STEPHANIE

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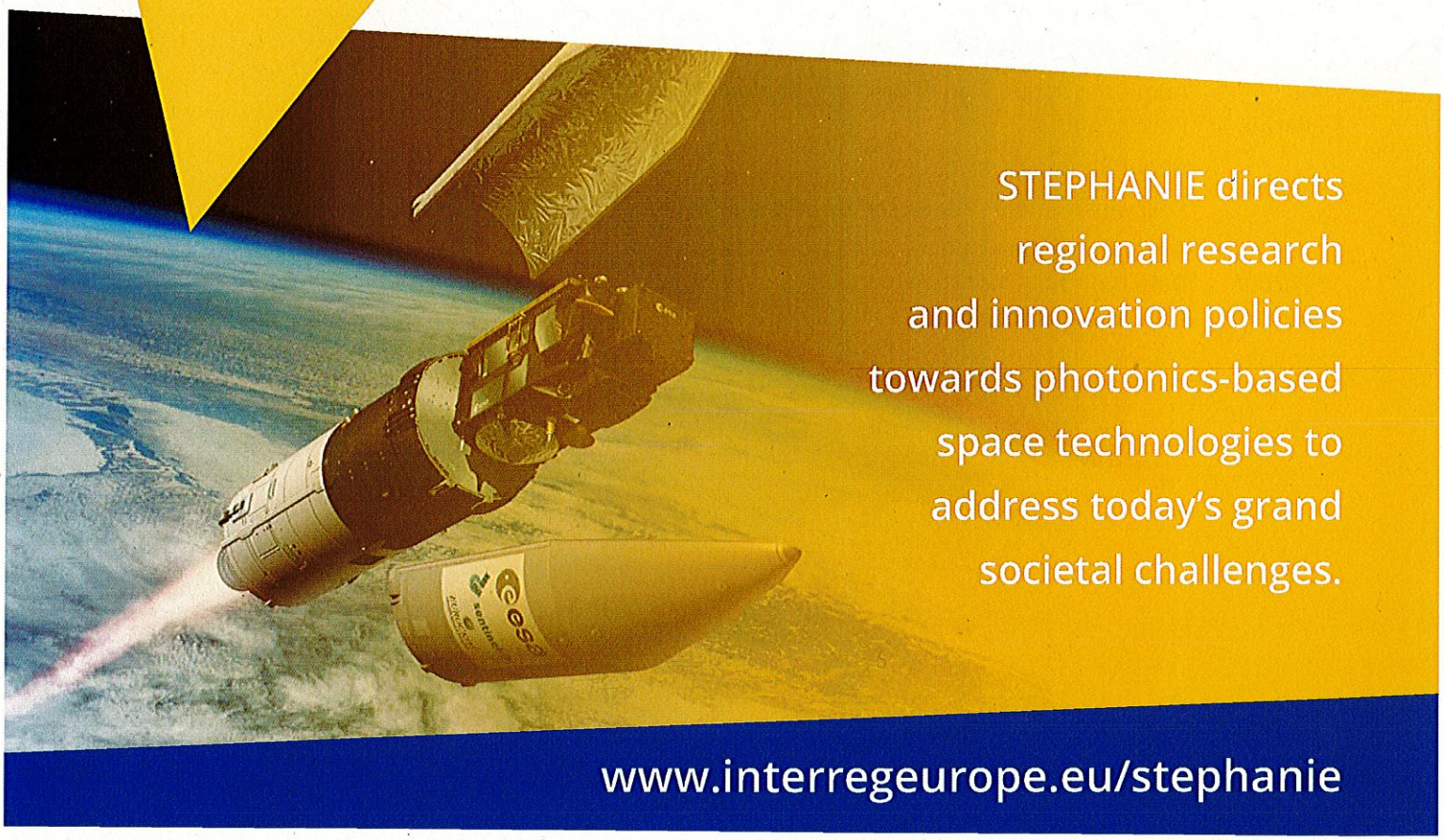

STEPHANIE directs regional research and innovation policies towards photonics-based space technologies to address today's grand societal challenges.

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An interregional cooperation project for improving innovation delivery policies.

ACTION PLAN FOR THE REGION OF BRETAGNE

Project partner: Photonics Bretagne

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Research & innovation

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Part I – General Information

Project	STEPHANIE
Partner organisation	Photonics Bretagne
Other partner organisations involved (if relevant)	
Country	FR
NUTS2 region	Brittany
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About the STEPHANIE Project

Space technologies based on photonics are considered as one of Europe's areas of key industrial competence. They have huge potential to address a number of today's grand societal challenges, in particular health and wellbeing, climate action and secure societies. However, this potential will be wasted if public policy fails to address the gap between space research and its application on the ground. A long-term challenge is to ensure that R&I investments exploit the opportunities offered by space technologies (e.g. huge availability of data and signals) by ensuring that applications and services are produced to address societal challenges and that they reach the market.

Recognizing the role played by EU regions in space policy, both in strategic development and territorial impact, STEPHANIE brings together 8 partners from 7 areas to exchange knowledge on how to ensure that policy is designed to guarantee real benefits from space technology based on photonics, particularly in space and earth observation.

Partners have recognized two pillars that their ERDF policy instruments can focus on to support this R&I delivery:

- Using quadruple helix cooperation along the technological value chain at regional and interregional level;
- Coordinated and simplified funding schemes for the development of marketable and society orientated products and services.

Partners and regional stakeholders cooperate over three years of interregional learning, leading to regional Action Plans that detail concrete measures for policy improvements. They continue to cooperate while implementing these measures, using interregional exchange for further stimulus and monitoring.

Policy changes will deliver long-term impact to regional competitiveness and socioenvironmental wellbeing, thanks to collaborative innovation and innovative products addressing socioenvironmental needs. They will

open new markets for enterprises and improve capacity of regions to direct European space policies and strategies.

About the Action Plan of Bretagne Region

Each region participating in NMP-REG produces one Action Plan, providing details on how the lessons learned from the interregional cooperation will be exploited in order to improve the policy instrument tackled within that region.

This document is the Action Plan of Bretagne region. The region is represented in this project by the cluster Photonics Bretagne (PP04), with Brittany region as supporting organisation also acting as responsible Managing Authority (MA) of the ERDF Regional Operational Programme 2014-2020 in Brittany.

The development of this Action Plan has been based on the principles of:

i. **Interregional cooperation between STEPHANIE partners:**
Cooperation was supported by a series of interregional learning events (ILE), bilateral exchanges of experiences, study visits and share of good practices;

ii. **Involvement of the main regional stakeholders**
dealing with Space and Photonics R&D, innovation support and innovation delivery to regional industry:

Participation was supported mainly through setting up a Regional Space and Photonics Innovation Actors Group (SPIA), which met periodically (at least once per semester) in order to support the project. SPIA was composed by relevant innovation actors from industry, science and the financing sector as well as from regional authorities.

This document is structured in four parts. After this introductory section, the second part provides an overview of the territorial context and the policy instrument addressed by the Action Plan. The third part provides an introduction to the actions envisaged by the Action Plan. The fourth part corresponds to the main part of the Action Plan, where each action is presented, specifying its background, activities, players involved, timeframe and costs.

Part II – Policy context

About Photonics in Brittany

Photonics in Brittany is represented by Photonics Bretagne, a Photonics Innovation Hub located in Lannion (Brittany, France). Photonics Bretagne gathers a cluster (115 members: companies, research centres, schools and support agencies) and a Research and Technology Organisation (RTO). With a high level of expertise, our technology center develops specialty optical fibres and components (product line: PERFOS®) such as tubes, capillaries, tapers... Scientific studies and proof of concept in the field of biophotonics (in particular for the agri-food sector) are also a growing activity. In addition, Photonics Bretagne supports innovation and contributes to industrial and technological development of its members and regional SMEs. The association promotes the integration of photonics technologies in all application areas, and especially into agri-food chains (food safety, quality and sorting of products, on-line process control ...)

Name of the policy instrument addressed:

OPERATIONAL PROGRAMME ERDF-ESF

BRITTANY 2014-2020

Axis 2: Developing Brittany's economic performance through support for research, innovation and enterprises.

II - Pour une économie dynamique au service de filières fortes et créatrice d'un emploi durable

Faire émerger l'activité et soutenir l'innovation

Programme 202 : Soutenir les pôles de compétitivité

The policy instrument that the Action Plan aims to impact is:

Investment for Growth and Jobs programme	***YES***

Overview of the Regional vision for Bretagne

Our regional vision devised during the first part of the project Stephanie made clear that a better connection between the world-class photonic ecosystem of Brittany with their European counterparts in the space application is a main challenge. It is clear that photonics for space is a high-value domain but also a relatively narrow field implying a lot of high technology that is usually not present in a single region. Interregional collaboration is then key to build bridges between the SMEs, labs providing the high-tech photonics components/systems and end-users in the space industry. Building interregional calls would then definitely improve the development of photonics projects for space application at European level and facilitate the emergence of disruptive innovation to keep the international lead in the domain!

Part III – Details of the action envisaged

ACTION 1

TITLE:	***Interregional collaboration in Photonics from research to industry through simple/flexible calls***

1. Overall Topic and Description of the proposed Policy Improvement ***(please provide a brief summary of the proposed Policy Improvement that this Action refers to)***	
Overall Topic	Set up flexible and simple interregional R&D calls for SMEs on the topic of Photonics for Space with a strong involvement of end users (Large companies, ESA...) and a focus on technology transfer from Research labs to Industry (RTOs, Research centers involved). The idea is to use existing simpler regional calls and open them to other European regions interested to cofund their local players in such collaborative projects. A very reactive process, from the definition of the collaboration to the start of the project, is also a key factor of the success of this new tool for interregional collaboration.
Specific Description	What we propose here is to initiate interregional projects by bringing Brittany's partners and local ERDF funds in calls running currently in Wallonia. This new initiative would help solving 3 issues by removing the barriers between research and industry, between Photonics and Space industries and between regions to foster innovation in Europe. At the end of phase 1 of the project, we have identified the regional needs (better connect Research and Industry and Brittany stakeholders with partners from other regions through interregional projects), the GPs from other partners to be transferred or adapted ("RWTH Aachen Campus" from NMWP and "ERA-STAR Platform to develop Interregional R&D projects" from CSL). Discussions with managing authorities and regional stakeholders to get consensus and agree on the main ideas for the new call has been carried out through 2019 with an estimation of the budget needed for the call (500k€ funding for Brittany submitted to a vote of the elected representative). At the same time, lessons learnt from partners, in particular during the 3 study visits that occurred for the Brittany delegation (Liège, Aachen, Prague), should also be taken into account to adapt the GP to the local specificities. More specifically, possible selection criteria could be included in future calls launched by the Brittany region (following the example of the Walloon call managed by the Cluster SKYWIN that we use as a base to build this first iteration) in order to make possible interregional collaboration in the future. The focus of the project on technology transfer between research and

	industry, inspired by the model of the Aachen Campus involving RTOs, should also be part of the selection criteria of the future calls. The lesson learned during the 3rd study visit in Prague confirmed the interest and will of the players of both regions to collaborate is huge but also that a simple and flexible financing tool to make it happen is just not existing at the moment. The details of the timeframe (from call publication, to projects approval, etc.) is currently being finalized but we expect a call defined in 2020 with 2-year projects starting on the 1rst of January 2021. The Brittany region will be the main authority managing the call for Brittany but there is a possibility that 2 other local authorities could be involved in the financing of the call: The Cote d'Armor department and Lannion Trégor Communauté. The idea is to submit the projects at the same time to the standard Walloon MA and Brittany MA. The timing will be set by the Walloon side as the calls are twice a year. The evaluation of the proposal will be similar to the one currently used in each region (scientific expertise and business outcome for the companies will be particularly checked). If the project(s) is (are) accepted on both side, the project(s) will be able to start and will be continually assessed along the project following the same rules than standard regional projects. We expect 3-year projects with roughly 4-5 partners located in Brittany and Wallonia and coming from Research and Industry. A total budget per project is expected to be close to 2M€. The funding rate for each partner will depend on the type of partners (Industry or Research), their size (SMEs or large groups), their location (Wallonia or Brittany) and the technology readiness level (TRL) of the project. The leader of the project needs to come from industry. At least one project is aimed to be funded as the timing is quite tight. The idea is to initiate a „prototype" project to launch the initiative during that period and to be continued on the next period if success is as good as planned! The technology transfer between research and industry will be particularly checked and the projects showing a good practice on this topic will have some bonus in the evaluation process.

2. Need addressed

(please provide a brief summary of the NEED that you wish to address with this policy improvement)

No region has all the technologies and applications. For example, Brittany has some gaps in the space sectors and it is then necessary to establish interregional collaboration with regions with complementary competencies in the respective technologies and supply chains. Brittany has strong assets in the development of high-tech components but not so much in the end-user industry. As well studied during the meetings, it is clear that each region has its specificity. Moreover, not all regions have all the value chain in the field of Photonics for Space, so teaming up with others while involving all the players from research to end-users is needed to achieve our goals.

To our knowledge, no simple and flexible tool exists today to co-fund interregional collaboration in particular in the field of Photonics. The current instruments (ERA-nets, Eurostar, Interreg, H2020...) require many administrative burden that can be a barrier for the SMEs. The complementarity of the players from different regions is usually required to build disruptive innovation. Extending simpler regional calls to foreign partners funded by other regions seems to be a good way to achieve this goal of easy interregional collaborations.

We also know that technology transfer is still to be improved between Research centers, RTOs, deeptech SMEs and end-users, with the so-called "valley of death" which is still an issue for the development of innovation. Setting-up calls to better connect all the players is needed to enhance the level of collaboration and help the technology from the lab reaching end-users applications and the society. One concrete example would be to monitor better the pollution of the estuaries from the space to better understand and treat the cause. The agriculture sector could also significantly benefit from the space images to improve the productivity while reducing chemical fertilizers.

3. Relevance to the STEPHANIE project ***(please describe how this action derives from the project and in particular from the interregional exchange of experience. Where does the inspiration for this action come from?)***	
Details of proposed Policy improvement	***Links with interregional input (including details of activities, good practices and knowledge shared)***
Interregional calls	The Liege partner (CSL) described during a meeting in Sevilla (29th – 30th January 2019) a local call called "plan Marshall" which is in place in Wallonia and which can accept international partners (with the conditions that they are funded by other means). The managing authority from Brittany has been contacted and we had a very positive feedback from their side to participate to these Walloon calls. Indeed, photonics has been a priority for the region for many years (photonics present in the S3 of the region) and Space has been recently defined as new priority. Brittany consider the initiative a perfect occasion to build on an existing project to reach their goals, while improving their interregional links which is another priority of the region and local councils. A study visit in Liège with 5 SMEs and one research center was organized on the 8th of April to better understand the conditions and start to talk about new collaboration on technical projects that could emerge between both regions. A visit of the Walloon delegation has finalised on the 19th of November 2019 the last details of the call. The Brittany MA has agreed to fund up to 500k€ for the partners from the region (A vote of elected representatives is however needed).
Good cooperation between research labs and industry	The German partner presented a best practice (AACHEN Campus) describing the good organisation at the Aachen campus between research labs, RTOs, industry and end-users. A partner meeting was organized in Aachen on the 10-11th of July 2018 and the initiative was presented by the local stakeholders. A study visit in Aachen with 5 SMEs and one research center was organized on the 9th of April 2019 to better understand the good practice and start to talk about technical projects that could emerge between both regions. The lessons learned during this study visit will be used in a first step in the call to be set-up. We can also imagine that a second iteration of these joint calls can be expanded to German partners from Aachen so we can learn even more from that side (the timing was too tight to include them in this first iteration).

4. Specific Activities and TIMEFRAME (please list and describe the activities to be implemented in order to achieve the policy change– add as many lines as necessary) – THIS REFERS TO THE ACTIVITIES EXPECTED TO BE CARRIED OUT IN THE IMPLEMENTATION PHASE (PROJECT PHASE 2)		
Activity Number	***Activity Description***	***Timing (with details)***
1	Set-up and launch of the interregional call - Further meetings of both MAs in order to refine the articulation between both regions and the conditions and selection criteria for the call. - Draft version and conditions of the call reviewed together with key stakeholders of both regions. - Final version ready and launched.	1rst semester 2020
2	Preparation and assessment of the project proposal(s) - Project consortium deliver a letter of intent. - Project consortium deliver a draft proposal. - Assessment of the draft proposal of the Walloon research administration. - Amended draft proposal for International Expertise. - Presentation of the project to the SKYWIN Internal Selection Committee for assessment. - Submission by SKYWIN of the final draft to the Region. - Final Decision	2nd semester 2020
3	Start of the project(s) (~3 year-projects)	01/01/2021
4	Monitoring of the approved projects will be identical to the one set-up in each region. Final details on the articulation between the Walloon and Brittany MA will be set early 2020.	2021-2023
5	Evaluation of the outcome of the project through indicators (see below)	2025

5. Players involved (please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role – add as many lines as necessary) – THIS REFERS TO THE ACTIVITIES EXPECTED TO BE CARRIED OUT IN THE IMPLEMENTATION PHASE (PROJECT PHASE 2)	
Name of Organisation	***Role in Action Plan Implementation***
Région Bretagne (Regional authority)	Main Funding body
Département CD22 (department)	Potential Funding body
Lannion-Trego Communauté (District)	Potential Funding body
SMEs and Research centers	Will submit project proposals

6. Risk and Contingency Plans (please describes any potential risks to Action Plan implementation and eventual contingency plans – add as many lines as necessary)		
Description of Risk	***Level of probability***	***Description of Contingency Plan***
Difficulty to have coordinated calls between 2 regions	Low	As the 2 regions have the same criteria for the evaluation of projects (scientific excellence and business outcome for the companies), we expect that this should be settled during the discussion to set the evaluation criteria in 2020.

7. Costs (please describe the costs required to implement the Action Plan. This can refer to human resources and external costs required to set up the actions and to any funding required (e.g. if the Action refers to a call for proposals / a funding scheme)
The Brittany managing authority will be able to support the action with up to 500k€ funding over the next period on at least one interregional project with Wallonia.

8. Funding sources (with reference to the above costs, please describe where the budget comes from to finance them)
Brittany Managing authority can fund up to 500k€ for these calls (see above for the conditions). The funding will come from the regional funding line: *II - Pour une économie dynamique au service de filières fortes et créatrice d'un emploi durable;Faire émerger l'activité et soutenir l'innovation; Programme 202 : Soutenir les pôles de compétitivité* Part of this funding can also come from 2 other financing authorities: the *Cotes d'Armor Département* and *Lannion Trégor Communauté* which can also contribute to this policy instrument. This will have to be confirmed in a second stage. If not agreed with these 2 other financing authorities, Brittany will finance 100% of the Brittany funding.

9. Monitoring (please describe the monitoring tools and indicators that you expect to use in Phase 2 – Implementation to ensure that your Action Plan is implemented correctly) ***Indicators should also include measurement of the territorial impact (e.g. beneficiaries concerned, results achieved in terms of increased competitiveness or cleaner environment, etc.).***	
Monitoring tools (description of the tools and how they will be applied)	Short survey sent to the partners of the project before and after the project to predict and collect the job and turn-over created. To avoid too much administrative burden, this monitoring tool should be simple and easy to answer.

	Indicators ***NB: The indicator included in the Application Form should be reported here, as well as any other indicator deemed necessary***	***target amounts***	***Means of Verification***
1	Job created (2 years after the end of the project) through interregional projects funded by the new call.	*1/(100k€ subsidies)*	*Survey*
2	Increased turn-over (2 years after the end of the project) through interregional projects funded by the new call.	*Subsidies X3*	*Survey*
3	Follow-up projects with the same partners (2 years after the end of the project)	*2/project*	*Survey*
4	Number of companies benefiting from the instrument that have developed innovation projects in Photonics	*5*	*Project proposals*

Part IV – Official Signature(s)

Date:	*xx/xx/xxxx* 22/01/2020 .
Name	Pierre VILLEMUR
Signature	***Stamp of the organisation (if available)*** Le Chef du service de l'innovation et des stratégies économiques **Pierre VILLEMUR**