Vanguard Initiative
New Growth through Smart Specialisation

Building EU Value Chains through S3

Vanguard as a tool for internationalisation of S3 and activities of regional clusters
The Vanguard Initiative is a coalition of European regions committed to enhancing the growth and competitiveness of their companies, through inter-regional cooperation, co-investment and industrial innovation along EU value chains.

https://www.youtube.com/watch?v=7h5I6vvrkZY  www.s3vanguardinitiative.eu
How does Vanguard work?

EU Value Chains

5 Pilot projects & 27 Demo cases (pilot S3P)

Regional Public Private Partnerships
Cluster platforms
Companies and innovation actors in the regions

S3 as coordination principle

EU Value Chains
Vanguard Initiative Pilot Projects

• Vanguard Initiative regions explore industry-led opportunities in specific Key Enabling Technology (KET) areas where inter-regional collaboration and co-investment could result in the creation of EU value chains.

• The aim is to generate proposals which can be translated into jointly funded projects or pilots.

‘Conditions’:

- Industry-leadership
- Demonstrable international market potential for up-scale projects/investments
- Uptake of research results – innovation to the market - TRL >5
- Boost EU-value chains through smart specialisation
- Leading by example in supporting the implementation of European industrial policy
Vanguard Initiative Pilots

The focus is on the joint development of networks of demonstrators and pilots to accelerate market development for existing and emerging value chains for competitive and high-value added products.

1. High-performance production through 3D-printing
   (lead: South-Netherlands, Flanders and Norte)

2. Efficient and Sustainable Manufacturing
   (lead: Catalonia and Lombardy)

3. Advanced Manufacturing for Energy Applications in Harsh Environments
   (lead: Scotland and Basque Country)

4. Bioeconomy – Interregional cooperation on innovative use of non-food Biomass
   (lead: Randstad Region and Lombardy)

5. Nano Enabled Products
   (lead: Skåne and Tampere)

27 demo cases
Vanguard Initiative Methodology

Scoping paper
(common vision and methodology)
Identifying lead regions
Mapping questionnaire
(potential/gaps)
Identifying lead-actors
(capability, capacity, opportunity)

Matching events for complementary partners
Project development for existing or new value chains

Networked demonstration
(Joint Demonstration Initiative)
Pilot lines and first of a kind factories
TRL 6 – 7 - 8

Launch of new ventures / start-ups
New value chains bring research results to the market
TRL 9
Vanguard Initiative
The Match Making event

VIDEO:
https://www.youtube.com/watch?v=7h5I6vvrkZY
3min 23

https://www.youtube.com/watch?v=ixDAKGapaUc
1min 26
Vanguard Initiative
Where are we?

5 pilots: 27 demo cases at different maturity level

2 Demo cases developed a business plan and started the dialogue with the EIB
The main goal of the pilot is to integrate a multidisciplinary set of advanced and innovative enabling technologies and to use the regional smart specialization in a synergic way to offer a service to European end-users, mainly manufacturing companies, to solve specific sustainability-oriented problems related to their products.
ESM Pilot Geographic Configuration and Regional Specialization

**Vanguard Pilot Network on De- and Remanufacturing**

- **Mechanical remanufacturing** and in-use product monitoring in the automotive industry.
- Laser-based remanufacturing of the mechanical parts in large machinery.
- Re-production of steel sheets by Hydroforming and CNC-bulk metal forming.
- Sustainable demanufacturing processes including human-robot cooperation for disassembly, electronics remanufacturing, key-metals and composite recovery and re-use by mechanical processes, for the automotive and electronics industry.

Re-use of composites by thermal processes from aeronautic sector and wind energy system. **Recovery** and re-use of metal scrap by plasma process.

Robotics handling systems supporting disassembly and reassembly operations in the automotive industry.
Estimating the parameters of this business model

Analysis & identification of sectorial Use Cases, with potential industrial partners associated, from different regions involved.

For each specific Use Case, a business case has been detailed including a business plan for the industrial take-up of the developed solutions within specific value chains.

<table>
<thead>
<tr>
<th>Regional/Cross-Regional Use Case</th>
<th>Involved Regions</th>
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</thead>
<tbody>
<tr>
<td>Composite Recovery from Wind Energy System</td>
<td>Basque Countries, Saxony, Lombardy, Tampere</td>
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<tr>
<td>Heavy machinery components remanufacturing</td>
<td>Tampere, Basque Countries, Lombardy, Saxony</td>
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<tr>
<td>Automotive parts remanufacturing</td>
<td>Scotland, Lombardy, Saxony, Norte</td>
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<tr>
<td>High-value TLC systems and Electronics Recovery</td>
<td>Lombardy, Tampere</td>
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<tr>
<td>Metal components reprocessing</td>
<td>Saxony, Tampere, Lombardy</td>
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<tr>
<td>Remanufacturing of e-motors</td>
<td>Saxony, Lombardy, Norte</td>
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This pilot network is designed to be a “generator” of new industrial pilots
Conclusion

The Vanguard Initiative is a clear example of the power of connected regional innovation ecosystems and of the added benefit that can be achieved within EU value chains.