INCREASE

INCREASING THE PENETRATION OF RENEWABLE ENERGY SOURCES IN THE DISTRIBUTION GRID BY DEVELOPING CONTROL STRATEGIES AND USING ANCILLARY SERVICES

D7.1 Project Handbook

Document info

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Reviewers	Bart Meersman

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1 Introduction

1.1 Purpose of this document

The purpose of this document is to provide an overview of the management and administrative procedures of the INCREASE project in order to ensure a successful execution with positive results. The document provides the project partners (referred to in the EC Grant Agreement as "Beneficiaries") with information necessary to facilitate the management, the monitoring of the overall progress and the communication.

1.2 Scope of this document

This Deliverable D7.1 Project Handbook provides information necessary to facilitate the day-to-day management of the project for every partner.

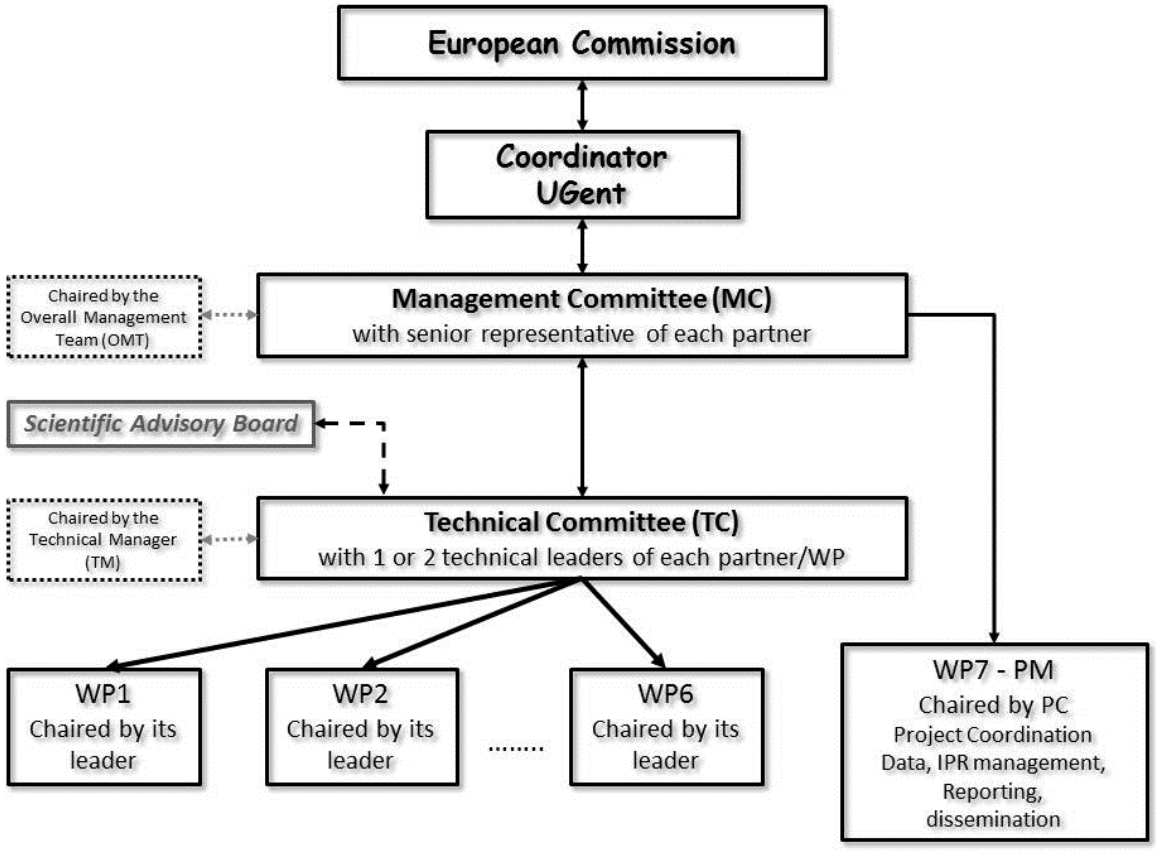
The Project Handbook can be adjusted and reviewed whenever considered necessary.

1.3 Acronyms and abbreviations

Item	Description
D	Deliverable
DOW	Description of Work
ECGA	European Commission Grant Agreement
IPR	Intermediate Progress Report
IPR	Intellectual Property Rights
M	Milestone
MC	Management Committee
OMT	Overall Management Team
P	Prototype
PC	Project Coordinator
PM	Person Month
PO	Project Officer
PP	Restricted to other programme participants (including Commission Services)
PPR	Periodic Progress Report
PU	Public
R	Report
QA	Quality Assurance
TC	Technical Committee
WP	Work Package
WPL	Work Package Leader

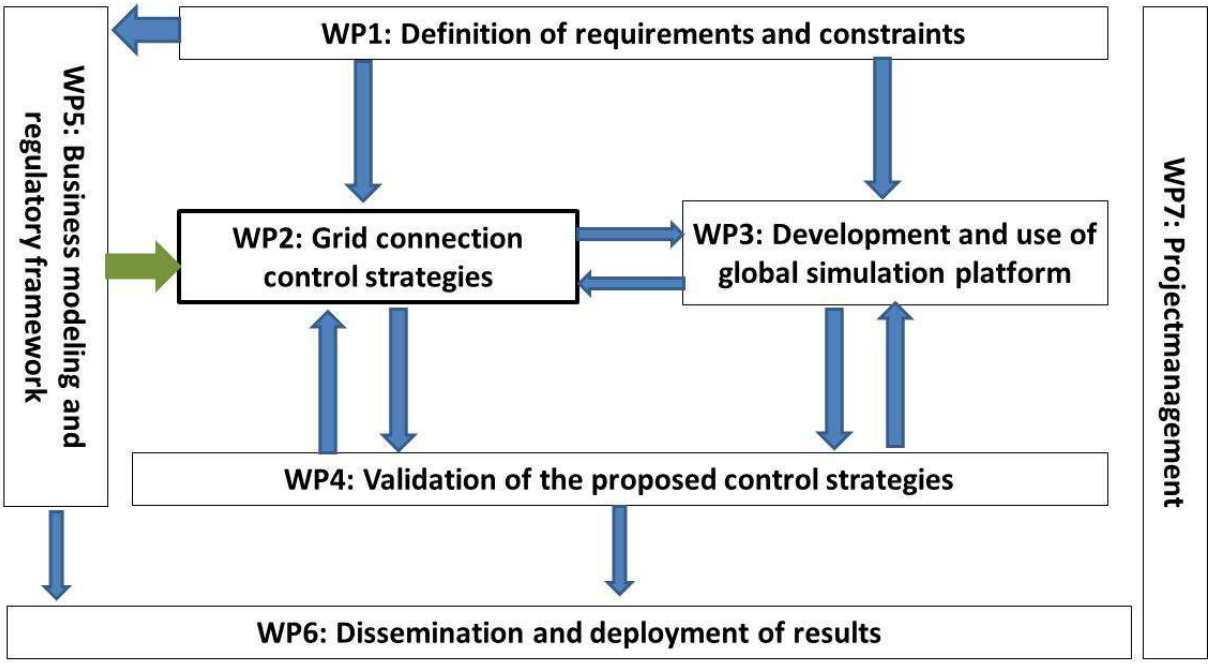
2 Project Management

2.1 Project Management Structure



2.1.1 Work Packages

WP1 – Definition of requirements and constraints
WP2 – Grid connection control strategies
WP3 – Development and use of an integrated simulation platform
WP4 – Implementation and validation of the proposed control strategies
WP5 – Market mechanisms and regulatory frame work for ancillary services
WP6 – Dissemination and deployment of results
WP7 – Project Management



2.2 Project Organization

The Project Organization consists of:

- Overall Management Team (OMT)
- Project Coordinator (PC)
- Management Committee (MC)
- Technical Committee (TC)
- Work Package Leaders (WPL)
- Scientific Advisory Board

2.2.1 Overall Management Team

The Overall Management Team (OMT) is responsible for the overall project strategy, ensuring optimal coherence between the work performed in the different work packages and the overall objectives. The OMT consists of the Technical Manager (TM) and DSO Manager (DM). The TM of INCREASE is Dr. Ir. Bart Meersman (UGENT) and the DM is Lieven Degroote (EANDIS).

2.2.2 Project Coordinator

The Project Coordinator (PC) is Ghent University and is fully responsible for all the project affairs. The Project Coordinator is the official link between the INCREASE project and the European Commission. The Project Coordinator will handle all financial and other operational matters of the project.

The Project Coordinator is responsible for the following tasks:

a) Administering the financial contribution of the Union regarding its allocation between the partners and activities, in accordance with the European Commission Grant Agreement

(ECGA) and the decisions taken by the consortium. The PC shall ensure that all the appropriate payments are made to the other partners without unjustified delay.

b) Keeping the records and financial accounts making it possible to determine at any time what portion of the financial contribution of the Union has been paid to each partner for the purposes of the project.
c) Informing the Commission of the distribution of the financial contribution of the Union and the date of transfers to the partners, when required by the ECGA or by the Commission.
d) Reviewing the reports to verify consistency with the project tasks before transmitting them to the Commission.
e) Monitoring the partners' compliance with their obligations under the ECGA.
f) Ensuring accession to the contract by the other partners.
g) Collecting from all Beneficiaries the cost and other statements for submission to the European Commission.
h) Analysing potential conflicts between partners and the ECGA.
i) Ensuring prompt delivery of all data identified as deliverable items in the Contract or requested by the European Commission for reviews and audits.

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2.2.3 Management Committee

The Management Committee (MC) is the core organisational and decision-preparing body. It will be responsible for the successful completion of the project and the exploitation of its results. The MC will be composed of one or two senior members of each partner. At least one of them must have the legal authority to officially conduct business on behalf of the legal entity they represent. The MC will be chaired by the TM and the DM. The MC represents the highest level of decision making within the project. The MC has the obligation to ensure that the consortium functions properly.

2.2.4 Technical Committee

The Technical Committee (TC) is the joint forum for all work package leaders (WPLs) to discuss the progression of the individual WPs and the alignment of all WPs with the overall objectives. The TC is chaired by Bart Meersman as Technical Manager.

2.2.5 Work Package Leaders

All Work Package Leaders (WPLs) are member of the TC. During the TC meetings WPLs will present the results of their respective WPs. The deliverables and milestones will be evaluated and the next steps will be discussed.

Each WPL will be responsible for the coordination activities and the administrative management of their work packages meaning:

a) Design of the detailed strategy to be used in their work package.
b) Assigning individual task leaders, if appropriate, based on a rotation system in time.
c) Task assignment for individual members of the work package.
d) Progressing and monitoring of milestones and deliverables of the working group.
e) Monitoring of KPIs.
f) Reporting problems to the PC.
g) Collection and finalisation of progress reports for the Commission.
h) Disseminating reports to the PC.
i) Stimulation of interactions with other work packages through the MC and TC meetings.
j) Recommendations on significant findings for dissemination (website, publications, …).

2.2.5.1 Overview WPs and their WPLs

WP	Title	Responsible
1	Definition of requirements and constraints	UL
2	Grid connection control strategies	UGENT
3	Development and use of an integrated simulation platform	AUTH
4	Implementation and validation of the proposed control strategies	KORONA
5	Market mechanisms and regulatory frame work for ancillary services	UL
6	Dissemination and deployment of results	JR
7	Project Management	UGENT

2.2.6 Scientific Advisory Board

As this project has major impact for end-users, i.e. the network operators, the consortium has decided to call upon an external advisory group to discuss intermediate results and to gain input for on-going work packages. This will allow timely adjustments of results and work progress.

The Advisory Board will consist of (non exhaustive list) responsible persons belonging to:

a) DSOs in other countries.
b) TSOs in other countries.
c) ENTSO-E – European Network of Transmission System Operators.
d) EDSO – European Association of Distribution System Operators.
e) ERGEG – association of European Energy Regulators.
f) Coordinators of other past or current projects dealing with the topic of integration of DRES: MetaPV, Fenix, SUSPLAN, City-zen, EvolvDSO, DREAM and IDE4L.
g) Policy makers.

Additional members will be requested after the start of the project. There will be on-going exchange with the scientific community.

The advisory board will be called upon when necessary and will meet yearly along with the MC. The TM, DM or one of the WPLs can call upon the input of the advisory board or one of its members whenever necessary.

2.3 Decision making process

The Management Committee (MC) is responsible for the decision-preparing process. A majority of voting members (at least half of the number of members of the MC) is required to conduct a meeting (quorum). Decisions will be made on a voting base, one vote per partner:

- Simple majority for small changes in the work plan;
- 2/3 majority for major changes of work plan that lead to budget changes, intake of new partners, withdrawal/rejection of partners.

2.4 Meetings

The Management Committee (MC) will organize a bi-monthly conference call and will meet once every six months. Whenever considered necessary the MC can organise additional meetings. The foreseen dates and locations for the meetings are the following:

1) September 2013	Ostend (Belgium)	at Universiteit Gent (UGent)
2) March 2014	Eindhoven (The Netherlands)	at Technische Universiteit Eindhoven (TU/e)
3) September 2014	Ljubljana (Slovenia)	at University of Ljubljana and Korona (UL)
4) March 2015	Graz (Austria)	at Joanneum Research (JR)
5) September 2015	Thessaloniki (Greece)	at Aristotle University of Thessaloniki (AUTH)
6) March 2016	Graz (Austria)	at Stromnetz Steiermark GmbH – DSO (SNG)
7) July 2016	Kranj (Slovenia)	at Elektro Gorenjska – DSO (EG)
8) January 2017	Eindhoven (The Netherlands)	at Technische Universiteit Eindhoven (TU/e)

The Technical Committee will organize a conference call monthly and will meet once every six months, coinciding with the MC meetings. Whenever considered necessary the TC can organise additional meetings.

The advisory board will be called upon when needed and will meet yearly along with the MC. First edition will be in March 2014.

2.4.1 Voting rules and quorum

The MC shall only deliberate and decide when 2/3 of its members are present or represented (quorum). If there is not enough presence, the PC shall convene a new meeting within 7 days that shall deliberate and decide validly regardless of the number of presence. Each member has one vote. Defaulting partners cannot vote.

2.4.2 Veto

A partner who can show that his work, performance, costs, liabilities, intellectual property rights or other legitimate interests would be severely affected by a decision of the MC may exercise a veto with respect to the corresponding decision or relevant part of the decision.

When a decision is foreseen in the agenda of the meeting, the partner can only veto that decision during the meeting. When a decision has been taken about a new item added to the agenda during the meeting, the partner can veto this decision during the meeting and within 15 days after the draft minutes of the meeting are sent.

When a partner vetoes a decision all the partners will make every effort to resolve the matter and come to an agreement every partner is satisfied with.

A partner cannot veto the decision to its own identification as a defaulting partner. The defaulting partner may not veto decisions relating to its participation and termination in the Consortium. A partner requesting to leave the Consortium may not veto decisions related to its departing.

3 Project Dissemination

3.1 Dissemination Strategy

The aim of the Dissemination Strategy is to ensure maximum use of the project results by addressing a broad audience, not only in research institutes but also to involve policy makers, media and the overall public. Addressing this broad audience will be done in several ways: through a website, publications in scientific journals, organization of workshops, attendance at international conferences and networking, and the publication of a special issue journal for the INCREASE results and partners.

The INCREASE strategic dissemination plan will be included and available in D6.3 ‘Plan of action/communication strategy for dissemination of knowledge with annual updates and adjustments’.

3.2 Publications

The complete rules for dissemination activities are covered in Article II.30.3 of the Grant Agreement and specified in the Consortium Agreement Section 8 (Foreground) article 8.3.1.

The partner who has planned any dissemination or publication activities shall inform the other partners at least 45 days before the dissemination/publication date and distribute the draft publication. The other partners can object against the dissemination/publication. The Objection Notice needs to be written within 15 days of receipt of the draft publication. Partners can either

delay the proposed publication with a maximum of 4 months or delete the partners' reference in the publication. Objection Notices are send to the Project Coordinator and the publishing partner.

3.3 Management of Intellectual Property Rights

All the INCREASE partners are encouraged to file patents or initiate mechanisms for the protection of intellectual property rights (IPR) in their area of expertise.

Wherever relevant the Consortium will align a consistent and fair license policy to third parties. Issues that might arise will be dealt with within the overall Consortium Agreement.

In order to protect IPR of each partner and to promote patenting of critical know-how, the OMT will assist the partners on patenting and IPR issues. Whenever INCREASE partners want to take the initiative to protect their rights and/or want to publish data that can inhibit later on patenting of results, they will upfront discuss this with the OMT.

The OMT will be responsible for ensuring that a secure and suitable knowledge management system is put in place, which will run as soon as possible after the project has started. The system will hold relevant and clearly numbered administrative documents such as project meeting minutes, deliverable lists, implementation plan updates and result portfolios. It is the responsibility of the OMT to make sure everyone is able to access and use the system effectively. The PC will ensure that data protection legislation is followed.

All partners will identify and register knowledge as it is produced within INCREASE. Regulations concerning dissemination and exploitation of knowledge, and access rights, are defined in the Consortium Agreement.

The project participants have already agreed on the following Intellectual Property issues:

a) All information provided by a partner to another partner within the project is confidential unless:
    a. it was already known to the partner before the negotiations started, or
    b. the information provided is public property, or
    c. it is explicitly specified otherwise by the originator of the information.
b) Partners agree to use the information provided only for the purposes of conducting the project. Any disclosure of confidential information to a third party requires the explicit consent of the originator of that information.
c) Proper records, indicating the originator and the date of the transfer, must be kept when information is transferred between partners.
d) When more than one partner claims joint ownership of newly produced intellectual property, the partner involved should make provisions to clarify the terms of joint ownership among them.
e) Partners are not restricted in any sense regarding the rights associated with the ownership of any IPR they produce while conducting the project activities.

4 Reporting

4.2 Overview of the different types of reports

There are three different types of reports:
a) Intermediate Progress Report (IPR)
b) Project Periodic Report (PPR)
c) Project Final Report

The templates for the different reports will be spread by the PC and uploaded onto the Zephyr platform (My Zephyr > nvt INCREASE - FP7 > Documents > Reporting > Templates).

4.2.1 Intermediate Progress Report

The Intermediate Progress Report contains an overview of the activities carried out during the reporting period within each WP. This will give an early indication whether sufficient progress is being made or problems have arisen, in order to be able to take timely measures. These IPRs serve as deliverables and need to be sent to the PC who will submit them to the EC. Its contents can be used as input for Period Project Reports and the Project Final Report.

Dates for IPRs:
- D7.2 February 2014 (M6)
- D7.3 August 2014 (M12)
- D7.4 August 2015 (M24)
- D7.5 June 2016 (M34)

4.2.2 Project Periodic Report

This report is obligatory and has to be submitted to the EC three times during the project's duration. The PC will coordinate the realisation of this report. D7.2, 7.3, 7.4 and 7.5 can serve as input for this report, financial statements and certificates need to be added. This report needs to be submitted within 45 days following the end of the respective reporting periods.

Dates for PPRs:
- Reporting period 1: month 1-12 (31st of August 2014)
- Reporting period 2: month 13-24 (31st of August 2015)
- Reporting period 3: month 25-40 (31st of December 2016)

4.2.3 Project Final Report

The Project Final Report has to be submitted to the EC at the end of the project. The PPRs will serve as input for this report. Not only financial statements and certificates need to be added, but also a

publishable report and a plan for the use and dissemination of foreground. The PC will coordinate the realisation of this report. This report needs to be submitted within 45 days following the end of the project (15/02/2017).

4.2.4 Financial reporting

Together with the Project Periodic Reports and the Project Final Report financial statements need to be added. Every partner can claim his costs related to INCREASE. All the invoices related to INCREASE need to mention INCREASE and have to concern eligible costs within the project. All the hours performed for INCREASE can also be claimed, hours need to be recorded in timesheets.

4.3 Overview of Deliverables

Deliv. No	Deliverable name	WP No	Nature	Diss. level	Deliv. date
D1.1	Report on relevant experiences	1	Report	PU	M4
D1.2	Report on technical aspects	1	Report	PP	M6
D2.1	Overview of existing forecasting techniques for production (PV, wind) and consumption	2	Report	PP	M6
D2.2	Recommendations on real-time line rating and demand-side management	2	Report	PU	M8
D2.3	Evaluation of potential of the combined exploitation of the selected optimisation techniques	2	Report	PU	M12
D2.4	Fast control strategy for three-phase four wire inverter for DRES	2	Prototype	PP	M14
D2.5	Agent-aggregator platform and its distributed algorithms	2	Prototype	PP	M14
D2.6	Probabilistic models to support DSOs for the provision of AS	2	Prototype	PP	M34
D3.1	Dynamic equivalent models for the simulation of controlled DRES	3	Prototype	PP	M16
D3.2	Integrated simulation platform which models the key components and control strategies	3	Prototype	PP	M19
D3.3	Report on simulation results and evaluation of the integrated simulation platform	3	Report	PU	M24
D3.4	Optimal coordinating strategies to harmonise multi services/objectives	3	Prototype	PP	M26
D4.1	Report chapter on the feasibility of using the hot water boiler to provide electrical flexibility	4	Report	PP	M12
D4.2	Prototype of three-phase four-wire inverter with the necessary protection algorithms	4	Prototype	PP	M19

D4.3	Specifications for network and labo-like field trials	4	Report	PP	M25
D4.4	Report on the laboratory experiments at the Power Quality lab of TU/e and UGent	4	Report	PP	M28
D4.5	Report on the field tests in the Dutch, Slovenian and Austrian grid	4	Report	PU	M39
D5.1	Report on common definition of AS in the Transmission system and in the Distribution system	5	Report	PU	M26
D5.2	Report on short-term market mechanisms for AS provision	5	Report	PU	M26
D5.3	Report on necessary adjustments to the Regulatory framework	5	Report	PU	M34
D6.1	Assignment of dissemination and exploitation coordinator	6	Other	PP	M1
D6.2	First accessible version of the INCREASE website to allow promotion for the TSO/DSO stakeholder kick-off meeting in M3	6	Other	PU	M2
D6.3	Plan of action/communication strategy for dissemination of knowledge with annual updates and adjustments	6	Other	PP	M2
D6.4	INCREASE visual identity: logo, templates for presentations, newsletters, etc.	6	Other	PU	M2
D6.5	Organisation of kick-off event where DREAM, EvolvDSO and IDE4L will take part	6	Other	PU	M3
D6.6	INCREASE workshops to be organised, one of the workshops concerning multi-agent based techniques will be organised in cooperation with the DREAM consortium	6	Other	PU	M18
D6.7	Plan for exploitation of results and further collaboration of partners after the project has ended	6	Report	PP	M40
D7.1	Project handbook	7	Report	PP	M2
D7.2	Intermediate progress report No 1	7	Report	PP	M6
D7.3	Intermediate progress report No 2	7	Report	PP	M12
D7.4	Intermediate progress report No 3	7	Report	PP	M24
D7.5	Intermediate progress report No 4	7	Report	PP	M34

Deliverables are to be submitted to the PC according to the Quality Assurance (QA) Process; after which the PC will discuss, approve and send it to the EC within 45 days after the end of the reporting period.

The Quality Assurance Process ensures that the deliverables are uploaded according to the contractual delivery date. The QA process we preserve, foresees the following timing:

t = contractual delivery date

t-60 PC reminds lead partner
t-50 deliverable structure issued
t-40 PC identifies two reviewers
t-30 complete deliverable to reviewers
t-20 reviewers comment
t-13 revised deliverable completed
t-10 reviewers confirm OK
t-5 acceptance by PC and deliverable uploaded to the EC system

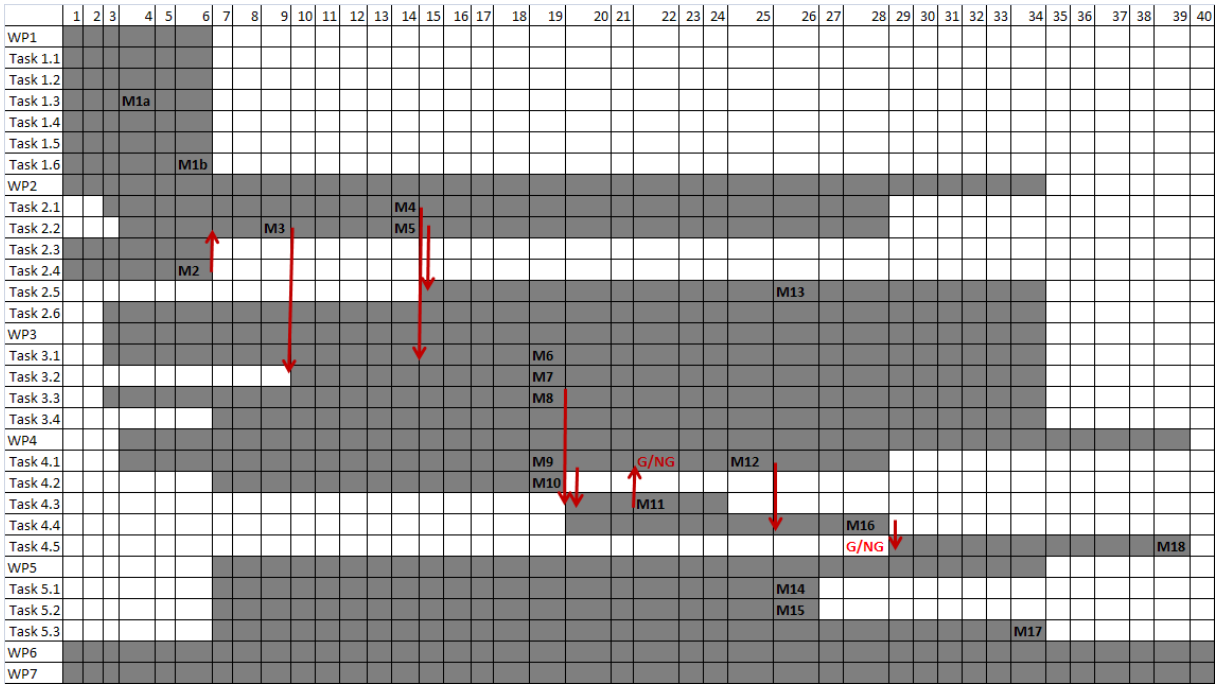
5 Project planning and timetable

5.1 Overview of Milestones and Expected Results

Milestone No	Milestone name	WP(s) involved	Expected date	Expected Results
M1	Two part report on the requirements and constraints necessary for the development of the control strategies	WP1	M4 & M6	The report will be delivered to the different partners
M2	Optimisation and forecasting techniques	WP2	M6	Report which describes the techniques together with the necessary models to implement them in the MAS system
M3	Definition of the specifications of the multi-agent aggregator control strategy	WP2	M9	This will be used in development of the simulation model.
M4	Local control strategy for three-phase four-wire inverters	WP2	M14	The control strategy will be implemented and tested by means of matlab
M5	Multi-agent aggregator control strategy	WP2	M14	The control strategy will be implemented and tested by means of a prototype (inverter)
M6	Development of the simulation model of the proposed solutions	WP3	M19	Models of the control algorithms which can be integrated in the developed platform
M7	Integration of MAS-based control system in the network simulation platform	WP3	M19	Results of the simulation of a test case which is compared with the lab tests (prototype)
M8	Toolset capable to join the power- and communication aspects in the integrated platform	WP3	M19	Results of the simulation of a test case which is compared with the lab tests (prototype)

M9	Prototype of a single-phase and a three-phase four-wire inverter equipped with the proposed control strategies	WP4	M19	Prototype which can be tested. The control strategies from M4 and M5 will be tested using this prototype. This prototype will also be used to validate the simulation platform in Task 4.4.
M10	Data capture process	WP4	M19	Report
M11	Validation by means of the integrated simulation platform	WP4	M22	Report. When this test is successful, the other prototypes will be built to be used in the lab tests and in a later stage in the field trials. **(GO/NO GO)**
M12	Single-phase and three-phase prototypes which will be used in the lab tests and the field tests	WP4	M25	The other prototypes which can be used in the lab tests and the field trials.
M13	Generic distributed control system	WP2	M26	A model which can be implemented in the simulation platform from WP3
M14	Report on common definitions of AS in DS and TS	WP5	M26	Report
M15	Report short-term market mechanisms for AS provision	WP5	M26	Report
M16	Validation by means of lab tests	WP4	M28	Report. If this test is successful, the field trials can start. **(GO/NO GO)**
M17	Report on necessary adjustments to the Regulatory framework	WP5	M34	Report
M18	Validation by means of field trials	WP4	M39	Report

5.2 Timing of the different WPs and their components



6 Project Communication Mechanisms

6.1 Communication channels

A project partner never directly communicates with the Project Officer (PO) of the European Commission. Only the PC communicates with the PO.

The dissemination and exploitation coordinator for INCREASE is Joanneum Research. They will provide all partners with flyers, posters, a press release and templates. They will also follow-up the dissemination strategy and list interesting conferences for the dissemination of INCREASE. More detailed information about the dissemination strategy is written and explained in D6.3 Plan of action/communication strategy for dissemination of knowledge with annual updates and adjustments.

6.2 Public Project Website

INCREASE has its own website accessible for the public. Partner JR is the responsible for this website. The link is the following one: http://www.project-increase.eu.

6.3 Internal Project Website

All documents (information, official reports, templates, meeting agendas, etc) will be uploaded to the online sharing platform Zephyr: https://zephyr.ugent.be/.

Every partner has access and a log-in for this website and can upload documents whenever considered necessary.

Appendix A Project Contact Details

A.1 Project Coordination

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Appendix B Activity chart

	m1-m12 (sep/13-aug/14)						m13-m24 (sep/14-aug/15)						m25-m36 (sep/15-aug/16)						m37-m40	
	1/2	3/4	5/6	7/8	9/10	11/12	13/14	15/16	17/18	19/20	21/22	23/24	25/26	27/28	29/30	31/32	33/34	35/36	37/38	39/40
WP1	**Definition of requirements and constraints (UL)**																			
1.1 (UL)		D1.1																		
1.2 (JR)		D1.1																		
1.3 (UGent)		M1a	D1.2																	
1.4 (Korona)			D1.2																	
1.5 (AUTH)			D1.2																	
1.6 (Eandis)			D1.2 M1b																	
WP2	**Grid connection control strategies (UGent)**																			
2.1 (UGent)			D2.1				M4													
2.2 (TU/e)				D2.2	M3		M5													
2.3 (Eandis)						D2.3														
2.4 (Korona)			M2				D2.4													
2.5 (UGent)							D2.5						M13							
2.6 (Korona)																	D2.6			
WP3		**Development and use of an integrated simulation platform (AUTH)**																		
3.1 (AUTH)								D3.1		M6										
3.2 (AUTH)										M7 D3.2										
3.3 (AUTH)										M8		D3.3								
3.4 (TU/e)													D3.4							
WP4		**Implementation and validation of the proposed control strategies (Korona)**																		
4.1 (Alenco)						D4.1				M9 D4.2	go/ no go		M12							
4.2 (Korona)										M10										
4.3 (AUTH)											M11		D4.3							

4.4 (UGent)														M16 D4.4						
4.5 (Korona)														go/ no go						M18 D4.5
WP5				**Market mechanisms and regulatory framework for ancillary services (UL)**																
5.1 (UL)													M14 D5.1							
	m1-m12 (sep/13-aug/14)						**m13-m24 (sep/14-aug/15)**						**m25-m36 (sep/15-aug/16)**						**m37-m40**	
	1/2	**3/4**	**5/6**	**7/8**	**9/10**	**11/12**	**13/14**	**15/16**	**17/18**	**19/20**	**21/22**	**23/24**	**25/26**	**27/28**	**29/30**	**31/32**	**33/34**	**35/36**	**37/38**	**39/40**
5.2 (UL)													M15 D5.2							
5.3 (JR)																	M17 D5.3			
WP6	**Dissemination and deployment of results (JR)**																			
6.1 (JR)	D6.1 D6.3																			
6.2 (JR)	D6.2 D6.4																			
6.3 (UGent)		D6.5							D6.6											
6.4 (all)																				D6.7
WP7	**Project management (UGent)**																			
	D7.1		D7.2			D7.3						D7.4					D7.5			