


D.T4.3.1 - CONCEPT FOR FUTURE ADVANCED SYSTEM FOR CREATING A MANUFACTURING CROSS- EUROPEAN VALUE CHAIN

D.T4.3.1

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Title:	D.T4.3.1 - Concept for future advanced system for creating a manufacturing cross-European value chain	
Description:	On the basis of EC REG. 651/2014 CRIT, ATR & PPs design 1 advanced cross-CE ecosystems to (1) reinforcing groups of SMEs in R&D joint exploitation (2) financial endowment to SMEs and Risk finance aid that shall be financed by CTE, including CE	
Version	4 (CR4 - March 2020)	



A. Introduction

The purpose of WPT4 is: (1) to identify effective structural options to incorporate the NUCLEI i-services model in a federated, stable & autonomous business organization to embed the pilots in a real transnational services value chain (2) to expand the NUCLEI use-cases at EU and regional level to bring them to an upper level and approach the targets set by S3 for advanced manufacturing in each of the 7 CE regions concerned by NUCLEI and by EFFRA.

The pursue of these goals is mainly based on one joint strategy for the commercialization, valorisation and exploitation of the set of transnational i-services supporting innovation in businesses for the advanced manufacturing supply chain. Furthermore, from the political point of view, one recommendation paper will be addressed to the regional innovation policy managers for the expansion of the NUCLEI i-services within each regional Smart Specialization Strategies 3 as innovative approach to support ESIF 2014-2020 regional investments (literally to support the ERDF Managing Authorities to improve the impacts of the grants under the Axis 1 “Research & Innovation”).

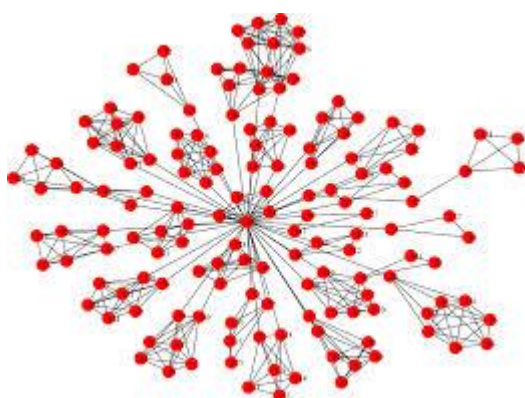
Along with the two measures conceived above, a third initiative is tackled to follow up the NUCLEI open innovation and collaborative environment, based on the direct participation of companies and R&D performers in the development of technology concept and in sharing knowledge to bring new solutions and prototypes closer to the market.

This paper offers some alternatives to enable group of companies of Central Europe area to directly cooperate to generate new components and solution with an exploitable market potential.

The developed approach deals with the opportunity to set up **cross-CE value chains for innovation**, where value chain for innovation is defined as the transformation of “traditional” value chains into new ones through cross-border and cross-sectoral collaboration between different economic actors (belonging both to the industrial and the research world).

The conceptualization of one brand new project consisting in a cooperation system organized in sub-projects to encourage special fast-lanes for KET applicability in SMEs is hereinafter named NUCLEI+.

B. Goal and scope of the Deliverable D.T4.3.1



The goal and scope of the Deliverable D.T4.3.1 is to conceive one follow-up concept to support top SMEs to integrate knowledge into world-class & **cross-CE value chains** (NUCLEI+).

Fostering the transformation of the global economy towards sustainability is one of the commitments made by the G20 towards implementing Agenda 2030, a



focus of the last two G20 Presidencies. Integrating Global Value Chains (GVCs) is a critical part of achieving sustainability, especially through the incorporation of small and medium enterprises (SMEs).

SMEs are a vital part of any economy and have developmental gains as they can impact the grass-roots level of an economy, allowing individuals and communities to upgrade their livelihoods and incomes, potentially raising them out of poverty.

There are significant barriers that SMEs face when seeking to upgrade in their sectors or when expanding their production opportunities by seeking to access export markets. This is a result of seeking to attain higher outputs than the domestic market can offer at the time. Alternatively, when domestic demand falters, for variety of reasons, firms look outside their markets for expansion possibilities.

The so called Concept for future advanced system for creating a manufacturing **cross-European value chain** consists in one advanced **cross-CE ecosystem** to (1) reinforcing groups of SMEs in R&D joint exploitation (2) financial endowment to SMEs and Risk finance aid that shall be financed by CTE.

In other terms, upon the identification of a pool of key-strategic principles for technological innovation into a master project, the purpose is to generate a cluster of sub-projects open to the participation of innovative companies and benefitting of the advantages of INTERREG cooperation and financial system.

C. Normative background and inspirational principles

In the present action, the concept of 1 **cross-CE ecosystem** aims at reinforcing new groups of SMEs in R&D joint exploitation & financial endowment from CTE funds is conceptualized on the basis of the provisions of EC REG. 651/2014.

The Commission Regulation (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty Text with EEA relevance. In accordance with Article 108(4) of the Treaty the Commission may adopt regulations relating to those categories of State aid. Council Regulation (EC) No 994/98 empowers the Commission to declare, in accordance with Article 109 of the Treaty, that the following categories may, under certain conditions, be exempted from the notification requirement: aid to small and medium-sized enterprises (SMEs), aid in favour of research and development, aid in favour of environmental protection, employment and training aid and aid that complies with the map approved by the Commission for each Member State for the grant of regional aid.

The Regulation points out that SMEs participating in the European Territorial Cooperation (ETC) projects covered by Regulation (EU) No 1299/2013 of the European Parliament and of the Council of 17 December 2013 on specific provisions for the support from the European Regional Development Fund to the European territorial cooperation goal (15) often find difficulties in financing additional costs stemming from the cooperation between partners located in different regions and in different Member States or third countries.

Therefore, given the importance of the ETC for the cohesion policy providing a framework for the implementation of joint actions and policy exchanges between national, regional and local actors from different Member States or third countries, the EC REG. 651/2014 address certain difficulties faced by ETC projects in order to facilitate their compliance with State aid rules. The



ETC-specific issues that this Regulation should address relate to the applicable regional aid intensity for ETC projects, SMEs' cooperation costs linked to ETC projects and to obligations concerning publication and information, reporting and keeping records for monitoring purposes.

In other terms, the provisions let the shaping of **cross-CE value chains**, focused on innovation, in terms of SMEs organisational cooperation for the development of joint business strategies or management structures, common services or services to facilitate cooperation, coordinated activities such as research or marketing, the support of networks and clusters, the improvement of accessibility and communication, the use of joint instruments to encourage entrepreneurship and trade with SMEs.

Technical and financial provisions

The art. 20 “Aid for cooperation costs incurred by SMEs participating in European Territorial Cooperation projects“ defines certain provisions to be considered:

1. Aid for cooperation costs incurred by SMEs participating in the European Territorial Cooperation projects covered by Regulation (EC) No 1299/2013 of the European Parliament and of the Council shall be compatible with the internal market within the meaning of Article 107(3) of the Treaty and shall be exempted from the notification requirement of Article 108(3) of the Treaty, provided the conditions laid down in this Article and in Chapter I are fulfilled.
2. The eligible costs shall be the following:
 - (a) costs for organisational cooperation including the cost of staff and offices to the extent that it is linked to the cooperation project;
 - (b) costs of advisory and support services linked to cooperation and delivered by external consultants and service providers;
 - (c) travel expenses, costs of equipment and investment expenditure directly related to the project and depreciation of tools and equipment used directly for the project.
3. The services referred to in paragraph 2(b) shall not be a continuous or periodic activity nor relate to the undertaking's usual operating costs, such as routine tax consultancy services, regular legal services or routine advertising.
4. The aid intensity shall not exceed 50 % of the eligible costs

Moreover, the art. 2 states that for aid to SMEs for cooperation costs incurred by participating in European Territorial Cooperation projects, the limit is EUR 2 million per undertaking, per project; for an initial investment linked to European territorial cooperation projects covered by Regulation (EU) No 1299/2013, the aid intensity of the area in which the initial investment is located shall apply to all beneficiaries participating in the project. If the initial investment is located in two or more assisted areas, the maximum aid intensity shall be the one applicable in the assisted area where the highest amount of eligible costs is incurred. In assisted areas eligible for aid under Article 107(3)(c) of the Treaty, this provision shall apply to large undertakings only if the initial investment concerns a new economic activity.



D. The concept of NUCLEI+ for a future advanced system for creating a manufacturing cross-European value chain

Considering both the normative background and inspirational principles and the technical and financial provisions, and taking into consideration the opportunities offered by the European Territorial Cooperation offered by Programme's call for proposals, below is described a possible way to develop a NUCLEI+ advanced system for creating a manufacturing **cross-European value chain** based on the direct cooperation among advanced manufacturing companies of different Countries.



The goal is the creation of one Cooperation project where pool of companies of different Countries, represented in the project by “intermediate bodies“ are enabled to cooperate together in the development of new components and solution with an exploitable market potential.

The project consists basically in a cooperation system organized in X. Number of sub-projects to encourage special fast-lanes for KET applicability in SMEs, thus transforming the next NUCLEI phase in a larger FRAMEWORK PROJECT open to a new aggregations of SMEs, R&D performers & business intermediaries from other CE Regions.

E. Architecture of the NUCLEI+

The goal of this project is to define open calls for distributing grants to SMEs from different countries that, duly grouped together in cross-CE value chains, develop new products and components.

The project is structured in 4 steps.

1. In the first step, a group of 5-6 intermediate bodies (all official project partners) defines an overall technology agenda, that consists in some innovation and business targets and requirements to be pursued by their own companies. These consortia will consist of organisations with connections to SMEs. Examples of such organisations are technology transfer centres, technopoles, agencies for innovation. Open innovation workshops with pools of companies are organized to benchmark the technical requirements and help defining the technology agenda.



2. In the second step, the intermediate bodies (all official project partners) launch open tenders for SMEs and start-ups focused on some specific technology / sectorial domains. Only then, SMEs and startups, could submit proposals to one (or perhaps more) of these open calls, in accordance with the requirements defined by these projects. The first open calls are expected to be launched 5-6 months after the projects start. As results of this second step, a certain number of SMEs of different countries are grouped in sub-projects and are committed to work together to develop technical-based solutions serving the needs of the consortium.
3. In the third step, groups of companies cooperate and share their own R&D infrastructures (like laboratories, industrial plants etc...) to develop “highly innovative infrastructure, components services and applications and validates their usefulness in real developments. This will allow the joint technologies to be further developed into marketable components and to train SMEs and web entrepreneurs on sophisticated technologies for innovative services and applications.

A share of the main project budget is put at disposal of the sub-projects. For examples, assuming that the overall project budget is 3 million euro, 2 millions shall be put at disposal of 4 sub-projects (500.000 € each, to be further divided among the participating companies) to pursue the innovatio goals.

4. The step four is about transferability of the results to industry, and the possible integration of the conceived solutions into the industrial layout.

A cross-cutting phase regard the support to all sub-projects (i.e. for the correct use of the financing, for the correct implementation of the goals set by the technological agenda, for thematic project meetings with the other sub-projects, for IPR agreements etc...).

The project shall also define the commercial model to maintain and guarantee the availability and sustainability of the technology developed in the programme.

Timing, budget and implementation rules

The necessary timing for the full implementation of this project is 3 years.

- The phase 1 (technology agenda) should last no more than 6 months
- The phase 2 (open call) shall be implemented in maximum 2 months
- The phase 3 (cooperation) shall be implemented in 1.5 years
- The phase 4 (integration of technologies, or at least the preliminary phases) should last 6 months

About the project budget, assuming that the overall project budget is 3 million euro, 2 millions shall be put at disposal of 4 sub-projects (500.000 € each, to be further divided among the participating companies) to pursue the innovatio goals.

Partners and companies shall follow the Programme financial rules.



NUCLEI+ into the new EU MFF 2021-2027



Given the current timeframe, the conceptualization of one brand new project consists in a cooperation system organized in sub-projects to encourage special fast-lanes for KET applicability in SMEs shall be applied into the EU Multiannual Financial Framework 2021-2027 (new EU programming period).

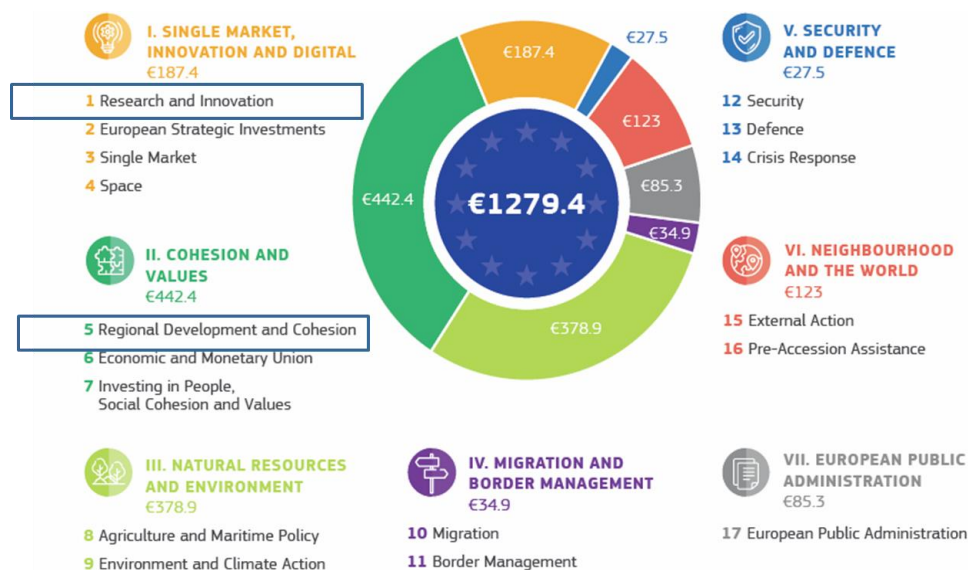
As highlighted by the Investment guidance of cohesion policy funding 2021-27, among the five main objectives that will drive EU

investments in 2021-2027, between 65% to 85% of ERDF and Cohesion Fund resources will be allocated to objectives 1 and 2 concerning innovation and climate goals:

- Smarter Europe, through innovation, digitisation, economic transformation and support to small and medium-sized businesses
- a Greener, carbon free Europe, implementing the Paris Agreement and investing in energy transition, renewables and the fight against climate change

Cohesion Policy supports reforms for an investment-friendly environment, where businesses can thrive. Full complementarity and coordination with the new, enhanced Reform Support Programme will be ensured.

So, beside the ultimate goal of set the right conditions for growth and job creation, new “enabling” conditions to help remove barriers to investments, the consortia taking part in the NUCLEI+ cooperation system 2021-2027, when defining their own transnational technology agenda, should address the definition of shared technology / sectorial domains into climate-neutral applications.





The development of a NUCLEI+ transnational cooperation system is well fitting with the purpose of the new Interreg 2021-2027, oriented at **removing cross border obstacles and supporting interregional innovation projects**. Indeed, interregional and cross-border cooperation will be facilitated by the new possibility for a region to use parts of its own allocation to fund projects anywhere in Europe jointly with other regions. The new generation of interregional and cross-border cooperation (“Interreg”) programmes, based on the **joint effort of members of cross-CE value chains**, will help Member States overcome cross-border obstacles and develop joint services. The Commission proposes a new instrument for border regions and Member States eager to harmonise their legal frameworks, the European Cross-Border Mechanism.

Furthermore, building on a successful pilot action from 2014-2020, the Commission proposes to create the Interregional Innovative Investments. Regions with matching ‘smart specialisation’ assets will be given more support to build pan-European clusters in priority sectors such as big data, circular economy, advanced manufacturing or cybersecurity.

In this sense, and according to the definitive provisions regulated by the proposal of Regulation COM (2018) 375, the NUCLEI+ shall be rooted into the Central Europe area, although R&D exploitation can be sought even outside CE area, opening to the possibility to address a strategic partnership with a real pan-european dimension.



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