



Boosting DR through increased community-level consumer engagement by combining Data-driven and blockcHain technology Tools with social science approaches and multi-value service design

Deliverable D1.1 Quality Management Plan

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Imprint

Title:	Quality Management Plan
Contractual Date of Delivery to the EC:	31.12.2020
Actual Date of Delivery to the EC:	31.12.2020
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Project:	Boosting DR through increased community-level consumer engaGement by combining Data-driven and blockcHain technology Tools with social science approaches and multi-value service design (BRIGHT)
Work Package:	WP1 – Project Management
Task:	T1.2 – Quality Assurance, Technical and Project Risk management
Confidentiality:	Confidential
Version:	1.0.

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List of Acronyms and Abbreviations

AI	Artificial Intelligence
API	Application Programming Interface
BRIGHT	Boosting DR through increased community-level consumer engagement by combining Data-driven and blockchain technology Tools with social science approaches and multi-value service design
CA	Consortium Agreement
DLT	Distributed Ledger Technology
DOW	Description of Work
DPO	Data Protection Officer
DR	Demand Response
DSO	Distribution System Operator
DT	Digital Twin
EC	European Commission
EU	European Union
GDPR	General Data Protection Regulation
IEEE	Institute of Electrical and Electronics Engineers
IPR	Intellectual Property Rights
ISO	International Standards Organization
PC	Project Coordinator
RES	Renewable Energy Source
RP	Reporting Period
VPP	Virtual Power Plant
WBS	Work Breakdown Structure
WP	Work Package
WPL	Work Package Leader

Table 1 List of Acronyms and Abbreviations

Executive Summary

The present deliverable is the first document produced by WP1, which covers the Project Management duties. This document is the natural evolution and combination of all the initial project description documents, namely Description of Work (DoW), its evolution to the Grant Agreement (in which the project structure and roles were outlined) and the Consortium Agreement (in which the BRIGHT partners arranged the way they will interact). More specifically, this deliverable provides a Project Quality Plan and includes a specific Project Management Plan, addressing all management-related activities and providing all the required tools to organise the workflow efficiently.

The document addresses the following topics: (i) the overall project management plan, including a schedule for the activities and a Work Breakdown Structure which includes a schedule per task, the responsible partners and the related subtasks, the related deliverables, and the dependencies on other activities, (ii) the description of project roles and responsibilities, (iii) the description of IT tools and document handling procedures, (iv) the quality and (v) risk management procedures.

Once approved by the Consortium, it will be used for day-to-day management of the project, as a reference for preparing and producing the project deliverables, and as a reference for quality control.

1 Introduction

This document describes the project management organization, roles, members and execution procedures of the H2020 BRIGHT project for progress and control monitoring, meetings, progress reporting, quality assurance, information sharing, risk assessment and management.

One of the main goals of this Quality Management Plan is to define the quality expectations to be met within the scope of the project. This document defines the policies that the project partners must follow in order to ensure the quality of expected results, affirm the commitment of the project to high standards of quality, and ensure continuous improvement.

To maintain an effective and efficient process of quality assurance, in the BRIGHT project all partners have to:

- ensure consistency in the method of work according to established policies and regulations
- ensure that all policies are implemented and reviewed to ensure the achievement of the project's objectives
- regularly monitor and measure the quality of work methods, releases, and results in order to ensure high quality standards and continuous improvement.

A unique submission of D1.1 is envisaged at month 2. Nevertheless, the Project Coordinator will inform periodically the EC Officer in case of any modification.

1.1. Purpose

Purpose of this document is to report on project management procedures, roles, and responsibilities, project monitoring, peer-review process, reporting, communication management, and risk management. The Quality Management Plan will provide a single point of reference on the quality that will be governed during the overall project.

1.2. Relation to Other Activities

The achievement of the BRIGHT project objectives depends on the provision of a series of project outcomes including reports, software modules, events, and dissemination activities.

The criteria for assessing the quality of a release depend on its nature and the following sections will describe the quality criteria for documentation, software prototypes and presentations.

The quality of the project deliverables depends also on an efficient and productive communication between project partners. For this reason, this document defines the procedures for periodic internal meetings, monitoring and reporting.

1.3. Structure of the Document

The document is structured in eight chapters and will be updated as needed in the course of the project:

- **Project Details:** this section gives an overview of project objectives.
- **Work Breakdown Structure (WBS):** this section presents the WBS of the project and the dependencies among the Work Packages.
- **Project Management structure and procedures:** this section details the decision-making procedures and the organisation of the consortium bodies in the project.

- **Communication quality control:** this section describes the communication tools and procedures adopted in BRIGHT to support clear, transparent, and efficient internal communications among partners.
- **Documentation quality control:** this section describes the documentation management procedure for the project, defining standard rules and procedures that should be applied by all the project partners. It also reports the deliverable preparation workflow including the procedure required for review and formal approval.
- **Software quality control:** this section details on quality guidelines identified for handling the source code, testing, and documenting the software implemented in BRIGHT.
- **Project monitoring and reporting:** the aim of this section is to provide guidelines for the periodical reporting activities to be applied by all partners to provide data to the Project Coordinator, the preparation of management and financial reports.
- **Risk assessment and management:** this section details the project procedure for risk assessment, monitoring and mitigation for a smooth implementation of the project with respect to its objectives.

2 Project Details

Demand Response (DR) opportunities could potentially improve due to the increasing electrification of heat and transport and larger deployment of decentralized Renewable Energy Sources (RES). However, technology immaturity, regulatory fuzziness, and distorted business a framework, are limiting the extent of DR exploitation at residential consumer's level.

BRIGHT aims to put individual consumers at the centre of the process within a DR framework combining social-science driven user experience design and monetary and non-monetary incentives, in a participatory co-creation process. The framework for DR will leverage innovative technologies, including Digital Twin models, Virtual Power Plants (VPP) based on multi-layer blockchain smart contracts, and AI driven services for energy (power, heat, gas), mobility, health (comfort), smart home. The tools, services, and the underlying enablers will be deployed in 4 demo sites in Belgium, Slovenia, Italy, and Greece, targeting around 1000 consumers in a variety of different community configurations. The validation will be complemented in the early stage of development by a lab-based validation in the Netherlands.

The Consortium (Table 2) has defined a detailed plan for the project implementation. Considering the complexity of the proposal, the 36 months BRIGHT project has been structured in 10 Work Packages (WP) following a logical development of the project phases and involving the project partners according to their competencies.

No.	Organisation Name	Short Name	Country	Type
1	Engineering Ingegneria Informatica Spa	ENG	Italy	Large Enterprise
2	Universitatea Tehnica Cluj-Napoca	TUC	Romania	Higher or secondary education establishment
3	Interuniversitair Micro-Electronica Centrum	IMEC	Belgium	Research Organization
4	Comsensus, Komunikacije In Senzorika, Doo	COM	Slovenia	SME
5	Sonce Energija Doo	SONCE	Slovenia	SME
6	Iskraemeco, Merjenje In Upravljanje energije, DD	ISKRA	Slovenia	Industry
7	Emotion Srl	EMOT	Italy	SME
8	Nederlandse Organisatie Voor Toegepast Natuurwetenschappelijk Onderzoek Tno	TNO	Netherlands	Research Organization
9	Centrica Business Solutions Belgium	CEN	Belgium	Industry
10	Asm Terni Spa	ASM	Italy	Public Company
11	Ducoop	DuCoop	Belgium	Cooperative Enterprise
12	Cyberethics Lab Srls	CEL	Italy	SME
13	Domx Idiotiki Kefalaiochiki Etaireia	DOMX	Greece	Technology Provider
14	Asociatia Pro Consumatori	APC	Romania	NGO
15	Watt And Wolt Anonimi Etairia Ekmetalleysis Enallaktikon Morfon Energeias	WVT	Greece	SME
16	Suncontract Ou	Sun	Estonia	Profit Organization

Table 2 BRIGHT Consortium

3 Work Breakdown Structure (WBS)

BRIGHT is a 36 month project. The work is divided into four incremental waves (Figure 1) for fulfilling and validating the project objectives.

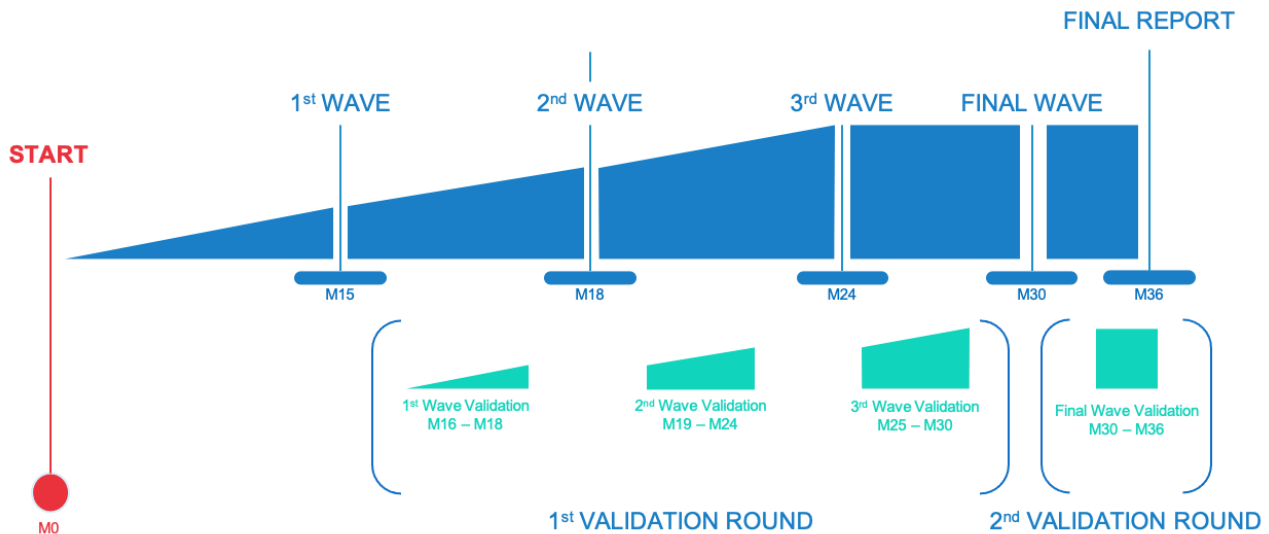


Figure 1 Development and validation cycle

The project structure is composed in total of 10 Work Packages (WP), consisting of groups of manageable activities, coherent with each other. The different Work Packages can be grouped into related areas as follows:

- Technology conceptualization: WP2, WP3.
- Tools and services development: WP4, WP5, WP6.
- Tools and services validation: WP7.
- Communication, dissemination, and exploitation: WP8, WP9.
- Project management: WP1, WP10.

The Work Breakdown Structure (WBS) is presented in Figure 2, below, while Figure 3 presents the relations and dependencies among the different Work Packages or groups of Work Packages. Finally, the Gantt chart presented in Figure 4 provides the time schedule of the activities, indicating the start and end time for each task and WP, the due date for each deliverable, and the deadline for each project milestone.

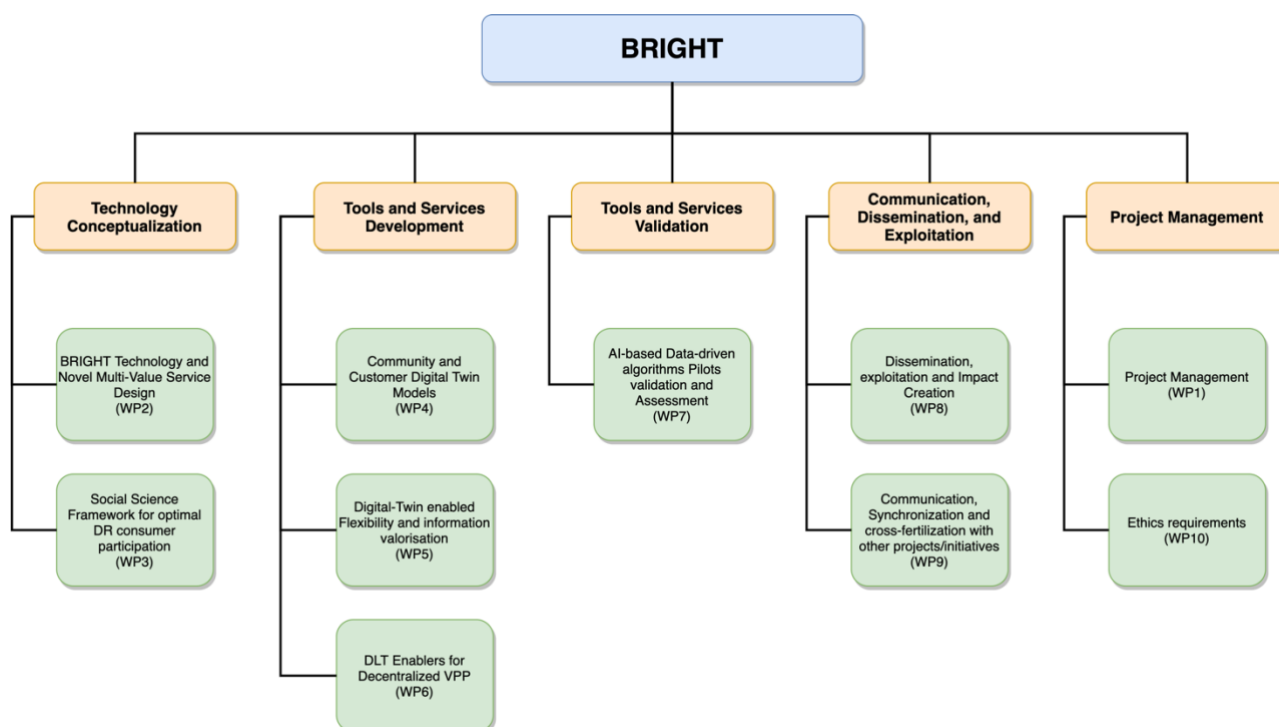


Figure 2 Work Breakdown Structure

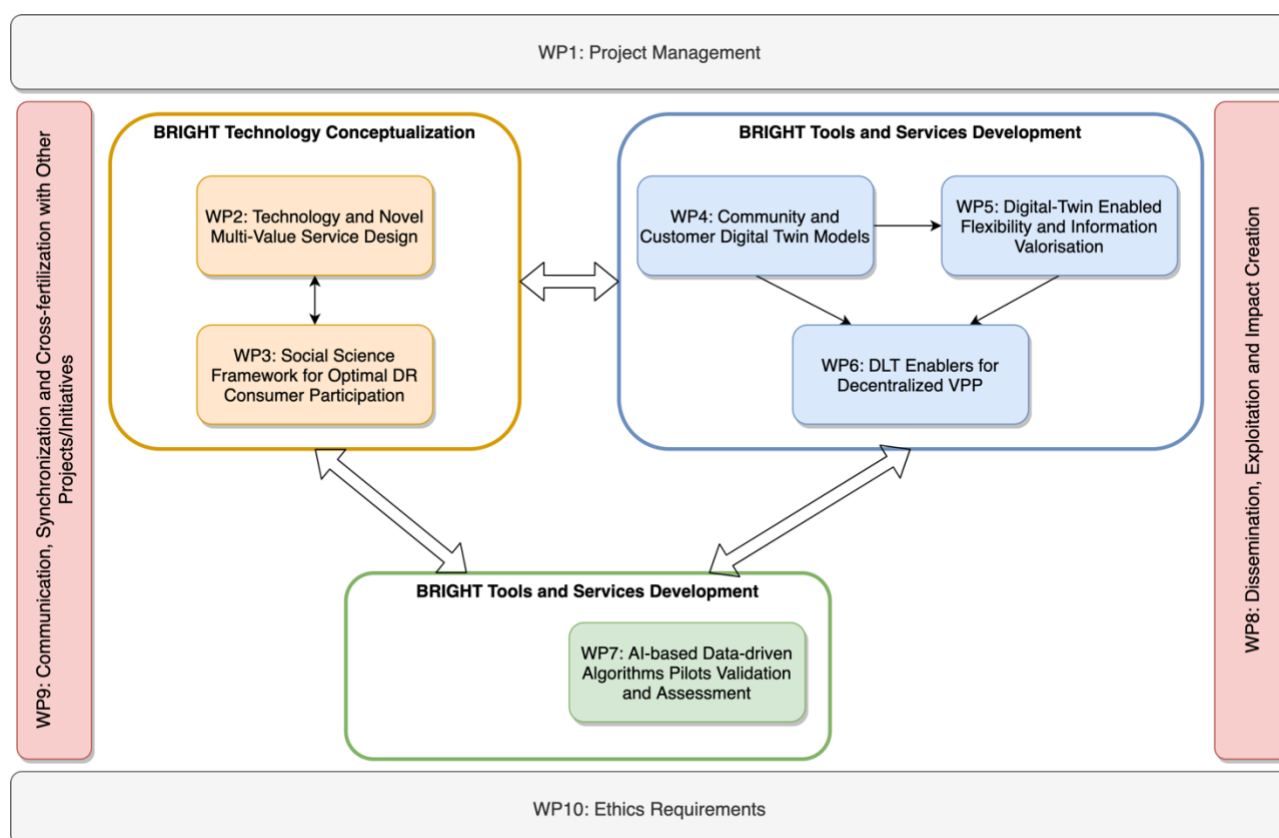


Figure 3 Work Packages Dependencies

BRIGHT D1.1 – Quality Management Plan

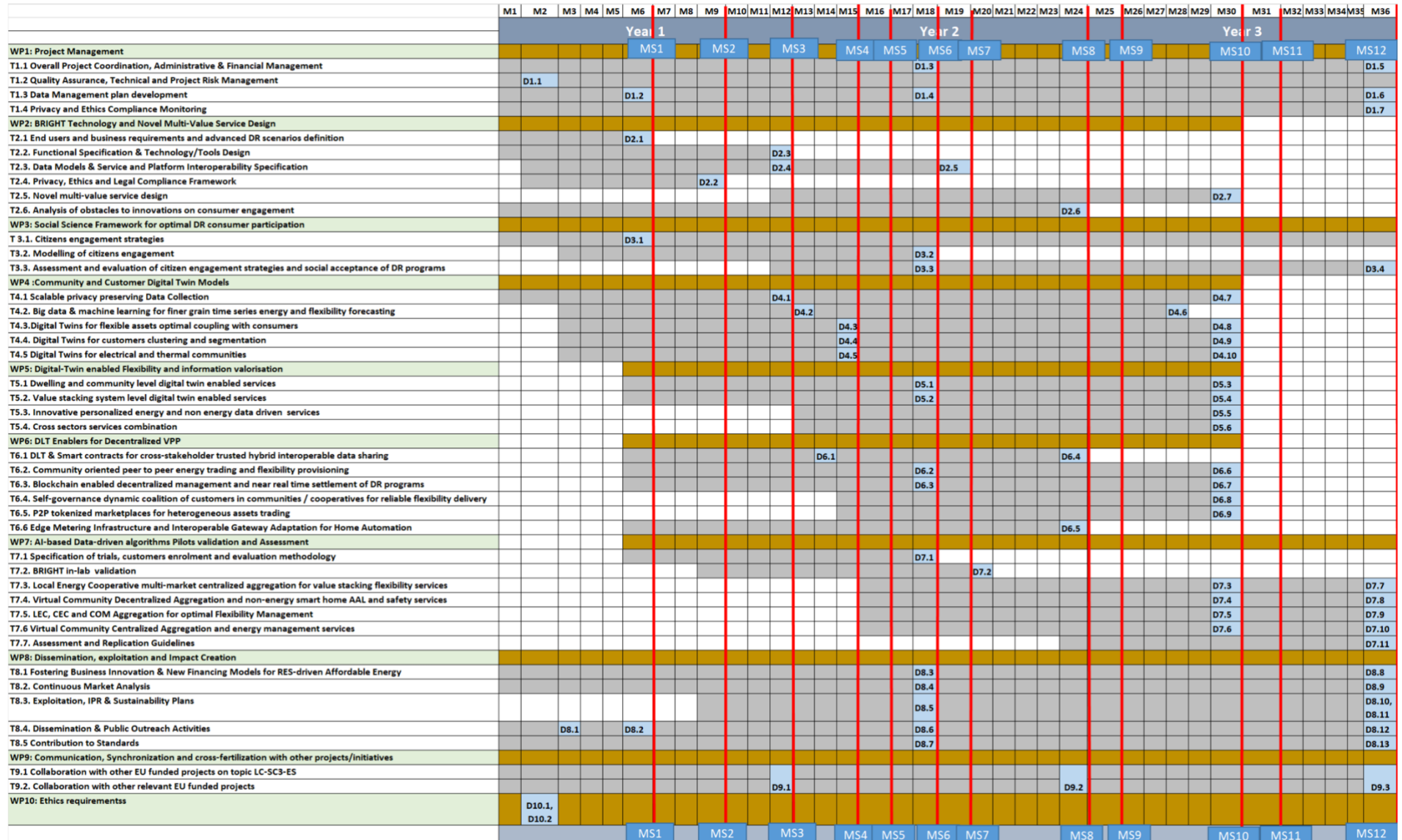


Figure 4 Project Gantt chart

Each WP is summarized below in a table, detailing the leaders, schedule, deliverables, and dependencies for each task. Each task is described in detail including the task leader and the subtasks composing it. The dependencies across different activities are summarized as follows: an “input” indicates an input from another task or WP, so the activity *depends on* its results, while an “output” indicates *handover* to another task or WP.

WP1 Project Management					
WP LEADER	ENG				
TASK	T1.1 Project Coordination, Administrative and Financial Management				
TASK LEADER	ENG				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M1	M36	Coordination of the activities of WPs and the interaction of partners.
	2	ENG	M1	M36	Establish and maintain links between project partners, EU and external organizations.
	3	ENG	M1	M36	Establish and maintain financial records, coordination of costs submission, preliminary checks of individual costs against known criteria and consolidation of cost, follow-up of EC payments, and distribution of shares.
Deliverables	#	Title		Editor	DL
	D1.1	Quality management plan		ENG	2
	D1.3	First Project Periodic Reporting		ENG	18
	D1.5	Second Project Periodic Reporting		ENG	36
Dependencies	Task/WP	Nature		Type	Description
	ALL	Input		CROSS-WP	WP coordination.
	ALL	Output		CROSS-WP	Effort and cost reporting.
TASK	T1.2 Quality Assurance, Technical and Project Risk management				
TASK LEADER	ENG				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M1	M36	Overall Technical Coordination and monitoring of ongoing technical activities.
	2	ENG	M1	M36	Overall Quality Monitoring and Risk management.
	3	ENG	M1	M36	Initial version of Quality Assessment Plan, Risk Assessment and Contingency Plans.
Deliverables	#	Title		Editor	DL
	D1.1	Quality management plan		ENG	2
Dependencies	Task/WP	Nature		Type	Description
	WP2,3,4,5 ,6	Input		CROSS-WP	Monitoring of technical activities and progress.
TASK	T1.3 Data Management Plan development				
TASK LEADER	ENG				
Starting Date	M1	End Date		M36	

Subtasks	#	Leader	Start	End	Description
	1	ENG	M1	M36	Elaboration of a data management plan
	2	ENG	M1	M36	IPR and knowledge management
Deliverables	#	Title		Editor	DL
	D1.2	Data Management Plan		ENG	6
	D1.4	Data Management Plan – second version		ENG	18
	D1.6	Data Management Plan – final version		ENG	36
Dependencies	Task/WP	Nature		Type	Description
	ALL	Output		CROSS-WP	IPR policies and data management procedures.
TASK	T1.4 Privacy and Ethics Compliance Monitoring				
TASK LEADER	CEL				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	CEL	M1	M36	Investigation, design and coordination of all the procedures and protocols for legal and ethical risks management.
	2	CEL	M1	M36	Monitoring the impacts on ethical, privacy and data protection aspects.
Deliverables	#	Title		Editor	DL
	D1.7	Report on data protection, privacy & ethical impact		CEL	36
Dependencies	Task/WP	Nature		Type	Description
	ALL	Input		CROSS-WP	Initiatives dealing with Privacy & Ethics awareness.
	ALL	Output		CROSS-WP	Privacy & Ethics guidelines and legal documentation.

Table 3 WP1 Project Management

WP2 BRIGHT Technology and Novel Multi-Value Service Design					
WP LEADER	COM				
TASK	T2.1 End users and business requirements and advanced DR scenarios definition				
TASK LEADER	SONCE				
Starting Date	M1	End Date		M6	
Subtasks	#	Leader	Start	End	Description
	1	SONCE	M1	M6	Collection of needs and requirements coming from target customers groups / communities and relevant energy market players (DSO, Aggregators, etc.).
	2	SONCE	M1	M6	Definition of business scenarios and use cases.
	3	SONCE	M1	M6	Manage active involvement of stakeholders with interviews for consolidation of use cases.
Deliverables	#	Title		Editor	DL
	D2.1	User group needs, requirement and advanced DR engagement scenarios		SONCE	6

Dependencies	Task/WP	Nature		Type	Description
	T2.2	Output		INTERNAL-WP	Business use cases and scenarios.
TASK	T2.2 Functional Specification & Technology/Tools Design				
TASK LEADER	ENG				
Starting Date	M1	End Date		M12	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M1	M12	Definition of functional and non-functional requirements.
	2	ENG	M1	M12	Definition of interfaces between the different layers and sub-systems.
Deliverables	#	Title		Editor	DL
	D2.3	DR technologies and tools		ENG	12
Dependencies	Task/WP	Nature		Type	Description
	T2.1				Business use cases and scenarios
	WP4, WP5, WP6	Output		CROSS-WP	Definition of tools design and technical specifications.
TASK	T2.3 Data Models & Service and Platform Interoperability Specifications				
TASK LEADER	COM				
Starting Date	M2	End Date		M19	
Subtasks	#	Leader	Start	End	Description
	1	COM	M2	M19	Collection, analysis and proposal of a multi-purpose semantic vocabulary and data models.
	2	COM	M2	M12	Definition of guidelines for interoperability with legacy/standard solutions.
	3	COM	M2	M19	Architecture design
Deliverables	#	Title		Editor	DL
	D2.4	Cross-domain Data & Service Interoperability – first version		COM	12
	D2.5	Cross-domain Data & Service Interoperability – final version		COM	19
Dependencies	Task/WP	Nature		Type	Description
	WP4, WP5, WP6	Output		CROSS-WP	The architecture design will describe the modules and interfaces
	WP4, WP5, WP6	Output		CROSS-WP	Data models and services
TASK	T2.4 Privacy, Ethics and Legal Compliance Framework				
TASK LEADER	CEL				
Starting Date	M2	End Date		M9	
Subtasks	#	Leader	Start	End	Description
	1	CEL	M1	M9	Exploring of standards for anonymisation and aggregation of data.
	2	CEL	M1	M9	Legal and regulatory requirements.
	3	CEL	M1	M9	Identification of cyber-security management guidelines.
Deliverables	#	Title		Editor	DL
	D2.2	Privacy, Ethics and Legal Requirements		CEL	9

Dependencies	Task/WP	Nature		Type	Description
	ALL	Output		CROSS-WP	Cyber-security and data protection requirements.
TASK	T2.5 Novel multi-value service design				
TASK LEADER	CEN				
Starting Date	M12	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	CEN	M12	M30	Design of novel multi-value chain combined services.
	2	CEN	M12	M30	At DR level design of which parameters would be more relevant to be further analysed and incorporated into subsequent modelling activities.
Deliverables	#	Title		Editor	DL
	D2.7	New multi-value services for DR engagement		CEN	30
Dependencies	Task/WP	Nature		Type	Description
	T2.1, T2.3, T2.4	Input		INTERNAL-WP	End user, business, interoperability, privacy and cyber-security requirements.
	WP4	Output		CROSS-WP	List of parameters for modelling activities.
TASK	T2.6 Analysis of obstacles to innovations on consumer engagement				
TASK LEADER	ASM				
Starting Date	M1	End Date		M24	
Subtasks	#	Leader	Start	End	Description
	1	ASM	M1	M24	Identification of technological, economic, regulatory, organizational and human barriers in engaging decentralized flexibility assets and end users in DR programs.
	2	ASM	M1	M24	Monitoring of identified barriers and policy issues.
Deliverables	#	Title		Editor	DL
	D2.6	Report on analysis on obstacles to innovation		ASM	24
Dependencies	Task/WP	Nature		Type	Description
	ALL	Output		CROSS-WP	List of technological, economic, regulatory, organizational and human barriers.

Table 4 WP2 BRIGHT Technology and Novel Multi-Value Service Design

WP3 Social Science Framework for optimal DR consumer participation					
WP LEADER	TNO				
TASK	T3.1 Citizens engagement strategies				
TASK LEADER	TNO				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	TNO	M1	M6	Reviewing existing products, services, incentives and policies that can both hinder or enable consumer/citizen engagement.

	2	TNO	M1	M36	Co-creation activities with stakeholders of each pilot to design new products and services, using insights from CODEC.
	3	TNO	M1	M36	Test products with end-users in the pilots as well as evaluation of social acceptance and consumer engagement strategies
Deliverables	#	Title		Editor	DL
	D3.1	Overview of barriers and drivers for consumer engagement in DR		TNO	6
Dependencies	Task/WP	Nature		Type	Description
	T2.1	Input / Output		CROSS-WP	User group needs, requirements and advanced DR engagement scenarios
	T3.2, T3.3	Output		INTERNAL-WP	Requirements and co-creation of products and services for citizen engagement in DR as well as consumer engagement and social acceptance framework
	T7.3 - T7.6				Test cases from pilots highlighting citizen engagement activities already in practice.
TASK	T3.2 Modelling of citizens engagement				
TASK LEADER	TNO				
Starting Date	M6	End Date		M18	
Subtasks	#	Leader	Start	End	Description
	1	TNO	M1	M18	Adapt the consumer decision model CODEC for DR programs.
	2	TNO	M1	M18	Creation of customer segments based on collection of data (interviews, questionnaires, existing data) at pilot locations.
	3	TNO	M1	M18	Set up co-simulation platform for ESSIM and CODEC.
	4	TNO	M1	M18	Quantify estimations of uptake of different existing products and services for DR providing points of improvements.
Deliverables	#	Title		Editor	DL
	D3.2	CODEC model adapted to estimate the uptake of DR products and services		TNO	18
Dependencies	Task/WP	Nature		Type	Description
	T3.1	Input			Identified factors for citizen engagement
	WP4, WP5, WP6, WP7	Input		CROSS-WP	Citizens engagement from pilots
	T8.1	Output			Enhancing business models
TASK	T3.3 Assessment and evaluation of citizen engagement strategies and social acceptance of DR programs				
TASK LEADER	CEL				
Starting Date	M12	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	COM	M12	M24	Definition, measurement, and tracking of KPIs to evaluate the DR consumer engagement process.

	2	CEL	M12	M36	Analysis on social acceptance of the transition towards DR by considering four main dimensions: socio-political, value dimension, market acceptance, and Trustability.
Deliverables	#	Title		Editor	DL
	D3.3	Assessment and evaluation of citizen engagement strategies and social acceptance in BRIGHT – first version		CEL	24
	D3.4	Assessment and evaluation of citizen engagement strategies and social acceptance in BRIGHT – final version		CEL	36
Dependencies	Task/WP	Nature		Type	Description
	T3.1	Input		INTERNAL-WP	Identified factors for citizen engagement
	WP7	Input		CROSS-WP	Data collection from citizens engagement.

Table 5 WP3 Social Science Framework for optimal DR consumer participation

WP4 Community and Customer Digital Twin Models					
WP LEADER	IMEC				
TASK	T4.1 Scalable privacy preserving Data Collection				
TASK LEADER	COM				
Starting Date	M1	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	COM	M1	M30	Data collection process for modelling/DT creation and AI enabled DR technologies implementation.
Deliverables	#	Title		Editor	DL
	D4.1	Data Collection – first version		COM	12
	D4.7	Data Collection – final version		COM	30
Dependencies	Task/WP	Nature		Type	Description
TASK	T4.2 Big data & ML for finer grain time series energy and flexibility forecasting				
TASK LEADER	TUC				
Starting Date	M3	End Date		M28	
Subtasks	#	Leader	Start	End	Description
	1	TUC	M3	M28	Forecasting tool based on big data enabled ML techniques.
	2	TNO	M3	M28	Improve energy prediction error rate by combining the output of different forecasting algorithms in various situations/ combinations of features and historical data.
Deliverables	#	Title		Editor	DL
	D4.2	Big data fine-grained distributed energy		TUC	13

		forecasting tool – first version			
	D4.6	Big data fine-grained distributed energy forecasting tool – final version		TUC	28
Dependencies	Task/WP	Nature		Type	Description
	T4.1	Input		INTERNAL-WP	Collected data for the forecasting process
	T4.3	Output		INTERNAL-WP	Forecasting results for developing the coupled DT of the user
	WP2	Input		CROSS-WP	System requirements, use cases and scenarios.
TASK	T4.3 Digital Twins for flexible assets optimal coupling with consumers				
TASK LEADER	TNO				
Starting Date	M3	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	TNO	M3	M30	Identification of flexible assets and creation of templates for typical assets
	2	TNO	M3	M30	Development of a proof of concept of DT models for identified flexible assets aiming to enact their optimal control and dynamic coupling with consumers.
	3	TNO	M3	M30	DT models parameterisation and training.
Deliverables	#	Title		Editor	DL
	D4.3	Flexible assets DT models – first version		TNO	15
	D4.8	Flexible assets DT models – final version		TNO	30
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input		CROSS-WP	Use cases specifications & requirements.
	WP3	Input		CROSS-WP	Consumer engagement hooks (via potentially co-creation cross WP workshops).
	WP5	Output		CROSS-WP	Flexible assets DT models
	WP7	Input / Output		CROSS-WP	Test cases from pilots including in-lab validation planning; data and evaluation feedback from pilots
TASK	T4.4 Digital Twins for customers clustering and segmentation				
TASK LEADER	IMEC				
Starting Date	M3	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	IMEC	M3	M30	Study on the application of existing generic time series clustering approaches (e.g., k-means, G-means, d-stream, k-shape).
	2	IMEC	M3	M30	Load profiling and customer segmentation service.
	3	IMEC	M3	M30	Development of multi-dimensional clustering techniques.
Deliverables	#	Title		Editor	DL
	D4.4	DTs’ model for customer’s categorization – first version		IMEC	15

	D4.9	DTs’ model for customer’s categorization – final version		IMEC	30
Dependencies	Task/WP	Nature		Type	Description
	WP2 & WP3	Input		CROSS-WP	User requirements, use cases, specifications definitions and social-science driven insights.
TASK	T4.5 Digital Twins for electrical and thermal communities				
TASK LEADER	IMEC				
Starting Date	M3	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	IMEC	M3	M30	Statistical analysis and generative model development for creation of electrical DT models.
	2	IMEC	M3	M30	Statistical analysis and generative model development for creation of thermal DT models.
	3	IMEC	M3	M30	Study on aggregation models.
Deliverables	#	Title		Editor	DL
	D4.5	Electrical and thermal communities DTs’ models – first version		IMEC	15
	D4.10	Electrical and thermal communities DTs’ models – final version		IMEC	30
Dependencies	Task/WP	Nature		Type	Description
	WP2 & WP3	Input		CROSS-WP	User requirements, use cases, specifications definitions and social-science driven insights.

Table 6 WP4 Community and Customer Digital Twin Models

WP5 Digital-Twin enabled Flexibility and information valorisation					
WP LEADER	CEN				
TASK	T5.1 Dwelling and community level digital twin enabled services				
TASK LEADER	CEN				
Starting Date	M6	End Date	M30		
Subtasks	#	Leader	Start	End	Description
	1	CEN	M6	M30	Specification of ML algorithms for a range of flexibility services both at the level of a dwelling and at the level of a community.
	2	CEN	M6	M30	Outcomes and performance of developed algorithms.
Deliverables	#	Title		Editor	DL
	D5.1	Dwelling and community level DT enabled flexibility services – first version		CEN	18
	D5.3	Dwelling and community level DT enabled flexibility services – final version		CEN	30
Dependencies	Task/WP	Nature		Type	Description
	WP4	Input		CROSS-WP	DT models for flexible assets and end users.
	T5.2	Output		INTERNAL-WP	Algorithms for flexibility services at community level.

TASK	T5.2 Value stacking system level digital twin enabled services				
TASK LEADER	CEN				
Starting Date	M6	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	CEN	M3	M28	Design of community of communities architecture.
	2	CEN	M3	M28	Algorithms for inter community services.
Deliverables	#	Title		Editor	DL
	D5.2	Value stacking and system level services: A community of communities’ algorithms for flexibility management – first version		CEN	18
	D5.4	Value stacking and system level services: A community of communities’ algorithms for flexibility management – final version		CEN	30
Dependencies	Task/WP	Nature		Type	Description
	WP4	Input		CROSS-WP	DT models for flexible assets and end users.
	WP7	Output		CROSS-WP	Pilot demonstrations
TASK	T5.3 Innovative personalized energy and non-energy data driven smart home services				
TASK LEADER	COM				
Starting Date	M13	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	COM	M13	M30	Prototype implementation on machine learning services applied to smart home/neighbourhood domain.
	2	COM	M13	M30	Definition of non-energy services to support cross-domain interoperability, such as pattern/anomaly detection and alarming in elderly care.
Deliverables	#	Title		Editor	DL
	D5.5	Services for energy driven smart homes		COM	30
Dependencies	Task/WP	Nature		Type	Description
	WP4	Input		CROSS-WP	DT models for flexible assets and end users.
TASK	T5.4 Cross sectors services combination				
TASK LEADER	TUC				
Starting Date	M13	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	TUC	M13	M30	Optimal combination of data and services cross sectors personalized to the costumers / community’s needs.
	2	TUC	M13	M30	Creation of dynamic coalitions of prosumers in virtual communities to meet the technical and services level constraints.
Deliverables	#	Title		Editor	DL

	D5.6	Heuristics for cross sector services optimal	TUC	30
Dependencies	Task/WP	Nature	Type	Description
	WP4	Input	CROSS-WP	DT models for flexible assets and end users.

Table 7 WP5 Digital-Twin enabled Flexibility and information valorisation

WP6 DLT Enablers for Decentralized VPP					
WP LEADER	ENG				
TASK	T6.1 DLT & Smart contracts for cross-stakeholder trusted hybrid interoperable data sharing				
TASK LEADER	ENG				
Starting Date	M6	End Date		M24	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M6	M24	Scalable distributed ledger for storage and sharing of smart energy cross-domain heterogeneous data.
	2	ENG	M6	M24	Extension of FIWARE NGSI ETSI Standard Context broker.
	3	ENG	M6	M24	Test of the platform in terms of immutability, traceability, accountability, and notarization/time stamping.
	4	ENG	M6	M24	Development of mechanisms for managing and enforcing data access policies (DAP).
Deliverables	#	Title		Editor	DL
	D6.1	DLT/Smart contracts Data Governance for digital fingerprinting of energy data – first version		ENG	14
	D6.4	DLT/Smart contracts Data Governance for digital fingerprinting of energy data – final version		ENG	24
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input		CROSS-WP	Functional and non-functional requirements.
TASK	T6.2 Community oriented peer to peer energy trading and flexibility provisioning				
TASK LEADER	ENG				
Starting Date	M6	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M6	M30	Development of a P2P blockchain based energy-trading platform.
	2	ENG	M6	M30	Implementation of a system based on distributed databases to store prosumers personally identifiable data.
	3	ENG	M6	M30	Deploy of Data Harmonization tool to manage access to data to different actors in the energy ecosystem as well as external services/ platforms.
Deliverables	#	Title		Editor	DL
	D6.2	P2P flexibility provisioning tool – first version		ENG	18
	D6.6	P2P flexibility provisioning tool – final version		ENG	30
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input		CROSS-WP	Functional and non-functional requirements.
TASK	T6.3 Blockchain enabled decentralized management and near real time settlement of DR programs				
TASK LEADER	TUC				
Starting Date	M6	End Date		M30	
Subtasks	#	Leader	Start	End	Description

	1	TUC	M6	M30	Development of blockchain based platform for distributed management, control, and validation of DR services in low/medium voltage smart grids.
	2	TUC	M6	M30	Implementation of mechanism for near real time settlement of DR.
Deliverables	#	Title		Editor	DL
	D6.3	Blockchain based management platform for DR programs – first version		TUC	18
	D6.7	Blockchain based management platform for DR programs – final version		TUC	30
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input		CROSS-WP	Functional and non-functional requirements.
	T6.5	Output		INTERNAL-WP	Blockchain based management platform for DR.
TASK	T6.4 Self-governance dynamic coalition of customers in communities / cooperatives for reliable flexibility delivery				
TASK LEADER	TUC				
Starting Date	M15	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	TUC	M15	M30	Development self-enforcing smart contracts-based platform for self-governance coalitions of prosumers in virtual or hybrid communities.
	2	TUC	M15	M30	Development of well-defined policies addressing: prosumer level constraints, the constraints imposed by the targeted combination of service to be delivered, and the rules for including and/or excluding prosumers from the virtual community.
Deliverables	#	Title		Editor	DL
	D6.8	Smart contracts for coalition of customers in communities / cooperatives		TUC	30
Dependencies	Task/WP	Nature		Type	Description
	WP5	Input		CROSS-WP	Hybrid optimization heuristics for cross sector combination of services.
TASK	T6.5 P2P tokenized marketplaces for heterogeneous assets trading				
TASK LEADER	ENG				
Starting Date	M15	End Date		M30	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M15	M30	Implementation trustable and secure mechanisms based on smart contracts for heterogeneous assets monetisation.
	2	ENG	M15	M30	Integration of monetization mechanisms with the blockchain based management platform for DR developed in T6.3.

Deliverables	#	Title		Editor	DL
	D6.9	DLT Blockchain and Smart Contracts for tokenized heterogeneous asset trading		ENG	30
Dependencies	Task/WP	Nature		Type	Description
TASK	T6.6 Edge Metering Infrastructure and Interoperable Gateway Adaptation for Home Automation				
TASK LEADER	DOMX				
Starting Date	M6	End Date		M24	
Subtasks	#	Leader	Start	End	Description
	1	DOMX	M6	M24	Deploy of edge-level stack for behind-the-meter electricity near real time consumption and flexibility data gathering and monitoring.
	2	DOMX	M6	M24	Integration of home level gateway for the interoperable management of control action over IoT-enabled appliance and devices.
	3	DOMX	M6	M24	Energy Flexibility Interface (EFI) and the CEN/CENELEC S2 communication protocols are exploited to control smart devices.
Deliverables	#	Title		Editor	DL
	D6.5	Edge interoperable gateway for home automation		DOMX	24
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input		CROSS-WP	Business and user requirements.

Table 8 WP6 DLT Enablers for Decentralized VPP

WP7 AI-based Data-driven algorithms Pilots validation and Assessment					
WP LEADER	TUC				
TASK	T7.1 Specification of trials, customers enrolment and evaluation methodology				
TASK LEADER	TUC				
Starting Date	M6	End Date		M18	
Subtasks	#	Leader	Start	End	Description
	1	TUC	M6	M18	Definition of KPIs.
	2	TUC	M6	M18	Mapping of use cases and the definitions of the KPI to different trials sites and technology demonstrators.
	3	TUC	M6	M18	Draft of technology validation plan.
Deliverables	#	Title		Editor	DL
	D7.1	Trial scenario Definitions and Evaluation Methodology		TUC	18
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input		CROSS-WP	Use cases, scenarios, functional and non-functional requirements.
	WP3	Input		CROSS-WP	Consumer engagement in DR.
	WP4, WP5, WP6	Input		CROSS-WP	Technology and tools developed.

	T7.2, T7.3, T7.4, T7.5, T7.6	Output		INTERNAL- WP	Validation plan to trial sites.
TASK	T7.2 BRIGHT in-lab validation				
TASK LEADER	TNO				
Starting Date	M9	End Date		M20	
Subtasks	#	Leader	Start	End	Description
	1	TNO	M9	M20	Setup of individual evaluations for pilots of BRIGHT technology in-lab.
	2	TNO	M9	M20	Exploitation of Hybrid System Integration (HESI) lab facility.
	3	TNO	M9	M20	Report lessons learned and technological feedback to the follow up deployment.
Deliverables	#	Title		Editor	DL
	D7.2	BRIGHT in lab validation report		TNO	20
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input/Output		CROSS-WP	System requirements, use cases and scenarios. Validation feedback
	WP3	Input/Output		CROSS-WP	Consumer engagement in DR. Validation feedback
	WP4-, WP5, WP6	Input/Output		CROSS-WP	Technologies to validate at (to-be) identified HESI’s test cases. Technology and tools developed. Validation feedback
	T7.3 -, T7.4, T7.5, T7.6, T7.7	Input / Output		INTERNAL-WP	Pilot’s data. In-lab validation results and feedback for deployment preparations
TASK	T7.3 Local Energy Cooperative multi-market centralized aggregation for value stacking flexibility services				
TASK LEADER	DuCoop				
Starting Date	M16	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	DuCoop	M16	M36	Demonstration of Pilot site 1, Local Energy Cooperative Multi-Market centralized aggregation for value stacking flexibility services.
	2	DuCoop	M16	M36	KPI calculation results.
Deliverables	#	Title		Editor	DL
	D7.3	Belgium pilot: Local Energy Cooperative multi-market centralized aggregation - 1st trials		DuCoop	30
	D7.7	Belgium pilot: Local Energy Cooperative multi-market centralized aggregation – 2nd trials		DuCoop	36
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input/Output		CROSS-WP	User requirements, use cases and specifications definition. Validation feedback
	WP3	Input/Output		CROSS-WP	Consumer engagement in DR. Data collection and validation feedback
	WP4, WP5, WP6	Input/Output		CROSS-WP	Technology and tools developed. Validation feedback

	T7.3-7.6	Output		INTERNAL-WP	Pilot Trials results
	T7.1 and T7.2	Input		INTERNAL-WP	Validation plan to trial sites. In-lab validation feedback.
TASK	T7.4 Virtual Community Decentralized Aggregation and non-energy smart home AAL and safety services				
TASK LEADER	SONCE				
Starting Date	M16	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	SONCE	M16	M36	Deploy of B-DT, B-EMHC, B-FLEX, and B-DLT solutions in pilot site 2.
	2	SONCE	M16	M36	KPI calculation results.
	3	SONCE	M16	M36	Users’ willingness and commitment to active participation will be analysed in the context of various DR schemes market acceptance.
Deliverables	#	Title		Editor	DL
	D7.4	Slovenian pilot: Demand-response aggregation and non-energy services in decentralized virtual community of smart home users - 1st trials		SONCE	30
	D7.8	Slovenian pilot: Demand-response aggregation and non-energy services in decentralized virtual community of smart home users – 2nd trials		SONCE	36
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input/Output		CROSS-WP	User requirements, use cases and specifications definition. Validation feedback
	WP3	Input/Output		CROSS-WP	Consumer engagement in DR. Data collection and validation feedback
	WP4, WP5, WP6	Input/Output		CROSS-WP	Technology and tools developed. Validation feedback
	T7.3-7.6	Output		INTERNAL-WP	Pilot Trials results
	T7.1 and T7.2	Input		INTERNAL-WP	Validation plan to trial sites. In-lab validation feedback.
TASK	T7.5 LEC, CEC and COM Aggregation for optimal Flexibility Management				
TASK LEADER	ASM				
Starting Date	M16	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	ASM	M16	M36	Integration of B-DT, B-DLT, B-EMHC, B-FLEX with IOT smart meters already in operation.
	2	ASM	M16	M36	Demonstration of Terni pilot site.
	3	ASM	M16	M36	KPI calculation results.
	4	ASM	M16	M36	Assess user acceptance and impact (social and economic).
Deliverables	#	Title		Editor	DL

	D7.5	Italian pilot: Aggregation for optimal Flexibility Management - 1st trials		ASM	30
	D7.9	Italian pilot: Aggregation for optimal Flexibility Management - 2nd trials		ASM	36
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input/Output		CROSS-WP	User requirements, use cases and specifications definition. Validation feedback
	WP3	Input/Output		CROSS-WP	Consumer engagement in DR. Data collection and validation feedback
	WP4, WP5, WP6	Input/Output		CROSS-WP	Technology and tools developed. Validation feedback
	T7.3-7.6	Output		INTERNAL-WP	Pilot Trials results
	T7.1 and T7.2	Input		INTERNAL-WP	Validation plan to trial sites. In-lab validation feedback.
TASK	T7.6 Virtual Community Centralized Aggregation and energy management services				
TASK LEADER	WVT				
Starting Date	M16	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	WVT	M16	M36	Demonstration of IoT-assisted energy and comfort management through advanced home-IoT gateways, sensors, metering and automation tools.
	2	WVT	M16	M36	Promoting user participation in electricity DR scheme.
	3	WVT	M16	M36	Engagement of pilot population using smartphone applications and dashboards providing user interaction with connected home appliances and systems.
Deliverables	#	Title		Editor	DL
	D7.6	Greece pilot: Virtual Community Centralized Aggregation and energy management services - 1st trials		WVT	30
	D7.10	Greece pilot: Virtual Community Centralized Aggregation and energy management services - 2nd trials		WVT	36
Dependencies	Task/WP	Nature		Type	Description
	WP2	Input/Output		CROSS-WP	User requirements, use cases and specifications definition. Validation feedback
	WP3	Input/Output		CROSS-WP	Consumer engagement in DR. Data collection and validation feedback
	WP4, WP5, WP6	Input/Output		CROSS-WP	Technology and tools developed. Validation feedback
	T7.3-7.6	Output		INTERNAL-WP	Pilot Trials results
	T7.1 and T7.2	Input		INTERNAL-WP	Validation plan to trial sites. In-lab validation feedback.

TASK	T7.7 Assessment and Replication Guidelines				
TASK LEADER	TUC				
Starting Date	M24	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	TUC	M24	M36	Report on final assessment of project results in testing sites.
	2	TUC	M24	M36	List of replication guidelines.
Deliverables	#	Title		Editor	DL
	D7.11	Project results evaluation and replication guidelines		TUC	36
Dependencies	Task/WP	Nature		Type	Description
	T7.1-T7.6	Input		INTERNAL-WP	Technology validation plan. Trials results
	T7.3-7.6				Project results in testing sites
	WP2	Input		CROSS-WP	Use cases and scenarios for replicability.
	WP4, WP5, WP6	Input		CROSS-WP	Final technology and tools developed.

Table 9 WP7 AI-based Data-driven algorithms Pilots validation and Assessment

WP8 Dissemination, exploitation and Impact Creation					
WP LEADER	SONCE				
TASK	T8.1 Fostering Business Innovation & New Financing Models for RES-driven Affordable Energy				
TASK LEADER	ENG				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M1	M18	Definition of business models, pricing models and communication strategies.
	2	ENG	M1	M18	Identify relevant target groups and key stakeholder for dissemination activities.
	3	ENG	M1	M36	Refinement of business models.
Deliverables	#	Title		Editor	DL
	D8.3	BRIGHT new business models– first version		ENG	18
	D8.8	BRIGHT new business models – final		ENG	36
Dependencies	Task/WP	Nature		Type	Description
	ALL	Output		CROSS-WP	Definition of business models.
	WP2	Input		CROSS-WP	Collection of requirements and identification of targets, resources, events and strategies
TASK	T8.2 Continuous Market Analysis				
TASK LEADER	SONCE				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	SONCE	M1	M36	Monitoring of global development of DR services, energy communities, VPPs, microgrids, local energy/ flexibility markets and multi-energy hubs.
	2	SONCE	M1	M36	Analysis on existing solutions to understand how BRIGHT tools can interface and interoperate with them.
Deliverables	#	Title		Editor	DL

	D8.4	BRIGHT market analysis – first version		SONCE	18
	D8.9	BRIGHT market analysis – final version		SONCE	36
Dependencies	Task/WP	Nature		Type	Description
	ALL	Output		CROSS-WP	Market analysis result.
TASK	T8.3 Exploitation, IPR & Sustainability Plans				
TASK LEADER	SONCE				
Starting Date	M9	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	SONCE	M9	M36	Definition of exploitation plan.
	2	SONCE	M9	M36	Identify and agree an IPR protection plan as an ongoing concern.
	3	SONCE	M9	M36	Definition of sustainability plan.
	4	SONCE	M9	M36	Identification of target policy makers and regulators for BRIGHT manifesto
	5	SONCE	M9	M36	Selection of properties, capabilities, and replication guidelines for the BRIGHT manifesto
Deliverables	#	Title		Editor	DL
	D8.5	BRIGHT exploitation planning – first version		SONCE	18
	D8.10	BRIGHT exploitation planning – final version		SONCE	36
	D8.11	BRIGHT manifesto, recommendations to policy makers		SONCE	36
Dependencies	Task/WP	Nature		Type	Description
	ALL	Output		CROSS-WP	Exploitation, IPR, Sustainability plans.
TASK	T8.4 Dissemination & Public Outreach Activities				
TASK LEADER	APC				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	APC	M1	M36	Creation of the web page and social media accounts.
	2	APC	M1	M36	Maintenance of the web and social media channels.
	3	APC	M1	M36	Creation of the project leaflet.
	4	APC	M1	M36	Manage all dissemination events and publications based on a defined plan.
	5	APC	M1	M36	Increase BRIGHT awareness through the BEUC initiatives (meetings, workshops, web site).
Deliverables	#	Title		Editor	DL
	D8.1	Project Website		ASM	3
	D8.2	Dissemination and Communication Plan		APC	6
	D8.6	Report on dissemination – first version		APC	18
	D8.12	Report on dissemination – final version		APC	36
Dependencies	Task/WP	Nature		Type	Description
	ALL	Output		CROSS-WP	Project website.
	ALL	Output		CROSS-WP	Dissemination and communication plan.

	ALL	Input	CROSS-WP	Collaboration to update the web and social media channels	
	ALL	Input	CROSS-WP	Collection of publications and dissemination events.	
TASK	T8.5 Contribution to standards				
TASK LEADER	TNO				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	TNO	M1	M36	Active collaboration with SDOs.
	2	TNO	M1	M36	Creation of working groups dealing with data interoperability, home automation, prosumer flexibility.
	3	TNO	M1	M36	Standardisation activities in the created working groups.
Deliverables	#	Title		Editor	DL
	D8.7	Standardization activities – first version		TNO	18
	D8.13	Standardization activities – final version		TNO	36
Dependencies	Task/WP	Nature		Type	Description
	WP3	Input			Citizen engagement recommendations towards CEC & REC roadmap (Clean Energy Package)

Table 10 WP8 Dissemination, exploitation and Impact Creation

WP9 Communication, Synchronization and cross-fertilization with other projects/initiatives					
WP LEADER	ENG				
TASK	T9.1 Collaboration with other EU funded projects on topic LC-SC3-ES-5				
TASK LEADER	ENG				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M1	M18	Identification of a set of H2020 projects with common topics and definition of a collaboration strategy.
	2	ENG	M1	M18	Collaboration activities.
	3	ENG	M1	M36	Final report on collaboration with H2020 projects.
Deliverables	#	Title		Editor	DL
	D9.1	Report on collaboration with other projects – first version		ENG	12
	D9.2	Report on collaboration with other projects – second version		ENG	24
	D9.3	Report on collaboration with other projects – final version		ENG	36
Dependencies	Task/WP	Nature		Type	Description
	WP8	Input		CROSS-WP	Dissemination activities.
	WP2-7	Input/output		CROSS-WP	Two-way updates/communication/dissemination
TASK	T9.2 Collaboration with other relevant EU funded projects				
TASK LEADER	ENG				

Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M1	M36	Active participation on workshops related to policy relevant issues such as regulatory frameworks, business models and obstacles to Smart Grid innovation
	2	ENG	M1	M36	Active contribution to common information and dissemination activities with EASME.
	3	ENG	M1	M36	Continuous systematic cooperation with BRIDGE activities.
Deliverables	#	Title		Editor	DL
	D9.1	Report on collaboration with other projects – first version		ENG	18
	D9.2	Report on collaboration with other projects – second version		ENG	24
	D9.3	Report on collaboration with other projects – final version		ENG	36
Dependencies	Task/WP	Nature		Type	Description
	WP8				Dissemination activities

Table 11 WP9 Communication, Synchronization and cross-fertilization with other projects/initiatives

WP10 Ethics requirements					
WP LEADER	ENG				
TASK	Ethics requirements				
TASK LEADER	ENG				
Starting Date	M1	End Date		M36	
Subtasks	#	Leader	Start	End	Description
	1	ENG	M1	M36	Monitoring of Privacy & Ethic issues within the project and check of the observance of EU rules concerning data protection.
	2	ENG	M1	M36	Providing support to the project members in dealing with the privacy issues by producing the needed guidelines and legal documentation.
Deliverables	#	Title		Editor	DL
	D10.1	H - Requirement No. 1		ENG	2
	D10.2	POPD - Requirement No. 2		ENG	2
Dependencies	Task/WP	Nature		Type	Description

Table 12 WP10 Ethics requirements

4 Project management structure and procedures

The management structure of the project is designed to enable efficient information and communication flows within the consortium and external stakeholders, as well as decision making mechanisms to assure project quality management and control.

In terms of management, this quality plan takes in consideration the following key quality objectives:

- define the operational plan and the action plan that will ensure successful collaboration between all parties involved in the project, in line with quality standards
- implement a progress monitoring and evaluation system
- submit deliverables in compliance with planned commitments and agreed cost plans
- identify critical issues as soon as possible in the life cycle of the Project and apply appropriate, efficient and cost-effective resolutions
- enable active collaboration and information flow among project partners to ensure the gradual achievement of the project objectives.

Proper governance and appropriate control of the overall management of BRIGHT are ensured by following means:

- quality standards, methodologies, procedures and tools to ensure the quality of the activities
- program and responsibility for conducting quality assurance activities
- risk management plan, which identifies possible risks and corresponding emergency plans.

4.1 Organisational structure, roles and responsibilities

The organisational structure is based on hierarchical management layers. The coordination and management activities of the project will be performed by the Project Coordinator (PC) in cooperation with the other Consortium Bodies that are introduced later in this section.

The work is organised in 10 Work Packages (WP's), led by Work Packages Leaders (WPL's), which are in charge of coordinating, planning, monitoring and reporting to the PC about WP progress. Figure 5 shows the overall organisation and all bodies for the administrative and technical management.

The organisational structure of the Consortium is defined in the project Consortium Agreement (CA), where the main roles and responsibilities are specified. In this section, the same information is summarized for reference.

Governance structure

The organisational structure of the project comprises: The *Management Board*, as the ultimate decision-making body of the consortium, the *Executive Board*, as the supervisory body for the execution of the project, which reports to the Management Board and the Coordinator, acting as the intermediary between the parties and the Funding Authority.

Project Coordinator

The Coordinator is the intermediary between the parties and the Funding Authority. Its tasks are defined in the Grant Agreement and the Consortium Agreement. The Coordinator is responsible for monitoring the compliance of the project partners with their obligations, keeping an updated list of project members and contact persons, collecting, reviewing, and verifying reports to the Funding

Authority, transmitting documents and information connected with the project to any of the parties concerned, and administering the financial contribution. The project coordinator is Mr. Vincenzo Croce, from Engineering.

Management Board

The Management Board consists of one representative of each project partner. The Management Board meetings are chaired by the Coordinator. The Management Board is in charge of decisions about content, finances, IPR, and evolution of the Consortium. It is also in charge of the appointment of Executive Board members. The Management Board Members list is presented in Table 13.

No.	Partner	Reference Person
1	ENG	Vincenzo Croce
2	TUC	Tudor Cioara
3	IMEC	Chris Develder
4	COM	Miha Smolnikar
5	SONCE	Gregor Novak
6	ISKRA	Tomaz Dostal
7	EMOT	Francesco Bellesini
8	TNO	Vasiliki Georgiadou
9	CEN	Ruben Bäumer
10	ASM	Francesca Santori
11	DuCoop	Chaim De Mulder
12	CEL	Carmela Occhipinti
13	DOMX	Stratos Keranidis
14	APC	Emil Bojin
15	WVT	Konstantinos Arvanitis
16	SUN	Mojca Bajec

Table 13 Management Board List

Executive Board

The Executive Board consists of the Coordinator and the Parties appointed by the Management Board. The Coordinator chairs the Executive Board meetings. The Executive Board is responsible for the proper execution and implementation of the decisions of the Management Board, and monitors the effective implementation of the project.

The Executive Board members identified, in addition to the Project Coordinator, are presented in Figure 5. The *Technical Manager* is Mr. Giuseppe Raveduto, from Engineering. The role of the Technical Manager is to work closely with the Coordinator, providing technical expertise, ensuring effective communication with all project partners and assisting in the overall management of the project. The *Innovation Manager* is Mr. Gregor Novak, from Suncontract. The Innovation Manager defines the innovation process to be followed in the project and ensure that it is being fulfilled. He will oversee the alignment of the technical development of tools and services with the business exploitation and coordinates the exploitation tasks, working in close collaboration with the Technical Manager. The *Quality Manager* is Mr. Diego Arnone, from Engineering. The Quality Manager supports the Coordinator, helps monitoring the project progress and possible deviations from the project plan. The *Data Protection Officer* (DPO) is Ms. Carmela Occhipinti, from Cyberethics Lab. The DPO develops the Data Management Plan and monitors and ensures compliance with the *General Data Protection Regulation* (GDPR). The *EC Strategies & Policy Liaisons Manager* is Mr. Massimo Bertoncini, from Engineering. He will advise the Consortium on new strategies and

strategic input from the EC and on how to incorporate them in the project activities, aligning the project vision with the priorities set by EC.

The Executive Board Members list is presented in Table 14, which details for each role the project partner and the contact person responsible for it.

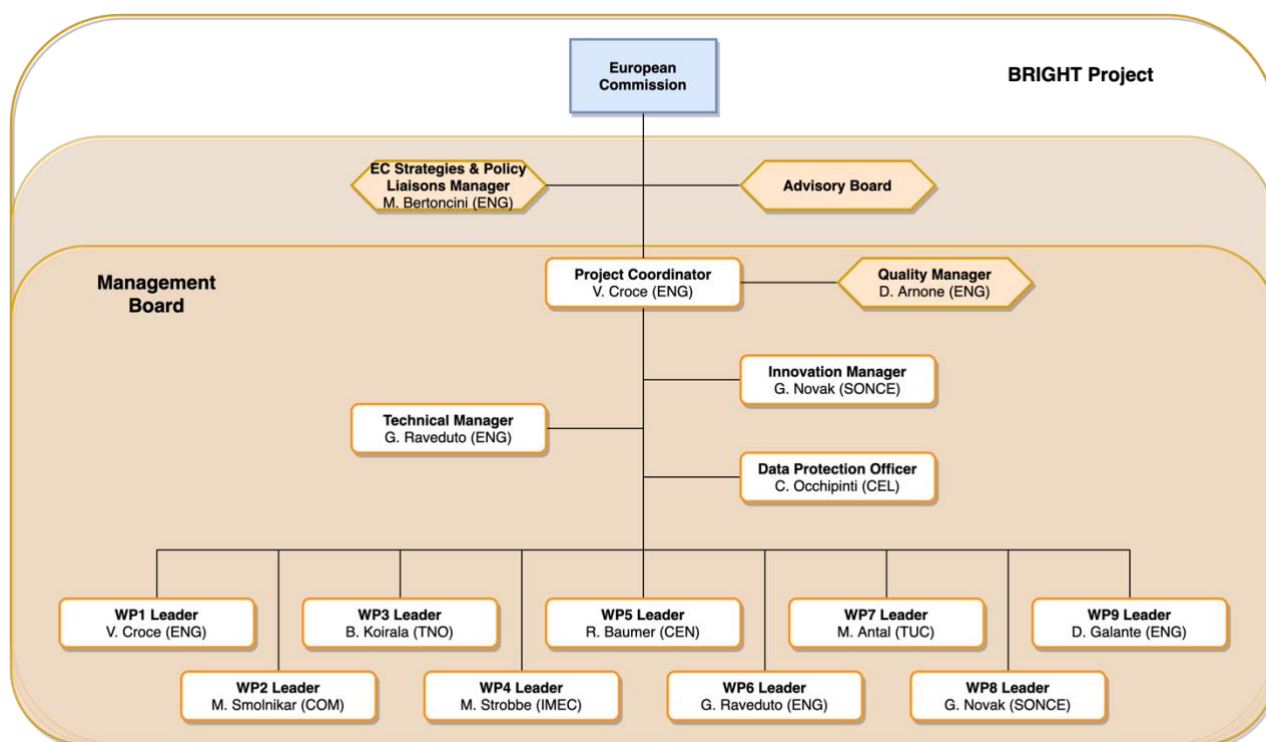


Figure 5 Organisational structure of the project

No.	Role	Partner	Reference Person
1	Project Coordinator	ENG	Vincenzo Croce
2	Technical Manager	ENG	Giuseppe Raveduto
3	Innovation Manager	SONCE	Gregor Novak
4	Quality Manager	ENG	Diego Arnone
5	Data Protection Officer	CEL	Carmela Occhipinti
6	EC Strategies & Policy Liaisons Manager	ENG	Massimo Bertoncini

Table 14 Executive Board List

WP Leaders

Each Work Package is led by a *WP Leader*. The WP Leader is responsible for the implementation of the respective WP, for reviewing and evaluating WP deliverables, as well as cooperating with Task Leaders and other WP Leaders. The list of WP Leaders is presented in Table 15, below.

WP	Partner	Reference Person
1	ENG	Vincenzo Croce
2	COM	Miha Smolnikar
3	TNO	Binod Koirala
4	IMEC	Matthias Strobbe
5	CEN	Ruben Baumer
6	ENG	Giuseppe Raveduto

7	TUC	Marcel Antal
8	SONCE	Gregor Novak
9	ENG	Debora Galante
10	ENG	Vincenzo Croce

Table 15 WP Leader List

Advisory Board

The Bright Advisory Board is an external consultative organ composed mainly by experts in the area of big data and energy. The role of this body is to provide its independent opinion, acting as an advisor and guiding the overall project activities. The members of the Advisory Board will be discussed with the EC project office and will be defined taking in consideration the initial list of potential candidates: Dr. Mihai Paun, Director of CRE (Romanian Energy Center), formerly chairing relevant WGs at ENTSOE; Prof. Antonello Monti, Ph. D., Director ACS / Chair Automation of Complex Power Systems, RWTH Aachen; Dr. Artemis Voulkidis, CEO of Power Operations Ltd. UK energy analytics start-up company; Ms Fiona Williams, leading on Ericsson R&D Energy Lab. The Management Board is responsible for the final approval after taking into account any concerns in case of conflict of interests or competitors involvement.

4.2 Decision making and conflict resolution

As specified in the project Grant Agreement, the Coordinator oversees the project progress and sets the project directions. The Technical Manager is responsible for the daily management and progress of the project and can take decisions that do not significantly affect or go beyond the agreed activities. The Management Board will discuss and agree the proposed actions whenever there is a need to make more substantial modifications. The Board will reach decisions by consensus, if this is not possible, decisions will be taken by majority voting, while the Coordinator has a casting vote.

The Board will decide, inter alia, about deviations from the work plan and budget shifts, as well as corrective actions to mitigate risks. In the unlikely event of severe malpractice, then the Board may authorise the Project Coordinator to start the process for terminating a partner's participation. In case a quick decision is critical to ensure the smooth progress of the work, the Coordinator is authorised to do this, which if needed may be validated by the Management Board afterwards.

Technical issues and conflicts that do not require a change in the Grant Agreement, and/or resources shifts that must be communicated to the EC Project Officer, will be discussed and resolved at WP level, with the support of the Coordinator. The Management Board will be involved when this is not possible, or changes are considered substantial. Required actions will be agreed informally and confirmed in writing via email or in minutes of meetings.

4.3 Project meetings

The project started officially with the Kick-off meeting, chaired by the PC. The aim of the Kick-off meeting is to reinforce the sense of common purposes among all partners, to establish responsibilities, to initiate collaboration between WPs, to confirm and improve the work plan for the duration of the project. The PC presented the expectations for each partner in terms of achievements, performance and reporting.

Different types of meetings will be held during the project lifecycle, to discuss technical issues, to take strategic decisions, to apply changes to the Consortium etc.

The formal record of all decisions taken is provided by written minutes of each meeting. The minutes will be sent to all Members within 10 calendar days of the meeting. Each meeting may also be held remotely.

Depending on the responsibilities of the participants, the following types of meetings will take place during the project lifecycle:

Management Board meetings

The Management Board Members should meet at least once a year. Extraordinary meetings may take place at any time upon written request of the Executive Board or 1/3 of the Members of the Management Board. Written notice of a meeting should be given no later than 45 calendar days for ordinary meetings and 15 calendar days for extraordinary meetings. The meeting agenda should be prepared and sent to the Members in written form no later than 21 calendar days for ordinary meetings or 10 calendar days for extraordinary meetings.

Executive Board meetings

The Executive Board Members should meet at least quarterly. Extraordinary meetings may take place at any time upon written request of any Member of the Executive Board. Written notice of a meeting should be given no later than 14 calendar days for ordinary meetings and 7 calendar days for extraordinary meetings. The meeting agenda should be prepared and sent to the Members in written form no later than 7 calendar days for ordinary meetings or 4 calendar days for extraordinary meetings.

Technical meetings

Technical meetings are necessary to check the technical progress of a specific task or WP. They can be held as face-to-face meetings or remote (video)conferences and are arranged whenever necessary. A WP leader may call for a physical WP meetings whenever required.

5 Communication quality control

This section reports on tools and procedures that will be adopted in the Bright project to ensure clear, transparent, and efficient internal communication. Figure 6 shows the different tools to be used in relation to specific communication objectives.

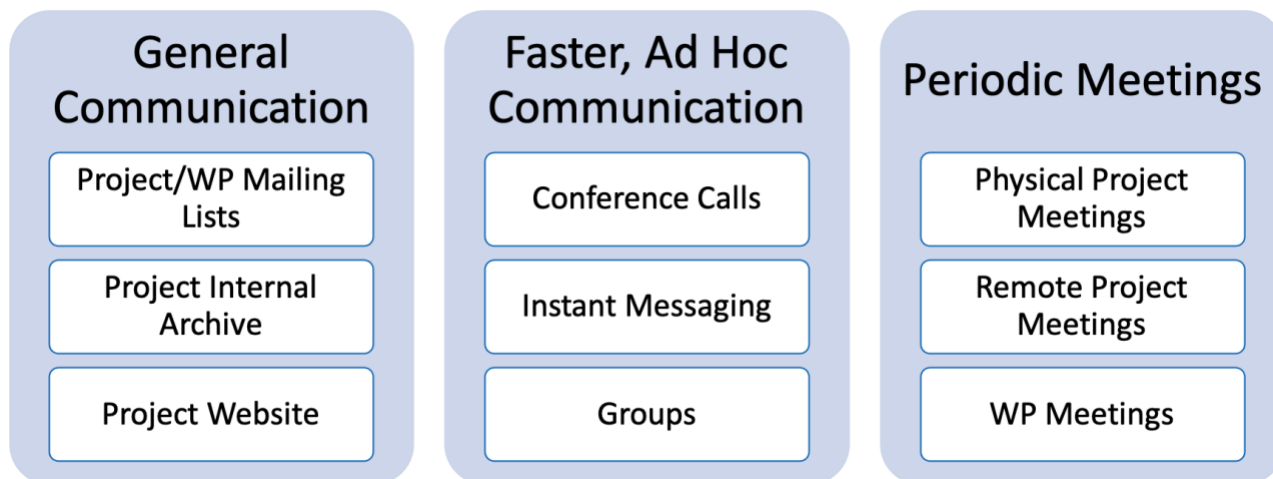


Figure 6 Communication tools

Most of the communication needs (periodic remote meetings, instant messaging, groups, dedicated (video)conference calls, internal document archive) will be addressed via Microsoft Teams. Engineering has made available a Microsoft Teams instance dedicated to the project and manages the internal project mailing lists. The project website is the main channel of communication towards external users. Remote meetings will be combined with physical meetings, as described in section 4.3.

5.1 Project internal archive and cooperative working area

Microsoft Teams is adopted for BRIGHT as central document repository and cooperative working area. A dedicated “BRIGHT” workspace, private and reserved to the project partners, has been created on the platform and all project participants are granted to access the shared workspace. Each project partner is responsible to notify Engineering all changes of project participants in their organisation in order to manage access rights to the workspace accordingly.

The repository already has an initial structure for files and folders (Figure 7), which will be periodically refined to meet the project needs. Project partners are allowed to add additional folders to the archive where appropriate.

As a general principle, the documents must be uploaded to the internal archive and then notified by email instead of sending them as attachments by email.

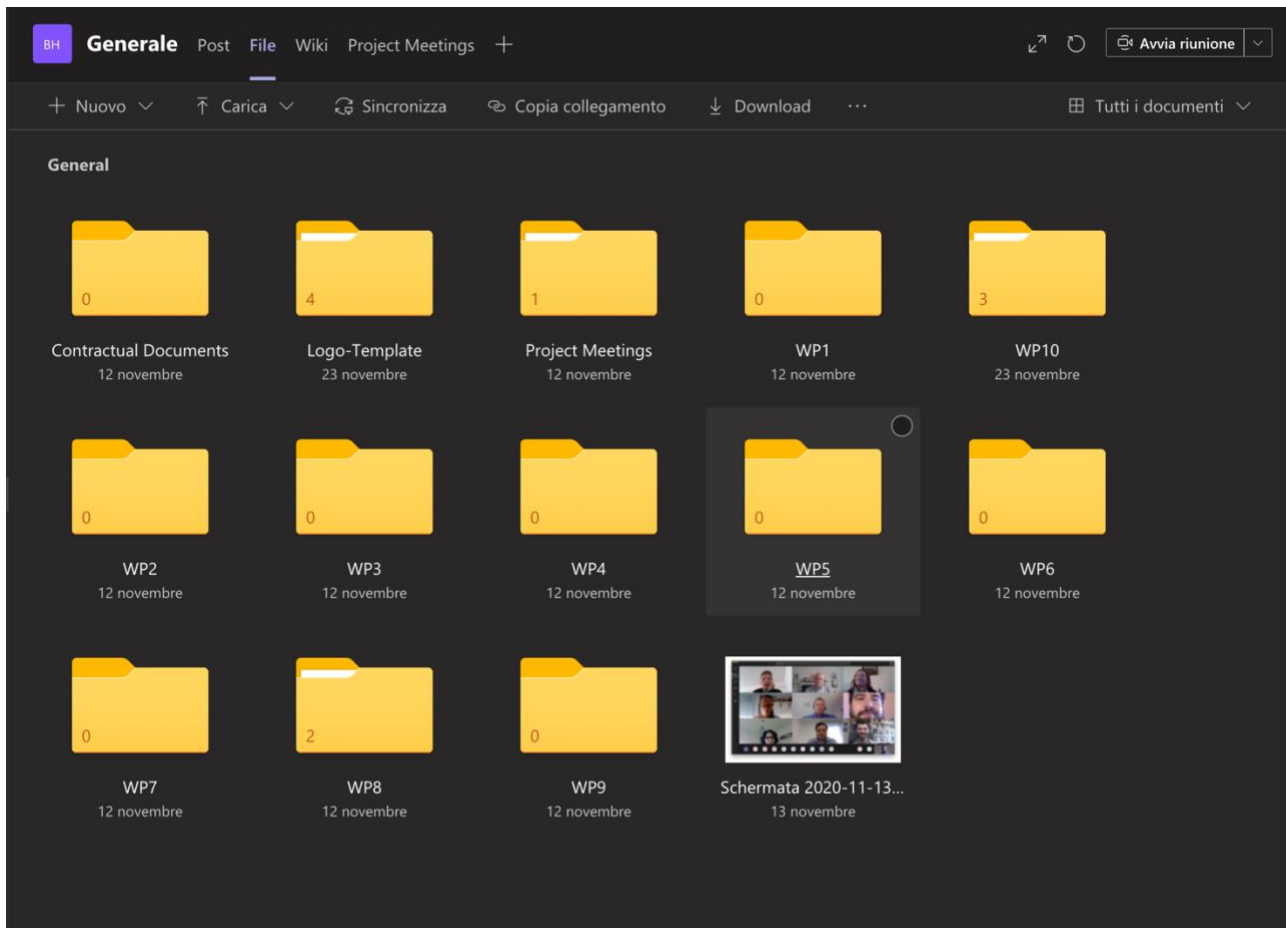


Figure 7 BRIGHT Internal archive structure

The workspace allows project participants to create specific channels in order to discuss on specific topics and share files, to create project meetings, to cooperate on the same document concurrently, to create 1-to-1 or group chats. The initial structure already includes multiple communication channels: a general channel, a channel dedicated to communications and announcements, and a channel for each Work Package.

Each channel can be extended with built-in tools for the daily management of activities. Common applications include wikis, quick notes, calendar, and task management tools.

5.2 Email

Emails and mailing lists are one of the main means of communication within the project. The use of a mailing list should be preferred every time to listing manually multiple addresses.

As a general policy, each person posting to a mailing list should ensure that the content is appropriate for the recipients of the selected list, avoiding unintended and unnecessary messages. At the time of writing, the general list bright_all@eng.it is present and is directed to all the project participants. During the course of the project, the creation of different lists for specific purposes (e.g. specific lists per WP or role) will be considered to ensure that internal communication requirements are met.

Engineering will handle the management of subscriptions of users to the mailing lists.

5.3 Conference calls

Microsoft Teams will be used as the main tool for conference calls. It allows web conferences, which will be used for more structured meetings. Users can share their screen and, if a webcam is available, arrange videoconferences. Additionally, Teams offers instant messaging, document exchange, whiteboard sketching, and 1-to-1 calls. This enables quick discussions and information exchange.

6 Documentation quality control

This section describes the documentation management procedure for the project, defining standard rules and procedures that should be applied by all the project partners.

The procedure for documentation management is applicable to all partners, for all the deliverables to the European Commission, and for all the documents exchanged internally within the Consortium.

6.1 Software tools for editing documentation

To improve the workflow activity, it is recommended to use standardised software instruments. The following tools will be used for BRIGHT documentation:

- Word processing: Microsoft Word 2010+
- Spreadsheet: Microsoft Excel 2010+
- Slides presentation: Microsoft PowerPoint 2010+
- Document for web publication: Portable Document Format (PDF).

Authors are strongly recommended to use TeX/LaTeX when preparing manuscripts for scientific papers and any other similar publications.

6.2 MS Word document quality

6.2.1 Naming convention rules

Deliverables and other Project documents must be circulated among partners following this naming convention:

BRIGHT_DX.Y_Vk.j_PPP

where:

- DX.Y: is the deliverable number according to the Grant Agreement;
- Vk.j: is the version number, V1.0 is the final version to be sent to the Commission;
- PPP: is the partner's abbreviation responsible for a specific version of the document. The value of this field for the latest version of the document (V1.0) is the name of the partner responsible for the deliverable.

For example, document with title “BRIGHT_D1.0_V1.0_ENG” indicates Final version (V1.0) of the deliverable D1.0 which is delivered by partner Engineering.

The version number is the unique identifier of the document and allows to maintain an effective version control. When a document is first released, it should be defined as a draft (V0.x). Usually, the approval process requires that a document should be circulated for comments among interested partners. Once the comments have been received within the deadline, the author of the document will make the appropriate changes, thus changing the version number. Only the official release will have version V1.0, only after receiving the final approval by the designated internal quality checker and the PC.

6.2.2 MS template rules

Standard documentation templates will be used by all partners to provide standardised documentation. Each deliverable must include:

- title page, with contractual info and the document identifier
- a presentation page, including information on Work Packages, document responsible, reviewers, deadline, etc.
- history of changes, containing all versions and released for the document. It will be removed in the last version of the deliverable.
- index of contents, tables, figures
- a glossary and list of acronyms if necessary
- an executive summary
- document main sections
- conclusions section
- a bibliography, if any. IEEE format must be used.
- annexes, if applicable.

Main attributes of BRIGHT documents are presented in Table 16.

English date format will be used for all documents, for example 01/02/2021 stands for 1st February 2021.

Attribute	Description	Title page	Presentation page	Other pages
Logo	BRIGHT Logo	X	X	X
Project name	BRIGHT	X	X	X
Project Identifier	Project Identifier number	X	X	
Document Title	Name of the deliverable	X	X	X
Document Identifier	Document Identifier number	X	X	
Date	Last update		X	
Availability	Confidential level		X	
Author(s)	Document author(s)	X	X	
Document status	Progress status		X	
WP number	Work Package number	X	X	X
Contract reference	Grant Agreement number: 957816.	X		

Table 16 BRIGHT document attributes

Confidentiality level

The document is assigned one of the following confidential levels:

- PU Public (fully open)
- CO Confidential (restricted under conditions set out in Model Grant Agreement)
- CI Classified (information as referred to in Commission Decision 2001/844/EC).

Document status

A document is issued in one of the following states:

- Table of Contents (ToC), V0.1, the structure of the document is defined;
- Draft version, V0.x, incomplete version of the deliverable (it is strongly suggested to use v0.x.y format, especially for non-major changes, such as internal reviews or small contributions);
- Consolidated version V0.9, first complete draft to be submitted for peer-review;
- Reviewed version, V0.9.y, after peer-review;
- Release Candidate version, V0.9.5, after that the author has applied corrections, suggestions and comments from peer reviewers;
- Quality Checked version, V0.9.9, after applying the quality check from the Quality Checker;
- Final version, V1.0, when it is approved it and ready to be submitted to the Commission.

The above status values appear on the document change history section.

After delivery, the deliverable passes through an approval process performed by the EC (European Commission). During this period, the status of the deliverable can change according to the following steps:

- Submitted
- Accepted
- Accepted with remarks
- Refused.

6.2.3 MS Word writing procedure

To make easier the Quality Check, all the members must comply with the following rules for writing deliverables with MS Word:

- Use the template stored in MS Teams, under the directory Logo-Template;
- Set “English UK” language
- Pay attention to text formatting (font, dimension, colour, indentation, line spacing of titles, text, reference and captions) according to BRIGHT template
- Include a list of acronyms. When an acronym is used for the first time, the full name must be reported too, e.g., European Commission (EC). In particular, if the document is too long, the repetition of “extended name” is suggested at the beginning of each section
- Each figure and each table must have its own caption
- Check that links to external resources are still accessible before adding them in the text
- The figures and text in the document must be comprehensible and have a good resolution
- Verify the accuracy of the executive summary and conclusions sections.

6.2.4 Report deliverable workflow

The documentation produced by a collaborative project like BRIGHT is finalised with the contribution of many partners. In order to minimise the effort involved in managing these documents, it is important that all Project participants follow the agreed standards for formats and tools, as well as the good practices defined for writing and exchanging documents.

Each deliverable addresses a specific topic and must have a "Deliverable Manager" who coordinates the production of the document, interacting with the other partners involved, as necessary.

Table 17 shows the list of deliverables to be submitted, with the corresponding month of delivery.

Number	Title	Due date (in months)
D1.1	Quality management plan	2
D1.2	Data Management Plan – first version	6
D1.3	First Project Periodic Reporting	18
D1.4	Data Management Plan – second version	18
D1.5	5 Second Project Periodic Reporting	36
D1.6	Data Management Plan – final version	36
D1.7	Report on data protection, privacy & ethical impact	36
D2.1	User group needs, requirement and advanced DR engagement scenarios	6
D2.2	Privacy, Ethics and Legal Requirements	9
D2.3	DR technologies and tools	12
D2.4	Cross-domain Data & Service Interoperability – first version	12
D2.5	Cross-domain Data & Service Interoperability – final version	19
D2.6	Report on analysis on obstacles to innovation	24
D2.7	New multi-value services for DR engagement	30
D3.1	Overview of barriers and drivers for consumer engagement in DR	6
D3.2	CODEC model adapted to estimate the uptake of DR products and services	18
D3.3	Assessment and evaluation of citizen engagement strategies and social acceptance in BRIGHT – first version	24
D3.4	Assessment and evaluation of citizen engagement strategies and social acceptance in BRIGHT – final version	36
D4.1	Data Collection – first version	12
D4.2	Big data fine-grained distributed energy forecasting tool – first	13
D4.3	Flexible assets DT models – first version	15
D4.4	DTs' model for customer's categorization – first version	15
D4.5	Electrical and thermal communities DTs' models – first version	15
D4.6	Big data fine-grained distributed energy forecasting tool – final version	28
D4.7	Data Collection – final version	30
D4.8	Flexible assets DT models – final version	30
D4.9	DTs' model for customer's categorization – final version	30
D4.10	Electrical and thermal communities DTs' models – final version	30
D5.1	Dwelling and community level DT enabled flexibility services – first version	18
D5.2	Value stacking and system level services: A community of communities' algorithms for flexibility management – first version	18
D5.3	Dwelling and community level DT enabled flexibility services – final version	30
D5.4	Value stacking and system level services: A community of communities' algorithms for flexibility management – final version	30
D5.5	Services for energy driven smart homes	30
D5.6	Heuristics for cross sector services optimization	30
D6.1	DLT/Smart contracts Data Governance for digital fingerprinting of energy data – first version	14
D6.2	P2P flexibility provisioning tool – first version	18
D6.3	Blockchain based management platform for DR programs – first version	18
D6.4	DLT/Smart contracts Data Governance for digital fingerprinting of energy data – final version	24
D6.5	Edge interoperable gateway for home automation	24
D6.6	P2P flexibility provisioning tool – final version	30
D6.7	Blockchain based management platform for DR programs – final version	30
D6.8	Smart contracts for coalition of customers in communities / cooperatives	30
D6.9	DLT Blockchain and Smart Contracts for tokenized heterogeneous asset trading	30

D7.1	Trial scenario Definitions and Evaluation Methodology	18
D7.2	BRIGHT in lab validation report	20
D7.3	Belgian pilot: Local Energy Cooperative multi-market centralized aggregation - 1st trials	30
D7.4	Slovenian pilot: Demand-response aggregation and nonenergy services in decentralized virtual community of smart home users - 1st trials	30
D7.5	Italian pilot: Aggregation for optimal Flexibility Management - 1st trials	30
D7.6	Greece pilot: Virtual Community Centralized Aggregation and energy management services - 1st trials	30
D7.7	Belgian pilot: Local Energy Cooperative multi-market centralized aggregation – 2nd trials	36
D7.8	Slovenian pilot: Demand-response aggregation and nonenergy services in decentralized virtual community of smart home users – 2nd trials	36
D7.9	Italian pilot: Aggregation for optimal Flexibility Management - 2nd trials	36
D7.10	Greece pilot: Virtual Community Centralized Aggregation and energy management services - 2nd trials	36
D7.11	Project results evaluation and replication guidelines	36
D8.1	Project Website	3
D8.2	Dissemination and Communication Plan	6
D8.3	BRIGHT new business models– first version	18
D8.4	BRIGHT market analysis – first version	18
D8.5	BRIGHT exploitation planning – first version	18
D8.6	Report on dissemination – first version	18
D8.7	Standardization activities – first version	18
D8.8	BRIGHT new business models – final	36
D8.9	BRIGHT market analysis – final version	36
D8.10	BRIGHT exploitation planning – final version	36
D8.11	BRIGHT manifesto, recommendations to policy makers	36
D8.12	Report on dissemination – final version	36
D8.13	Standardization activities – final version	36
D9.1	Report on collaboration with other projects – first version	12
D9.2	Report on collaboration with other projects – second version	24
D9.3	Report on collaboration with other projects – final version	36
D10.1	H - Requirement No. 1	2
D10.2	POPD - Requirement No. 2	2

Table 17 List of Project Deliverables

Roles assignment: peer-reviewers and quality checkers

A common procedure has been established to have two people within the project as Peer-Reviewers for each deliverable. Two reviews will be carried out in parallel by the two reviewers who will provide their feedback and recommendations to the Deliverable Manager. A Quality Checker will be responsible for a final quality check.

Number	Title	Del. Manager	1 st Reviewer	2 nd Reviewer	Quality Checker
D1.1	Quality management plan	ENG	DuCoop	CEN	ENG
D1.2	Data Management Plan – first version	ENG	APC	EMOT	ENG
D1.3	First Project Periodic Reporting	ENG	ISKRA	SONCE	ENG
D1.4	Data Management Plan – second version	ENG	EMOT	ASM	ENG
D1.5	5 Second Project Periodic Reporting	ENG	SONCE	COM	ENG
D1.6	Data Management Plan – final version	ENG	ASM	IMEC	ENG

D1.7	Report on data protection, privacy & ethical impact	CEL	EMOT	TNO	ENG
D2.1	User group needs, requirement and advanced DR engagement scenarios	SONCE	CEL	ISKRA	ENG
D2.2	Privacy, Ethics and Legal Requirements	CEL	ASM	APC	ENG
D2.3	DR technologies and tools	ENG	CEL	IMEC	ENG
D2.4	Cross-domain Data & Service Interoperability – first version	COM	CEN	TUC	ENG
D2.5	Cross-domain Data & Service Interoperability – final version	COM	TUC	IMEC	ENG
D2.6	Report on analysis on obstacles to innovation	ASM	EMOT	CEN	ENG
D2.7	New multi-value services for DR engagement	CEN	COM	DOMX	ENG
D3.1	Overview of barriers and drivers for consumer engagement in DR	TNO	SONCE	WVT	ENG
D3.2	CODEC model adapted to estimate the uptake of DR products and services	TNO	TUC	CEN	ENG
D3.3	Assessment and evaluation of citizen engagement strategies and social acceptance in BRIGHT – first version	CEL	DOMX	SUN	ENG
D3.4	Assessment and evaluation of citizen engagement strategies and social acceptance in BRIGHT – final version	CEL	IMEC	ISKRA	ENG
D4.1	Data Collection – first version	COM	SUN	ASM	ENG
D4.2	Big data fine-grained distributed energy forecasting tool – first	TUC	EMOT	ENG	ENG
D4.3	Flexible assets DT models – first version	TNO	ISKRA	SONCE	ENG
D4.4	DTs' model for customer's categorization – first version	IMEC	TNO	APC	ENG
D4.5	Electrical and thermal communities DTs' models – first version	IMEC	EMOT	ASM	ENG
D4.6	Big data fine-grained distributed energy forecasting tool – final version	TUC	TNO	DOMX	ENG
D4.7	Data Collection – final version	COM	ASM	ISKRA	ENG
D4.8	Flexible assets DT models – final version	TNO	ENG	EMOT	ENG
D4.9	DTs' model for customer's categorization – final version	IMEC	COM	TUC	ENG
D4.10	Electrical and thermal communities DTs' models – final version	IMEC	SUN	COM	ENG
D5.1	Dwelling and community level DT enabled flexibility services – first version	CEN	TUC	EMOT	ENG
D5.2	Value stacking and system level services: A community of communities' algorithms for flexibility management – first version	CEN	CEL	ISKRA	ENG
D5.3	Dwelling and community level DT enabled flexibility services – final version	CEN	SUN	TNO	ENG
D5.4	Value stacking and system level services: A community of communities' algorithms for flexibility management – final version	CEN	ISKRA	ASM	ENG
D5.5	Services for energy driven smart homes	COM	DOMX	ISKRA	ENG
D5.6	Heuristics for cross sector services optimal combination	TUC	CEN	CEL	ENG
D6.1	DLT/Smart contracts Data Governance for digital fingerprinting of energy data – first version	ENG	EMOT	DOMX	ENG

D6.2	P2P flexibility provisioning tool – first version	ENG	ISKRA	TNO	ENG
D6.3	Blockchain based management platform for DR programs – first version	TUC	SUN	ENG	ENG
D6.4	DLT/Smart contracts Data Governance for digital fingerprinting of energy data – final version	ENG	SUN	DuCoop	ENG
D6.5	Edge interoperable gateway for home automation	DOMX	SONCE	WVT	ENG
D6.6	P2P flexibility provisioning tool – final version	ENG	TNO	IMEC	ENG
D6.7	Blockchain based management platform for DR programs – final version	TUC	EMOT	TNO	ENG
D6.8	Smart contracts for coalition of customers in communities / cooperatives	TUC	ISKRA	DOMX	ENG
D6.9	DLT Blockchain and Smart Contracts for tokenized heterogeneous asset trading	ENG	SUN	APC	ENG
D7.1	Trial scenario Definitions and Evaluation Methodology	TUC	CEL	WVT	ENG
D7.2	BRIGHT in lab validation report	TNO	ASM	ISKRA	ENG
D7.3	Belgium pilot: Local Energy Cooperative multi-market centralized aggregation - 1st trials	DuCoop	EMOT	TUC	ENG
D7.4	Slovenian pilot: Demand-response aggregation and nonenergy services in decentralized virtual community of smart home users - 1st trials	SONCE	CEN	DOMX	ENG
D7.5	Italian pilot: Aggregation for optimal Flexibility Management - 1st trials	ASM	CEL	TUC	ENG
D7.6	Greece pilot: Virtual Community Centralized Aggregation and energy management services - 1st trials	WVT	APC	SONCE	ENG
D7.7	Belgium pilot: Local Energy Cooperative multi-market centralized aggregation – 2nd trials	DuCoop	IMEC	COM	ENG
D7.8	Slovenian pilot: Demand-response aggregation and nonenergy services in decentralized virtual community of smart home users – 2nd trials	SONCE	EMOT	DOMX	ENG
D7.9	Italian pilot: Aggregation for optimal Flexibility Management - 2nd trials	ASM	TNO	SUN	ENG
D7.10	Greece pilot: Virtual Community Centralized Aggregation and energy management services - 2nd trials	WVT	CEN	IMEC	ENG
D7.11	Project results evaluation and replication guidelines	TUC	TNO	SONCE	ENG
D8.1	Project Website	ASM	TNO	CEN	ENG
D8.2	Dissemination and Communication Plan	APC	CEL	EMOT	ENG
D8.3	BRIGHT new business models– first version	ENG	ASM	DuCoop	ENG
D8.4	BRIGHT market analysis – first version	SONCE	ISKRA	CEN	ENG
D8.5	BRIGHT exploitation planning – first version	SONCE	CEL	TNO	ENG
D8.6	Report on dissemination – first version	APC	TUC	EMOT	ENG
D8.7	Standardization activities – first version	TNO	APC	DOMX	ENG
D8.8	BRIGHT new business models – final	ENG	ISKRA	SUN	ENG
D8.9	BRIGHT market analysis – final version	SONCE	EMOT	TUC	ENG
D8.10	BRIGHT exploitation planning – final version	SONCE	IMEC	ISKRA	ENG

D8.11	BRIGHT manifesto, recommendations to policy makers	SONCE	TNO	WVT	ENG
D8.12	Report on dissemination – final version	APC	ASM	EMOT	ENG
D8.13	Standardization activities – final version	TNO	CEN	APC	ENG
D9.1	Report on collaboration with other projects – first version	ENG	CEN	ASM	ENG
D9.2	Report on collaboration with other projects – second version	ENG	TNO	COM	ENG
D9.3	Report on collaboration with other projects – final version	ENG	CEL	ISKRA	ENG
D10.1 ¹	H - Requirement No. 1	ENG	TNO	EMOT	ENG
D10.2 ²	POPD - Requirement No. 2	ENG	EMOT	APC	ENG

Table 18 Deliverables peer-reviewers

Deliverable preparation workflow

As a first step in the preparation of the deliverable, the Deliverable Manager will define the document structure and the contributions expected by each involved partner in a preliminary document called Deliverable Development Plan. The Deliverable Manager will also manage meetings and activities he/she may consider necessary for the development of the deliverable.

The ToC must report a short description of contributions expected in each single sections together with the assignment of responsibility to partners involved in the deliverable. Once the ToC is consolidated, the document is sent to partners for contributions. Contributions are merged together by the Deliverable Manager, who is in charge to check the consistency and coherency of the content, he/she can ask for clarifications or for further/different contributions. Then, the deliverable will be sent to peer reviewers and the Work Package leader.

Peer-reviewers will verify the deliverable considering these aspects:

- the deliverable addresses the objectives set out in the grant agreement;
- the deliverable is complete (no missing parts, non-existent references, topics not covered, topics not properly explained) and consistent with other BRIGHT deliverables;
- the quality of the work described in the document is acceptable and in accordance with what was expected.
- Correctness: Language check; does it contain correct information; lay-out / template check?

Then the deliverable is sent as Release Candidate to the Quality Checker for a final quality check.

The last step of the process is assigned to the PC, who is in charge to submit the deliverable to the EC. After submission, the deliverable manager informs by email all partners about the submission.

¹ D10.1 was developed with the support of CEL as main contributor

² D10.2 was developed with the support of CEL as main contributor

The process for the preparation of a Project deliverable is illustrated in Figure 8.

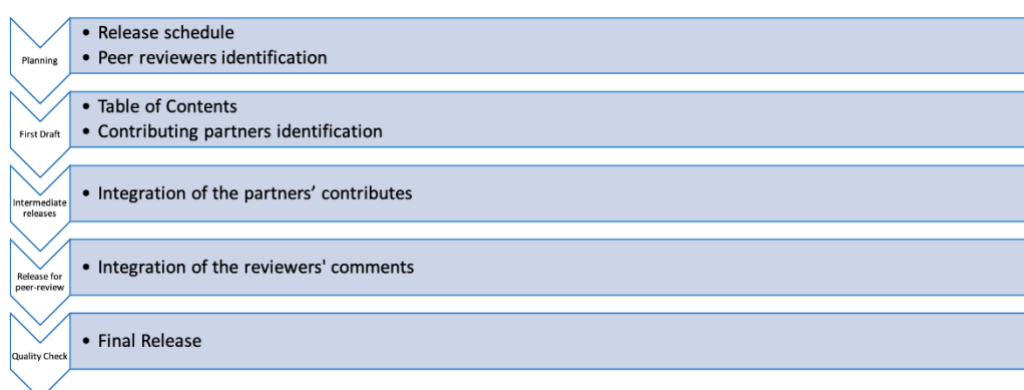


Figure 8 Deliverable preparation workflow

Table 19 shows the timing needed for preparation of each intermediate document release.

Document workflow timing	
Table of Contents and release plan	About 2 months before official deadline
Release for peer-review	About 20 days before official deadline
Release candidate	About 8 days before official deadline
Release for quality check	About 5 days before official deadline
Release for Coordinator	About 3 days before official deadline
Release for the EC	Within the official deadline

Table 19 Document workflow timing

6.3 Quality of presentations

A template for PowerPoint presentations has been defined and is available in the *Logo-Template* subfolder of the project internal repository. It must be adopted for each presentation within the project as well as for external presentations connected to the project.

The document name should always include the extended project name “BRIGHT”, the title of the presentation, place and date of the meeting, and the version number, with V1.0 the final version released by the responsible partner.

For example, the code “BRIGHT_2020-12-16_Rome_title_of_the_presentation_V0.3” indicates an intermediate version of a presentation showed at an event in Rome in December 2020.

7 Software Quality Control

This section provides a quick summary of the guidelines identified for handling the source code, testing, and documenting the software produced.

7.1 Source code management

Git is the recommended version control system. It is a distributed system, free and open source, flexible and faster than centralized systems like SVN. The suggested workflow to be adopted is based on the following conventions:

- A *Develop* branch is used to integrate the code during the development phase
- Each new feature to be developed uses a new *feature* branch, forked from the development branch
- The *master* branch contains the stable code and is updated with each release from the development branch. Each pull request is reviewed by a collaborator for quality control assurance.

The usage of a software development platform, like GitLab, is also recommended. Such platforms, in addition to version control, include tools for issue tracking, code review, and CI/CD integration that can be used from a graphical user interface.

A workflow integrating all the above tools can be summarized as follows:

- Create and assign an issue describing the changes to be developed or the fix to be made
- Create a feature branch related to the issue. Changes must be submitted to this branch
- Once the changes are submitted and the automatic tests triggered by the CI/CD pipeline are passed, the branch can be merged with the develop branch
- After a successful merge, the issue can be closed and the branch removed.

Versions should be numbered following a three-digit schema, e.g. V1.0.0, in which the first digit represents a *breaking* update including non-backward compatible changes, the second digit indicates a *feature* release that adds a new functionality, and the final digit represents minor changes or bug fixes.

7.2 Software environments

It is suggested that minimum 2 software environments are used for software development, a development and production environment. New developments are tested in the development environment on simulated assets or in a lab setting. Fully tested and approved release candidates move from the development to the production environment which are connected to the assets in the field. This ensures quality control, especially for the planned pilot tests.

7.3 Testing

The aim of a good testing methodology is to fix software bugs as early as possible in the development lifecycle, since the costs of discovering bugs increases with each step in the process. Tests can be grouped into levels, indicating a set of activities managed together. A typical classification includes the following levels, related to different activities within the development lifecycle:

Unit test

Unit tests are usually performed by the developer who wrote the code, since it requires access to the source code of the test object. Developers may alternate between components development and bug fixing.

Integration test

Integration tests focus on the integration itself. For example, if two modules are integrated, the tests should focus on the communication between the modules, not on the functionality of the individual modules, which should have been covered by unit tests. The same applies while integrating two separate systems.

System test

System tests focus on the end-to-end behaviour of the system as a whole, from a functional and a non-functional point of view.

Acceptance test

Acceptance tests are often envisaged as the last level of testing in a sequential development lifecycle, while in iterative development project teams may apply acceptance testing during each iteration (e.g. validating a new functionality against its acceptance criteria). They are usually the responsibility of customers, product owners, or system operators.

A software development platform like GitLab allows the automatic execution of a suite of tests, typically unit tests and integration tests, each time a software module is updated to a new version.

7.4 Documentation

Each software module must be provided with the appropriate documentation. This includes: requirements definitions and specifications, system architecture, design of the data model, and APIs specification. This usage of automatic tools for generating the documentation from the source code is encouraged.

8 Project monitoring and reporting

Continuous monitoring allows to track the overall progress as well as to identify potential problems. Periodic reports should describe the work done, issues, achievements, travels, and relevant events. The project coordinator will collect internal reports every six months in which each project partner will indicate the progress and effort expenditure.

To collect the reports from the partners, the project Coordinator will circulate specific templates based on the samples provided below for tracking the activities (Table 20), effort and costs (Table 21), and travels (Table 22) in the reference semester.

WP	Activities	Achievements

Table 20 partners' activities tracking per WP

WP	Semester X		Total Allocated	
	Effort	Costs	Effort	Costs
Total				

Table 21 partners' effort and costs tracking per WP

Destination	Date	Travellers	Reason

Table 22 partners' travels tracking

In addition, each WP leader will describe the work done versus the planned work, key issues, and ongoing results of evaluation indicators for each WP.

Reporting to EC

The project's Grant Agreement defines two reporting periods:

- RP1: from month 1 to month 18
- RP2: from month 19 to month 36

The coordinator must submit a periodic report within 60 days following the end of each reporting period. The periodic report must include a periodic technical report and a periodic financial report. In addition to the periodic report for the last reporting period, the coordinator must submit a final report within 60 days following the end of the last reporting period. The final report must include a final technical report with a summary for publication, containing an overview of the results and their exploitation and dissemination, the conclusions of the action, and the socio-economic impact of the action and a final financial report containing a final summary financial statement created automatically by the electronic exchange system and a certificate on the financial statements for each beneficiary if needed. All details can be found in the Grant Agreement and related Annexes.

9 Risk Assessment and Management

ISO 31000, a family of standards relating to risk management codified by the International Organisation for Standardisation, defines risk as *'the effect of uncertainty on objectives'*, where effect is a positive or negative deviation from what it is expected. Uncertainty is a condition that results in a lack of information and leads to inadequate or deficient knowledge or understanding. In the context of risk management, uncertainty exists whenever knowledge or understanding of an event, consequence or probability is inadequate or incomplete. Due to the uncertainty of the context of a research project, for a prefixed objective, there is a possibility that things may not proceed according to plan and the results may not be as expected. Sometimes the results are positive and sometimes negative. For this reason, contextual uncertainty should be minimised as much as possible.

A risk management plan describes how an organisation intends to manage risks. Typical components of risk management include processes, practices, responsibilities and activities (including their sequence and timing). The inclusion of opportunities in the plan (risk with positive effects) conveys a proactive methodology that seeks not only to minimise the negative effects of risk management, but also to understand that there is a positive outcome in identifying means and methodologies to deal with the risk.

9.1 Risk Management process

According to ISO 31000 the Risk Management process involves the systematic application of policies, procedures and practices to the activities of communicating and consulting, establishing the context and assessing, treating, monitoring, reviewing, recording and reporting risk. Although the Risk Management process is often presented as sequential, in practice it is iterative. This process is presented in Figure 9.

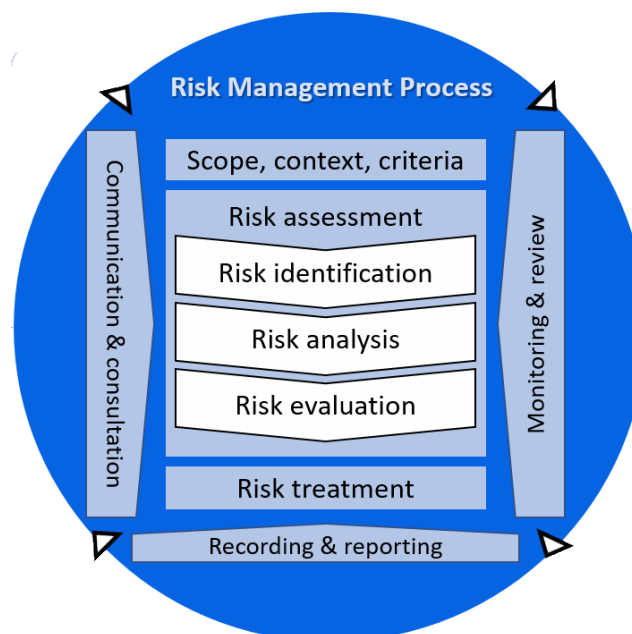


Figure 9 ISO 31000 Risk Management process

The main elements of the Risk Management process are:

- **Communication & consultation:** The purpose of communication and consultation is to assist relevant stakeholders in understanding risk, the basis on which decisions are made and the reasons why particular actions are required.
- **Scope, context, criteria:** the purpose of establishing the scope, context and criteria is to customise the risk management process, allowing effective risk assessment and appropriate risk treatment. Scope, context and criteria require defining the scope of the process and understanding the external and internal context.
- **Risk assessment:** Risk assessment is the overall process of risk identification, risk analysis and risk evaluation. Risk assessment should be conducted in a systematic, iterative and collaborative way, taking into account the knowledge and views of stakeholders. It should use the best available information, supplemented by further investigation if necessary.
- **Risk treatment:** The main goal of risk treatment is to select and implement options for addressing risk. It involves an iterative process of formulating risk treatment options, implementing risk treatment, assessing effectiveness, deciding whether the remaining risk is acceptable, if not acceptable taking further treatment.
- **Monitoring & review:** its purpose is to assure and improve the quality and effectiveness of process design, implementation and outcomes. Monitoring and review should take place in all stages of the process. Monitoring and review includes planning, gathering and analysing information, recording results and providing feedback.
- **Recording & reporting:** The risk management process and its outcomes should be documented and reported through appropriate mechanisms.

BRIGHT will employ the Risk Management process described above to identify, assess, mitigate, monitor and control risks related to administrative, technical and financial issues, throughout the project lifecycle. Risk management in BRIGHT is based on risk awareness among the partners. Risks, problems and open questions will be discussed during the regular BRIGHT meetings. However, as in any project with research components, there is always the possibility of reaching a stage where further improvements cannot be made and the objective cannot be achieved. If this occurs during the life of the project, the PC can initiate a contingency activity aimed at redefining the objectives of the project and, if necessary, requesting from the European Commission a reduction in costs due to the elimination of specific parts of the project, or an extension of the timeframe for achieving the planned objectives.

The success of the project depends on the early identification of risks and the establishment of an efficient Risk Management process. The Consortium has already carried out a preliminary identification of risks and factors critical to its success and will continuously follow methods and procedures to identify, assess, monitor and control risk areas. The preliminary identification and analysis of risks presented in the Grant Agreement are shown in Table 23, together with their likelihood, impact and mitigation strategy.

Num.	Risk description	Impact/ Probability	Linked WPs	Risk-mitigation measures
1	Underperforming partner; a key partner leaves the project; disagreement between partners.	Moderate/ Rare (LOW)	WP1	WP leaders monitor progress (including potential conflicts) at WP level and communicate difficulties to Management Board and Project Coordinator. Any problems which cannot be solved bilaterally are

				referred to the Project Coordinator for mediation and then to the Board. The Consortium Agreement will also provide a framework for underperforming partners and conflict resolution procedures. The Consortium is of enough strength and diversity for partners to reassign tasks if required.
2	Partner overspending resources and/or allocated budget.	Moderate/ Rare (LOW)	WP1	Close monitoring of partner spending through WP reports and through partners' quarterly management reports. Also, all partners of the consortium are familiar with this type of project activities and clear responsibilities are allocated for every task in the WPs (Administrative, Financial and Management Risk Analysis).
3	Partners not reacting as expected, lack of communication.	Moderate/ Unlikely (MEDIUM)	WP1	Use of further interactive communication means (use the phone when e-mail is not enough) and/ or liaise with additional persons in the institution. Ultimately, apply mitigation measures contained in Consortium Agreement.
4	Key milestones or critical deliverables are delayed.	Moderate/ Rare (LOW)	WP1	This risk is reduced by the expertise of the partners (both in terms of technical and management experience) that will allow the identification of planning drifts. Work-package plans (as internal documents) are key management elements to reduce this risk.
5	Not suitable quality of deliverables.	Moderate/ Rare (LOW)	WP1	Definition of a reviewing process for all deliverables, including the formal appointment of reviewers (partners) for each deliverable.
6	Poor feedback gathered for pilot evaluation.	Moderate/ Rare (LOW)	WP3, WP7	The early planning of the evaluation methods and means for the collection of network data and user feedback will leave little room for this risk occurring. If the risk occurs, partners will devise new/more persistent evaluation means (i.e. phone interviews, face-to-face meetings) in order to get the needed feedback and will also exploit their large partner networks to this purpose.
7	BRIGHT solutions fail to conform to user's needs and requirements.	Moderate/ Rare (LOW)	WP2, WP6	The development of the BRIGHT platform will follow an iterative approach in order to integrate end users' feedback.
8	The BRIGHT solution (reference technologies and tools) are not appropriate	Moderate/ Rare (LOW)	WP2, WP6	The work plan contains extensive analysis and specification of the architecture and the different components. Preliminary versions of the components will be released during the project. These results will be verified by the Consortium.

9	Insufficient or ineffective pilots' support.	Major/ Rare (MEDIUM)	WP7	If the risk occurs, scientific partners will undertake more intensive user support, update accordingly the supporting material and even improve the platform, e.g. in terms of user friendliness, etc.
10	Low performance or efficiency of AI/ML models for some pilots.	Moderate/ Rare (LOW)	WP4, WP5, WP6, WP7	Some ML techniques like deep learning require a huge amount of specialized hardware resources and present high latency response times. To mitigate these risks, BRIGHT partners will consider the set of functional and non-functional requirements in order to select the appropriate techniques, also exploiting edge-fog hardware resources, being possible to improve the scalability by offloading part of processing to these components.
11	DLT fails to integrate different services under the common approach.	Moderate/ Rare (LOW)	WP2, WP4, WP7	Through iterative and agile-like approaches, BRIGHT will adopt standardized and widely accepted technologies for the common APIs, DLT protocols to be used to allow different systems to connect to the blockchain. Moreover, the necessary documentation and SDKs will be provided to allow stakeholders to seamlessly integrate with the BRIGHT solution.
12	Risk of disclosing personal and/or sensitive data	Minor/ Unlikely (LOW)	WP3, WP7	Legal procedures will be prepared, involving the management board, including security measures and consortium agreement.
13	The solutions developed are too case specific.	Minor/ Unlikely (LOW)	WP3, WP4, WP5, WP6	The variety of end users, country and domain wise, will ensure a wide view and adoption of the proposed platform. BRIGHT will also consider existing EU and internationally generated knowledge.
14	Number of engaged end users is lower than expected in due time (due bad trade-off between price and comfort, or digital illiteracy, or too much burden due to heavy user involvement in service operation, or due to the unclear structure of the electricity price).	Moderate/ Unlikely (MEDIUM)	WP7	Involve a much larger number of potential consumers and involve consumers which are familiar with similar campaigns from other projects.
15	Consumers are dropping out from DR campaign since they do not perceive the added value of combined flexibility and Energy Efficiency services value proposition.	Moderate/ Moderate (MEDIUM)	WP7	Technology design and integration will be carefully focusing on modularity of the proposed technology to minimize the risk of technology immaturity within the planned time framework. Moreover, local installers, where necessary, will be recruited well in advance to acquire familiarity with BRIGHT technology in due time.

16	Technology maturity and interoperability of the BRIGHT solution deployed at pilot sites is not sufficient, or integration with field devices (Es SmartPlug, Home automation devices, etc...) and deployment/installation is too complex, due to lack of interoperability and vendor lock-in.	Moderate/ Rare (LOW)	WP7	Technology design and integration will be carefully focusing on modularity of the proposed technology to minimize the risk of technology immaturity within the planned time framework. Moreover, local installers, where necessary, will be recruited well in advance to acquire familiarity with BRIGHT technology in due time.
17	End user acceptance of technology insufficient.	Moderate/ Rare (LOW)	WP7	BRIGHT solution will leverage on systematic gathering of end user requirements, which takes into due consideration into the subsequent adapted technological design potential risks from privacy infringement and personal data breaches: moreover end user interfaces for BRIGHT technologies will be carefully designed with a view to capture the user attention and understanding in a very immediate way.
18	Low penetration of flexible loads at end customers' premises to form a logical/geographical cluster with critical power or energy sizing.	Major/ Unlikely (MEDIUM)	WP7	BRIGHT task 7.1 is aimed to take into due consideration a number of criteria for end user engagement, including an acceptable number of flexible loads which will reasonably affect the available flexibility within a community-context.
19	Reluctance and lack of response to data sharing and reuse.	Minor/ Unlikely (LOW)	WP8, WP9	A dissemination and communication strategy will be developed early in the project in order to identify the correct audiences and venues and devise strategies to reach them. Professional workshops, networking events, or other motivating initiatives would be organised. The project's pilots are carefully selected in order to represent the widest possible spectrum of stakeholders.
20	BRIGHT results are not on the path to be considered useful after the project finishes.	Moderate/ Rare (LOW)	WP8, WP9	The project partners' participation in other projects provide a potential community of users: both the scientific and the industrial partners, have high motivation to keep using the BRIGHT technology due to its benefits for their day-to-day activities and/or their business agendas, and are well-connected with user communities that promise a broader uptake of the results.
21	New technology is launched during the project, changing the market.	Major/ Moderate (MEDIUM)	WP2, WP3, WP6, WP8, WP9	The Innovation Coordinator detects this market shift and, together with the Technical Manager, contacts each technology provider on the given area to conduct and analysis of the new technology and assess its impact on BRIGHT activities.

22	Business adoption of BRIGHT proposals is not as expected.	Moderate/ Rare (LOW)	WP3, WP8, WP9	WP 8 focuses on monitoring business adoption and providing a roadmap for tools and pilots to exploit their results. They will work closely with pilots to guarantee the adoption, at demonstrator side, is full and the way to marketize the result is also clear for the future beyond the project.
23	Delay in all tasks due to the Covid-19 lockdown.	Moderate/ Moderate (MEDIUM)	WP3, WP7, WP8	User engagement activities, participation in conferences and workshops for dissemination and exploitation activities will be carried out remotely in case of restrictions on live events. Evaluation activities on pilot sites will be carried out considering the possible existence of emergency regulations for each of the countries in which the pilots take place.
24	Covid-19 health risk.	Negligible/ Moderate (LOW)	ALL WPs.	Until the Covid-19 pandemic is resolved, all project meetings will be organised remotely. No trips will be made in order to avoid gatherings.

Table 23 Risk analysis and mitigation actions

9.2 Risk register

Risks will be documented and tracked in a dedicated .xls file containing:

1. **Risk ID** – unique identification number used to identify and track the risk
2. **Risk Category** – category assigned to the risk (technical, external, organisational, project management). The use of these categories helps to identify likely risks and groups them into categories relevant to the future
3. **Risk Description** – brief description of the potential risk
4. **Linked WBS** – link to the Work Breakdown Structure WP/task
5. **Likelihood** – the estimated likelihood that the risk will occur at some point and become a project issue. It will be qualitative: very likely, likely, moderate, unlikely, rare. It also could be quantitative if enough information is available
6. **Impact** – the potential consequence or impact of the risk if it did become a project issue. It will be qualitative: extremely serious, serious, moderate, minor, negligible. For example, as the time is a fixed constraint for the project, any risk that has the potential to significantly delay the project schedule has a high consequence
7. **Risk Rank** – this is the magnitude or the level of the risk, expresses as a combination of likelihood and consequence. If they are both high for example, then the risk rank is also high (see Figure 10)
8. **Risk Trigger** – it represents the event that would indicate the need to implement contingency plans. For example, 'If team conflicts have not been resolved three weeks before the scheduled start date, then implement contingency plans'
9. **Prevention Plan** – this is an action plan to prevent the risk from occurring, for example, specifying and agreeing resource needs (staff and equipment) with PC and TM
10. **Contingency Plan** – this is an action plan to address the risk if it does occur
11. **Risk Owner** – the Risk Owner is the person responsible for managing the risk and implementing the Prevention or Contingency Plans

12. **Residual Risk** – this is the risk that remains after treatment is carried out. After treatment, the residual risk level should be 'low'
13. **Status** – status of the risk management (open, closed)
14. **Risk Identification Date** – date when the risk has been identified
15. **Risk Approval Date** – date when has been approved the treatment of the risk
16. **Planned Closure Date** - estimated closure date of the risk management
17. **Plan Status** - status of the contingency plan (on schedule, in delay)

		Impact				
		Negligible	Minor	Moderate	Major	Extreme
Probability	Rare	Low	Low	Low	Medium	Medium
	Unlikely	Low	Low	Medium	Medium	Medium
	Moderate	Low	Medium	Medium	Medium	High
	Likely	Medium	Medium	Medium	High	High
	Very likely	Medium	Medium	High	High	High

Figure 10 Risk matrix

10 Conclusions

This report defines all the procedures and rules that the BRIGHT project participants must follow to ensure high quality project results. The project Governance Bodies were defined and explained, based on what was already established and accepted in the Consortium Agreement and the Grant Agreement. The Quality Management Plan explains the workflows for document preparation and delivery, the guidelines defined for software quality, and the tools and procedures for managing the communication among all the parties involved in the project. The procedures defining the way the project results will be prepared, stored, reviewed, and delivered are presented all along this document. Finally, the risk management process that will be adopted to avoid or mitigate risks and exploit opportunities (i.e. risks with positive effects) during the BRIGHT project lifetime is presented.

In conclusion, this document aims to be a reference for the daily management of the project activities and the guide for all the procedures which the project partners must be compliant with.