Project Management Handbook
D6.1

Person responsible / Author:	Gabriella Monteleone
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Author(s) contact information

Name	Organisation	E-mail	Tel
Gabriella Monteleone	POLIMI	gabriella.monteleone@polimi.it	
Elisa Rossi	ENG	elisa.rossi@eng.it	

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Abbreviations and Acronyms:	
AI	Artificial Intelligence
CA	Consortium Agreement
CLARUS	Optimizing Production and Logistic Resources in the Time-critical Bio Production Industries in Europe
CRR	Central Risk Register
CR	Coordinator Team
DOA	Description of Action
EC	European Commission
EAB	Ethics Advisory Board
EEIAB	External Expert Industrial Advisory Board
FAIR	Findable, Accessible, Interoperable and Reusable
GA	Grant Agreement
GDI	Green Deal Index
HEP	Horizon Europe
IM	Innovation Manager
KER	Key Exploitable Result
PC	Project Coordinator
TC	Technical Coordinator
TEO	Tangible Expected Outcome
TL	Task Leader
WP	Work Package
WPL	Work Package Leader

Executive summary

This deliverable represents the first result of WP6 (tasks T6.1, T6.2) of the CLARUS Project.

The deliverable defines the managerial rules and procedures that will be followed by the CLARUS consortium across the whole project duration. Moreover, this document gives instructions and regulations how the quality of the project in general and the project results and findings in specific shall be guaranteed and treated.

The main objective of task T6.1 and T6.2 is to ensure the successful realisation of the foreseen S&T activities and Business Objectives of CLARUS. This Deliverable D6.1 Project Management Handbook, defines the requirements of the project in detail and ensures the alignment of general communication rules, quality control processes, work planning and procedures, as well as support for the archiving of documentations.

The aim of this document is to establish a common management and coordination standard for the whole consortium. The Project Management Handbook is designed to be the document of reference for the functioning of the project and for the seamless implementation of its tasks and objectives. The Project Management Handbook provides:

- An overview of the main Objectives of the Project
- A thorough overview and description of the Consortium partners, the organisation of work into Work Packages, and the workplan and tasks of the Project
- A description of the Consortium main bodies, their functions, their rules of procedure, and their composition
- A description of the procedures, processes, and guidelines for the smooth functioning of the Project's day- to-day implementation and collaboration, including a description of available communication and dissemination tools and platforms
- A list of responsibilities, duties, and rights for the Consortium partners in the development and implementation of the Project;
- A thorough overview of the procedures and processes for reporting on the Project's implementation and the achievement of its objectives and milestones, including information on internal formal and informal reporting and communication with the European Commission as the funding entity of the Project.

The Project Management Handbook will remain available at all times to all members throughout the duration of the Project as the main guidance tool for the definition and application of procedures, rules, limitations, rights, and obligations in the work that the partners are doing for the successful implementation of the Project. The document is a core task of the Project's Management and Support Team (managed by POLIMI as Project Coordinator), which will be available to all members for any further clarifications and guidance about the functioning of the Consortium and the execution of the Project's workplan.

The project activities will continuously be monitored to allow the generation of technical and business assessments of completed and running activities and the provision of feedback to the initial plans that might be updated if needed taking into account possible deviations, changes in the working environment or any unexpected factor that might appear during the whole duration of the project.

The document has to be considered as a working tool, which can be improved during the project lifetime, to facilitate the collaboration among the partners and to create a "common language" within the people involved in the CLARUS project.

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CLARUS

1 Introduction

1.1 Purpose, Intended Audience and Scope

This deliverable defines the managerial rules and procedures that will be followed by the consortium across the whole project duration. Moreover, this document gives instructions and regulations how the quality of the project in general and the project results and findings in specific shall be guaranteed and treated.
The aim of this document within tasks T6.1, T6.2 is to define the rules and procedure for the management of CLARUS project. This includes in particular details on

- organisational issues (consortium partners, management structure and management procedures)
- project plan (pert diagram, work package list and Gantt chart)
- communication and data sharing strategy (concept, project repository and project web page)
- deliverables and templates (list of deliverables, procedure and templates)
- management report (activity reports and financial statements)
- aspects of quality assurance
- the project assessment including the role of the project members and project bodies, the proceeding in order to guarantee the quality and the measures that have to be taken up in case of deviations and/or changes.
- the innovation management

Every partner of the consortium of CLARUS is addressed by this document.

Further main documents for project management are:

- Grant Agreement – Contract with European Commission
- ANNEX I: Description of Action (DOA)
- Consortium Agreement (CA)

In case of a legal problem the CA and the EU contract will be the basis for the resolution.

The Project Management Manual gives guidelines on how to run the project in its day to day operative business. It may be amended by the coordinator in the wake of the project progress. All changes and amendments will be communicated to the project consortium.
Additionally, all given information are provided by the project document repository, within the partners' area.

1.2 Applicable Documents

The following documents are applicable to this deliverable and provide details not explicitly set out here:
HEP reference documents
CLARUS DOA
CLARUS Consortium Agreement

2   Project Summary

2.1   Project Objectives

The CLARUS project aims to connect the Sustainable Paradigm in the food industry and AI-based applications, with the goal of developing a platform with high communications and processing capabilities, as well as the use of standardized open protocols and data models that will allow resource consumption assessment and traceability for food industry processes.

Currently, two pilots have been selected for validating the CLARUS solution. The first pilot focuses on the production of the frozen food, where energy and water consumption can be reduced using AI and data technologies. The other pilot focuses on the meat by-product production where the aim is to reduce the energy and maintain the quality of the products by optimizing the logistics of the by-products arrival.

CLARUS ambitions include not only contributing to resource and logistic optimization methods through the two pilot solutions, but also making a more general contribution through the creation of a Green Deal Index (GDI).

To demonstrate the impact on the green deal concept, the CLARUS project will provide three Tangibles Expected Outcomes which represents the Key Exploitable Results of the project:

- **CLARUS Green Deal Index**: methods, tools and data used to calculate the Green Deal Index (GDI)
- **CLARUS Data Space**: FAIR data models and Industrial Data Platforms tools that are developed and deployed for edge data management, cloud data management, and data harmonization, transformation and sharing
- **AI Toolkit**: AI algorithms and the trained models that are developed, tested, and validated in the project.

2.2   Project Consortium

The Consortium of CLARUS consists of 9 partners from 6 European countries (Table 1).

No.	Participant organization name	Short name	Type	Country
1	POLITECNICO DI MILANO	POLIMI	University	IT
2	TAMPEREEN KORKEAKOULUSAATIO SR	TAU	University	FI
3	UNIVERSITAT POLITÈCNICA DE VALÈNCIA	UPV	University	ES
4	ENGINEERING - INGEGNERIA INFORMATICA SPA	ENG	Large Enterprise	IT
5	IKERLAN S. COOP	IKERLAN	Research centre	ES
6	KNOW-CENTER GMBH	KNOW	Research centre	AT
7	EXPERTAI-LUX	EAI	SME	LU
8	HONKAJOKI OY	HONKA	Industry	FI
8.1	GMM FINLAND OY	GMM	Industry	FI
9	ARDO BENIMODO SL	ARDO	Industry	ES

Table 1: CLARUS Consortium

The Consortium provides the expertise, all core and key competences and activity interests that shapes the scientific and technological knowledge of CLARUS for assure the success implementation of the project.

Figure 1 represents the CLARUS "Knowledge Map" and provides a visual analysis of the coverage of each needed competence for building the CLARUS Solutions. According to the partners key competences, roles in the project have been assigned to Technology Providers and R&D partners.

COMPETENCES		TECH & RESEARCH Partners designing and building the CLARUS Solutions										COVERAGE
		1	2	3	4	5	6	7	8	8.1	9	
CCode	Description	POLIMI	TAU	UPV	ENG	IKERLAN	KNOW	EAI	HONKA	GMM	ARDO	
C1	Algorithms		K	K		K	K					
C2	Big Data Management		S	S	K	K	S		S	S		
C3	Branding and Marketing							K				
C4	Communication and Information Management		K	K		S	K	S				
C5	Community building	K	S				S	S	S			
C6	Competitive Intelligence	S	K		S							
C7	Data Collection		K	S	K	K		S	K	K	S	
C8	Data Communication Standards		S	S		K					S	
C9	Data Interoperability		K	K	K	S						
C10	Data Interpolation		K	S	S	S	S					
C11	Data Monitoring		S	S	K	K	S		S	S		
C12	Data Representation		K	S	K	S	K		S	S		
C13	Data Sharing Systems	S	K	K	K	K	S		S	S		
C14	Data-Driven Systems		K	K	K	S	K					
C15	Digital Innovation Hubs (DIH) outreach	K	S	S	K		K	S				
C16	Energy and Material Resource Efficiency	S		K				S	K	K	K	
C17	Ethics and Legal Compliance							K				
C18	Event-Driven Systems		S	K	S	S	S					
C19	Graphical and Visual interfaces		S	S	S	S	K			S		
C20	Intellectual Property Management and Protection			S			S	K			S	
C21	Knowledge based systems		S	S	S		S					
C22	Logistics	S		K			S		K		K	
C23	Machine learning		S	K	S	K	K	S				
C24	Market Analysis	K		S	K		K	S			S	
C25	Optimization Algorithms	K	S	K		S	K					
C26	Pattern Recognition		S			K	S					
C27	Performance Management	K	K	K					K	K	S	
C28	Product Lifecycle Management	K	K	K			K				S	
C29	Reasoning		S	S	S							
C30	Sensors & IoT Devices		S	S		K			S	S	S	
C31	Standardisation		K	S	S			S			S	
C32	Statistical Data Analysis		S	S		K	K					
C33	Sustainable Business	K		K			K	S	K	K	S	
C34	Trustworthy Industrial IoT		S	S	S	S	S					
C35	Web Services		S	S	K	S	K					
C36	Web-based Applications		S	K	K	S	K					
C33	Green Deal Performance Assessment	K	S						K	K	s	

Figure 1: CLARUS "Knowledge Map"

2.3 Coordination Contact Details

POLIMI is the CLARUS coordinator bringing its yearly Project Coordination expertise to the project, having a long experience in coordinating successful EU and National research projects and initiatives.

Dr. Gabriella Monteleone
CLARUS Project Manager
gabriella.monteleone@polimi.it

Ing. Roberto Rocca
CLARUS Technical Manager
roberto.rocca@polimi.it

2.4 Participants Contacts

For data protection reasons, being this deliverable public, the list of members and contacts of the CLARUS Participants are available just for the consortium in the internal project management repository, with restricted access only for partners.

3 Project Plan

3.1 Implementation structure

CLARUS project implementation is arranged in 6 work packages and will operate over 36 months. The tasks provide a clear structure and process descriptions that will help to keep collaborations frictionless.
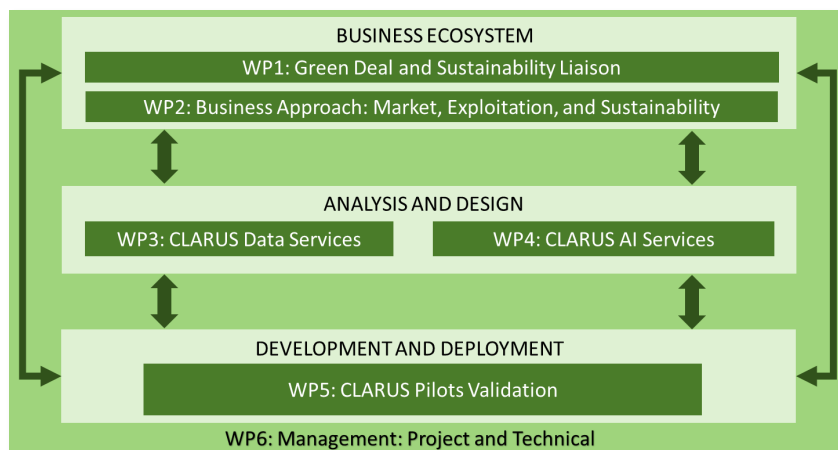
Figure 2: CLARUS Project Pert Chart

WP1 includes the scientific and methodological basis work to research and build the Green Deal Index paradigm for the project. It involves the definition of environmental requirements, impact and KPIs in order to develop a novel quantitative methodology to assess Green Deal sustainability requirements in the companies involved. The main outputs of the Green Deal Performance Assessment methodology will consist in a set of specific KPIs (together with a final exhaustive index, the GDI) regarding resources consumption and depletion of resources present within the food product life cycle and supply chain. Emphasis will be on both eco-efficiency (i.e., toxicity and pollution of resources and wastes) and Circular Economy principles (i.e., eco-efficacy, resource reutilization, waste reduction). Also, the development of a maturity model and planning of continuous assessment. Elaboration of recommendations for future actions are part of this work package. A Green Deal Roadmapping Tool will be defined as a management tool to analyse sustainability level of food companies processes from an economic, environmental, and social point of view (CSR perspective), defining the relevant dimensions from which to start collecting data for the sustainability transition, following the Green Deal principles and requirements identified.

WP2 describes the Business Ecosystem and the CLARUS Exploitation. The work in WP2 includes a market analysis and evaluation of business opportunities during and beyond CLARUS. Strategies to ensure success and growing on innovative business models will be defined. The work package will also define the dissemination strategies and plan alongside with its reporting. Activities involving Workshops between relevant stakeholders in order to trigger EU cooperation aiming for green-deal-goals will be addressed. WP2 will organize training to the end users in order to smoothly transition to the AI tools generated at CLARUS.

WP3 describes the CLARUS Data Services Space approach. This WP defines the platform requirements and the full design of the project architecture oriented to delineate the Edge Data and Cloud Data Management services, alongside with the harmonisation and transformation. This analysis involves the data life cycle covering aspects such as data acquisition, processing, encapsulation, filtering, distribution, storage, data modelling and semantic.

WP4 describes the work involving the stages for AI development, including the requirements needed to modulate Machine learning algorithms aligned with the CLARUS green goals for food and by-product

processing. This work also includes the elaboration of MLOps (a compound of machine learning and operations) techniques for implementing and automating continuous integration (CI), continuous delivery (CD), and continuous training (CT) for machine learning (ML) systems of the use cases. This WP defines the design and policies as well for automation and monitoring at all steps of ML system construction, including integration, testing, releasing, deployment and infrastructure management.

WP5 describes the CLARUS Pilots Validation including the integration, data engineering, model training in order to evaluate the quality of environmental impact and perform the related KPI assessment. With the technologies developed in the project, resource distribution can be expanded to environments and targets that have not been accessible before.

WP6 includes the tasks related to project management and coordination, risk management, and innovation management tasks to ensure quality in project execution. Managing that the action/project is implemented properly, acting as the intermediary for all communications between the beneficiaries and the Commission. requesting and reviewing any documents or information required by the Commission and verifying their completeness and correctness before passing them on to the Commission. Submitting the deliverables and reports to the Commission. Project periodic reports.

3.2 Work Package List and resources

	Work package Title	Leader short name	Effort [PM]	Start	End
WP1	Green deal and Sustainability Liaison	POLIMI	51	1	36
WP2	Business Ecosystem and CLARUS Dissemination and Exploitation	KNOW	88	1	36
WP3	CLARUS Data Services	ENG	86	1	30
WP4	CLARUS AI Services	IKERLAN	86	1	30
WP5	CLARUS Pilots Validation	TAU	117	9	36
WP6	Project Coordination and Consortium Management	POLIMI	38	1	36
Total			466		

Table 2: Work Packages

3.3 Project Implementation Timeline
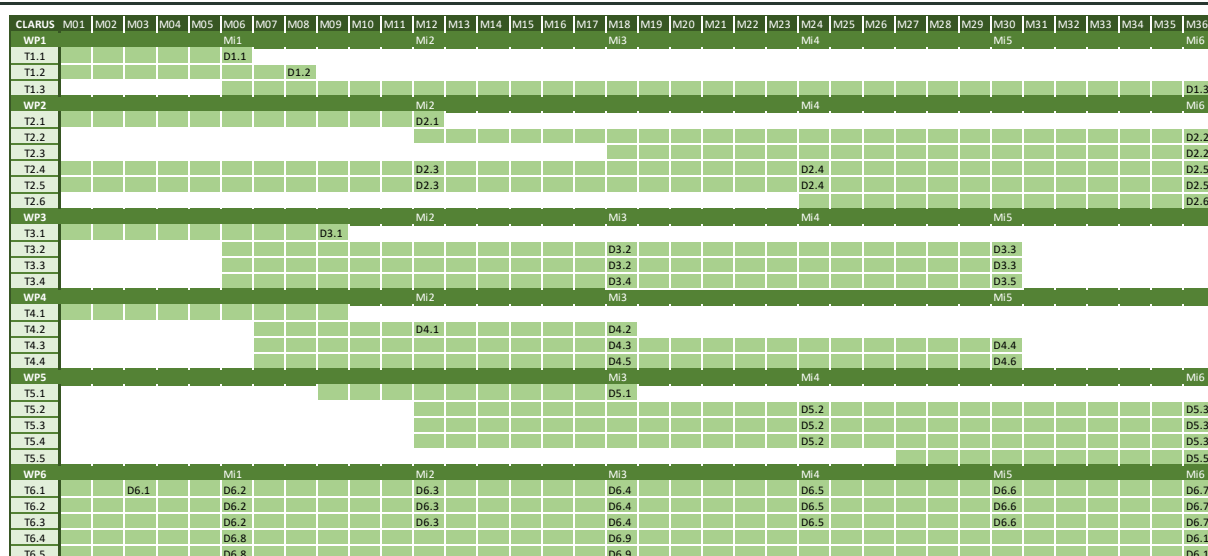
Figure 3: CLARUS Project Gantt

The Deliverables were determined to represent the work and progress done for every task. Tasks with long duration report deliverables periodically.

3.4 Project Milestones

Six milestones are considered in CLARUS, evaluated in M06, M12, M18, M24, M30 and M36.

No.	Milestone title	Work package	Due date	Means of verification
Mi1 **Initiated**	Requirements, Project and Data Management guidelines	WP1, WP6	M06	Release of the project handbook, (D6.1). Initial specifications of the Data Management Plan (D6.3). Pilot requirements collection and its Analysis (D1.1). Project Website.
Mi2 **Prepared**	Green Deal Sustainability Guidelines	WP1,WP2, WP3, WP4, WP6	M12	Development of Green Deal KPIs (D1.2). Data Models Definition (D3.1, D6.2). Machine Learning Lifecycle (D4.1). Exploitation Strategy and Plans: Individual and Joint (D2.1, D2.2).
Mi3 **Developed**	Development of AI and Data Services	WP3, WP4, WP5, WP6	M18	Technical Infrastructure Establishment. Data and AI Platform Building (D3.2, D3.3, D4.1, D4.2, D4.3, D5.1). Process Quality Assurance (D6.2)
Mi4 **Refined**	Edge-Cloud Platform Integration	WP2, WP5, WP6	M24	Edge-Cloud Platform Integration (D5.2). Quality and KPIs Validation (D6.3). Report on Cooperation and Dissemination (D2.2)
Mi5 **Established**	AI and Data Services Assessment	WP3, WP4, WP6	M30	AI and Data Services for Primary Food and By-product Quality Evaluation (D3.2, D3.3, D4.2, D4.3, D6.2)
Mi6 **Matured**	CLARUS Pilot Validated	WP1, WP2, WP5, WP6	M36	Green Deal Sustainability Maturity Assessment (D1.3, D5.2, D5.3). Report on Exploitation, Dissemination and User Training (D2.1, D2.2, 2.3, D6.3)

Table 3: Milestones

4 Management Structure

4.1 Management roles and bodies

The CLARUS project is based on a management structure tailored to the project context and the number of partners, in order to provide efficient and effective project management and ensure that all project objectives are achieved within time, cost and resource constraints. The project management uses tried and tested project management procedures and techniques that have been successfully developed over many years of project management experience by the organizations involved in the project.

The CLARUS management structure is composed by different roles and bodies that will support the project coordinator in the implementation of the management activities to guarantee the proper execution of tasks and use of resources, the follow-up of deadlines and the compliance of EC rules.
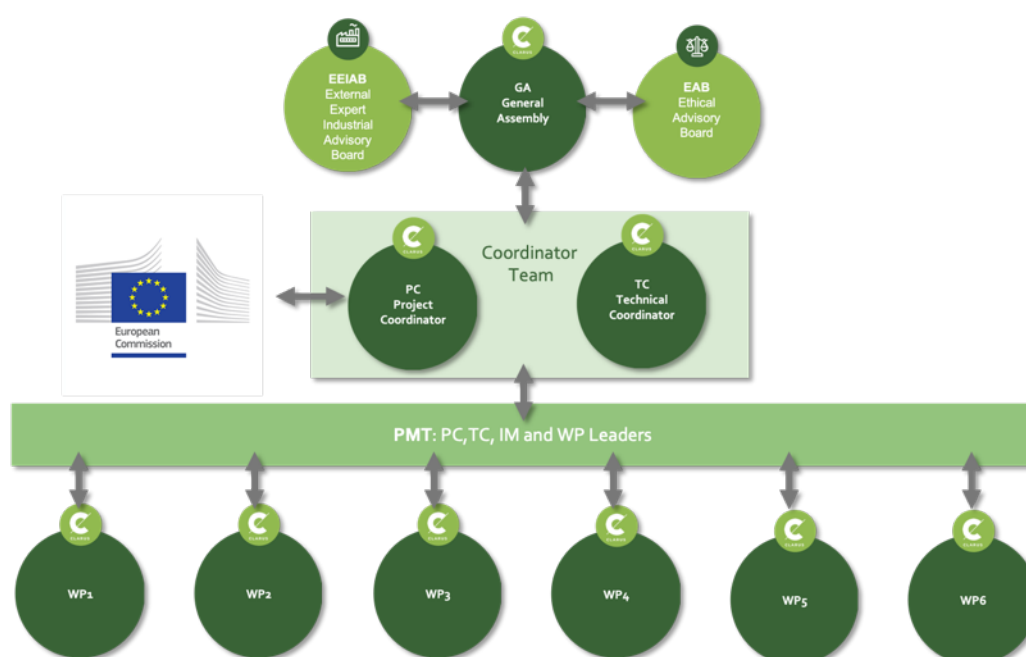
Figure 4: View of the management roles and bodies

As indicated in the figure above, the management structure supporting CLARUS project is composed by:

Roles:

Role	Short name	Person (s)
Project Coordinator	PC	Gabriella Monteleone, POLIMI
Technical Coordinator	TC	Roberto Rocca, POLIMI
Innovation Manager	IM	ENG
Work Package Leaders	WPL	The partners responsible for the coordination of the assigned WPs; they have been chosen according to their expertise in reference to the main objectives of the WPs.
Task Leaders	TL	The partners responsible for carrying out and reporting the activities included in the work plan.

Table 4: Management Roles

For data protection reasons, being this deliverable public, the names of the persons representing the roles above listed, are available for the consortium members in the CLARUS's project repository, with restricted access only for partners. See Section 6 for more details about the repository.

Management Bodies:

Management Body	Short name	Member(s)
Coordinator Team	CT	PC+TC
General Assembly	GA	The core organisational and decision-making body; it is chaired by the coordinator and it gathers one representative of each legal entity.
Project Management Team	PMT	PC, TC, IM + WPLs
External Expert Industrial Advisory Board	EEIAB	As appointed by GA.
Ethics Advisory Board	EAB	As appointed by GA.

Table 5: Management Roles

For data protection reasons, being this deliverable public, the names of the persons representing the roles and the list of members of the management bodies are available with their contacts for the consortium members in the CLARUS repository, with restricted access only for partners. See Section 6 for more details about the repository. Their detailed role and duties are described in the next subsections.

4.1.1 General Assembly

The **General Assembly** (GA) is the decision-making body of the consortium. The General Assembly shall consist of one representative of each Party. Each Member shall be deemed to be duly authorised to deliberate, negotiate and decide on all the following matters:

- Content, finances and intellectual property rights
- Evolution of the consortium
- Appointments of Experts of Advisory Boards

4.1.2 Project Coordinator

The **Project Coordinator** (PC) shall be the intermediary between the Parties and the Granting Authority and shall perform all tasks assigned to it as described in the Grant Agreement and in the Consortium Agreement.

In detail, the Coordinator shall be responsible for:

- monitoring compliance by the Parties with their obligations,
- keeping the address list of Members and other contact persons updated and available,
- collecting, reviewing to verify consistency and submitting reports, other deliverables (including financial statements and related certification) and specific requested documents to the Granting Authority,
- preparing the meetings, proposing decisions and preparing the agenda of General Assembly meetings, chairing the meetings, preparing the minutes of the meetings and monitoring the implementation of decisions taken at meetings,
- transmitting promptly documents and information connected with the Project to any other Party concerned,
- administering the financial contribution of the Granting Authority and fulfilling the financial tasks
- providing, upon request, the Parties with official copies or originals of documents that are in the sole possession of the Coordinator when such copies or originals are necessary for the Parties to present

claims.

If one or more of the Parties is late in submission of any Project deliverable, the Coordinator may nevertheless submit the other Parties' Project deliverables and all other documents required by the Grant Agreement to the Granting Authority in time.

4.1.3   Technical Coordinator

The **Technical Coordinator** (TC) oversees the overall technical management of the project. He is responsible for the correct execution of the technical activities of the contract ensuring timely release, technical high quality and accuracy of technical deliverables.

The Technical Coordinator will have the overall technical responsibility of the project. He will monitor project advances and will be responsible with the Project Coordinator for preparation of the periodic Management and Progress reports to the EC, with contribution from Work package Leaders. Each Work package Leader shall provide a technical WP progress report every six months to constitute the basis for the periodic Management Report. These reports shall include sufficient technical information to enable the Technical Coordinator to be assured that each work area is progressing according to plan. The Technical Coordinator is entitled to request additional reports and remedial actions, should any doubt concerning progress and adherence to timescales be evident.

4.1.4   Innovation Manager

The **Innovation Manager** (IM) has the technical skills to very closely understand, and contribute to, the most advanced research tasks. Indeed, the Innovation Manager will assist and advise the PMT in best responding to emerging market opportunities. In turns, by thoroughly following the evolution of the sector, the new emerging technologies and products, and the mutating needs, the Innovation Manager will help bringing all this inside the project, and will assist the project in identifying changes in strategies and re-planning of technical activities to best fit the evolving sector.

4.1.5   Project Management Team

The **Project Management Team** (PMT) is the supervisory body for the implementation and for daily management of the Action, and shall report to and be accountable to the General Assembly.

The Project Management Team is responsible for the daily management of CLARUS. In detail the PMT has to monitor the overall project progress (objectives, schedule, milestones, etc.) and to find proper solutions in conformance with the decisions of the PB, in case of deviations from project plan. Activities of the Project Management Team will address the following issues:
-    coordination, monitoring and control of the progress of the work in the project,
-    launch or stop of tasks within defined WP structure,
-    technical management of the project,
-    analyses and solutions on technical issues,
-    technological roadmaps, and,
-    approval of the deliverables.

The Project Management Team is composed of the PC, the TC, the IM, the Work Package Leaders. Any additional member of the Consortium may be appointed, if needed, to form part of the PMT by the Project Coordinator. The PMT shall meet on a per-need basis as determined by the Project Coordinator. The default is monthly phone calls and on request Physical meetings will take place co-located with project periodic meetings.

4.1.6   Work package Leader

The management responsibility for each work package is attributed to the appointed partner, as from WP descriptions, who nominates an individual as **Work package Leader** (WPL).

Each work package is led by the Work Package Leader, who is responsible for making the day- to-day technical and management decisions that solely affect their work package.

The WP leader' responsibilities include:

- leading and coordinating the task activities involved in the WP through the Task Leaders,
- initial quality checking of the WP work and deliverables,
- handling resource/skills balance within the WP subject to agreement of the PB to changes,
- participating in the PMT,
- highlighting to the PMT of potential threats to the technical success of the project; and,
- reporting progress to the PB and raise amendments, issues and red flags to the TM if needed.

The CLARUS WP Leaders partners are:

	Work package Title	Leader short name
WP1	Green deal and Sustainability Liaison	POLIMI
WP2	Business Ecosystem and CLARUS Dissemination and Exploitation	KNOW
WP3	CLARUS Data Services	ENG
WP4	CLARUS AI Services	IKERLAN
WP5	CLARUS Pilots Validation	TAU
WP6	Project Coordination and Consortium Management	POLIMI

Table 6: WP Leaders

4.1.7   Task Leaders

The management responsibility for each task is attributed to the appointed partner, as from WP descriptions, who nominates an individual as **Task Leader** (TL).

Each Task is led by the Task Leader (TL), who is responsible for the activities performed in his/her task coordinating the technical work, and making the day-to-day technical decisions that solely affect his/her Task. It should be stressed that task leadership is partner-based.

TLs should report (internally) to the WPL every month (at least, although a more dynamic communication process will be encouraged) on the progress of their task.

WP		Task	Leader short name
WP1	T1.1	Use Cases Problem Alignment and Analysis	TAU
	T1.2	Green deal requirements, Impact and KPIs	POLIMI
	T1.3	Sustainability Maturity Model and Continuous Assessment	POLIMI
WP2	T2.1	Market analysis and business opportunities during and beyond CLARUS	KNOW
	T2.2	Exploitation Strategy and Planning	ENG
	T2.3	CLARUS maturity and sustainable Business Model	KNOW
	T2.4	Dissemination Strategy, Plan, and Reporting	UPV

WP		Task	Leader short name
	T2.5	EU and National Impact Activities: EU Initiatives cooperation, Workshops and Regional Interaction	POLIMI
	T2.6	CLARUS Training and User Engagement	POLIMI
WP3	T3.1	CLARUS Data Approach: requirements, specifications and design	ENG
	T3.2	Edge Data Management Services	IKERLAN
	T3.3	Cloud Data Management Services	ENG
	T3.4	Data Harmonization and Transformation	TAU
WP4	T4.1	CLARUS AI Approach: Requirements, Specifications and Design	EAI
	T4.2	Models and Workload lifecycle management	IKERLAN
	T4.3	Primary Food Processing AI models' design	UPV
	T4.4	By-product Processing Models' design	TAU
WP5	T5.1	Pilots Staging: Integration, Data Engineering, Model, Training	TAU
	T5.2	Primary food processing: Quality Assessment, KPI Assessment and Validation	ARDO
	T5.3	By-product processing: Quality Assessment, KPI Assessment and Validation	HONKA
	T5.4	Monitoring, Feedback and Tuning	TAU
	T5.5	Green Deal Index Assesment	POLIMI
WP6	T6.1	Consortium and Project Management, Coordination and Governance	POLIMI
	T6.2	Scientific/Technical Coordination, Impact Measurement and Governance	POLIMI
	T6.3	Innovation Coordination and Business Impact	ENG
	T6.4	Data Management, ethics and trustworthy AI	EAI
	T6.5	Risk Assessment and Management	POLIMI

Table 7: WP Leaders

4.1.8 Advisory Boards

On the basis of the Grant Agreement, in CLARUS the GA will appoint:

- External Expert Industrial Advisory Board
- Ethics Advisory Board
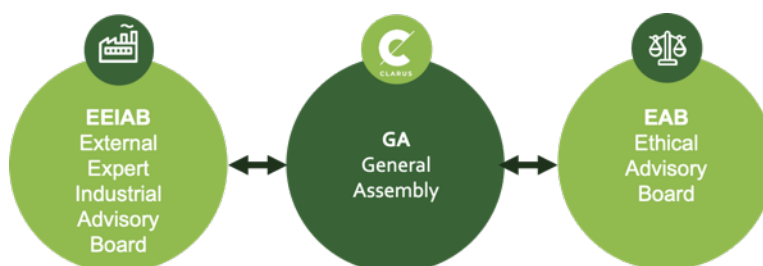
Figure 5: Advisory Boards

External Expert Industrial Advisory Board

During the first 6 months of the project, CLARUS will establish an Industrial Advisory Board, which will consist of around 5 external experts from food and by-product processing industries. This **External Expert Industrial Advisory Board** (EEIAB) will consult the project towards its way with a strong focus on the applicability of CLARUS in the market. It will guide the project with recommendations and neutral feedback and provide a fresh and relatively neutral view on the project and its developments in order to maximise the impact and exploitation of the project. All EEIAB members and other external experts will be required to sign an appropriate non-disclosure agreement prior to participating in any project related meetings, decision or activity. The EEIAB is assumed to meet around 4 workshops during the course of the project. Workshops between partners and EEIAB will be performed to guide the consortium during the project execution.

The External Expert Industrial Advisory Board will be appointed and steered by the General Assembly. The EEIAB shall assist and facilitate the decisions made by the General Assembly.
The Coordinator will ensure that a non-disclosure agreement is executed between all Parties and each EEIAB member. The EEIAB members shall be allowed to participate in General Assembly meetings upon invitation but have not any voting rights.

Ethics Advisory Board

As CLARUS might raise concerns with respect to ethics, the consortium has decided to put together **Ethics Advisory Board** (EAB) consisting of:

- One member of the legal and ethics expert of the consortium (EAI), who will chair the board and will have the leading role in identifying legal and ethical issues in the project (Ethics Mentor)
- One representative for each pilot partner

EAI is expert in the technical, business, financial, social, and ethical aspects of Artificial Intelligence (AI), offering high-tech, high-quality consulting services that help organizations in their Artificial Intelligence Journey. EAI combines business acumen with a deep technical understanding of AI systems and technique, including cutting edge AI technologies such as Autonomous Cyber Physical Systems, Robotics, Cobots, Automatic Machine Learning, Explainable Artificial Intelligence, as well as Ethical and Responsible AI.

The EAB will guarantee that all legal, ethical, societal and gender equality issues related to the project activities are properly considered and any relevant legislation and best practices is respected, ensuring that the framework being proposed adheres to a minimum set of ethical and legal requirements.

As part of the implementation policy, the multidisciplinary Ethical Advisory Board (EAB) will be constituted. The EAB is familiar with the EU guidelines and other relevant social-technical aspects. The EAB will review and analyses CLARUS technology under development and the use cases to identify all potential legal and socio-technical obstacles as early as possible. The EAB will be also in charge of the ethical oversight of the CLARUS research activities, outputs and pilots' experimentations and of certifying CLARUS solutions with respect to legal compliance, ethical-soundness and human enhancement, besides privacy friendliness. The EAB will consist of at least 3 experts from the Parties and 3 external advisors. It will be assured that the EAB constitution covers multidisciplinary backgrounds such as human factors, ethics and AI research.

A non-disclosure agreement with each external advisor of the EAB, in order to protect Confidential Information disclosed by any of the Parties to any external advisor of the EAB.

5 Management procedures

The following management procedures will be adopted:

5.1 Coordination

CLARUS project requires specific mechanisms to assure the coordination among the partners and the consecution of the objectives.
The management will be based on the following recurring events:

Every 6 months with ALL partners	Monthly with all WP Leaders	Biweekly calls (at least a monthly call)	After each reporting period
Plenary Meetings	**Project Status Meetings**	**WP Meetings**	**Review Meetings**

Figure 6: Meetings and Telcos

5.1.1 Plenary meetings

The consortium meetings are organized every six months, for a total of about 6 meetings throughout the whole 36-month project duration as in person meeting if the COVID-19 contingency measures allow the members to safely travel and attend the meetings.
Plenary meetings are dedicated to discussing the advances in all the project work-packages and to transfer knowledge and achievements across work-packages. Whenever more extensive per-WP discussion is needed, separate per-WP sessions will be deployed.
The meetings are scheduled to rotate between the partners' home bases.
The consortium meetings gather the General Assembly together with all the members of the consortium.

5.1.2 Project status meetings

The Coordinator Team will schedule a regular phone call, to be held in a fixed date. The PMT conference call will be organized and chaired by the Coordinator Team to review the status of each work-package one-by-one, the global project status and to discuss possible issues. Ad-hoc calls to address any relevant issue will be allocated whenever is needed upon request from any member of the PMT.
The project status meetings take place online, through Microsoft Teams platform, every month on the first Monday at 16:00, by involving PMT members and at least one representative for each partner.
The objectives of these meetings are:
- to review the status of each work-package one-by-one,
- to report on what has been achieved in the last month,
- to plan the activities to perform in the following 4 weeks and ask for the partners' contributions,
- to update about the deliverable status,
- to highlight and discuss any potential issues which might hinder the work to be done.

The agenda of the meeting is distributed by the coordinator team among the partners one week before the date of the meeting, in order to define together the topics to discuss.
The minutes of the meeting are written and distributed by the coordinator team among the partners via mailing list, in order to collect possible amendments, and they are stored on the shared folder on Project Repository.

5.1.3   WP meetings

After the project status meeting, the partners attend the bi-weekly WP meeting during which they focus the discussion on specific topics. The minutes of the meeting are written and distributed by the WP Leaders to the consortium via mailing list, in order to collect possible amendments, and they are stored on the shared folder on the Project Repository.

All work packages related to specific stages of the project shall have a kick-off meeting to get acquainted with the area of expertise of each the partners involved and to elaborate a work plan, which can take place within regular consortium meetings, for instance, within the general kick-off meeting. It is the responsibility of the work package leader to organize and lead the kick off, and the work package discussions within consortium meetings, as well as any other specific meeting of his/her work package (including preparation of the agenda, preparation and sending of the minutes).

5.1.4   Reviews

EC reviews will be organised to present the project results at regular intervals to the European Commission and their independent experts. This enables the Commission to monitor the project and to ensure that the contractual obligations are fulfilled. Additionally, future project plans are discussed and agreed within such a meeting. The payment to the project will be processed if the outcome of the EC Review is considered satisfactory.
The external reviews will cover Progress Reports, deliverables and software demonstrations. Their schedule is established in the Grant Agreement:

2 Review Meetings after each reporting period (**M18 and M36**)
- EC Project Officer, EC appointed expert reviewers and all partners
- Project progress and results as well as resource consumption will be assessed by the EC

1 Technical review at **M13** not related to the reporting period

Figure 7: Project Meeting and Reporting

5.1.5   Review Preparation Meetings

Review Preparation Meetings are expected to take place the day(s) before the project reviews. The Project Coordinator and all Work Package Leaders are expected to attend the Review Preparation Meetings. Other members of the project will be expected to attend when required. As the Review Preparation Meetings will

form a major forum for the exchange of information in addition to the management of the project, all consortium members will be encouraged to attend. The Review Preparation Meetings will also review progress against the project success criteria and will report to the General Assembly all deviations from planned progress, together with an action plan to recover any shortfalls or exploit any gains in the programme. All meetings will have minutes written by the Project Coordinator.

5.2   Representation in Meetings

Any Party, which is a member of a Management Body:
- should be represented at any meeting of such Management Body;
- may appoint a substitute or a proxy to attend and vote at any meeting;
- and shall participate in a cooperative manner in the meetings.

5.3   Preparation and Organization of Meetings

Members of a Management Body or participants of project's meeting shall be given notice in writing (via email) of a meeting as soon as possible, and anyway no later than 14 calendar days preceding the meeting (7 calendar days for extraordinary meeting). With the meeting's notice, the chairperson will also circulate an agenda.

All the necessary working documents will be circulated by the chairperson no later than 7 calendar days preceding the meeting (3 calendar days for extraordinary meeting).

Any participant may add an item to the original agenda by written notification to all participants up to 7 calendar days preceding the meeting (3 calendar days for an extraordinary meeting). Items might be added during a meeting if accepted unanimously.

Written minutes should be produced by the coordinator team together with WP Leaders leading different meeting sessions, which shall be the formal record of all decisions taken. The draft copy should be sent to all participants via email within 15 calendar days of the meeting.

The minutes shall be considered as accepted if, within 15 calendar days from sending, no participant has objected in writing to the chairperson with respect to the accuracy of the draft of the minutes. The minutes (reviewed and corrected if necessary), should be approved and signed at the following meeting.

Notice of a meeting	No later than 14 calendar days preceding the meeting, 7 calendar days for an extraordinary meeting
Sending the agenda	No later than 14 calendar days preceding the meeting, 7 calendar days for an extraordinary meeting
Working documents circulation	No later than 7 calendar days preceding the meeting, 3 calendar for extraordinary meeting
Adding agenda items	No later than 14 calendar days preceding the meeting, 7 calendar days for an extraordinary meeting or by unanimous vote in a meeting
Minutes/Action Points	Sent within 15 calendar days of the meeting, considered accepted within 15 days from sending

Table 8: Meetings Procedure

5.4   Information Flow

Communication and information flow on administrative and technical issues will reflect the management structure outlined in previous section and will be achieved as followed:

Administrative Issues

- Meetings of the PMT, for the administrative execution and monitoring of the project, approximately every month.
- Project Progress Report, issued every 6 months, containing an overall description of the administrative issues of the matching period.
- Financial Statements of the Periodic Report.

Technical issues

- Meetings of the PMT, for the technical execution and monitoring of the project, approximately every month.
- WP meetings, attended by all project participants. The internal workshops will each have specific themes and speakers. This workshop structure organization has proven to be an effective means of stimulating the discussion and the exchange of views all over the project.
- Use of electronic mail, telephone and videoconferences in order to reduce travel costs. Electronic telecommunication has proven itself to be most effective, provided project participants have met on several occasions and formed working relationships.
- Project Progress Reports, issued every six months, containing the technical progress reports, prepared by Work package Leaders and revised by the Technical Coordinator.

External Relations

- Attendance at and presentation of contributions to related standardisation activities under the responsibility of the PMT.
- Attendance and presentation of papers at seminars, workshops and conferences when appropriate, under the responsibility of the PMT.
- Exchange and cooperating activities with other HEP projects with which it may be requested to cooperate are under responsibility of the PMT.

5.5   Planning and Reporting

Administrative planning and reporting are the responsibility of the Project Coordinator. The administrative monitoring and reporting of the project budget implementation are the responsibility of the Project Coordinator and will be reported to the EC via the Six-Monthly Project Progress Reports (which will include Financial Statements once per period). Monitoring of the project budget consumption will be conducted by the GA at all its meetings.

The technical monitoring and reporting of the implementation of the project plan is the responsibility of the Technical Coordinator and will be reported to the EC via the six-monthly Project Progress Reports. Each Six-monthly Report will contain indicators on the progress of the work: what is done (in percentage) according to the workplan, what has to be done and a more detailed plan for the following months. Monitoring of the progress of the project according to the workplan will be conducted by PMT at all of its meetings

5.6   Deliverables Handling

The responsibility for the production and quality checking of deliverables lies with each Work package Leader. Each Task Leader providing a contribution will guarantee its quality and appropriateness. The Coordinator Team will assign a reviewers for each deliverable. He/she will fill in a Quality Control form for the deliverable. The Coordinator Team will approve both the quality report and the deliverable before issuing. The Project Coordinator will submit the deliverable to the EC.

5.7   Project repository

The Coordinating Partner (POLIMI) maintains the official project repository storing all documents and shared software produced by the project. All project partners will be granted access to the project repository. All documents (internal reports, meetings minutes, and deliverables) are recorded in the

repository with their consecutive versions; a listing of repository contents will be regularly updated in the repository. It is the partners' responsibility to make sure that all documents are made available to the Coordinating Partner.

5.8   Dispute and Conflict Resolution

As with all projects, unknown and unplanned events may occur throughout the lifetime of the project. It is hence important to manage any disputes amicably. Examples of these may be:

- Failure to produce deliverables by a partner
- Loss of partner owing to an unforeseeable conflict of interest or event
- Disputes between consortium members

Such disputes and conflicts will be resolved, wherever possible through mediation. The partner in dispute will first present their case to their respective Work Package Leader, who will then represent their case to the Project Coordinator. The aim will be to resolve the issue in as simple a manner as possible. However, if the partner is not satisfied with the outcome then the dispute will be presented to the steering committee.

5.9   Red flags

Exceptional problems are dealt with through General Assembly meetings. These can be raised by any PMT member or Work package Leader.

6 Communication and Knowledge Sharing Strategy

6.1 Communication with the Commission

The Project Coordinator is responsible for an efficient communication between the consortium and the EC. Any communication of the partners with the EC shall pass through the Project Coordinator. This means that the partners shall not directly contact the European Commission officers for questions regarding the CLARUS project.

6.2 Internal Communication

Internal communication inside the project group is usually very intense and rich. There is always a massive amount of information-sharing, discussions, and work collaboration going on among different partners and parts of the project at any given time. It is extremely important to use adequate communication channels. These channels are: email, working documents, project meetings, visits, workshops, web site, collaborative space, wiki pages, chats and web conferences or telephone conferences.

The coordinating partner maintains the official project repository and stores all documents and shared software produced by the project. All project partners have access to the project repository. All documents (internal reports, meetings' minutes, deliverables etc.) are recorded in the repository with their consecutive versions. It is responsibility of each project partner ensure that all documents are made available to the coordinating partner.

All information circulated will be treated as consortium confidential unless stated as public.

6.2.1 Project Knowledge Repository

The Project Repository is a tool for storing and sharing project related documents/information (deliverables, working papers, etc.) managed through a OneDrive folder within the POLIMI protected area.

Figure 8: Project Repository

It allows all beneficiaries to download, archive and exchange project related data during the whole project duration. As a result, email lists should normally NOT be used to distribute documents as attachments, in order to keep the mailboxes of each beneficiary and the data traffic as small as possible.

Rather than circulate project documents to the beneficiaries by email, each beneficiary will upload their material intended for sharing with either some or all other beneficiaries of the Consortium on the document

repository and inform them of their availability for download (by sending an email with the link corresponding to where the document is stored).

This repository is private. It is only accessible to beneficiaries of the project consortium, who have an account.

All the official documents relevant for the entire consortium will be stored in the document area of the top-level project. A subfolder has been created for each work package allowing work package leaders to organize their working area according to their requirements.

All the information related to the project, including all draft deliverables, the final deliverables, the shared documentation, the meeting reports, the updated project time-table, and so on, will be normalised in a common format according to defined templates to maintain homogeneity in the project, and will be stored in the Project Repository. Centralized maintenance and housekeeping of all the project documentation will be guaranteed by the Project Coordinator, and by the WP leader for the internal WP documentation. Documents will be organized in sub-folders related to project activities or information, as well as dedicated folders for work- packages and task.

The deliverables will be managed and released under the responsibility of the editor, after a well-defined review procedure.

6.2.2   Contact list

The updated contact list, including telephone number(s) and email address, can be accessed from the project repository. The list is regarded as the central point of reference and will be always updated when the personnel of the partners changes.

6.2.3   E-mail and other Communication Channels

Besides the project's Repository and Teams platforms, CLARUS partners are of course invited to engage in dialogue and communication through other means.

The Repository contains an updated list of all e-mail contacts of all the personnel involved in the project. This list should be considered as the one valid repository of personal contact information and treated with adequate caution to preserve the privacy of all people involved. E-mail is a legitimate means of formal communication among the project's partners – e.g., an e-mail is considered valid in-writing communication for formal requests such as extraordinary meetings of consortium bodies or the issuing of official project-related documents. It is appreciated that all formal project communication be exchanged copying the Coordinator Team among the recipients.

It is required that POLIMI as Project Coordinator be the sole institution in contact with the European Commission. All communication between any parties of the consortium and the European Commission should be mediated by POLIMI.

It is advised that e-mail not be used as a means of engagement in complex or lengthy interactions, to avoid overloading mailboxes and diluting potentially sensitive or relevant information. Partners should consider the opportunity of scheduling virtual or in-presence meetings to avoid such overload.

The project has set up the following mailing lists:

e-mail address	Type of communication
coordinator-clarus-dig @polimi.it	Communication that should reach the POLIMI coordination team.
all-clarus-dig@polimi.it	Communication of interest for the whole Consortium. All contacts are included in that mailing list.
admin-clarus-dig @polimi.it	Communication related to administrative business.
GA-clarus-dig @polimi.it	Communication that should reach the GA members.
PMT-clarus-dig @polimi.it	Communication that should reach the PMT members.
EAB-clarus-dig @polimi.it	Communication that should reach the EAB members.
IEAB-clarus-dig @polimi.it	Communication that should reach the IEAB members.

Table 9: CLARUS main mailing lists

The global mailing list will be used for issues affecting several WPs and for other issues requiring global communication. This mailing list was composed by all the members of the consortium.

With regard to operational activities of the project the following mailing lists have been created.

e-mail address	Type of communication
WP1-clarus-dig@polimi.it	Communication related to WP1 activities
WP2-clarus-dig@polimi.it	Communication related to WP1 activities
WP3-clarus-dig@polimi.it	Communication related to WP1 activities
WP4-clarus-dig@polimi.it	Communication related to WP1 activities
WP5-clarus-dig@polimi.it	Communication related to WP1 activities
WP6-clarus-dig@polimi.it	Communication related to WP1 activities

Table 10: CLARUS WPs mailing lists

Further mailing lists may be setup whenever required, according to the project needs, throughout the development of the project.

All project-related emails must report, within the subject, the "[CLARUS]" tag, followed by the subject text.

6.3 External Communication

6.3.1 Project Logo

A specific project logo has been developed for the project identity. The logo will be included in all project promotional material including the factsheet, website, etc.

Figure 9: Project Logo

The logo was designed starting from the letter "C", which is precisely the initial of the project name. The C, seen as part of a circle (symbol of quality and sustainability). The oblique line placed at 45 ° that cuts the letter C represents the concept of linearity of the data technology that is the basis of the solutions developed in the project.

It is advised that the CLARUS logo appears in all CLARUS related documents. Any material co-funded with the project budget needs to make explicit reference to it and if possibly make use of the CLARUS logo.

6.3.2 Project Web Site

The project web site is available at the following url: www.CLARUS-project.eu
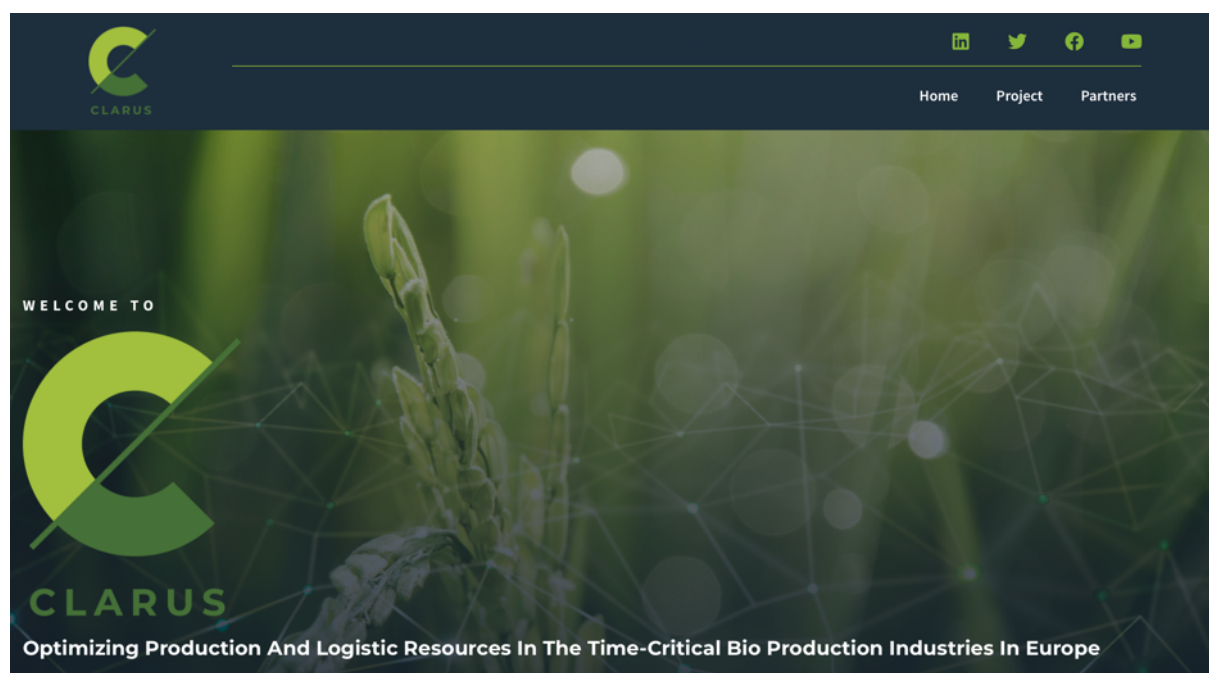
Figure 10: Project Web Site

The site is structured in the following sections/pages:

1. **Home page** is the main entrance to the CLARUS site and contains the main information concerning the project
2. **Project s**ection which contains the pages:
    a. Project Description
    b. Objectives describes the main objectives of the project
    c. Expected Results
3. **Partners** section contains the list of all the project partners with a link to the partner site
4. **Pilots** section contains the descriptions of the two project industrial pilots.

The site will be continuously maintained up to date. The project partners will take an active part in this task; they will act as contributors of the site inserting new posts then moderated by the administrators of the site. Users interested in CLARUS project has different options to keep up to date with the project developments: they can follow CLARUS account on Twitter or join the CLARUS group on LinkedIn. Dissemination of project results on other social networking sites will be taken in consideration in future.

6.3.3   Presentation, poster and graphical material

Any presentation related to the project work in progress or results will be created from the corporative presentation template available at the repository.
In addition to the available template, the consortium has prepared a number of alternative materials to help disseminate and present the project results in a coherent and effective way.

- A **general presentation** has been compiled to provide a quick look at the project objectives and contents. This set of slides will be updated periodically with the new results as the project advances.
- A **brochure** will be prepared to promote and enhance the visibility of the project.
- A **roll-up** to present the project at conferences and poster sessions.

6.3.4   Notification of dissemination or exploitation activity

To ensure maximum visibility of any relevant dissemination or exploitation activity through the project website, partners should send to the coordinator the following information:

- Event details: 1) type of event, 2) location, 3) dates, 4) website of the event, 5) agenda / program of the event.
- Person(s) participating to the event.
- In case of publications: full reference of the published paper.

If possible: presentation given during the event. In case of poster: poster presented.

7 Deliverables and Reporting

In the following subsections, the preparation and submission process for the CLARUS deliverables are defined. This includes the definition of appropriate deadlines for the deliverable preparation and delivery, information about the review process and negative consequences of non-delivery. Further information regarding the software deliverables, is prototypes, is provided.

7.1 List of Deliverables

Deliverable No	Deliverable Name	Work Package No	Description	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D1.1	Use Case Analysis	WP1	Description of UC Problem and Analysis.	2 - TAU	R — Document, report	SEN - Sensitive	6
D1.2	Green Deal KPIs	WP1	Description of the requirements, Impact and KPIs for Green Deal project	1 - POLIMI	R — Document, report	PU - Public	8
D1.3	Sustainability Maturity Assessment	WP1	Assessment for the level of maturity of pilot's sustainability.	1 - POLIMI	R — Document, report	PU - Public	36
D2.1	Report on Exploitation and Sustainability Strategy M12	WP2	Description of the Exploitation actions	6 - KNOW	R — Document, report	PU - Public	12
D2.2	Report on Exploitation and Sustainability Strategy M36	WP2	Description of the Exploitation actions	6 - KNOW	R — Document, report	PU - Public	36
D2.3	Report on Dissemination and cooperation Activities M12	WP2	Description of the Dissemination strategy and actions	3 - UPV	R — Document, report	SEN - Sensitive	12
D2.4	Report on Dissemination and cooperation Activities M24	WP2	Description of the Dissemination strategy and actions	3 - UPV	R — Document, report	SEN - Sensitive	24
D2.5	Report on Dissemination and cooperation Activities M36	WP2	Description of the Dissemination strategy and actions	3 - UPV	R — Document, report	SEN - Sensitive	36
D2.6	Report on User Training	WP2	Description of the methods used in user training and its results.	1 - POLIMI	R — Document, report	PU - Public	36
D3.1	CLARUS Data Approach	WP3	This deliverable describes the Clarus Data Approach defined in T3.1	4 - ENG	R — Document, report	PU - Public	9
D3.2	Edge-Cloud Data Management Services M18	WP3	Edge and Cloud Data Management Services	5 - IKERLAN	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	18
D3.3	Edge-Cloud Data Management Services M30	WP3	Edge and Cloud Data Management Services	5 - IKERLAN	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	30
D3.4	Data Harmonization and	WP3	Data Harmonization and Transformation framework	2 - TAU	DEM — Demonstrator,	SEN - Sensitive	18

Deliverable No	Deliverable Name	Work Package No	Description	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
	Transformation M18				pilot, prototype		
D3.5	Data Harmonization and Transformation M30	WP3	Data Harmonization and Transformation framework	2 - TAU	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	30
D4.1	Model lifecycle management - MLOps- M12	WP4	Descriptions of Techniques, tools and implementations used for the MLOps strategy	5 - IKERLAN	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	12
D4.2	Model lifecycle management - MLOps- M18	WP4	Descriptions of Techniques, tools and implementations used for the MLOps strategy	5 - IKERLAN	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	18
D4.3	Primary Food Processing AI design M18	WP4	Description of AI solution for the use case "Primary Food Processing" integrated in MLOps framework	3 - UPV	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	18
D4.4	Primary Food Processing AI design M30	WP4	Description of AI solution for the use case "Primary Food Processing" integrated in MLOps framework	3 - UPV	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	30
D4.5	By-product AI design M18	WP4	Description of AI solution for the use case "By-product" integrated in MLOps framework	2 - TAU	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	18
D4.6	By-product AI design M30	WP4	Description of AI solution for the use case "By-product" integrated in MLOps framework	2 - TAU	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	30
D5.1	Integration and Data Engineering Report	WP5	This deliverable describes the data model and its integration into CLARUS Solution.	2 - TAU	R — Document, report	PU - Public	18
D5.2	Pilot Validation Report M24	WP5	This deliverable describes the assessment criteria to evaluate the pilot performance in terms of primary food and byproduct processing	2 - TAU	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	24
D5.3	Pilot Validation Report M36	WP5	This deliverable describes the assessment criteria to evaluate the pilot performance in terms of primary food and byproduct processing	2 - TAU	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	36
D5.4	Green Deal Index Assessment Report	WP5	Description of the metric that measure the environmental aspects of heterogeneous variables utilized in the production process of food and by-products.	1 - POLIMI	DEM — Demonstrator, pilot, prototype	SEN - Sensitive	36
D6.1	Project Management Handbook	WP6	This report will provide guidelines to be followed by all partners	1 - POLIMI	R — Document, report	PU - Public	3

Deliverable No	Deliverable Name	Work Package No	Description	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
			in different managerial aspects				
D6.2	Project progress reporting M06	WP6	The document will include project updates on progress, costs, developments, objective achievement levels, management successes, etc	1 - POLIMI	R — Document, report	SEN - Sensitive	6
D6.3	Project progress reporting M12	WP6	The document will include project updates on progress, costs, developments, objective achievement levels, management successes, etc	1 - POLIMI	R — Document, report	SEN - Sensitive	12
D6.4	Project progress reporting M18	WP6	The document will include project updates on progress, costs, developments, objective achievement levels, management successes, etc	1 - POLIMI	R — Document, report	SEN - Sensitive	18
D6.5	Project progress reporting M24	WP6	The document will include project updates on progress, costs, developments, objective achievement levels, management successes, etc	1 - POLIMI	R — Document, report	SEN - Sensitive	24
D6.6	Project progress reporting M30	WP6	The document will include project updates on progress, costs, developments, objective achievement levels, management successes, etc	1 - POLIMI	R — Document, report	SEN - Sensitive	30
D6.7	Project progress reporting M36	WP6	The document will include project updates on progress, costs, developments, objective achievement levels, management successes, etc	1 - POLIMI	R — Document, report	SEN - Sensitive	36
D6.8	Quality, Risk and Data Management Plan M06	WP6	This report describes how data will be handled throughout the project. And how quality assurance and risk management will be implemented	7 - EAI	R — Document, report	PU - Public	6
D6.9	Quality, Risk and Data Management Plan M18	WP6	This report describes how data will be handled throughout the project. And how quality assurance and risk management will be implemented	7 - EAI	R — Document, report	PU - Public	18
D6.10	Quality, Risk and Data Management Plan M36	WP6	This report describes how data will be handled throughout the project. And how quality assurance and risk	7 - EAI	R — Document, report	PU - Public	36

Deliverable No	Deliverable Name	Work Package No	Description	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
			management will be implemented				

Table 11: Deliverables

7.2   Deliverables Procedure

The internal reviewing procedure is one of the main tools to guarantee the high quality of the results.

Every deliverable has a specific due date as defined in the Description of Action. Every deliverable is assigned to one partner acting as the editor who coordinates the preparation of the deliverable, collects the contributions from the other partners, and who is responsible for the timely delivery and to one partner acting as internal reviewer, who revises the deliverable and provides the editor with possible recommendations to improve its quality.

Each WP leader will be responsible for the quality of the results, which will be subject to a peer review by the additional expert that must checks their quality (not including the periodic progress reports), before the final submission to the EC. POLIMI, as Project Coordinator, will review the progress reports containing resource-reporting information, as the last stage before submission to the EC.

The Coordination Team has elaborated a table which defines the partners in charge of the internal review of CLARUS deliverables, ensuring a balanced workload for all of them not only in terms of the number of reports to be reviewed by each partner but also creating enough space in time to avoid several deliverables to be reviewed by the same partner in a short period of time. The table is shown is available in the CLARUS Project Repository. Just to add that, even if this is not included in the table, POLIMI as Project/Technical Coordinator will review the relevant deliverables when a project milestone is related.

1. Each partner responsible for a deliverable will provide (or upload in the repository) the proposed table of contents at least **2 months** before the submission date.
2. A preliminary full version of the deliverable will be sent to the WP leader as well as to the peer reviewer allocated in the table at least **three weeks in advance of the due date**. The Project Coordinator and the Technical Manager will be also informed. It needs to be noted that early draft versions of the deliverable should be periodically circulated in order to confirm that the work progresses as expected, and progress update will be reported during the monthly PMT meetings.
3. The peer reviewer will review the document and send comments **within one week** using the peer review report template available at the repository as well as using the track changes mode in the draft version of the document. In case they encounter that the document does not fulfil the requirements for such document, they will notify accordingly the deliverable responsible partners within one week after the request.
4. The new version of the document will be again available for the deliverable responsible partner who will modify the document accordingly. Upon confirming with the peer reviewers that their comments have been effectively addressed, the final version will be sent to the Project Coordinator **at least 2 working days before the delivery date**.
5. In case the deliverable fulfils the required objectives, the Project Coordinator will submit it to the EC and informs the consortium via mailing list. Whether the deliverable responsible partner fails to deliver the document, or the document does not fulfil the objectives, the GA will take the required actions

according to the provisions of the Consortium Agreement and Contract.

The process of internal review is summarized in the following diagram:
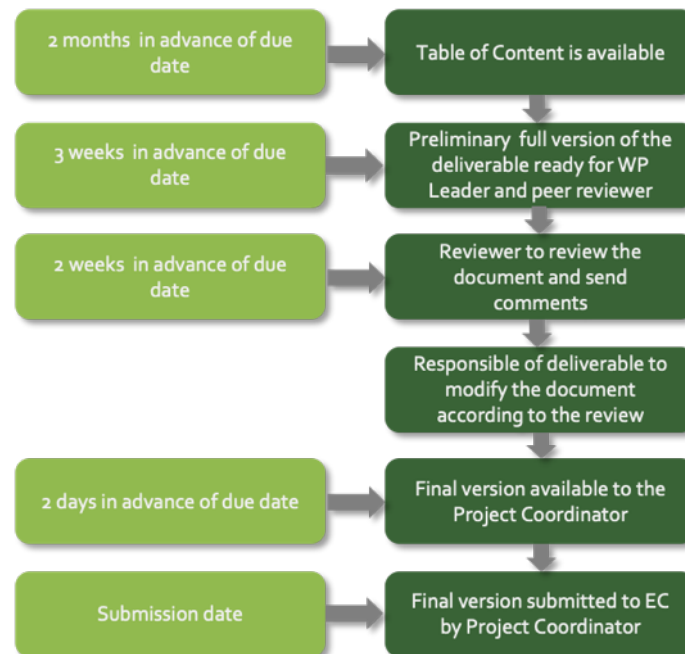
Figure 11: Internal Review Procedure

The final version of the deliverable is stored on the shared folder on Project Repository.

Templates for the deliverable will be provided in the Project Repository.

The criteria to evaluate the quality of the deliverables are the following.

- The deliverable is in accordance with the Description of Action.
- The objectives of the deliverable are clearly stated.
- If relevant, the deliverable explains its connection with other deliverables.
- The structure of the contents is well organised.
- The figures and tables are of high quality.
- The deliverable includes correct information and all the necessary data to draw conclusions
- Appropriate references and citations are provided.
- The contents are easy to read and understand.
- The contents are not repetitive and there are references to other documents when needed.
- The contents are written in British English, with good syntax and grammar.
- The document follows the formatting rules of the project template.

The deliverables in the form of written reports are prepared using a common template and a filename convention, including the number of the deliverable, the title, the due date and the number of the version: e.g., "*CLARUS_Dx.y Title_v.x.y*".

They are stored in the Project Repository folder, and they are published on the project web site if they are not confidential.

The deliverables in the form of prototypes should be accompanied by a written document describing the nature of the deliverable, the editor partner and the contributing partners, a description of what is included in the deliverable and other supporting material (e.g., photographs, technical design etc.).

An excel file on the Project Repository folder is used to monitor the progress in deliverables preparation.

Since most of the deliverables require the contribution from different partners, all the partners involved should therefore take the appropriate steps to ensure that the deliverable preparation is completed in time and with high quality, in order to issue the deliverable within the due date.

The editor partner is responsible for defining the structure of the document, collecting information from the partners, and creating a document that is properly structured and consistent also with other deliverables (e.g., terminology, structure, references to other documents, supporting material).

7.3   Periodic Project Progress Reports

Templates for Periodic Project Progress Reports will be provided. The templates are based on 'Guidance Notes of Project Reporting', launched by the European Commission.

The consortium members are obliged to use the templates and to send the filled Periodic Reports in due time to the coordinator. The time covered by the document is, if no other rules are applicable, six months.

The coordinator will aggregate and summarise the activity reports to deliverables D6.x *Project progress reporting* at M6, M12, M18, M24, M30, M36.

Figure 12: Project Progress Reporting

The report will comprise:

- report on the technical work and related accomplishments carried out in the six months period,
- management data for the considered six months period, (persons-month spent per each active WP, major travels and other resources deployed),
- predicted management data for the next six months,
- dissemination accomplishments,
- major issues or problems encountered and/or foreseen in the six months.

7.4   Reporting to EC

Reporting to the European Commission will be performed through the Funding and Tenders website and the Participant Portal, the online platform that centralises the management of EU-funded projects and the reporting activities between the Commission and the partners of the projects. Various individuals in each CLARUS partner institution have been granted access to the Participant Portal with one of several roles

available. Specific roles allow to perform certain actions on the portal. A user-friendly guide to role attribution and powers in HEP project management is available online in the European Commission's programme manual:

https://webgate.ec.europa.eu/funding-tenders-opportunities/display/OM/Roles+and+access+rights

Partner members with authorised access to the Participant Portal can easily access the information of the CLARUS project in their account's main page.

Accessing this area will lead to the Participant Portal proper, the shared ecosystem in which official reporting to the European Commission is ultimately performed.

7.4.1 Continuos Reporting

During the Project, regular updates on the status of the Project must be provided: the continuous reporting.

The **continuous reporting** includes:
- progress in achieving milestones
- deliverables
- updates to the publishable summary
- response to critical risks, publications, communications activities, IPRs

The Continuous Reporting Module is accessible through this link:
https://ec.europa.eu/research/participants/grants-app/reporting/DLV-101070076

7.4.2 Periodic Reporting

In order to receive payments, the Consortium must submit **periodic reports** (following the schedule set out in the Grant Agreement). These reports must be submitted directly in the Periodic Reporting Module of the Portal Grant Management System at the latest within 60 days after the end of the reporting period (including the last reporting period).

CLARUS is divided into two reporting periods of the following duration:
- P1: from month 1 to month 18
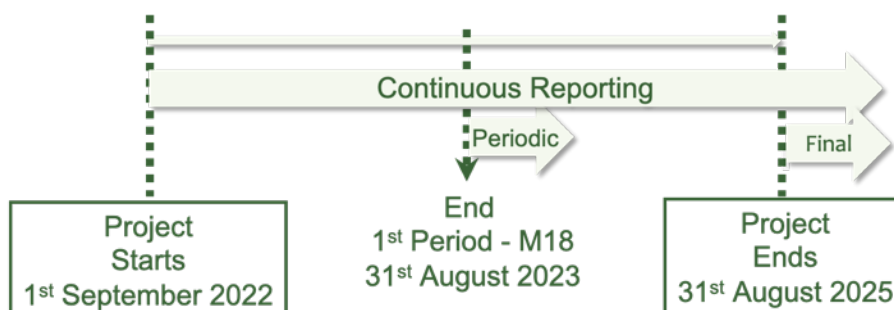- P2: from month 19 to month 36.

Figure 13: Reporting to EC

The Periodic technical report consists of two parts:

1) Technical Report

The Technical Report consists of two parts:

- **Part A** is completed online, filling structured tables from the grant management system. The structure of part A consists of:
    - cover page
    - publishable summary
    - web-based tables covering issues related to the Project implementation (e.g., work packages, deliverables, milestones, etc.)
    - answers to the questionnaire about the economic and social impact.
- **Part B**, the core part of the report as free text, submitted as a separate PDF document in the Grant Management System. Part B should provide:
    - explanations justifying the differences between work expected to be carried out in accordance with the Description of the Action and that actually carried out.
    - an overview of the progress towards the Project objectives, justifying the differences between work expected under the Description of the Action and the work actually performed, if any.

2) Financial Report

Consists of structured forms from the grant management system, including:

- the financial statements (individual and consolidated; for all beneficiaries/affiliated entities)
- the explanation on the use of resources (or detailed cost reporting table, if required)
- the certificates on the financial statements (CFS) (if required)

The technical report Part A and the Financial Report are generated automatically on the basis of the data in the Grant Management System; Part B needs to be prepared outside the tools (using the template downloaded from the system) and then uploaded as PDF (together with Annexes, if any).

The Project Coordinator is responsible for the preparation of these reports and shall receive the data provided by the partners and consolidate them in a common report. Partners must complete and return draft versions of their individual reports to Coordinator at the latest within 25 days after the end of the reporting period.

By signing the financial statements (directly in the Portal Periodic Reporting tool), the beneficiaries confirm that:

- the information provided is complete, reliable and true
- the costs and contributions declared are eligible
- the costs and contributions can be substantiated by adequate records and supporting documents that will be produced upon request or in the context of checks, reviews, audits and investigations

Periodic Reports must be submitted to the European Commission within 60 days since the end of each Reporting Period. POLIMI as Project Coordinator will coordinate and manage the preparation of the Periodic Reports and the contributions of each partner.

7.4.3   Final Report

The Periodic Reporting Module (and periodic reports) are also used for the **final report** (report for the last reporting period, to close the grant).

Figure 14: Project Reporting

7.5 Templates

It is essential that all Deliverables and all documents submitted to the European Commission are laid out using the project's official templates. All available templates will be accessible for all partners on the project's Repository.

Templates will be provided (as download within the project area) for the following documents:

- Template for Agenda
- Template for Minutes
- Template for Deliverables
- Template for Progress Report
- Template for Periodic Report
- Template for PowerPoint Presentations

The templates shall allow the consortium to perform the activities in a smooth and efficient way and furthermore provide a common and homogeneous image of the project deliverables, releases etc.

8   Quality Assurance

8.1   Quality Assurance as Part of Project Management

Project management is the responsibility of the Project Management Team (PMT). The PMT serves as the element responsible for planning, managing, coordinating, directing, controlling and helping executing the project.

8.2   Responsibilities Concerning Quality Assurance

The Coordinator is the leader of the PMT and has the responsibility for up-dating the project management plan. The Coordinator and the Project Manager are responsible for the following:

- Preparation and maintenance of the quality plan
- Conducting the quality aspects of the project
- Prepare actual project planning
- Coordinate and resolve communication problems
- Assure information transfer system
- Keep all parties involved and aware of upcoming project events
- Coordinate project progress and reports
- Review and monitor expenditures and schedules

Each partner will have a local project manager, as a point of contact with project coordinator and the rest of local project personnel. The local Project Managers responsibilities include the following:

- assign project personnel provided that they are qualified to act according to project tasks
- coordinate the local project management

Every project team member is responsible to assure the project activities/tasks are performed taking into account the project quality management.

They have the following tasks:

- to use the project assessment tools
- to analyze the feedback from partners and provide solutions (corrective or preventive actions, if needed).

The particular parties like:

- General Assembly
- Coordinator Team
- Project Management Team (PMT)

are described in section 4.

8.3   Quality Plan

A quality plan is required to identify the principles, practices and processes to be applied during the project implementation, to ensure that the deliverables conform to the agreed requirements, according to the project planned objectives and resources.

The quality plan describes the project's quality objectives, quality of the project deliverables and how they are to be managed during the project implementation.

The principles described below are applicable to all consortium members.

8.3.1 Scope and Objectives of the Quality Aspects of the Project

The project goal is to perform the project activities on schedule and within budget, supporting a continuous assessment process. To accomplish this goal, the quality concerns include:

- project outcomes quality (project effectiveness)
- degree of project objectives achievement
- content of the project products: pertinence, clarity, availability, usefulness, innovation
- form of the project products: accessibility, agreeableness
- project management quality
- choice of methods for project management, communication, timing
- project efficiency (actual/planned costs ratio)

The project results quality assurance is a very important matter of concern for both the Project Management and the Technical Coordination. The PMT will guarantee a consistent quality for all project results by evaluating them. The quality assurance activity is included in task T6.2.

8.3.2 Quality of the Project Deliverables

The quality and implementability of project products (Deliverables) produced during the project progress will be evaluated before their issuing. It will be done by Project Coordinator and the PMT.
In detail a Deliverable will be launched in a draft version to all contributing partners and if necessary to the whole consortium. Any questions, suggestion etc. will be solved first by the involved partners, and if needed by the PMT. After having integrated the feedback, suggestions etc. the final version will be submitted to the Project Coordinator, who is in charge for launching it to the European Commission in due time.
The need for updates and refinement of products will also be considered during project implementation.

8.4 Project Implementation Process

8.4.1 Project Quality Planning

The project quality is planned during the project initial development phase (development of the project proposal). There are provisions for the specific quality management methodology to be followed during the execution of the work, as presented in this section.

During the first months of the project, the quality plan should be discussed by the project management team, to review and refine the scope, objectives, requirements, and approach.

The coordinator will maintain communication, coordination, and team interaction through team meetings, progress monitoring, and periodic reviews. The project manager is responsible that proper coordination takes place between the local teams in those work-packages where ongoing exchange is important to the development of the project results.

8.4.2 Project Quality Control

The quality control process is a continuous concern, based on the input from the project progress monitoring activities, coordinated by local project managers.
Deviations and lessons learned are communicated between partners, to avoid risks or duplication of corrections. Review and monitoring of expenditures and schedule will be performed continuously. Project quality control must also address other different types of reviews: the work breakdown structure, the organizational structure, project outcomes, and budget.
Project personnel should be held accountable for the quality of their work. Usual performance objectives for project personnel, specific to each partner organisation, should be observed by local project partners.

8.4.3   Project Quality Assurance

Open continuous communication should be maintained between partners, and regular progress meetings are included in the project planning, to ensure the work is progressing as per requirements.

A more detailed and updated quality and management plan will be presented as part of Deliverable *D6.8 Quality, Risk and Data Management Plan* due in M06.

9 Project Assessment

9.1 Proceeding in Terms of Quality Assurance

The methods for quality assurance have to address the following topics (see section 8):

- project outcomes quality (project effectiveness)
- degree of project objectives achievement
- content of the project products: pertinence, clarity, availability, usefulness, innovation
- form of the project products: accessibility, agreeableness
- project management quality
- choice of methods for project management, communication, timing
- project efficiency (actual/planned costs ratio)

In general, the WP leaders are in charge for the due delivery of all kind of Deliverables. They have to try to guarantee already during the start of the activities the due fulfilment of the project goals in terms of milestones, deliverables etc.

The main body for quality assurance will be the PMT.

9.2 Take Up of Measures in Case of Deviations

In case of deviations the WP at first has to try to take up specific measures in order to solve the problem in due time. If this will not be possible the coordinator has to be informed and adequate measures (e. g. setting of particular priorities) have to be started.

The WP leader and the coordinator shall inform the consortium about the relevant changes; especially those WP leaders whose workload will be affected and deviated have to be informed in a very early stage.

10 Risk management

Risk Management is adopted to manage project issues and conflicts.

During the first six months of the project, a risk assessment will be conducted to identify risks associated with both the business and technical aspect of the research. The PMT, General Assembly, advisory boards, work package leaders and other key players have been involved in the assessment. This will establish a **central risk register**. Risks will be assessed for their impact on the project and the probability of the risk materializing. The team will establish risk mitigation plans to reduce the impact and likelihood of the risk occurring, as well as action plans to manage the risk should it arise.

This integrated approach to risk management will enable the programme office effectively control business, intellectual property, technology, people, management, environment and other implementation risks that may arise. Unresolved issues or conflicts impacting the project plan will be escalated to the appropriate theme board, project coordinator and then if required to the GA. Should the need arise the necessary partner assembly will be convened to vote on the issue or dispute in question.

The deliverable *Quality, Risk and Data Management Plan* will report how risk management will be implemented at M6, M18, M36.

10.1 Project risks and associated contingency plans

Risk management aims to minimise factors that can be detrimental to project objectives. Risk management will be performed at all project levels and will adopt a uniform and systematic approach across project teams to:

- Identifying and evaluate risks;
- Define and plan proactive and efficient actions for risk reduction;
- Starting, performing and controlling planned mitigation activities;
- Documenting progress of risk management activities, and evaluating their results with continuity in order to bring needed corrections.

It is continuous process throughout the lifetime of a project that addresses the planning of risk management, identification, analysis, monitoring and control.
Risk assessment will be updated throughout the project lifecycle as unexpected sources of risk can be identified at any time.
The objective is to **decrease** the **probability** and **impact** of events adverse to the project.

Figure 15: Risk Management

In order to keep risks aligned with the project and improve the process of identification, a **six monthly risk management activity** will be developed within the project. Although there are sophisticated tools available, a simple, well proven methodology has been selected for the project. If this proves to be insufficient, the project will apply more advanced methods. Risk items in identified Deliverables will be described, and then rated in severity of impact as High, Medium or Low in a Central Risk Register.

The **Central Risk Register** (CRR) is composed by a set of tables providing the cockpit of the risk management. Each WP has a table as well as project level risks.

ID	Description of risk	Likelihood	severity	WP	Proper risk-mitigation measures

Table 12: Central Risk Register

Each table is composed by the following elements:

- **ID**: a sequential number for tracking each risk.
- **Risk Description**: short description of the risk.
- **Likelihood**: probability that the risk arises in the project (high – medium - low).
- **Severity**: severity of impact of the risk on the project (high – medium - low).
- **WP:** The WP to which the risk is associated or is most associated with.
- **Mitigation:** A brief description of the steps already taken, or to be taken, to reduce the risk.

The risks that have been identified so far, as reported in Grant Agreement, are reported in the following table:

ID	Description of risk	Likelihood	severity	WP	Proper risk-mitigation measures
Research and Innovation					
1	**High-level architecture of proposal is not suitable**	Low	High	3, 4	WP3, WP4 will fully specify the architecture with the help of the RDI stakeholders in an agile way. Hence, critical aspects will be specified first so that blocking issues can be settled as early as possible. Therefore, one strength of CLARUS is the real-world tailoring of selected research concepts providing a user-based environment for validation and subsequent exploitation.
2	**Unclear requirements**	Low	Medium	1, 3, 4	The requirement analysis based on the Pilots and the scientific state-of-the-art might lead to ambiguous requirements. This risk is eliminated by following requirement engineering methodologies to refine the requirements to clear

					specifications driving the creation of the lighthouse demonstration case of the CLARUS Solutions.
3	**Weak software design**	Low	High	3, 4	There are work packages (WP3, WP4) dedicated to the design of the CLARUS Reference Architecture and the viewpoints (Business, Usage, Functional, Implementation) following the ISO/IEC/IEEE 42010 standard and the most common reference architectures in the manufacturing domain, such as IIRA (mainly), RAMI4.0, IDSA, and IMSA.
4	**Complex AI technology for Manufacturing**	Medium	High	3, 4, 5	WP3/WP4 will apply AI technologies for optimising the manufacturing phase of primary food and by-products. The risk of failure in this development or integration is mitigated due to the high expertise of all R&D and TECH partners in AI capable of selecting the most suitable methods out of the large number of potential methods.
5	**Unavailability of datasets**	High	Low	3, 4, 5	There is a risk for the Pilots not providing datasets or these not being relevant for the necessary applications and solutions' development. However, there will always be the possibility of generating synthetic datasets, as relevant as possible to the considered use cases and solutions.
Administration/Management/Impact					
6	**Failure to meet milestones**	Medium	Low	ALL	Problems and risks are promptly identified and rapid adaptation to changes affecting the project planning is conducted through effective project management. The Technical Manager is responsible for the early problem identification and arrangement.
7	**Lack of coordination or poor communication**	Low	Medium	ALL	The highly experienced Project Coordinator has sufficient knowledge in project management. Additionally, all involved partners have participated in projects of equivalent level. The strategic planning regarding project management schemes and

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					actions will ensure adequate operational qualification and it will enable the in-time project execution without obstacles.
8	Deliverable failure due to missed deadline or poor deliverable quality	Medium	Low	ALL	The CLARUS project will adopt quality management and assurance policies. Each deliverable will be extensively reviewed by two project partners. Each task will be overviewed by the respective task leader. Whenever insufficiencies arise, complementary actions can be requested from partners by the work package leaders, the Technical Manager, and the Project Coordinator. This procedure will ensure each deliverable's compliance with the project's contractual requirements.
9	Lack of required know-how	Low	High	ALL	All involved participants have been carefully selected in order to satisfy the project requirements. Their skills and experience have been thoroughly examined. Their successful participation in several EC funded projects evidences their capacity
10	Loss of Beneficiary	Medium	Low	ALL	If the terminated activity is included in the CLARUS consortium, the respective funding along with the respective work will be assigned to the remaining active partners. If the aforementioned action cannot be implemented, another organisation with similar specifications, standards, and characteristics will be exploited.
11	COVID-19 impact on project	High	Low	ALL	The project will plan all meetings by respecting regulations and travel restrictions according to the current status of the pandemic in Europe. Telco conferencing will always be available to ensure communication in the consortium. No risks will be taken with regard to meetings and traveling which could lead to potential COVID-19 related health complications.
12	Difficulties in exploitation	Low	High	2	This risk is handled by a dual people/process strategy. People: Engagement of PMR as a

				47	beneficial solely dedicated to exploitation to assist the partners and coming from a generic market/research background. Process: The development of a detailed Exploitation Strategy/Plan over the full duration of the project's lifetime. It will include a classification of the potential exploitable results, the project partners that will invest in each result, intentions of partners with regard to the dissemination and use of all results and conflicts of interest. See exploitation Section 2.2.
13	Poor/ineffective dissemination	Low	Medium	2	A project dissemination strategy will be developed within WP2 aiming to link the project with the industrial sector and other stakeholders who may be interested in the project outcomes in order to achieve the maximum interaction with the different target groups.
14	Vision not converging	Medium	High	1	Pay specific attention to a very good preparation of the inception phase starting with the Kick-off meeting. Ensure Kick-off meeting of sufficient length for clear discussion and results as well as people-work-with-people networking.
15	Business potential too low	Medium	High	2	WP2 Depending on the outcome of the market business potential analysis, adjustments in sectors and use cases may be elaborated, or alternatively, this will be a no-go situation.

Table 13: Project Risks

A more detailed and updated risk identification and management plan will be presented as part of Deliverable *D6.8 Quality, Risk and Data Management Plan* due in M06.

11   Innovation Coordination

A proper management of innovative aspects of the Project is a key component of the overall CLARUS success. To pave the path to the correct execution of CLARUS as well as a proper exploitation of its outcomes, it is fundamental to define from the early beginning a strategy to support Consortium partners towards an effective promotion of the innovative assets created within the Project.

Under the umbrella of this Task, all the activities necessary to comply with the Innovation Action impact contractual obligations and control points will also be grouped. The task involves the practical organisation and management of the principles and concept for project results monitoring and control against innovation objectives. Recommendations for corrective actions will be issued for conflict situations if needed.

The purpose of the present Section is to:

1. Define the best practices for innovation management (IM) to identify the actual worth for the Food Industry market/users of the assets generated (i.e., enhanced or created from scratch) as part of CLARUS, including working methods and implementation routes.
2. Settle a strategy for project results monitoring and control against innovation objectives.
3. Through the achievement of bullets 1 and 2, smooth and steer the Dissemination and Exploitation activities and other networking activities of WP2, and ease the communication between WP2 and technical WPs.

Finally, "Innovation coordination and business impact" is strongly linked with the Objective 6.5 as per GA, "To support the innovation process in the perspective of exploitation".

11.1   Innovation management

Innovation management is one of the key factors that leads to success (EU) projects since it helps ensure that research results generated by the projects are further used for commercial and non-commercial purposes, facilitating the exploitation of results and enhancing the expected impacts of a project.

The process of innovation management that will be pursued within CLARUS is made up of many parts, nevertheless, as part of the innovation capabilities there is the ability to understand and respond to changing conditions of the context, to pursue new opportunities, and to leverage the knowledge and creativity of people within the Consortium, and in collaboration with external interested parties. Thus, the approach adopted to lead innovation requires to be structured yet flexible.

Figure 11: Innovation management system as per ISO 56002:2019 [1]

Even if the Innovation management system proposed by ISO 56002:2019 [1] Figure 11, is made by four main blocks, namely "Analysis", "Process", "Tools" and "Methods", the common belief is that innovation is boosted more effectively and efficiently if all necessary activities and other interrelated or interacting elements are managed as a system.

It is important to remark that, while the present discussion should be considered as a best practice, the specific methodologies/tools to be followed/used in these activities is demanded to WP/Task leaders.

The lesson learnt from Figure 11 comprises:

- Analysis to identify:
  - Internal issues (risks, obstacles): actions undertaken within the context of WP6, dispositions and procedures have been identified mainly in Section 8,9 and 10.
  - External issues (competitors): investigated as part of T2.1 with the market analysis, two different iterations are foreseen (M12 and M36) in order to be on one hand up to date with Project status, on the other with actual market orientation and progress. Innovation management within European projects is a process that requires an understanding of both market and technical problems, with a goal of successfully implementing appropriate creative ideas.
  - Opportunities (collaborations, follow up projects): collaborations and opportunities will be investigated through the effort undertaken in Task 2.5 "EU and National Impact Activities: EU Initiatives cooperation, Workshops and Regional Interaction", as well as thanks to the individual dissemination plans of the Consortium partners.
  - Stakeholders should be identified; their needs and fears should be pointed out: their insights will serve to better shape the solutions provided.
  - Product positioning: the final but not definitive outcome of the analysis above should be a clear definition of the problem that CLARUS aims to solve, the technical steps needed to reach that scope (WP3 and WP4) and the business /communication/IPR plan to make the solutions eligible to the target audience (WP2).
- A structured Process to:
  - Support the elaboration of solution through the promotion of a strong cooperation between technical partners and end-users, including Project demonstrators from the beginning of the Project (high collaboration between WP1 and WP5 to define pilots' requirements) and, from the second phase, external stakeholders that have been identified with the 'Analysis' and engaged through the WP2 activities.
  - Incorporate outcomes of the analysis: as stated in previous bullet, mainly during the second phase of the Project (M19-M36), based on the insights gained through WP2, technical partners have a strong foundation to decide on which technical results may have a wider interest on the market, and have all the information to define specific initiatives to adapt the assets to the new knowledge, increasing the possibility for Project assets to last after the Project end.
- Tools to:
  - Investigate for and identify solutions: starting from the elicitation of the user requirements (WP1 and WP5), as part of technical WPs (WP3-WP4) the state of the art will be analysed in order to evaluate the more promising technologies to support the development of CLARUS.
  - Collect ideas to address risks or opportunities: Section **Error! Reference source not found.** defines how risks will be managed (i.e. identified, mitigated and eventually dealt). Opportunities that may come from single partners ideas/contacts from Events or directly from the EC will be evaluated as a Consortium case by case.
  - Brainstorm and choice of the appropriated Business Model (e.g., Business Model Canvas helps to structure the process of business model innovation and to early deal with issues of business model implementation).
- Methods to evaluate:
  - The Consortium has a solid base in terms of technical and business knowhow in order to achieve all CLARUS objectives and deal with Issues and opportunities.
  - Technical monitoring for design and developments, as part of the activities of T6.2.
  - Dissemination and exploitation as well will follow standard methodologies that have already been used with success in similar projects as it will be described in WP2.

11.2 Innovation strategy

As stated above, under the umbrella of Task 6.3, 'Innovation Coordination and Business Impact', all activities to support the recognition and promote of the innovative potential of the assets developed or enhanced within CLARUS are undertaken. Apart from the methodology described in Section 11.1, that has to be pursued and fitted on each WP/Task, the other relevant direction provided by T6.3 is a strong partnership and observatory over the activities of WP2.

In particular:

1. Relation with T2.2 ('Exploitation strategy and planning'): the recommendation is to define, with the support of existent Innovation methodologies promoted by the EC [e.g., the Innovation Radar, 2] and other relevant sources, a clear and detailed questionnaire to be filled for each of the most promising TEO/KER (*Tangible Expected Outcome/Key Exploitable Result*). Other tasks of WP2 (mainly T2.1 and T2.3, 'Market analysis and business opportunities during and beyond CLARUS', and 'CLARUS maturity and sustainable business model') may benefit from the outcomes of such investigation.

2. Relation with T2.5, 'EU and national impact activities: EU initiatives cooperation, workshops and regional interaction': as observatory, the participation at events of interest for the project will be encouraged and monitored.

12   Conclusions

This deliverable summarizes the procedures established by the CLARUS consortium to successfully manage the project towards meeting the objectives with the highest possible quality level. To this end, all partners are committed to guarantee the quality standards expected for the project.

This deliverable is not intended to replace other relevant documents to which the partners should refer for additional details: *Consortium Agreement* and *Description of Action*; *D6.2 Quality, Risk and Data Management Plan*; D5.2 *Dissemination Plan Branding, Community Building*; D5.3 *Business Plan*.

Since the procedures described in this document are guidelines to support the effective collaboration among the partners, during the project they can be adjusted and updated with additional common rules, collaboration, and communication tools to address all the needs expressed by the partners.

This project has received funding from the European Union's Horizon Europe Research and Innovation Programme under Grant Agreement N. 101070076

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