportunities as a member of MED MS National Node? Yes / No

- If you answered yes in the previous question, what were the benefits gained to your organization through these collaborations/opportunities?

……

- Did you participate in any National Node events this year? (Please specify)

……….

- Did the support of the Node contribute to the extroversion of your company? Yes/No (please specify if applicable)

………

- Do you have any additional Recommendations regarding the operation and the services of the MED MS National Node?

……

- Would you recommend to another related actor to be a member of MED MS National Node? Yes / No

Signature   Date

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