ELectric Innovative Commuter Aircraft

D1.3 Plan for Dissemination, Exploitation and Communication of Project Results

	Name	Function	Date
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Executive Summary

The ELICA project aims to develop a conceptual design of a 19-passenger commuter aircraft based on alternative propulsion concepts (hybrid electric) targeting near-zero emissions in terms of CO2, NOX, and noise. The final concept design will pave the way to an innovative aircraft demonstrator. It will be an important step stone to strengthen the technology leadership of the European aeronautical industry, in the global race for the next-generation efficient commuter aircraft for regional mobility.

The present deliverable represents the first version of the Plan for Dissemination, Exploitation and Communication. It aims to present the overall strategy to disseminate and promote the project and to point out exploitable opportunities of the project. Based on the identified target groups, the document describes respective activities that have already been completed as well as those that are going to be performed in the future by the ELICA consortium. It includes a detailed plan for the implementation of these activities in order to achieve maximum effect of the dissemination and exploitation process and reach the relevant target groups. This is fundamental for the successful commercialization of ELICA.

Based on the progress and the development of the project, the present Plan for Dissemination, Exploitation and Communication will be continually monitored, updated according to the needs and reported.

1. Introduction

The present document depicts the “Plan for Dissemination, Exploitation and Communication” which is part of the work package number “WP 1: Management, Dissemination and Exploitation”.

The aim of this document is to present the overall strategy to disseminate and promote the project and to point out exploitable opportunities of the project. Based on the identified target groups, the document describes respective activities that have already been completed as well as those that are going to be performed in the future by the ELICA consortium. It includes a detailed plan for the implementation of these activities in order to achieve maximum effect of the dissemination and exploitation process and reach the relevant target groups. This is fundamental for the successful commercialization of ELICA.

This deliverable is outlined in six chapters in order to fully present the overall strategy for dissemination, communication and communication as well as the efficient implementation of these activities during the lifecycle of this project.

After a short introduction to the project ELICA and its projects goals, chapter 2 continues with the description of the dissemination strategy. In this regard, the target groups are defined and appropriate measures will be presented. The next chapter focuses on the activities in the field of communication. Respective tools are going to be described in order to raise awareness and promote the project in an effective and efficient way. In chapter 4, the exploitation scenarios and opportunities will be elaborated and the IPR handling procedures will be set out. The last two chapters 5 and 6 will briefly outline the further roadmap of the project and finally summarize the key points of this deliverable.

1.1. Project Description of ELICA

The ELICA (ELectric Innovative Commuter Aircraft) research activities are focused on the delivery of the conceptual design of a 19 passenger commuter aircraft based on alternative propulsion concepts, targeting near-zero emissions in terms of CO2, NOX, and noise. The project aligns with the environmental expectations of the European Commission towards the aeronautical industry formulated in Flightpath 2050 and is in line with the economic objectives of the European Commission to safeguard high-quality jobs in the aerospace sectors by strengthening the technological leadership and the competitiveness of the European aerospace industry.

The challenging objective can only be achieved by a consortium consisting of partners with excellent track records. For the current project, the main driving force will be the Rolls-Royce Electrical unit within Rolls-Royce Deutschland Ltd & Co KG (RRD) and the Design of Aircraft and Flight Technologies (DAF) research group of University of Naples Federico II (UNINA). Through various successful cutting-edge projects, Rolls-Royce Electrical has acquired a world leading role in the electric propulsion of aviation, while UNINA has matured experience in design of regional turboprop and general aviation aircraft at industrial level.

With the excellent track-record and the extensive experience of the partners in the field of aircraft design (UNINA) and electrical power train layout (RRD), ELICA project will push the innovation

boundary of the propulsion research and implementation into the class of commuter aircraft with 19 passengers.

In the short-term, ELICA will explore the design space utilising the new freedom in design provided by Hybrid-Electric Propulsion (HEP), and in the mid-term, the experience gathered and the methodologies developed in ELICA will contribute to the coming research framework programme.

The project will be conducted under the continuous advisory of the four main European manufactures for regional and general aviation, i.e. Leonardo, Tecnam, Piaggio, and Evektor. At the end of the project, the performed research will enable the consortium (including the partners and the advisors) to proceed to the next technological step, i.e. to build a ground or a flight demonstrator of an innovative commuter aircraft in the coming years.

1.2. Project Objectives

This project will contribute to the environmental and economic objectives formulated in the context of “Flightpath 2050 – Europe’s Vision for Aviation” by the European Commission. For this reason, the high-level objective of ELICA is to provide a concept design of a 19 passenger commuter aircraft with near-zero emissions in terms of CO2, NOX, and noise, to contribute to the given environmental and economic objectives. The concept should be:

- environmentally friendly, i.e. with measurable reduction in estimated emission values;
- economically feasible, i.e. the aircraft requirements are derived from the market demands;
- technologically innovative, i.e. the flexibility in the aircraft design space provided by new propulsion technologies should be explored and exploited.

Based on the high-level objectives of ELICA the following technical goals are derived:

- Develop an integrated conceptual design chain for electric commuter aircraft at system level
- Integration of power train design and analysis into conceptual design approach
- Perform detailed analysis with high fidelity numerical methods (CFD-FEM)
- Perform fault tolerance analysis (FTA) to ensure specifications and regulations compliancy
- MDO chain applications in top-down system selection
- Future challenge scenarios, trade-off analysis and perspectives

The final concept design will pave the way to an innovative aircraft demonstrator. It will be an important step stone to strengthen the technology leadership of the European aeronautical industry, in the global race for the next-generation efficient commuter aircraft for regional mobility.

2. Dissemination strategy

Dissemination is defined as the sharing of research results with potential users - peers in the research field, industry, other commercial players and policymakers. By sharing the results of the project with the rest of the scientific community, a contribution to the progress of science in general is made.

Dissemination is related to the results of the project (art. 29) whereas Communication has been associated to the project itself (art. 38). However, some measures and tools will be used both for dissemination and communication.

2.1. Objectives of Dissemination Strategy

The dissemination of results is a contractual requirement for engaging in projects funded by the European Union's science and innovation system Horizon 2020.

The aim of the dissemination strategy is to identify and coordinate the activities to be carried out in order to maximize the impact of the project and to foster commercial and other exploitation of the project results. The dissemination objectives are in detail:

- Increasing awareness, interest and knowledge on the project and the opportunities of hybrid electric propulsions to all target groups
- Encouraging acceptance of the alternative propulsion systems and embed it as state of the art
- Explaining the economic, social, and environmental benefits of ELICA
- Involving a large number of stakeholders early in the discussion, supporting the definition of requirements, specification, and barriers for the project;
- Creating enhanced opportunities for stakeholder feedback that can be used to guide the project;
- Sharing the project’s results and achievements among the key stakeholder groups
- Transforming strategy into practice at the local level and ensuring continuity and accuracy in all activities during the entire project lifecycle
- Sharing experiences with projects and field groups in order to align resources, to reduce duplication and to maximize potential
- Disseminating knowledge, methodologies and technologies that were developed during the project
- Laying the foundation for commercial and other exploitation of the gained knowledge
- Provision of education and transparency

All public outcomes will be available on the ELICA website and open to all stakeholders who may benefit from it.

The definition of the dissemination strategy is based on the assessment of the following aspects:

- Subject of dissemination
- Analysis and definition of target groups
- Identification of appropriate methods and tools
- Definition of a time table

- Identification of roles and responsibilities in the management team

All documents and results will be sent to the relevant project partners before dissemination and publication.

Attention has been paid to the specific needs of each target group of the project. Different communication tools and methods of dissemination, as mentioned below, were created and used.

2.2. Target Audience (Internal /External)

In agreement with the Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013, the aim of the Consortium is to intensify the connection between science and society.

As the development of alternative propulsion systems means a significant innovation and progress in the aeronautical industry, the consortium identifies and clusters the key stakeholders that will be addressed by the described communication and dissemination activities. Targeted dissemination is conducted based on the needs and characteristics of each target group in order to deliver maximum impact at every step performed in line with the dissemination strategy.

ELICA's main target groups are all stakeholders that may theoretically adopt the approaches being developed and evaluated within the project. In general, three categories of stakeholders are expected to benefit from the provided information in different ways (see Fig. 1). The project has been regularly collecting input through direct communication with key stakeholders, particularly 'end-users,' to ensure that their interests are taken into account. Dissemination also takes place more broadly by using networks of partner organizations.

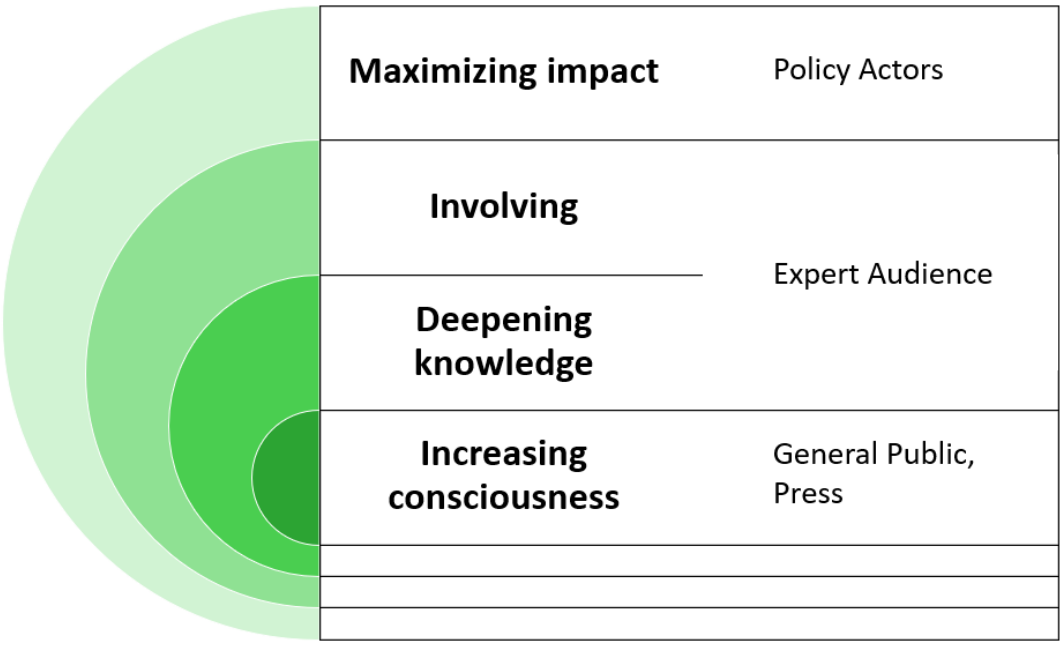

Figure 1: Levels of benefits for target groups

The following table presents the objectives that are pursued by ELICA in detail and how the project plans to address each target group.

Target Group	Objective	Dissemination Tool
Aeronautical industry	• Generating awareness among relevant stakeholders of the aeronautical industries as well as respective suppliers • Promoting an early acceptance and adaption of the innovation	• Regular workshops with the IAB members of ELICA: Leonardo, Tecnam, Piaggio, and Evektor on a half-yearly basis • Presenting ELICA progress to RR internal and external project partners
Press	• Promoting the project and reaching a significant number of stakeholders • Creating awareness of novel propulsion system that is needed to support the EU goal of Flightpath 2050	• Press releases through RR marketing team • Regular update of ELICA content on RR webpage dedicated for electric commuter studies
Scientific community	• Encouraging and fostering European research in the context of Horizon 2020 • Sharing and exchanging research results with relevant stakeholders in order to create synergies • Contributing to tomorrow's engineers by providing knowledge but also gaining new insights	• Publications • Presentation on scientific conferences • Networking via online platforms (e.g. LinkedIn group) or scientific events
Policy actors	• Expanding the understanding of the importance of innovative propulsion systems in order to achieve the goal of CO2 reduction • Raising awareness of the benefits arising from support	• Collaboration with and report to European Commission, Clean Sky JU • Presentation of ELICA results during visits of politicians
General public	• Fulfilling the obligation to inform the society about the benefits and results of an EU-funded project • Generating awareness about the developments in the aviation industry	• Public Website • Social Media

Table 1: Summary of target groups and objectives

Summary of target groups and planned activities:

Figure 2: Levels of benefits and planned activities

A detailed stakeholder database will be created in order to ensure the communication with all stakeholders involved in ELICA; contact details will be collected centrally and will be clustered according to their level of engagement in the project. Depending on their level of engagement, different dissemination, communication and exploitation tools will be applied.

This list of target groups will be updated if necessary.

2.3. Messages to be disseminated

The following table presents the key stakeholder, which have been identified to be addressed as well as the key messages of ELICA that will be delivered to each identified target group during the project lifecycle.

Message	Target Group
• Electrification opens the design space for new aircraft design increasing **aircraft performance** • Electric propulsion will create economic advantage for commuter **aircraft operators**	Aeronautical industry
• Electric aviation will significantly **reduce emissions for aviation, and help to reduce global warming** • Due to **the environmental advantages of the electric propulsion, will reduce emission for aviation**	Press
• Research in electrification of aviation, with e.g. the pursuit for higher power density, will need inputs from electrotechnology, material science, etc.	Scientific community
• Electric propulsion is a key emerging technology. Taking a leading role in this area will secure jobs and enable sustainable economic growth • The **environmental advantages of the electric propulsion** will enable regional aviation, and new jobs will be created in this sector	Policy actors
• Electric aviation will enable new way of air travel, i.e. start of journey from a nearby regional airfield instead of big airports as nowadays	General public

Table 2: Key messages for target groups

2.4. Dissemination tools

After the analysis and identification of the key target groups, the appropriate dissemination tools are described in the following.

In order to create an effective and efficient way of dissemination and communication, project results will be adapted to the different categories of stakeholders, in terms of content, style, format and information use.

Meetings

In order to ensure the project's visibility and a common understanding about alternative propulsion systems in the European aviation industry, partners will participate and organize several events, ranging from conferences, exhibitions, to workshops and strategic meetings, targeting different stakeholders.

A continued engagement with major aerospace companies in the EU will allow a high external visibility on the project. RRD and UNINA will manage regular meetings with Leonardo and Tecnam, i.e. the Industrial Advisory Board (IAB) of ELICA project. As regard light and general aviation industries close to UNINA, the achieved results can be extremely useful to enhance the design and certification process of new airplanes. SMARTUP and ASP will promote ELICA activity among SME innovative Start-Up and Academic Start-Up, to create a network of SME and speed-up the knowledge transfer on innovative commuter aircraft and power train technologies. This will offer an opportunity for future collaborations aligned with the institute's project themes on multi-disciplinary aircraft design. The developed of methodologies and tools could be integrated into MDO collaborative-remote approach as done into AGILE project and proposed into AGILE 4.0 project, led by DLR, and made available to a wide spread of industrial partners (Airbus DS, Bombardier, Leonardo, Fokker, Embraer). ELICA project will enable SISW to demonstrate and validate its software products Simcenter DX and Simcenter 3D for respectively systems fault tolerance analyses and structural analyses for 19pax-class aircraft with alternative propulsion systems. This should result in an increased sale of these products and associated services to aircraft manufacturers.

Publications

Initially, research will benefit from peer interaction to refine and extend the methods developed and increase the awareness of potential stakeholders including researchers, designers, and manufacturers. To this goal, the outcomes of the project will be regularly disseminated in leading aerospace and electric energy journals (peer-review journals), reaching the academic community and the industrial stakeholders. This will ensure engaging with a broad, interdisciplinary audience. The aim will be to publish at least one high-quality papers per year (for a total of three throughout the project) in Progress in Aerospace Sciences, AIAA Journal, Aerospace Science and Technology, Energy and Journal of Power Sources. These top-quartile periodicals are selected for their broad distribution in the academic and industrial communities. The first submissions to conferences and papers will take place as soon as substantial scientific results arise from the project.

All consortium partners will be responsible for publishing scientific content in local and international press and in the communication channels of the European Commission.

The consortium will guarantee open access for scientific publications, granting free internet access to the submitted version of the research articles and full access to the published articles after any embargo period. These papers will be submitted with the requested metadata to the project repository. The project website will also provide a link to access these articles.

Conferences and other Events

Trade Fairs and Conferences

Results will also be presented regularly at leading international conferences. The AIAA Aviation Forum and ICAS conferences have been identified as the appropriate ones, and resources are requested for attendance at these events. The AIAA Aviation Forum hosts traditionally separate conferences, ranging from aircraft design, atmospheric flight mechanics to modelling & simulation, noise & emission, hybrid-electric sessions (AIAA/IEEE Electric Aircraft Technologies Symposium) and it is widely attended by members of academia and industry. The ICAS conference is held every two years and the main mission is the better understanding of engineering science and practice and an improved level of cooperation among aeronautical engineering professionals from around the world. Full-text versions of all publications will be made freely available through on-line institutional open-access repositories.

Regular presentation of the project results on leading trade fairs are also planned.

- The **AERO Friedrichshafen** is one of the largest and most important trade shows that is held every year. The focus of this trade show is general aviation with primarily business and private aircraft on display.
- The **Paris Airshow** is the largest international exhibition for aviation and aerospace and is organized every two years. New technologies in the industry as well as related equipment (aircraft engines, aircraft cabins etc.) are presented during the seven days long trade show.
- The **ILA Berlin** showcases the industry's very best in terms of high-tech products as well as research and development projects. It is held every two years and attended by trade visitors as well as members of the public.
- **Farnbourough Airshow:** In addition to the ILA and the Paris Airshow, the Farnbourough Airshow is one of the largest and most important trade fairs worldwide. The focus lies on the aerospace and defence industries in order to demonstrate civilian and military aircraft to potential customers and investors and to debut new developments in the industry.

Lectures

Outreach activities will be undertaken to increase awareness and foster interest among young generations, focusing on under-represented groups. A presentation will be delivered annually at local schools and in scientific events opened to the public. The impact of the visits will be measured through questionnaires and monitoring enrolment on aerospace courses.

All partners will be responsible for publishing project results in conferences and other respective events.

Workshops

Organize periodic workshops open to other ITD/IADP and to students. The organization of these workshops will be easier thanks to the involvement of university in the project and UNINA expertise in this kind of events. The objectives of these workshop are:

- to improve dissemination among specialist
- to disseminate results to students and young researchers

- to provide a contact point informing aeronautics stakeholders about the project and the partners' activities in the context of the Project mainly at the EU level in Brussels
- to establish contacts with SME and industry representatives for the presentation and exploitation of the Project results: CORDIS database, AEROPORTAL database, support in technology transfer, etc.

A Students' challenge competition will be launched at the end of the third project years, with the aims to propose new aircraft concept using the project outcomes and eventually the software developed within the project. The winning student/team will be invited in the final meeting to present results and propose solutions.

Online

A ResearchGate project page will be created and constantly updated to spread out the research implications to the scientific community, making available answers to the topic of the research project.

2.5. Roles and Responsibilities

UNINA assumes the roles as the Leader of WP4 and WP5, and will lead the Dissemination, Communication and Exploitation activities according to the in this document defined plan.

The responsibilities include:

- Managing partners' contribution
- Supervising and updating the dissemination activities
- Evaluating the activities and initiating necessary measures to improve them

The tasks and responsibilities of each consortium partner are documented in the following table (see table 3).

	Rolls-Royce Deutschland Ltd & Co KG	Universita Degli Studi Di Napoli Federico II	Smartup Engineering SRL	Siemens Industry Software NL	AIR S.PACE GmbH
Project Website	C	L	C	C	C
Management	C	L	C	C	C
Content	C	L	C	C	C
Communication materials	L	C	C	C	C
Organization of meetings	L	C	C	C	C
Project events	L	C	C	C	C
Social Media	L	C	C	C	C
Press release	L	C	C	C	C
Company engagement	L	C	C	C	C

Project corporate images	L	C	C	C	C
Publications during conferences	L	L	C	C	C
Participation in events	L	L	C	C	C
Factsheets	L	C	C	C	C
Videos	L	C	C	C	C
Public campaign strategy	L	C	C	C	C
		L= Leader	C= Contributor		

Table 3: Responsibilities of consortium partners

2.6. Evaluating the impact of the dissemination activities

All project related activities that are described in this deliverable are going to be monitored and evaluated as part of a constantly running quality control process. The main objective of this process is to evaluate the success of the dissemination strategy regarding the achievement of the expected impact and the defined goals.

The performance of the described activities is evaluated with the help of the following Key Performance Indicators.

KPI	Year 1	Year 2	Year 3
Submitted conference papers	4	4	4
Submitted journal papers	0	1	1
Workshops	3	3	3
Promotional Material	3	3	3
Conferences	4	4	4

Table 4: Key performance indicators of activities

3. Communication Strategy

Communication includes taking strategic and targeted measures for promoting the action itself and its results to a multitude of audiences, including the media and the public, and possibly engaging in a two-way exchange.

Consequently, this chapter highlights the overall communications strategy. In detail, the visual identity of ELICA, communication channels and tools, planned actions and material that will be used for the successful implementation of dissemination, communication and exploitation processes.

3.1. Communication Tools

3.1.1. Visual Identity

The aim of the ELICA visual identity is to create a unique and memorable image of the project for the identified target group. It enhances the recognition effect and is going to be used for all materials throughout the ELICA project.

Branding Guidelines have been developed to provide partners with support and guidance on the use of the project logo and branding.

Project logo

The project logo is one of the most important tools of the visual identity. Consequently, a logo has been designed by a professional designer at the beginning of the project and has been accepted by all project partners. The chosen logo expresses the combination of an environmentally friendly and electrical propulsion concept under the umbrella of Clean Sky 2.
The created logo for ELICA will be used in all materials throughout the communication, dissemination and exploitation activities.

The logos can be downloaded from the project cloud folder to ensure that all partners are able to get access to the logos.

Project Templates

In order to raise the awareness of ELICA and to enhance a recognition effect during the dissemination activities, templates have been developed for external and internal use. Uniformed and attractive materials according to ELICA graphic identity support the dissemination efforts. The templates can be accessed via the cloud storage of the project and must be used by the consortium partners for every dissemination or communication activity in the context of ELICA.

Firstly, a Word-Template has been developed and approved for applying to deliverables of the project. It contains a cover pages first which includes the project's logo in the middle of the page in an appropriate size, its acronym and full title as well as information about the author, the approver and the date of approval. The second page represents the disclaimer required by Article 29.5 of the Grant Agreement regarding the excluding responsibility of the European Commission as well as a copyright statement. The third page summarizes all information of the deliverable. Subsequently, the table of content is presented, followed by a list of table and figures. These sequence of the first four pages must be used for every delivery in connection with the ELICA project.

In addition, a Powerpoint-Template has been designed for external presentations (events, conferences, etc.) as well as the internal exchange of information.

As directed by Article 29.4 of the Grant Agreement, all material used for dissemination, communication and exploitation during the life span of the project will display the EU emblem along with the determined statement that the project has received EU funding in the context of Horizon 2020 Research and Innovation programme.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 864551.

3.1.2. Online Presence

Public Website

By the development of a project website it is guaranteed that EU-funded research is adequately communicated to all target groups. An online presence for ELICA is going to be established in English language. The before mentioned visual identity is going to be applied. In addition, EU Best Practice Guidelines for projects will be considered.

The project website will be available for the whole project lifecycle and at least two years after its end. It is administrated, monitored and regularly updated by the partner SMARTUP.
It is supposed to contain a public as well as a private area. The public area will provide the objectives of the project and contain material that has been authorized by the contractors for public dissemination. In addition, it will allow external companies to express their interest in the project. One section will inform the public about the latest news and developments in the project. Furthermore, the main results of the project will be published. The private area will be used for project internal communication as well as the storage for templates and other relevant materials.

The website will not only target aerospace professionals, but it will also be instrumental to reach the wider public, showcasing research findings and project progress in a way tailored to a non-specialist audience.

In order to meet the above-mentioned requirements, the objective of the website is to present clearly structured, easy to understand content. Attention will be paid on search engine optimization activities in order to provide a good findability.

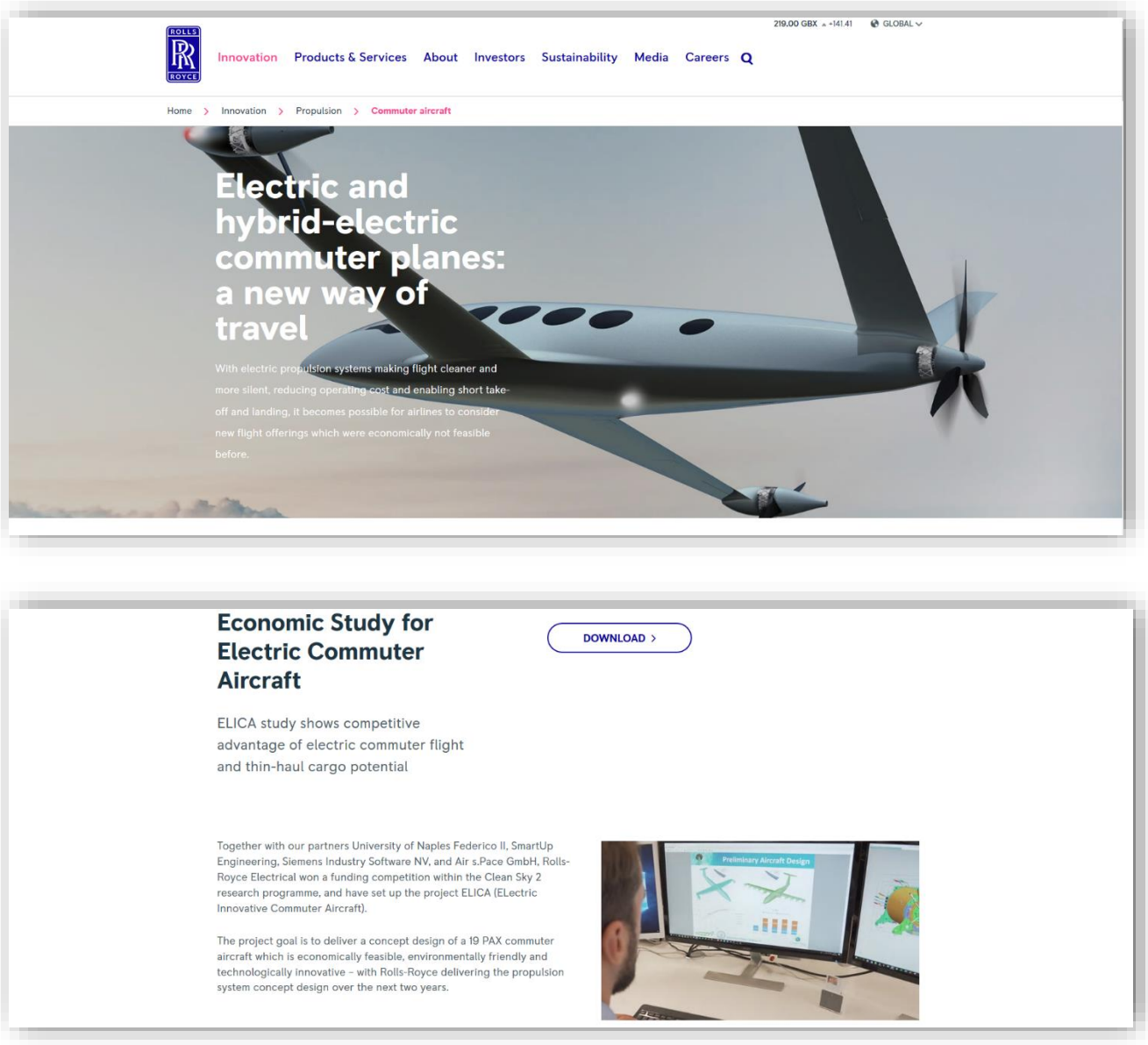

Figure 3: ELICA Website

Social Media

In addition to the planned project website, a presence on Social Media channels is going to be established. The objective of this activity is to extend the reach of the project to target groups as well as the broad public in a very dynamic and efficient manner. Furthermore, it enables a two-sided communication between the project consortium and the respective stakeholders.

In detail, the following platforms will be used:

- LinkedIn
- Research Gate

The focus will be laid on LinkedIn and Research Gate, as these are the most commonly and actively used platforms by the project partners and target groups. The displayed content will include latest news, achievements and information about further developments in the project; a link to the official website will be added. The account on the respective Social Media platforms ha been established in 2020.

Over the past years, research gate has been growing among the scientific community as a tool to disseminate papers, scientific conferences and similar events.

Press releases

In order to inform the target groups as best as possible, press releases are going to be created on current achievements/events. They will be published on the ELICA website as well as on the website of the consortium partners. A standardized format will be used by all consortium partners to ensure recognizability.

3.1.3. Promotional material

Promotional material such as (poster, one-pager, fact sheets, leaflet, flyer etc.) will be created according to the ELICA branding guide. These materials will support the distribution of project-related information and enables the reach of a broad audience.

Dissemination materials will be published on the website and will be available for download. They will be also distributed at the events attended by the partners in order to increase the visibility of the project and extend our network and contacts

Newsletter

An electronic newsletter will be published and distributed on a regular basis (to be determined) on the website and Social Media channels. Regarding the content, the newsletter includes project-related news, statements in the context of current developments and results, announcement of events etc.
The newsletter can be subscribed by any interested individual on the ELICA website and will automatically be sent to the consortium, project partners and stakeholders.

Video

Videos are an illustrative way to raise awareness about the project and describe the main concepts and models behind the project. Promotional videos will be distributed through various channels (e.g. project and partners' websites, social networks). The videos will focus on the project concepts, methods or findings and will be directed to all identified target groups.

The first video about ELICA is part of a Rolls-Royce video about electric propulsion. The video sequence gives general information about the project as well as preliminary findings regarding the economic feasibility.

Figure 4: ELICA video

3.1.4. Communication with partners

Communication tools are not only used for the communication to the public, but also for the communication between the project partners.

Cloud Folder

An access-based cloud storage has been implemented in Sharepoint / Forumpass and is also going to be implemented at the project web site. The objective of these collaborative tools is that all project participants have the same level of knowledge throughout the project lifecycle and that the exchange of information is simplified. The access to the cloud storage on the website and Sharepoint/Forumpass is going to be restricted to the project consortium.

Mailing list

An internal mailing list including relevant contact details (name, organization and e-mail address) of all persons involved in the ELICA project has been/will be set up. The list will be sent to all project partners and will facilitate internal communication and the exchange of information within the consortium. If any changes regarding the persons' contact occur, the mailing list will be updated accordingly.

4. Exploitation

The presentation of the Dissemination and Communication Plan provides the basis for efficient exploitation of the project results and arising thereby a higher impact of research and industry. As the technologies of alternative propulsion system in the aviation industry will be a long-term task, it is obvious that further research in the industry and science are necessary before its application in commercial aircraft programmes. However, ELICA will make an important step towards the commercialisation by enhancing research and analysing technology gaps.

Exploitation means the direct or indirect use in further research activities other than those covered by the action or in developing, creating or marketing a product or process or in creating or providing a service or in standardisation activities. As required by the Annotated Model Grant Agreement, a beneficiary must — up to four years after the end of the project — take measures aiming to ensure 'exploitation' of its results. Thus, in the following chapters the initial exploitation strategy will be determined.

An overview of the methodological approach for the exploitation plan and strategy during the project lifecycle is going to be provided. The exploitation strategy is going to be tailored to the potentially most valuable project results, which includes business models and market strategy.

In order to reach these objectives, the exploitation tasks entail ensuring a permanent exchange with stakeholders, identifying their needs and requirements, analyzing challenges that might occur during the exploitation process, highlighting the impact.

This chapter explains the approaches and methods the consortium plans to transform project results "profitable" into benefits in order to foster future research activities and business initiatives after the end of the project. These benefits can be financial as well as non-financial.

As already stated, the exploitation plan describes the strategy and the scheme that supports the capitalisation of the tangible and intangible outcomes of ELICA, optimise their value, enlarges the impact and fosters the implementation in various fields.

During the project lifetime the Exploitation Plan will be regularly updated.

4.1. Exploitation strategy

The overall objective of ELICA project is to deliver a conceptual design of a 19-pax commuter aircraft based on alternative propulsion concepts targeting at low emissions. For the aircraft design and optimisation, today's state-of-the-art tools are developed for the conventional propulsion systems using fossil fuel. On the way to the final goal of the ELICA project, new sophisticated design tools with respect to electric architecture generation and power train design need to be developed and integrated into the existing aircraft design tools. This development will be the core know-how created within the project. In possession of the advanced design tools, the consortium will be able to provide innovative aircraft designs based on given TLARs.

For the near-term exploitation, the developed numerical tools can be refined or validated in further research projects. Firstly, tool refinement means that the numerical simulation tools and methodologies from the different disciplines can be refined with respect to their robustness,

fidelity, etc. Secondly, the obtained design results can be validated experimentally in further research activities, so that the trust and understanding of the numerical simulations can be increased.

For the mid- and long-term exploitation, the design and optimisation tool chain can be applied for new electric commuter aircraft projects. The tool chain can not only provide innovative design concepts from the very beginning, it can also help to further improve the existing aircraft designs.

4.2. Exploitation strategy partners

Based on the exploitation strategy described above, strategy partners for the exploitation have been identified. For the short-term exploitation, academic research institutes and universities can be the partners for further research activities beyond the active project period of ELICA. In this case, DLR and TU Munich can be named as examples. For the mid- and long-term exploitation, industrial partners, like aircraft manufacturer and regional airlines, will be the partners beyond the project timeline.

Due to the inherent scalability of the numerical methods, the developed design know-how in the ELICA project is not limited to 19-pax commuter aircraft, and it can be easily adapted to other aircraft classes. That means, design optimisations can be performed for 4-seater, as well as 70-seaters. The potential application aircraft classes and partners are shown in

Figure 5.

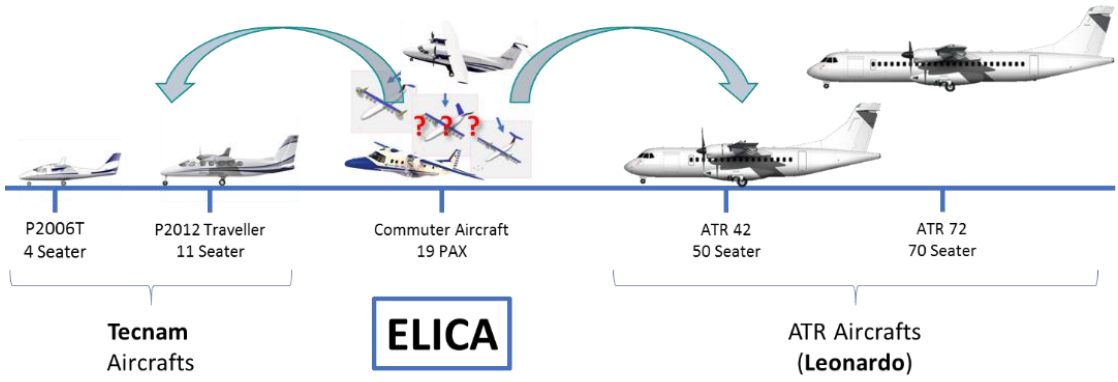

Figure 5: Impact of ELICA project

As leading aircraft manufacturers in the world in their market segments, both Leonardo and Tecnam issued supporting letters for the ELICA proposal during the application phase. After the award of the grant, Leonardo and Tecnam joined the Industrial Advisory Board (IAB) of ELICA and are providing guidance for the project with their industrial experiences. As the leaders in the Clean Sky Small Air Transport (SAT) programme, Piaggio Aerospace and Evektor joined the IAB of ELICA from the project start as well. The four mentioned industrial players are the current active European propeller aircraft manufacturers in different market segments. They will be the exploitation partners of ELICA results for industrialisation, also after the active project phase.
Further exploitation partners are the regional airlines. The Scottish regional airline Loganair showed strong interest to the market analysis results and the cost model of ELICA. The

Norwegian regional airline Wideroe has conducted similar market studies for regional air mobility, and they are strongly interested in zero-emission air transports. As the end customers, the regional airlines will be the most important partners for the commercialisation of the ELICA results.

4.3. Intellectual Property Rights

The ELICA project partners pay special attention to handle intellectual property and to confidential data exchange, as already done in several past European projects which involved power train manufacturers.

The management of knowledge (results, copyright, patents, designs, source code, etc.) resulting from ELICA, involves the ongoing identification, tracking, and registration of knowledge as it is produced. It is also concerned with the decisions on ownership of Intellectual Property and the procedures to be included in a Consortium Agreement. All the participants in the project will identify and register knowledge as it is produced with ELICA.

The Project Coordinator will ensure that data protection legislation is followed being implicitly intended that all ELICA participants have already agreed on the Intellectual Property issues listed below:

- All information provided by a Contractor to other Contractors within the project is confidential unless:
  - it was already known to the Contractor before the negotiations started, or
  - the information provided is public property, or
  - it is explicitly specified otherwise by the originator of the information.
- Contractors agree to use the information provided only for the purposes of conducting the project. Any disclosure of confidential information to a third party requires the explicit consent of the originator of that information.
- Proper records, indicating the originator and the date of the transfer, must be kept when information is transferred between Contractors.
- When more than one Contractor claims joint ownership of newly produced intellectual property, the Contractors involved should make provisions to clarify the terms of joint ownership among them.
- Contractors are not restricted in any sense regarding the rights associated with the ownership of any intellectual property they produce while conducting the project activities.

The Consortium Agreement follows the standard rules proposed for Horizon 2020. They determine the main approach regarding the ownership, protection and access to key knowledge. This approach will help ELICA pursue market opportunities emerging from the project's results on an individual and common level.

Thus, ELICA will follow the rules for IP defined by the European Commission:

• “Background” i.e. partners’ pre-existing know-how, while remaining the sole property of their owners, will be made available to other partners when needed for the project exploitation;

• “Results” i.e. knowledge developed through the project, will be owned by the partners who have directly contributed to its creation. In case of joint ownerships, a separate contract will be drawn

up and signed by the co-owners to determine rights and obligations, and settle the IP management and exploitation rules;

• Access rights to results for in-house research or for teaching activities will be granted on a royalty-free basis;

• Results including commercialisation or third-party research will be granted on fair & reasonable conditions;

Any proposed publication or dissemination activity by one of the parties will be submitted to all partners for agreement. Any exploitation activity will be also be accepted and approved by the members before to be exploited.

The management of IPR is strictly ruled by the Consortium Agreement (CA) which includes all regulations related to IPR management including ownership, protection and publication of knowledge, access rights to knowledge and pre-existing know-how as well as questions of confidentiality, liability and dispute settlement.

In the Consortium Agreement the members have defined the background knowledge included and excluded. The Consortium Agreement defines the ownership of results as well as the transfer of results ownerships.

The knowledge that was generated during the project shall be considered as a property of the contractor who created it, and consequently, the originator is entitled to use and to license such right without any financial compensation to the other consortium members. If it is not possible to separate the respective parts of a joint invention, the involved parties could agree that they may jointly apply to get the relevant rights and attempt to reach appropriate agreements.

Each consortium member is allowed to transfer ownership of its own Foreground following the regulations of the Grant Agreement Article 30.

Partners who own knowledge suitable for patenting will be encouraged to pursue any form of protection and shall supply details of applications to the other consortium partners. Specific confidentiality agreements will be signed among partners involved in tasks with sensitive IP and commercial issues, if required.

5. Time Table

An overview about the conducted dissemination, exploitation and communication activities are summarised in the following Table 5.

	2019			2020												2021												2022										
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Deliverables																																					
DEC Plan (D1.3)						x																															
Update 1									x																												
Update 2														x																							
Dissemination																																					
Meetings									x																												
Publications									x				x	x																							
Trade Fairs							x							x																							
Workshops	x					x				x			x																								
Lectures														x																							
Communication																																					
Social Media													x																								
Website							x																														
Press Releases						x				x																											
Newsletters	x						x						x																								
Videos							x																														
Exploitation																																					
Workshop	x									x			x																								

Table 5: Dissemination, exploitation and communication activities for ELICA

This table will be updated during the project execution time.

6. Conclusion

The present deliverable outlines the first version of the Dissemination, Exploitation and Communication Plan. It aims to present the overall strategy to disseminate and promote the project and to point out exploitable opportunities for the project ELICA; in summary, it serves as a framework for uniform and consistent activities and measures tailored to the requirements of each target group.

Regarding the dissemination activities, the consortium partners will attend to trade fairs and conferences that are relevant and important to the industry. In addition, the results of the project will be presented in conferences and published in scientific journals. For a best possible communication, multiple tools such as social media platforms, promotional material or press releases have already been or will be introduced.

Strategy has been defined for the exploitation of the project results. For the near-term exploitation, the developed numerical tools can be refined or validated in further research projects, together with academic research institutes and universities. For the mid- and long-term exploitation, the design and optimisation tool chain can be applied for new electric commuter aircraft projects together with aircraft manufacturers and regional airlines. Strategic partnerships have been built for the exploitation, also beyond the active project period.

In order to foster the visibility of the project and to ensure the impact on the respective target groups, the document will continuously be updated, adapted and monitored based on the progress of the project.

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