

## D6.1 COMMUNICATION, DISSEMINATION AND EXPLOITATION PLAN

### ELECTRO-INTRUSION PROJECT

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## LIST OF ABBREVIATIONS

Acronym / Short name	Meaning
AC	Academic community
CIC	CIC energiGUNE
CMS	Content management system
FAQ	Frequently asked questions
IJ	Industrial journal
IP	Intellectual property
IPR	Intellectual property rights
Int-ext	Intrusion-extrusion
KPI	National Technical University of Ukraine Igor Sikorsky Kyiv Polytechnic Institute
KPIs	Key performance indicators
KT	Knowledge transfer
NGO	Non-governmental organization
OEM	Original equipment manufacturer
R&D	Research and development
SC	Scientific community
TEN	TENNECO AUTOMOTIVE EUROPE BVBA
TRL	Technology readiness level
USK	Uniwersytet Slaski
UniFe	University of Ferrara

## PROJECT ABSTRACT

### **– Simultaneous transformation of ambient heat and undesired vibrations into electricity via nanotriboelectrification during non-wetting liquid intrusion-extrusion into-from nanopores –**

Greenhouse gas emissions, pollution and rational energy use are civilization-scale challenges which need to be resolved urgently, in particular by the conversion of abundant waste heat and undesired vibrations into useful electricity. However, the low efficiency of existing conversion methods does not provide an attractive solution.

Electro-Intrusion project proposes a new and highly efficient method and apparatuses for the simultaneous transformation of mechanical and thermal energies into electricity by using zero-emission nanotriboelectrification during non-wetting liquid intrusion-extrusion into-from nanoporous solids.

To tackle these phenomena, Electro-Intrusion project brings together a consortium of multidisciplinary teams specializing in physics, chemistry, material science and engineering to address the project by the state-of-the-art methods of molecular dynamic simulations, high-pressure calorimetry and dielectric spectroscopy, materials synthesis and characterization, and prototype development. The FET-PROACTIVE call is a key solution to bring this early-stage multidisciplinary concept to higher TRLs, fill in the large knowledge gaps in the solid-liquid contact electrification and heat generation during intrusion-extrusion as well as enable its full impact on EU innovation leadership, competitive market and energy sector security.

The proposed method can be used for energy scavenging within a wide range of technologies, where vibrations and heat are available in excess (train, aviation, domestic devices, drilling, etc.). In particular, using European Environment Agency data, this project estimates that the use of the proposed approach only within the automobile sector can reduce the overall EU electricity consumption by 1-4% in 2050. With this regard, the final stage of the project implies regenerative shock-absorber development and field-testing for a drastic maximization of the maximum range of hybrid / electric vehicles.

Electro-Intrusion project is scheduled to run from January 1<sup>st</sup>, 2021 to December 31<sup>st</sup>, 2024, for a total duration of 48 months and has received funding from the European Union's H2020 research and innovation programme under grant agreement No. 101017858. A full list of partners and funding can be found at: <https://cordis.europa.eu/project/id/101017858/es>.

## 1. EXECUTIVE SUMMARY

This document describes the Communication, Dissemination and Exploitation Plan of the Electro-Intrusion project, which will be implemented during the four years of activity to maximize the impact and exploit the possibilities arising from the results of our research. In the document, we first analyse the targets of our communication and dissemination activities, then present our plan to reach them, also describing the tool we plan to develop to reach our objectives. Tools include social media presence, to which all partners will contribute preparing suitable content to be made available on the various platforms. Key Performance Indicators are identified to measure and monitor the effectiveness of the communication, dissemination and exploitation activities, which will allow us to adapt our plan to achieve its general objectives.

To maximize the effectiveness of communication and dissemination activities of the Electro-Intrusion project, we will follow a decentralized approach: each partner will prepare material suitable for reaching different audience, following their expertise and contribution the partners give to the project, whether more focused on the fundamental aspects of the research or on the more technological ones. This decentralized activity will be coordinated by UniFe, the lead beneficiary of the Communication and Dissemination Work Package, that will also take care of preparing the material for the generalist audience, including video material or cartoons illustrating the objectives of the project, the profile and role of the partners and major achievements of the project, to engage the audience that can more easily be reached by these communication tools.

Finally, a Knowledge Transfer and Intellectual Property Management Plan is drawn to assist the partners in the exploitation of the scientific and technological results of the project, during its development and after its conclusion.

## 2. INTRODUCTION

The present document introduces the Electro-Intrusion project strategy for communication, dissemination and exploitation activities. This document is based on the provisional Communication, Dissemination and Exploitation plan reported in the original project proposal and following the guidelines and documents provided by the European Commission on the subjects of the present report:

- Pages “Dissemination & Exploitation of results” and “Communicating Your Project” of the participant portal and documents available therein. In particular:
  - Communicating EU research and innovation guidance for project participants
  - The Social media guide for EU funded R&I projects
  - Communication, dissemination and exploitation: Why they all matter and what is the difference?
  - YouTube video The EU Guide to Science Communication
  - Making the most of your H2020 project. Boosting the impact of your project through effective communication, dissemination and exploitation.
- Commission Recommendation on the management of intellectual property in knowledge transfer activities and code of Practice for universities and other public research organisations

The main objective of this plan is to organize the activities for presenting and promoting the Electro-Intrusion project in an effective and coordinated manner in order to ensure consistency and accessibility during the grant period, to guarantee high visibility and to raise awareness on the project topics and achievements.

Our focus is to provide tailored information to target groups at the local, national and international levels. For this purpose, we structured this document in various sections to:

- illustrate how to build a well-defined identity, suitable to communicate the key messages at the basis of the Electro-Intrusion project;
- analyse target groups to identify suitable messages and tools to establish a fruitful communication with them;
- identify and design suitable tools to fit communication, dissemination and exploitation goals;
- plan the knowledge transfer activities and intellectual property management
- identify key performance indicators (KPIs) to measure the effectiveness and efficiency of our activities.

Communication, dissemination and exploitation might require adjustments along the project dictated by the development of the research activities or mutation of external conditions, e.g., the identification of better applications for nanotriboelectrification, market niches that appear more promising and mature, changes of regulations, the emergence of novel societal priorities, etc. The possible occurrence of these changes requires a constant check and update of the Communication, Dissemination and Exploitation Plan, whose changes will be tracked in an *ad hoc* section of the document (Section Revision History in the preamble of the document).

As described below, the project will adopt a two-fold communication strategy:

- communication activities: aimed at informing citizens, young population, stakeholders as well as the lay, non-specialized audiences about Electro-Intrusion objectives, research and results;
- dissemination and exploitation activities: aimed at targeting scientists as well as authorities, industry, policymakers, non-governmental organizations, etc. to maximize the impact of the outcomes of the project, taking into special account their potential commercial and societal impact.

This document, together with material and services for a high-impact communication and dissemination activity, is developed within the Work Package (WP) 6 of the project. WP6 is led by UniFe and the activities are carried out in collaboration with all the other partners. UniFe has established a Communication Team, composed by academic and non-academic staff having expertise in the various aspects necessary to implement the Communication and Dissemination Plan: i) communication strategies and techniques, ii) production of visual, video and audio materials, iii) ICT. This team is coordinated by the leader of the UniFe partner, Prof. Meloni.

## 2.1. COMMUNICATION ACTIVITIES

A key ingredient of the Electro-Intrusion communication strategy is to establish a strong connection with stakeholders. The aim is i) to make available the basic ideas and objectives of the project to the broadest possible audience, to pave the way for follow-up strategies for the possible development of a marketable technology after the project ends; ii) to gather, to analyze and to understand stakeholders' expectations and requirements for the regenerative shock



absorbers or other technologies that will be developed during the project, so as to optimize the activities, and increasing public acceptance and impact of the results of the project.

Engaging with industry and end-users guarantees a demand-driven innovation approach throughout all phases of the project, generating trust with regard to novel products and removing potential barriers to market acceptance at an early stage, should the outcome of the project results in a marketable product. Further communication and public engagement activities are targeted at policymakers, media and the general public. On the one hand the objective is to exploit knowledge generated by the project and, on the other hand, to increase the visibility and acceptance towards Electro-Intrusion concepts and to reinforce policies on energy scavenging and energy questions at large.

As Electro-Intrusion project concerns the field of clean and sustainable energy, a theme of ever increasing interest among European citizens and, in particular, the young generation, we designed a broad spectrum of actions aimed at reaching the various groups taking into account their age and interests.

## 2.2. DISSEMINATION ACTIVITIES

Electro-Intrusion aims at delivering relevant information about the objectives of the project, as well as interim and final results, to groups of people potentially interested in technologies for energy harvesting and scavenging. We will foster a regular two-way flow of information between partners of the Electro-Intrusion project and stakeholders.

To achieve the dissemination objectives of the project, we will identify target groups and potential users, and investigate their interests in the themes addressed by Electro-Intrusion to maximize the impact of dissemination. Among the others, we can already mention the scientific community interested in fundamental research (e.g., chemistry and materials for the synthesis of porous materials, physics of fluids, statistical mechanics and simulation of complex processes, etc.) as well as more applicative subjects (e.g., engineering for the design and implementation of regenerative devices). Expected stakeholders include European car manufacturers and suppliers, train and antivibration systems manufacturers, service providers, technical centers, regulatory bodies and policymakers. These and other potential stakeholders will be engaged to maximize the impact of the scientific and technological results of the Electro-Intrusion project.

In parallel to the above actions, dissemination activities will be developed among national and, in particular, EC-funded projects focused on energy, possibly implementing joint dissemination actions toward stakeholders.

## 3. STRATEGY

A careful selection, design and implementation of communication and dissemination tools and actions is crucial to achieve the success and maximize the impact of projects like Electro-Intrusion. Indeed, the aim of H2020-FET projects is not limited to the accomplishment of scientific goals but also to set the ground for possible follow-up business opportunities, possible industrial and/or commercial applications of the technology developed during the project and its societal impact. This requires providing demonstrations of the technology under development, attract the attention of stakeholders, understand their priorities and strategies, consider possible regulatory issues, identify additional market niches.

To maximize the impact of communication and dissemination activities, it is key i) to identify the audience and groups potentially interested in the Electro-Intrusion project, ii) to select few clear key messages to attract their attention and engage them in discussions at different (more and less) technical levels, iii) to develop a visual identity of the project - logo, font and colours - that make Electro-Intrusion easily recognizable and iv) to accompany it with an incisive payoff, a short sentence illustrating the objectives and vision of the project. Importantly, this strategy is tailor-made for the Electro-Intrusion project from its inception to the end, continuing throughout its entire lifetime. In the following, we will discuss points i), ii) and iv). We reserve Section 4 of this plan to the point iii).

### 3.1. PROFILE OF THE AUDIENCE

A thorough stakeholder analysis provides the basis for all activities aimed at maximizing Electro-Intrusion's communication and impact, and serves as the foundation for the project's dissemination, exploitation and communication activities.

Figure 1 shows the most important stakeholders divided into groups according to their level of influence and interest in Electro-Intrusion:

- Key Stakeholders (high influence/high interest);
- Facilitators or Risks (high influence/low interest);
- Multipliers & Target Groups (low influence/high interest);
- Potentially Interested Parties (low influence/low interest).

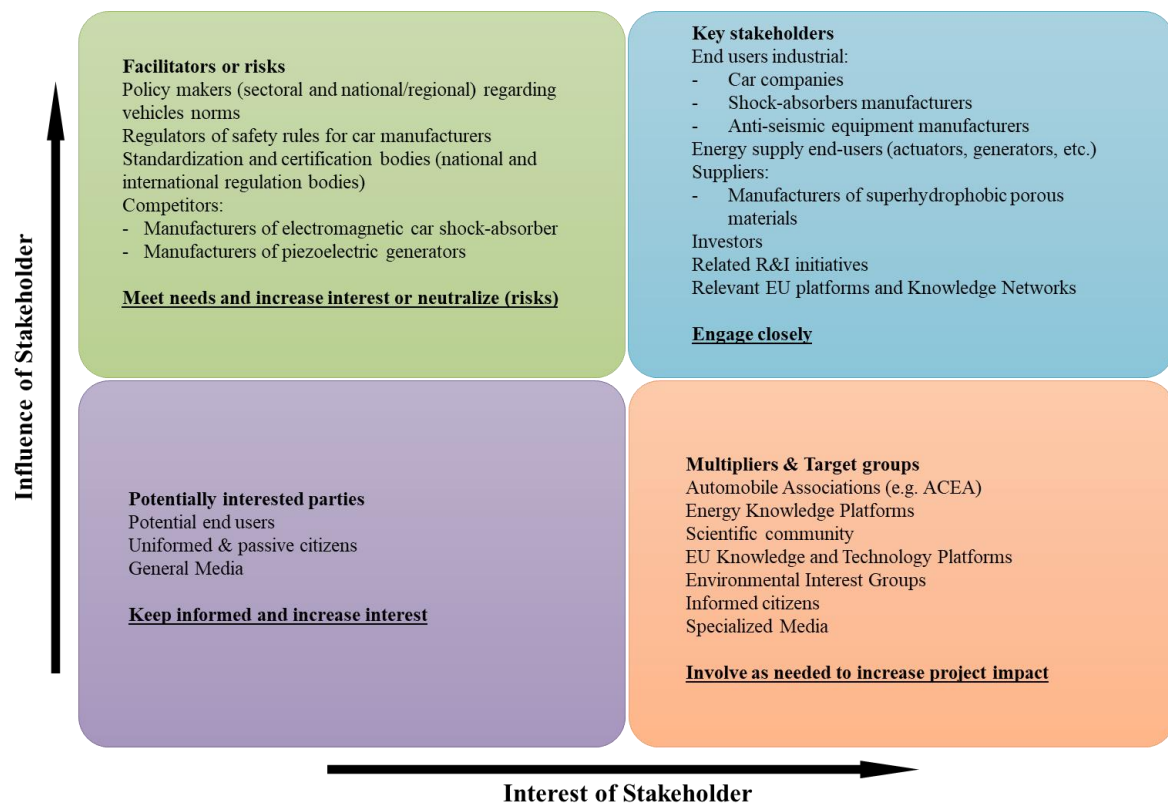


Figure 1.- Groups of stakeholders ordered according to their Influence and Interest on the Electro-Intrusion project.

Communication, dissemination and exploitation activities are targeted at all identified groups with appropriate and well-defined goals. Activities and means are chosen based on these goals and are divided into communication, dissemination and exploitation activities described below in dedicated sections (Secs. 5 and 6, respectively).

### 3.2. KEY MESSAGES

The overarching objective of Electro-Intrusion is to go beyond the current paradigm of recovering dissipated (mechanical) energy by adding ambient heat into the conversion process and hence increasing the (nominal) efficiency of energy scavenging, a key ingredient for sustainability.

The project is funded and rooted in the breakthrough zero-emissions energy storage and conversion technologies for carbon-neutrality sub-topic of the H2020-FET PROACTIVE actions and, more in general, reacts to the call to action of the European Green New Deal. The aim of the project is to develop a new approach and related apparatuses for simultaneous conversion of mechanical energy of undesired vibrations and heat extracted from the environment into electricity, using a technique recently discovered by some of the members of the consortium. We have identified the following **messages to be conveyed to stakeholders** to engage them in discussions about objectives and results of Electro-Intrusion, as well as the more general energy-related issues, its use and misuse, in our society:

- **Sustainability:** i) develop new technologies to recover dispersed energy, here vibrations, and transform them into electric current; ii) exploit the process leading to energy recovery (collection of dispersed energy) to obtain, at the same time, energy harvesting (gathering of energy available in the environment), so as to convert both dispersed mechanical energy and heat into high-quality energy, namely electric current. This will allow one to reduce the energy consumption of modern societies, preserving the environment without compromising on the level and quality of life.
- **Innovation:** this project is based on the comprehension of fundamental phenomena and the development of nanotechnologies that can exploit them. The understanding of these phenomena - liquid intrusion in/extrusion from porous materials, liquid/solid triboelectrification - and the development of these innovative nanotechnologies - lyophobic nonporous materials with suitable triboelectric properties - can have an impact on different scientific and technological domains, such as chromatography, nanofluidic, surface coating and many more. This might contribute to boost-up high-tech industries in Europe.
- **Feasibility:** the project moves from the solid ground of preliminary results obtained by some of the partners of the consortium. This message will be updated and reinforced all throughout the project, when new results will be achieved.
- **Broad scope:** Electro-Intrusion vision is applicable to nearly every field of life and to any technology, wherever excess mechanical energy is available: private and public transportation, industrial apparatuses, domestic appliances (washing machine, vacuum cleaner, etc.) and many more
- **Financial sustainability:** the technology we envisage is expected to be relatively cheap. Though it is too early to perform a detailed financial analysis, we expect that the return time of Electro-Intrusion devices will be short. This message will be reinforced during the process when, after have developed some preliminary apparatuses, it will be

possible to estimate the cost of Electro-Intrusion regenerative shock absorbers or other devices based on the same approach.

### 3.3. PAYOFF

The project will be accompanied by a payoff - or tagline - a short sentence summarizing the vision and objectives of Electro-Intrusion, hence reinforcing in the audience's memory the vision and goals of the project. A payoff, a well-established tool in marketing and branding practices, offers the opportunity to **optimize the effectiveness** of our communication at different levels: both on lay and specialist audiences, on the website, social media and offline communication.

The sentence we choose as payoff always matches the logo and the title of Electro-Intrusion, expressing in a few words the mission of the project. Also, our payoff highlights the quality and the potential of the project. Our payoff is ***“Recovering dissipated energy for a sustainable future”***, appearing on the homepage of the website and to be used on other advertising material.

## 4. VISUAL IDENTITY

In the present times, it is of paramount importance to associate an image to a project. The image, and the other ingredients of the visual identity (colors, fonts of the text, etc.), must at the same time **transmit the vision** of the project and make it easy to **identify the initiative**.

The visual identity realized for the project, described in detail below, will be adopted at all levels of communication, offering a **consistent visual profile to our communication tools**.

A short manual and templates for documents, slides, posters, etc. will be prepared to help the partners to gain the maximum advantage from the visual identity of the Electro-Intrusion project. This material is made available to the partners in the OneDrive repository of the project.

### 4.1. BASIC CONCEPTS

#### 4.1.1. LOGO

The logo of Electro-Intrusion, a hexagon inscribing circles of various sizes, is inspired by the key aspects of the project: porous materials, vibrations, energy harvesting. The logo aims at visually communicating the main objective of the project: **converting dispersed energy into electric current through liquid intrusion into porous materials**. The colors selected for the project help transmitting this message.

The pictogram of the Electro-Intrusion logo will also serve as favicon of the website.

#### 4.1.1. COLORS

Colors are important to support and enhance the message conveyed by the logo. The main color of the Electro-Intrusion project is light blue (#379FAE), which degrades to green (#3CDDAB) toward the center of the logo, with text in grey (#6C7571). Light blue is prioritized and is used, for example, for the footer and some graphic elements of the web site. Degradation of light blue into green helps to give depth to the logo, to recall liquid intrusion into the pores. Moreover, light blue and green are colors associated with nature, which helps recalling the basic messages of Electro-Intrusion: **give new life to unusable energy to help sustainability**.

#### 4.1.1. FONTS

The **Domus Titling - Regular font** has been selected for the logotype of the project. **The Domus Titling** is a regular and clean font perfectly in line with the regular shape of the pictogram of the logo, providing a sense of solidity and determination to achieve the objectives of the project. Text for dissemination material is **Helvetica (also known as Neue Haas Grotesk)**.

#### 4.2. SELECTION PROCESS

The logo of the Electro-Intrusion project has been selected by choosing among **FIVE options** prepared by UniFe. To make it easier for the partners to express their preference, several formats of each logo (size, colors, position of the text) and renderings were prepared illustrating the look and feel of the visual identity within the context of the website of the project and homepage of selected social media. In the next section, we report the visual identity chosen by the members of the consortium. A selection of the material provided to the partners for the selection is reported in the appendix of this document.

#### 4.3. PICTOGRAM, LOGOTYPE AND COLORS

Pictogram, the position of the logotype, and background colors combinations of the approved logo are reported below (Figures 2-4). Since the visual identity must be applied in different contexts - webpage, social media, documents, slides, etc - to help selecting the visual identity among the various options, rendering of the logo on the (provisional) webpage of the project and (provisional) homepages of selected social media were prepared and provided to the partners for their evaluation (Figures 5-6).



Figure 2.- Logo of the Electro-Intrusion project. In this form, the logo is ideal for opening and closing audiovisual materials, such as clips and cartoons.



Figure 3.- Logo of the Electro-Intrusion project with several coloring schemes to be used depending on the context.



Figure 4.- Logo of the Electro-Intrusion project in several sizes and positioning of the name to be used depending on the context.



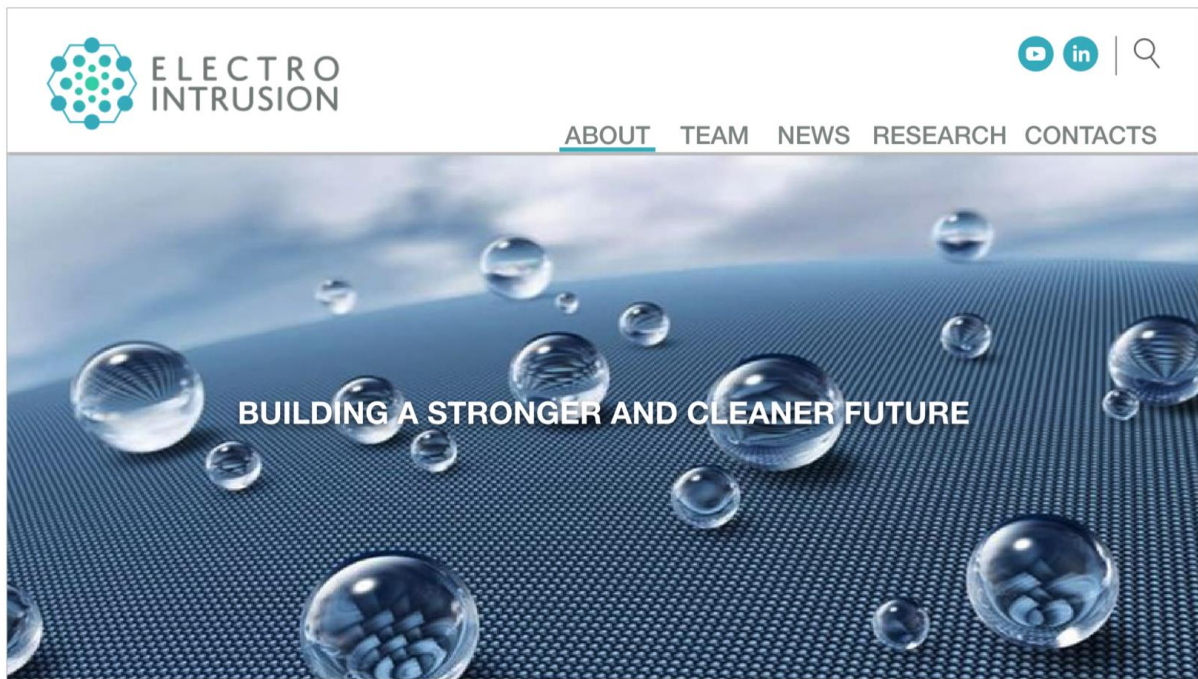


Figure 5.- Logo of the Electro-Intrusion project in a rendering of the webpage of the project. This rendering was prepared before selecting the payoff of the project, which is not reflected in the one shown in the figure.

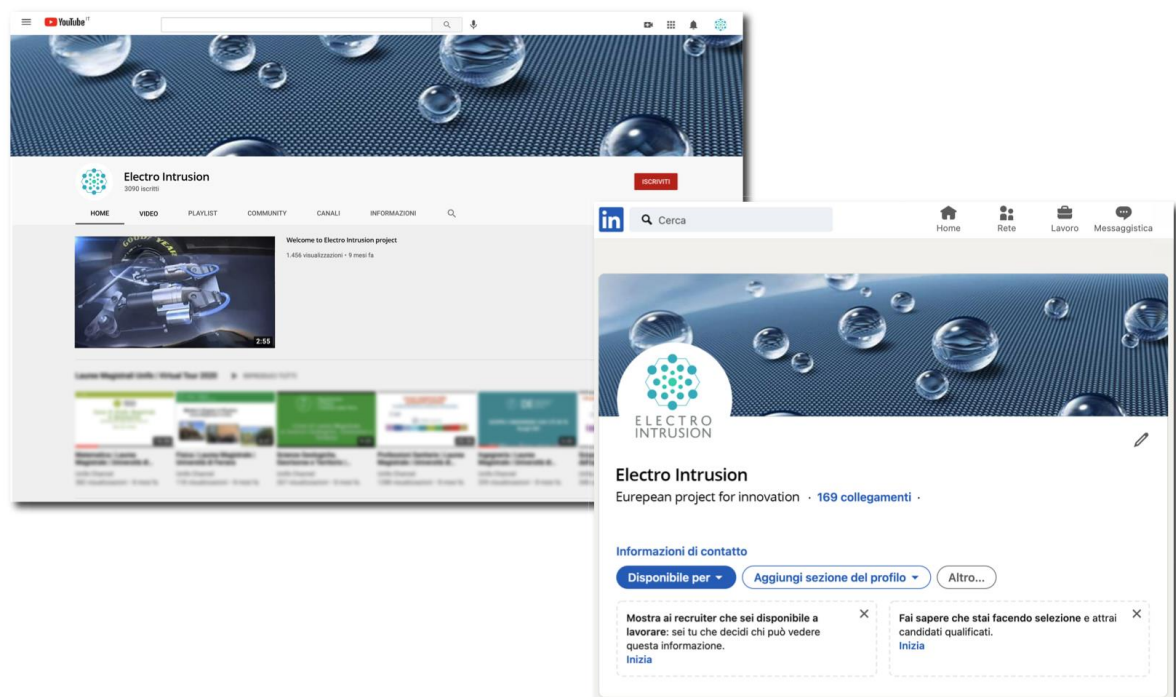


Figure 6.- Logo of the Electro-Intrusion project in a rendering of social media homepages (YouTube and LinkedIn).

## 5. COMMUNICATION

### 5.1. AUDIENCE

The communication of Electro-Intrusion does not target a static and uniform audience. People potentially interested in the project belong to different groups, each one characterized by its **own interests** and **specific language**. To establish an effective communication link, we must take these aspects into account to choose and use suitable channels, contents, languages and *tone*. Nonetheless, the project identity described above must underlie every action of the plan.

The targets of our communication, here, are **car manufacturers and their suppliers' associations** and analogous associations of other relevant industrial sectors (e.g., **trains and aero sector, energy industries**, any industry where large amounts of mechanical energy - vibrations - is dissipated), **environment protection NGOs** and **national/international agencies, informed citizens**.

These groups will be involved in both communications, discussed here, and dissemination, presented in the next section. The communication toward this audience is targeted at the various levels of these composite entities, which are made of people-oriented toward business, science and technology, politics and regulation, etc. Hopefully, this communication activity will also facilitate the dissemination activity. In some cases, communication might require a one-to-one engagement through coaching and mentoring activities.

The communication to the more specialized audience spans the **entire duration of the project**, from the beginning all through the subsequent stages of Electro-Intrusion. Communication toward these groups is more oriented to quantitative aspects of the technology under development to illustrate its possible impact on the industry, economy and society. Of course, depending on the counterpart, the language and degree of scientific/technological details will be adapted to maximize the communication impact.

### 5.2. COMMUNICATION ACTIVITIES

In Table 1 we list the communication activities that we envisage for the Electro-Intrusion project. It is worth remarking that some actions belonging to the various activities of Table 1 have already been performed at the time of submission of this plan.

Table 1.- Communication activities.

Activity	Description	Target	Timeline	Responsibility
Website and RRSS	Progress and updates will be reflected on a project website and social media (LinkedIn, Twitter, ResearchGate, Facebook)	Society, SC, AC*	Regularly	UniFe
Teaching at universities	The project idea and its results will be included in ongoing Master programs and will be presented as open seminars. In particular, members of the partner institutions teaching at universities will promote the	SC, AC*	Regularly	All university partners



Activity	Description	Target	Timeline	Responsibility
	multidisciplinary approach at the basis of the Electro-Intrusion project.			
Publications in media	Presentation of the objectives and results on media, such as interviews of the Electro-Intrusion researchers on national radio and TV show interviews. Other events to achieve these objectives are TedX, MakerFaire and similar gatherings. This will allow to reach a broader and general audience.	Society	Regularly	All partners
OEM customers Innovation Tech Days	OEM customers Innovation Tech Days	Industry	Regularly	CICe and selected partners
School visits	Informative visits to schools in each country of consortium members will be organized to deliver seminars on the project idea. Typically, these events are organized by the schools for last-year students to help them choosing university courses.	Young population	Regularly	University partners, depending on their contact with schools
Open days	Open days at the universities to stimulate the interest of students to the project and their involvement within the Master or PhD project. These events are regularly organized for students passing from Bachelor to Master and from Master to PhD schools	Young population, SC, AC*	Regularly	University partners

\* SC stands for *Scientific Community* and AC for *Academic Community*.

## 6. DISSEMINATION AND EXPLOITATION

### 6.1. AUDIENCE

The objective of dissemination and exploitation activities is to make the Electro-Intrusion **results and achievements** available to those entities that may take advantage of the technology that we will develop within the project, to plan follow-up actions to take the maximum advantage for Europe from the scientific, technological and economic points of view. Dissemination to other groups, facilitators - e.g., FET Program Managers - and multipliers, may help us to get in contact and to establish two-way communication with industrial stakeholders, policymakers,

regulators, public and private funding institutions and organizations. Of course, given the low initial TRL, we expect to publish a number of research articles on fundamental and more applicative aspects of our research. Hence, dissemination will also target the scientific community.

The audience of our dissemination activities can be divided into **several groups according to their interest** on the specific topic of this project and on **their influence** on the dissemination and exploitation of the outcomes (see Figure 1):

#### 6.1.1.FACILITATORS AND RISKS

The first group, highly influential but with a moderate interest in the specific topic of the project, includes **policymakers and regulators** defining norms and rules for vehicles and their components as well as **standardization and certification bodies**.

**Competitors, researchers and companies** working on other technologies for the recovery of (mechanical) energy - e.g., electromagnetic or piezoelectric regenerating shock-absorbers - are also part of this group.

#### 6.1.2.KEY STAKEHOLDERS

This group, highly influential and with potentially high interest in the results of the Electro-Intrusion project, includes **potential industrial partners**, who can fabricate or implement regenerative triboelectric shock absorbers on their products, primarily shock absorber producers and car manufacturers but also producers of other vehicles or devices dissipating significant mechanical energy: train and aerospace sector, turbines, anti-seismic equipment, home appliances, etc.

**Other companies using devices** that dissipate mechanical energy are also part of this group, e.g., companies working in the field of energy. Within this group, we also include other R&I initiatives and projects - e.g., other H2020-FET and Horizon Europe-EIC projects - investors, managers of venture capitals, relevant EU platforms and knowledge network.

#### 6.1.3.MULTIPLIERS & TARGET GROUPS

This group, highly influential and with potentially high interest in the results of the Electro-Intrusion project, includes **potential industrial partners**, who can fabricate or implement regenerative triboelectric shock absorbers on their products, primarily shock absorber producers and car manufacturers but also producers of other vehicles or devices dissipating significant mechanical energy: train and aerospace sector, turbines, anti-seismic equipment, home appliances, etc.

**Other companies using devices** that dissipate mechanical energy are also part of this group, e.g., companies working in the field of energy. Within this group, we also include other R&I initiatives and projects - e.g., other H2020-FET and Horizon Europe-EIC projects - investors, managers of venture capitals, relevant EU platforms and knowledge network.

## 6.2. DISSEMINATION AND EXPLOITATION ACTIVITIES

The Dissemination and Exploitation Plan consists of the following activities:

Table 2.- Dissemination and Exploitation Plan.

Activity	Description	Target	Timeline	Responsibility
Peer-reviewed scientific articles	Phys-Chem and Chem-Phys journals for results concerning the int-ext process. Applied energy journals for the optimization of the triboelectric power generation and regenerative shock absorbers prototypes. The policy and rules for the publication of scientific articles is detailed in Sec. 12.3 of the <b>Project Manual and Management Guidelines</b>	SC, AC	Regularly	All partners
International Conferences	Participation to conference on interface science, wetting, Phys-Chem and Chem-Phys for the int-ext process; Automobile, vibrations for the optimization of the triboelectric power generation and regenerative shock absorbers prototypes. The policy and rules for the dissemination in conferences and workshops is detailed in Sec. 12.3 of the <b>Project Manual and Management Guidelines</b>	SC, AC, Industry	Regularly	All partners
Cross-project communication	Several national, European and international projects focus on energy and related themes. Cross-fertilization and exchange of communication among these projects can be helpful to both develop new ideas and maximize the impact of expertise and skills of research teams	SC, AC	Regularly	CICe, UniFe
Workshops (WS)	2 WS to present the main results of the project and a “prototype tour”: 1. Addressed to the scientific community and focusing on the	SC, AC, Industry	1 <sup>st</sup> WS M30-36  2 <sup>nd</sup> WS M42-48	CICe, UniFe, TEN

Activity	Description	Target	Timeline	Responsibility
	<p>fundamental research aspects of the project</p> <p>2. Addressed to industry and the R&amp;D sector</p> <p>At the end of the project will be organized a <i>tour</i> organized by TENNECO to present the prototype of the nanotriboelectric regenerative shock absorber</p>			
Articles in industrial journals (IJ)	<p>IJ specialized in the automotive sector, energy conversion, energy recovery, energy dissipation technologies, etc. will be targeted. Examples of such journals are <i>Technical Committee on Motion Control at IEEE Industrial Electronics Society</i> (<a href="http://home.uia.no/michaeru/tcmc/">home.uia.no/michaeru/tcmc/</a>); <i>FISITA – The International Federation of Automotive Engineering Societies</i> (<a href="http://www.fisita.com">www.fisita.com</a>).</p> <p>The policy and rules for the publication of scientific articles is detailed in Sec. 12.3 of the <b>Project Manual and Management Guidelines</b></p>	Industry R&D	Regularly	All partners
Presentations for industry	<p>Info-meetings will be organized with the relevant companies to present the results of the project, which are not covered by IP agreements. In particular, within TEN's yearly innovation forums to strategic OEMs.</p>	Industry	Regularly	CICe, TEN, UniFe
Research data	<p>1. Experimental and modelling data will be gathered, stored and curated according to the ISO/GMP;</p> <p>2. The cost of data will be borne by the project;</p> <p>3. Raw data will be freely available for the SC via repositories and golden open data pilot initiative, except for data under IP protection.</p>	SC, AC	Regularly	All partners

Activity	Description	Target	Timeline	Responsibility
Facts and policy recommendations	Regulations regarding market implementation of regenerative shock-absorbers will be consider while defining the dissemination and development strategy the proposed for the nanotriboelectric generator.	Policy makers and regulators	Regularly	CICe, UniFe
Higher-TRL EU projects	During the last phase of the project, after an evaluation of the degree of success of the project, other EU calls dedicated to more mature technology developments will be targeted to exploit the obtained results and develop closer to the market solutions.	SC, AC, Industry	End of the project	All partners
Industrial projects with EU companies	Participation in specific calls based on the developed energy conversion method, targeting devices other than shock-absorbers. These projects will involve EU companies to establish the EU leadership in this innovation technology to propose market solutions.	Industry SC, AC	After the project	All partners
Scale up-oriented projects	It is possible that the best-performing porous material and/or non-wetting liquids are not currently produced at the required scale. Therefore, a scale up project may be required. This can be realized within high-TRL EU projects or within direct projects of the members of the consortium with relevant EU industries.	Industry SC, AC	After the project	All partners

Activity	Description	Target	Timeline	Responsibility
<b>Business acceleration support and coaching services</b>	EIC offers services to scientists and innovators. Beneficiaries can receive help to progress along the duration of the project, “from idea to proof of concept, to first pilot application and finally upscaling and expansion.” This service might help Electro-Intrusion partners to better manage intellectual property and to identify market niches and companies to whom to present our vision and achievements.	Industry	M30-48	All partners
Horizon Impact Award	Participation to the Horizon Impact Award, the award granted by European Commission's “to recognize and celebrate outstanding projects that have used their results to provide value for society.”	Consortium	End of the project	CICe

As far as facilitators are concerned, **EIC program managers**, a figure just introduced in the Horizon Europe framework programme, can help to get the Electro-Intrusion partners in contact with policymakers and regulators interested in the topics of the project. EIC program managers can also help finding funding opportunities within Horizon Europe for a higher TRL project stemming from the results of Electro-Intrusion.

Concerning dissemination and exploitation, we plan to take advantage of the tools provided by the EC for this purpose, such as “The Horizon Results Booster”, whose mission is to provide guidance to disseminate and exploit research results. Particularly interesting is the promise that this service can be tailored for increasing the exploitation potential of the projects’ results and improve the chance to access to markets or get in contact with high-tech companies that can transform the prototype fabricated at the end of the project into a marketable product.

Particular care must be devoted to **competitors**. Indeed, we believe that a concurrent action is possible to raise the awareness of the society at all levels on energy recovery, which might promote at the same time the adoption of the technology developed within the Electro-Intrusion project and those proposed by the competitors. Indeed, different technologies might be optimal for different market niches, thus turning competition into cooperation.

One of the **partners** of the project, **TENNECO AUTOMOTIVE EUROPE BVBA, a well-established company in the R&D of car components**, can be functional to establish a two-way communication with industries of the automotive sectors. Moreover, European initiatives, such as “Research Meet Industry” meetings organized by EIC, will be helpful to get the project in contact with industries that can have interest in our technology but have been overlooked in the analysis of the impact of Electro-Intrusion.

## 7. INTERNAL COMMUNICATION

Internal communication is important to ensure a smooth development of the project and a continuous **engagement of all partners**. This will also allow taking advantage of the lateral view of partners who are not directly involved in a specific task, who can suggest alternative approaches to address scientific and technical problems.

More in detail, the objectives of internal communication are:

- **Coordinate and optimize the flow of communication** among partners according to the management plan.
- Align and maximize the synergy among concurrent work packages.
- **Keep the Communication Team updated** about the progress of the project, to allow a prompt and smooth implementation of the present plan.

Internal communication is based on regular meetings:

- **Scientific/ technical meetings** within each work package, to be held approximately once per month and called by the leader of the WP. The agenda is set by the leader of the work package after consultation with the partners involved in the WP.
- **Communication meeting**, to be held every 3-4 months **to plan in detail and coordinate communication and dissemination activities** and to report about the communication/dissemination results of the previous period. The coordination obtained through these meetings will ensure that no *ad hoc* dissemination, communication or exploitation activities will occur.

The tools planned to keep track of internal communication are intentionally light and simple, typically minutes of the meetings, slides and other material used by presenters or to help the discussion. This **material** will be collected **in the OneDrive repository** of the Electro-Intrusion project, which is managed by CICE.

## 8. COMMUNICATIONA AND DISSEMINATION TOOLS

To put in place the communication and dissemination activities illustrated above we plan to realize several tools, including a website, social media channels, and dissemination materials described in the following.

### 8.1. WEBSITE

The website is designed as **information meeting-point** of the project and **the hub** of the communication, dissemination and exploitation activities of Electro-Intrusion. On the website, information and updates on the progress of the Electro-Intrusion project will be published, with social media and other dissemination channels pointing to the website to complement posts with more thorough information.

The website is based on the **Content Management System (CMS) Plone**, used for publishing, editing and managing content without the need to use programming languages. This will make it possible to all members of the Electro-Intrusion partnership to add content to the website without the need of having any technical skill. This approach has already successfully been

employed for the webpage of UniFe, the WP6 leader; Plone is, therefore, a trusted and well tested platform.

The project website is available at the URL [www.electro-intrusion.eu](http://www.electro-intrusion.eu).

The website has been designed to achieve the following objectives:

- consistently communicating the **vision** and **identity** of the project;
- be **easily accessible**, i.e., to allow a variegated audience to access the information of their interest. The Electro-Intrusion website adheres to the W3C accessibility standards;
- achieve the **main communication, dissemination and exploitation objectives**;
- to be easy to **manage and updated**.

The Communication Team designed the website, its aims, architecture and content strategy, which will then be approved by all partners. **All partners contributed and will contribute** contents and updates to the website, under the coordination and guidelines provided by the Communication Team.

The website consists of several pages:

#### 8.1.1. THE HOMEPAGE

The website homepage aims at providing an **overview** as well as an easy access to the sections and contents of the website. The header displays the logo, a navigation menu, and the links to social media.

The **menu** is deliberately very simple, for a clear and immediate use, and contains the following items: about, team, news and events, research, contacts. The number of sections is limited to allow easy navigation. The **labels** of the menu items describe the contents of the linked sections clearly and in a user-friendly language.

The homepage includes a **selection of news** from the dedicated section, highlighting the latest and more interesting updates. A **video** will be also published to introduce the general public to the project and its objectives.

The website **footer**, which is visible in all the pages of the website, contains the logo of the project, a disclaimer, the EU logo and an acknowledgment of the EU funding.

#### 8.1.2. THE ABOUT SECTION

This section is introduced by an image to maximize the visual impact and is meant to provide an easy and immediate **access to the project**. Here we describe the vision and main objectives of Electro-Intrusion adopting a non-technical language and a *lite* structure to make this section accessible to a broad audience.

#### 8.1.3. THE TEAM SECTION

In this section we provide information **on the skills each partner and the contribution they will give to the project**. Here, we intentionally refrain from giving a formal description of institutions participating in the project, which is left to their website to which a link is provided.

#### 8.1.4. THE NEWS AND EVENTS SECTION

This section is introduced by an image to maximize the visual impact. It is the section where the **general updates** will be published. They will be organized and tagged to be immediately



accessible to the specific audiences they are meant to. They will be marked depending on the type of news, identifying, for example, news from the consortium, news from the media and events, etc.

#### 8.1.5.THE RESEARCH SECTION

This section is introduced by an image to maximize the visual impact. This section is meant to support **dissemination**. Here, we collect the relevant publications, such as related scientific and technical articles published by the consortium, as well as other data and publications that might help dissemination and exploitation.

#### 8.1.6.CONTACTS SECTION

This section allows a direct communication with the Electro-Intrusion team via a **form**. The direct use of an email of the project is not allowed to avoid to incur in spamming and analogous actions.

### 8.2. SOCIAL MEDIA

Social media allow one to reach both a broad and targeted audience. Moreover, they allow one to enhance the reputation and the **influence** of the project and to **build networks** among colleagues and other stakeholders. Therefore, social media will be used to pursue and strengthen communication, dissemination and exploitation activities.

In this section, we describe how we will plan and manage the presence of Electro-Intrusion on each social media, bearing in mind the intrinsic features of each platform and the analyses of our different audiences (Secs 5.1 and 6.1). The detailed management of communication *via* social media is devoted to the **Editorial Plan**, a set of tools consisting of i) guidelines on how to prepare posts for the social media (style, “tone of voice”, structure of the post, etc), which will be different from social medium to social medium, ii) rules for approving/modifying/discarding proposed posts, iii) a calendar of posts to be released. The Editorial Plan is especially important for the organization of the distributed **Editorial Board** of Electro-Intrusion, which includes all partners, who are invited to contribute to the communication of the project (see below). The first version of the Editorial Plan, to be continuously updated for what concerns the calendar, and which might require some adaptation to enhance the impact on the audience, will be released in the deliverable D6.2, “Project website and social media presence”, together with the website and social media accounts.

As already mentioned (Section 3), the vision and visual identity of Electro-Intrusion will be at the basis of the social media presence of the project.

#### 8.2.1.TWITTER

Twitter is a social medium requiring **intense activity with frequent posting**. Its suitability for research projects, which typically produce communicable results at a slow pace, raised some concern. Nevertheless, we decided to use it for our communication and dissemination activities. To obtain a good balance between a reasonable frequency of posting and avoiding excessive burden on the research teams, we adopt a **decentralized strategy**, with each partner expected to tweet at least once every two weeks, i.e., 3 Electro-Intrusion tweets per week, Typically on Tuesday, Wednesday and Thursday. These tweets can also be re-tweet of posts of related projects or significant and new literature results related to the themes of the Electro-Intrusion project.

To maximize the visibility of the Electro-Intrusion twitter account, this will follow the EU accounts connected with research and technology activities, including other FET and ERC projects, with special attention to those projects related to energy, int-ext, surfaces, novel materials, etc.

### 8.2.2. LinkedIn

Strategic considerations based on the target audience and on the frequency of posting, led us to conclude that LinkedIn is **the ideal social media** for the Electro-Intrusion project. LinkedIn will add to Electro-Intrusion means to reach and to be reached by automobile associations, energy knowledge and technology platforms, environmental interest groups and informed citizens.

The Electro-Intrusion Communication Team reckons that the kind and flow of information necessary to a successful and efficient (centralized) social media management is possible for this project on LinkedIn, a social media especially featured for professional networking. The frequency of posting will be event-driven, depending on the scientific results.

The LinkedIn account will be set up and **managed by UniFe**, the lead beneficiary of the WP6, in order to provide the stakeholders with regular information about the main achievements and outcomes of the project.

### 8.2.3. YouTube

A YouTube channel of the project will be opened i) as a social media tool and ii) to act as storage of videos to be loaded and circulated on the website and other channels.

We envisage three kinds of videos: i) **non-technical videos** for communicating the objectives and results of the project, ii) **videos presenting the partners** contributing to the Electro-Intrusion project, to be incorporated in the corresponding section of the website, iii) **more technical videos to help dissemination** of scientific and technical results.

Videos for point i) might be **cartoons** to catch the attention of a more generalist audience. Non-technical video for communicating the objectives and results of the project will be produced by UniFe upon consultation with all the partners.

Videos presenting the partners' contribution to the Electro-Intrusion project will be individually produced by each partner following a general scheme to be agreed by all consortium members.

More technical videos to help dissemination of scientific and technical results might be produced by individual partners or thanks to the contribution of more partners. UniFe, the leader of WP6, will take care of coordinating this activity and performing the editing necessary to obtain high-quality videos of look and feel consistent with the visual identity of the project.

Timeline for this activity is i) initially a video per month describing the objectives of the project and presenting the various partners (Table 3). Then, event-driven, depending on the scientific results.

In Table 3 we report a provisional plan for the preparation and publication of the planned videos. The cartoon illustrating the vision and objectives of Electro-Intrusion will be realized by UniFe. All the partners will be involved in the preparation and approval of the storyboard of the cartoon. Videos presenting the various partners will be recorded by their own and edited by UniFe before publication. The structure of each clip will be agreed with the Communication Team to guarantee a common style and feeling.

Table 3.- Plan for production of video contributions.

Video	Provision date of raw material	Publication
Cartoon “Electron-Intrusion”	All the process will be managed within UniFe	30 June 2021
CICe	2 July 2021	16 July 2021
UniFe	30 July 2021	30 August 2021
USK	17 September 2021	30 September 2021
UoB	18 October 2021	29 October 2021
KPI	1 November 2021	19 November 2021
TEN	1 December 2021	17 December 2021

#### 8.2.4. ResearchGate

ResearchGate will be used **to engage the scientific community** via this social medium devoted to science and academia. ResearchGate allows only personal accounts; thus, to circumvent this limitation, we will prepare a so-called “project”, a sort of **virtual repository** associated to an individual account where we will post research and industrial papers, technical documents, and other material related to Electro-Intrusion.

ResearchGate projects can be followed like individual accounts and members of the team will all follow this project to allow maximum visibility among their respective followers.

It will be fed regularly, depending on the publication of scientific and technical papers and the availability of new data.

### 8.3. COMMUNICATION MATERIAL

Among the communication and dissemination activities planned for the project we envisage publications in **traditional media** (newspapers, magazine, TV and radio national broadcast), **public events** (open days, school visits, public lectures, and conferences for a generalist audience – e.g., TedX, Maker Faire), **teaching at universities, organization of conference and workshops** targeting the scientific and industrial communities.

Project flyers and brochures, posters, videos and slides for presentation will be prepared to support these activities. In this case, one cannot always use English for communication; thus, templates will be prepared in English and translated into the national language by each consortium partner.

### 8.4. AUTONOMOUS COMMUNICATION ACTIVITY OF THE PARTNERS

Most of this document is devoted to the planning of the communication activity of the project. However, researchers contributing to the project belong to institutions with their own communication plans, activities and offices. Typically, each institution is present on the web with a webpage, social media and manages and distributes newsletters, etc. **Each institution has its own interests, rights and freedom to communicate its contribution to the Electro-Intrusion project** that falls beyond the limits of the coordinated activities discussed in Secs. 5-7.

To achieve a good balance between the autonomy of the communication activities of partner institutions and the objectives and strategies of communication and dissemination of the Electro-Intrusion project, guidelines will be prepared to help the communication offices of the partner institutions to convey messages consistent with those agreed among all partners of the project, as well as promoting the communication channels and visual identity of the project. These **guidelines and FAQs**, made available to the partners through the Electro-Intrusion OneDrive repository, will be updated along the project to reflect the progress of the research activities as well as to improve the original version on the bases of the experience accumulated.

## 9. KNOWLEDGE TRANSFER AND INTELLECTUAL PROPERTY MANAGEMENT

Knowledge is the combination of education, research and innovation and has been recognized as one of the priority areas of the renewed Lisbon Strategy. Effective knowledge transfer is key to turn scientific research into innovation with an economic and societal impact. Most of this document is devoted to the strategy and tools to maximize knowledge transfer under various forms, here we focus on the intellectual property (IP), intellectual property rights (IPR) and their management. IPR management is a system to manage intangible creations resulting from the research activities of the project.

The general principles of IPR management within the Electro-Intrusion project are expressed in the original proposal and will be implemented according to the “Commission Recommendation on the management of intellectual property (IP) in knowledge transfer (KT) activities and code of Practice for universities and other public research organisations”:

- An IP policy is defined and made available internally through this document and externally on the website of the project.
- A **single contact point** for IPR is set for the Electro-Intrusion project: any request and question concerning IPR must be addressed to CICE.
- **Basic training on IPR and IPR management** will be provided upon request from team members such as the courses offered by the EPO e-learning center ([https://e-courses.epo.org/course/search.php?filter\[groups\]\[\]=free](https://e-courses.epo.org/course/search.php?filter[groups][]=free)).
- **Professional knowledge transfer services** for legal, financial, commercial as well as intellectual property protection will be provided to the consortium as a whole and to its members concerning the activity of Electro-Intrusion by the contact point.
- The ownership of scientific results of the project belong to authors identified on the basis of the guidelines for authorship of the partner institutions.
- **Financial returns** from knowledge transfer revenues resulting from the outcomes of Electro-Intrusion will be shared among partners who contributed to the outcome and the percentage of contribution will be stated in a joint ownership agreement.
- Should a **spin-off** be established to exploit the results of Electro-Intrusion, all partners will be offered to take part in it, with equal share of benefits and responsibility, including financial effort. A member may opt to participate in the spin-off with a share lower than the standard, including opting out.
- Concerning the **use of IP by consortium members**, the following rules apply:
  - **use of IP for execution of the project:** the following Access rights are applied: i) Partners shall have access rights to the results and the background IPR, if the

results or background IPR is needed to carry out their own work under that project; ii) Access rights to results shall be granted on a royalty-free basis within the project, unless an agreement was effective before the signature of the Grant Agreement. iii) in the unlikely event of the termination of the participation of a partner, it shall in no way affect its obligation to grant access rights to the other partners until the end of the project.

- **use of IP for any other purpose**, i) access rights will be granted to any partner upon written request; ii) partners shall have access rights to results and to background IPR, if the results or background IPR is needed in order to use their own know-how; iii) access rights for use purposes will be granted either under fair and reasonable conditions or royalty-free (participants may choose as stated in the Consortium Agreement - Attachment I - Background); iv) the period during which access right for use may be requested is one year, unless the participants agree differently (i.e. shorter or longer time periods); v) when staff members of a partner are entitled to claim rights on the obtained results, they must ensure that the application for these rights will be made in accordance with their obligations under the Grant Agreement; vi) When work is carried out jointly by several partners, with no possibility to ascertain their share, joint ownership of the foreground will apply. Where no joint ownership agreement has been concluded regarding the allocation and terms of exercising that joint ownership, each of the joint owners shall be entitled to grant non-exclusive licenses to third parties, based on 4 weeks prior notice and reasonable compensation.
- The disclosure of new ideas with potential commercial interests must be agreed among the partners. Consistently with **dissemination** and **decision-making** rules reported in the **Project Manual and Management Guidelines**, notification must be sent to all partners, who have time to submit their complains and propose amendments according to the following calendar:

Table 4.- Protocol to disclosure of new ideas with potential commercial interests.

Time [Day]	Description
0	Notification to all Electro-Intrusion partners. The notification should include a detailed description of the device/apparatus/intangible at the basis of the new idea, and the public event or potential industrial/economic partner(s) where/to whom the disclosure will be presented. The proponent must take measures to prevent further disclosure beyond people to whom communication is intended. These measures must be illustrated in the notification
15	Partners send comments and objections within 15 days, if any. Any objection to the planned disclosure shall be made in accordance with the GA in writing to the PC and to the partner(s) proposing the disclosure. The objection has to include a precise request for necessary modifications. If no objection is made within the time limit stated above (T-15), the disclosure is permitted. If an objection has been raised, the involved partner(s) shall discuss how to overcome the justified grounds for the objection on a timely basis and the objecting partner(s) shall not unreasonably continue the opposition if appropriate measures are taken following the discussion.

Time [Day]	Description
30	The proponent circulates the amended version of the notification.
38	If further objections emerge, a vote will be called by the PC in 1 week.
45	The vote takes place according to the <b>Project Manual and Management Guidelines</b> rules: i) Each member of a Consortium expresses one vote, ii) a decision in favour of disclosure is taken if it receives two-thirds (2/3) of the votes or more.

### 9.1. IP MANAGEMENT AND EXPLOITATION PLAN

The IP Management and Exploitation Plan has the objective to define the strategy to maximize the impact of results of the Electro-Intrusion project with potential industrial and economic implications. The starting TRL of Electro-Intrusion, TRL 1-2, is relatively low, which prevents to design a detailed Exploitation Plan from the very beginning of the project. Rather, here we describe the activities that will be undertaken to evaluate the potential impact on the market of the results of the present project. The plan consists of four points which are listed here and described more in detail in the following:

- Analysis of the main outcomes
- Analysis of the patents
- Technology trends
- Electro-Intrusion CANVAS

These activities will bring us to draw a realistic IP Management and Exploitation Plan during the last part of the project, when, according to our objectives, the Electro-Intrusion technology should have reached a TRL 4-5. This plan will be included in the D6.3, "Communication & exploitation final report".

#### 9.1.1. ANALYSIS OF THE MAIN OUTCOMES

Electro-Intrusion will produce two types of exploitable results: research outcome and a regenerative shock absorber prototype. Research outcomes include

- Experimental/theoretical methods and protocols
- Novel/optimized materials
- Expertise in scientific and technical domains and on regulations

Each of these research outcomes has a potential economic and industrial value both within the field of the project, possibly associated to the regenerative shock absorber prototype, or in other fields. For example, experimental and theoretical methods and protocol developed within the project might be relevant in other fields, e.g., liquid porosimetry is important for liquid separation, chromatography and many more. Similarly, novel and optimized materials have a high potential impact, which can be fully realized within the duration of Electro-Intrusion or might be further explored after its end. In the modern times, intangibles, such as scientific and technical expertise, as well as experience in the field of regulations, have a high impact both on industry and society. At the same time, transforming these outcomes, together with the regenerative shock absorber prototype, into a marketable product requires an analysis to evaluate the cost/benefit ratio, market niches beyond those identified in the original proposal, the degree of maturity of each of these outcomes, to identify possible follow up actions

necessary to reach the market, e.g., identify which component of the prototype add significant cost to the product or make it difficult to achieve mass production because of complex fabrication procedures. A similar analysis is possible for intangibles. For example, one of the possible outcomes of Electro-Intrusion is establishing a spin-off/start-up offering consultancy in the development of porous hydrophobic materials, their fabrication, testing, regulations, etc. However, possibly some skills necessary to establish such a company might be lacking among the partners and they need to be formed or sought, requiring looking for partners.

This analysis will be carried out all along the project but will become more intense in the second part, when the scientific results will be achieved, and the project will be focused on more technological aspects. TENNECO, with its R&D expertise, and its connection with the car manufacturers and components industries, will be very functional to develop this analysis.

#### 9.1.2.PATENTING AND THEIR EXPLOITATION

Not all the results of Electro-Intrusion research might be turned into patents, and one has to find a good balance between the advancement and open dissemination of scientific knowledge and the protection of intellectual property by patenting. Thus, we will carefully evaluate the scientific and technical results of Electro-Intrusion for identifying those suitable for patenting.

However, not all patents have immediate applicability, with some of them appearing very promising in the present or close future while other might be economically valuable on a longer time scale. We will evaluate the degree of maturity of Electro-Intrusion patents and will engagement with possible industrial/economic partners to exploit their potential.

#### 9.1.3.TECHNOLOGY AND ECONOMY TRENDS

Technology changes very rapidly and it needs to be followed to identify market niches for Electro-Intrusion tangible and intangible outcomes. For example, the strong push of the EU New Green Deal and the very recent plan announced by the new U.S.A. administration, with significant funding for a transition toward electric vehicles, seems to indicate that the original plan to target car shock absorbers is very promising. However, the growing attention on energy saving and energy recovery might lead to novel needs that can be satisfied with the technology that will be developed within the project. For example, one can in principle use Electro-Intrusion to recover heat produced in excess by human activities and to transform it back into electric current, without the need of any mechanical stimulus, the vibration to be absorbed in the proposal. By following the technology and economy trends in the field of energy we might discover novel markets for the outcomes of our project. CICE, whose research is focused on energy storage, has a broad view on technologies for energy production and storage, and their evolution. Thus, together with all the partners, especially TENNECO with its experience in technology for car components, CICE will lead this analysis.

#### 9.1.4.Electro-Intrusion CANVAS

Based on the previous analysis, a CANVAS will be drawn to summarize exploitable outcomes and other elements to develop a strategy to engage potential partners or other means to exploit the results of Electro-Intrusion. Following the lesson learned in the events organized by the FET Briefing project, we will develop a CANVAS adapted from the model reported in Figure 7.



## The Research Canvas

© Alexandra Rudl & Dr. Christian Förster, inspired by iminds

Date:		Name:	
RESEARCH		YOU	
<b>3. DEFINE THE CONTEXT OF YOUR RESEARCH</b>  Give some background on the field of technology you are working in. If applicable, describe the larger regional or European project your research is part of.		<b>1. WHO ARE YOU?</b>  Where do you come from, what is your personal motivation / plans for the future	
<b>5. WHAT ARE THE FUNCTIONALITIES OF YOUR SOLUTION?</b>  Illustrate the (technological) solution you are working on which aims to solve the previously stated problem.		<b>2. WHAT DO YOU KNOW?</b>  Your educational background, key competences you have acquired so far relevant for your research project.	
<b>7. WHICH TYPES OF IPR IS INVOLVED AND WHO OWNS THEM?</b>  If applicable, state the „Intellectual Property Rights“ (patents, software code, databases etc.) involved in your research as well as its respective owner (you, university...)		<b>4. WHAT PROBLEM DO YOU SOLVE?</b>  Key question of your research, problem character, who has this problem?	
<b>9. WHICH TARGET AND STAKEHOLDER GROUPS ARE YOU ADDRESSING?</b>  Define all relevant audiences (researchers, industries, investors, policy makers, citizens) and the general public. Who are you targeting with this presentation? Each target should be approached with different messages, formats and channels.		<b>6. HOW DOES YOUR SOLUTION POSITION ITSELF WITH RESPECT TO OTHER SOLUTIONS?</b>  Unique differentiators against existing solutions	
		<b>8. POTENTIAL MARKET</b>  In which market(s) could your solution be commercialised?	
		<b>10. CALL TO ACTION</b>  Depending on the audience your call to action should be to ask questions, get in touch, cooperate, search for a licensing partner or ultimately invest	

Figure 7.- Research CANVAS illustrated at the “Communication Training – how to communicate your research results to business stakeholders” organized by FET Briefing on 9 March 2021.

## 10. EVALUATION OF COMMUNICATION AND DISSEMINATION ACTIVITIES

Adopting clear, specific, and measurable indicators is crucial to evaluate the overall impact of the project communication activities. Here we identify a series of **Key Performance Indicators (KPIs)** that will be used in addition to online tools such as Google Analytics and social media reports in order to monitor communication and dissemination.

### KPIs of the website

- Number of single users on the site
- Average duration of each visit
- Popular web pages and browsing flow
- Traffic source of the visitors
- Regular visitors vs new visitors

### KPIs of the press releases

- Number of publications in the media
- Number of web sessions from press releases

### KPIs of the social media

- Number of followers
- Number of mentions
- Number of comments
- Number of interactions
- Number of web sessions from social media



**KPIs of the dissemination and exploitation activities:**

- Number of scientific and technical articles
- Number of articles in newspapers, magazines, and industrial journals
- Number of events with project Electro-Intrusion participation
- Number of assistants to Open Days
- Number of assistants to workshops organized within Electro-Intrusion

**10.1. REPORTING TOOLS**

The results of the analysis of impact of the communication and dissemination activities will be collected in an **excel sheet**, privileging **simplicity and accessibility**.

For decentralized (see above) dissemination activities, when an Electro-Intrusion partner releases or carries out a communication action, a new entry is created in the excel sheet and suitable KPIs are applied to it.

The leader of WP6 **periodically checks the progress** of communication and dissemination activities, taking advantage of the KPIs to monitor and, if necessary, amends the strategy.

Results of this analysis will be presented to members of the Electro-Intrusion team during the **meetings of the WP6** and data will be made available to them through the OneDrive repository of the project.

**11. CONCLUSIONS**

Summarizing, in this report we have presented the Communication, Dissemination and Exploitation Plan of the Electro-Intrusion project. We have analysed the different audiences potentially interested in our activities and results and have designed strategies to reach them, which include suitable online tools (website and social media) as well as more contact activities. Metrics and tools to measure the effectiveness of our strategy have been introduced and will be used all along the project to optimize our communication and dissemination activity.

## 12. APPENDIX

### 12.1. ALTERNATIVE PROPOSALS FOR THE VISUAL IDENTITY

Here we report the other 4 proposals for the visual identity of the project that have been submitted to the partners for their consideration. In particular, here we report only the logo and the rendering of the provisional webpage for each of the remaining 4 options.



Figure 8.- Alternative option 1 for the logo of the project



Figure 9.- Alternative option 2 for the logo of the project. This and the following options are centered around a different concept of the pictogram, which is based on the initials of the title of the project: 'e' and 'i'.



Figure 10.- Alternative option 3 for the logo of the project. This, the previous and the following options are centered around a different concept of the pictogram, which is based on the initials of the title of the project: 'e' and 'i'.



Figure 11.- Alternative option 4 for the logo of the project. This and the previous two options are centered around a different concept of the pictogram, which is based on the initials of the title of the project: 'e' and 'i'.



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