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D1.1

Project manual

**STEEL Applications for Low Investment
manufacturing of high Value Elements**

Lead beneficiary:
CIDAUT

July 25



Project & Document Information

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0.1	13/06/2025	Initial Table of Contents
0.2	27/06/2025	First consolidated version
1.0	31/07/2025	Integration of review feedback; Final version ready

List of Abbreviations

Acronym	Description
AHSS	Advanced High-Strength Steels
DEM	Demonstrator
DoA	Description of Action
EC	European Commission
F2F	Face-to-Face
GA	General Assembly
IPR	Intellectual Property Rights
KRI	Key Risk Indicator
LCV	Light Commercial Vehicle
MoM	Minutes of the Meeting
MS	Microsoft
OEM	Original Equipment Manufacturer
PC	Project Coordinator
QA	Quality Assurance
TL	Task Leader
ToC	Table of Contents
WP	Work Package
WPL	Work Package Leader



Table of Contents

1	EXECUTIVE SUMMARY	6
2	PROJECT SYNOPSIS	7
2.1	Project Objectives	7
2.2	Work Plan	7
2.3	Deliverables and Milestones Timeline.....	8
2.3.1	Deliverables	8
2.3.2	Milestones.....	9
3	FUNCTIONAL PROJECT ORGANISATION.....	10
3.1	Management structure	11
3.2	Persons & Roles	12
4	PROJECT IMPLEMENTATION	14
4.1	Internal Communication.....	14
4.2	Collaborative Workspace.....	15
4.3	Periodic meetings	16
5	QUALITY ASSURANCE PROCEDURES	17
5.1	Authoring Guidelines	18
5.2	QA Process Explanation	18
6	RISK IDENTIFICATION AND MANAGEMENT STRATEGY	19
6.1	General strategy.....	20
6.2	Response plan	21
6.2.1	Amendment	22
7	CONCLUSIONS	23

List of figures

Figure 1. Overall structure of STEEL-ALIVE and the interaction between the work packages	8
Figure 2. Management structure	12
Figure 3. Primary individuals assigned to the project	13
Figure 4. Information flow diagram for the project.....	14
Figure 5. Preview of the MS Teams Area of the project.....	15
Figure 6. Quality Assurance process.....	19



List of tables

Table 1. List of official deliverables to be submitted to European Commission 8

Table 2. Project milestones..... 9

Table 3. Project's consortium composition10

Table 4. Structure of the General Assembly.....13

Table 5. List of channel into which the MS Teams Area is structured 16

Table 6. Overview of the project meetings.....16

Table 7. Criteria for assessing the quality of deliverables.....18

Table 8. Fields into which the mandatory Risk Register will be organised21



1 Executive Summary

This deliverable, D1.1, presents the methodology to be adopted throughout the project to meet its objectives within the specified timeline and allocated resources. In essence, the Project Manual serves as a reference for the daily execution of project activities, covering both management and administrative dimensions. As such, it incorporates mechanisms for effective governance and communication, collaboration between partners, quality assurance and risk management.

Within this framework, the document begins by defining the project's objectives, detailing the work plan and identifying the roles of the consortium members. It then details the communication strategy to be implemented and outlines how adherence to the Description of Action (DoA) will be ensured. Finally, it presents the guidelines for risk management.

The information contained in the deliverable is grounded in the terms and conditions specified in the Grant Agreement. It is noteworthy that this document is a dynamic tool, that may be updated and refined over the course of the project. In any case, it is emphasised that in case of any discrepancies or conflicts, the provisions of the Grant Agreement or of the Consortium Agreement shall always prevail over those of the Project Handbook.



2 Project Synopsis

STEEL-ALIVE is an initiative that aims to boost the manufacturing of steel-based Light Commercial Vehicles (LCVs) by optimising the production process. Instead of conventional stamping or giga-casting methods, the project starts with standard tubes and sheets of Advanced High-Strength Steels (AHSS), which are shaped through cutting, bending and welding processes. The specific applications that will be used as demonstrators are: (i) the battery case, (ii) the rear carrier box, and (iii) the body frame.

To achieve this, the strategy focuses on investigating and applying advanced welding processes and developing novel quality control methodologies integrated with Artificial Intelligence. The project's quantitative objectives are to reduce the initial investment by 80%, decrease energy consumption and the CO₂ footprint during manufacturing by 70%, and cut production costs by 30%. This approach not only promotes advanced and sustainable manufacturing but also reinforces the economic viability of steel in the sector.

The project will be executed by a multidisciplinary consortium composed of seven industrial and academic partners from across Europe.

2.1 Project Objectives

In general terms, STEEL-ALIVE seeks to demonstrate the competitive potential of LCV production using AHSS, from both economic and environmental perspective. In this connection, three application case have been selected (see above). Given the complexity, this general objective has been divided into several specific objectives, which are detailed as follows:

1. Application of AHSS in the manufacturing of LCV components
2. Design and development of innovative LCV components with adaptable configurations for any body size or frame, eliminating the need for new tooling and ensuring alignment with both OEM requirements and end-user expectations.
3. Establishment of a completely innovative LCV manufacturing line based solely on laser cutting and bending of tubes and metal sheets, complemented by additional bending and punching techniques, removing the dependency on dies, moulds or stamping processes
4. Implementation of hybrid joining techniques that combine welding and structural adhesives with advanced in-line quality control methods.

2.2 Work Plan

To meet the objectives, a work plan was established that started on 1st July 2025 (M1) and concludes on 30th June 2028 (M36). In essence, the STEEL-ALIVE's work plan is structured into five work packages, each led by a consortium partner. The interconnections between the work packages are depicted schematically in Figure 1.



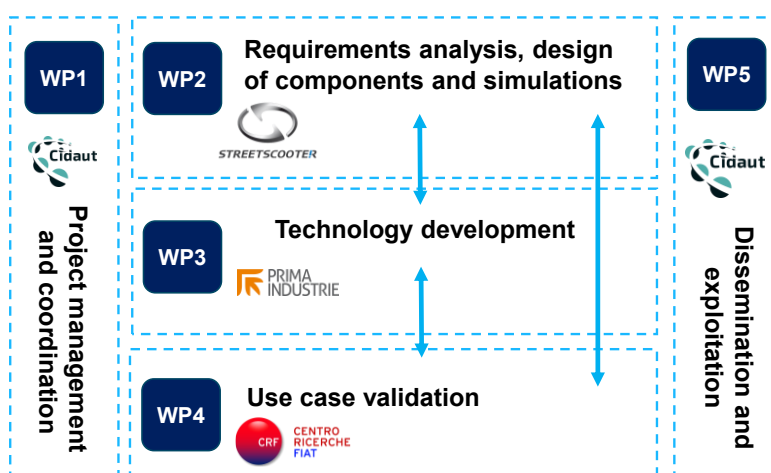


Figure 1. Overall structure of STEEL-ALIVE and the interaction between the work packages

In few words, WP1 (led by CIDAUT) is responsible for overseeing the project's overall management and coordination. WP2 (led by STS) focuses on the design and simulation-based validation of innovative LCV components made entirely of AHSS. For its part, WP3 (led by PRIMA) focuses on developing the necessary technologies for manufacturing the components conceptualised in WP2. WP4 (led by CRF) undertakes the production and validation of the application cases covered by the project's scope. Lastly, all work packages contribute to WP5 (led by CIDAUT), which manages the Dissemination and Communication activities and promotes AHSS within the LCV sector.

2.3 Deliverables and Milestones Timeline

Within the project framework, deliverables and milestones are key indicators of the progress over time. In case of the deliverables, the Project Coordinator is responsible for uploading the corresponding reports to the official EC platform, adhering to the established timing and conditions. On the other hand, milestones functions as checkpoints to monitor and measure the project's advancement.

2.3.1 Deliverables

Considering the established work plan, where all WPs are interrelated, the deliverables of STEEL-ALIVE are designed to complement each other. Each deliverable is accompanied by a corresponding report, even in the case of the demonstrators (DEM), in alignment with the standard practices of the EC.

By way of a summary, the Table 1 presents the deliverables defined within the project's scope.

Table 1. List of official deliverables to be submitted to European Commission

#	D	Deliverable name	WP	Lead Beneficiary	Type	Delivery date (M)
1	D1.1	Project manual	1	CID	R	1
2	D1.2	Comprehensive overview of STEEL-ALIVE	1	CID	R	6
3	D1.3	Risk and Contingency Plan	1	CID	R	3
4	D1.4	Data Management Plan	1	CID	R	6

5	D1.5	Final Data Management Plan	1	CID	R	36
6	D1.6	Ethical Management Plan	1	CID	R	3
7	D2.1	Theoretically evaluated design rear carrier box ready for manufacturing	2	IFEVS	R	21
8	D2.2	Theoretically evaluated design battery case ready for manufacturing	2	IFEVS	R	21
9	D2.3	Theoretically evaluated design body frame ready for manufacturing	2	IFEVS	R	21
10	D2.4	Theoretically evaluated design of the manufacturing line	2	PRIMA	R	24
11	D3.1	Laser and deforming technological solution for AHSS materials to prototype the strategic LCV components	3	PRIMA	R	18
12	D3.2	Arc welding solution for the AHSS materials	3	BWI	R	14
13	D3.3	Manual laser welding solution for the AHSS materials	3	BWI	R	18
14	D3.4	Monitoring system quality assessment report for laser cutting, bending and welding processes based on AI-supported digital twins	3	PRIMA	R	21
15	D4.1	Assembled proof-of-concept components according to the designed methodologies and technologies	4	PRIMA	DEM	24
16	D4.2	Report on the functional testing of the strategic use case applications (rear carrier box, battery case and body frame)	4	CRF	R	36
17	D4.3	Report describing the validation of real time quality monitoring using the measurement setups and real products from the end users	4	BWI	R	34
18	D5.1	Communication and dissemination Plan and activities report	5	CID	R	6
19	D5.2	Public publishable report	5	CID	R	36
20	D5.3	Exploitation plans and structured business cases/business models	5	PRIMA	R	36
21	D5.4	Report on standardization activities and open data	5	BWI	R	36
22	D5.5	Report on outreach and development of STEEL-ALIVE stakeholder community	5	CID	R	36

2.3.2 Milestones

While the deliverables are tangible outputs of the project, which are subject to specific delivery commitments; the milestones established within STEEL-ALIVE represent temporal markers. These, detailed in the Table 2, will be used to evaluate the project's progress at pivotal stages throughout its duration.

Table 2. Project milestones

Milestone #	MS Name	WP	Due date	Means of verification
1	Setup project execution team	1	M1	D1.1



2	Full characterization of selected steel grades selected for the industrial applications	2	M12	Full datasets available for all the novel steel grades considered in the project
3	Harmonised requirement specification sheet	2	M8	A complete and harmonised specification sheet is available to the project team. D2.1 -D2.2 -D2.3
4	Simulation reports	2	M21	Simulation overview: D2.1 -D2.2 - D2.3
5	Manufacturing technologies fully developed and ready to prototype LCV parts	3	M18	D3.1 -D3.2 -D3.3
6	ML model to automatically detect anomalous welds ready	3	M21	ML model capable of accurately correlating weld defects with measured data, tailored to specific welding conditions, realising a detection accuracy of at least 90% (reported in D3.4)
7	Component proof-of-concepts created and ready for validation	4	M24	D4.1
8	Final version of the AI/ML algorithms released	4	M32	D4.3
9	Performance of the demonstrators certified according to relevant standards and testing procedures	4	M36	D4.2
10	Project website	5	M3	Website available
11	Workshops with external stakeholders organised	5	M30	List of attendees to the workshops, materials (PPT, recordings, etc.)

3 Functional Project Organisation

STEEL-ALIVE brings together a working group that consists of seven partners from various European countries. The partners were selected based on their specialised profiles and expertise required to address and achieve the project's objectives. Following these premises, the STEEL-ALIVE consortium includes the entities reported in Table 3:

Table 3. Project's consortium composition

Participant No.	Participant organisation name	Short name	Country
1 (Coordinator)	CIDAUT	CID	Spain
2	BWI/BWI-IND	BWI	Belgium
3	PRIMA INDUSTRIE	PRIMA	Italy
4	IFEVS	IFEVS	Italy
5	CRF-Stellantis	CRF	Italy
6	STREETSCOOTER	STS	Italy
7	ARCELOR MITTAL	AMMR	France



Considering the heterogeneous nature of the group, it is crucial for the project to have a clear, efficient and well-documented management plan. To address this need, the governance structure and the distribution of responsibilities among consortium members are outlined below.

3.1 Management structure

In essence, the STEEL-ALIVE management framework will be based on the following four fundamental pillars:

- Ensuring the fulfilment of the project's contractual commitments. This will require continuous progress monitoring, effective communication and a clear, shared understanding of responsibilities.
- Aligning project management decisions with the project's priorities.
- Promoting the delivery of high-quality research and innovation. For this purpose, the coordination of the technical tasks and the integration of their results will be critical.
- Ensuring and validating the project's impact across both the industry and the research community.

In line with these principles, the organizational structure of the Consortium, schematised in Figure 2, will comprise the following bodies:

- The **General Assembly (GA)**: This body will be responsible for making strategic decisions, tracking the project's advancement, implementing corrective actions and addressing conflicts. It will be led by CIDAUT and represented by Mr. Javier Romo (project coordinator). Basically, the GA will concentrate on the following fields: (1) general project management; (2) monitoring of technological progress; (3) management of IPR and dissemination activities and (4) management of exploitation activities. To fulfil these responsibilities, the assembly will include at least one representative from each entity, in addition to the project coordinator.
- The **Coordinator**: The person who acts as the liaison between the project and the European Commission. His/her functions include ensuring timely submission of reports and deliverables, coordinating the consortium, and managing risks. In STEEL-ALIVE, Mr. Javier Romo from CIDAUT will take on the role of Project Coordinator and will therefore become the intermediary between the consortium and the EC. His duties will also encompass overseeing the project's contractual, ethical, financial, and administrative aspects. Furthermore, he will supervise technical activities, including the oversight of work package leaders.
- The **Work Package Leaders (WPLs)**: As their name suggests, they are responsible for coordinating the work packages. Specifically, their roles encompass the following: (1) monitoring the advancement of the work packages; (2) ensuring adherence to the allocated budget; (3) achieving predefined milestones and deliverables; and (4) notifying



the coordinator in the event of any delays or complications. Within the framework of STEEL-ALIVE, each work package leader shall be required to provide the coordinator with monthly updates on the progress of the assigned tasks and any associated administrative matters.

- The **Task Leaders** (TLs): They bear the responsibility of overseeing the coordination of their assigned tasks. Furthermore, it is up to them to ensure that the deliverables are submitted within the stipulated timelines. In STEEL-ALIVE, each task leader is additionally entrusted with the duty of reporting the progress and potential risks associated with their tasks to their respective Work Package Leaders. Detailed information regarding the designation of Task Leaders is outlined in the DoA.

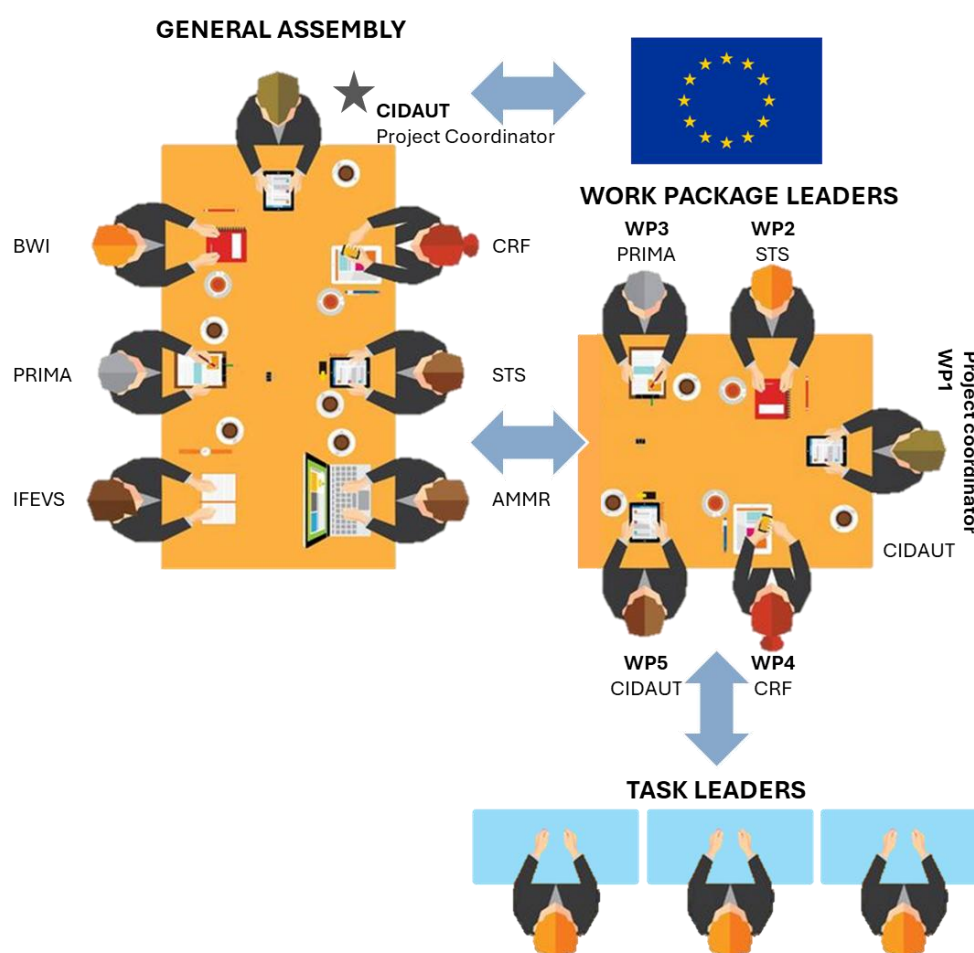


Figure 2. Management structure

3.2 Persons & Roles

The following Figure 3 provides a more detailed explanation of who holds responsibility for each body:

Project Coordinator (PC)

- Mr. Javier Romo Garcia, javrom@cidaut.es
- **Role:** Leader of the entire project, including both scientific and technical activities. Acts as the liaison between project partners and the European Commission. Manages overall strategy.
- **Tasks:** His responsibilities include maintaining communication with the European Commission, overseeing the project's progress and ensuring it aligns with the predefined timeline. This also involves submitting deliverables and progress reports to the EC, coordinating activities within the consortium, and executing risk management strategies to address potential challenges effectively.

Work Package Leaders (WPLs)

- WPL1, WPL5 - Mr. Javier Romo Garcia, javrom@cidaut.es; WPL2 - Mr., @streetscooter.com; WPL3 - Mr. Pietro Pittaro, pietro.pittaro@primaindustrie.com; WPL4 - Mr., @crf.it
- **Role:** Leader of a specific Work Package. Responsible for providing regular updates to the Project Coordinator.
- **Tasks:** Develop work plans. Oversee the timely and efficient execution of the Work Package Tasks. Regularly evaluate the results of the WPs and identify any instances of underperformance.

Task Leaders (TLs)

- See DoA
- **Role:** Leader of a specific Task. Responsible for reporting to the respective WPL.
- **Tasks:** Coordinate the activities associated with the task. Facilitate and oversee the interactions between the partners involved. Monitor the timeline to safeguard the timely completion of the task. Assess the outcomes critically, identifying and addressing any signs of suboptimal performance.

Figure 3. Primary individuals assigned to the project

Regarding the General Assembly, it will consist of one representative from each partner (see Table 4).

Table 4. Structure of the General Assembly

GENERAL ASSEMBLY		
Participant organisation name	Short name	GA Representative
CIDAUT	CID	Javier Romo
BWI/BWI-IND	BWI	Koen Faes
PRIMA INDUSTRIE	PRIMA	Pietro Pittaro
IFEVS	IFEVS	Pietro Perlo
CRF-Stellantis	CRF	Silvia Avataneo
STREETSCOOTER	STS	Markus Schneider
ARCELOR MITTAL	AMMR	Thomas Dieudonne

4 Project Implementation

Implementing a collaborative research project such as STEEL-ALIVE demands a constant exchange of information between partners. For this, it is essential to have a well-defined communication procedure that specifies in detail how relevant information will be shared in the project's framework. This section addresses this aspect and outlines the methodological approach that will be applied in STEEL-ALIVE to guarantee efficient communication. Essentially, the proposed procedure includes aspects such as defining communication channels, the frequency of interactions, and identifying recipients, along with other elements.

4.1 Internal Communication

In line with what has already been said above, the project's success partially relies on effective communication. In recognition of this, this section details the overall strategy for sharing information within the project's operational framework. The primary aim is to ensure that the consortium clearly understands who is responsible for providing notifications, when they should be delivered, and to whom they should be addressed.

From this perspective, the STEEL-ALIVE project will implement a centralised communication model, wherein the Project Coordinator -Javier Romo from Cidaut- will serve as the primary point of contact. To guarantee effective oversight, the Coordinator will convene monthly meetings with the consortium to assess project progress and solve any issues that may arise. Additionally, he will engage in near-daily email correspondence with consortium members. In this way, a consistent upward flow of communication will be established, always with the Coordinator as the final contact point (see Figure 4).

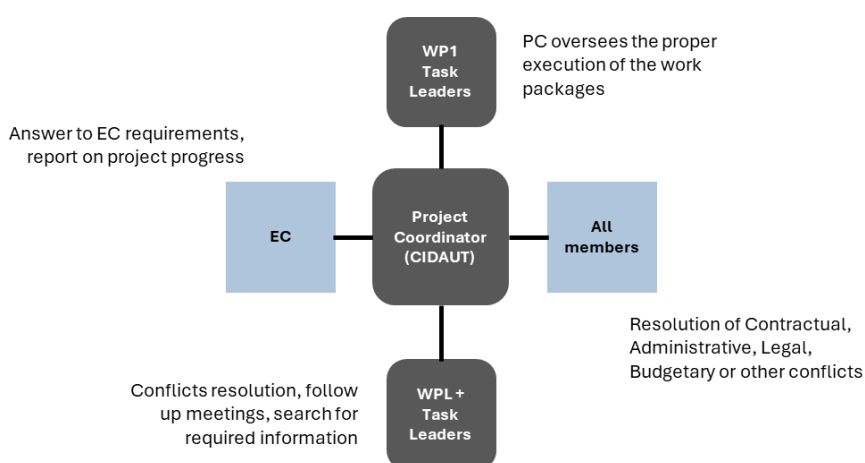


Figure 4. Information flow diagram for the project

The guidelines for communicating with the Project Coordinator (PC) are described below:

- WP Leaders gather the requests from the Task Leaders.
- WP Leader escalates the matter to the PC.



- Depending on the nature and complexity of the issue, the PC may request assistance from the Project Officer to facilitate its resolution.

To ensure the effective implementation of this communication flow, the following tools will be used:

- SharePoint
- Contact list
- Website
- ...

4.2 Collaborative Workspace

The PC has enabled a collaborative workspace in MS Teams for all STEEL-ALIVE members (Figure 5), aiming to boost internal communication. Each partner has access to the Teams Space and can actively engage in discussions and contribute to content creation.

CIDAUT, as the space administrator, is solely responsible for managing access to the STEEL-ALIVE Teams Area. When a new member is granted access, they receive an email with an invitation and a link to join the Project Team.

After accepting the invitation, members can use either the web interface or the desktop application to download, upload and edit documents directly in the Teams area. Additionally, multiple members can simultaneously work on the same document, simplifying collaborative work.

As regards the organisation of the workspace, each WP has a specific channel where partners can post messages and share comments. Although all posts are visible to members of the consortium, no automatic notification are sent. To notify someone specifically, you can tag users by using “@[their username]”, which ensures they receive an alert.

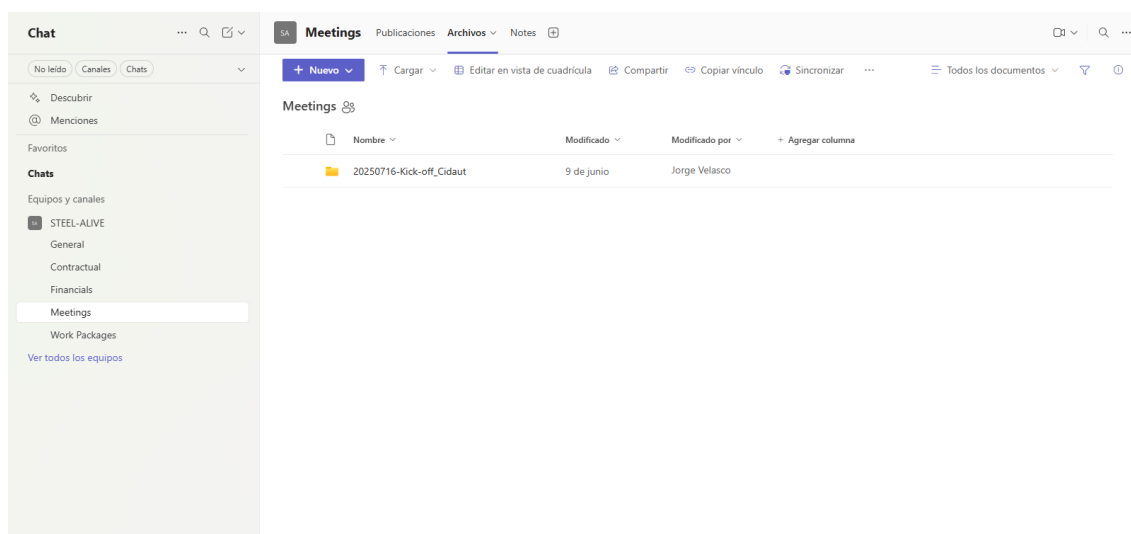


Figure 5. Preview of the MS Teams Area of the project

Table 5 lists the available channels in the workspace and their descriptions.

Table 5. List of channel into which the MS Teams Area is structured

Channel Name	Description	Primary audience	Access rights
Contractual	Contractual documents (GA and CA)	All members	All members
Financials	Project Financials	Financial Officers	All members
General	General documentation for the Consortium	All members	All members
Meetings	Documentation generated during meetings, such as presentation slides, agendas and minutes	All member	All members
Work Packages	All deliverables, shared documents, planning details and posts related to the progress of WPs should be included here	Partners involved in the WPs	All members

Only CIDAUT will have the rights to create or delete channels. If a partner needs a new channel to be created, they must notify the Coordinator.

4.3 Periodic meetings

Once the regular communication procedure has been defined, this section addresses the arrangement of regular meetings. Specifically, the PC will hold the responsibility for organising and updating the meeting schedule as the project progresses. Furthermore, whenever feasible and appropriate, online meetings will be prioritised over face-to-face meetings. This approach is intended to facilitate the participation of all partners.

At high level, Table 6 reports the tentative meetings scheduled to take place throughout the project:

Table 6. Overview of the project meetings

Meeting	Frequency	Participants	Objectives
Kick off	A one-day F2F meeting at the start	All partners	Initiate the project and address administrative and financial matters. Review and approve the work plan and timing.
General Assembly	5 F2F meeting every 6 months, each lasting 2 days	All partners	Monitor the progress of the project's development.
Periodic review meetings	Monthly	All partners	Revision and discussion of technical activities and outcomes. Coordination between WPs. Assessment of budget-related matters.
WP & Task meetings	Variable frequency	WP/Task leaders and participants	Discuss technical aspects, methodologies and outcomes achieved. Track and evaluate the progress. Facilitate collaboration and establish connections with other WPs and tasks.



Final meeting	A two-days F2F meeting at the end of the project	All partners	Review of the project's achievements and milestones. Agreement on the strategy to ensure the continuity of the outcomes.
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In the context of face-to-face meetings, the partner hosting the event, since not all meetings will be organised by the Coordinator, will be responsible for covering the administrative and planning costs, as well as for preparing the agenda. Before circulating the agenda to the consortium, it is imperative that the Coordinator approves its content. Once a consensus is reached between the host and the PC regarding the discussion topics, the final agenda will be distributed to all consortium members by the Coordinator. The agenda should include the following details:

- Title of the meeting
- Date/Time
- Meeting Venue
- A tentative time plan

Concerning the minutes, CIDAUT, in collaboration with the host, will be responsible for drafting the Minutes of the Meeting (MoM). Upon completion of the draft, the coordinator or an authorised representative from CIDAUT will distribute it to all attendees for review. If no objections are raised by any member within a period of seven calendar days, the minutes shall be considered accepted. The minutes are expected to address the following elements:

- Title of the meeting
- Date/Time and location of the meeting
- Name and organisation of all attendees
- Notable remarks shared by attendees
- Action items identified during the meeting
- Agenda

5 Quality Assurance Procedures

Building upon the premise established in the previous section regarding the fundamental role of communication in achieving project objectives, this section addresses the concept of Quality Assurance (QA). From a formal perspective, QA comprises the set of processes aimed at providing confidence that the project will comply with what is established.

Within the project's operational framework, these QA procedures will be primarily applied to the deliverables. The underlying reason is that deliverables constitute the tangible evidence of progress and, therefore, are the primary subject of evaluation to verify conformity with the outcomes. Hence, the subsequent subsections are dedicated to detailing the specific quality standards required for said deliverables and defining the methodological protocols to be applied for their control.



5.1 Authoring Guidelines

All deliverables produced within the scope of the project will undergo iterative reviews by the partners involved. This will ensure that deliverable submitted to the European Commission meet the standards of excellence and accurately represent the work performed.

To this end, lead authors must ensure compliance with the Deliverables Templates and associated guidelines. Documents are to be written in clear and accessible British English, integrating technical terminology where needed. Furthermore, a maximum length of 100 pages is set; exceptions will require formal justification, such as the need to include a high number of figures.

That said, every deliverable must meet the quality criteria described in Table 7:

Table 7. Criteria for assessing the quality of deliverables

Category	Checkpoint
Content Quality	The objective(s) of the deliverable are clearly addressed.
	The methodology is comprehensive, scientifically valid, and well-supported.
	The outcomes align with the DoA and support the objectives outlined in the work plan.
	References are appropriately used.
	The conclusions of the deliverables are well-founded and derived from the content.
Structure	The task is clearly referenced.
	Tracking the contributions is straightforward.
	Nomenclatures and other notations are well defined.
	The deliverable template has been correctly implemented.
Readability	The central vision, underlying concepts, and contributions are presented in a manner that facilitates comprehension.
	Fonts, figures and tables are clearly legible.
	The deliverable uses appropriate English and is easy to read.

In essence, the purpose of these criteria is to ensure that the deliverables:

- Align with the project objectives
- Clearly indicate which Tasks within the project they are associated with
- Are easy to understand to readers

5.2 QA Process Explanation

To guarantee adherence to the criteria, a structured procedure has been developed and will be detailed below. Briefly, this procedure encompasses three key quality assurance stages: the approval of the Table of Contents (ToC), the approval of the Draft, and the submission of the Final Version.

- **ToC approved and ready:** Every deliverable's Table of Contents must receive approval from the Coordinator and the WPL at least one month before the due date. These dates can be found in the DoA. To facilitate this, the TL should meet with contributors to finalise the document's ToC. It will be important to include the short names of partners



responsible for drafting each section. Once finalised, the lead author of the deliverable will upload the ToC to the repository and notify the WPL and the Coordinator. The WPL and PC will then provide their feedback to the responsible. The deliverable leader will update the document accordingly and communicate the changes via email. The WPL and PC will then confirm whether their comments have been addressed.

- **Draft approval:** The completed draft of the deliverable must be prepared no later than three weeks prior to the official submission deadline. This version will undergo a quality review process conducted by the partners contributing to the deliverable. Specifically, they will assess whether the pre-defined quality standards are satisfactorily met in those sections they have not personally authored. A maximum period of one week is allocated for completing this review. Afterward, all participating partners will be informed about the aspects to be corrected. Corresponding authors will have an additional one week to incorporate the feedback and address the required modifications. Once the revisions are completed, the updated deliverable will be uploaded to the repository by the lead beneficiary, and a notification will be sent to all contributors, including both WPL and PC.
- **Final version submission:** No later than two days prior to the final submission deadline, the Coordinator will ensure that all quality feedback has been incorporated correctly. If required, the PC will request last-minute adjustments from the individual responsible for the deliverable, who should remain available during these final days. Once the Coordinator confirms that the deliverable is fully prepared for submission, he will proceed to upload the final document to the EC Portal before the deadline.

The QA process is summarised in Figure 6.

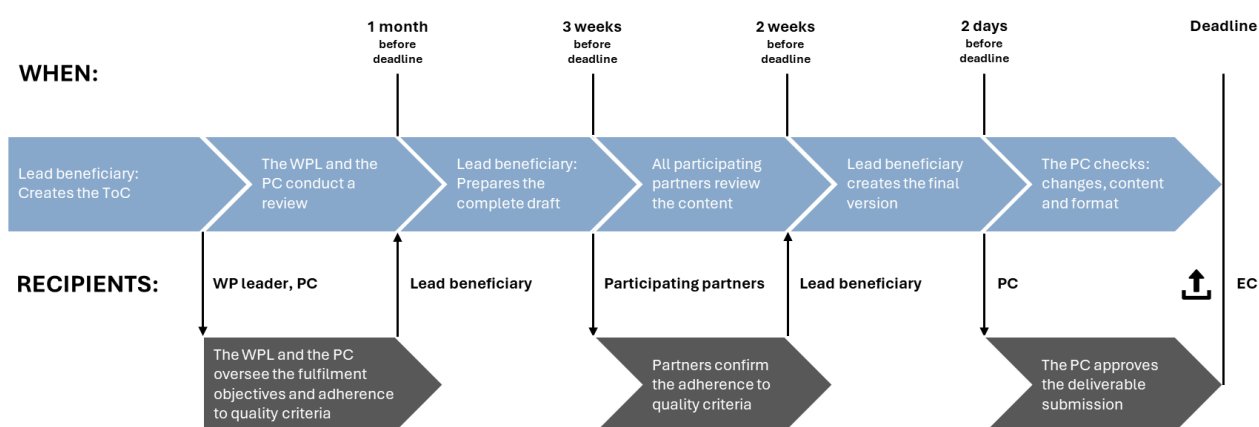


Figure 6. Quality Assurance process

6 Risk Identification and Management Strategy

While QA provides a proactive framework for mitigating risks by identifying quality deviations, Risk Management offers a complementary, systematic approach. Its purpose is to identify,

analyse and neutralise potential threats that could jeopardize project quality and overall success.

This section presents the governance framework for the STEEL-ALIVE Risk Management Strategy. A core principle of this framework is shared responsibility; risk management is not centralized with the Coordinator but is a designated duty of all Work Package (WP) and Task leaders.

What follows is a detailed description of the risk management process—from identification and analysis to the implementation of specific measures designed to mitigate potential adverse impacts.

6.1 General strategy

In general, risks arise in projects due to various reasons. For example, there may be unforeseen events, such as the Israeli-Iranian conflict, which bring about numerous challenges. Adding to that are operational constraints, such as incompatibilities between software systems, further exacerbate these problems and cause project delays. On the other hand, although STEEL-ALIVE seeks to develop cutting-edge technologies, the interest of key stakeholders within the business sector is not always assured, and challenges related to the adoption of these innovations may arise.

Effectively addressing such risks is essential to ensuring the success of any project. That is why it is critical for the consortium to proficiently execute the following steps: (1) identify potential risks; (2) evaluate their relative significance; (3) devise appropriate strategies to mitigate or manage them effectively; and (4) maintain ongoing monitoring.

To implement these actions, STEEL-ALIVE will employ a risk analysis framework derived from prior projects. This framework will systematically categorise risks and assign monitoring priorities based on two key factors: their likelihood of occurrence and their anticipated impact on the project's outcomes. Priority assignment will be guided by a structured approach, as outlined below.

- **High (H):** These are critical risks that could significantly impact the project's success or at least influence certain work package combination. The Coordinator will be responsible for managing them.
- **Medium (M):** These risks have moderate consequences and may affect an individual WP. WPLs will handle these risks after notifying the PC.
- **Low (L):** These risks specifically impact the outcomes of certain tasks. Task Leaders will manage them after informing the WPL.

It is stipulated as a requirement of the project that all identified risks must be reported to the next level in the hierarchy. Specifically, Task Leaders are obligated to report identified risks to their respective Work Package Leader, who in turn are required to update the Coordinator.



Additionally, a centralised risk documentation system is mandated. This document must be accessible to all project partners and should include the fields included in Table 8:

Table 8. Fields into which the mandatory Risk Register will be organised

Field	Description
ID	Unique numerical code assigned to the risk for identification purposes
Author	Individual responsible for reporting the risk
Registration date	Specific date when the risk was recorded
Risk Type	Predefined classification that based on who is responsible for addressing the risk: <ul style="list-style-type: none"> - PM: Risk related to the management to the project - TEC: Risk that concerns the technical part of the project - DEL: Risk associated with the deliverables of the project - OTH: Risk that do not fall into the previous categories
Description	Description of the risk. This should be as clear and direct as possible.
Contingency / Mitigation / Avoidance	Proposed measures for mitigating the effects of the risk on the project, contingency plans for handling the risk, or measures to avoid the effects of the risk altogether.
P	Likelihood of the risk occurring. This will be estimated using the following scale: <ul style="list-style-type: none"> - L: There is a low probability of occurrence. - M: There is a medium probability of occurrence. - H: There is a high probability of occurrence.
I	Potential effect or severity of the risk. This will be assessed using a similar scale: <ul style="list-style-type: none"> - L: Low-insignificant. Risks that have the potential to affect the success indicators of a Task. - M: Medium consequence. Risks that can potentially affect the success indicators of a particular work package. - H: High-critical. Risks with high impact are one that can seriously affect the success indicators of the whole project.
Status	Current risk status according to the following options: <ul style="list-style-type: none"> - OPEN: Initial status of every risk. It indicates the risk is still open / ongoing and can still affect the project. - CLOSED: When a risk stops being a risk either because it has occurred or because it has been avoided.
Closing Remarks	When a risk is marked as ' CLOSED ', this field should be completed to specify: <ul style="list-style-type: none"> - The method of closure, such as whether the risk was avoided or if it materialised - The impact on the project, detailing how it was affected - The date the risk was closed

To ensure adequate monitoring, it is imperative that all partners update this register on an annual basis.

6.2 Response plan

Pursuant to the strategy outlined previously, a preliminary risk assessment was conducted during the proposal phase. Although the outcomes of this assessment will be formally documented in Deliverable D1.3, this section focuses on detailing the measures that will be put in place to manage these risks. In this context, STEEL-ALIVE will implement a continuous risk management process. This process is designed to address both pre-identified and emergent



risks, through systematic assessment of their impact and the formulation of specific mitigation and contingency plans. The main purpose is to minimise any adverse impact that may compromise the project outcomes. The core activities of this process are detailed below:

- **Risk Identification and Analysis:** Periodic and systematic reviews will be conducted by the consortium to identify new risks and re-evaluate existing ones. This analysis includes quantifying their probability and impact across various project scenarios.
- **Risk Prioritization and Mapping:** Following each review, a detailed analysis will be performed to map the vulnerability index of Work Packages. This process involves establishing clear risk tolerance thresholds for each WP.
- **Risk Monitoring and Control:** Overseen by the Project Coordinator with active input from all WP leaders, this activity involves the continuous monitoring of the risk environment. The process will be facilitated by a set of defined Key Risk Indicators (KRIs), which will provide benchmarks for tracking the mitigation actions.

If after following this structured framework, there remains a significant likelihood of a particular risk coming to fruition, the corresponding contingency plan shall be enacted. This scenario will necessitate an increased workload for the Coordinator, who will be tasked with overseeing the efficacy of the implemented measures. If the Coordinator determines that the plan fails to mitigate the risk, then the consortium will need to make adjustment to the plan.

6.2.1 Amendment

Often, though not always, the activation of contingency plans following the occurrence of a risk necessitates adjustments to the work plan. These adjustments may involve rescheduling specific activities, altering tasks or redistributing workload, among other adjustments. In such cases, the WP leader will promptly inform the PC upon recognising the situation and proceed to initiate the amendment process.

The procedure of amendment will be based in the following steps:

- The modifications requests shall be presented by the concerned WPL to the Project Coordinator and discussed within a follow-up meeting to be submitted to a voting process.
- If agreed, the changes will be incorporated by the Project Coordinator to a draft new version of the project plan, highlighting the agreed changes.
- After that, the introduced changes to the work plan shall be communicated by the Project Coordinator to the Project Officer and an amendment session in the EC portal will be opened. Approval of the amendment must be acquired before subsequent actions.
- Once the approval is obtained, changes will be incorporated to a definitive version of the project that will immediately enter into force.



7 Conclusions

This report establishes a clear framework for coordinating consortium partners and tools to ensure the project's efficient and successful execution. In essence, it functions as a reference guide for all STEEL-ALIVE partners, facilitating informed decision-making in the face of potential challenges. The document integrates a defined methodology for adhering to the work plan with essential tools for consortium governance, internal communication, quality control, and risk management. By providing these structured guidelines and processes, it is focused on the successful achievement of the project's objectives.

The entire content of the report is mandatory for all project partners. In fact, its implementation will be monitored by the General Assembly, under the guidance of the Project Coordinator. Finally, it is remarked that in case of any discrepancies or conflicts, the provisions of the Grant Agreement or of the Consortium Agreement shall always prevail over those of the Project Handbook.

