

Cognitive plants through proactive self-learning hybrid digital twins

COGNITWIN

DT-SPIRE-06-2019 (870130)

Deliverable Report

Deliverable ID	D8.6		Version	V1									
Deliverable name	Short Interim Management Report-2												
Lead beneficiary	SINTEF (SINTEF AS)												
Contributors	Akhilesh Kumar Srivastava (SINTEF), Arne Berre (SINTEF),												
	Frode Brakstad (SINTEF)												
Reviewers	Jan Gunnar Dyrset (CYB), Tobias Bettinger (SAG)												
Due date	28.02.2021												
Date of final version	28.02.2021												
Dissemination level	PU												
Document approval	Frode Brakstad	28.02.	2021	10.									
				The Guld									



The COGNITWIN project has received funding from the European Union's Horizon 2020 research and innovation programme under GA No. 870130

PROPRIETARY RIGHTS STATEMENT

This document contains information which is proprietary to the COGNITWIN consortium. The document or the content of it shall not be communicated by any means to any third party except with prior written approval of the COGNITWIN consortium.



Executive Summary

This report presents an overview of project management activities performed during M7 (March 2020) to M18 (February 2021) of COGNITWIN project. In this time frame, the consortium has requested a 6-month project extension as an amendment in the Grant Agreement to address COVID-19 related risks. Other inconsistencies found in the Description of Action (DoA) were also corrected at the same time.

This report also includes information on various meetings (general assembly, executive board, project, and status meetings), status of deliverables and milestones, financial and resource planning input from partners, and the preparation of upcoming M18 project review meeting.



Table of Contents

1	Intr	oduction	4
2	Agr	eements	4
3	Me	etings	5
	3.1	General Assembly	5
	3.2	Executive Board Meeting	5
	3.3	Project Meetings	5
	3.4	Status Meeting	6
4	Scie	entific/Technical Coordination & Impact Measurement System	6
5	Inno	ovation Impact Measurement and Governance	6
6	Fina	ancial	6
7	Res	ource Planning	6
8	Stat	tus of Deliverables and Milestones	6
9	M1	8 Project Review	7
1() C	ocument Sharing and Communication Platforms	7
11	1 R	isk	7
12	2 /	Appendix A	8
L	ist o	f Tables	
Tá	able 1:	COGNITWIN key project information	4
		Status of M18 deliverables	
Ta	ahle 3	Current version of the Gantt Chart in COGNITWIN project	Q



1 Introduction

In the COGNITWIN project, the working methods and implementation routes are being agreed and implemented under the project management activities. A summary of these project management activities carried out from M7 to M18 is provided in this report. The updated key information about the COGNITWIN project is presented in Table 1.

Table 1: COGNITWIN key project information

Acronym	COGNITWIN
Grant Agreement No	870130
Starting date	1 September 2019
Duration	42 Months
Project total cost	€ 8 653 170,00
EC contribution	€ 6 982 431,38
Project Coordinator	Frode Brakstad
Project Officer	Monika Spinu

2 Agreements

The Grant Agreement (GA) and Consortium Agreement (CA) regulate all relevant issues concerning management (description of the action, governing bodies, roles, organization, resources, specific operational procedures for the consortium bodies etc.). The status of GA and CA is as follows:

Grant Agreement: The Grant Agreement (GA) was digitally sealed by the European Commission on 30-July-2019 (before the project was started).

Consortium Agreement: All the partners have signed the Consortium Agreement (CA). The signing process was completed on 22-Jan-2020.

Amended Grant Agreement: The following amendments in the Grant Agreement have been made:

- Project Duration (The project will run for 42 months instead of originally planned 36 months)
- List of Deliverables
- List of Milestones
- Table of Efforts
- Modified Gantt Chart
- Any other inconsistencies informed by the partners

The project extension request was made by the consortium based on the risk assessment performed due to COVID-19 situation. During the COGNITWIN project status meetings held 06-May-2020 and 20-May-2020, the consortium has evaluated potential risks of delays on various deliverables and milestones caused by COVID-19 restrictions. The project is driven by 6 industrial pilots. Two of these pilots were facing restrictions in their operations which was imposing delays in their M18 deliverables. Consequently, all the other deliverables and milestones are delayed by 6 months. The



organization of workshops in WP7 that were planned for M15 and M35 are also postponed by 6 months. Apart from the delay caused by COVID-19 situation, some additional amendments were also requested by the consortium. These requests were mainly based on inconsistencies found in the DoA after the project was started.

All the amendments in Grant Agreement (including 6 months project extension) proposed by the consortium were accepted by the European Commission on 10-Nov-2020. An updated Gantt chart is shown in Appendix A. A detailed overview of the amendments, including updated list of deliverables and milestones, is available on SharePoint platform of the project.

3 Meetings

Several meetings have been organized during this reporting period. Minutes from all the meetings were recorded and approved by the meeting participants. Documents related to these meetings are available at SharePoint platform of the project.

3.1 General Assembly

The 2nd General Assembly of the project took place on 17-December-2020. All the partners were present in the meeting. Overall project progress was mainly discussed. The consortium had not raised any topics for voting. Meeting minutes were recorded and accepted by all the participants.

3.2 Executive Board Meeting

Executive board meetings were organized on 25-Mar-2020 and 21-Oct-2020.

All the work package and pilot leaders provided updates on the progress of their respective work packages and pilots. Meeting minutes in both the meetings were recorded and accepted by all the participants.

3.3 Project Meetings

COGNITWIN consortium had the following two project meetings in the reporting period. Both the meetings were held online due to COVID-19 situation.

M12 Project Meeting: The meeting was held online via Microsoft Teams on 16th and 17th June 2020, with 42 people joined the meeting. Regardless the situation around COVID-19, the COGNITWIN project made significant progress in all the work packages. The status, work plan and other relevant technical details were presented and discussed to all project participants. Project partner SUMITOMO made a presentation on its company profile and processes. Additionally, a detailed analysis of project risks caused mainly by COVID-19 was carried out.

M18 Project Meeting: This meeting was held on 2nd and 3rd of February 2021. Total 38 participants joined the meeting via Microsoft Teams (online). Status update of the use cases, the technologies developed, and dissemination, exploitation, and project management activities were provided by the



partners. A discussion on the results achieved in the last 6 months and future steps for the project took place during the meeting. On the second day of the meeting one of the project's pilot; NOKSEL Steel Pipe made presentations on its company profile and steel pipe production processes. In the end, a session on the preparation of M18 project review meeting was organized.

3.4 Status Meeting

The Project Status meeting is regularly taking place on monthly basis.

4 Scientific/Technical Coordination & Impact Measurement System

The COGNITWIN project is developed with a pilot driven approach towards the priorities of the technology contributions. This is done to ensure a good coordination between the technical development related to the COGNITWIN Toolbox and business relevance for the pilots for the related technical project innovations. The six pilots and the technical work packages have organized regular meetings on weekly, bi-weekly or monthly basis.

5 Innovation Impact Measurement and Governance

There is a regular monitoring and update of the progress towards the planned impact based on the identified performance indicators for each of the pilot plants. There is also a monitoring of the progress of the planned exploitable assets from the project and how these can have impact on European process industries linked to SPIRE and P4Planet.

6 Financial

An interim financial report was requested from all the partner as an internal exercise to track the budget. No financial risks were reported by any partner. Detailed M18 financial report will be provided to the Commission on or before 30-Apr-2021.

7 Resource Planning

An overview of resource planning at task and work package level was requested from all the partners. These documents are available to all the partners through SharePoint platform.

8 Status of Deliverables and Milestones

Table 2 presents an overview of M18 deliverables (submission deadline-28-Feb-2021).



Table 2: Status of M18 deliverables

WP No	Del Rel. No	Title	Lead Beneficiary	Nature	Dissemin ation Level	Status
WP1	D1.2	A Database and digital platform for the Non-ferrous pilots	Hydro	Demonstrator	CO	Submitted
WP2	D2.2	A Database and digital platform for the Steel pilots	SAG	Demonstrator	CO	Submitted
WP3	D3.2	A database and digital platform for Engineering pilot	SFW	Demonstrator	CO	Submitted
WP4	D4.2	Initial Platform, Sensor and Data Interoperability Toolbox	Fraunhofer	Demonstrator	Public	Submitted
WP5	D5.2	Initial Hybrid AI and Cogntive Twin Toolbox	DFKI	Demonstrator	Public	Submitted
WP8	D8.6	Short Interim Management Report - 2	SINTEF	Report	Public	Submitted

The project is also submitting milestone 2 (MS2) report in accordance with the DoA.

A project progress report will be submitted to the commission on or before 30-Apr-2021.

9 M18 Project Review

The M18 project review meeting will take place on 27-Apr-2021. A project progress report along with the financial report as per the guidelines from the commission will be prepared for this review. An invitation for this meeting has been distributed to the partners. Internal deadlines for preparing the progress report have been established.

10 Document Sharing and Communication Platforms

SharePoint is primarily being used for sharing the documents among the project participants. A Teams platform has been established for communication. Dedicated channels for each WP/pilots and managerial bodies are available in this platform.

11 Risk

As presented earlier in Section 2 (Agreements), the project has experienced the risk of COVID-19 situation. A risk assessment report in this regard was submitted to the commission. Consequently, the project has received an extension of 6 months. Apart from this, no other risks are in critical state.



12 Appendix A

Table 3: Current version of the Gantt Chart in COGNITWIN project

					Ye						L				Ye				Year 3															
	1	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 2													3 24	25	26	27 2	8 29	30	31	32	33	34 3	36	37	38	39	40 4:	1 4				
WP1 Large scale pilot Non-ferrous																																		4
Task 1.1 Co-innovative preparations					D1.1																													
Task 1.2 Digital twin: Existing technologies															D1.2																			
Task 1.3 Hybrid Twins: Merging old and new technologies																										D1.3								
Task 1.4 Cognitive Twins: Realizing the cognitive elements																																		D1.4
WP2 Large scale pilot steel																																		
Task 2.1 Co-innovative preparations					D2.1																													
Task 2.2 Digital twin: Existing technologies															D2.2																			
Task 2.3 Hybrid Twins: Merging old and new technologies																										D2.3								
Task 2.4 Cognitive Twins: Realizing the cognitive elements																																		D2.4
WP3 Large scale pilot Engineering																																		
Task 3.1 Co-innovative preparations					D3.1																													1
Task 3.2 Digital twin: Existing technologies															D3.2																			1
Task 3.3 Hybrid Twins: Merging old and new technologies																										D3.3								1
Task 3.4 Cognitive Twins: Realizing the cognitive elements																																		D3.4
WP4 COGNITWIN Platform, Sensor and Data Interoperability Toolbox																																		
Task 4.1 COGNITWIN Interoperability Toolbox Architecture					D4.1																													
Task 4.2 Digital Twin Cloud Platform, Data Space and Cyber Security															D4.2																			
Task 4.3 Sensors, Understanding the Sensor Data & Quality Assurance																								D4.3										1
Task 4.4 Realtime sensor/data processing																																		D4.4
WP5 COGNITWIN Hybrid AI and Cognitive Twin Toolbox																																		
Task 5.1 Plant Digital Twins with ML/AI					D5.1																													1
Task 5.2 Multivariate Sensor analytics with Deep Learning																																		1
Task 5.3 Deep Learning Performance																																-		†
Task 5.4 Hybrid Digital Twins																																-		1
Task 5.5 Cognitive Digital Twins															D5.2									D5.3										D5.4
WP6 Business SPIRE Industry Impact/Exploitation																																_		
Task 6.1 Conduct the baseline KPI measurement based retrospective data					D6.1																											-		+
Task 6.2 Process Industry Impact																			D6.2													-		+
Task 6.3 Develop Best "Cognitive Twin" Practices																																		D6.3,
																																		D6.4
Task 6.4 Impact on education																																		D6.5
WP7 Communication, Dissemination, Standardisation																																		4
Task 7.1 Communication plan and tools		D7.1																																4
Task 7.2 Industrial and scientific dissemination procedures and activities					D7.2														D7.3															D7.6
Task 7.3 International networking																																		D7.4
Task 7.4 Standardisation																																4		D7.5
WP8 Project Management																																		
Task 8.1 Project Management, Coordination, Risk Assessment, Governance					D8.1, D8.2										D8.6									D8.7					D8.8					
Task 8.2 Scientific/Technical Coordination & Impact Measurement System			D8.3																D8.4															D8.10
Task 8.3 Innovation Impact Measurement and Governance			D8.5													0	8.9																	

Classification Public Page 8 of 8