

Big Data Value Spaces for Competitiveness of European Connected Smart Factories 4.0

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Project Partners

Participant organisation name	Acronym
Asociación de Empresas Tecnológicas Innovalia	INNO
Volkswagen Autoeuropa, Lda *	VWAE
Visual Components	VIS
Automatismos y Sistemas de Transporte Interno S.A.U.	ASTI
Telefónica Investigación y Desarrollo SA	TID
Volkswagen AG. *	VW
UNINOVA	UNINO
FILL GmbH. *	FILL
TTTECH Computertechnik AG	TTT
RISC Software GmbH	RISC
PHILIPS Consumer Lifestyle B.V. *	PCL
PHILIPS Electronics Nederland	PEN
Interuniversitair Micro-Electronicacentrum VZW	IMEC
Centro Ricerche Fiat S.C.p.A. *	CRF
SIEMENS S.p.A.	SIEMENS
Prima Industries S.p.A	PRIMA
Politecnico di Milano	POLIMI
AUTOTECH ENGINEERING, AIE *	GESTAMP
Fundació Privada I2CAT, Internet I Innovació Digital A Catalunyai2cat	I2CAT
TRIMEK S.A.	TRIMEK



CAPVIDIA N.V,	CAPVIDIA
Volvo Lastvagnar AB *	VOLVO
Chalmers Tekniska Hoegskola AB	CHAL
Whirlpool EMEA SpA *	WHIR
SAS Institute Srl	SAS
Benteler Automotive GmbH *	BAT
It.s OWL Clustermanagement	OWL
Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.V.	FhG
Atlantis Engineering	AE
Agie Charmilles New Technologies SA *	+GF+
Ecole Polytechnique Federale De Lausanne	EPFL
Institut Für Angewandte Systemtechnik Bremen GmbH	АТВ
Rheinische Friedrich-Wilhelms-Universitat Bonn	UBO
Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (CERTH)	CERTH
The University of Edinburgh	UED
Institute Mines Telecom	IMT
Industrial Data Space E.V.	IDSA
FIWARE Foundation EV	FF
GEIE ERCIM EEIG	ERCIM
IBM ISRAEL – Science and Technology LTD	IBM
ESI Group	ESI
Eneo Tecnología, S.L	ENEO
Software Quality Systems S.A.	SQS



Consultores de Automatización y Robótica S.A.	CARSA
INTRASOFT International	INTRA
United Technologies Research Centre Ireland, Ltd *	UTRC-I
Fratelli Piacenza S.p.A. *	ΡΙΑ
RiaStone - Vista Alegre Atlantis SA *	RIA
Unparallel Innovation, Lda	UNP
Gottfried Wilhelm Leibniz Universität Hannover	LUH
*LHF 4.0 – Lighthouse Factory 4.0 * RF – Replication Factory 4.0	





Executive Summary

This deliverable represents the first result of WP1 (tasks T1.1) of the BOOST4.0 Project. This document is the first release of the Project Coordination at M1. The deliverable defines the managerial rules and procedures that will be followed by the BOOST4.0 consortium across the whole project duration.

The main objective of tasks T1.1, T1.2 and T1.3 is to ensure the successful realisation of the foreseen Project Management actions of BOOST4.0. This deliverable D1.1 (Project Management Plan and Fact Sheet), defines the requirements of the project in detail and ensures the alignment of general communication rules, quality control processes, work planning and procedures, as well as technical support for the archiving of documentations.

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

Keywords: Project management, communication, quality control, document management, tools.

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<u>Acronyms</u>

CA	Consortium Agreement
CPPS	Cyber-Physical Production System
DoA	Description of Action
EC	European Commission
GA	General Assembly
IPR	Intellectual Property Regulations
КРІ	Key Performance Indicator
REI	Responsible Exploitation & Innovation Board
RRI	Responsible Research & Innovation
тсс	Technical Coordination Committee
WP	Work Package



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1 Introduction

BOOST 4.0 "Big Data Value Spaces for Competitiveness of European Connected Smart Factories 4.0" will demonstrate, in a realistic, measurable, and replicable way an open, certifiable and highly standardised and transformative <u>shared data-driven Factory 4.0 model</u> through 10 lighthouse factories. BOOST 4.0 will also demonstrate how European industry can build unique strategies and <u>competitive advantages</u> through big data across all phases of product and process lifecycle building upon the BOOST 4.0 connected smart Factory 4.0 model to meet the Industry 4.0 challenges.

A **Connected Smart Factory 4.0** requires collecting, analysing, transporting, and storing vast amounts of data. The Factory 4.0 will use data to drive efficiencies and improve capabilities in three ways. First, connecting workforce, assets, and things to the Internet will enable use cases such as **predictive maintenance** that reduce operating expenses and improve equipment uptime. Second, integration with non-production departments, such as product development and after-sales service, enables new business insights to drive **product and process improvements**. Lastly, improved data visibility among companies enables **collaborative business models**.

It is important to clearly establish that BOOST 4.0 overall objective will not be to deliver "the big data-platform to rule them all". But on the contrary, is a concerted effort among equipment providers, digital platform providers, data analytics software providers, manufacturing industry, standardisation bodies, certification service stakeholders and digital innovation multipliers to set up the rules, standards and reference frameworks that should allow the **free flow of data assets** (interoperability), **the growth of both a large big data market and manufacturing capabilities data-driven transformation in the context of Industry 4.0** globally and the emergence of a vibrant European big data-centric ecosystem to support Industry 4.0 servitization.

- Strategic Objectives: ICT 15-2016-2017
- 50 Partners
- 16 Countries





- Duration: 3 Years
- Total Eligible Cost: 18.843.440,00 €
- EC Contribution: 14.983.516,26 €
- 10 Lighthouse
 - o 6 Automotive
 - o 2 Machine Tool
 - o 2 White Goods & Appliances
- 3 Replication
 - o Textile
 - o Ceramics
 - Elevation/ AERO



Based on the different big data backgrounds and the pilot domains from where big data solutions and platforms will develop business value and transformation, **pilots will reach TRL8/TRL9** suitable system complete, qualified and proven in competitive manufacturing operational environment.

The project coordinator is responsible for elaborating the "project handbook" according to good practice quality procedures. The project handbook defines the project wide management processes, rules and tools to be applied throughout the BOOST4.0 project. This includes in particular the following aspects:

- The detailed definition and description of the roles of the management- and decision making bodies.
- The detailed definition and description of the roles of the individual Work Package leaders and Task leaders.
- The management and reporting rules, including the organization of meetings.
- The project management tools, including the communication tools, the documentation management tools, the reporting tools and the rules for using them.
- The risk mitigation strategies.
- Dissemination rules.

The target of the project management plan and fact sheet is to provide the BOOST4.0 consortium with guidance for day-to-day actions related to the overall management of the project. In particular, it is relevant for the administrative bodies of the project. The document further supplements the Description of Action (Annex 1) of the PGA.

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1.1 Purpose and scope

Deliverable D1.1 Project Management and Fact Sheet is the first deliverable planned in the project. The deliverable represents the planning and implementation of the BOOST4.0 project management strategies and their continuous refinement.

This deliverable defines the managerial rules and procedures that will be followed by the BOOST4.0 consortium across the whole project duration. Moreover this document gives instructions and regulations how the quality of the project in general and the project results and findings in specific shall be guaranteed and treated.

The aim of this document is to define the rules and procedure for the management of BOOST4.0 project. This includes in particular details on

- Organisational issues (consortium partners, management structure and management procedures)
- Project plan (work package list and Gantt chart)
- Communication and data sharing strategy (concept, project wiki and project web page)
- Deliverables and templates (list of deliverables, procedure and templates)
- Progress report (activity reports and financial statements)
- IPRs (description, arbitration rules and procedures for publishing)
- Aspects of quality assurance

Every partner of the consortium of BOOST4.0 is addressed by this document.

Further main documents for project management are:

- Project Grant Agreement (PGA) Contract with European Commission
- PGA ANNEX I: Description of Action (DoA)
- Consortium Agreement (CA)

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

This Project Management Manual gives guidelines on how to run the project in its day to day operative business. It may be amended by the coordinator in the wake of the project progress.

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All changes and amendments will be communicated to the project consortium. Additionally, all given information are provided by the project document repository.

1.2 Contributions to other WPs and deliverables

The following documents are applicable to this deliverable and provide details not explicitly set out here:

• H2020 reference documents

http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h20 20-amga_en.pdf

https://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_doc s.html#h2020-grants-manual-amga

http://ec.europa.eu/research/participants/data/ref/h2020/other/legal/templ/tmpl_ti me-records_en.pdf

- BOOST4.0 DoA
- BOOS4.0 Consortium Agreement (CA)





2 Boost 4.0 Project Methodology & Facts.

The methodology, WP organization and activity dependencies are illustrated below. **Project Management (WP1)** deals with BOOST 4.0 project implementation arranged in 10 work packages and 3 iterative cycles of technical validation, large scale piloting and in-situ validation over 36 months. **WP2 (BOOST 4.0 Reference Architecture)** will cover the planning, coordination and management of the project pilots, from the identification of specific sectorial requirements and the provision of a reference architecture, certification model and standard contribution. The heart of the project is **WP3 (BOOST 4.0 Big Data Interoperable Pipeline & Analytics Platforms)** where a trusted federated Industrial Data Space will be established on top of service delivery infrastructures, industrial semantic models, context information management engines and cognitive models for big data digital manufacturing platforms (engineering, planning, operations, manufacturing and after-sales services). WP4-8 provide the core innovation engine of BOOST 4.0 and focus on piloting and validation by delivering **connected and integrated data value chains for 10 diverse sets of factories 4.0 models** Early pilot results (M9) will ramp-up large-scale activities (M12).



Figure 1 BOOST 4.0 Project Methodology & Dependencies

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Each pilot will use a common and agreed cost structure and impact assessment framework that is based on the 6P framework developed by POLIMI and successfully applied in the impact assessment of FIWARE for Industry large scale pilots, I4MS BeinCPPS experiments and more recently in the Italian study for Industry 4.0 observatory. Visit http://www.fiware4industry.com/?portfolio=trw-automotive-supplier-industrial-health-safety for a sample of the type of results achieved by the monitoring framework, the extensive set of ICT and manufacturing KPIs already selected and jointly applied for the preparation of this proposal will be utilised and documented at full scale for evidence and impact assessment. The overall project impact and business development aspects will be part of WP9.

WP9 (Impact Analysis and Exploitation) is dedicated to the exploitation of project results and analysis of the horizontal and vertical impacts and lessons learnt. The WP will develop a strategy and digital business model for BOOST 4.0 and its associated ecosystem. **WP10 (Dissemination, Stakeholders Engagement and Training)** will create high impact visibility for BOOST 4.0 and generate a solid brand image from the very beginning of the project. It will engage key stakeholders, collaborate with major Knowledge and Innovation Communities in the field of ICT/Big data and industry 4.0

2.1 Workpackage list

WP No	Work Package Title	Lead Beneficiary	Person- Months	Start Month	End Month
WP1	Management	INNO	120	1	36
WP2	BOOST 4.0 Reference Architecture	INTRA	306	1	36
WP3	BOOST 4.0 Big Data Interoperable Pipeline & Analytics Platform	IDSA	442	2	24
WP4	Smart Digital Engineering Big Data Pilots	FILL	148	2	36
WP5	Smart Production Planning & Management Pilots	+GF+	141	2	36
WP6	Smart Operations & Digital Workplace Pilots	PCL	136	2	36
WP7	Smart Connected Production Pilots	GESTAMP	162	2	36
WP8	Smart Maintenance & Service Pilots	WHIR	131	2	36
WP9	Impact Analysis and Exploitation	CARSA	260	10	36

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WP10 Eng	gagement and Training	INNO	176	1	36
Tota	tal		2022		

Table 1 Work Packages list

The expected duration of the project is 36 months and the main facts can be found in Annex I.

The detailed Gantt diagram of the different activities is shown in the figure below:







Project Gant

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Figure 3 BOOST 4.0 Project Gantt – Technical Development



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WP4. Smart Digital Engineering Big Data Pilots	FILL	M3	M4	M5	M7	M8
T4.1 Pilot Set-up, Cognitive Industry 4.0 Service Design & Data Preparation	ATB		D4.1			
T4.2.1 - VW Experimentation	VW		D4.2			
T4.2.1 - FILL Experimentation	FILL		D4.3			
T4.3.1 VW - Large Scale & On-site Trials	VW			D4.4	D4.5	
T4.3.1 FILL - Large Scale & On-site Trials	FILL			D4.6	D4.7	
T4.4 Pilot Area KPI Collection and Benchmarking Data	ATB		D4.8	D4.		D4.4.1c
WP5. Smart Production Planning & Management Pilots	+GF+	M3	M4	M5	M7	M8
T5.1 Pilot Set-up, Cognitive Industry 4.0 Service Design & Data Preparation	EPFL		D5.1			
T5.2.1 - AUTO Experimentation	VWAE		D5.2			
T5.2.2 - +GF+ Experimentation	+GF+		D5.3			
T5.3.1 AUTO - Large Scale & On-site Trials	VWAE			D5.4	D5.5	
T5.3.2 +GF+ - Large Scale & On-site Trials	+GF+			D5.6	D5.7	
T5.4 Pilot Area KPI Collection and Benchmarking Data	EPFL		D5.8	D5.		D5.4.1c
WP6. Smart Operations & Digital Workplace Pilots	PCL	M3	M4	M5	M7	M8
T6.1 Pilot Set-up, Cognitive Industry 4.0 Service Design & Data Preparation	IMEC		D6.1			
T6.2.1 - CRF Experimentation	CRF		D6.2			
T6.2.2 - PCL Experimentation	PCL		D6.3			
T6.3.1 CRF - Large Scale & On-site Trials	CRF			D6.4	D6.5	
T6.3.2 PCL - Large Scale & On-site Trials	PCL			D6.6	D6.7	
T6.4 Pilot Area KPI Collection and Benchmarking Data	IMEC		D6.8	D6.		D6.4.1c
WP7. Smart Connected Production Pilots	GESTAMP	M3	M4	M5	M7	M8
T7.1 Pilot Set-up, Cognitive Industry 4.0 Service Design & Data Preparation	INNO		D7.1			
T7.2.1 - GESTAMP Experimentation	GESTAMP		D7.2			
T7.2.2 - VOLVO Experimentation	VOLVO		D7.3			
T7.3.1 GESTAMP - Large Scale & On-site Trials	GESTAMP			D7.4	D7.5	
T7.3.2 VOLVO - Large Scale & On-site Trials	VOLVO			D7.6	D7.7	
T7.4 Pilot Area KPI Collection and Benchmarking Data	INNO		D7.8	D7.		D7.4.1c
WP8. Smart Maintenance & Service Pilots	WHI	M3	M4	M5	M7	M8
T8.1 Pilot Set-up, Cognitive Industry 4.0 Service Design & Data Preparation	POLIMI		D8.1			
T8.2.1 - Whirlpool Experimentation	WHIR		D8.2			
T8.2.2 - Benteler Experimentation	BAT		D8.3			
T8.3.1 Whirlpool Large Scale & On-site Trials	WHIR			D8.4	D8.5	
T8.3.2 Benteler - Large Scale & On-site Trials	BAT			D8.6	D8.7	
T8.4 Pilot Area KPI Collection and Benchmarking Data	POLIMI		D8.8	D8.		D8.4.1c

Figure 4 BOOST 4.0 Project Gantt – Pilot Development



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WF5. Impact Analysis and Exploitation	CANSA								101-4				1013										1017				· · · · · ·	IVIO
T9.1 Horizontal and Vertical Sectorial Impact Analysis	INNO								D0 1			D	9.2/D9												00			D0 2
T9.2 Commerical Exploitation	CARSA								09.1				.11												09.	1		09.5
T9.3 BOOST 4.0 Ecosystem Business Development	CARSA												D9.4															D9.5
T9.4 Project + PPP KPIs	POLIMI								D9.6				D9.7															D9.8
T9.5 Replication for Sectorial Transformation	IDSA												D9.9															D9.10
WP10. Dissemination, Stakeholders Engagement and Training	INNO	M1																									_	M8
T10.1 Dissemination Material (Public Relations Office, PR plan,)	INNO	D10.1							D10.2								D10.3											D10.4
T10.2 Demonstrations at Industrial Trade Fairs	INNO																											
T10.3 Big Industrial Data Space Promotion and Community Building	IDSA												0105															D10.6
T10.4 ICT Community Awareness Raising & Multiplication	FF												010.5															010.0
T10.5 Industry 4.0 Community & DIH Awareness & Multiplication	POLIMI																											
Project Month		1	2 3	4 5	6	7 8	9	10 1	11 12	13 14	15 16	17	18	19 20	21 2	2 2	3 24	25	5 26	5 27	28	29	30	1 32	. 33	34	35	36
		Kick-off			BOOST 4	.0	First pilots	s I	Final explorator	/		1	Mid-Term				BOOS	T 4.0				Pi	ot Handov	er				Project
		Complete	d	1	First Spec	s.	explorator	у	results & Full-				pilots				Ref						Complete				(Jutcome
					Ready		results	s	scale pilots begi	n			results				Archit	ect.										Attained
							available						available				Comp	ete										

Figure 5 BOOST 4.0 Project Gantt – Impact & Innovation





3 Project Management Structure/Contacts

3.1 Project Management Structure

Given the ambition and complexity of a project like BOOST 4.0, a formal management structure is set up, capable of ensuring unambiguous responsibilities and ensure that all pilot and project objectives are achieved within time, cost and resource constraints. The project management will use successfully tried and tested project management procedures and techniques over many years of project management experience. In order to achieve a clear and efficient management of all the aspects of BOOST 4.0, it is decided to clearly separate the project management in three different levels: *Strategic Level, Operational Level* and *Advisory Level*.

The *Strategic Level*, will always operate with the mandate of the General Assembly and chaired by the Project Coordinator. It will be in charge of transmitting the project value internally and externally, monitoring the project's performance, managing the technical audits, supervising the preparation of the deliverables and performing major changes in the project plan (e.g. reallocation of resources).

The Project Strategic Board will convene at least every 3 months (physical or remotely), to align and drive project strategy and suggest action lines. It will be composed by Prof. Dr Oscar Lazaro (INNO) will be the Project Coordinator in charge of overall project management including interactions with the EC (unique contact point). The PC has amongst his responsibilities will deal with administrative and financial tasks (contract negotiation, day to day relationship with the EC's Project Officer, consortium representation in workshops and official meetings, periodic (quarterly) project progress report compilation, management of CA affears and administration of project resources and project spending control). Miss Nora Larrinaga (INNO) will be the Financial & Administrative Manager who will be responsible for a spotless financial management of the project as a whole and the financial and reporting consortium support. Mr Athanasios Poulakidas (INTRA) will be the Technical & Innovation Manager (WP2 leader) assisting the PC in technical and operational matters of the project (e.g. strategic decisions on technical choices or deployment activities). The technical and innovation manager will be supported by two scientific deputies Prof. Dr. Sören Auer (UBO) in the area of industrial vocabularies and IDS and Dr Dimos Ioannidis (CERTH) on predictive manufacturing models. The Technical and Innovation Board is also responsible for coordinating the technical developments (digital platforms, vocabularies, models) across the 5 pilot domains, 10 lighthouse factories and 3 replication factories. Miss Silvia de la Maza (INNO) will be the Public Relationships & Communication Office Manager (WP10 leader) responsible for the outreach of the project results to a wide audience and the effective implementation of the project's Dissemination and Communication activities (see section 2.2). Mr. David Vidal (CARSA) will be the Exploitation & Innovation Manager (supported by WP9 leader) who, will be responsible to maximize the project's impact.





Boost





Deliverable 1.1 – V1.0

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The exploitation manager will focus on effective digital transformation strategy build up and datadriven business models and market aspects associated to BOOST 4.0 exploitable assets, ensuring big data platform and industry 4.0 manufacturing processes sustainability. **Dave Raggett (W3C/ERCIM)** will be the **Interoperability & Standards Manager** responsible for dealing with interoperability and standards issues associated to the deployment of BOOST 4.0 tools and pilots. **Miss Alicia Gonzalez (INNO)** will be the **Quality & Risk Manager** responsible for quality and timely delivery of required technical reports, along with identification of main areas of possible technical risks and promotion of appropriate contingency activities. This will be complemented by **5 Expert Groups** under each of the 5 BOOST 4.0 pilot domains, continuously monitoring, analyzing and adjusting the main technology (big data digital manufacturing models, industrial data vocabularies and interoperability) and reference architecture development goals to market changes.

Pilot Factories & Replication Management Board is led by the Multiplication & Certification Manager **Mr Thorsten Huelsmannn** who will collaborate with Pilot coordination manager (INNO) and be responsible for the smooth rollout of the replication roadmap across additional sectors.

- Mr. David Vidal (CARSA) will be the Digital Business Modelling Manager (also T9.3 leader) responsible for the coordination of development of the innovative digital business models of the different BOOST 4.0 solutions.
- Mr. Sergio Gusmeroli will be the Monitoring & KPI Evaluation Manager (T9.4 & T10.5 leader).
- Mr. Rigo Wenning (ERCIM) will be the Advisor on Industrial Data Governance who will be responsible for providing advice on legal and regulatory, privacy and regulatory provisions on privacy and data protection.
- The **Pilot Factory Managers** as well as the **Replication Factory Managers** will responsible for representing and coordinating the activities within the local factory ecosystem.

VW	FILL	VWAE	+GF+	Philips
Factory	Factory	Factory	Factory	Factory
Mr. Thorsten	Mr. Alois	Miss Gisela	Mr. Roberto	Mr. Jeroen
Gläsner	Wiesinger	Garcia	Perez	Greidanus
CRF	VOLVO	GESTAMP	Whirlpool	Benteller
Factory	Factory	Factory	Factory	Automotive Factory
Factory Mr. Julien	Factory Miss Wang	Factory Mr. Miguel	Factory Miss Barbara	Automotive Factory Mr. Daniel
Factory Mr. Julien Mascolo	Factory Miss Wang Zhiping	Factory Mr. Miguel Angel Calvo	Factory Miss Barbara Villa	Automotive Factory Mr. Daniel Wienhusen

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Mr. Menouer Boubekeur Mr. Alessandro Canepa Miss Olga Miranda

The *Operational Level* is the ultimate project decision body; being the only with conflict resolution capability and ability to coordinate activities across the different work packages. The operational level will be driven by:

- **General Assembly**. The purpose of the General Assembly (GA) is to supervise the project workplan and is the only one with the authority to alter the workplan and resource allocation in any significant degree. The GA will decide based upon consensus, only in case of continuous disagreement, the full majority (over 75%) will be adopted. Each partner will hold one vote at the GA. The GA shall comprise one_Partner Representative from each participating partner. The GA shall be chaired by the **Project Coordinator (INNO**). GA meetings shall be held periodically (in principle every six months).
- Work package Leaders. The management responsibility for each work package is set as from WP descriptions in table 3.1.2. The Workpackage Leader is responsible for coordinating the work done by all participants in the work package. Establishes, in coordination with the involved partners and other work packages, the detailed schedule of the work package. Presents the work package progress when required by the Project Coordinator and at the external reviews. Organizes the production and review of the workpackage deliverables.

The *Advisory Level*, will be arranged around the External Stakeholder Task Forces. Four Task Forces (TF1 - Reference Framework, TF2 – Multiplication, TF3 - Factory Replication, TF4 – Standardisation) will be set up at the beginning of the project. The project will participate in the activities organized within the BDV PPP cluster. With the objective of providing input towards common issues and receiving feedback (e.g. from other related projects), related to SME support, standards, policy and regulatory activities, national or international initiatives, BOOST 4.0 will establish a strong and continuous link with the I4MS initiative (some of the partners have a strong background on this successful FoF innovation action). Furthermore, the project will also leverage, where appropriate on the solid connections to other PPPs (Future Internet - FIWARE, 5G-PPP, Internet of Things - AIOTI), Public Private Platforms (Network and Information Security - ECSO) and JUs (Electronic Components and Systems for European Leadership – ECSEL and ARTEMISIA). This continuous interaction will be crucial in a wider and richer elicitation of BOOST 4.0 requirements and challenges and the assessment of the value and potential for adoption of the technical approaches proposed by the project.

3.2 Project Governance Structure

The Coordinator is the legal entity acting as the intermediary between the Parties and the Funding Authority. The Coordinator shall, in addition to its responsibilities as a Party, perform the tasks assigned to it as described in the Grant Agreement and this Consortium Agreement.

3.2.1 General operational procedures for all Consortium Bodies

3.2.1.1 Representation in meetings

Any Party which is a member of a Consortium Body (hereinafter referred to as "Member"):

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- should be present or represented at any meeting;
- may appoint a substitute or a proxy to attend and vote at any meeting; and
- shall participate in a cooperative manner in the meetings.

3.2.1.2 Preparation and organisation of meetings

Convening meetings

The chairperson of a Consortium Body shall convene meetings of that Consortium Body.

		Ordinary meeting	Extraordinary meeting
General A	ssembly	At least once a year	At any time upon written request of the Project Strategic Board or 1/3 of the Members of the General Assembly
Project Board	Strategic	At least quarterly	At any time upon written request of any Member of the Project Strategic Board

Notice of a meeting

The chairperson of a Consortium Body shall give notice in writing of a meeting to each Member of that Consortium Body as soon as possible and no later than the minimum number of days preceding the meeting as indicated below.

	Ordinary meeting	Extraordinary meeting
General Assembly	45 calendar days	15 calendar days
Project Strategic Board	14 calendar days	7 calendar days

Sending the agenda

The chairperson of a Consortium Body shall prepare and send each Member of that Consortium Body a written (original) agenda no later than the minimum number of days preceding the meeting as indicated below.

General Assembly 21 calendar days, 10 calendar days for an extraordinary meeting	General Assembly	21 calendar days, 10 calendar days for an extraordinary meeting	
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Project Strategic Board

7 calendar days

Adding agenda items:

Any agenda item requiring a decision by the Members of a Consortium Body must be identified as such on the agenda.

Any Member of a Consortium Body may add an item to the original agenda by written notification to all of the other Members of that Consortium Body up to the minimum number of days preceding the meeting as indicated below.

General Assembly	14 calendar days, 7 calendar days for an extraordinary meeting
Project Strategic Board	2 calendar days

During a meeting the Members of a Consortium Body present or represented can unanimously agree to add a new item to the original agenda

Meetings of each Consortium Body may also be held by teleconference or other telecommunication means.

Any decision may also be taken without a meeting if the Coordinator circulates to all Members of the Consortium Body a written document, which is then agreed by the defined majority of all Members of the Consortium Body. Such document shall include the deadline for responses.

Decisions taken without a meeting shall be considered as accepted if, within the period set out in in the document referred to above, no Member has sent an objection in writing to the chairperson. The decisions will be binding after the chairperson sends to all Members of the Consortium Body and to the Coordinator a written notification of this acceptance.

3.2.1.3 Voting rules and quorum

Each Consortium Body shall not deliberate and decide validly unless two-thirds (2/3) of its Members are present or represented (quorum). If the quorum is not reached, the chairperson of the Consortium Body shall convene another ordinary meeting within 15 calendar days. If in this meeting the quorum is not reached once more, the chairperson shall convene an extraordinary meeting which shall be entitled to decide even if less than the quorum of Members are present or represented.

Each Member of a Consortium Body present or represented in the meeting shall have one vote.

A Party which the General Assembly has declared according to Section 4.2 to be a Defaulting Party may not vote.

Decisions shall be taken by a majority of two-thirds (2/3) of the votes cast.

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3.2.1.4 Veto rights

A Member which can show that its own work, time for performance, costs, liabilities, intellectual property rights or other legitimate interests would be severely affected by a decision of a Consortium Body may exercise a veto with respect to the corresponding decision or relevant part of the decision.

When the decision is foreseen on the original agenda, a Member may veto such a decision during the meeting only.

When a decision has been taken on a new item added to the agenda before or during the meeting, a Member may veto such decision during the meeting and within 15 calendar days after the draft minutes of the meeting are sent. A Party that is not a Member of a particular Consortium Body may veto a decision within the same number of calendar days after the draft minutes of the meeting are sent.

When a decision has been taken without a meeting a Member may veto such decision within 15 calendar days after written notification by the chairperson of the outcome of the vote.

In case of exercise of veto, the Members of the related Consortium Body shall make every effort to resolve the matter which occasioned the veto to the general satisfaction of all its Members.

A Party may neither veto decisions relating to its being in breach of its obligations nor to its identification as a Defaulting Party. The Defaulting Party may not veto decisions relating to its participation and termination in the consortium or the consequences of them.

A Party requesting to leave the consortium may not veto decisions relating thereto.

3.2.1.5 Minutes of meetings

The chairperson of a Consortium Body shall produce written minutes of each meeting which shall be the formal record of all decisions taken. He/she shall send the draft minutes to all Members within 10 calendar days of the meeting.

The minutes shall be considered as accepted if, within 30 calendar days from sending, no Member has sent an objection in writing to the chairperson with respect to the accuracy of the draft of the minutes.

The chairperson shall send the accepted minutes to all the Members of the Consortium Body and to the Coordinator, who shall safeguard them. If requested the Coordinator shall provide authenticated duplicates to Parties.

3.2.2 Specific operational procedures for the Consortium Bodies

3.2.2.1 General Assembly

In addition to the rules described in Section 3.2,1 the following rules apply:

Members





The General Assembly shall consist of one representative of each Party (hereinafter General Assembly Member).

Each General Assembly Member shall be deemed to be duly authorised to deliberate, negotiate and decide on all matters listed in Section Decisions below.

The Coordinator shall chair all meetings of the General Assembly, unless decided otherwise in a meeting of the General Assembly.

Decisions

The General Assembly shall be free to act on its own initiative to formulate proposals and take decisions in accordance with the procedures set out herein. In addition, all proposals made by the Project Strategic Board shall also be considered and decided upon by the General Assembly.

The following decisions shall be taken by the General Assembly:

Content, finances and intellectual property rights

- Proposals for changes to Annexes 1 and 2 of the Grant Agreement to be agreed by the Funding Authority
- Changes to the Consortium Plan
- Modifications to Attachment 1 (Background Included) in as far as they concern deletions or limitations of Background

Evolution of the consortium

- Entry of a new Party to the consortium and approval of the settlement on the conditions of the accession of such a new Party
- Withdrawal of a Party from the consortium and the approval of the settlement on the conditions of the withdrawal
- Identification of a breach by a Party of its obligations under this Consortium Agreement or the Grant Agreement
- Declaration of a Party to be a Defaulting Party
- Remedies to be performed by a Defaulting Party
- Termination of a Defaulting Party's participation in the consortium and measures relating thereto
- Proposal to the Funding Authority for a change of the Coordinator
- Proposal to the Funding Authority for suspension of all or part of the Project
- Proposal to the Funding Authority for termination of the Project and the Consortium Agreement

Appointments

On the basis of the Grant Agreement, the appointment if necessary of Project Strategic Board Members



3.2.2.2 Project Strategic Board

In addition to the rules in Section 3.21, the following rules shall apply:

Members

The Project Strategic Board shall consist of one representative of the Coordinator and one of the Parties appointed by the General Assembly .

The Coordinator shall chair all meetings of the Project Strategic Board, unless decided otherwise by a majority of two-thirds.

Minutes of meetings

Minutes of Project Strategic Board meetings, once accepted, shall be sent by the Coordinator to the General Assembly Members for information.

Tasks

The Project Strategic Board shall prepare the meetings, propose decisions and prepare the agenda of the General Assembly according to Section 6.3.1.2.

The Project Strategic Board shall seek a consensus among the Parties.

The Project Strategic Board shall be responsible for the proper execution and implementation of the decisions of the General Assembly.

The Project Strategic Board shall monitor the effective and efficient implementation of the Project.

In addition, the Project Strategic Board shall collect information at least every 6 months on the progress of the Project, examine that information to assess the compliance of the Project with the Consortium Plan and, if necessary, propose modifications of the Consortium Plan to the General Assembly.

The Project Strategic Board shall:

- support the Coordinator in preparing meetings with the Funding Authority and in preparing related data and deliverables
- prepare the content and timing of press releases and joint publications by the consortium or proposed by the Funding Authority in respect of the procedures of the Grant Agreement Article 29.

In the case of abolished tasks as a result of a decision of the General Assembly, the Project Strategic Board shall advise the General Assembly on ways to rearrange tasks and budgets of the Parties concerned. Such rearrangement shall take into consideration the legitimate commitments taken on prior to the decisions, and which cannot be cancelled.

Coordinator



The Coordinator shall be the intermediary between the Parties and the Funding Authority and shall, in addition to its reponsabilities as a Party, perform all tasks assigned to it as described in the Grant Agreement and in this Consortium Agreement.

In particular, the Coordinator shall be responsible for:

- monitoring compliance by the Parties with their obligations
- keeping the address list of Members and other contact persons updated and available
- collecting, reviewing to verify consistency and submitting reports, other deliverables (including financial statements and related certifications) and specific requested documents to the Funding Authority
- transmitting documents and information connected with the Project to any other Parties concerned
- administering the financial contribution of the Funding Authority and fulfilling the financial tasks.
- promptly providing, upon request, the Parties with official copies or originals of documents that are in the sole possession of the Coordinator when such copies or originals are necessary for the Parties to present claims or for other justified reasons (e.g. audits).

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

If the Coordinator fails in its coordination tasks, the General Assembly may propose to the Funding Authority to change the Coordinator.

The Coordinator shall not be entitled to act or to make legally binding declarations on behalf of any other Party or of the consortium, unless explicitly stated otherwise in the Grant Agreement or this Consortium Agreement.

The Coordinator shall not enlarge its role beyond the tasks specified in this Consortium Agreement and in the Grant Agreement.

External Stakeholder Task Forces (ESTF)

An External Stakeholder Task Forces (ESTF) will be appointed and steered by the Project Strategic Board. The ESTF shall assist and facilitate the decisions made by the General Assembly. The Coordinator will ensure that a non-disclosure agreement executed between all Parties and each ESTF member. Its terms shall be not less stringent than those stipulated in this Consortium Agreement, and it shall be concluded no later than 30 calendar days after their nomination or before any confidential information will be exchanged, whichever date is earlier. The Coordinator shall write the minutes of the ESTF meetings and prepare the implementation of the ESTF's suggestions. The ESTF members shall be allowed to participate in General Assembly meetings upon invitation but have not any voting rights.





3.3 Project Strategic Board Contact Details

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4 Project Key Performance Indicators (KPIs).

A key aspect for correct project execution is the monitoring and control of Key performance indicators. Boost 4.0 is driven by 4 different types of KPIs. On one hand Technical KPIs mainly driven by adoption of outputs from WP2 and WP3 by pilot projects. On the other hand, by Pilot indicators deriving from WP4 to WP8. Thirdly, by impact KPIs and leveraged additional investments from pilot activities (WP9). Finally, dissemination and communication KPIs associated with WP10 activities. The Set of Boost 4.0 KPIs are summarised in the Table below.

KPI No.	KPI	WP	M1	M3	M6	M9	M18	M36	Status M9
1.1	Methodology defined	2				1	2	2	
1.2	Methodology assessed in factories	2				1	5	10	
4.6	Standard WG participation	2				5	15	30	
4.7	Products ready for certification	2						5	
2.3	Increase of big data use in decision	3				5%	20%	50%	
2.4	Vocabularies identified	3				5	10	10	
2.5	Semantic Vocabulary Support	3					5	10	
2.6	Accuracy of data analytics	3				70%	90%	95%	
2.7	Speed reduction in data analytics	3				5%	30%	50%	
2.8	Number of trusted computing platforms	3					1	4	
1.3	Business Processes Deployed	4 - 8					15	40	
1.4	User acceptance of new processes	4 - 8					≥60%	≥80%	
3.1	Deployments	9					3	7	
3.2	Pilot Business Demonstrations	9				5	10	30	
3.3	Number of ecosystems adhere	9				5	15	25	
3.4	SMEs & large industry reached	9				1K	10K	20K	
3.5	Best practices	9				5	10	20	
3.6	Success Stories	9				2	9	15	
1.5	Business Processes Replicated	9						6	
2.1	Successful pilot completion	9						10	
2.2	KPI fulfilments	9					≥30%	≥80%	
4.1	Events organised	10				2	8	18	
4.2	Yearly events	10					2	4	
4.3	Publications - media presence	10				5	20	50	
4.4	User Perception (scale 1-5)	10				3	4	5	
4.5	Agreements	10				1	2	5	
D.1	Journal publications	10						10	
D.2	Conferences by industrial partner	10				1	1	1	
D.3	Conferences by research partner	10				3	3	3	
D.4	Fairs, events by industry partners	10				24	48	72	
D.5	Fairs, events by research partners	10				30	60	90	
D.6	Event with advisory members	10				1	2	3	
D.7	SME Training	10					3	7	
D.8	Boost 4.0 Book	10						1	
D.9	SME e-book	10						1	
D.10	Internal large industry dissemination event	10				5	10	20	
C.1	Project Logo, presentation, templates.	10	1 set						
C.2	Project Factsheet	10	1				2	3	
C.3	Project Website	10	1				2	3	
C.4	Pilot Videos	10			5		10		
C.5	Project Videos	10			2		5		
C.6	Newsletter	10		1			4	6	
C.7	Engagement Platform - e-Survey	10					1		
C.8	Social Media Followers	10			300		700	1000	
C.9	Posters/banners/rollups	10			10		20	30	
C.10	Trial Specific Banners	10					5	10	
C.11	Flyers/infographic designs	10					3	6	
C.12	EU Networking Events	10					10	TBD	
C.13	Academic/Scientific events	10					12		
C.14	Boost4.0 Innovation Event	10					1		





Table 2 Boost 4.0 Project KPIs

4.1 Additional Investment KPI

Beyond the project progress, Boost 4.0 has an additional investment plan (follow up) described by the tables below, which need to be regularly revisited and substantiated.

BOOT4.0 follow-on investment / Monetary benefits	Y-1 (after project)	Year-2	Year-3	Year-4	Year-5
GF Machining Solutio	ns (+GF+)				
Additional investment triggered due to project	350K€	100K€	100K€	150K€	150K€
Benefit due to increase of market share	1M€	1M€	3М€	5M€	10M€
Benefit due to improved operational efficiency	500K€	500K€	1M€	2M€	5М€
Benefit due to improved productivity / less costs	500K€	500K€	1M€	2М€	ЗМ€
Benefit due to reduced time to market	200K€	500K€	1M€	2М€	5М€
Fiat (CRF)					
Additional investment triggered due to project	100K€	200K€	100K€	100K€	100K€
Benefit due to increase of market share	300K€	3М€	5M€	15M€	25М€
Benefit due to improved operational efficiency	300K€	500K€	600K€	600K€	800K€
Benefit due to improved productivity / less costs	200K€	200K€	300K€	300K€	500K€
Benefit due to reduced time to market	100K€	300K€	500K€	1M€	1M€
Volkswagen (V	W)				
Additional investment triggered due to project	500K€	600K€	2,5M€	600K€	600K€
Benefit due to increase of market share (i.e. provision of tools to VW group and external customers)	3М€	6M€	18M€	10M€	10M€
Benefit due to improved operational efficiency	50K€	100K€	250K€	500K€	1M€
Benefit due to improved productivity / less costs (i.e. mainly due to reduced maintainability)	100K	400K€	1M€	1,5M€	1,5M€
Benefit due to reduced time to market (we expect 5%-20% gradually less time)	150K€	600K€	3,6M€	2М€	2М€

Table 3 Boost 4.0 Additional Follow Up Investment Plan KPI (VW, +GF+, CRF)

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Phillips (PCL)								
Additional investment triggered due to project	2М€	2М€	2M€	2M€	2М€			
Benefit due to improved operational efficiency	200K€	400K€	500K€	500K€	500K€			
Benefit due to improved productivity / less costs	300K€	400K€	500K€	500K€	500K€			
Benefit due to reduced time to market	400K€	400K€	400K€	400K€	400K€			
Volkswagen Autoeuro	pa (VWAE)							
Additional investment triggered due to project	525K€	300K€	500K€	175K€	75 K€			
Benefit due to increase of market share	1,95M€	2,26M€	2,71M€	3,25М€	3,9М€			
Benefit due to improved operational efficiency (i.e. flexibility, ergonomics, quality, zero-defects)	2M€	2,34M€	2,81M€	3,7M€	4,04M€			
Benefit due to improved productivity / less costs (i.e. manpower and line-feeding reduction costs)	1,83M€	2,2M€	2,63M€	3,15M€	3,8M€			
Benefit due to reduced time to market	2М€	2,4M€	2,88M€	3,46M€	4,15M€			
FILL GmbH (F	ILL)							
Additional investment triggered due to project	200 K€	200K€	100K€	25K€	25K€			
Benefit due to increase of market share	500K€	575K€	661,25K€	826,5K€	991,8K€			
Benefit due to improved operational efficiency	200K€	230K€	264,5K€	330,6K€	396,7K€			
Benefit due to improved productivity / less costs	250K€	287,5K€	330,6K€	413,2K€	495,9K€			
Benefit due to reduced time to market	300K€	345K€	396,75K€	495,9K€	595,1K€			

Table 4 Boost 4.0 Additional Follow Up Investment Plan KPI (PCL, VWAE, FILL)

GESTAMP S.A. (G	ESTAMP)				
Additional investment triggered due to project	450K€	350K€	200K€	100K€	100K€
Benefit due to increase of market share	1,2M€	1,2M€	2,5M€	зм€	ЗМ€
Benefit due to improved operational efficiency	500K€	500K€	1M€	2М€	4M€
Benefit due to improved productivity / less costs	1M€	2М€	2М€	2,5M€	зм€
Benefit due to reduced time to market	100K€	300K€	300K€	400K€	500K€
Volvo Lastvagnar (VOLVO)				
Additional investment triggered due to project	1M€	1M€	1M€	1M€	1M€
Benefit due to improved operational efficiency	100K€	150K€	200K€	450K€	500K€
Benefit due to improved productivity / less costs	100K€	100K€	200K€	300K€	300K€
Benefit due to reduced time to market	200K€	300K€	300K€	350K€	350K€
Whirlpool EMEA	(WHIR)				
Additional investment triggered due to project	500K€	1M€	2M€	2M€	1M€
Benefit due to increase of market share	200K€	500K€	750K€	500K€	500K€
Benefit due to improved operational efficiency	500K€	500K€	1M€	2М€	2M€
Benefit due to improved productivity / less costs	1M€	4М€	5М€	5M€	5M€
Benefit due to reduced time to market	100K€	400K€	500K€	500K€	500K€
Benteler Automotiv	ve (BAT)				
Additional investment triggered due to project	400K€	300K€	175K€	80K€	80K€
Benefit due to improved operational efficiency	450K€	500K€	750K€	1,5M€	зм€
Benefit due to improved productivity / less costs	800K€	1,2M€	1,5M€	2М€	2,5M€
Benefit due to reduced time to market	100K€	200K€	300К€	400K€	500K€

Table 5 Boost 4.0 Additional Follow Up Investment Plan KPI (VOLVO, BAT, WHIR, GESTAMP)

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5 Innovation Plan

5.1 Innovation Management Processes and Development of Minimum Viable Product (MVP)

Since in BOOST 4.0 we would like to apply innovation management processes to guarantee the fulfilment of needs and expectations of the companies involved in the BOOST 4.0 predictive manufacturing innovation design, we have analysed and adopted CEN / TS 16555-1ⁱ.standard as a source of consolidated practices to support BOOST 4.0 innovation and R&I transfer into marketable products.

<u>Technology transfer processes</u>. In BOOST 4.0 we will adopt a simplified model for the transfer of technology associated with R&I, which is represented as a cycle that can begin with the incorporation of the external intangible assets needed, continues with the generation of new assets through R&D activities, and ends with clear identification of these assets, protection, and determination of their value and exploitation of such assets. In BOOST 4.0 we will work in the processes of asset identification and valuation. *Processes for identification and selection of intangible assets*. In BOOST 4.0 we will support industry, SMEs and research partners in this process, carrying out the technological diagnosis to identify the most valuable R&I assets. *Intangible asset valuation methods*. BOOST 4.0 will consider and select the most appropriate asset valuation method based on the nature of the R&I under consideration: (1) Method based on cost (2) Method based on the market. (3) Method based on income/profit (4) Options-based approach.

Technology surveillance processes Technological surveillance systems have become a fundamental tool for organisations that manage R&I projects. The methodology for technological innovation surveillance will consider (1) **Identification of needs and challenges,** (2) **Identification of the sources,** (3) **Access means** (4) **Search:** Iterative processes where we must always analyse the results to check if they correspond with expectations, (5) **Valorisation of the information**

5.1.1 Risk Analysis and Assessment

BOOST 4.0 has set an specific methodology and risk management registry that can be found in D1.4. For further reference to risk analysis and assessment please refer to that deliverable and subsequent versions of the deliverable.





6 Quality management plan

6.1 Aspects of quality assurance

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

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

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

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

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

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

They have the following tasks:

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

The particular parties like:

- General Assembly
- Project Coordinator (PC)
- Technical Coordination Committee (TCC)
- Responsible Exploitation & Innovation Board (REI)

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are described in section 2.1.

6.1.1 Project quality implementation process

The project quality is planned during the project initial development phase (development of the project proposal). There are provisions for the specific quality management methodology to be followed during the execution of the work, as presented in this section. The quality plan should be discussed by the General Assembly to review and refine the scope, objectives, requirements, and approach.

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

The quality control process is a continuous concern, based on the input from the project progress monitoring activities, coordinated by WP leaders. To operate the project, the consortium has created the Boost 4.0 for dummies presentation, which captures the essential day to day procedures and instructions to be followed by project partners.

Deviations and lessons learned are communicated between partners, to avoid risks or duplication of corrections. Review and monitoring of expenditures and schedule will be performed continuously. Project quality control must also address other different types of reviews: the work breakdown structure, the organizational structure, project outcomes, and budget.

Project personnel should be held accountable for the quality of their work. Usual performance objectives for project personnel, specific to each partner organisation, should be observed by local project partners.

Open continuous communication should be maintained between partners, and regular progress meetings are included in the project planning, to ensure the work is progressing as per requirements. In case of deviations the WP at first has to try to take up specific measures in order to solve the problem in due time. If this will not be possible the coordinator has to be informed and adequate measures (e. g. setting of particular priorities) have to be started.

The WP leader and the coordinator shall inform the consortium about the relevant changes; especially those WP leaders whose workload will be affected and deviated have to be informed as soon as the deviation is identified.

6.1.2 Project quality assessment

The methods for quality assurance have to address the following topics:

• project outcomes quality (project effectiveness)

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

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

The main body for quality assurance will be the GA and the TCC

6.1.3 Quality Plan

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

The quality plan describes the project's quality objectives, quality of the project deliverables and how they are to be managed during the project implementation. The principles described below are applicable to all consortium members. The project goal is to perform the project activities on schedule and within budget, supporting a continuous assessment process. To accomplish this goal, the quality concerns include:

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

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

6.1.3.1 Quality of the Project Deliverables

The quality and implementability of project products (Deliverables) produced during the project progress will be evaluated before their issuing. It will be done by General Assembly (GA) and the Technical Coordination Committee (TCC). In detail a Deliverable will be launched in a draft version to all contributing partners and if necessary to the whole consortium. Any questions, suggestion etc. will be solved first by the involved partners, and if needed by the PC and/or TCC. After having

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integrated the feedback, suggestions etc. the final version will be submitted to the Coordinator, who is in charge for launching it to the European Commission in due time.

The need for updates and refinement of products will also be considered during project implementation (after testing phase)..



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6.2 Deliverables and templates

6.2.1 List of Deliverables

Marchan	Relative Number in		WP	Local Description	-	Dissemination	Due Date (in	Reviewer	Reviewer	6 k k k k
Number	WP 🔽	i itte	Number 💌		туре 🔽	Level 💌	months) 💌	1 💌	2 💌	Status
D1	D1.1	Project management plan and fact sheet	WP1	1 - INNO	Report	Public	1			
D2	D10.1	Annual communication plan and actions v1	WP10	1 - INNO	Report	Public	1			
D3	D1.4	Risk Management Plan v1	WP1	1 - INNO	Report	Public	3			
D4	D3.1	Industrial Data Space v1	WP3	37 - IDSA	Other	Public	6			
D5	D1.2	Interim Progress Report v1	WP1	1 - INNO	Report	Public	9			
D6	D1.5	Risk Management Plan v2	WP1	1 - INNO	Report	Public	9			
D7	D3.3	Big Data Models and Analytics Platform v1	WP3	34 - CERTH	Other	Public	9			
D8	D2.1	Pilot Requirements and Use Cases Specification v1	WP2	45 - INTRASOFT	Report	Public	12			
D9	D2.3	Pilots description, adaptations and execution plans v1	WP2	1 - INNO	Report	Public	12			
D10	D2.5	BOOST 4.0 Reference Architecture Specification v1	WP2	45 - INTRASOFT	Report	Public	12			
D11	D2.7	BOOST 4.0 standardization & certification v1	WP2	39 - ERCIM	Report	Public	12			
D12	D4.1	Technical and Largescale experimentation and set-up VW/FILL	WP4	32 - ATB	Report	Public	12			
D13	D4.2	VW technical experiments	WP4	6 - VW	Report	Confidential	12			
D14	D4.3	FILL technical experiments	WP4	8 - FILL	Report	Confidential	12			
D15	D4.8	Pilot area, pilotbenchmark and KPIs VW/FILL v1	WP4	32 - ATB	Report	Public	12			
D16	D5.1	Technical and Largescale experimentation and set-up VWAE/+GF+	WP5	31-EPFL	Report	Public	12			
D17	D5.2	VWAE technical experiments	WP5	2-WVAE	Report	Confidential	12			
D18	D5.3	`+GF+ technical experiments	WP5	30 - +GF+	Report	Confidential	12			
D19	D5.8	Pilot area, pilotbenchmark and KPIs VWAE/+GF+ v1	WP5	31 - EPFL	Report	Public	12			
D20	D6.1	Technical and Largescale experimentation and set-up FCA/ PHILIPS	WP6	13 - IMEC	Report	Public	12			
D21	D6.2	FCA technical experiments	WP6	14 - CRF	Report	Confidential	12			
D22	D6.3	PHILIPS technical experiments	WP6	11 - PCL	Report	Confidential	12			
D23	D6.8	Pilot area, pilot benchmark and KPIs FCA/PHILIPS v1	WP6	13 - IMEC	Report	Public	12			
D24	D7.1	Technical and Largescale experimentation and set-up GESTAMP/VOLVO	WP7	1 - INNO	Report	Public	12			
D25	D7.2	GESTAMP technical experiments	WP7	18 - GESTAMP	Report	Confidential	12			
D26	D7.3	VOLVO technical experiments	WP7	22 - VTC	Report	Confidential	12			
D27	D7.8	Pilot area, pilot benchmark and KPIs GESTAMP/VOLVO v1	WP7	1 - INNO	Report	Public	12			
D28	D8.1	Technical and Large-scale experimentation and set-up WHIRLPOOL/BENTELER	WP8	17 - POLIMI	Report	Public	12			
D29	D8.2	Whirlpool technical experiments	WP8	24 - WHIR	Report	Confidential	12			
D30	D8.3	Benteler technical experiments	WP8	26 - BAT	Report	Confidential	12			
D31	D8.8	Pilot area, pilot benchmark and KPIs WHIRLPOOL/ BENTELER v1	WP8	17 - POLIMI	Report	Public	12			
D32	D9.1	Horizontal and Vertical Impact Analysis & Project + PPP KPIs assessment v1	WP9	1 - INNO	Report	Confidential	12			
D33	D9.6	BOOST 4.0 Ecosystem Business Development v1	WP9	44 - CARSA	Report	Confidential	12			
D34	D10.2	Annual communication plan and actions v2	WP10	1 - INNO	Report	Public	12			

Table 6 List of deliverables(M1-M12)

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Deliverable 1.1 – V1.0 15 July 2018

Number	Relative Number in	Title	WP	Lead Beneficiary	Type	Dissemination	Due Date (in	Reviewer	Reviewer	Status _
-	WP 🔻	·····	Number 💌		• • • • •	Level 🔻	months) 💌	1 🔻	2 🔻	
D35	D1.6	Risk Management Plan v3	WP1	1 - INNO	Report	Public	18			
D36	D4.4	VW large scale & onsite pilots v1	WP4	6 - VW	Report	Confidential	18			
D37	D4.6	FILL large scale & onsite pilots v1	WP4	8 - FILL	Report	Confidential	18			
D38	D5.4	VWAE large scale & onsite pilots v1	WP5	2 - VWAE	Report	Confidential	18			
D39	D4.6	`+GF+ large scale & onsite pilots v1	WP6	30 - +GF+	Report	Confidential	18			
D40	D6.4	FCA large scale & onsite pilots v1	WP6	14 - CRF	Report	Confidential	18			
D41	D6.6	PHILIPS large scale & on-site pilots v1	WP6	11 - PCL	Report	Confidential	18			
D42	D7.4	GESTAMP large scale & on-site pilots v1	WP7	18 - GESTAMP	Report	Confidential	18			
D43	D7.6	VOLVO large scale & on-site pilots v1	WP7	22 - VTC	Report	Confidential	18			
D44	D8.4	Whirlpool large scale & on-site pilots v1	WP8	24 - WHIR	Report	Confidential	18			
D45	D8.6	Benteler large scale & on-site pilots v1	WP8	26 - BAT	Report	Confidential	18			
D46	D9.2	Horizontal and Vertical Impact Analysis & Project + PPP KPIs assessment v2	WP9	1 - INNO	Report	Confidential	18			
D47	D9.4	Exploitation Action Plan v1	WP9	44 - CARSA	Report	Confidential	18			
D48	D9.7	BOOST 4.0 Ecosystem Business Development v2	WP9	44 - CARSA	Report	Confidential	18			
D49	D9.9	Report on knowledge transfer for sectorial transformation actions v1	WP9	17 - POLIMI	Report	Confidential	18			
D50	D9.11	Additional Investments v1	WP9	44 - CARSA	Report	Confidential	18			
D51	D10.5	Annual demonstration plan and actions v1	WP10	1 - INNO	Report	Public	18			
D52	D2.2	Pilot Requirements and Use Cases Specification v2	WP2	45 - INTRASOFT	Report	Public	21			
D53	D2.6	BOOST 4.0 Reference Architecture Specification v2	WP2	45 - INTRASOFT	Report	Public	24			
D54	D3.2	Industrial Data Space v2	WP3	37 - IDSA	Other	Public	24			
D55	D3.4	Big Data Models and Analytics Platform v2	WP3	34 - CERTH	Other	Public	24			
D56	D4.9	Pilot area, pilot benchmark and KPIs VW/FILL v2	WP4	32 - ATB	Report	Public	24			
D57	D5.9	Pilot area, pilot benchmark and KPIs VWAE/+GF+ v2	WP5	31 - EPFL	Report	Public	24			
D58	D6.9	Pilot area, pilot benchmark and KPIs FCA/PHILIPS v2	WP6	13 - IMEC	Report	Public	24			
D59	D7.9	Pilot area, pilot benchmark and KPIs GESTAMP/VOLVO v2	WP7	1 - INNO	Report	Public	24			
D60	D8.9	Pilot area, pilot benchmark and KPIs WHIRLPOOL/ BENTELER v2	WP8	17 - POLIMI	Report	Public	24			
D61	D10.3	Annual communication plan and actions v3	WP10	1 - INNO	Report	Public	24			
D62	D1.3	Interim Progress Report v2	WP1	1 - INNO	Report	Public	28			
D63	D2.4	Pilots description, adaptations and execution plans v2	WP2	1 - INNO	Report	Public	30			
D64	D4.5	VW large scale & onsite pilots v2	WP4	6 - VW	Report	Confidential	30			
D65	D4.7	FILL large scale & onsite pilots v2	WP4	8 - FILL	Report	Confidential	30			
D66	D5.5	VWAE large scale & onsite pilots v2	WP4	2-VWAE	Report	Confidential	30			
D67	D5.7	`+GF+large scale & onsite pilots v2	WP4	30- +GF+	Report	Confidential	30			
D68	D6.5	FCA large scale & onsite pilots v2	WP6	14 - CRF	Report	Confidential	30			
D69	D6.7	PHILIPS large scale & on-site pilots v2	WP6	11 - PCL	Report	Confidential	30			
D70	D7.5	GESTAMP large scale & on-site pilots v2	WP7	18 - GESTAMP	Report	Confidential	30			
D71	D7.7	VOLVO large scale & on-site pilots v2	WP7	22 - VTC	Report	Confidential	30			
D72	D8.5	Whirlpool large scale & on-site pilots v2	WP8	24 - WHIR	Report	Confidential	30			10
D73	D8.7	Benteler large scale & on-site pilots v2	WP8	26 - BAT	Report	Confidential	30			

Table 7 List of deliverables(M13-M30)

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Number	Relative Number in	Tala	WP Load Repoficiant		Turne	Dissemination	Due Date (in	Reviewer	Reviewer	Chantura
WP V		litte 🔽	Number 💌		туре 🗸	Level 💌	months) 💌	1 💌	2 🔻	Status
D74	D9.12	Additional Investments v2	WP9	44 - CARSA	Report	Confidential	33			
D75	D2.8	BOOST 4.0 standardization & certification v2	WP2	39 - ERCIM	Report	Public	36			
D76	D4.10	Pilot area, pilot benchmark and KPIs VW/FILL v3	WP4	32 - ATB	Report	Public	36			
D71	D5.10	Pilot area, pilot benchmark and KPIs VWAE/+GF+ v3	WP5	31 - EPFL	Report	Public	36			
D72	D6.10	Pilot area, pilot benchmark and KPIs FCA/PHILIPS v3	WP6	13 - IMEC	Report	Public	36			
D73	D7.10	Pilot area, pilot benchmark and KPIs GESTAMP/VOLVO v3	WP7	1 - INNO	Report	Public	36			
D74	D8.10	Pilot area, pilot benchmark and KPIs WHIRLPOOL/ BENTELER v3	WP8	17 - POLIMI	Report	Public	36			
D75	D9.3	Horizontal and Vertical Impact Analysis & Project + PPP KPIs assessment v3	WP9	1 - INNO	Report	Confidential	36			
D76	D9.5	Exploitation Action Plan v2	WP9	44 - CARSA	Report	Confidential	36			
D77	D9.8	BOOST 4.0 Ecosystem Business Development v3	WP9	44 - CARSA	Report	Confidential	36			
D78	D9.10	Report on knowledge transfer for sectorial transformation actions v2	WP9	17 - POLIMI	Report	Confidential	36			
D79	D10.4	Annual communication plan and actions v4	WP10	1 - INNO	Report	Public	36			
D80	D10.6	Annual demonstration plan and actions v2	WP10	1 - INNO	Report	Public	36			

Table 8 List of deliverables(M31-M36)



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6.2.2 Deliverable Management Procedure

The responsible of a deliverable (deliverable owner) will propose a ToC at least 2 months before the due date. The ToC should indicate the partners expected to contribute to each section as well as the main partner responsible for the contents of each Section. Each Task Leader that contributes will guarantee for the contribution's quality and appropriateness.

The responsibility for the production and quality checking of deliverables lies on each work package Leader. For each deliverable 2 reviewers will be appointed not directly involved in the development of the content. Deliverable reviews should be issued within 5 working days of request being made by the deliverable owner.

The TCC together with the Project Coordinator will check the deliverables before issuing. The Project Coordinator will submit the deliverables to the EC Project Officer making use of the Participant Portal Platform.

The deliverables in final format will be submitted by the Project Coordinator to the participant portal.

The deliverable owner will upload the final deliverable in word and pdf format to the Boost 4.0 cloud file system (<u>https://files.boost40.eu/</u>)

6.2.3 Templates

Templates are be provided – see Annex -as download within the project cloud file system area for the following documents and graphics:

- Template for Agenda
- Template for Deliverables
- Template for Periodic Report
- Template for PowerPoint Presentations
- Logo BOOST4.0 for Web
- Logo BOOST4.0 for Web transparent

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



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6.2.4 Activity Reports and Financial Statements

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

The consortium members are obliged to use the templates and to send the filled Periodic Reports in due time to the coordinator. The time covered by the document is, if no other rules are applicable, three months. The coordinator will aggregate and summarise the activity reports to the so-called Progress Report.

Furthermore, a Periodic Report will be submitted to the European Commission by the coordinator for each reporting period within 60 days after the end of each respective period.

The report will comprise:

- a. An overview, including a publishable summary, of the progress of work towards the objectives of the project, including achievements and attainment of any milestones and deliverables identified. This report should include the differences between work expected to be carried out and that actually carried out
- b. An explanation of the use of the resources, and
- c. A financial statement, from each beneficiary together with a summary financial report consolidating the claimed contribution of all the beneficiaries in an aggregate form, based on the information provided by each beneficiary.

After the end of the project the Coordinator will submit a final report to the Commission. The report shall comprise:

- a. A final publishable summary report covering results, conclusions and socioeconomic impact of the project.
- b. A report covering the wider societal implications of the project, including gender equality actions, ethical issues, efforts to involve other actors and spread awareness as well as the plan for the use and dissemination of foreground.



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7 Dissemination of results

The overall measures to maximize impact are organized following a dissemination and exploitation strategy as illustrated in **¡Error! No se encuentra el origen de la referencia.**. The strategy consists of three vertical phases. All dissemination activities are distributed along these phases and aim for the support of the final exploitation – activities increase in intensity and business scope with each phase.



Figure 7 Dissemination & Exploitation Strategy

Dissemination Principles (Mission Statement). It is the principle of all dissemination activities to use innovation results to create value within the targeted communities of the European Union, and to ensure public funding will lead to further progress and keeping European industries at the leading edge within the global market place. Dissemination concerns, on one hand, the communication of the project (awareness) and its results (achievements), to the **external audience**, the scientific community, Advisory Board and the potential business users of the outcomes of the BOOST 4.0 project, including the coordination with agents from the United States. On the other hand, in the case of large industry and multiplier partners, includes internal dissemination towards other research and business units, which can also make good use of the project research. Thus, it is intended to conform an "internal dissemination industrial observatory" among the big players involved in the pilot. Hence all partners of the project are aware of and committed to a proper communication of the project results. All these activities will be coordinated by the *Public Relationships & Communication Office*.

Dissemination Approach. The project will prepare an appropriate specific **dissemination plan** at the beginning of the work along with relevant milestones and **KPIs**. The communication should guide and prepare potential users for the benefits of the expected outcomes of the BOOST 4.0 project.



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BOOST 4.0 Partners	Dissemination approach
Industry: VIS, ASTI, TID, TTT, RISC, PEN, SIE, PRIMA, i2CAT, TRIM, CAPV, SAS, ATLANT, IBM, ESI, ENEO, SQS, CARSA, INTRA, UNP.	Approach other industry-sectors, client networks and networks of SMEs to identify and engage potential customers of exploitable assets.
Research & Innovation: UNINO, INNO, IMEC, POLIMI, CHAL, OWL, FhG, EPFL, ATB, UBO, CERTH, UED, IMT, IDSA, FF, ERCIM,	Engage the scientific and industrial communities across the enlarged Europe to raise awareness for the project and contribute to knowledge .
Manufacturers: VWAE, FILL, VW, GF, CRF, VOLVO, GESTAMP, PCL, WHIR, BAT, UTC, PIA, RIA	Approach suppliers and complementary industry to a identify and engage potential stakeholders in the value network
Consultancy: CARSA	Approach additional users and shared innovative and advanced use/deployment of data and digital automation service infrastructure

The BOOST 4.0 project has established a framework for result exploitation and dissemination among a large community of industrial users, suppliers, and research organizations. The project partners will disseminate the results of BOOST 4.0 through different dissemination channels. These channels benefit from natural R&I streams and include scientific journal and conferences, workshops, special sessions and events related to the European Commission, as well as European Research Initiatives (ERI). Additional channels, such as the website (see communication in the next Section), as well as training and education activities, will be used in a complementary way to inform stakeholders and the European public about the project's results. The BOOST 4.0 dissemination activities planned over the different available channels are as follows:

Workshops, special sessions and events related to the EC, Big Data and research associations (promote the project and its results in the commercial community from a variety of perspectives)

The BOOST 4.0 technological and strategic results will be presented to the interested European Industries and Regional Clusters, as well as events relevant to the different sectors addressed in the project: automotive, pharma, whitegoods, mining and aeronautics. All partners in the consortium will periodically participate in different self-organised and externally organised public events, industry trade shows and other marketing and public relation actions. BOOST 4.0 members are very active and feature vast expertise on organising reference conferences in the field of the project. Taking the lead of an established workshop is preferable with respect to starting up a brand new event. BOOST 4.0 will organise its yearly event co-located and in coordination with reference venues for the research and industrial community, and where BOOST 4.0 partners play important roles; e.g. EDF, BDVA Summits and

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<u>World Manufacturing Forum</u>. BOOST 4.0 dissemination strategy considers the following events (non exhaustive) as a sample of high relevance events that the dissemination plan will target.

- Manufacturing Centric Events. Hannover Messe, AERO, MINEXPO International, Pharmacy, Automotive News World Congress, AIC European Forum, CES Las Vegas, Control Fair, BIEMH, SAE 2016 World Congress, MRO Aviation Week Europe, AIRTEC, World Manufacturing Forum, I4MS Event.
- ICT & Big Data Events. CEBIT, Mobile World Congress, 5G-PPP, FIWARE, INTEROP-VLab, IoTWeek, NetFutures, IERC Cluster, ICT Conference, Big Data Innovation Summit, Big Data Spain, BITKOM Big Data Summit, Big Data: the business challenge)
- Big Data Conferences & Journals. International Conference on Internet of Things and Big Data, IEEE Ingternational Conference on Data Mining, International Conference on Big Data Analysis and Data Mining, Mathematics and Big Data Showcase.
- Manufacturing Conferences & Journals. I-ESA, IEEE World Forum on Internet of Things, CIRP Design Conference, IEEE Transactions on Industrial Informatics, Computers in Industry, CIRP, Extended Semantic Web Conference, PLM.

	 Industry – 24 events/year • Academia 30 events/year • Total > 100 events
Performance Indicators	 Industry – 1 conference/year • Academia 3 conferences /year • Total > 100 conf.
	10 journal publications during the project
	• 3 BOOST 4.0 innovation events during the project

Joint events with Advisory Board Members

BOOST 4.0 will organize joint events with Advisory Board members in order to present the results of the different pilots of the project. This Advisory Board comprises stakeholders and experts interested in receiving exposure to the progress of the project and conversely in exchanging knowledge. These experts include representatives and initiatives from industrial, regional, standardisation or even international areas, all of them with large access to potential users, suppliers and contributors. Moreover, BOOST 4.0 will organize joint workshops with United States agents, which are part of the Advisory Board, in order to share proposed solutions for interoperability to be applied to application in the USA.

Performance • Average Indicators events	- 1 event/year with advisory member • Total > 60
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Internal dissemination towards other research and business units

In the case of large industry and multiplier partners, the BOOST 4.0 technological and strategic results will be presented within internal organization events towards other research and business units, which can also make good use of the project research. Thus, BOOST 4.0 intends to conform an "internal observatory". Technological information will be mostly communicated to technical employees while strategic results and decisions will be presented to department managers or senior staff.

Performance
Indicators

Average for large industry – 1 event/year • Total > 20 events

7.1 Training & Education. Reaching SME communities

Infrastructures and learning material provided by the research partners and SME multipliers will be used in higher education and training. The project aims to deliver effective training and education programmes for industrialists - see specific exploitation strategies for academic partners – and students to enable the uptake of the technologies developed by BOOST 4.0. Particular attention will be paid both to industrial users and to SMEs customers. The delivery of the training programme will be carried out both by traditional approaches (such as 'class-based' courses, seminars, and workshops) and where appropriate a modern online platform to personalise and learn at each learner's convenience. The key elements of the BOOST 4.0 training programme are the following:

- Introductory training seminar and workshop materials for dissemination to SME.
- A training programme for business and IT managers to raise awareness about digital transformation and business model.
- A structured training programme for the SMEs personnel to transfer knowledge on:
 - (a) Best practices and methodology for successful operation of BOOST 4.0 processes;
 - (b) BOOST 4.0 marketplace and assets for data-driven services for equipment vendors;
 - (c) Best-practices on SME data-driven business model development

Performance Indicators. Training material for SMEs • 3 Training sessions to SMEs before end of the second phase of the project (7 Total) • A project book "**Reference architecture and digital business ecosystems for big data cognitive manufacturing for collaboration support across stakeholders**". • A practitioner's e-guide book (SME particularly) with BOOST 4.0 working principles (e.g. 10 pages text + illustrations + media on "How can SMEs successfully benefit from combination of advanced analytics and lean management? Set up your BOOST 4.0 business process.

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7.2 Other Dissemination Means

Predictive Manufacturing Services and Apps Hackaton. The Hackathon is a tool for dissemination as well as tool integration. INNO, ENG will set at least 1 Hackaton to engage SMEs in the development of predictive manufacturing services for BOOST 4.0 marketplace with pilot use cases data.

Watify - Boosting Technological Transformation in Europe EU action just kicked-off in December 2016 is an awareness-raising campaign funded by the European Commission to support the EU efforts to stimulate the modernization of Europe's industry by fostering European SMEs' digital and technological transformation, as well as supporting Europe's regions to translate their smart specialisation strategies in the area of digitisation and KETs into concrete projects. In particular, Watify will support BOOST4.0 in the professional awareness raising campaign, offer their more than 240 digital and technology transformation awareness events, 40 matchmaking events and development of 100 success stories

7.3 Timing of dissemination activities

The dissemination activities will differ in intensity based on the evolution of the project. The dissemination activities will be carried out in four main phases, spanning throughout the project duration and extend beyond it, starting from the **creation of general awareness and concluding with attracting potential supporters and customers/users** of the project results. The dissemination activities of the BOOST 4.0 project will be carried out in four main phases. The four phases are summarised below:

Phase • Aim • Intensity	Content disseminated	Main target audiences	Dissemination Channels
Phase I: First 12 Months • Awareness raising • Light	Approach-oriented content; project presentation; objectives; expected results.	Industrial & Technological communities; Potential end-users.	Website, Exhibitions, Leaflet & Brochures, Conference, Workshops.
Phase II: Till End of Project • Customers & constituency attraction • Medium	Result-oriented content; project intermediate and final results;	Potential supporters & end-users, strategic partners.	Exhibitions, Trade fairs, Workshops, Focused publications, Conferences.

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Phase III: During the Year After Project • Mature & Commercialise • Strong	Result-oriented content; final results; integrated experiment, showcases & lessons learnt.	Potential supporters & end-users, strategic partners	Exhibitions, Trade fairs, Partners leaflets, press releases and publications.
Phase VI: One year after Project End • Commercial • Strong	Commercial components; methodological approaches, SW solution distribution, HW solutions	Business network, customers, strategic partners	Exhibitions, Trade fairs, Partners leaflets, press releases and publications.

7.4 Procedure for dissemination of activities

During the Project and for a period of 1 year after the end of the Project, the dissemination of own Results by one or several Parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions.

Prior notice of any planned publication shall be given to the other Parties **at least 45 calendar days before the intended** date of publication to the consortium mailing list <u>consortium-boost@boost40.eu</u>. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 45 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication of own Results by one or several Parties is permitted.

An objection is justified if

- (a) the protection of the objecting Party's Results, company and industrial secrets or Background would be adversely affected, or
- (b) the proposed dissemination includes Confidential Information of the objecting Party, or
- (c) the objecting Party's legitimate interests in relation to the Results or Background would be significantly harmed.

The objection has to include a precise request for necessary modifications.

If an objection has been raised the involved Parties shall discuss how to overcome the justified grounds for the objection on a timely basis (for example by amendment to the planned publication and/or by protecting information before publication) and the objecting Party shall not unreasonably continue the opposition if appropriate measures are taken following the discussion.

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The objecting Party can request a publication delay of not more than 60 calendar days from the time it raises such an objection. After 60 calendar days the publication is permitted, provided that Confidential Information of the objecting Party has been removed from the Publication as indicated by the objecting Party.

7.4.1 Dissemination of another Party's Results or Background

A Party shall not include in any dissemination activity another Party's Results or Background without obtaining the owning Party's prior written approval. The mere absence of an objection according to the previous Section is not considered an approval.

7.4.2 Cooperation obligations

The Parties undertake to cooperate to allow the timely submission, examination, publication and defence of any dissertation or thesis for a degree that includes their Results or Background subject to the confidentiality and publication provisions agreed in this Consortium Agreement.

7.4.3 Use of names, logos or trademarks

Nothing in this process shall be construed as conferring rights to use in advertising, publicity or otherwise the name of the Parties or any of their logos or trademarks without their prior written approval.

7.4.4 Exclusive licenses

Where a Party wishes to grant an exclusive license to its Results and seeks the written waiver of the other Parties pursuant to Grant Agreement Article 30.2, the other Parties shall respond to the requesting Party within 45 calendar days of the request. Any Party's failure to respond (whether in the negative or the positive) to the request **within such 120 calendar days** shall not be deemed to constitute written approval of the waiver by the non-responding Party.



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8 Communication activities

Communication approach. Communication activities will be conducted by the *Public Relationships & Communication Office*. These activities include all actions that will help to disseminate the project's results beyond the consortium and the direct stakeholders, attracting a wide range of stakeholders. Even though the project's activities are oriented towards manufacturing, pharma, aeronautics, mining industries, it is essential to include also the general public into the communication loop, especially as the outcomes of the project are foreseen to impact various domains.

8.1 Target Audience and Communication Objectives

Target Group	Description	Interest in the project
A - Industry, SMEs and Entrepreneurs (Business)	Players belonging to Industry, SMEs but also entrepreneurs, operating in the smart city domain (service developers, city operators & telco)	 Utilisation of project's results in everyday operations Enhance industrial innovation via blending with in-house artefact and existing platforms.
B –EFFRA, BDVA AIOTI Programme Stakeholders (Non for-profit)	Participants, project partners and relevant stakeholders active in the EFFRA, VDMA, BDVA AIOTI European projects (both from FP7 and H2020)	 Identification of common topics Synergies and collaborations for results promotion Enhancing innovation through results combination Co-organisation of events & standardisation efforts.
C - Technology Clusters (Non for- profit)/Business)	European initiatives and clusters (like IERC, Digital Business Innovation, FIWARE, I4MS, Digital Agenda, Innovation Union), research communities, associations, federations (like i4.0,	 Inclusion of project's results to collaborative research activities (roadmap, white papers)

The potential target groups of the audience of the BOOST 4.0 project, as initially identified are:

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		15 July 2016
	IIC,AIOTI, NetWorks, US IGNITE,)	 Dissemination of project's results to their members Participation in project's events for knowledge exchange
D - Researchers and Academics	Researchers and academics working in universities, research centres, R&D departments of industry	 Advancing research post- project Training personnel & students Porting results to real-life industry cases through the re-use of results
E - Policy Makers (Government)	Policy-makers at any level like EC Directorates and Units, Ministries and Governments, Regulatory Agencies, Standardisation Organisations (CEN, ISO, IEC, W3C, TOG etc.)	 Evaluation of the project's Social-Technological- Economic-Environmental- Political (STEEP) aspects Definition of future research and innovation directions based on project's acquired knowledge Input for standardisation activities
F - General Public (Civil Society)	General public and anyone interested in the project	 Understand and influence the future applications in the BOOST 4.0 domains. Participate in hackathons and project's competitions and events

Based on the target audience groups identified above and their expected interest in the project, the objectives of communication and their relation to these groups are shown below.

8.2 Communication measures

The communication measures are tightly coupled with the different dissemination activities. Communication will use conventional measures such as flyers, infographics, posters, etc., Web2.0 channels such as the project's website, the use of social media channels, etc. and

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relevant event participation (industry fairs, scientific events (conferences, workshops) and organisation of dedicated demonstration events (e.g., webinars, demonstrators, etc.).

Communication approach. Communication activities will be conducted by the *Public Relationships & Communication Office*. These activities include all actions that will help to disseminate the project's results beyond the consortium and the direct stakeholders, attracting a wide range of stakeholders. Even though the project's activities are oriented towards manufacturing, pharma, aeronautics, mining industries, it is essential to include also the general public into the communication loop, especially as the outcomes of the project are foreseen to impact various domains.



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a. Communication strategy and target audience

To get in contact with the identified target audiences and reinforce the visibility and recognition of the project, specific communication actions will be defined and responsibilities will be distributed and documented in the project dissemination and exploitation plan, which will be prepared at the beginning of the project.

Communication	Target Group Objectives' Description				ups		
Objectives		Α	В	С	D	E	F
COM.Obj. 1	Provide clear view of the project goals and results	х	x	x	х	x	x
COM.Obj. 2	Create an active community of potential users and collect knowledge to be taken into account by the project's activities. Consolidate challenges & requirements.	x	x	x	х	x	x
COM.Obj. 3	Prepare the ground for the exploitation of project's results towards the industry. Consolidate business value	x	x				
COM.Obj. 4	Create awareness of the project among the full range of potential adopters , users and usages	x	x	x	x		
COM.Obj. 5	Establish liaisons with other projects and initiatives for knowledge and innovation transfer		x	x	x		
COM.Obj. 6	Support the dissemination and exploitation of results by formulating adapted key messages, and prepare adapted communication material.	x		x	x		
COM.Obj. 7	Recognition of the results among the research communities , standardisation bodies , users , policy-maker institutions .		x	x	х	х	

Additionally, a communication plan with precise measures will be set up to support the achievements of the project objectives, coordinated by the *Public Relationships & Communication board*. To achieve the stated objectives, all the partners commit to undertake the activities that will be defined at the beginning of the project and that will be revised along the project as needed to maximise the expected impact of these activities.

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8.3 Communication measures

The communication measures are tightly coupled with the different dissemination activities. Communication will use conventional measures such as flyers, infographics, posters, etc., Web2.0 channels such as the project's website, the use of social media channels, etc. and relevant event participation (industry fairs, scientific events (conferences, workshops) and organization of dedicated training and demonstration events (webinars, demonstrators, etc.)).

Measures	Description	Expected impact	Target Audience	Due	Usage Span
	Project Cor	nmunication Materi	al		
Project Logo, presentation, templates.	 A HR professional logo Professional Presentation Template for all partners 	 Visual identity & branding Unified experience for the audience targeted 	All Target Audience Groups	M1	Throughout the project
Project Factsheet 3	 A double sided A4 page basic project information. 	 Instant information about the project 	All Target Audience Groups	M1	Updated Throughout the project
Project Website 3 versions	- A Web2.0 website, providing information about the project, the trials and the results, showcasing project's news and acting as a communication channel with the stakeholder (www.BOOST40.eu)	 Main online information point Communication of project news, events results Liaisons with other initiative, projects through links 	All Target Audience Groups	M2	Updated Throughout the project
Videos & Multimedia 10 pilot videos	 1 video presenting the project profile and general concept 	 Communicating project's concept, general info and results in a 	All Target Audience Groups	M6 M18	Throughout the project

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					10 July 2010
5 project videos	 1 video presenting the project results and their application Information pills with focused messages (YouTube target). Ad-hoc multimedia material to support presence in booths, fairs and events 	clear, easy to understand manner - Attracting the interest of high level stakeholders - Awareness raising of the general public			
Newsletters 6	 Information loaded electronic newsletters project's status, developments and other events of interest 	- Attainment of interest of stakeholders subscribed and website/social media	All Target Audience Groups	М3	Throughout the project - updated quarterly
	Project Cor	mmunication Channe	el		
External stakeholder engagement platforms	 The external stakeholder engagement and interaction platform – professional social network & e-survey (EvalMaster). 	- Engagement of End users and general public to co-design and co-develop collaborative manuf. apps	Targets Audience A, F	M18	Updated Throughout the project
Social Channels 1000 followers after 3 years	 1 Twitter account - information, general domain news and communicating directly with parties @BOOST4_0 1 LinkedIn community group to gather all interested stakeholders <u>https://www.linkedin. com/groups/1207598</u> <u>8</u> 1 Slideshare account for sharing all 	 Increasing visibility to stakeholders in Web2.0 Creation of stakeholders' communities around the project's concepts Viral marketing by spread "word of mouth" 	All Target Audience Groups	M2	Updated Throughout the project

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	presentations <u>www.slideshare.net/B</u> <u>OOST_2020</u> - 1 YouTube account for hosting the videos & other clips <u>https://www.youtube</u> <u>.com/playlist?list=PL4</u> <u>a31idCgGo_JxyRuSE1R</u> <u>IGoGD58FEAIm</u>	through the social followers - Direct communication mechanism			
Traditional Communication Material	 30 Posters/Banners/Roll-ups which will present the project's concept 10 Trial specific posters/banners 6 different flyers & infographic designs that will contain general project information and ad-hoc information for events 	 Improved communication of results and information provision during events Strengthening the visual identity of the project Ad-hoc diffusion on information based on identified opportunities 	All Target Audience Groups	M3	Throughout the project - updated as needed
Joint events, workshops, round tables (dissemination KPIs)	 Events organised/co- organised by project inviting experts, researchers, clients and industry people to discuss approaches Events where project will be invited to present its work and vision Events jointly organized with the Advisory Board 	 Increase collaboration with other ICT, FoF and relevant projects Synergies establishment for joint research, information exchange and dissemination Increased awareness for 	Targets Audience A, B, C, D, E	Dissemination plan	As appropriate

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	 Events for internal dissemination within organization for other business units or departments 	external and internal stakeholders			
Demonstrations , show cases exhibition stand (dissemination KPIs)	- Events where BOOST 4.0 will demonstrate its results through live demos of the trial use cases	 Attraction of potential clients and adopters Attraction of potential future partners for research collaboration 	Targets Audience A, B, C	Dissemination plan	As appropriate

8.4 Communication channels

The following channels have been already established and should be used to drive project communication and dissemination.



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9 IPR and publication procedures

BOOST4.0 participants agree to respect their individual Intellectual Property Rights. IPR management has been detailed defined within the Consortium Agreement. The main principles of IPR handling and dissemination are:

9.1 Protection of knowledge

Joint ownership is governed by Grant Agreement Article 26.2 with the following additions:

The joint owners shall, within a six (6) month period as from the date of the generation of such Results, establish a written separate joint ownership agreement regarding the allocation of ownership and terms of exercising, protecting, the division of related costs and exploiting such jointly owned Results on a case by case basis. However, until the time a joint ownership agreement has been concluded and as long as such rights are in force, such Results shall be jointly owned in shares according to their share of contribution (such share to be determined by taking into account in particular, but not limited to, the contribution of a joint owner to an inventive step, the person months or costs spent on the respective work etc.) to the Results by the joint owners concerned.

Unless otherwise agreed:

- Each of the joint owners shall be entitled to use their jointly owned Results for noncommercial research activities on a royalty-free basis, and without requiring the prior consent of the other joint owner(s), and
- Each of the joint owners shall be entitled to otherwise Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license), if the other joint owners are given:
 - o At least 45 calendar days advance notice; and
 - Fair and Reasonable compensation.

9.2 Procedure for Publishing of Project Results

9.2.1 Dissemination of own Results

During the Project and for a period of 1 year after the end of the Project, the dissemination of own Results by one or several Parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions.

Prior notice of any planned publication shall be given to the other Parties at least 45 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties

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proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted. For more

9.2.2 Dissemination of another Party's unpublished Results or Background

A Party shall not include in any dissemination activity another Party's Results or Background without obtaining the owning Party's prior written approval, unless they are already published.

The Parties undertake to cooperate to allow the timely submission, examination, publication and defence of any dissertation or thesis for a degree that includes their Results or Background subject to the confidentiality and publication provisions agreed in this Consortium Agreement.

Nothing in this Consortium Agreement shall be construed as conferring rights to use in advertising, publicity or otherwise the name of the Parties or any of their logos or trademarks without their prior written approval.

9.2.3 Specific Procedure

One Party shall be named that will be in charge for elaborating and/or approving materials to be published, like flyers, an official standard project presentation, official project descriptions, articles for conferences etc.

Hence all materials that are foreseen to be published shall be approved by this Party in advance of publication.

In case of dispute(s) the Management Board first will find a solution. In case of failure the general terms will come into effect.



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10 Conclusion

This deliverable provides a description of containing the first release of the Project Coordination planned at M1. The deliverable defines the rules and procedures of the project governance and operations that will be followed by the BOOSt4.0 consortium across the whole project duration.

Next activities in the area of Project Management comprises continuous monitoring and reporting to allow the provision of feedback to the initial plans that might be updated if needed taking into account possible deviations, changes in the working environment or any unexpected factor that might appear during the whole duration of the project.



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11 Annex I – Boost 4.0 FactSheet

BIG DATA P BIG DATA P About B Boost 4.0, s in Big Data 4.0 will lead of Industry in the facto benefit of B	OR FACTORIES	9 2018 and with a durati With a 20ME budget and of the European Industr a the European manufa industrial sector with th	on of 3 years, is the big d leveraging 180M€ of pr ial Data Space to impro cturing industry in the he necessary tools to c	ngest European initiative ivate investment, Boost ivate investment, Boost introduction of Big Data obtain the maximum	
2			50	16	
Objectiv	/85 Global Standard Space data mode	s: Contribution to the inten	national standardization o	f European Industrial Data Reference Architectural	
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• 🖉	Certification: Eu big data service	ropean certification prog s for their operation in th	jram of equipment, infras e European Industrial Da	tructures, platforms and ta Space.	
10	PILOT FACTORIES	DIGITAL INFRASTRUCTURES	9 DIGITAL MANUFACTURING PLATFORMS	4 OPEN INITIATIVES	
info®boc ¥ @bocst4 m www.link ⊕ www.boo	st48.eu _8 #boost4_8 edin.com/groups/1287 st48.eu	5888		European Commission	

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Lighthouse & Replication Factories 10 Lighthouse Factories ۷ 3 Replication Factories PHILIPS The European Industrial Data Space and BETTELERV Big Data Services: +GF+ Deployed and assessed in the factories of the 10 main European manufacturing leaders. REASTONS Evaluated in 3 strategic economic sectors (automotive, manufacturing equip-Genterro 😫 ment and household appliances). Whirlsool 00 Adopted by 3 factories in traditional and highly regulated manufacturing sectors (textile, ceramics, aero). Lighthouse Factory 4.0 Replication Factory 4.0 Consortium Coordinated by: Consortium members file Information Technologies i2cat• carsa 🌵 INTRASOFT **(** Tliech epcc Telefonica 🗏 Fraunhofer umec (PAL LT B UNINOVA RIMA INDUSTRIE POLITECNICO ASTI **S**sas TRIMEK UNPARÁLLEL CAPVIDIA IBM en it right VISUAL COMPONENTS **BENTELER** V Whirlpool SIEMENS +GF+ VOLVO Gestamp 🖉 PHILIPS CR YOUR FUTURE 0 ð. **RIA STONE** C Redart Tachendagtes Research Center it's owl W3C" INTERNATIONAL DATA 🔒 redborder בסב UNIVERSITÄ

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12 Annex II – Agenda Template



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Agenda

Version history

Date	Description
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Agenda

Date of the Meeting	Time
Organiser:	
Place/Link	
Attendees:	
Al	
Reference Documents:	

Agenda

Item	Duration	Speaker

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13 Annex III – Deliverable Template



Big Data Value Spaces for Competitiveness of European Connected Smart Factories 4.0

Title	The name of the deliverable	
Document Owners	The name of the document holders	
Contributors	Names of the partners	
Dissemination	Public/Private	
Date	**/**/****	
Version	V1.0	



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Document history

Version	Dete	Contributors	Description
0.1	••/••/•••	(partner acronym)	

Document Fiche

Authors	······
Internal Reviewers	;
Workpackage	WP*
Task	1 ⁴ . ⁴
Nature	R/others
Dissemination	PU/PR

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Project Partners

Participant organisation name	Acronym
Asociación de Empresas Tecnológicas Innovalia	INNO
Volkswagen Autoeuropa, Lda *	VWAE
Visual Components	VIS
Automatismos y Sistemas de Transporte Interno S.A.U.	ASTI
Telefónica Investigación y Desarrollo SA	TID
Volkswagen AG. *	vw
UNINOVA	UNINO
FILL GmbH. *	FILL
TTTECH Computertechnik AG	π
RISC Software GmbH	RISC
PHILIPS Consumer Lifestyle B.V. *	PCL
PHILIPS Electronics Nederland	PEN
Interuniversitair Micro-Electronicacentrum VZW	IMEC
Centro Ricerche Fiat S.C.p.A. *	CRF
SIEMENS S.p.A.	SIEMENS
Prime Industries S.p.A	PRIMA
Politecnico di Milano	POLIMI
AUTOTECH ENGINEERING, AIE	GESTAMP
Fundació Privada I2CAT, Internet I Innovació Digital A Catalunyai2cat	12CAT
TRIMEK S.A.	TRIMEK
CAPVIDIA N.V,	CAPVIDIA
Volvo Lastvagnar AB	VOLVO
Chaimers Tekniska Hoegskola AB	CHAL
Whirlpool EMEA SpA *	WHIR
SAS Institute Sri	SAS
Benteler Automotive GmbH *	BAT
It.s OWL Clustermanagement	OWL
Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.V.	FhG
Atlantis Engineering	AE
Agie Charmilles New Technologies SA *	+GF+

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Ecole Polytechnique Federale De Lausanne	EPFL
Institut Für Angewandte Systemtechnik Bremen GmbH	ATB
Rheinische Friedrich-Wilhelms-Universitat Bonn	UBO
Ethniko Kentro Erevnas Kai Technologikis Anaptyxis (CERTH)	CERTH
The University of Edinburgh	UED
Institute Mines Telecom	IMT
Industrial Data Space E.V.	IDSA
FIWARE Foundation EV	FF
GEIE ERCIM EEIG	ERCIM
IBM ISRAEL - Science and Technology LTD	IBM
ESI Group	ESI
Eneo Tecnología, S.L	ENEO
Software Quality Systems S.A.	505
Consultores de Automatización y Robótica S.A.	CARSA
Consultores de Automatización y Robótica S.A. INTRASOFT International	CARSA
Consultores de Automatización y Robótica S.A. INTRASOFT International United Technologies Research Centre Ireland, Ltd	CARSA INTRA UTRC-I
Consultores de Automatización y Robótica S.A. INTRASOFT International United Technologies Research Centre Ireland, Ltd " Fratellí Piacenza S.p.A. "	CARSA INTRA UTRC-I PIA
Consultores de Automatización y Robótica S.A. INTRASOFT International United Technologies Research Centre Ireland, Ltd [®] Fratelli Piacenza S.p.A. [®] RiaStone - Vista Alegre Atlantis SA [®]	CARSA INTRA UTRC-I PIA RIA
Consultores de Automatización y Robótica S.A. INTRASOFT International United Technologies Research Centre Ireland, Ltd * Fratelli Piacenza S.p.A. * RiaStone - Vista Alegre Atlantis SA * Unparallel Innovation, Lda	CARSA INTRA UTRC-I PIA RIA UNP
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*LHF 4.0 - Lighthouse Factory 4.0 * RF - Replication Factory 4.0

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Executive Summary

Please prepare the Executive Summary with this format.

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Acronyms

Acronyms

Full name



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2 First level title format

2.1 Second level title format

2.1.1 List of Partners

Table format (Please follow this format if you're going to introduce a table)

Organisation	Name	Firstname	E-Mail

Table 1 (name of the table)

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das Projekt ge 16 Vitsoluth



Big Data für Industrie 4.0

Der zunehmende Einsatz von Big Data in der Produktion soll die Wettbewerbsfählig-keit der europäischen Automobilindustrie verbessem. Mit diesem Ziel wurde die größte europäische Initiative im Bereich Big Data für Industrie 4.0 – Boost 4.0 – Initiiert:



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2.2.1 Third level title

Forth Level title

3 First level title

3.1 Second level title

3.2 Second level title

3.3 Second level title

4 First level title

4.1 Second level title

Text

4.2 Communication measures

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5 Conclusion

Conclude here

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14 Annex IV – Project General Presentation



Project Overview

Name of the presenter



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Manufacturing Domain

BOOST 4.0 will demonstrate, in a realistic, measurable, and replicable way an <u>open, certifiable and highly</u> <u>standardised</u> and transformative <u>shared data-driven</u> Factory 4.0 model.



Mission and Vision

BOOST 4.0 will demonstrate HOW....

European industry can build unique strategies and competitive advantages (significantly increase operational efficiency, E2E manufacturing planning and deliver improved smart product customer experience, and foster new digital business models; e.g. outcome-based and product servitisation)

big data across all phases of product and process lifecycle (engineering, planning, operation, production and after-market services) BUILDING UPON

the BOOST 4.0 connected smart Factory 4.0 model to meet the Industry 4.0 challenges (lot size one distributed manufacturing, operation of zero defect processes & products, zero break down sustainable operations, agile customer-driven manufacturing value network management and human centred manufacturing).



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Boost 4.0 Objectives



Boost 4.0 Objectives

01: Establish a set of European big data light-house smart connected factories

02: Accelerate the adoption by Industry 4.0 of big data and advanced analytics platforms through trusted computing platforms, open standards, open APIs and open platforms



03: Maximize BOOST 4.0 Commercial Impact



04: Maximize BOOST 4.0 Visibility, Mobilisation and Standardization Impact





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 O1: Establish a set of European big data light-house smart connected factories
 WP2 - Incorporate Relative Business Value (RBV) big data decision support framework in Industry 4.0 business development strategies

KPI1.1	Mechadology defined	KFI@M9	1	KP @M18	2	KPI@M36	2	
KPI1.2	Methodology assessed in factories	KPI@M9	1	KP @M18	5	KPI@M36	10	

WP4-WP8 - Establish and evaluate innovative oig data driven cognitive industry 4.0 manufacturing processes

KPII.3	Business Processes Deployed	KPI@M9	 KPI@M18	15	KPI@M36	40
KPII.4	User acceptance of new processes	KPI@M9	KPI@MI8	≥60×	KPI@M36	≥80×

Boost 4.0 - KPIs

Ol: Establish a set of European big data light-house smart connected factories

- WP9 Demonstrate the replication potential of lighthouse factory BOOST 4.0 big data manufacturing processes
- KPIL5 Business Processes KPI@M9 ---- KPI@M18 ---- KPI@M36 6
- 02: Accelerate the adoption by Industry 4.0 of big data and advanced analytics platforms through trusted computing platforms, open standards, open APIs and open platforms
 - WP9 Provide evidence of the performance leveraged by open big data manufacturing value chains

KPI2.1	Successful pilot completion	KPI@M9	055750	KPI@M18	100.000	KPI@M36	10
KPI2.2	KPI fulfilments	KPI@M9		KPI@MI8	≥30%	KPI@M36	≥80%
KPI2.3	Increase of big data use in decision	KPI@M9	5%	KPI@M18	20%	KPI@M36	50%



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02: Accelerate the adoption by Industry 4.0 of big data and advanced analytics platforms through trusted computing platforms, open standards, open APIs and open platforms

WP3 - Facilitate horizontal and vertical integration of data silos (cognitive big data service interoperability)

KPI2.4	Vocabularies identified	KPI@M9	5	KPI@M18	10	KPI@M36	10	
KPI2.5	Semantic Vocabulary Support	KPI@M9		KPI@M18	5	KPI@M36	10	

 WP3 - Leverage smart integration of industry 4.0, real-time architectures, big data predictive analytics and data/knowledge protection with Industrial Data Spaces

KPI2.6	Accuracy of data analytics	KPI@M9	70%	KPI@M18	90%	KPI@M36	95%
KPI2.7	Speed reduction in data analytics	KPI@M9	5%	KPI@M18	30%	KPI@M36	50%

Boost 4.0 - KPIs



02: Accelerate the adoption by Industry 4.0 of big data and advanced analytics platforms through trusted computing platforms, open standards, open APIs and open platforms

 WP3 - Establish SME friendly and trusted data sharing & processing spaces for big data services

KPI2.8	# of trusted computing	KPIGMG		KPI@M18	1	KPIØMRA	4	
	platforms	NITEHY	10000	N Ieriio	34	KI IGI IDU	ч	

• 03: Maximize BOOST 4.0 Commercial Impact

• WP9 - Ensure immediate replication of B00ST 4.0 success stories and lighthouse pilots inside the key European industria, groups involved and their ecosystems.

KPI3.1	Deployments	KPI@M9		KP @M18	3	KPI@M36	7
KPI3.2	Pilot Business Demonstrations	KPI@M9	5	K= @M18	10	KPI@M36	30



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• 03: Maximize BOOST 4.0 Commercial Impact

 WP9 - Make BOOST 4.C big data framework widely accessible to large regional ICT and manufacturing ecosystems, including SMEs; across Europe and globally.

KPI3.3	Number of eccsystems adhere	KPI@M9	5	KPI@M18	15	KPI@M36	25	
KP 3.4	SMEs & large industry reached	KPI@M9	1K	KPI@MI8	ЮК	KPI@M36	20К	

 WP9 - Generalise evidences from pilots and generate lessons learned and best practices that will go beyond individual factories to support a sector transformation.

KPI3.5	Best practices	KPI@M9	5	KPI@M18	10	KPI@M36	20
KP 3.6	Success Stories	KPI@M9	2	KPI@M18	9	KPI@M36	15

Boost 4.0 - KPIs

04: Maximize BOOST 4.0 Visibility, Mobilisation and Standardization Impact

 WP 10 - Europe Wide dissemination and communication of BOOST potentia... achievements and results

KPI4.I	Events organised	KPI@M9	2	KPI@M18	8	KPI@M36	18	
KP 4.2	Yearly events	KPI@M9		KPI@M18	2	KPI@M36	4	
KP 4.3	Publications - medi presence	5 KPI@M9	5 - 20	KPI@M18	20- 80	KPI@M36	50 200	-
KP14.4	User Perception (scal 1-5)	E KPI@M9	3	KPI@M18	4	KPI@M36	5	

 Full integration with EU network of Digital Innovation Hubs for Industry 4.0, Future Internet, (open) industrial data and IoT

KPI4.5 Agreements	KPI@M9	1	KPI@MI8	2	KPI@M36	5
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• 04: Maximize BOOST 4.0 Visibility, Mobilisation and Standardization Impact

• WP2 - Lead standard sation efforts.

KPLA	Standard WG	KPIRMG	5	KPIGM18	15	K PI@M36	30
NI0	participation	KITCHD	2	ALIGHTO.	10	KI IGHOO	00

Establish a certification programme for B00ST 4.C connetors

KP 4.7 Products ready for certification KPI@M9 KPI@M18 KPI@M36	5	
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BOVA REFERENCE ARCHITECTURE



RAMI4.0



"Big Data for RAMI 4.0"







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Deliverable 1.1 – V1.0 15 July 2018



Connectivity, fog/edge, data-center, HPC, cloud



O AnellaIndustrial.cat





TERALAB



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"Trusted Open Big Data Middleware"

Open Big Data Pipelines, Data Sovereignty, Context Information Brokering, Distributed Data Traceability





Engineering, planning, operations, quality control, analytics, maintenance, cybersecurity

 SIEMENS
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 VISUAL COMPONENTS
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FACTORIES 4.0

10 Lighthouse

Automotive (6) Machine Tool (2) White Goods & Appliances (2)

3 Replication

Textile Ceramics Elevation / AER0



Replication Factory 4.0



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Big Data Factory 4.0 Competitive Advantages

- (1) VW zero defect factory 4.0 virtual commissioning
- (2) FILL lot-size-one machine tool circular engineering factory 4.0
- (3) VWAE real-time self-learning virtual factory 4.0
- (4) +GF+ machine tool optimum production factory 4.0
- (5) FIAT autonomous assembly line factory 4.0
- (6) Philips mass customised consumer electronics manufacturing line
- (7) Volvo truck digital assembly factory 4.0
- (8) GESTAMP automotive part resource efficient factory 4.0
- (9) Benteler predictive factory 4.0
- (10) Whirlpool whitegoods spare part sensing customer service factory 4.0

Smart Digital Engineering

Smart Planning

Smart operations & digital workplace

Smart connected production

Smart maintenance & service



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BOOST 4.0 Big Data Transformation



Big Data/Al Factory 4.0 Transformation - Opportunities

Smart Digita	l Engineering			
Pilot Area 1		Smart digital engineering		Fin
BOOST 4.0 Tra	ansformation Value	Networked Commissioning and Engineering		
	Descrip for inde- mainten commis	otion: Short time-to-market of innovative custon ustrial companies. Integrating big data feedbac lance phases into the engineering phases will shor sioning in lot-size-1 production facilities	nised products is a the information fro rten the time for re	key success factor om operation and eal plant or factory
Smart Plann	ing			
Pilot Area 2		Smart Planning & Management	Autoeuropa 🛞	+GF+
BOOST 4.0 Transformation Value Cognitive Production Planning				
and the	Description: Allow syst the global value chain wi planning schedules and p value networks.	tem wide visibility and data flow and analysis fro Il allow manufacturing companies to trade on their production costs to perform dynamic end-to-end	m the shop-floor t r production capac l production plann	to the top floor to ity, manufacturing ing across flexible
Smart Opera	ations & Digital Wor	kplace		
Pilot Area 3		Smart operations and digital workplace		PHILIPS
BOOST 4.0 Tra	ansformation Value	Autonomous Production Automation.		0.1.
D ev p	Description: Multi-source valuation is critical for sho roduction data analysis is k	high-speed production data processing in workpl op-floor productivity and safety concerns. Machine tey for system autonomy-automation and augment	ace-process-humar ine learning based nted human compe	1-machine context high-performance etences.



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Big Data/Al Factory 4.0 Transformation - Opportunities

Smart Connected

Pilot Area 4		Smart Connected Production					
BOOST 4.0 Tran	DST 4.0 Transformation Value Collaborative Manufacturing Networks.						
	Description: Hundred into large complex pr production world with enables quality control	ls of thousands of parts, provided by multiple oduct such as automotive or smart home as the digital twin. Big data transparency means within and across the complete value chain	supplier facilities act ppliances. Big data continuous process	ross the globe, go connects physical coordination and			

Smart Maintenance & Service

Pilot Area 5		Smart maintenance & service BENTELER V				
BOOST 4.0 Transform	nation Value	Full Equipment and Product Availabilit	y.			
	Description: C process coordin part distribution	ontinuous product or machine data means ation resulting in better customer experien- and prescriptive maintenance.	s continuous analysis, risk : ce, fewer field service calls,	assessment, and optimum spare		

Boost 4.0 WPs

WP	Work package title	Lead participant	Person- months	Start month	End month
1	Management		120	1	36
2	B00ST 4.0 Reference Architecture		306	1	36
3	B00ST 4.0 Big Data Interoperable Pipeline & Analytics Platforms	INDUSTRIAL DATA SPACE ASSOCIATION	442	2	24
4	Smart Digital Engineering Big Data Pilots	FILL YOUR FUTURE	148	2	36
5	Smart Production Planning & Management Pilots	+GF+	141	2	36
6	Smart Operations & Digital Workplace Pilots	PHILIPS	136	2	36
7	Smart Connected Production Pilots	Gestamp 🖉	162	2	36
8	Smart Maintenance & Service Pilots	Whirlpool	131	2	36
9	Impact Analysis and Exploitation	carsa	260	10	36
10	Dissemination, Stakeholders Engagement and Training		176	1	36



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Project Duration: 36 Months WPL Man

WP3, BOOST 4.0 Big D

T3.3 Industry Da

Boost 4.0 – Project planning



Boost 4.0 – Project planning





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Boost 4.0 WPs





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15 Annex V – Boost 4.0 for dummies



Project Management Handbook for Dummies

Your answers here!



Welcome!

Welcome to the Boost 4.0 Consortium!

We understand that, at the beginning, you might find yourself lost in the middle of a consortium with 50 partners spread across Europe and piles of tasks and deliverables.

You have no idea about when and how to report, not sure about what is the most effective way to communicate within the group, how to use the shared cloud for working documents, ect. We get you!

Don't worry. This handbook is designed for Boost 4.0 dummies so that they can kick off this highly anticipated journey towards our common vision: a connected European Industrial Data Space.

We guide you in every step of the way.





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Introduction

- 1. Progress Report Procedures Slide 1-2
- 2. Main contact emails Slide 3



- 3. How to get access to the cloud? Slide 5
- 4. How to navigate the Boost 4.0 Cloud? Slide 5-6
- 5. The dos and don'ts for Boost 4.0 cloud. Slide 7
- 6. How to get in the Mailing list. Slide 8
- 7. How to unsubscribe from the Mailing list. Slide 9
 - 8. What to do if you have change of personnel? Slide 10





ort reporting Will be led by WP leaders. The WP leaders Will annouce through Mailinglist for pai contribute to completed tasks and corresponding efforts.



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Boost 4.0 Progress Report Procedures



Naming convention - Deliverables

To facilitate documents organization, the naming of deliverables should follow this format: (Year month data) - WPx - Dx.x - Title - vx.x_contributor e.g. 2018 06 15 - WP1 - D10.1 - Annual Communication Plans -V1.0_INNO

Where to put the deliverables submitted?

IMPORTANT! Please upload every submitted deliverable into the Boost Cloud under specific WP folders. E.g. D10.1 should be stored in the WP10 Communication and impact folder.

Boost 4.0 Progress Report Procedures

Main contact for WP leaders

Coordinator: Mr Oscar Lázaro <u>olazaro@innovalia.org</u> Communication and events: Miss Silvia de la Maza <u>smaza@innovalia.org</u> WP1: Miss Silvia de la Maza <u>smaza@innovalia.org</u> WP2: Mr. Konstantinos Sipsas <u>Konstantinos.SIPSAS@intrasoft-intl.com</u> WP3: Mr. Christop Mertens <u>christoph.mertens@internationaldataspaces.org</u> WP4: Mr. Wiesinger Alois <u>alois.wiesinger@fill.co.at</u> WP5: Mr. Roberto Perez <u>roberto.perez@georgfischer.com</u> WP6: Mr. Jeroen Greidanus jeroen.greidanus@philips.com WP6: Mr. Miguel Angel Calvo <u>calvoma@gestamp.com</u> WP8: Miss Barbara Villa <u>barbara_villa@whirlpool.com</u> WP9: Marie Bourdon <u>mbourdon@carsa.es</u> WP10: Xianshu Zeng xzeng@innovalia.org



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Boost 4.0 Cloud Environment and Mailing list



How to get access to the cloud?

You can send an email to Silvia (smaza@innovalia.org) or Xianshu (xzeng@innovalia.org) with the WP you want to be in the mailing list and then you'll be granted with the access. Link: https://files.boost40.eu





Boost 4.0 Cloud Environment and Mailing list

How to navigate the Boost 4.0 Cloud? (1)

Project Content: Docs

Con Carta		Parent Folder			
	Evento	Gen	eral Legal	WPs WP01-WP10	
Velcome: inno					
🔶 🚽 🚖 🚇 😂 B	al IB FA	100	用品牌。		
- a docs	Sub	Folder	(Day)	Ben	
• 🖿 Events 🖉					
+ 20180130		20180130	20180131	20180508	
20180131		V .	Create Net	w Folder	
20180508-FIW	ARE	-	STATE STATES	E Partalana	
🕨 🧮 General	Open		within su	biolder	
Legal	Download	1			
	1 Uninad files	11			
WPs WP01-WI					
• WPs WP01-WL	New folder				

- When you log in, you're going to see these four main parent folder: Events, General, Legal and WPs. Remember: these are created by IT department, BOOST 4.0 users can't create their own parent archive.
- When you click in the parent archive, you can see the content listed in sub folder. Your are free to create new folders within by clicking right and choose New Folder.



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Boost 4.0 Cloud Environment and Mailing list

How to navigate the Boost 4.0 Cloud? (2)



When you click into any of the four parent folders, you enter the main working cloud zone of Boost 4.0. The categorisation is:

- o Events Presentatios of mayor Boost 4.0 events
- o General Project Presentation.
- o Grant Agreement DoA
- o WP All WP specific working Profiles.

Tips: never need to worry about how to present Boost4.0 to any interested parties. The Project Presentation in General/Presentations.

Boost 4.0 Cloud Environment and Mailing list (2)

The dos and don'ts for Boost 4.0 cloud.

Dos:

- Gain access through subscribing to mailing list;
- Upload and share any Boost 4.0 related working files;
- Create a folder within defined parent archives.

Don'ts

- Don't try to delete nor change any document that you have uploaded.
- Don't try to create a new parent archive.

04: What to do if you have mistakenly uploaded some files that you want to delete or change?

Please contact Miguel Ángel Urrutia by maurrutia@cbt.es.



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Boost 4.0 Mailing list (1)

How to get in the Mailing list.

You NEED to get in to the Mailing list to stay in the loop. Boost 4.0 has 12 mailing list: Consortium, Legal, WP1-10.

To subscribe to the mailing list, please contact:

Silvia (<u>smaza@innovalia.org</u>) or Xianshu (<u>xzeng@innovalia.org</u>) Please also kindly tell them which are the Mailing list they you want to get involved.

Miscellaneous

What to do if your organization/company changes responsible personnel in Boost 4.0?

Please follow the following steps

- Make sure the new personnel covers the necessary skill set required from the project and sign the commitment to participate;
- 2. Inform the coordinator about the change; and
- Subscribe the new personnel in the corresponding Mailing list, thus gaining access to the Boost 4.0 cloud.



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Boost 4.0 Mailing list (1)

How to get unsubscribed from the Mailing list.

If you're not going to be involved in Boost 4.0 anymore, please unsubscribe yourself from the Mailing list. You have the following options:

- Unsubscribe by yourself via the World Wide Web. Visit: <u>http://lists.boost40.eu/mailman/listinfo/</u> and then unsubscribe yourself from any WPs.
- Write an email to Miguel Ángel Urrutia by <u>maurrutia@cbt.es</u> to unsubscribe.



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i http://www.iat.es/2013/06/new-european-standard-for-managing-innovation/?lang=en