Low CO_2 footprint on Press Hardened Steels

D1.3
Communication and Dissemination Plan

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Deliverable Information sheet

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Executive Summary

The present public document details the COOPHS project's communication and dissemination plan, aiming at reaching as many relevant actors as possible to inform them on the activities and results derived from the project.

EUT is responsible for designing and implementing COOPHS communication and dissemination strategy, but all consortium partners will be involved in it.

The channels and platforms considered in the communication and dissemination plan are the creation of a webpage, social media channels, materials to be distributed in key events, media relations to specialised and general media outlets, scientific publications, the participation in conferences and congresses targeting academia and the industry, among others.

This deliverable also details the target groups, key messages addressed to each main group of stakeholders, communication and dissemination activities planned, requirements and the process of reporting and monitoring communication activities.

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Terminology and Acronyms

AEPD	Spanish Data Protection Agency
EAF	Electric Arc Furnace
EC	European Commission
EU	European Union
GDPR	General Data Protection Regulation
KPI	Key Performance Indicators
PHS	Press Hardened Steels
PR	Public Relations
RFCS	Research Fund for Coal and Steel
SEO	Search Engine Optimisation
T	Task
VCI	Visual Corporate Image
WP	Work Package

1. Dissemination and communication plan objectives

COOPHS is a 42-month project aiming at evaluating how eco-friendly steel processing affects the performance of ultrahigh strength Press Hardened Steels (PHS). The COOPHS project delves into the influence of residual elements in press hardening steels to enhance low CO2 steel production for the automotive sector, and, ultimately, advancing the industry's environmental and technological standards by minimising CO_2 emissions.

EUT is the leader of WP1 Project Coordination, including the task: Task 1.3. Dissemination and exploitation of Results (led by EUT and participated by all the consortium), which is related to the present deliverable. EUT is responsible for defining the project's Communication and Dissemination Plan and executing it following the project timeline.

The COOPHS Communication and Dissemination Plan has the objective to:

- **a)** Raise awareness on the project solutions, its funding, the economic, environmental, and social impact for the European manufacturing industries and society.
- **b)** Exploit and disseminate the project results and actions to as many relevant actors as possible.
- **c)** Divulge the project results to target audiences to support exploitation and ensure market uptake.
- **d)** Share the know-how generated from the project with the scientific and industrial community and support all project activities.
- **e)** Training the next generation of researchers and industry professionals.

This document develops the strategy and plan for communication and dissemination activities, encompassing the development and upkeep of the project's webpage, social media platforms and posts, creation of promotional materials, issuance of press releases, publication of scientific articles, organization of workshops and events, and participation in key conferences, fairs, and congresses.

Communication initiatives will be initiated at the project's commencement and sustained beyond its conclusion. In contrast, dissemination efforts will commence upon the availability of initial results, focusing on specific target audiences, and will persist post-project completion.

It is important to highlight that, to safeguard the commercial interests of the partners, the release of materials will be selective, with exceptions for mandated reports and information to the European Commission. In such instances, partners retain the discretion to determine which aspects of the project's information are to be protected by copyright or patents and which can be widely disseminated. All the actions in the plan consider the European Research Executive Agency's recommendations and guidelines for European-funded research and innovation projects[1].

1.1 Target of communication and dissemination

An initial analysis of the dissemination and communication target audiences has been done. Four stakeholder groups have been identified as target audience of the communication and

[1] https://rea.ec.europa.eu/communicating-about-your-eu-funded-project_en

dissemination activities, including: academia, industry, end-users / customers, policy makers and the society at large. Detailed information is presented in Figure 1.

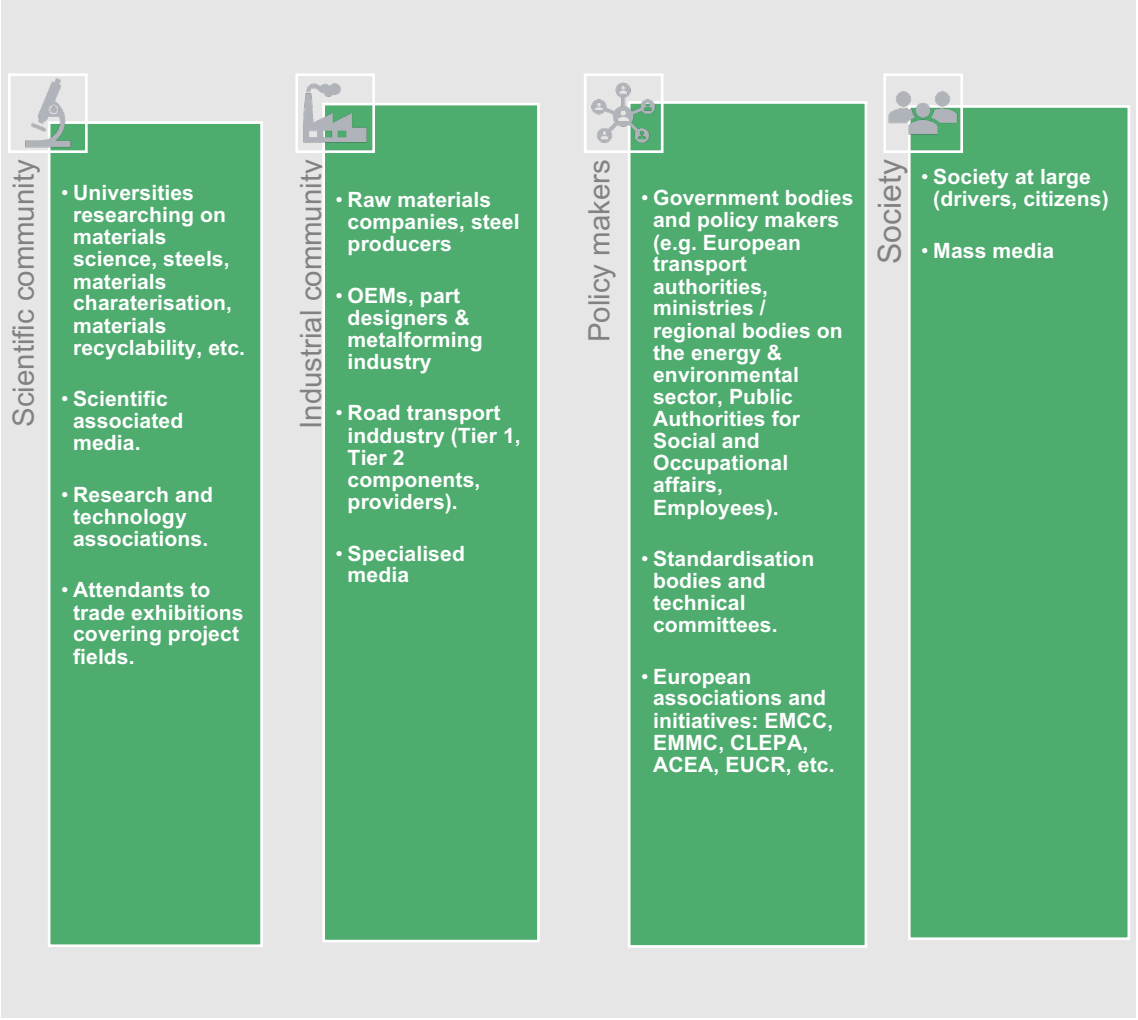

Figure 1: COOPHS detailed target audiences

1.2 Channels

The project partners will disseminate results to a broad audience within machining, machine tools and additive manufacturing industries and their supply chain industries through all EU. In addition to internal dissemination and regular reporting to the RFCS Commission, the following channels will be used to reach the defined stakeholder groups:

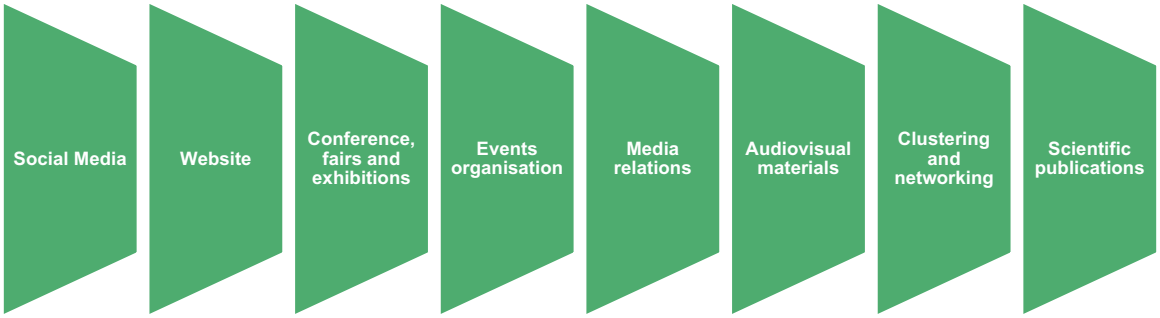

Figure 2: COOPHS dissemination and communication channels

1.3 Key messages

The communication and dissemination plan messages have been carefully designed and tailored with each of the stakeholders defined and will be adapted to the different COOPHS communication and dissemination channels.

The messages go together with the main dissemination and communication objectives and translate the possibilities and strength of the research and development done during the project's execution. The following messages will be evolved in pertinent messages for all audiences, both specialised and non-specialised, in a way that they can understand actions and results of COOPHS project.

The general messages that COOPHS will address to stakeholders include:

- *COOPHS*, funded by the European Commission, will contribute to the development of safer vehicles developed with materials and processes more respectful with the planet.
- *COOPHS* results will respond to current and future challenges in modelling and manufacturing for the development of vehicles with improved performance, cost-effectiveness and reduced environmental footprint.
- *COOPHS* contributes to the EC Circular Economy Action Plan and the EU Green Deal by developing circular, safe, and lightweight sustainable materials, which supports the EU emission reduction target of 40% by 2030.

2. Communication and dissemination management

2.1 Distribution of responsibilities

The COOPHS dissemination and communication strategy entails active participation and dedication from all project partners to effectively showcase the project and its key outcomes.

Under Task 1.3, titled "Dissemination and Exploitation of Results," various activities pertaining to communication, dissemination, and exploitation will be executed. EUT serves as the lead beneficiary for Communication and Dissemination activities, tasked with coordinating these activities.

This includes facilitating information exchange within the consortium, supporting comprehensive project dissemination, developing the project's visual identity and webpage, producing communication and PR materials, and generating content for the project's social media accounts. Moreover, EUT will lead the efforts to establish synergies with relevant projects and initiatives, backed by full support from the entire consortium.

All partners will contribute to ensure the successful execution of communication and dissemination activities, reaching diverse stakeholder groups as identified in the project's objectives.

2.2 Requirements

All communication and dissemination materials produced in the project (posters, presentations, promotional materials, publications, etc.) and distributed in physical or electronic format will display the EU emblem and funding text provided below, in line with the EU regulations described in the Grant Agreement.

According to the Grant Agreement "*unless the Agency requests or agrees otherwise or unless it is impossible, any dissemination activity related to the action (including in electronic form, via social media, etc.) and any infrastructure, equipment and major results funded by the grant must*:

a) *Display the EU emblem*
b) *Include the following text*

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When displayed together with another logo, the EU emblem must have appropriate prominence. For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Agency. This does not, however, give them the right of exclusive use. Moreover, they may not appropriate the EU emblem or any similar trademark of logo, either by registration of by any other means.

In addition, results disseminated are recommended to include the following disclaimer:

[This result NAME] reflects only the author's view and the Agency / Commission is not responsible for any use that may be made of the information it contains.

Regarding scientific publications based on COOPHS research, a specific claim will be used:

The research leading to these results has received funding from the European Union's Horizon Europe programme under grant agreement No 101112485– COOPHS project.

2.3 Ethics, gender, and inclusiveness

The COOPHS project considers ethical, societal, and inclusive issues in its decision-making throughout its implementation. In addressing gender equality, a key focus will be put by project partners in ensuring that project images embody principles of gender fairness and equality. During the construction of the project webpage, partners have carefully chosen images, steering clear of stereotypes in technology and avoiding historical assumptions related to gender, ethnicity, and religion.

Additionally, efforts toward gender sensitivity and inclusiveness extend to crafting messages that consider gender perspectives and maintaining gender balance in round tables and speakers' panels. The team overseeing project communication and dissemination activities is trained in non-sexist communication and gender-perspective communication.

Communication and dissemination messages emphasize truthfulness, accuracy, honesty, and reason as essential elements for communication integrity. Other principles under consideration include freedom of expression, diversity of perspective, and tolerance, while expressions of hate and discrimination are actively condemned in COOPHS communication channels.

The COOPHS project is committed to transparent communication out of responsibility to the funding organization and taxpayers (citizens) who fund the research activities. This commitment remains steadfast without compromising partner confidentiality on specific details about the technologies being developed. The application of ethical and inclusive principles contributes to increased credibility, transparency, and honesty, translating into greater support from the funding organization and heightened citizen engagement.

During project meetings, task leaders and participants in communication and dissemination activities are encouraged to raise potential ethical issues and values for collective discussion.

2.4 Monitoring and reporting

2.4.1 Communication and Dissemination KPIs

Key Performance Indicators (KPIs) have been allocated to various communication and dissemination activities outlined in the project to gauge their effectiveness and impact by the project's conclusion. Updates on project KPIs will be documented in project review reports, as well as conveyed in project meetings. The principal KPIs established are detailed in Table 1.

Table 1: Dissemination and communication-related KPIs

Strategy	Indicator	Means of verification	Target M42
Website	Number of website visits	Website Analytics	>1,500
	Updates per year		3 updates / year

Strategy	Indicator	Means of verification	Target M42
Social Media	**Twitter:** Number of tweets in partners' accounts	Twitter Analytics	>25
	YouTube: Number of videos uploaded	YouTube Analytics	>1
	YouTube: Number of video views		>500
	LinkedIn: Number of posts in partners' accounts	LinkedIn analytics	>50
Media relations	Number of press releases	Proof in dissemination reports / project meetings	>2
	Articles published in generalist EU outlets		>10
	Articles published in key specialised magazines		>4
Events	Number of events participated		>4
	Number of workshops organised		1
	Number of workshop attendees		>35
Publications	Number of scientific publications		>3 (*1 in cooperation with 2 or more partners*)
Clustering activities	Number of clustering activities with related projects and initiatives	Proof in dissemination reports / project meetings	>3
Promotional Materials	Audio-visual materials		>1
	Number of roll-ups / poster		1
	Number of factsheet		1

2.4.2 Activities reporting

EUT has created an Excel file to document all communication and dissemination activities carried out by project partners throughout the project's execution.

This file is stored in the SharePoint online repository, accessible to all partners. It includes details such as the activity description, target audience, date and location, participating partners, the number of individuals reached, feedback received, and information specifying the associated WP/Task for each activity.

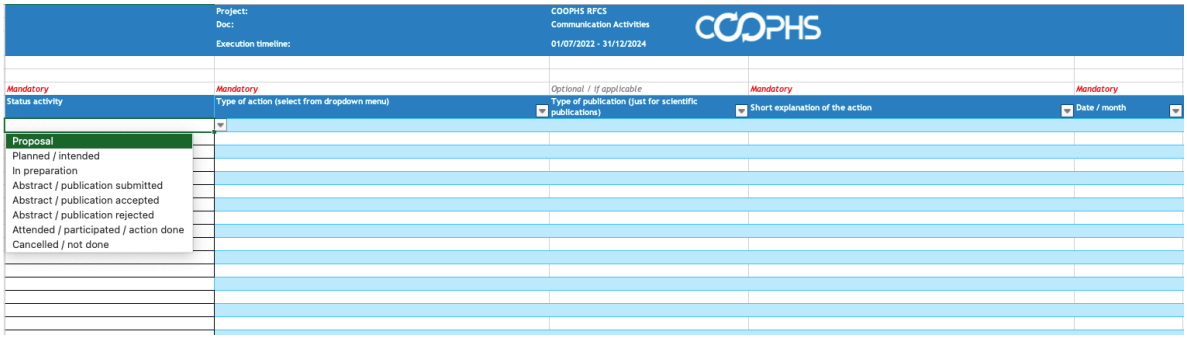


Figure 3: Overview of reporting excel file

The file is organised in the following columns:

- **Status activity,** with a breakdown menu including several options to report on depending on the activity type (*proposal, planned/intended, in preparation, abstract/publication submitted, abstract/publication accepted, abstract/publication rejected, attended/participated/action done, cancelled not done*).
- **Type of activity**, offering a breakdown menu of multiple activity types:
    - [Communication campaign (e.g radio, TV)]
    - [Exhibition]
    - [Flyer]
    - [Rollup]
    - [Poster]
    - [Non-scientific and non-peer reviewed publications (popularised publications)]
    - [Organisation of a conference]
    - [Organisation of a workshop]
    - [Participation in activities organised jointly with other EU project(s)]
    - [Participation to a conference (POSTER)]
    - [Participation to a conference (TALK)]
    - [Participation to a workshop]
    - [Participation to an event other than a conference or workshop]
    - [Press release]
    - [Social media - LINKEDIN]
    - [Social media - TWITTER]
    - [Trade fair]
    - [Training]
    - [Video/film]
    - [Brokerage event]
    - [Pitch event]
    - [Website]
    - [Scientific publication]
    - [Other]

- **Type of publication**, just for publications, allowing to select from four options (article in journal, conference/workshop proceedings, books/monographies, chapter in books).

- **Short explanation of the action:** field to write a description of the action being reported.

- **Date/month**

- **Place,** if applicable (related to events)
- **Type of audience,** offering a break down menu to select from the stakeholders defined in the EU reporting portal:
    - Scientific community (higher education / research)
    - Industry
    - General public
    - Civil society
    - Media
    - Policy makers
    - Investors
    - Customers
    - Other
- **Num. of people of the audience reached**
- **Secondary type of audience reached (if applicable),** allowing to select again from a breakdown menu.
- **Num. of people of the audience reached in the secondary audience**
- **Partner/s and/or list of authors**
- **Link / DOI in case of scientific publications / comments**

2.4.3 Risks and mitigation measures

The initial risks related to communication and dissemination, along with the anticipated contingency plans, are presented to ensure effective management of adverse situations throughout the project's progression. The exposure to a given risk is estimated using the risk matrix as following:

Impact \ Probability	1- Extremely unlikely	2- Likely	3- Extremely likely
1- Not critical	1	2	3
2- Significant	2	4	6
3- Fundamental to coninuing operations	3	6	9

Risk score = Impact x Probability

Priority: High Medium Low

Figure 4: Risk management matrix

The risks associated with the completion of activities outlined in T1.3 and the potential mitigation measures have been identified and are outlined in Table 2. Although no risk related to dissemination and communication activities was identified during the project proposal, some risks have been identified during the preparation of this deliverable.

This table will undergo periodic reviews to identify any emerging risks and assess whether additional mitigation actions need to be implemented.

Table 2: Risks and mitigation measures

Risks	Probability	Impact	Risk score	Mitigation measures
Low participation of project partners in project's communication and dissemination activities	2	2	4 Medium	Causes will be evaluated during meetings. Dedicated meetings on communication and dissemination actions will be organised to engage consortium members and track actions done.
The audience has difficulty to understand COOPHS research	2	3	4 Medium	Usage of plain language in project communication materials, showcase and validate the technology through use cases and adapt the technology and language to different contexts as well as the audience's needs.
Low project visibility	1	2	2 Low	Develop an appealing webpageand communication materials. Organise joint activities with other initiatives and projects. Regular check of publication activities containing trade fair and conference participation, publications and social media activities guaranteeing the visibility. Increase of efforts on audio/visual material for extensive use on web platforms (e.g., YouTube). Take advantage of project partners involved in relevant EU projects and initiatives to serve as ambassadors of COOPHS and multiply project dissemination and stakeholder engagement.

3. Communication and dissemination tools

3.1 Project branding and templates

According to the work plan, EUT is tasked with creating COOPHS's official Visual Corporate Image (VCI), with the aim of aligning all communication materials throughout the project tasks effectively.

Establishing the project branding is crucial for shaping and solidifying COOPHS's identity, ensuring a consistent and coherent image. It is imperative to appropriately utilize the established elements and adhere strictly to authorized document templates to convey the project's properties and goals consistently as a brand.

The following sections detail the various project branding elements, encompassing the project's logo, corporate colours, fonts, templates, and graphic elements. These elements are intended for use and implementation in all communication and dissemination tasks undertaken by every partner involved in the COOPHS project.

3.1.1 Logo

The logo serves as the primary brand element in COOPHS's visual identity, aiming to encapsulate the various concepts associated with the project. COOPHS logo features the project acronym and tagline "*Low CO_2 footprint on Press Hardened Steels*". The logotype's accent colour is a gradient of blue and green, two colours associated with sustainability and circular economy. This concept is further enforced with the use of grey circular arrows, symbolising recyclability and repurpose of steel materials, an focal point of the project.

Figure 5: COOPHS full colour version

Various iterations of the logo have been crafted, including an inverse colour version, a positive and negative black and white version (to be used when colour application is restricted), and a black and white version tailored for use when no gradient is allowed.

Figure 7: Inverse colour logo for applications in which the logo is placed on top of images or coloured backgrounds.

Figure 6: Black and white versions maintaining the gradient in the logo symbolism

Figure 8: Plain black and white logo version for restricted applications

3.1.2 Visual Corporate Identity (VCI) manual

This visual identity guide defines and outlines how to use identifying elements pertaining to COOPHS including logos, colours, fonts, stationery, and some marketing and advertising materials. The guideline has been created and circulated among partners to safeguard the integrity of the project's branding.

This guide ensures that all partners utilize the elements appropriately, maintaining consistency and effectively conveying the properties and goals of the project as a brand.

Corporate colours

This section introduces the primary colour palette for COOPHS that should be applied consistently across all project materials, including the website, social media channels, and various promotional or graphic elements.

As per the designated palette, the key colours for the COOPHS project are Blue (Pantone: #0080BF), Green (Pantone: #77992C), and Grey (Pantone: #676858). All colours within the COOPHS palette are equally permitted for use with no specified hierarchy.

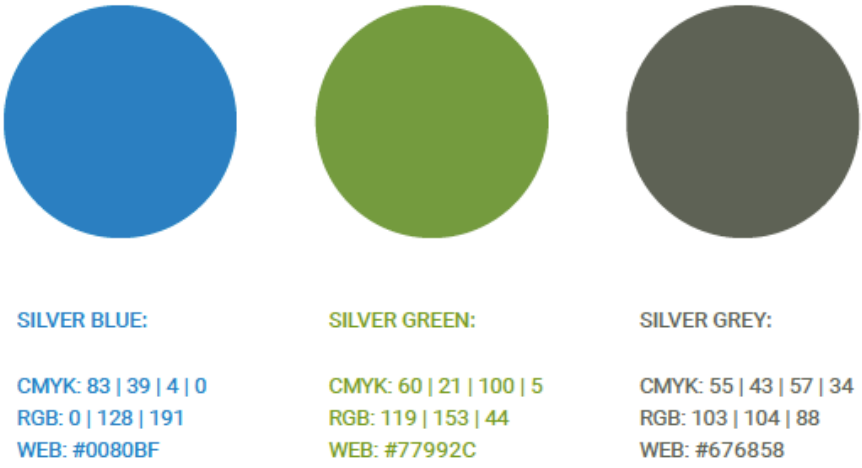


Figure 9: COOPHS project corporate colours

Fonts

Three fonts have been established for project use in internal and external documents and promotional materials. **Proxima Nova ExtraBold and Light** and **Roboto Regular and Medium** are the special fonts to be used for promotional and advertising materials.

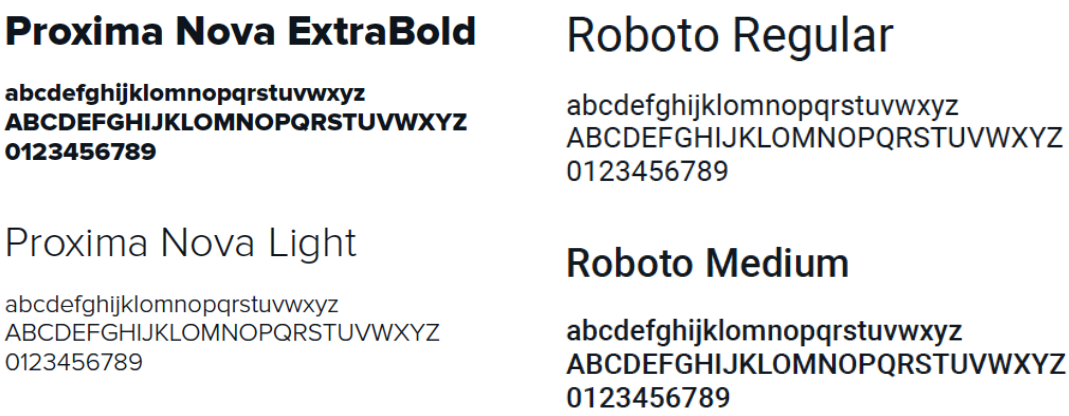


Figure 10: COOPHS fonts for promotional materials. Proxima Nova will be used in titles and Roboto in the texts

On the other hand, Arial and its different versions is the main font established for deliverables and internal documents because it is a standard Microsoft Office font included in Word and PowerPoint documents, among others.

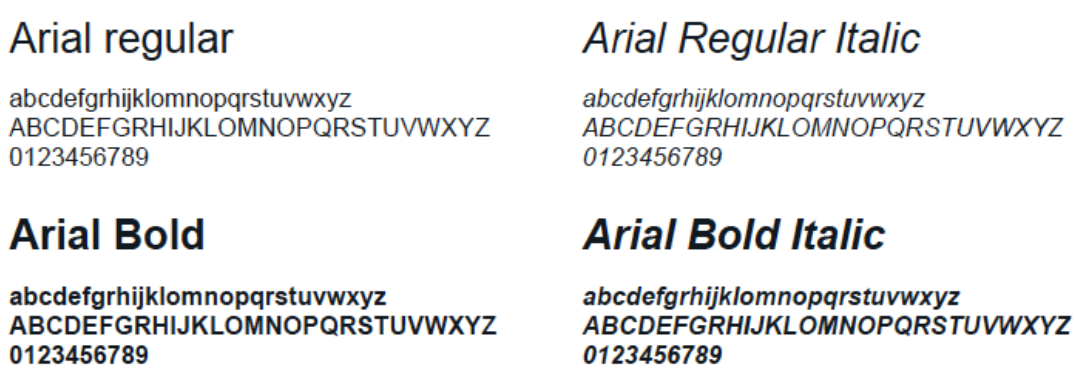


Figure 11: Fonts to be used in project internal documents

Stationery

The COOPHS Visual Corporate Image manual encompasses various elements specifically crafted for stationery materials, including letters, envelopes, or business cards. Partners are encouraged to utilize these elements as needed.

Figure 12: View of COOPHS stationery materials

3.1.3 Templates

Various document templates have been created and distributed to all partners involved in the COOPHS project. This includes a Power Point template designed for both internal and external presentations, along with four distinct Word documents. These Word templates cover deliverables, meeting agendas, general correspondence, and meeting minutes.

The purpose of these template documents is to ensure a uniform and consistent image throughout the entire duration of the project's execution. They serve as standardized tools for maintaining coherence in various project-related documents.

Power Point presentation

A PowerPoint template has been created for use in both internal and external presentations throughout the COOPHS project.

This document provides a range of slides featuring various options for incorporating text and diverse visual elements. All partners are encouraged to use and adapt these slides when preparing presentations related to the project. A screenshot of some sample slides is presented in the figure below:

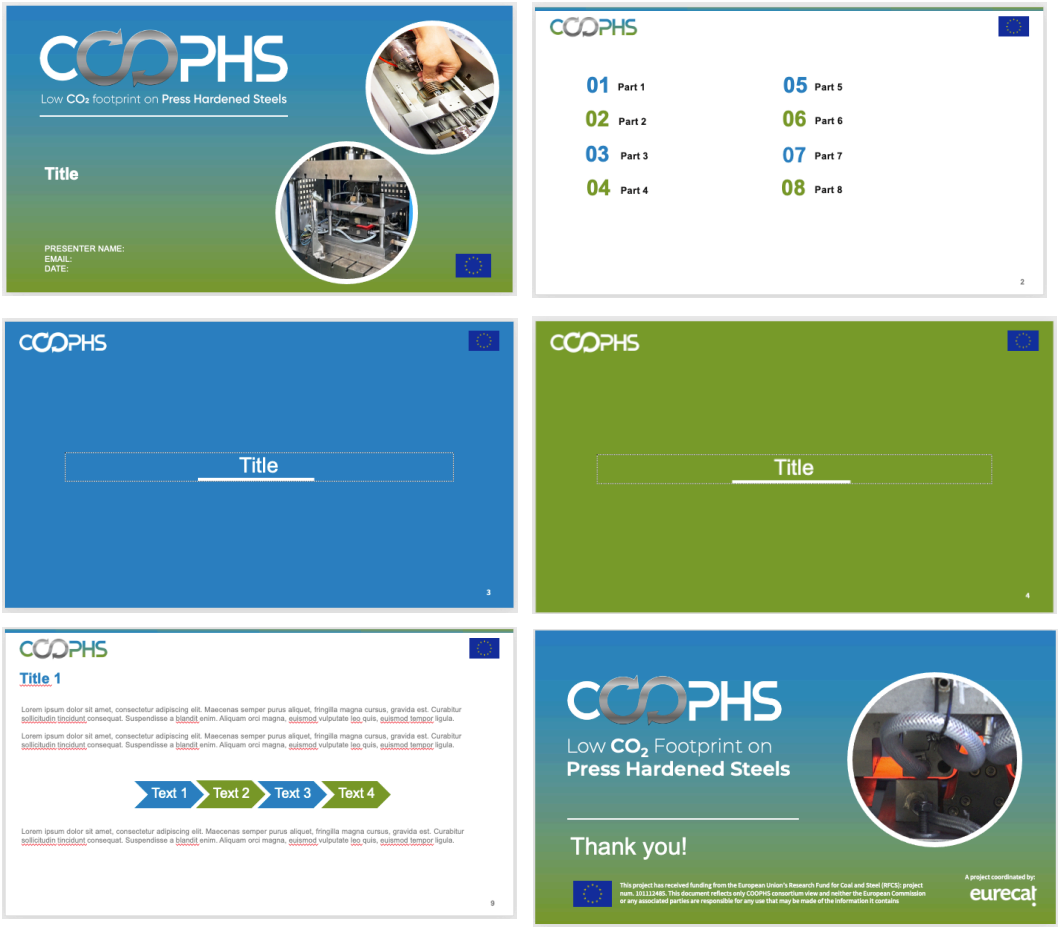


Figure 13: View of COOPHS presentation template

Deliverable template

A Word document template has been developed and distributed to partners for the creation of all project deliverables within the COOPHS project. This template incorporates a page header featuring both the project's logo and the EU funding body's logo, along with a footer containing pertinent information about the document and a graphic element specifically designed for project materials.

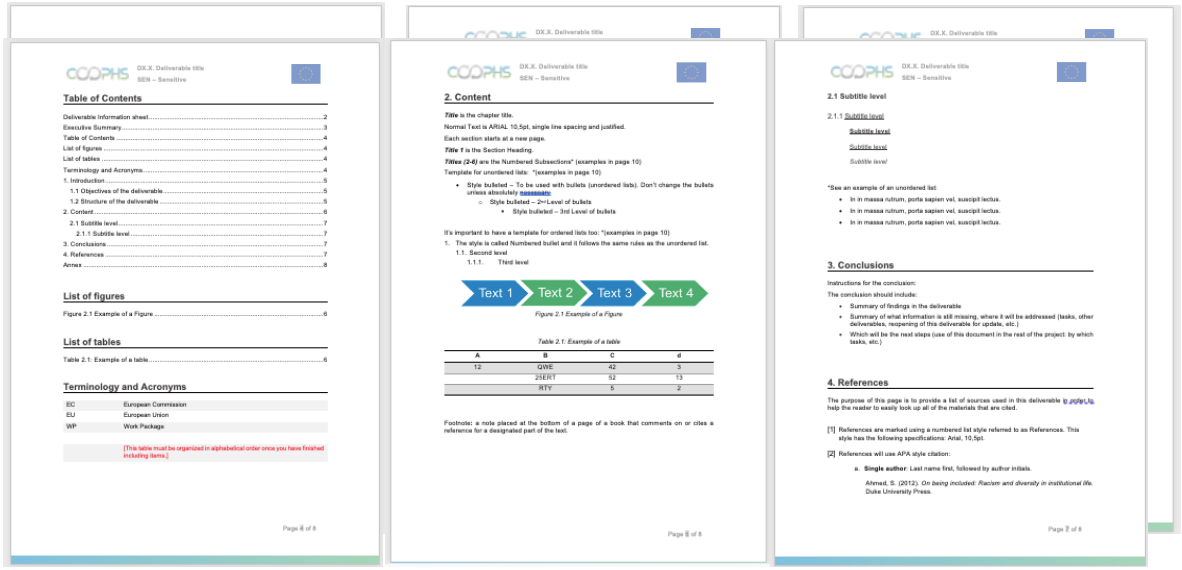
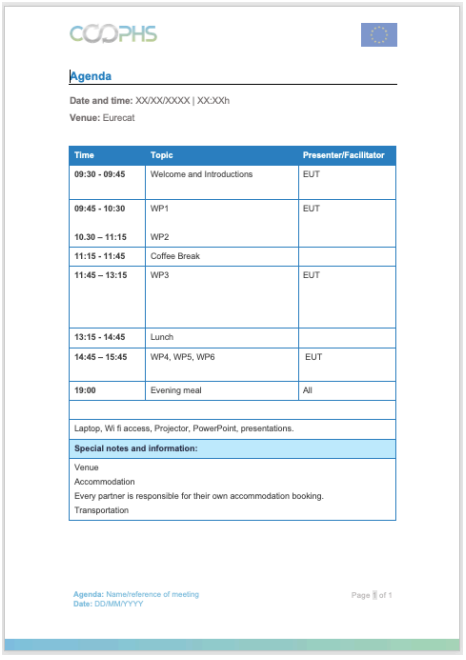


Figure 14: View of COOPHS deliverable template

Agenda template



The agenda template, tailored for COOPHS, incorporates a header page with both COOPHS and its funding body's logos. The footer includes essential information along with a graphic element aligned with the project's branding resources.

This standardized template ensures a consistent and professional appearance for all project-related agendas.

Figure 15: View of COOPHS project agenda template

Meeting minutes template

This template is intended for presenting the minutes and the list of attendees for internal project meetings within COOPHS. The document features a header page with both COOPHS and the funding body's logos, accompanied by a footer containing essential information and a graphic element consistent with the project's branding.

The template is divided into several sections, including general information about the meeting (date, time, location, list of attendees), tables to report on the updates of each of the WPs and Tasks and ana final section where to write action points and details of the next meeting.

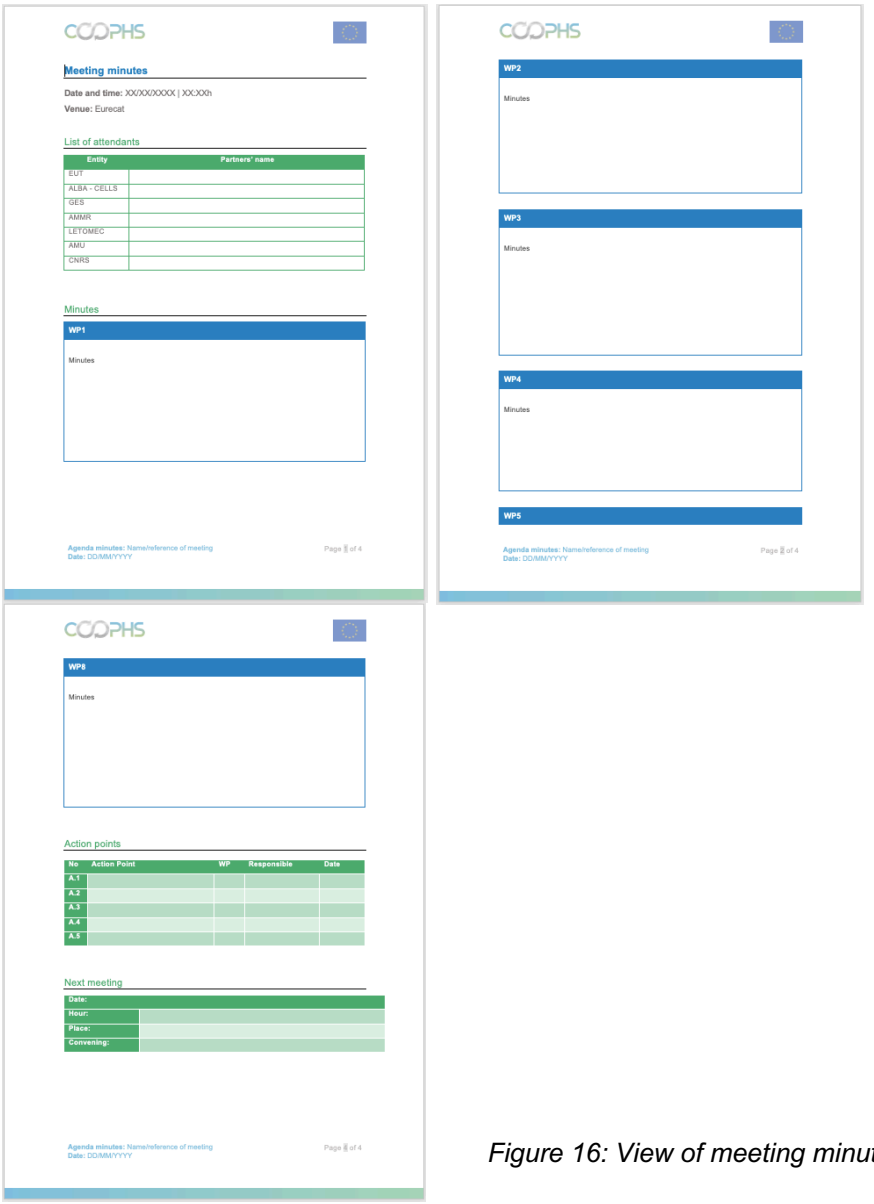


Figure 16: View of meeting minutes template

Letter template

This template is exclusively crafted for letters that consortium partners may need to compose during the COOPHS project. It incorporates designated sections for the sender's details and references to the COOPHS project.

Figure 17: COOPHS letter template

3.2 Website

Following the project plan, EUT has designed and implemented the official COOPHS project webpage. In accordance with the recommendations of the European Commission, this web page has been integrated into a dedicated URL housed within EUT's website: https://eurecat.org/portfolio-items/coophs

The following sections provide an outline of the online platform's features. The webpage will serve as the central hub for all project-related communication endeavours and will function as a central entry point for all public materials, including fundamental project information, projected impacts, and objectives.

The webpage will undergo consistent updates, featuring outcomes, news, relevant links, and details about published papers, conferences, and exhibitions taking place throughout the project's timeline. Its functionality will continue for a minimum of five years after the project's conclusion.

The design of the webpage aligns with the project's agreed corporate visual identity, granting users access to the COOPHS project's social media channels.

To ensure seamless browsing experiences on tablets and smartphones, the webpage has been developed with a responsive design strategy.

3.2.1 Website structure

The proposed information architecture for the COOPHS project website is illustrated in the diagram below. This website adopts a one-page format, which means that the creation of subpages linked to different sections is not included in the plan.

Sections designated in blue represent the segments prepared for the website's launch, while the green sections signify areas that will be developed at later stages in alignment with the project's advancements.

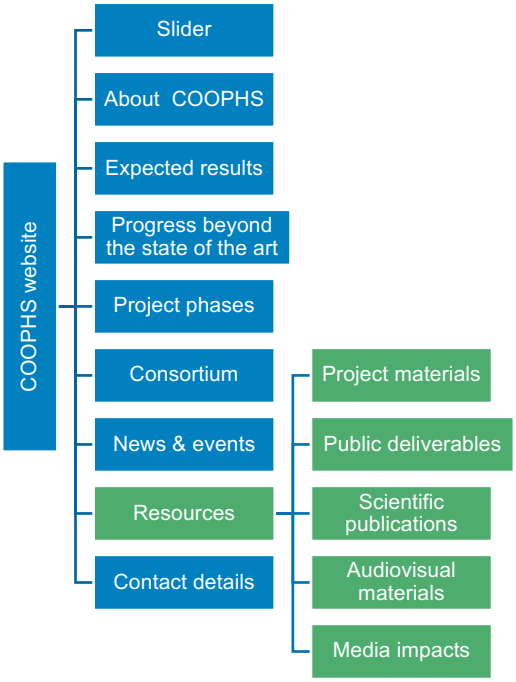


Figure 18: Website structure

3.2.2 Website content

In the following sections we describe the contents that have been published in the website launch (September 2023).

Slider

The top of the page displays one slider with the project title: "*COOHPS RFCS project: Low CO_2 footprint on Press Hardened Steels*".

In a nutshell

Enhancing low CO_2 steel production for the automotive sector through the development of more sustainable processing methodologies.

About the project

The COOPHS project focuses on evaluating how eco-friendly steel processing affects the performance of ultrahigh strength Press Hardened Steels (PHS). By delving into the influence of residual elements in press hardening steel, the project seeks to enhance low CO_2 steel production for the automotive sector, ultimately advancing the industry's environmental and technological standards by minimising CO_2 emissions.

During the project, the impact of residual elements from EAF steel production routes on microstructures and subsequent material properties will be examined. The project also aims to determine segregation effects on critical properties, design a tool for emissions-product compromise to facilitate the progression of low CO_2 steels in the PHS automotive market,

compare EAF and BOF-based solutions, and propose optimized low emission processing routes. This initiative aims to advance both environmental sustainability and the European steel market's competitiveness, in line with RFCS Research programme objectives and the European Green Deal Roadmap.

Key Data

- **Start-end date:** 1 July 2023 – 31 December 2026
- **Duration**: 42 months
- **Funder under**: RFCS Programme
- **Overall budget**: 1.121.328,48€

COOPHS expected results

The COOPHS project is to deliver outcomes through cutting-edge research and innovation. The project is set to provide results contributing to a more sustainable future of steel processing.

- Deeper insight into residual element impact on PHS microstructures.
- Quantified local residual element concentrations in microstructures.
- Enhanced understanding of PHS mechanical property effects.
- Development of a tool for CO_2 emission-product compromise in automotive sector.
- Comparative analysis of EAF vs. BOF steel solutions.
- Optimised low emission processing routes for high-performance steels.

Progress beyond the state of the art

The COOPHS will contribute to advance the state of the art in optimising Press Hardened Steels for automotive applications:

Enhanced Compatibility of Automotive Press Hardened Parts:

State of the art: Initial insights from literature and lab tests revealed that PHS have potential ductility risks in martensitic parts due to residual elements.

COOPHS contribution: The project aims to establish a direct link between residual element content and mechanical behaviour in press hardened steel. This understanding pave the way for countermeasures to mitigate associated risks and ensure compatibility with automotive safety standards.

Optimized Press Hardening Processes:

State of the art: Exploration of alternative steel manufacturing methods demonstrated promising results within the standard hot stamping process parameters.

COOPHS contribution: The project will focus on non-BOF steel manufacturing methods, adapting hot stamping processes and parameters accordingly. This advancement could ensure the attainment of required results and offers insights into equipment and parameter optimization for superior property outcomes.

Quantification of Solute Segregation at Grain Boundaries:

State of the art: Insights from existing literature emphasized the significance of solute segregation at grain boundaries during heat treatments.

COOPHS contribution: The project aims to unravel the intricate effects of solute segregation on steel properties. This newfound knowledge will enable a comprehensive assessment of acceptable solute quantities concerning industrial deployment and product risk evaluation.

Advanced Analysis of Coated PHS Interfaces:

State of the art: Previous research highlighted the potential of FIB+APT technique for analysing interfaces like oxide/Fe or Zn/Fe.

COOPHS contribution: The COOPHS project will go beyond by successfully adapting this technique for complex Fe/Al interfaces in coated PHS. This innovative approach enables safe quantification of intricate soft/hard coating/substrate interfaces.

Project phases

The project is articulated in five different phases, each strategically designed to advance the understanding and capabilities of ultrahigh strength press hardened steel.

Phase 1: Residual Element Diversification

Production of Ultrahigh Strength Press Hardened Steel introducing residual element contents representative of steelmaking routes with a wide range of CO_2 emission levels.

Phase 2: Microstructural Insights

Advanced description of surface and grain boundary segregation behaviour of residual elements in Press Hardened steel microstructures.

Phase 3: Mechanical Characterization

Characterization of phase transformation, low and high-temperature ductility, toughness, and embrittlement behaviour of Ultrahigh Strength Press Hardened Steel with increasing residual element content.

Phase 4: Correlation Discovery

Determination of key relationships between surface and grain boundary segregation of residual elements and phase transformation, ductility, toughness, and embrittlement behaviours.

Phase 5: Environmental-Performance Equilibrium

Identification of the optimum compromise of CO_2 emission levels and product and application performance of ultrahigh strength press hardened steels.

Consortium

The project, coordinated by Eurecat Technology Centre of Catalonia, is participated by six entities, including actors from the steel industry, the automotive safety sector and research organisations: ArcelorMittal, Gestamp HardTech Ab, Letomec, Aix-Marseille University, the French National Centre for Scientific Research (CNRS) and ALBA-CELLS.

Eurecat

Eurecat is the leading Technology Centre of Catalonia, providing the industrial and business sector with differential technology and advanced expertise.

The centre offers solutions to their innovation needs and boosts their competitiveness in a fast-paced environment. It brings together the expertise of 650 professionals who generate a volume of income of 50M€ per year. Serving more than a thousand companies, Eurecat is involved in 200 projects of R&D national and international with high strategic value.

Contribution to COOPHS

Eurecat is in charge of coordinating the project through the Metallic and Ceramics Unit. With large expertise in areas such as fracture mechanics, lightweight applications based on advanced high strength steels (AHSS) and press, tribology, corrosion and degradation, micromechanical characterization and optimization of sheet forming processes, Eurecat takes responsibility of the COOPHS microstructural characterisation (EBSD analysis), phase transformation kinetics studies and mechanical tests. Moreover, the centre is also responsible for managing IPR and the project's communication and dissemination activities.

ALBA Synchroton

The consortium CELLS manages the Spanish ALBA Synchrotron Light Source (www.albasynchrotron.es), which has currently ten operational state-of-the-art beamlines, comprising infrared, soft and hard X-rays, which are devoted mainly to biosciences, condensed matter and materials science, in particular metal and alloys have been studied in the material science powder diffraction beamline. ALBA-CELLS provides high-end technological and scientific services to more than 2400 researchers per year and to more than 75 companies. It is also co-leading the SME industry services provided by the European light sources through several European projects (www.leaps-innov.eu, www.remade-project.eu).

Contribution to COOPHS

ALBA-CELLS is in charge of performing high energy X-Ray diffraction tests in the ALBA synchrotron to follow in-situ the phase transformation taking place in the studied steels. It will be also used to follow the tempering kinetics including the carbide formation and the evolution of the dislocation density.

Gestamp HardTech AB

Gestamp is a multinational specialized in the design, development and manufacture of highly engineered metal components for the main vehicle manufacturers. It develops products with an innovative design to produce lighter and safer vehicles, which offer lower energy consumption and a lower environmental impact. Its products cover the areas of BiW, chassis and mechanisms.

The Company is present in 24 countries with 115 production plants (5 under construction), 13 R&D centers and a workforce of nearly 43,000 employees worldwide. Its turnover in 2022 was €10,726 million. Gestamp is listed on the Spanish stock exchange under the ticker GEST.

Contribution to COOPHS

Gestamp has the industrial experience of hot stamping of steels and will therefore coordinate, and work within, the topics related to the hot stamping process. Both the process limitations (process parameters, formability etc.) and the final properties (tensile properties, bending angle etc.) of the hot stamped material will be investigated.

ArcelorMittal

ArcelorMittal (AMMR) is the world's leading steel and mining company. It has steel manufacturing in 16 countries and customers in 155 countries. ArcelorMittal has a large offer (more than 200 trademark products) representing ~62.9MTon of steel shipments in 2021. Moreover, the group holds more than 724 patent families and has launched 51 new products and solutions in 2021. This is supported by a workforce of around 1,500 full-time researchers at 11 geographical sites throughout the world, with centres strategically placed in Europe, North and South America and close to key operations and customers.

Contribution to COOPHS

The department of Metallurgy for Products and Process of AMMR in France will responsible for the design and production of lab-scale and industrial Press Hardening Steels obtained by steelmaking routes with different CO2 footprint levels. AMMR will also participate in the microstructural, mechanical and metallurgical characterization of the steels.

LETOMEC

Letomec is an innovative SME and a Spin-off company of the University of Pisa, promoting scientific and technological research by developing cutting-edge solutions for Hydrogen Industry.

The company operates consultancy services and research activities aimed at studying the effect of hydrogen on materials' behaviour and improving technologies for energy transition, resulting in this way a reference laboratory for several large industrial companies of national and international scenarios.

Contribution to COOPHS

Thanks to the long-standing expertise in the study of hydrogen-metal interaction, and thanks to a dedicated and patented line of instruments named HELIOS (patent N EP2912452), Letomec leads the investigation on hydrogen embrittlement susceptibility of steels, including the set-up of hydrogen charging procedure, the mechanical tests and correlation of metal behaviour in presence of hydrogen to microstructural features.

Letomec contributes also to basic microstructural characterization by SEM analysis to characterize the micro-scale modifications as tempering or auto-tempering and identification of lower bainite.

Aix-Marseille University

Aix-Marseille University IM2NP is a research laboratory of Aix-Marseille University. As a multidisciplinary research unit of more than 300 people at the confluence of physics, chemistry and microelectronics, IM2NP has a broad spectrum of skills that enable it to link many fundamental aspects to applications in the fields of advanced materials, integrated electronics and nanoscience. The RDI team conducts research on the phenomena driving atomic redistribution as well as the kinetics of atomic transport and phase growth at the nanometric and atomic scales, in volume, on the surface and at interfaces.

Contribution to COOPHS

AMU/IM2NP will quantify at atomic scale the segregation taking place either at prior austenitic grain boundaries or at the Fe / Al interface using the Atom Probe Tomography and develop of a multiscale modelling to predict locally the amount of residual elements.

CNRS

The French National Centre for Scientific Research is among the world's leading research institutions. IM2NP is a research laboratory of Centre National de la Recherche Scientifique. As a multidisciplinary research unit of more than 300 people at the confluence of physics, chemistry and microelectronics, IM2NP has a broad spectrum of skills that enable it to link many fundamental aspects to applications in the fields of advanced materials, integrated electronics and nanoscience. The RDI team conducts research on the phenomena driving atomic redistribution as well as the kinetics of atomic transport and phase growth at the nanometric and atomic scales, in volume, on the surface and at interfaces.

Contribution to COOPHS

IM2NP will participate with AMU in the quantification at atomic scale of the segregation taking place either at prior austenitic grain boundaries or at the Fe / Al interface using the Atom Probe Tomography and develop of a multiscale modelling to predict locally the amount of residual elements.

News & events

This section presents articles highlighting the progress and outcomes of the COOPHS project, along with content related to project meetings or articles authored by partners on project-related subjects.

It will also encompass a schedule featuring upcoming events in which the COOPHS consortium is either organizing, attending, or participating (such as conferences, meetings, fairs, congresses, and workshops). Additionally, a compilation of articles linked to the attended events will be provided.

Within this section, significant project events like the final workshop will be announced and promoted. Following the event, downloadable resources such as presentations and documents shared during the event will be accessible through the page, alongside video recordings of the sessions.

Resources

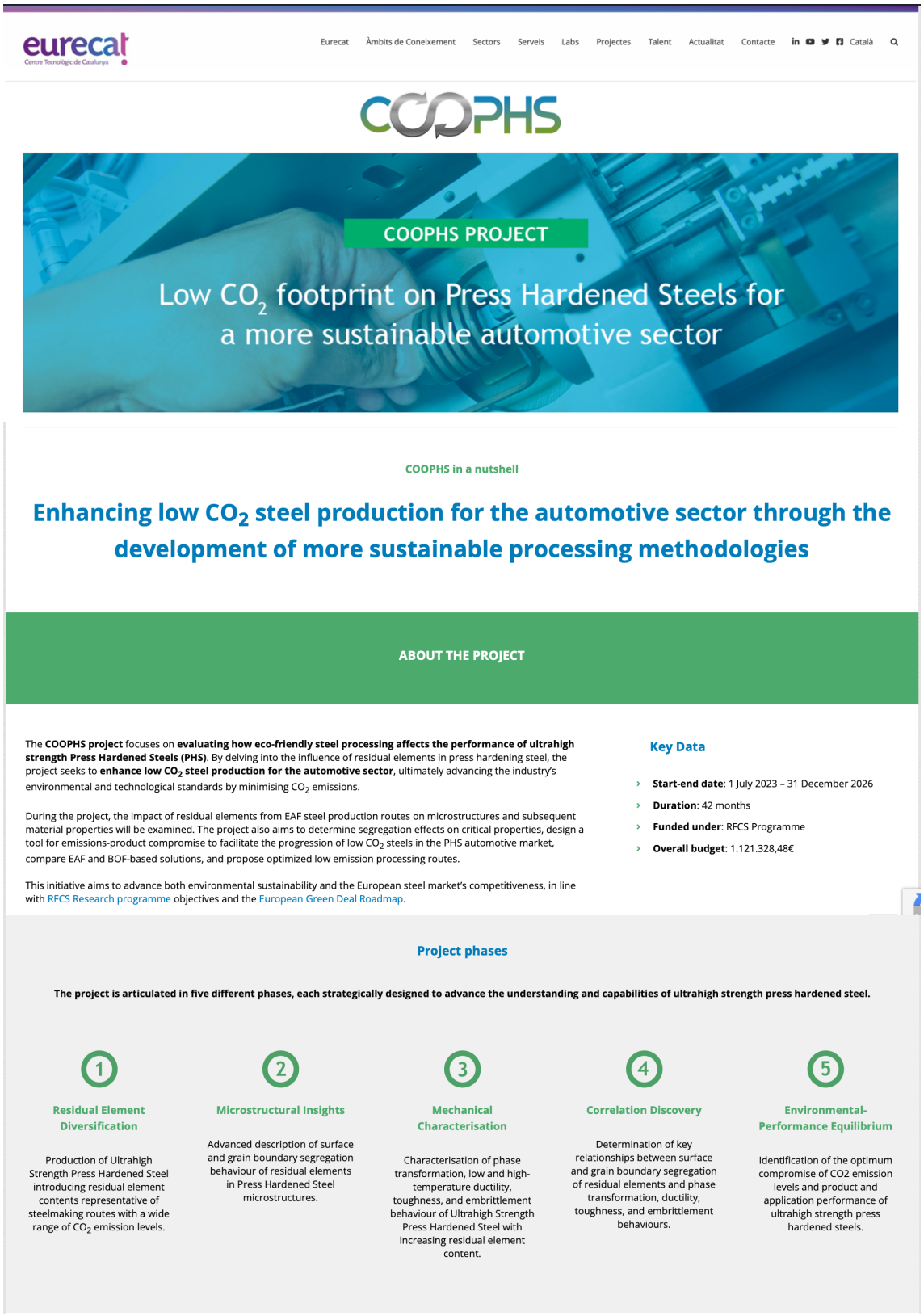
This section, to be created in the following months, will gather all public materials of the project, including visual materials, videos, public deliverables, scientific publications, and media features. Specific sub-sections will be available for each type of content:

- **Deliverables:** all public reports will be published on this website for in-depth access to project outputs.
- **Promotional materials:** project promotional materials produced (rollups, info sheets, posters, etc).
- **Scientific publications:** all scientific articles related to the project's research in open access journals or as conference proceedings.
- **Audio-visual materials:** a set of short videos will be produced to present COOPHS' concept and impacts.
- **Media impacts:** main articles featuring COOPHS project in generalist and specialised media outlets.

Contact details

This section shows a form for visitors to send comments and questions. The form includes the fields (Name, Surname, Email, Company, Phone, Subject and Message).

On the other hand, the email coophs-project@gmail.com has been created and is shown at the website as another way of contact. The project coordinator has access to that email to manage all information requests received.



eurecat
Centre Tecnològic de Catalunya

Eurecat Àmbits de Coneixement Sectors Serveis Labs Projectes Talent Actualitat Contacte Català

COOPHS

COOPHS PROJECT

Low CO_2 footprint on Press Hardened Steels for a more sustainable automotive sector

COOPHS in a nutshell

Enhancing low CO_2 steel production for the automotive sector through the development of more sustainable processing methodologies

ABOUT THE PROJECT

The **COOPHS project** focuses on **evaluating how eco-friendly steel processing affects the performance of ultrahigh strength Press Hardened Steels (PHS)**. By delving into the influence of residual elements in press hardening steel, the project seeks to **enhance low CO_2 steel production for the automotive sector**, ultimately advancing the industry's environmental and technological standards by minimising CO_2 emissions.

During the project, the impact of residual elements from EAF steel production routes on microstructures and subsequent material properties will be examined. The project also aims to determine segregation effects on critical properties, design a tool for emissions-product compromise to facilitate the progression of low CO_2 steels in the PHS automotive market, compare EAF and BOF-based solutions, and propose optimized low emission processing routes.

This initiative aims to advance both environmental sustainability and the European steel market's competitiveness, in line with RFCS Research programme objectives and the European Green Deal Roadmap.

Key Data

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The project is articulated in five different phases, each strategically designed to advance the understanding and capabilities of ultrahigh strength press hardened steel.

1 **Residual Element Diversification**

Production of Ultrahigh Strength Press Hardened Steel introducing residual element contents representative of steelmaking routes with a wide range of CO_2 emission levels.

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Advanced description of surface and grain boundary segregation behaviour of residual elements in Press Hardened Steel microstructures.

3 **Mechanical Characterisation**

Characterisation of phase transformation, low and high-temperature ductility, toughness, and embrittlement behaviour of Ultrahigh Strength Press Hardened Steel with increasing residual element content.

4 **Correlation Discovery**

Determination of key relationships between surface and grain boundary segregation of residual elements and phase transformation, ductility, toughness, and embrittlement behaviours.

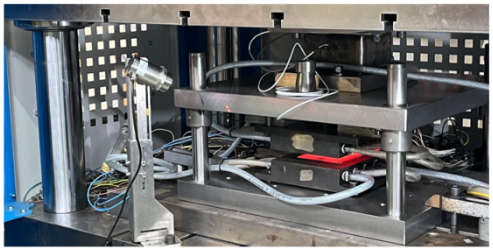
5 **Environmental-Performance Equilibrium**

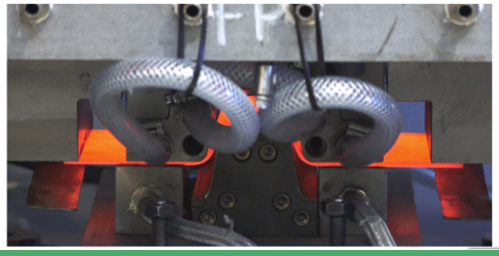
Identification of the optimum compromise of CO2 emission levels and product and application performance of ultrahigh strength press hardened steels.

COOPHS EXPECTED RESULTS

The COOPHS project is to deliver outcomes through cutting-edge research and innovation. The project is set to provide results contributing to a more sustainable future of steel processing:

- Deeper insight into residual element impact on PHS microstructures
- Quantified local residual element concentrations in microstructures.
- Enhanced understanding of PHS mechanical property effects.
- Development of a tool for CO_2 emission-product compromise in automotive sector.
- Comparative analysis of EAF vs. BOF steel solutions.
- Optimised low emission processing routes for high-performance steels.





PROGRESS BEYOND THE STATE OF THE ART

Enhanced Compatibility of Automotive Press Hardened Parts

State of the art: Initial insights from literature and lab tests revealed that PHS have potential ductility risks in martensitic parts due to residual elements.

COOPHS contribution: The project aims to establish a direct link between residual element content and mechanical behaviour in press hardened steel. This understanding pave the way for countermeasures to mitigate associated risks and ensure compatibility with automotive safety standards.

Optimized Press Hardening Processes

State of the art: Exploration of alternative steel manufacturing methods demonstrated promising results within the standard hot stamping process parameters.

COOPHS contribution: The project will focus on non-BOF steel manufacturing methods, adapting hot stamping processes and parameters accordingly. This advancement could ensure the attainment of required results and offers insights into parameter optimization for superior property outcomes.

Quantification of Solute Segregation at Grain Boundaries

State of the art: Insights from existing literature emphasized the significance of solute segregation at grain boundaries during heat treatments.

COOPHS contribution: The project aims to unravel the intricate effects of solute segregation on steel properties. This newfound knowledge will enable a comprehensive assessment of acceptable solute quantities concerning industrial deployment and product risk evaluation.

Advanced Analysis of Coated PHS Interfaces

State of the art: Previous research highlighted the potential of FIB+APT technique for analysing interfaces like oxide/Fe or Zn/Fe.

COOPHS contribution: The COOPHS project will go beyond by successfully adapting this technique for complex Fe/Al interfaces in coated PHS. This innovative approach enables safe quantification of intricate soft/hard coating/substrate interfaces.

CONSORTIUM

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- Eurecat
- ALBA Synchrotron
- Gestamp HardTech AB
- ArcelorMittal
- LETOMEC
- Aix-Marseille University
- CNRS

eurecat

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The centre offers to their innovation needs and boosts their competitiveness in a fast-paced environment. It brings together the expertise of 650 professionals who generate a volume of income of 50M€ per year. Serving more than a thousand companies, Eurecat is involved in 200 projects of R&D national and international with high strategic value.

Contribution to COOPHS

Eurecat is in charge of coordinating the project through the Metallic and Ceramics Unit. With large expertise in areas such as fracture mechanics, lightweight applications based on advanced high strength steels (AHSS) and press, tribology, corrosion and degradation, micromechanical characterization and optimization of sheet forming processes, Eurecat takes responsibility of the COOPHS microstructural characterisation (EBSD analysis), phase transformation kinetics studies and mechanical tests. Moreover, the centre is also responsible for managing IPR and the project's communication and dissemination activities.

Twitter
LinkedIn
Facebook
YouTube

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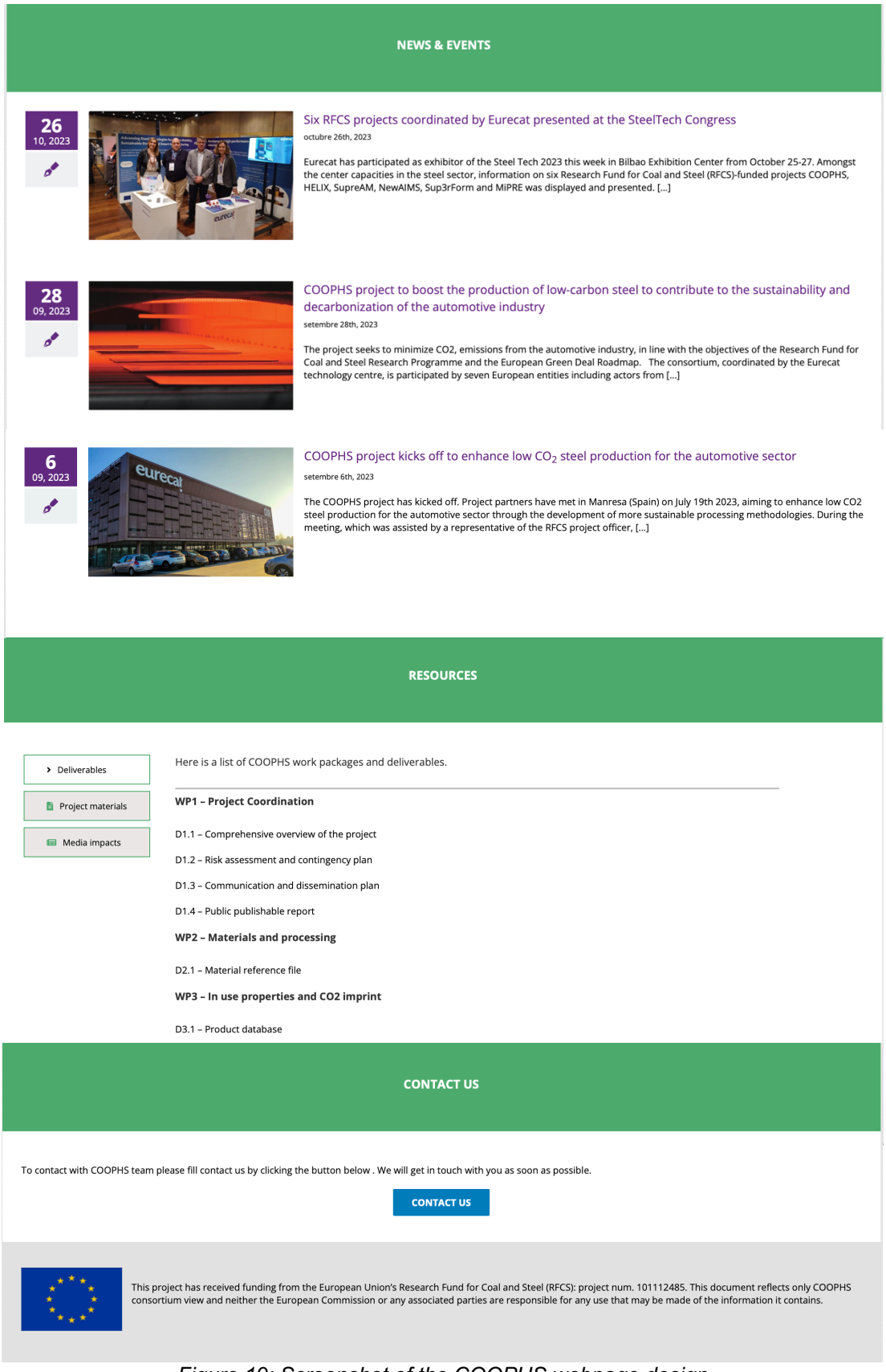


Figure 19: Screenshot of the COOPHS webpage design

3.2.3 Layout

The COOPHS website adopts a one-page design without an independent menu, requiring users to navigate by scrolling. However, individual articles created to provide updates on project activities will have dedicated pages for each post.

Both the header and footer sections showcase EUT's information, as the COOPHS page is seamlessly integrated into the technology center's overarching website.

A distinct footer has been formulated to acknowledge the project's funding. This section displays the following text, accompanied by the European Union flag:

This project has received funding from the European Union's Research Fund for Coal and Steel (RFCS): project num. 101112485. This document reflects only COOPHS consortium view and neither the European Commission or any associated parties are responsible for any use that may be made of the information it contains.

3.2.4 Managing and updating policy

The development of the website has been led by EUT, drawing on insights and contributions from all consortium partners.

In the case of the COOPHS project website, a continuous process of updates is planned. New content and information will be integrated each time a new dissemination initiative is executed, significant results are achieved, or there are noteworthy developments that warrant publication. This dynamic approach ensures that the website remains a current and comprehensive resource for project-related information and progress updates.

3.2.5 Analytics

The COOPHS project website employs Google Analytics 4 to systematically track website traffic and collect periodic reports on the site's performance. This enables the project team to gain insights into visitor interactions and overall webpage effectiveness.

3.2.6 Site hosting, installation and management

EUT has assumed the responsibility of setting up the webpage, including its hosting and configuration, as well as crafting content and designing the content sections.

Conversely, EUT has been designated as the partner in charge of maintaining the site, consistently adding new content and ensuring regular updates. The website has been optimized for Search Engine Optimisation (SEO), guaranteeing favourable positioning in search results.

The maintenance commitment spans a minimum of five years following the culmination of the COOPHS project, ensuring the enduring availability and currency of the COOPHS website.

3.2.7 Data protection

The COOPHS project website adheres to all European requirements and standards related to data protection, in alignment with the GDPR regulations.

The website has been meticulously adapted to adhere to the latest directives outlined by the Spanish Data Protection Agency (AEPD) in July 2020. These directives were implemented on October 31st, 2020, with the intention of harmonizing cookie installation practices with the consent stipulations of the General Data Protection Regulation (GDPR).

In accordance with the updated AEPD "Guidelines on the Use of Cookies," consent for cookies must be explicitly granted through actions such as clicking "I accept" or similar affirmative gestures. Passive actions like browsing or using the scroll bar are not considered sufficient consent. Additionally, the use of cookie walls that do not provide alternatives for consent is not acceptable.

To align with the new AEPD directives, EUT, the owner of the website https://eurecat.org/en/portfolio-items/life-coophs, has implemented a cookies banner. This banner empowers users to make choices regarding the installation of non-essential cookies. By complying with this updated regulation, web analytics will only be tracked for users who accept this type of cookies, which could potentially result in a decrease in some statistical data related to web visits, page views, and user counts.

Users retain the ability to review and adjust their cookie preferences at any time, as the Cookies Setting Banner remains accessible at the bottom right corner of the page. The website also dedicates specific pages to share the privacy policy (https://eurecat.org/en/privacy-policity/), the cookies policy (http://eurecat.org/en/politica-de-cookies/), and the legal disclaimer (https://eurecat.org/en/disclaimer/).

The website incorporates a form designed to manage user inquiries. EUT acts as the data controller for the form. The data collected via the contact form will be shared with project partners to facilitate accurate responses to user inquiries.

3.3 Promotional materials

Eurecat is the partner responsible to design and produce different types of promotional materials such as a rollup and a flyer to aid in disseminating information for the partners, as well as produce a final video compiling the project results.

The initial batch of materials (a flyer and a rollup poster) was created in M4, and they will undergo regular updates throughout the project to incorporate the latest advancements and outcomes.

All materials adhere to the visual identity guidelines outlined in section 3.1. and are digitally accessible to all members of the consortium. Additionally, these materials are publicly accessible on the project's website.

The creation of other audio-visual materials will be considered upon partners' needs.

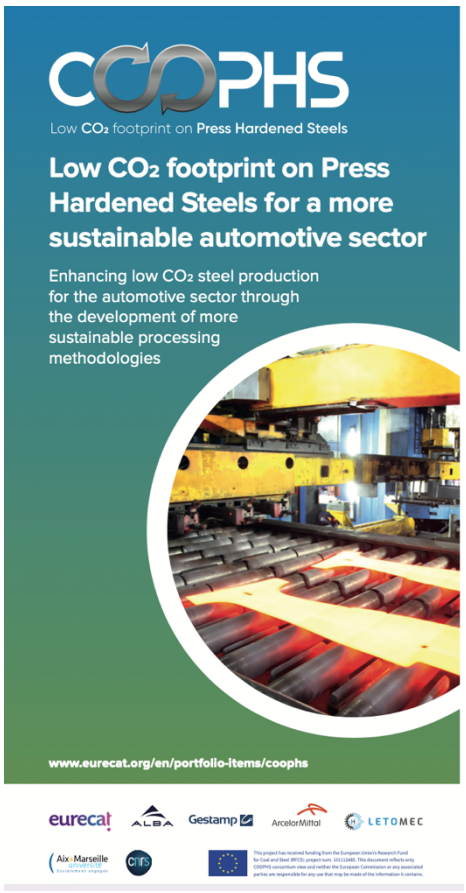
3.3.1 Digital / printed materials

Flyer

A trifold describing COOPHS project was elaborated containing an introduction of the project, the main objectives, key outputs, expected results and the project phases.

Figure 20: View of COOPHS flyer

Rollup



Rollup poster to be used when attending or organising project events.

The rollup includes the essential information about the project: a claim and tagline about the project, an illustrative image, link to the webpage and information about the funding body and partners.

Figure 21: View of project rollup

3.3.2 Audiovisual materials

A comprehensive project video is set to be developed to effectively convey the outcomes of the project. Anticipated for release at M40, the video will be used during the final workshop (M42).

To enhance visibility, it will be shared across partners' YouTube channels, prominently acknowledging the support received from the European Commission through the RFCS programme.

The video is designed for versatility, intended for use in various events, and will remain accessible even after the project concludes. Notably, it will feature compelling visuals showcasing the project's accomplishments, along with insightful interviews from diverse project partners, providing a multifaceted perspective on the collaborative efforts.

3.4 Media relations

Press releases will be crafted and dispatched to relevant media outlets at regular intervals. During the COOPHs project two press releases are scheduled to be sent to the media, one at M3 and another one by the end of the project at M42.

In addition to consortium-wide press releases, partners may independently develop country-specific releases or releases tailored to a specific stakeholder group. In such cases, prior notification to the Project Coordinator and Communication Leader (EUT) is essential.

These releases will focus on a spectrum of subjects, including the unveiling of research findings, achievement of project milestones, updates on meetings, participation in or hosting of events, and other noteworthy initiatives.

To ensure comprehensive dissemination and engagement, all press releases will initially be shared among partners in English. This collaborative approach allows partners to tailor the content to their corporate language and circulate it among their regional media contacts.

Within the project framework, a dedicated database containing the contact details of partners' communication officers has been established. This resource streamlines the media material review process, facilitates coordinated press release distribution, and amplifies the project's visibility across European media outlets.

Further enhancing outreach, a separate database will be compiled, featuring contact information for specialized media outlets covering the metal and automotive, sustainability, and related project topics. This database will primarily include outlets situated in the partners' respective countries.

3.4.1 Outlets of interest

During the project a minimum of 10 articles are aimed to be published in generalist media outlets. On the other hand, partners will target specialised magazines for the publication of at least 3 articles. An initial list of specialised outlets of interest is found in Table 3.

The schedule, partner responsible, and magazine selection, as well as the tracking media appearances, will be discussed in partners meetings.

The objective is for a wide range of readers to raise awareness on COOPHS project main goal and reach the industrial stakeholders.

Table 3: List of specialised media outlets

Outlet name	Website
Automotive Manufacturing Solutions	https://www.automotivemanufacturingsolutions.com
GreenCar Reports	https://www.greencarreports.com/news/mobility
Car Magazine	https://www.carmagazine.co.uk/electric/
Revista Metalmecánica	https://www.interempresas.net/MetalMecanica/MercadoDeOcasion/Ofertas/
Vehicles Dynamics International	https://www.vehicledynamicsinternational.com
Steeltimes International	https://www.steeltimesint.com

Engineering Materials Magazine	https://www.materialsforengineering.co.uk/engineering-materials-online-magazine/
Industry Today	https://industrytoday.com/
Metal Forming Magazine	https://www.metalformingmagazine.com/

3.4.2 Press releases

During M1 – M6, COOPHS Communication and Dissemination leader EUT, produced three press releases featuring the project, one with general information about the project and its consortium which was distributed to all partners and another one presenting several RFCS projects that were presented in the SteelTech Congress.

September 2023 - *COOPHS project to boost the production of low-carbon steel to contribute to the sustainability and decarbonization of the automotive industry*

The European consortium COOPHS, led by the Eurecat technology centre, works to improve the production of low CO2 steel for the automotive sector, through the development of more sustainable processing methodologies that will contribute to its decarbonization.

Read more here: https://eurecat.org/coophs-sustainable-steel-decarbonisation-automotive-industry/

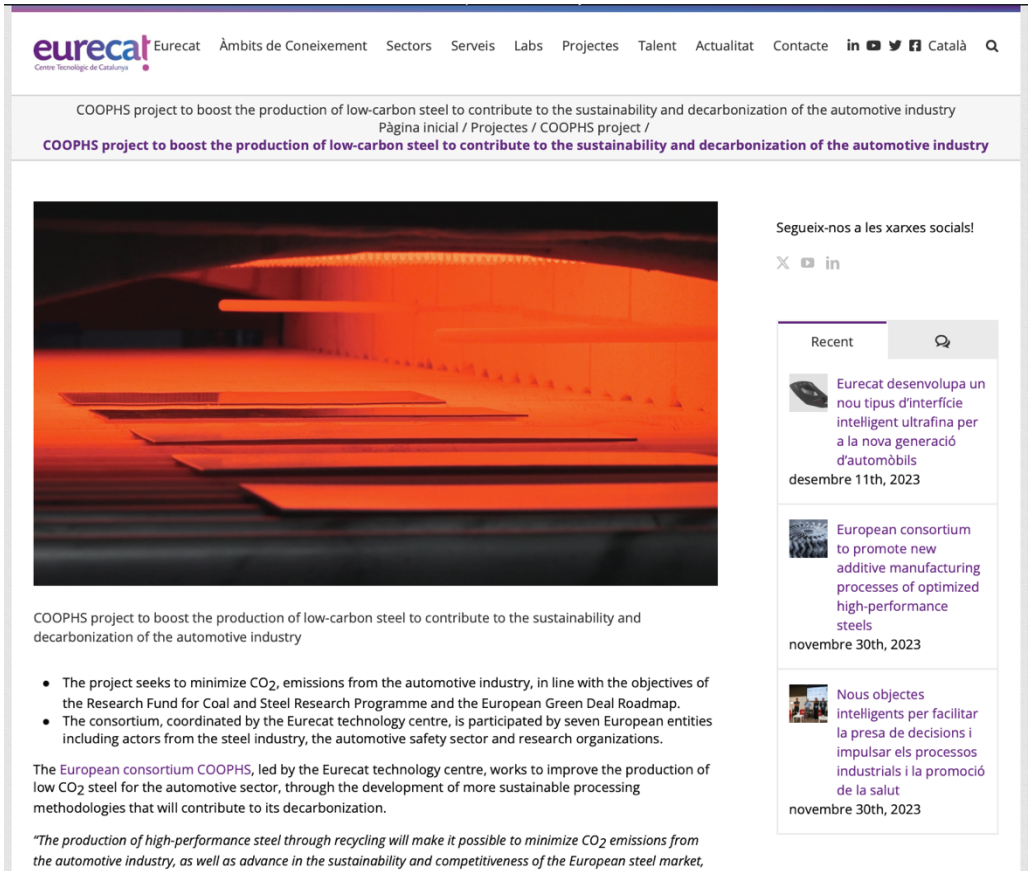


Figure 22: View of the press release published at Eurecat's website

October 2023 – *Eurecat leads three European projects that drive the optimization of steel components and the decarbonization of their manufacturing process.*

The technological center Eurecat leads three European projects with a total budget of 6.9 million euros, aimed at promoting the optimization of various qualities of steel to enhance their properties and applications in sectors such as automotive and aerospace. Simultaneously, these projects seek to achieve a reduction in defects, manufacturing costs, and carbon dioxide emissions during production, contributing to the overall decarbonization of the industry.

These initiatives are showcased this week at the SteelTech 2023 fair, the premier event in southern Europe for the metal sector, bringing together key stakeholders in the value chain. The event takes place in Bilbao from October 25 to 27.

Read more here (*in Catalan*): https://eurecat.org/eurecat-lidera-tres-projectes-europeus-que-impulsen-loptimitzacio-de-components-dacer-i-la-descarbonitzacio-del-seu-proces-de-fabricacio/

3.4.3 Media impacts

As a result of media relations activities, COOPHS project was featured in a total of **8 articles in generalist and specialised media outlets** at local and national level. According to a clipping tool, media actions have reached over 3M people.

The details of the articles on COOPHS published can be seen in the table below:

Table 4: COOPHS media clipping M1-M6

Date	Media	Title	Type	Language	Link
14/11/23	Interempresas MetalMecánica	Eurecat lidera la optimización de componentes de acero y la descarbonización de su fabricación	Online	Spanish	Link
13/11/22	HispaRob	Eurecat lidera tres proyectos europeos que impulsan la optimización de componentes de acero y la descarbonización de su proceso de fabricación	Online	Spanish	Link
26/10/23	Regio7	Eurecat Manresa lidera 3 projectes amb 6,9 milions de pressupost	Print	Catalan	Link
26/10/23	Metales&Máquinas	Eurecat lidera tres proyectos europeos que impulsan la optimización de componentes de acero	Online	Spanish	Link
26/10/23	Industry Talks	Eurecat lidera tres proyectos europeos para optimizar la producción de	Online	Spanish	Link

		acero disminuyendo la huella de carbono			
25/10/23	Regio7	Eurecat Manresa lidera tres projectes europeus amb un pressupost total de 6,9 milions d'euros	Online	Catalan	Link
25/10/23	Nacio Manresa	Eurecat Manresa lidera tres projectes europeus que impulsen l'optimització de components d'acer	Online	Catalan	Link
25/10/23	SolarNews.es	Eurecat lidera tres proyectos europeos que impulsan la optimización de componentes de acero y la descarbonización de su proceso de fabricación	Online	Spanish	Link

3.5 Social media

The project will communicate its achievements and all dissemination events and engage with stakeholders through partners personal and corporate Social Media accounts (see Table 5), reaching in total 956K followers on LinkedIn, 274K on Twitter and 88K users on Facebook.

Partners aim to publish at least 50 posts on LinkedIn and 25 posts on Twitter during the project. At M6, 4 posts have been published (see Figure 24).

Table 5: Partners coroporate media accounts

Partner	LinkedIn	Num Followers LinkedIn	Twitter	Num Followers Twitter
EUT	https://www.linkedin.com/company/eurecat	27,000	@Eurecat_news	16,400
ALBA-CELLS	https://www.linkedin.com/company/albasynchrotron	6,797	@ALBAsynchrotron	4,980
GES	http://www.linkedin.com/company/gestamp	272,511	@Gestamp	3,893
AMMR	https://www.linkedin.com/company/arcelormittal-france/	41,233	@ArcelorMittalF	3,817
LETOMEC	https://www.linkedin.com/company/letomec-srl/	600	-	-
AMU	https://www.linkedin.com/school/aix-marseille-universite/	2182,65	@univamu	20,800

CNRS	https://www.linkedin.com/company/cnrs/	389,729	@CNRS	224,200

To increase the reach of the tweets, it is proposed the frequent use of the following hashtags, usual in other areas within the scope of the project, and relevant handles to get a bigger impact when project news or information about results is published (see Figure 23).

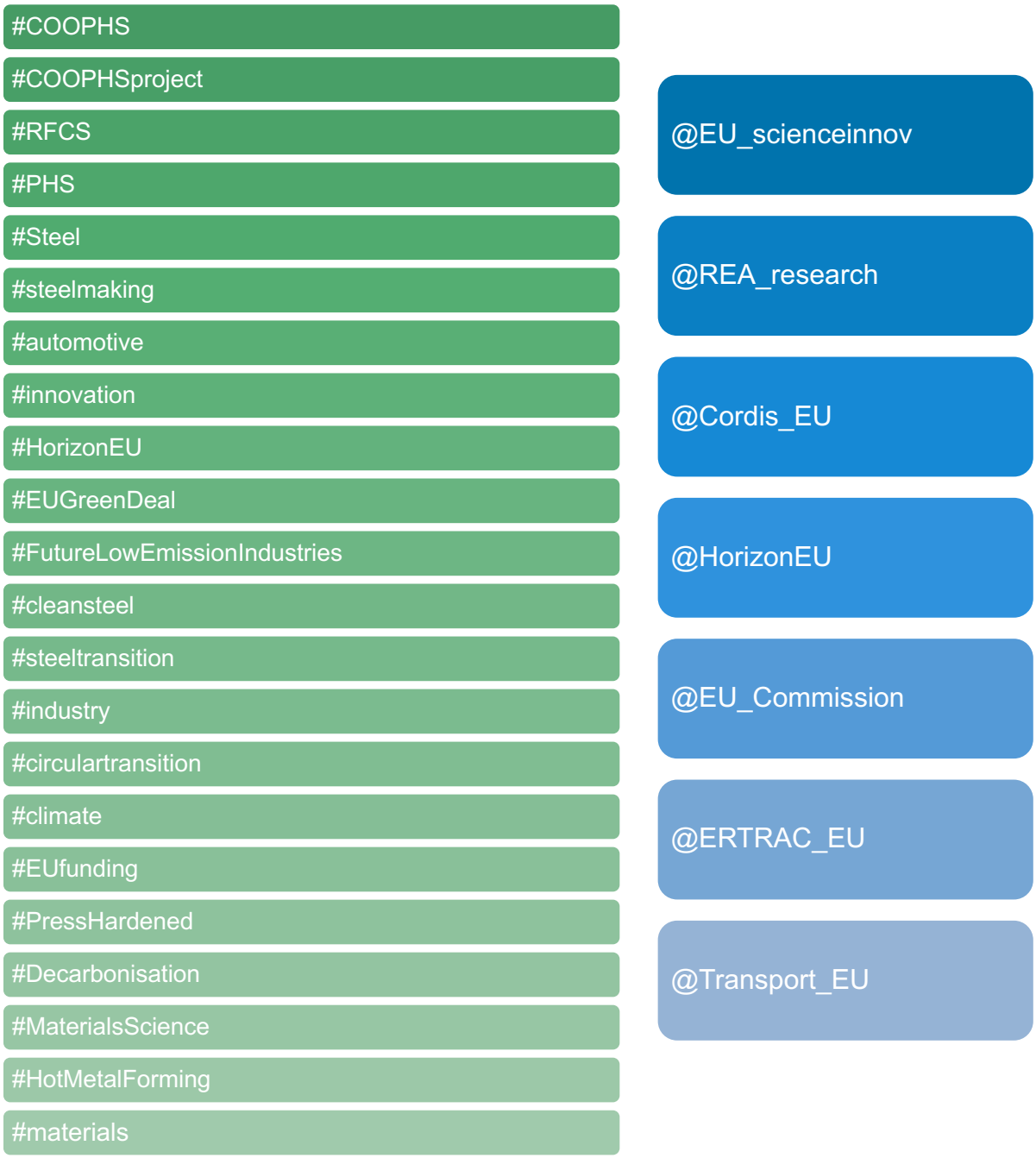


Figure 23: List of relevant hashtags (left) and handles to mention (right)

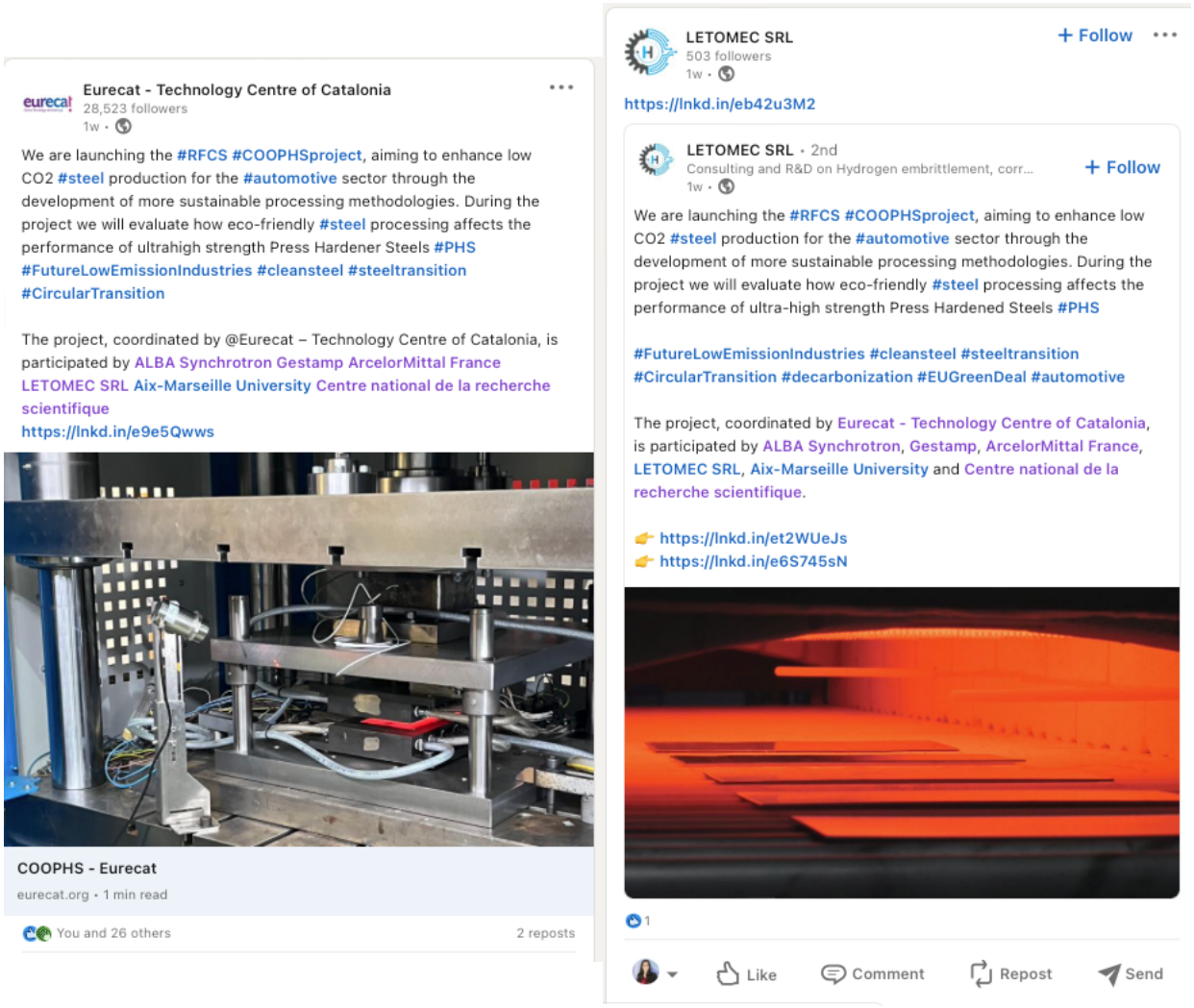


Figure 24: Examples of posts published by partners on Social Media

Eurecat is set to devise a comprehensive bi-monthly content plan, strategically designed for dissemination through Twitter and LinkedIn, with active collaboration from consortium partners. This collaborative approach encourages all partners to contribute diverse content forms, including text, images, and videos, for distribution.

The initial series of social media posts, constituting the project's debut on social media, aims to raise awareness about the project and drive traffic to the official website. This battery of posts is carefully crafted to effectively communicate the project's objectives, milestones, and noteworthy aspects, fostering engagement and interest among the target audience, while promoting the project website.

First proposal of Tweets

The #COOPHS project, participated by [NAME COMPANY], aims to enhance low CO2 #steel production for the #automotive sector through the development of more sustainable processing methodologies #FutureLowEmissionIndustries #cleansteel

Learn more ▶ https://cutt.ly/coophs

We are launching the #RFCS #COOPHSproject, evaluating how eco-friendly #steel processing affects the performance of ultrahigh strength Press Hardened Steels #PHS

Consortium @Eurecat_news @ALBAsynchrotron @gestamp @ArcelorMittalF @univamu @CNRS #LETOMEC

https://cutt.ly/coophs

[NAME OF COMPANY] takes part in #COOPHS #RFCS @HorizonEU project, boosting the production of low-carbon #PHS #steel to contribute to the #sustainability and #decarbonization of the #automotive industry

Learn more about the project 🔽

https://cutt.ly/coophs

Proposal of posts for LinkedIn

We are launching the #RFCS #COOPHSproject, aiming to enhance low CO2 #steel production for the #automotive sector through the development of more sustainable processing methodologies. During the project we will evaluate how eco-friendly #steel processing affects the performance of ultrahigh strength Press Hardened Steels #PHS

#FutureLowEmissionIndustries #cleansteel #steeltransition #CircularTransition

The project, coordinated by @Eurecat – Technology Centre of Catalonia, is participated by @ALBA Synchrotron @Gestamp @ArcelorMittal France @LETOMEC SRL @Aix-Marseille University @CNRS

https://cutt.ly/coophs

The #COOPHSproject, participated by [NAME OF YOUR COMPANY] seeks to minimize #CO2emissions from the #automotive industry, in line with the objectives of the #RFCS Research Programme and the #EUGreenDeal Roadmap, through the development of more sustainable press-hardened #steels processing methodologies contributing to #decarbonisation

The project, coordinated by @Eurecat – Technology Centre of Catalonia, is participated by @ALBA Synchrotron @Gestamp @ArcelorMittal France @LETOMEC SRL @Aix-Marseille University @CNRS

https://cutt.ly/coophs

3.6 Conferences, congresses, and other events

Participation in national and international conferences, congresses, and workshops aimed at both the academic and industrial communities is crucial for transferring the knowledge gained throughout the COOPHS project. Partners will present in at least four conferences, fairs, and exhibitions for showcasing and publishing COOPHS's results, encompassing a broad spectrum of topics such as materials science, steel processing, Press Hardened Steels characterisation, automotive materials, and more.

Through active involvement in academic and industrial events, COOPHS partners will establish connections within the automotive sector, engaging with OEMs, Tier 1 and Tier 2 companies, as well as fellow researchers.

Dissemination efforts will primarily target the partner countries, including Spain, France, Italy, and Sweden. Additionally, partners will explore opportunities to participate in events held in other European countries that align closely with the project's objectives, specifically within academia and industries associated with the sheet metal forming sector and the application of circular economy processes and recyclability approaches in steel production.

The decision to participate in academic and industrial events will be deliberated during WP-leaders' meetings. Partners can utilize an Excel file in the SharePoint folder, providing a platform to document their planned activities and identify events of interest.

3.6.1 Participation to events

As of M6, partners have successfully disseminated COOPHS in one event, marking the project's early presence in relevant forums and conferences:

October 25-27 2023 – *SteelTech Exhibition* (Bilbao, Spain).

Figure 25: Eurecat stand at SteelTech Exhibition

Eurecat has participated as exhibitor of the Steel Tech 2023 this week in Bilbao Exhibition Center from October 25-27. Amongst the center capacities in the steel sector, promotional materials of the COOPHS project was displayed and delivered to booth attendees.

In this activity, COOPHS liaised with other Research Fund for Coal and Steel (RFCS)-funded projects: HELIX, SupreAM, NewAIMS, Sup3rForm and MiPRE, all coordinated by Eurecat.

A non-exhaustive list of events already identified as relevant to continue disseminating COOPHS activities and outcomes are presented in Table 6. The list will be periodically updated by partners.

Table 6: Identified list of conferences, fairs, and exhibitions of interest for COOPHS Project

Dates	Event	Type	Place	Status
May 24	CHS2 Congress	Conference	Nashville, USA	Intended, being evaluated
June 24	Materials In Car Body Engineering	Conference	Bad Nauheim, Germany	Intended, being evaluated
July 24	FEMS Junior EUROMAT 2024	Conference	Manchester, Germany	Intended, being evaluated
Oct 24	EuroCarBody	Conference	Bad Nauheim, Germany	Intended, being evaluated
Oct 24	SteelTech Congress	Congress	Bilbao, Spain	Intended
Oct 24	Steel & Hydrogen	Conference	TBD	Intended
Jun/Jun 25	IDDRG 2024	Conference	TBD	Intended
Jun 25	International conference on Steels in Cars and Trucks (SCT)	Conference	Stockholm, Sweden	Intended
Jul 25	Thermec	Conference	TBD	Intended
Sep 25	FEMS 2025 EUROMAT	Conference	Granada, Spain	Intended
Oct 25	Materials in Car Body Engineering	Conference	Bad Nauheim, Germany	Intended
Oct 25	EuroCarBody	Conference	Bad Nauheim, Germany	Intended
Jun / Jul 26	IDDRG 2026	Conference	TBD	Intended
Jun/Jul 26	CHS2 Congress	Conference	TBD	Intended
Oct 26	SteelTech Congress	Conference	TBD	Intended
Oct 26	Materials in Car Body Engineering	Conference	Bad Nauheim, Germany	Intended
Oct 26	EuroCarBody	Conference	Bad Nauheim, Germany	Intended
TBD	ESTEP dissemination forums	Conference	TBD	Intended

3.6.2 Final workshop

A final event will be organized at the end of the project (M42) for a publicly presentation of the project results among key stakeholders (academic/scientific and industrial community. Partners will decide whether hosting the event in one of the consortium countries or within a key congress/conference (see Table 6).

Partners aim at gathering more than 35 attendees. The event will be open to all interested parties and promoted throughout COOPHS and partners communication channels, but partners will also send private invitations to key contacts in their portfolio. Eurecat will be the main responsible partners for the organization of the event, which will also include the contribution of all partners.

3.7 Scientific production

Reports or outcomes arising from the COOPHS project activities will be disseminated through scientific journals relevant to the project's focus areas. **A minimum of three publications in peer-reviewed journals is anticipated over the project duration.** At least one collaborative paper with the participation of more than two partners will be sought.

Due to the dynamic nature of result appearances and technical maturity, the scheduling of these publications is adaptable, guided by Eurecat and aligned with the work package plan.

During regular meetings of WP-leaders, significant results will be deliberated, allowing partners to establish timelines and select suitable conference proceedings or journals for publication. The chosen journals will be tailored to the specific nature of the results, encompassing domains such as materials science, fracture mechanics, materials engineering, and steel research.

An initial list of journals of interest can be found in Table 7. On the other hand, partners will consider the submission of papers to the Open Research Europe, an innovative open access publishing platform offering rapid publication and open peer review.

Table 7: List of identified scientific journals

Journal name	Link
Engineering Fracture Mechanics	https://www.sciencedirect.com/journal/engineering-fracture-mechanics
Journal of Materials Processing Technology	https://www.sciencedirect.com/journal/journal-of-materials-processing-technology
Metallurgical and Materials Transactions A	https://link.springer.com/journal/11661
Materials Science and Engineering: An	https://www.sciencedirect.com/journal/materials-science-and-engineering-a
Advanced Engineering Materials	https://onlinelibrary.wiley.com/journal/15272648
Metals	https://www.mdpi.com/journal/metals
Materials	https://www.mdpi.com/journal/materials
International Journal of Mechanical Sciences	https://www.sciencedirect.com/journal/international-journal-of-mechanical-sciences

ISIJ International	https://isijint.net
Journal of Materials Science & Technology	https://www.sciencedirect.com/journal/journal-of-materials-science-and-technology
Steel Research International	https://onlinelibrary.wiley.com/journal/1869344

As of M6, partners have pinpointed the following topics as potential subjects for forthcoming publications, marking a proactive step in shaping the project's scientific contributions.

Table 8: Intended publication topics

Publication topic	Partners involved	Planning
Effe**ct of trace element contents on fracture toughness of 22MnB5**	EUT, AMMR, GES	M30
Segregation of trace elements on 22MnB5 and interaction with Boron	AMU, AMMR, ALBA, EUT	M30
Response of recycled Boron steel to Hydrogen embrittlement	LETOMEC, AMMR, EUT	M36

Partners are **committed to guaranteeing open access**, which involves free, online availability for all users, to all peer-reviewed scientific publications. This accessibility will be facilitated through gold open access, when provided by the publisher upon article publication, and/or green open access via online repositories such as OpenAire or Zenodo. This approach ensures the long-term preservation and availability of publications.

To centralize and organize project-related research publications, a dedicated COOPHS Zenodo community will be established once the first scientific publication is available. This community will serve as a repository for all publications generated during the project, promoting easy access, and sharing.

Furthermore, publications will be disseminated through researchers' individual ResearchGate pages whenever applicable, expanding the visibility of the project's research outputs across the academic community and beyond.

3.8 Clustering activities

Throughout the execution of the COOPHS project, project partners will maintain continuous communication with coordinators of other related projects, relevant industry associations, companies, and European institutions associated with the project's domains.

Furthermore, partners will proactively engage with initiatives promoted by these projects or European initiatives, contributing with project content to enhance the content of associations' newsletters, website, and publications whenever feasible.

Clustering activities up to M6 include the **participation of the project to the Steel Tech Congress in collaboration with HELIX, SupreAM, NewAIMS, Sup3rForm and MiPRE**.

3.8.1 Clustering with sister projects

Collaborating with other projects and initiatives enables the pooling of efforts and strengthens the collective voice when communicating with target audiences. Some of the COOPHS sister projects and initiatives identified to date, associated with green steel, steel processing, automotive materials, etc., are listed in Table 9.

Table 9: COOPHS identified sister projects

Initiative	Short description
SALEMA (*ending in March 2024*)	SALEMA deals with recycling high performance Aluminium Alloys, with a similar challenges as those identified in COOPHS. Participation of Eurecat and Gestamp (partners in both) in circularity forums will include dissemination of both.
SUP3RFORM (*ending in December 2026*)	RFCS coordinated by EURECAT and dealing with advanced sheet steel grades, joint dissemination activities and workshops will help achieve critical mass for improved impact.
SUPREAM (*ending in December 2026*)	RFCS coordinated by EURECAT improving the performance and capabilities of a predictive simulation model of finishing operations in steel Additive Manufacturing (AM). Establishment of joint dissemination activities and workshops.
NewAims (*ending in December 2026*)	RFCS coordinated by EURECAT promoting new additive manufacturing processes of optimized high-performance steels. Establishment of joint dissemination activities and workshops.

3.8.2 Clustering with EU initiatives and platforms

Cooperation and synergies will be established with relevant initiatives and platforms, some of which are listed in Table 10.

Table 10: Initial list of identified clusters, associations and initiatives.

Name	Description	Website
EARPA – Association of Automotive	EARPA is the association of automotive R&D organisations. It brings together the most prominent independent R&D providers in the automotive sector throughout Europe. **EUT, is member.**	https://www.earpa.eu/earpa/home
EPPN – European Pilot Production Network	The EU-funded EPPN project aims to enhance European competitiveness by utilising existing pilot line production facilities in nanotechnology and advanced material technologies.	https://www.eppnetwork.com

ELCA- European Lightweight Alliance	The overall objective of the European Lighting Cluster Alliance, ELCA, is to gather forces on a European level in order to increase the competitiveness of the European lighting industries.	http://elcacluster.eu
EMMC- The European Materials Modelling Council	The non-profit Association, EMMC ASBL, was created in 2019 to ensure continuity, growth and sustainability of EMMC activities for all stakeholders including modellers, materials data scientists, software owners, translators and manufacturers in Europe. The EMMC considers the integration of materials modelling and digitalisation critical for more agile and sustainable product development.	https://emmc.eu
ACEA – the European Automobile Manufacturers Association	The European Automobile Manufacturers' Association (ACEA) represents the 15 major Europe-based car, van, truck and bus makers.	https://www.acea.be
EMCC- European Materials Characterisation Council	The EMCC is devoted to establish a community of European stakeholders in the process of developing and improving characterisation tools in order to bring the development of nanomaterials and advanced materials in Europe into end products more successfully.	http://characterisation.eu
ERMA – European Raw Materials Alliance	The European Raw Materials Alliance (ERMA) aims to make Europe economically more resilient by diversifying its supply chains, creating jobs, attracting investments to the raw materials value chain, fostering innovation, training young talents and contributing to the best enabling framework for raw materials and the Circular Economy worldwide.	https://erma.eu
EMIRI - The Energy Materials Industrial Research Initiative.	EMIRI is driving forward research and innovation in the advanced materials for low-carbon energy applications. Innovative energy	https://emiri.eu

	technologies are required to cost-effectively meet Europe's energy and climate change challenges.	
ESTEP - European Steel Technology Platform	The European Steel Technology Platform (ESTEP) brings together all the major stakeholders in the European steel industry. ESTEP's mission aims to engage in collaborative EU actions and projects on technology, which are tackling EU challenges (notably on renewable energy, climate change (low-carbon emission), circular economy) in order to create a sustainable EU steel industry.	https://www.estep.eu
EACN – The European Automotive Cluster Network	The European Automotive Cluster Network EACN is the leading network of clusters active in the fields of automotive, transport and mobility in Europe. It has been initiated in 2017 by eight clusters and grew to reach today 24 clusters from 11 European countries.	https://www.eacn-initiative.eu/
EIT Urban Mobility	EIT Urban Mobility is an initiative of the European Institute of Innovation and Technology (EIT). Since January 2019 we have been working to encourage positive changes in the way people move around cities in order to make them more liveable places. We aim to become the largest European initiative transforming urban mobility.	https://www.eiturbanmobility.eu/
CIAC Cluster	The Automotive Industry Cluster of Catalonia (CIAC) is a non-profit association open to companies operating in the automotive industry, that are based in Catalonia, and pursue R&D+i activities. **EUT is member.**	https://www.ciac.cat
CLEPA - European Association of Automotive Suppliers	CLEPA is the voice of European automotive suppliers, representing over 3.000 companies which employ 5.000.000 employees.	https://clepa.eu

SERNAUTO -Spanish Association of Automotive Providers	SERNAUTO represents the interests of the Spanish automotive equipment and components industry through an ongoing dialogue with the companies in the sector, Spanish and European public administrations, related institutions and society in general.	https://www.sernauto.es
WorldAutoSteel	WorldAutoSteel is the automotive group of the World Steel Association, comprised of 20 major global steel producers from around the world. Their mission is to advance and communicate steel's unique ability to meet the automotive industry's needs and challenges in a sustainable and environmentally responsible way. ArcelorMittal is member of it.	https://www.worldautosteel.org
EUROFER - European Steel Association	The European Steel Association (EUROFER) AISBL represents the entirety of steel production in the European Union. The European Steel Association's members are steel companies and national steel federations throughout the EU. The major steel companies and national steel federations in Switzerland and Turkey are associate members.	https://www.eurofer.eu
EUMAT - The European Technology Platform for Advanced Engineering Materials and Technologies	EuMaT has the aim to contribute to the best relation and dialogue between industry, R&D actors and institutions aiming at improving the coordination and synergies at national and European level in the field of materials R&D.	https://www.eumat.eu/en
METSA- Microscopie Electronique en Transmission et Sonde Atomique	National network of eight regional platforms of high-level Electron Microscopy and Atomic Probe Platforms made available to the French and international scientific community, both academic and industrial sector.	https://www.metsa.fr

Program Lättvikt	Swedish program for lightweight research and innovation.	https://lighter.nu/

4. Planning

The dissemination and communication plan will be implemented following the calendar of actions.

ACTIVITIES	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18
	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
Website update	X	X	X	X	X	X	X	X	X	X	X	X
Social media update		X		X		X		X		X		X
Participation to dissemination events					X	X	X	X	X	X	X	X
	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30
	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
Website update	X	X	X	X	X	X	X	X	X	X	X	X
Social media update		X		X		X		X		X	X	X
Participation to dissemination events	X	X	X	X	X	X	X	X	X	X	X	X
	M31	M32	M33	M34	M35	M36	M37	M38	M39	M40	M41	M42
	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Oct-26	Nov-26	Dec-26
Website update	X	X	X	X	X	X	X	X	X	X	X	X
Social media update		X		X		X		X		X		X

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Participation to dissemination events	X	X	X	X	X	X	X	X	X	X	X	X
Update project flyer										X		
Project final video										X		
Final workshop												X

5. Conclusions

This document provides plans in the areas of communication and dissemination, including key progress that has been made for the first six months of the COOPHS project.

It presents a comprehensive dissemination strategy for the COOPHS project and describes the materials and strategies that have and will be used for external dissemination. A series of communication and dissemination actions have been planned, but it is anticipated that more dissemination opportunities will arise as the project progresses.

The consortium will use this plan as an initial strategy which will be further updated and reviewed on a regular basis.

Next steps include involving all partners in the identification of other dissemination opportunities and agree on key opportunities. Collaboration among partners will be fostered. This will be done by regular dissemination calls, in which the presented plan will be reviewed, and future actions will be discussed.

The steps taken during the next years will be reported in review reports.

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