Project co-financed by the European Regional Development Fund

GREENOMED

Testing methods, format and planning

Deliverable 3.2.1

Responsible Partner: CNR-ITIA

31.03.2018

Project Acronym:	GREENOMED
Project full title:	Mediterranean Trans-Regional Cooperation for green manufacturing innovation
Priority Axis:	Promoting Mediterranean innovation capacities to develop smart and sustainable growth
Objectives:	1.1 To increase transnational activity of innovative clusters and networks of key sectors of the MED area
Project website:	http://greenomed.interreg-med.eu
Grant agreement number:	1MED15_1.1_M2_072
Project Coordinator:	CNR-ITIA
Deliverable:	D 3.2.1 – Testing methods, format and planning
Work Package:	WP 3 – Testing
Activity:	A 3.2 – Pilot activities design and planning
Summary:	This document describes the testing process, format, targets, Expected cluster services, tools and detailed testing workplan
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Distribution:	Confidential (Consortium Partners)
Partners involved:	CNR-ITIA
Due date of deliverable:	July 2017
Final date of submission:	31 March 2018
Status:	Final version
Document ID:	GNMD-CNR-WP3_D3.2.1_V2.0_ Testing method format and planning.docx

Revision History

Version	Status	Date	Author/Editor	Details of changes
0.1	Draft	20.03.2018	Golboo Pourabdollahian	First draft created
0.2	Updated document	26.03.2018	Golboo Pourabdollahian	Document updated
1.0	Final version for review	27.03.2018	Golboo Pourabdollahian	Document updated and final version for review created
2.0	Final (Second progress report)	31.03.2018	Golboo Pourabdollahian	Update of document, format check and finalisation for submission

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List of abbreviations

EEN: Enterprise Europe Network

ERRIN: European Regions Research & Innovation Network

ESM: Efficient & Sustainable Manufacturing

EU: European Union

MED: Mediterranean

RTO: Research Technology Organisation

S3: Smart Specialisation Strategy

SME: Small Medium Enterprise

VI: Vanguard Initiative

WG: Working Group

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1. Executive summary

The current document defines the trans-national cooperation methodology that has been developed within the GREENOMED project to design and build pilot plants supporting green manufacturing in the MED area based on an inter-regional cooperative framework (Vanguard Initiative) and in a logic of smart specialisation strategy of each region. The defined methodology in this deliverable entails a focal part of GREENOMED since the methodology will be tested during the upcoming activities of the project (A 3.3). Indeed, the developed methodology is one of the main outputs that GREENOMED is supposed to deliver during the course of the project. The methodology has been developed considering the important role of clusters in GREENOMED and thus can be conceived as a cluster-governed methodology. The methodology consists of three main layers namely phases, cluster services and tools. These layers provide the regions in which testing will take place, more specifically the regions that are going to conceive, design and implement pilot plants for green manufacturing, with the required tools to test and implement the methodology. Considering the central role of clusters in testing, the methodology has been developed in a way that clusters and other intermediaries in the project can have a clear picture of the services they are supposed to offer and tools to enable those services.

The methodology has been developed in a cooperative way, leading by partners already involved in Vanguard Initiative (CNR-ITIA, EURECAT, AFIL, Fraunhofer) and involving other partners to define a holistic methodology that can be implemented by all regions while considering specific characteristic of different regions. Through such a collaboratively designed methodology, it would be also possible to transfer experience and knowledge from experienced partners to new ones in VI.

Apart from the methodology, a testing plan for each regions has been defined as well taking into account different starting points of the regions as well as existing capacities.

The current deliverable has been structured as following: first the procedure that has been followed to involve all the partners and develop the GREENOMED methodology will be defined. Thereafter, the preliminary developed methodology for each region will be defined. Later on, the final concrete GREENOMED methodology, as a result of clustering and consolidating of regional methodologies, will be presented including phases, services and tools. Eventually, the work plan to implement and test the methodology in each region will be presented.

The output of this deliverable will be used in activity 3.3.1 to implement and test the methodology.

2. Objective of activity

The main objective of activity 3.2 is to develop the GREENOMED trans-national cooperation methodology to design and plan the pilot activities. This includes definition of innovative services offered by clusters, that will be crucial for implementation of methodology and to define strategic trans-regional innovation projects of pilot plants in the area of green manufacturing.

3. Procedure to develop the GREENOMED testing methodology

In order to develop the GREENOMED methodology a procedure was followed to ensure collaborative design of the methodology and involvement of all the partners. Figure 1 shows the applied procedure.

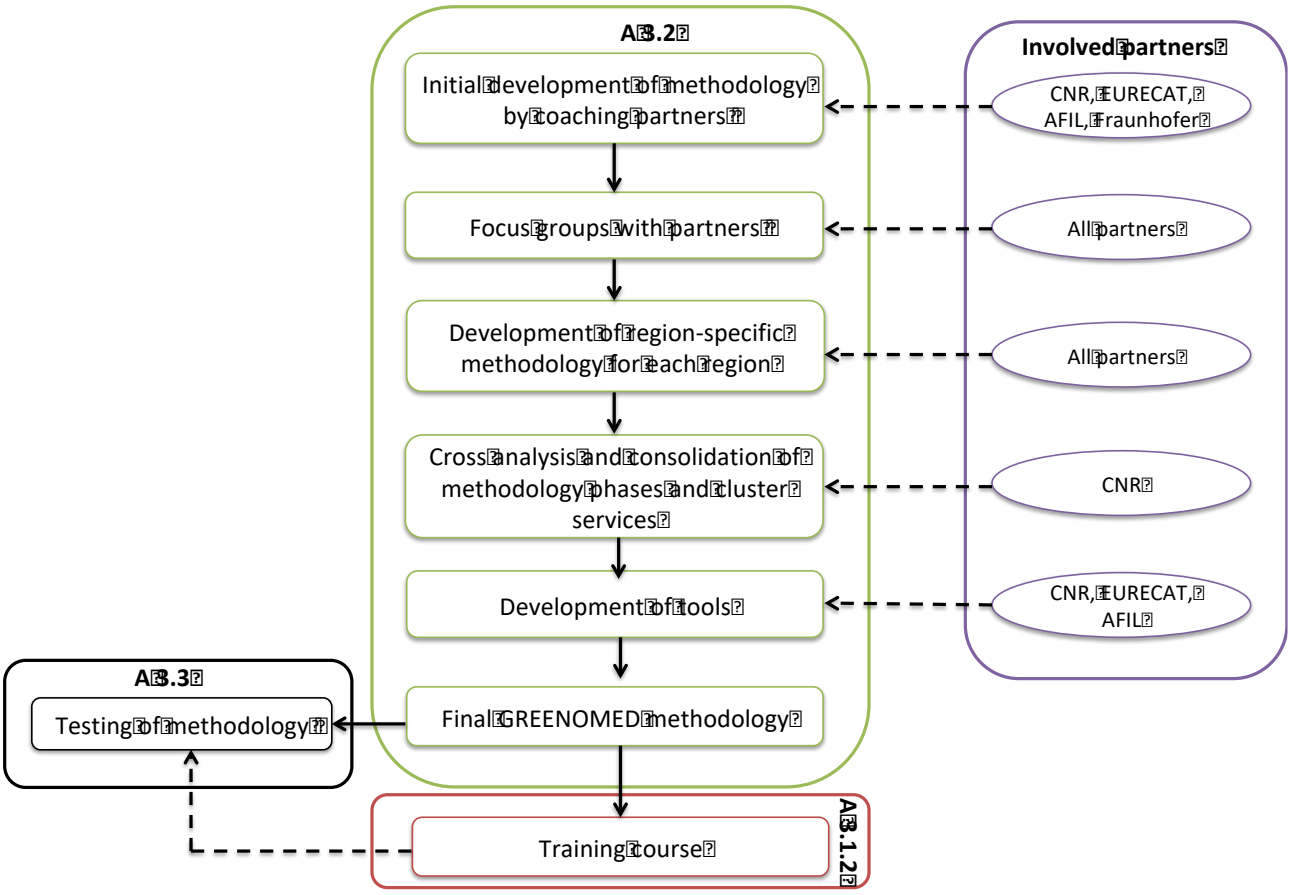

Figure 1. Applied procedure to develop the GREENOMED methodology

In following each stage of the procedure is described:

Initial development of methodology by coaching partners: The first stage to develop the GREENOMED methodology was to form the experience and knowledge of the coaching partners who are involved in VI and lead demo-cases in the form of a first draft of methodology. To this end, the four coaching partners namely CNR-ITIA, EURECAT, AFIL and Fraunhofer had a number of working meetings to co-design the first draft of GREENOMED methodology based on different experiences that each of them had in their own regions to design and implement pilot plants in the frame of VI. The outcome of this stage was the first version of the GREENOMED methodology.

Focus groups with partners: Having the draft of GREENOMED methodology, it was shared with all the other partners in a workshop in Ljubljana in June 2017. In order to discuss the methodology more in detail and based on features and capacities of each region, partners were divided to three different focus groups: 1) ACMM for Marche region 2) CEE and CIE for Croatia and 3) TPLJ and PTP

for Slovenia. Each focus group was led and coached by 1-2 coaching partners. Detailed discussions were made in each focus group mainly around the needs and barriers that each region might face during different phases of the methodology as well as services that clusters can provide in each phase and tools they need to realise those services. The discussions were running taking into account different factors such as status-quo of the region in terms of existing capacities, smart specialisation strategy, existing initiatives in the region for green manufacturing, etc. In addition another workshop was held in July in Milan to run the same activity for Greece ad France. During this second workshop, the draft methodology was discussed in terms of barriers and needs, services and tools with i-BEC and Plastipolis. The outcome of the two workshops, was a set of inputs to create the region-based methodologies.

Development of region-specific methodology and planning: The inputs provided by the focus groups were discussed more in depth via a couple of telco. Telcos were made for each region (focus group) independently leading by the coaching partners of each focus group/region. As a result, a region-specific methodology and planning was defined by each focus group (region). The region-specific methodologies are presented in Annex 2 of this deliverable.

Cross analysis and consolidation of methodology phases and cluster services: Having all the region-specific methodologies and planning, CNR-ITIA carried out a cross analysis to cross-check the different regional methodologies and identify similarities and differences. Consequently, a consolidated format of methodology defining different phases and cluster services was prepared by CNR in a way that it could be applicable to all the regions. The phases and services are described in sections 3.2 and 3.3 of the current deliverable.

Development of tools: The consolidated methodology prepared by CNR was shared and agreed with other coaching partners. Accordingly all the coaching partners got involved in development of tools that enable the defined cluster services based on their experience in VI. Hence, a set of tools were developed by each coaching partner for different services in different phases of the methodology. These tools are presented in section 3.3 of tis deliverable.

Final methodology: Once different layers of the methodology (phases, cluster services, tools) were generated, the final methodology was conceived and prepared to be delivered to the rest of partners in order to start the testing and implementing of the GREENOMED methodology in their regions which was planned to take place within activity 3.3. Moreover a training course was organised in December 2017, to provide partners with required training about the methodology and to prepare them for the testing activities. The details of the training course are available in Deliverable 3.1.2.

4. GREENOMED trans-national cooperation methodology

The GREENOMED trans-national cooperation methodology is one of the core outputs of the GREENOMED project. The GREENOMED methodology enables regions involved in GREENOMED in particular Varazdin (Croatia), East and West Slovenia, Region of central Macedonia (Greece) and

Rhone-Alpes (France) to conceive, design and implement pilot plants for green manufacturing, supporting technology uptake in a logic of smart specialisation of involved regions and based on an inter-regional cooperative framework (Vanguard Initiative). The pilot plants will be a part of an EU network of pilot plants.

Figure 2 illustrates the GREENOMED methodology which consists of three main layers. The first layer is the phases of the methodology that show the steps and process that should be taken in order to design and implement pilot plants for green manufacturing. The second layer includes services that will be offered in each phase by clusters or other intermediaries who govern the process. The third layer includes the supporting tools that clusters and intermediaries need to deliver the defined services. A more detailed definition of these three layers is given in following sections.

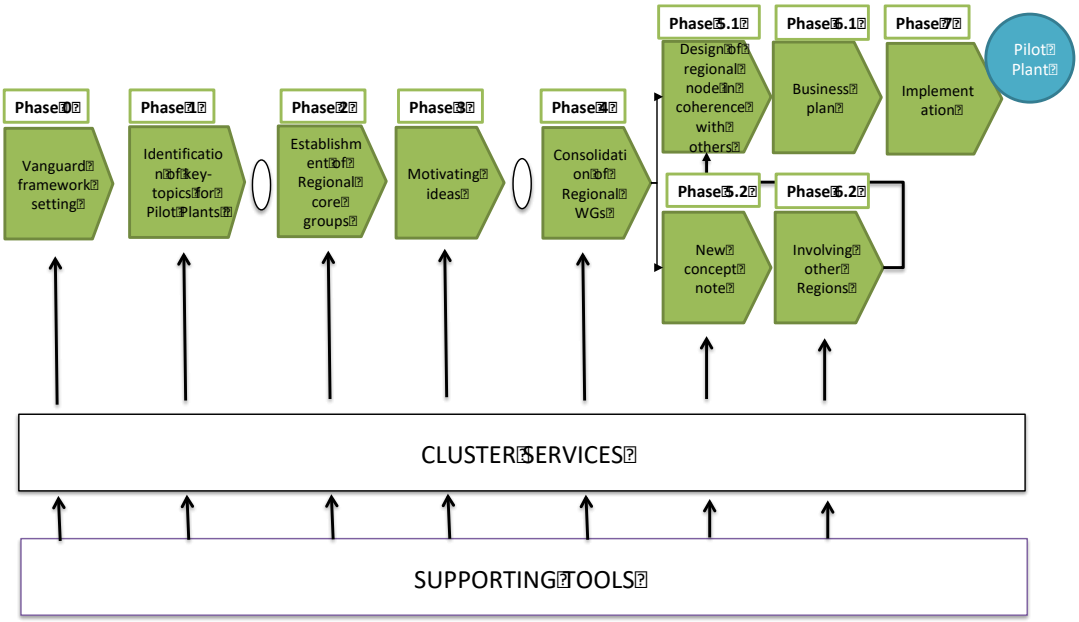

Figure 2. GREENOMED trans-national cooperation methodology

4.1. Targets

The main target users of the GREENOMED methodology are two types of stakeholders:

1) Clusters and other intermediary organisations that coordinate regional innovation eco-system (companies, RTOs, policy makers, …) and act as facilitators and intermediaries to link different types of stakeholders. Clusters will be the direct users of the GREENOMED methodology by implementing the phases of the methodology and using its tools to provide the defined services.

2) Companies and RTOs: They work according to the methodology, receiving services by clusters, in order to generate the contents of pilot plants projects (in demo-cases).

4.2. Phases of testing method

The GREENOMED methodology consists of seven phases (See Figure 2). Through each phase, clusters deliver services using the supporting tools. A description of each phase is given in following:

- **Phase 0- Vanguard framework setting:** GREENOMED is a project which is grounded on the basis of Vanguard Initiative. Indeed, the final goal of GREENOMED to design and implement inter-regional pilot plants for green manufacturing will be achieved within the framework of the EU interregional cooperative Vanguard Initiative. Thus, a clear understanding of Vanguard is a crucial first step that provides the required basis for next steps. Accordingly, during this phase, partners (clusters and intermediaries) will raise awareness about Vanguard by explaining to regional stakeholders the history, goals and state of the art of VI.

- **Phase 1- Identification of key topics for pilot plants:** When the substantial information about VI as the EU framework for inter-regional pilot plants is built in phase 0, partners will go on with identification of key topics for pilot plants. During this phase the main topics for the future pilot plant in each region will be identified and defined at a detailed level. The topics will be defined using either a bottom-up approach (initiating by stakeholders especially companies and RTOs) or a top-down approach (initiating by the existing strategic and political initiatives in the region) and based on the smart specialisation strategy of the region. At the end of this phase partners will ask for a preliminary feedback from Vanguard. Consequently, Vanguard provides each region a feedback on the suitability of proposed ideas in terms of: 1) general alignment with Vanguard vision and goals, and in particular with the ESM pilot 2) synergy and complementarity of the proposed ideas with respect to the current project portfolio.

- **Phase 2- Establishment of regional core groups:** During this phase, the core teams of stakeholders that propose/promote ideas for pilot plants will be created. The core groups should have the skills, resources and commitment to preliminarily describe ideas in order to communicate them to policy makers and other potential stakeholders as well as to show the validity of ideas.

- **Phase 3- Motivating ideas:** In this phase, the regional core group that have been established in previous phase motivates the relevance of the proposed ideas in terms of:
  - ✓ Innovation relevance and potential impact for the regional industry and for Europe;
  - ✓ Regional capability to develop pilot plants;
  - ✓ Synergy/complementarity with other ongoing projects.

  After this phase the regions will go through a second check-gate where they will receive a go/no go feedback from Vanguard. Vanguard will assess detailed ideas motivation and provides a go/no go feedback with respect to:
  - ✓ General Vanguard ESM goals and vision;

- ✓ Synergy/complementarity/overlapping with other on-going projects;
- ✓ Overall strength of the idea;
- ✓ Capability of the Region and alignment with specialization.

- **Phase 4- Consolidation of regional working groups:** While the regional WG receives a go feedback from Vanguard, it will proceed to phase 4 where the core group contacts and integrates additional stakeholders around the pilot ideas in order to create and consolidate a stable regional working group sharing a common strategic interest. The working group has a significant critical mass to represent regional interests in front of authorities and it will establish a structured governance in this phase.

In case the pilot idea can be included in other on-going Vanguard projects, the working group will go on with the following steps:

- **Phase 5.1- Design of regional pilot plant node:** In case the pilot idea can be included in other on-going Vanguard projects, the regional working group will go to phase 5.1 where it designs the concept of regional pilot plant in coherence with the pilot design of other Regions. The design will take place in terms of:
  - ✓ Thematic scope of the pilot node
  - ✓ Technologies
  - ✓ Services offered to companies
  - ✓ Mapping of existing facilities and infrastructures
  - ✓ Novelty compared to the state of the art
  - ✓ Linkages with other Vanguard pilot nodes

- **Phase 6.1- Business plan:** After the design of the pilot plant node, the WG should proceed with development of a business plan for the implementation of the designed pilot node. The generated business plan addressed different topics including:
  - ✓ Implementation work plan;
  - ✓ Future business model of the pilot plant, in coherence with the business model of other regional nodes;
  - ✓ Financial needs at Regional, National and EU level;
  - ✓ Investment plan with the indication of private co-funding
  - ✓ Sustainability analysis;
  - ✓ Risk analysis.

- **Phase 7- Implementation:** Finally having the design and business plan of the pilot plant, the working group works at the implementation of the pilot node assisted by Vanguard and exploiting the support available at Regional, National and EU levels.

After phase 4 of consolidation of regional working group, in case the pilot idea is a new idea to Vanguard and cannot be included in other ongoing projects; the working group will go through the following steps:

- **Phase 5.2- New concept note:** The working group elaborates a formal concept note to be presented to Vanguard in order to motivate the new concept and to aggregate new Regions around the idea

- **Phase 6.2- Involving other regions:** Once the new concept note is defined, the working group proposes the concept note to other Vanguard Regions in order to create a critical mass of Regions participating to the new demo-case. In case the concept is interesting for some non-Vanguard Regions, it would be possible to include them by formalizing their position with the Vanguard association. Accordingly, non-Vanguard Region can be supported in the dialogue with the Board for their admission as formal member or observer.

When the required critical mass is created, the regional WG follows the phases 5.1, 6.1 and 7 to design the regional node, develop the business plan and eventually implement the pilot plant.

4.3. Cluster services and supporting tools

Clusters and intermediary organisations of GREENOMED consortium, as the direct user of the GREENOMED methodology, will implement the methodology and provide services for implementation of methodology in each phase. Figure 3 shows the cluster services of the GREENOMED methodology.

I. Communication and awareness raising on Vanguard/Pilot plants

II. Regional orchestration for identification of strategic topics in the Region

III. Setup and animation of Regional WGs

IV. Coaching of WG to Design Regional pilot plants

V. Service for Internationalisation of WGs

VI. Support for the identification of funding for pilot plant projects

VII. Support for the definition of new demo case and proposal to Vanguard pilot

VIII. Regional Mapping

Figure 3. Cluster services

4.3.1. Service I: Communication and awareness raising on Vanguard/pilot plants

As the coordinator of the regional eco-system, clusters will provide information about Vanguard and the concept of pilot plants to different actors and stakeholders of the regional innovation system. It is specifically important to raise awareness about VI and pilot plants among companies, RTOs and regional authorities considering the focal role of these stakeholders in the regional working groups in future steps. In particular clusters will offer the following sub-services:

- **SI1- Vanguard Communication campaign:** clusters will organise raising awareness and communication campaigns to inform regional stakeholders about Vanguard, its context, how it works, potential benefits for regional stakeholders to become a Vanguard member, etc. The campaign can be managed through different channels to reach different types of stakeholders such as GREENOMED website, social networks, bi-lateral meetings, workshops, etc. They will also use their internal newsletters, website and other communication channels to publish about Vanguard.
- **SI2- Dedicated Vanguard meeting organization:** Clusters can raise awareness about VI by organising meetings to explain Vanguard in detail to regional stakeholders especially to companies and RTOs, present the existing Vanguard ESM demo-cases, and the pilot notes.
- **SI3- Press release:** Clusters will use social media (TV, radio, newspaper, etc.) to publish information about Vanguard and pilot plants.
- **SI4- Invitation to Vanguard meetings and events:** Clusters will invite regional stakeholders in particular companies, RTOs and other intermediaries to attend Vanguard events and meetings where they can get detailed information about activities and operation of different ESM demo-cases, and get to know the acting members, discover the potential benefits of pilot plants for their regions and potential opportunities for regional stakeholders.
- **SI5- Meeting with Regional Authorities:** Clusters will organise meetings with policy makers and regional authorities to diffuse information about Vanguard and explain the potential opportunities pilot plants could bring to regional industrial stakeholders to have access to innovative green manufacturing technology, in order to establish the background to involve regional authorities in next phases of the methodology and thus ensure their support for design and implement of pilot plants in the region. Moreover, there is the need of making regional authorities aware of the formal procedure for becoming Vanguard members.

Supporting tools:

- **TI1- Vanguard presentation:** A detailed and comprehensive presentation about Vanguard Initiative and ESM pilot plants is provided to partners to support them to raise awareness about VI. The presentation gives detailed information about VI, its demo-cases and use-cases, the ESM pilot and the benefits and conditions of participation to VI. Moreover, detailed introduction and presentation of three ESM demo-cases (De and re-

manufacturing, Advanced sustainable surface, and energy-efficient manufacturing) are included in the presentation. The presentation also provides information about the GREENOMED project and how the GREENOMED methodology can support regions to design and implement pilot plants to get integrated to VI.

- **TI2- Vanguard website:** Through the website of Vanguard, clusters find the relative information and materials to communicate Vanguard with regional stakeholders. Vanguard website provides information about the story of VI, partners and regions involved in VI, pilot projects, and documents related to meetings and annual reports.
- **TI3- How a region becomes a Vanguard member:** This tool contains of three documents (one main document and two annexes) that describe Vanguard and the steps and rules to be a member of VI. The documents provide useful and practical information about the steps of becoming a VI member from being an official observer to apply for membership, paying the fee, etc.
- **TI4- Vanguard white paper:** This tool provides detailed information about VI by describing a conceptual framework of the Vanguard Initiative. It defined the rationales, barriers and further opportunities of VI.
- **TI5- Pilot concept note:** This tool is a document that describes the concept note of ESM pilot which is led by Lombardy region and Catalonia. The document describes the relevance and goals of the ESM pilot, the main domains of the pilot and relevant enabling technologies, its potential impacts and the steps towards ESM initiative.

4.3.2. S II: Regional mapping

One of the first steps to design pilot plants is to have a concrete and clear view of the regional innovation eco-system and its actors. Clusters, as the intermediaries, should be involved in creating this view by generating a concrete map of the regional stakeholders and the services that they offer. Such a mapping should be an on-going activity of clusters to always have an updated mapping of the regional eco-system. Such a mapping will be crucial to diffuse the information about Vanguard and pilot plants to the most relevant and important stakeholders in the region, engage them during the testing process and eventually to engage them in the regional core groups. The mapping activity is essential for an effective execution of the methodology. During phase 0 of the methodology, it allows the cluster to pre-identify suitable stakeholders for setting the framework, and keep track of prepare an efficient communication campaign. During phases 1 and 2, it allows the cluster to keep track of stakeholders which expressed interest in one or more of the topics, and therefore support the creation of core interest groups. During phase 3, it allows the cluster and each core group to keep track of the changes in number and commitment of stakeholders supporting each idea. It is also useful in planning a data-gathering campaign (ask reports, execute expert interviews, meeting interpreters, etc.). During phase 4, it allows each WG to keep track of possibly interested, old and new stakeholders, and to manage better their operating activities

The following sub-services can be considered for regional mapping.

- **S II1- Continuous mapping of regional stakeholders:** Clusters should identify the players and stakeholders of the regional innovation system such as companies, RTOs, universities, associations, policy makers, business support organisations, etc. along with services that each of these stakeholders offer. Having this information clusters can create a map of regional stakeholders and their capacities. The mapping should be updated on a regular basis.
- **S II2- Inter-regional benchmarks:**
- **Mapping of Regional champions:** During the mapping process, clusters should identify the most important and pioneer stakeholders in the region to target them for communicating Vanguard, pilot plants and GREENOMED methodology, to invite them in the regional testing events and later on to involve them in regional core groups to design and implement pilot plants for green manufacturing.

Supporting tools:

- **T II1- Common methodology for mapping:** This tool consists of guidelines for supporting Regions in the implementation of mapping activities. In particular the presents the stakeholders mapping tools that has been developed within GREENOMED project, how to perform mapping activity, different phases of mapping activity and the benefits of regional mapping for clusters and other regional stakeholders.
- **T II2- Inter-regional mapping structured data:** This tool supports clusters for a structured and effective gathering of data, uniformed at interregional level. The tools is an excel sheet developed within GREENOMED project during activity 2.2 to create the GREENOMED stakeholders platform in all regions. It provides 7 templates to map seven different types of relevant regional stakeholders for GREENOMED testing activity namely industrial manufacturing companies, policy makers, intermediaries and support organisations, research and technology centers, universities, living labs, and eventually other regional service providers.
- **T II3- Interregional event format:** This tool is a template suggesting a shared format for interregional events

4.3.3. S III: Regional orchestration for the identification of strategic topics within the Region

During phase 1 of the GREENOMED methodology, clusters should support and facilitate identification of key topics in the region for green manufacturing. The key topics can be identified using a bottom-up or top-down approach. In both cases, clusters play a crucial role to come out with the most relevant topics for regional stakeholders in terms of green manufacturing. In the case of a bottom-up approach, clusters should organize the events with regional stakeholders and moderate the discussion in the events where different stakeholders express their needs and interests. In the case of top-down approach clusters should set the background to identify the

already strategic topics in the region which have been already expressed by regional authorities and according to the capacity of the region and needs of the stakeholders.

In particular clusters will offer the following sub-services:

- **S III1- Top-down topics identification:** In the top-down approach, cluster will analyse the regional S3 documents to identify the regional priorities. Thereafter, the cluster will extract the key general topics for green manufacturing in the region. They will also interact with regional authorities to get aligned with their perspectives about the strategic topics at regional level.
- **S III2- Strategic workshop organisation (bottom-up topics identification):** In the bottom-up approach, cluster will do the same analysis of the regional S3 documents to come out with the regional priorities. Afterwards, the cluster will organise events/creative workshops involving regional champions and other relevant stakeholders to provide a platform where they can discuss about their interests and needs. During the event, cluster will moderate the discussions so that at the end the key topics can be identified by stakeholders also by using some tools such a survey to identify topics (see T III5).
- **S III3- Elaboration of document with preliminary topics:** Using the results of workshops, surveys and regional S3 documents; the cluster will generate will generate a document of preliminary topics to do the first check with Vanguard and set the basis for the creation of the working groups.
- **S III4- Interaction with Vanguard to check alignment of topics:** The cluster will share the document of preliminary topics with Vanguard to receive the feedback about the suitability of proposed items and to understand the most-relevant topics to go on with creation of core groups.

Supporting tools:

- **T III1- Common method to identify key topics:** Clusters will use this tool for the identification of the strategic topics in the Region taking into account both top-down and bottom-up methodologies.
- **T III2- Creative workshop format:** This tools supports clusters to moderate the creative workshops in order to identify the key topics through a discussion with different types of stakeholders especially companies, RTOs and universities. The tool supports the process of identification of strategic topics through implementation of value proposition canvas and detecting the needs of the stakeholders and the potential solutions to the expressed needs in the field of green manufacturing.
- **T III3- Presentation of Vanguard demo-cases:** The tool consists of three presentations each related to a Vanguard ESM demo-case namely de and re-manufacturing, advanced surfacing materials and energy efficiency. The presentations provide a clear overview of

each demo-case describing the domain of demo-case, involved partners and regions, enabling technologies, and use-cases. Thus, it makes it easier for regional stakeholders to understand the existing demo-cases and use-cases and the issues that they are addressing as well as the detail level of the topics for each use-case.

- **T III4- Concept notes of ESM Demo Cases:** This tools consists of three documents, each related to a concept note of an ESM demo-case. The concept note document describes the demo-case topic and its envisaged industrial applications in detail. It also describes the pilot regional configuration, involved regions and the technologies each region is dealing with as well as the use-cases and involved regions in each use-case. The concept note also defines the potential market of demo-case, the encompassed novelty and its potential impacts as well as the implementation plan of the demo-case including the funding mechanism, investors and the planned implementation phases. This tool can be also a starting point for the formalisation of new demo-case ideas.
- **T III5- Questionnaire/survey to identify/validate topics:** This tool is a survey that can be used by clusters for either the identification or validation of strategic topics. The tool should be used in a workshop with stakeholders or by collecting feedback via email.
- **T III6- Regional S3 documents:** The regional smart specialization strategy documents are crucial tools that should be used by clusters to identify the strategic relevant topics in terms of green manufacturing. The tool should be used by clusters in both top-down and bottom-up approach to ensure the alignment and coherence of final identified key topics with regional S3. The documents should be collected by clusters in each region and also through the smart specialization platform (http://s3platform.jrc.ec.europa.eu/s3-platform-registered-regions).

4.3.4. S IV: Set-up and animation of regional Working Groups

While the key topics are identified, clusters should go on with creation of a working group consisting of a number of key regional stakeholders that shape the core group. The cluster should act as the moderator and animator of this working group during the following phases of the methodology. The animation of WG is a continuous service that to be provided by clusters in different phases of methodology especially during motivating ideas and consolidation of WGs. The more detailed sub-services are:

- **S IV1- Set up of Working Groups (WGs):** Once the key topics are generated, the regional Cluster gathers together a number of champion stakeholders including innovative companies, universities, and RTOs to set-up the regional WG. Each working group is focalized towards one particular thematic, which has to be relevant for both research and the industry. The theme of the WG should be aligned with the regional S3 and with the Vanguard Initiative topics.
- **S IV2- Animation of WGs:** The cluster, as the intermediary, will act as the animator and moderator of the regional WG and it is responsible for orchestration of the WG. The

cluster identifies the strategic thematic area, and put in place a process to appoint the coordinators for WGs. It also gives operative support to the working group activities and ensures the smooth operation of the WG to move to the next steps of the GREENOMED methodology.

Supporting tools:

- **T IV1- WGs mission and rules document:** This tool is a guideline for the setting up of WG in terms of organisation, operation and management. In particular it enables clusters to create the WGs by explicitly defining the concept of a WG, its structure, organisation, operation and constitution. It also gives explanations of potential processes to setup the WGs.
- **T IV2- Standard agenda format of WG meetings:** This tool is an example of the standard agenda format that is used in WG meetings of De and re-manufacturing Lombardy node. The document gives a taste about how a progress meeting of a working group can be. It also entails the explanation of the various activities done, and reported towards the member of the working groups.
- **T IV3- Stakeholder register of attendants template:** This tools is an excel sheet that can be used by clusters to manage the participation of stakeholders in the WG meetings and provides a database to monitor the engagement of WG members.
- **T IV4- Resources to animate WGs:** This tool consists of guidelines outlining the recourses needed for the animation of a WG (i.e. persons, support documents, preliminary work needed to prepare a meeting…).
- **T IV5- Examples and best practices from existing WGs:** This tool consists of the presentation of a couple of WGs in Vanguard in particular those that can be considered as best practice. The presentations describe the mission of the WG, its structure and its operation process. It also defines the main topics that the WG is dealing with, its targets users and its potential offerings to the target users. Currently the tool consists of two examples, the industrial WG “Factory” in Saxony and the WG “De and re-manufacturing” in Lombardy.

4.3.5. S V: Coaching of WG to design Regional pilot plants

Once the regional WGs are established, the identified topics are motivated and eventually a consolidated working group has been formed, the cluster should continue it animation activities to support and coach the WG to design the pilot plants. In particular clusters are expected to offer the following sub-services:

- **S V1- Design of topic node supported by regional mapping:** The cluster will support regional WG to transform the identified topic to the form of a pilot plant node. This could be a design of a regional node of an already existing pilot plant in Vanguard or it could be design of a regional node for a new pilot plant with a new topic that already doesn’t exist in Vanguard.

- **S V2- Design of interactions with other regional pilots:** The cluster should establish and facilitate the interaction of WG with other regional pilot plants in order to generate the required base to integrate the new regional node to Vanguard. If the new regional node is supposed designed within a topics of an existing pilot plant, the cluster should create effective interactions with other regional nodes of the pilot plant in order to facilitate the integration of new regional node. If the new regional node is supposed to be a part of a new pilot plant, the cluster should actively establish very effective interactions with other regions with potential capacities that could be eventually for other nodes of the new pilot plant.

- **S V3- Business Planning:** While the pilot plant is designed, the WG should proceed with development of a business plan for the implementation of the designed pilot node. During this phase, the cluster should effectively support the WG to generate a proper business plan that could ensure acquirement of funding for implementation of pilot plant. The cluster should support WG to define future business model of the pilot plant, ensure its incoherence with the business model of other regional nodes, define financial needs at Regional, National and EU level, and present a sustainability and risk analysis.

- **S V4- Implementation plan:** The cluster should also support the WG to define clear phases of implementation of the designed pilot plant, required resources to do that from financial, human and infrastructure point of view, and expected targets.

Supporting tools:

- **T V1- Pilot design format:** This tool consists of guidelines and existing examples for elaborating the design of regional nodes of pilot network.
- **T V2- Maps of companies and actors in the Region:** This tool is the updated version of T II2. It provides an extensive overview of the existing regional stakeholders that could be potentially involved in WG and eventually to design and implement of the regional pilot plant.
- **T V3- Statistical/market data: This tool provides an** example of impact and market analyses carried out by advanced demo-cases that are partner of GREENOMED. The new regions can use the tool to collect market data and perform similar market analysis that could support the business model development of the regional node.
- **T V4- Collection of all EU demo cases:** This tool entails several documents collecting the state of the art of most advanced Vanguard demo-case projects which already entered the business planning and designing phases. These documents can be used as a reference and best-practice for the new regions implementing GREENOMED methodology.
- **T V5- Pilot business plan format:** This tool is a document that entails format of the business plan of the advanced vanguard demo-cases which are partners in GREENOMED.

The tools helps new regions to understand the essential parts of a business plant for a pilot and required perspectives to be mentioned to generate an effective business plan.

- **T V6- Formats for letter of intents:** This tool consists of several templates suggesting a shared format for letter of intents to be signed by different group of stakeholders (i.e. companies, policy makers, research centres…).

4.3.6. S VI: Service for internationalisation of WG

Improving, promoting and internationalisation of the regional WG is a continues activity of the cluster. This is especially important during the design phase of the pilot plant. In particular clusters are expected to deliver the following sub-services:

S VI1- Benchmark with other WGs: The cluster should collect information and documents from other regional WGs especially the most advanced ones, to analyse their operating process and make a benchmark in order to improve the new regional WG.

S VI2- Contacts and meetings with other WGs: In order to promote the regional WG and establish links with other regions, the cluster should organise meetings and events to establish interaction between the regional WG and other WGs in other regions. This can take place in the form of site visits, matchmaking events, etc.

S VI3- Organisation and animation of interregional cooperation and matchmaking events: cluster should support the organisation of interregional events and matchmaking leveraging on their network established within cooperation projects. Indeed, this activities can promote the matching among complementary and/or synergic stakeholders resulting in a value added for the pilot projects

Supporting tools:

- **T VI1- Collection of documents and presentations of WGs in other Regions:** This tool consists several documents and presentation related to other WGs in other regions that define their format, operating process, topics they are dealing with, meeting and events, etc. The tool helps the cluster to analyse the status of other regions WGs and carry out a benchmark.
- **T VI2- Format for site visits and matchmaking events:** This tool consists of documents that show the format of site visits and matchmaking events that are done within the other advanced WGs involved in GREENOMED. It supports new regions to go on with organising the similar activities.
- **T VI3- Contacts and references of organisations and initiatives supporting inter-regional cooperation:** This tool provides a list of existing organisation, initiatives and programmes that can potentially support internationalisation of WG and establishment of inter-regional cooperation such as EEN, ERRIN, etc. The cluster will use these references to establish

connection with these initiatives and organisations to receive their support for internationalisation.

4.3.7. S VII: Support for the identification of funding for pilot plant projects

As the intermediaries of the regional innovation system, the cluster has a critical role to promote and advertise the design of pilot plant to other regional stakeholders in order to acquire funding for implementation of pilot plant. Moreover, cluster should provide the regional WG with an overview of the existing funding mechanisms that they can base the business plan on them and potentially use them for implementation phase. In particular the cluster is supposed to deliver the following sub-services:

- **S VII1- Diffusion of available funding opportunities at EU, national and Regional level:** One of the main activities of clusters is to provide an extensive mapping of existing funding opportunities for regional stakeholders. Regarding the regional WG, clusters should map and analyse the existing funding opportunities that can be exploited by the WG to design and implement of pilot plants. These funding opportunities could be at regional, national or EU level. Based on the identified funding opportunities, the most suitable ones will be chosen and further analysis will be done to understand the mechanism to acquire the opportunity and include it in business plan.
- **S VII2- Support in the identification of funding mix:** As the intermediary of the regional eco-system, clusters have an extensive overview of different types of available funding mechanisms including public and private funding. Thus they can guide the WG to shape the most suitable funding mix taking into account the existing opportunities.
- **S VII3- Presentation of pilot ideas to funders and stakeholders:** Clusters should promote and advertise the designed pilot ideas to potential funders and stakeholders to acquire required funding as well as engaging critical stakeholders to get their support fro design and implementation of pilot plants.
- **S VII4- Lobbying with Authorities:** Clusters should establish an effective link with regional and national authorities to promote the pilot plant idea and acquire their commitment and support for implementation of the pilot plant and regional node.

Supporting tools:

- **T VII1- Presentation of the concept of mixed funding model:** This tool contains guidelines for demo-case coordinators for the identification of the optimal funding mix to support the implementation of Vanguard pilot plants. This information has been discussed and shared at Vanguard level and it represents the common strategy to be adopted by all the ongoing pilot
- **T VII2- Presentation of various EU programs:** This tool contains of a document that provides the list of all existing initiatives. Organisations, and programmes at EU level that

can be potentially used by clusters and regional WG to get support (financially or operatively) to go on with implementation of the regional node and pilot plant.

- **T VII3- Presentation toolkit for lobbying:**

4.3.8. S VIII: Support for the definition of a new demo-case and proposal to Vanguard pilot

In case that the identified topic for the demo case is a new topic which already does not exist in Vanguard, the regional WG should present the ides of a new demo-case to Vanguard and upon receiving the approval from VI, it can go on with design and implement of a new pilot plant. In such a scenario, clusters should support the WG intensively to define of the new demo-case concept as to promote and present the new pilot plant idea to Vanguard in order to acquire its approval to go on. In particular the cluster should provide the following services:

- **S VIII1- Coaching in the elaboration of the new demo case concept:** The cluster should support and coach the regional WG in defining and elaborating the new demo-case concept making sure it provides the expected value proposition to be presented to Vanguard. Moreover, it should identify the state-of-the-art of other existing capacities in other regions that could potentially engage and shape the other regional nodes of the demo-case.
- **S VIII-2 Interaction with Vanguard for its proposal and follow-up:** While a concrete concept note of the new demo-case is prepared, the cluster should propose it to Vanguard and promote its potentiality to be included as new Vanguard pilot plant.

Supporting tools:

- **T VIII1- New demo-case proposal format:** This tool entails the format to define the concept note of a new demo-case. It contains critical parts that should be included in the new demo-case concept note such as clear definition, relevance and industrial application of the topic. The potential configuration of the pilot plant and potential partners and regional nodes that can be engaged, the potential impacts that the new demo-case can bring to stakeholders, and potential funding mechanisms.
- **T VIII2- Collection of existing demo-case concepts as a benchmark**: This tool is an extended version of T III3 and T III4 and provides a complete repository of documents and concept notes of existing demo-cases in VI.
- **T VIII3- Manufacturing observatory in the Region:**

5. Testing work plan

During the collaborative design of GREENOMED methodology, a work plan was generated collaboratively by each region to identify the timing for implementation of the methodology and to specify the important milestones during testing phase. Figures 4 to 8 illustrate the testing work

plan for each region in which testing activities should take place. It should be mentioned that due to some delay in implementation of testing activities due to difficulties such as complicated context of GREENOMED for partners to enter the context, difficulties and time-consuming processes to establish an effective communication with regional stakeholders and to convince them to get engaged, the following work plans will face some delay. In particular due to the fact that the first phase of the methodology started on time but it took more time than expected to establish Vanguard framework setting and to raise awareness about Vanguard and pilot plants in new regions. This consequently resulted in further delay in the next phases of the methodology and thus and overall delay in testing implementation activities. However, the actual work plan through which the methodology was implemented will be presented in D 3.3.1 of testing reporting.

TASKS	July 2017	August 2017		September 2017		October 2017		November 2017		December 2017		Janauary 2018		February 2018		March 2018		April 2018	
Days Division	19-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30
Phase 0: Vanguard Framework Setting																			
Consolidate stakeholders mapping																			
Collect and analyse Smart Specialization Documents in the region linked with Vanguard																			
Meeting with regional authoities to disseminate and get their committment																			
Disseminating Vanguard to other stakeholders (magazines, press release, events, etc)																			
Video and interviews with Vanguard partners																			
Detailed press release, newsletters																			
Participation to international Vanguard matchmaking (Saxony)																			
Phase 1: Key-Topics																			
Identification of initial proposed key topics and launch the call						*Key Topics Proposal*													
Organize a structured event to launch the process + dissemination + discussion about key topics						*EVENT*													
Phase 2: Core Group																			
Cluster ideas and create the cocre group																			
Organize restricted meeting with identified groups, where the targets are assigned																			
Phase 3: Support Key-Topics																			
Motivate the topic and develop two-pages document explaining the topic to be submitted to Vanguard (each group)								*Topic Documents submitted to Vanguard*											
Phase 4: Working Group																			
Disseminate and diffuses the concept																			
Events to consolidate working groups																			
Organise WG meetings																			
Phase 5: Regional Node																			
Elaboration of first version of concept design																			
Phase 6: Business Plan																			
First version of business plan																			

Figure 4. Testing workplan of Marche Region

TASKS	July 2017	August 2017		September 2017		October 2017		November 2017		December 2017		Janauary 2018		February 2017		March 2018		April 2018	
Days Division	19-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15		1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30
Phase 0: Vanguard Framework Setting																			
Consolidate stakeholders maping																			
Analyse Smart Specialization Document																			
Disseminate at the national level events																			
One-to-one meetings with relevant actors																			
Phase 1: Key-Topics																			
Construction of initial proposed key topics																			
Develope a document with key topics						*Key Topics Proposal*													
Phase 2: Core Group																			
Identify the composition of the core group																			
Organize restricted meeting with identified groups and set the targets																			
Phase 3: Support Key-Topics																			
Develop two-pages document explaining the topic										*Topic Documents*									
Phase 4: Working Group																			
Disseminate the documents to regional actors																			
Events to consolidate working groups in parallel with the conference																*EVENT*			
Phase 5: Regional Node																			
Elaboration of first version of concept design																			*First Concep*
Phase 6: Business Plan																			
First version of business plan																			

Figure 5. Testing workplan of Croatia

TASKS	July 2017	August 2017		September 2017		October 2017		November 2017		December 2017		Janauary 2018		Feb-18		Mar-18		April 2018	
Day Division	19-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30
Phase 0: Vanguard Framework Setting																			
Explain Vanguard to the existing groups + closed event		*need for material*		*event*															
Webinars done by Vanguard actors (all 3 themes - Recycling, Sustainable materials, Digital and Virtual)																			
Example with ongoing initiatives to companies and technology providers		*need for examples*																	
Involve officially the Regional Government in Vanguard																			
Map members of existing groups and other possibly intersted stakeholder/ champions																			
Phase 1: Key-Topics																			
Connect Surface treatment/coating and Smart Plastics/Electronics with the Vanguard one + Organize sessions within H2020 Meeting				*preparation*		*MEETING*													
Develop a document with key topics																			
Phase 2: Core Group																			
Formalize core group with one physical meeting, and set the target					*preparation*		*MEETING*												
Phase 3: Support Key-Topics																			
Develop two-pages document explaining the topic (each group)																			
Phase 4: Working Group																			
Disseminate two-pages documents to regional actors																			
Consolidate working group + matchmaking organized by Watify to enlarge the group						*preparation*			*Watify MEETING*										
Phase 5: Regional Node																			
Ask the Region for an Official label for the WG																			
Design of regional node, within the pilot network																			
Phase 6: Business Plan																			
Draft business plan																			

Figure 6. Testing Workplan of Rhone-Alpes

TASKS	July 2017	August 2017		September 2017		October 2017		November 2017		December 2017		Janauary 2018		Feb-18		Mar-18		April 2018	
Day Division	19-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30	1-15	16-30
Phase 0: Vanguard Framework Setting																			
Consolidate stakeholders map (Meet with the federation to explain the process and identify actors, ..)																			
Analyse Smart Specialization Document																			
Disseminate in already scheduled events																			
One-to-one meetings with relevant actors (including Associate Partner)																			
Preliminary press releases																			
Detailed press release, newsletters																			
Phase 1: Key-Topics																			
Construction of initial proposed key topics						*Key Topics Proposal*													
Organize a structured event to launch the process + dissemination + discussion about key topics						*EVENT*	*More detailed Key Topics proposal*												
Phase 2: Core Group																			
Identify/Fix the composition of the groups																			
Organize restricted meeting with identified groups, where the targets are assigned																			
Phase 3: Support Key-Topics																			
Develop two-pages document explaining the topic (each group)										*Topic Documents*									
Phase 4: Working Group																			
Disseminate the documents																			
Events to consolidate working groups in parallel with the conference																*EVENT*			
Phase 5: Regional Node																			
Elaboration of first version of concept design																			*Fi*
Phase 6: Business Plan																			

Figure 7. Testing workplan of Central Region of Macedonia

Tasks	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18
Collect smart specialization documents/programs in the Region linked to Vanguard									
Identify eventual topics that are already researched in the Region and identify key-stakeholders									
Prepare press publication and description of launching event									
Event in the Region to explain pilot plants				*Presentation event*					
Regional matchmaking to collect innovation ideas in the areas of Vanguard Pilot				*Regional matchmaking event*					
Participation to international Vanguard matchmaking (Saxony)									
Cluster ideas and create a core group					*Core group created*				
Elaborate concept definition and submit it to Vanguard						*Concept submitted to Vanguard*			
Diffuse the concept and consolidate a regional working group (with governance)							*Initial and final working group composition*		
Assign targets and transfer tools to the working group									
Intermediate working group meetings for progress discussion and coaching									
Release for the revised/imported concept or business plan							*Revised concept submitted to Vanguard*		

Figure 8. Testing workplan of Slovenia

Annex 1. Template for regional testing methodology development with partners

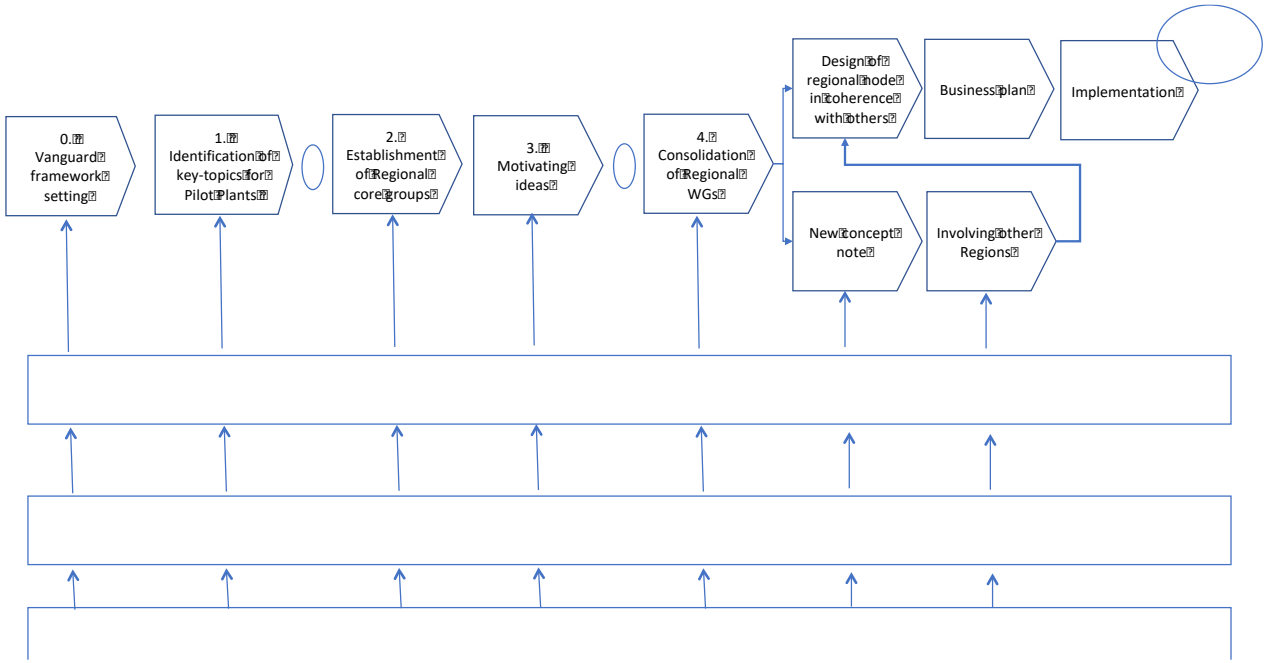

Figure 9. Template for regional testing methodology workshop

Annex 2. Mapping of workshop results for regional testing methodology development

Methodology phase	Needs/Barriers	Cluster services	Tools

Phase 0.1. Vanguard framework setting	- Lack of understanding of Vanguard initiative and of pilot plants
	- Find the right way to communicate Vanguard
	- Involvement of Marche Region and cooperate with them
		- Involve companies and commit them
		  - Workshop
		  - Meeting
		- Building Awareness of Vanguard that is a cooperation and not a competition
		  - Conferences
		  - Workshop
		  - Events
		- Deliver the ideas of pilot plant
			- Vanguard Transfer Toolkit
			  - Video and interview with people
			  - PowerPoint
			- One day trip to Milan to see pilot plants
			- Newsletter

Phase 1.1. Identification of key topics for pilot plants	- Define all possible interesting topics
	- Create a finite set of "Interesting Topics" and a finite set of keywords
	- Share knowledge with other stakeholders - reluctant to share info
		- Supervision on topic gathering:
		  - Workshop
		  - Matchmaking
		- Online survey for mapping competences and needs of companies
			- Moderator ad hoc for workshop
			- Collaboration with local associations
			  - Enterprise Europe Network
			- Strategic roadmapping
			- Business Model
			  - Canvas to collect ideas and focus
			  - Thinking diagram
			  - Clustering methodology

Phase 2.2. Establishment of regional core groups	- Find the right coordinator of the WG
	- Time for the definition of use cases
	- Management of WG
	  - Political work to divide stakeholders in groups that are not conflicting
		- Coordination Meeting
		  - Weekly/15days check on the activities done
		- Proper communication to the different stakeholders
		- Promotion of the joint communication
			- Event Guidelines/ best practices for matchmaking
			- Communication strategies
			  - Workshop
			  - Newsletter ad hoc
			  - Online platform

Phase 3.1. Motivating ideas	- Support ideas - Promote and justify the relevance of the idea
	- Synergies with ongoing projects
	- Promote new ones if they are really well structured
		- Support the stakeholders in evaluating possible impacts (market, social & environmental sustainability)
		  - Gather the needed data
		  - Mapping of Pilot Plant Projects
		  - Create a scorecard to evaluate idea (nr stakeholder involved)
		  - Alignment with Marche region
		- Identification of the existing capacities: living labs
			- Guidelines about KPIs to be used to take the decision-assessment framework
			  - Tool for mapping feasible Pilot ideas
			  - Endorsement of ideas by companies

Phase 4.1. Consolidation of WGs	- Attract new stakeholders
	- Re-allocate stakeholders cut out
	- Governance of WG
		- Offering matchmaking through an online platform already used by the Cluster.
		  - The platform has at one side companies and to the opposite side research: online interaction.
		- Promoting living labs
		  - Promotion of benefits
		- Governance
		  - Supporting through materials
		  - Statute
			- Handbook to support the animation of a WG
			- Living labs
			  - Presentation of what are
			  - Visits of living labs
			- Participate to other WG (inside Vanguard) to see the best practices

Phase 5.1.1. Design of regional nodes in coherence with others	- Know very well what the other regions are developing, and what are their ideas – to find suitable matchings
	- Decide the model of Pilot Plant in the region
		- Cluster is a consultant in the definition of services
		  - Inform WG
		  - Match WG
		  - Intermediator
		  - Push the WG/ be the supervisor
		- Rise awareness about services that Project Plan can offer
			- Regional node template
			- Supporting materials from other nodes to define PP

Phase 5.1.3. Business plan	- How to create a business plan? - What is included? - What are the financial aspects? Where does money come from? - Take care of risks	- Be consultant of the Regional WG in order to develop the business plan - Understand which types of funding to leverage: identification of european/national/regional funding programmes) - Offer meeting with Vanguard partners to teach them: coaching	- List of potential service offerings by other nodes - Business model template - Investment plan template - Funding instruments - Risk analysis template - Risk management template
Phase 5.2.1. New concept note	- Market analysis - Deep knowledge of existing technologies and competitors - Difficulties in the exploitation of something new - Involvement of other regional stakeholders	- Raise awareness about services that a new Project Plan can offer - Intermediator - Push the WG/ be the supervisor - Cluster is a consultant in the definition of services	- Supporting materials from other nodes to define PP - New template to define the concept
Phase 6.2.1. Involving other regions	- Find the right contact person - Raise awareness over the new project - Find common interest	- Intermediator with other regions - Problem solving - Promotion of the new concept everywhere	- Contact database - Communication toolkit

Figure 10. Results of regional testing methodology- Marche Region

Methodology phase	Needs/Barriers	Cluster services	Tools
Phase 0. Vanguard framework setting	Policy level: S3 at national level so this is the first level to involve. The ministry in charge of the S3 strategy (Innovation Strategy, Industrial Strategy, Croatian Research and Innovation Strategy, Croatian Research and Innovation Infrastructures Roadmap Strategy for Cluster development 2011-2020), and although one region is strongly developed from industrial point of view, it needs endorsement by the national level; Company level: The main issue is to raise awareness of importance of implementing cross-cutting themes of RIS3 (KET's, ICT, Tourism; Creative and Culture industries) Bottom-up approach (self-selection) Companies' needs Top-down approach (pre-selection): Prioritizing, Assistance to chosen sectors A mixture of pre-selection and self-selection may provide the best approach. One of the strategy could be to create interest in a group of company in a bottom-up process to start the process, than arrive to the top national level with just a clear idea; Companies are inert and show no interest to involved Technology level: Business Networking within Vanguard initiative Community involvement collaboration on key issues Consensus of triple-helix stakeholders on cooperation towards common goals	Show to the Croatian company the state of art of priority, topics and enabling technologies just shared inside the Vanguard workgroup and other important Vanguard partner; Involve network of companies, not single company, to reinforce the idea that the value-chain represents the added value; Involve others stakeholders (National/regional/local authorities, national and regional policy makers, university representatives, wider public..)	Information collected, made list of the stakeholders Different VI promotional events, like conference/teleconference or forum with S3 topics, match-making events for business sector and other stakeholders on national and regional Letter of interest for national S3 responsible institutions (national/regional)
Phase 1. Identification of key topics for pilot plants	Reinforcement of the added value within the value-chain and network of suppliers; Involve important foreign companies - Local branch of multinational as an entry body for all the value-chain of local supplier; Internal differentiation from their mother companies Identification of national/regional S3 strategic topics supported by industry and innovation challenges as well as heeded infrastructure Business sector is sceptical and don't want to invest time	Involve big regional end users Involve important foreign companies Involve national/regional policy makers and other stakeholders Involve best practices from Vanguard Initiative	Analyse and map the regional economy according to activity, identify existing clusters and gather information on potential interests, prioritise according to criteria set (existing and planned infrastructure, specialised education facilities, current business result, export, possible growth, employment, number of companies...) Formulate S3 topics and intervention for further development in line with Vanguard Initiative vision and goals in frame of workshops Sharing best practices - Presentation of the best practice from Vanguard Initiative
Phase 2. Establishment of regional core groups	Initial step in the establishment of core group is motivation of critical mass to join the group - representatives of companies, policy makers (National and regional level), academia sector and business support organizations (4-8 people) Generating early benefits for core group members, promotion of sectorial competitiveness (new value, new products, new markets, new technology) Identification of group leaders and tarriers, Establishment of the long term group committed members	Networking/Matchmaking with the existing Vanguard Region/ Pilot Plants Establishment of the One-stop-shop for technological solution Management of the Vanguard Initiative accession	Initiating the process of formal accession of Croatia to Vanguard Initiative Various meeting, seminars Introducing experts
Phase 3. Motivating ideas	to achieve a common understanding on the key issues and potential impact on the national/regional industry to respect capability of the national/regional economy in line with its specialization to create an environment that encourage members with passion to step forward in the next stage in order to fully implement development of Pilot Plant in synergy with other on-going processes Highlight the short-term actions that will start moving the group toward the preferred future, heed to move from long term agenda to identifying short term actions. The objective is to start developing an action agenda : Outlining innovation relevance, the activities, expected results, resources, skills/knowledge heeded	Closely coordinate regularly meetings of the core group Open access to technology providers, to new markets and market niche Services for access to sources of financing Connections with on-going projects	Consultative meetings of the core group Peer review workshops in order to facilitate process of Pilot Plant establishment External experts Report work programme progress of the core group
Phase 4. Consolidation of WGs	Regional Working group have to act proactive - To be effective in the long term the organization needs long-term organization (established coordination, committed members, long term vision and list of short term actions reflecting the wide range of member's interest) Upgrade the strategies agenda Identifying capability gap of the region Identifying risk and list of factors which are critical for the success Increase awareness and developing linkages outside the WG Extend the number of people directly involved in WG Developing identity, regional branding programme Joint initiative with other groups Typical risk is insufficient interest, especially by business sector, due to lack of joint project experience	Working group meetings - Harmonize operational improvements and implementation activities of working group Sectorial workshop presenting the best practices from Vanguard Network Deepen the dialog among regional/natioanal had EU initiative and networks considering it's complementary role within technology solutions	Regular meetings and setting methodology for WG (User –friendly rules and materials) Presentations at high profile events Targeted promotional campaign using various media channels - Marketing and branding tools: Social media, Storytelling & Ambasadors (ASP), PR and media relations Provide recommendations to develop Pilot Plant
Phase 5.1. Design of regional nodes in coherence with others	Define thematic scope and linkages to other Pilot Plants Promote close cooperation among Vanguard initiative regions to optimize the use of available expertise and resources Set an action plan with a realistic timeframe and the description of the milestones Ensure clear allocation of responsibilities Involve as many stakeholders as possible in process of designing a regional node Deliver first results quickly	Designing process management: regularly meeting of the WG,	Brainstorming Drafts of the tasks and action plans
Phase 5.1. Business plan	Implementation Plan: action plan, (technologies, services, novelties...) milestones Marketing Plan: target companies, promotional tactics and marketing channels, positioning Management Team: the team and key persons Financial Plan: external funding, area of investments, assets, projected financial results etc...	Be consultant of the Regional WG in order to develop the business plan Understand which types of funding to leverage: (identification of european/national/regional funding programmes) Offer meeting with Vanguard partners to teach them: coaching	Business plan required materials Procurement

Figure 11. Results of regional testing methodology- Croatia

Methodology phase	Needs/Barriers	Cluster services	Tools
Phase 0. Vanguard framework setting	Companies do not know what Vanguards, RTOs know The concept is new to companies, they do not understand why they should go for it (cultural) Convince that it is not a bottom-up process but industries should find their interest cultural reluctance if no funding is not there unawareness of companies: if they see there is a benefit they do not close the door Educate and involve governments since the beginning	Launch an article to attract about Vanguard on press/newspaper that is consulted by industry TV programs/radio/social media to reinforce and complement the Event/workshop/roundtable organization: Vanguard presentation with the clear indication of short and long term benefits, good and concrete cases. Presentation of concrete cases Lobbying with Authorities	Vanguard newsletter Vanguard article (1 pag. or more) Presentation of Vanguard with main messages Workshop guidelines Mapping service (Slovenia had a project on mapping but it can be done in alignment with other Regions) Presentation toolkit with authorities (presentation and note with political style)
Phase 1. Identification of key topics for pilot plants	Srips already address the identification of key-topics (the bottom-up activity was already done). They are legal entities. If they come form clusters they are more industry-oriented, with Reseaarch institutions they are more research. There might be some leading organizations being partial and pushing forward individual interests	Service for assisting stakeholders in the identification for pilot plants ideas. Clusters could organize an event where these ideas are put on the table and companies should (the problem is the power of research sides): regional matchmaking	Guidelines/presentations to organize/animate workshop/matchmaking event
Phase 2. Establishment of regional core groups	Need to have all stakeholders represented in the core group Identify and convince the right people/pioneers. Srips can be a starting point	Composition of a core group identifying and convincing the champions	Srips mapping Database of the managing authority managing calls with the indication of participants Mapping of regional champions Document to invite members in the core groups and to show what they should do (explanation of the process they will have to animate, also coming from other Regions) Presentation to core group members
Phase 3. Motivating ideas	Start from Srips and detail for clear industrial applications/use cases and mapping analysis Need to represent clear benefits to companies	Methodological support/guidelines Information support for evaluation/impact	Mapping tools Formats for the core group Evaluation methods
Phase 4. Consolidation of WGs	Goals alignment Exploit Srip meeting	Organise dissemination and matchmaking events Coordination and animation of working groups	Joint promo event - PTP, TECOS, TPLJ to gather a critical group of companies Questionnaire Individual working interviews - TPLJ W.S., PTP E.S. MOA - core members PTP, TPLJ, TECOS
Phase 5.1. Design of regional nodes incoherence with others	REGIONAL - SLO: various interest groups, Powerful players and initiatives, Uninterested parties, policy coherence within SI, SI vs. OTHERS: policy coherence with EU policies, Lack of motivation - clear value proposition Understanding the benefits, common understanding of Vanguard	Design method Facilitation of relationship with pilot nodes in other Regions Regional: facilitation of relationship within SI Using/upgrading of existing cluster services - e.g. SRIP	Guidelines and format Leading companies engagement/identification Workshops guidelines Node to node communication in Si and abroad Demo case/study trip - Saxony
Phase 5.1. Business plan	IPR Lack of trust Critical mass/ lack of awareness Sustainability concerns Lack of funds for investment companies/cluster	Identifying problems Partner/ solution feed Facilitation of the process - meetings, visits, research Active participation in research Project management Identificaiton of best cases Implementation/adaptation in company Help with production Help with marketing	CANVAS method Value proposition Identification of cons. partner roles
Phase 5.2. New concept note	REGIONAL - SLO: various interest groups, Powerful players and initiatives, Uninterested parties, policy coherence within SI, SI vs. OTHERS: policy coherence with EU policies, Lack of motivation - clear value proposition Understanding the benefits, common understanding of Vanguard Slovenia as a Balkan ecosystem center	Design method Facilitation of relationship with pilot nodes in other Regions Regional: facilitation of relationship within SI Using/upgrading of existing cluster services - e.g. SRIP	Guidelines and format Leading companies engagement/identification Workshops guidelines Node to node communication in Si and abroad Demo case/study trip - Saxony
Phase 5.2. Involving other regions	VANGUARD understanding and awareness-expansion to the Balkans Financial sources Lack of common topics Differentiation of topics knowledge sharing in sup. envir.	Complementarity vs. competition Networking with other regions Joint projects Finding new contacts/regions,	Joint EU programms Events Joint platforms, Conferences Cross fertilization approaches B2B meetings

Figure 12. Results of regional testing methodology- Slovenia

Methodology phase	Needs/Barriers	Cluster Services	Tools
Phase 0. Vanguard framework Setting	Audience may be difficult to find/involve Awareness and subsequent commitment of regional authority is needed to increase the resonance	Organization of a awareness event Intermediation between Regional authority and other stakeholders (cluster represents stakeholders) Communication to regional authority (direct contact-ID right contact) Communication to companies, intermediaries and support organizations, … the "Real Actors" (press, direct visits, Organize field visits to other Vanguard Regions	Event guidelines/indicative agenda (Conference, Meeting) "Awareness" material (for "Real Actors") – including best practices from Vanguard Standard communication kit to Regional Authorities (to translate)
Phase 1. Identification of key topics for pilot plants	Top-down: Very generic areas written in S3 documents, too broad to use Bottom-up: companies are reluctant to express strategic priorities Possible competition between topics – clash of interests	Development of a Regional Strategic Roadmap Mapping regional stakeholders Organizing interviews with intermediaries/representatives (e.g. federation of industries of north Greece) (intermediaries can themselves contact companies, to reach more actors – with deadline) Run a survey to ID key topics (F) Appoint "Champions" for each proposed topic	Set of possible topics – to create a survey and/or questionnaire Toolkit for mapping (desk research, interviews, surveys, database, …)
Phase 2. Establishment of regional core groups	Great communication effort to make stakeholders understand that it is a priority Find key and committed contact persons Language barrier (also to coordinate with Vanguard EU group) Misalignment of goals between (similar) regional actors "Champions" may be reluctant to share their ideas with others (potential competitor) – conflict of interest	Organize restricted events to involve potential "Champions" (why should they share ideas?) Continuously map "Champions" (including conflict/not convergence of interests risk analysis) Matching regional stakeholders with key-topics	Letter of intent/ memorandum of understanding and confidentiality to participate to the core group (F) Surveys, observatory, indicators, company mapping tools – Champions Documents to support presentations of restricted events (to convince)
Phase 3. Motivating ideas	Access figures and data to preliminarily motivate the idea Reluctancy to share data from the core group members Difficulty in coordinating the work among core group members (who did not know each other before)	Keeping the Secretariat of the core group – coordinates the work Consultancy in writing the preliminary document Provide: market/sector research (data, information, studies, related to the key topics) - Regional and EU focus Data and information about infrastructure/technology state of the art – Benchmarking	Agreement of confidentiality to share the data Format and structure of the preliminary document (template) Secretariat guidelines (calendar of meetings, targets to be assigned, follow up meetings, …
Phase 4. Consolidation of WGs	Commitment and cohesion of the Working Group may be an issue Possible misalignment (of objectives) between different members Endorsement of the Regional Authority is needed	Dissemination and diffusion of the Pilot Plant Project in the Region (contact new stakeholders e.g. leveraging on suggestions from Champions, …) Oversee a consultation process on the preliminary idea for the Pilot Plant Project Organize an event to consolidate the group (after the survey) Keeping the Secretariat of the Working group (e.g. assigning sub-tasks, targets, …) Commit regional authority	Guidelines for consultation Guidelines for meetings Map of possible interested stakeholders (same of phase 1 onward) Guidelines for Governance of the working groups – which may be formalized
Phase 5.1. Design of regional nodes in coherence with others	Need a benchmark/reference of similar detailed design Design should be coordinated with other regions	Organize Benchmark meetings with Regions that are more advanced in Vanguard Do Project Management: Manage progress meetings (they may talk also about other things – networking, knowledge of other regional actors, project proposals, …) Suggest consultants to define Services that Pilot Plant will offer Organize meetings and communication between Regional WG and other Regions' WGs	Design format and template Design process guidelines Project Management Guidelines Communication toolkit for meetings
Phase 5.1. Business plan		Do Project Management Consultancy to build the Business Plan of the Pilot Plant (gather and elaborate information e.g. market; business model of PP, …) Mapping/ consulting on possible private and public funding opportunities Provide benchmark with other Business Plans	Business plan guidelines (including establishment AND operation phases) and tools (e.g. canvas)
Phase 5.2. New concept note		Do Project Management Consultancy to build the Concept Note (gather and elaborate information e.g. market; …) Provide benchmark with other Concept Notes	Concept Note Format
Phase 5.2. Involving other regions		Map & Match other regions that may be interested in the concept (according to S3, …) Organize an event with policy makers of other regions Circulate the new concept note among the Vanguard network	Presentation toolkit for policy makers (presentation, documents, …) S3 Platform (online, already there)

Figure 13. Results of regional testing methodology- Rhone Alpes & Region of Central Macedonia