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Quality Management Plan

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RE	Restricted to a group specified by the consortium (including the Commission services).	
CO	Confidential, only for members of the consortium (including the Commission services).	

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1. INTRODUCTION

This document describes the different procedures that will allow the entities in charge of project management to monitor the fulfillment of the project objectives in terms of quality standard of deliverables and in terms of respect of deadlines and costs. In particular, these procedures will allow them to monitor the degree of achievement of each task, to review, validate and approve the associated outputs, to assess the deviations compared with the initial description of work and to ensure that corrective actions are taken quickly when needed. A regular update of the associated Risk Management Plan will guarantee a continuous assessment of project risks.

This document often refers to two other reference documents of the project:

- The EC Grant Agreement (GA) Number 283012 and its Annexes, and in particular Annex I Part B named “Description of Work” and its Annex II named “General Conditions”,
- The iTesla Consortium Agreement (CA).

Several procedures have already been defined in the GA and in the CA; this document is intended to complement them.

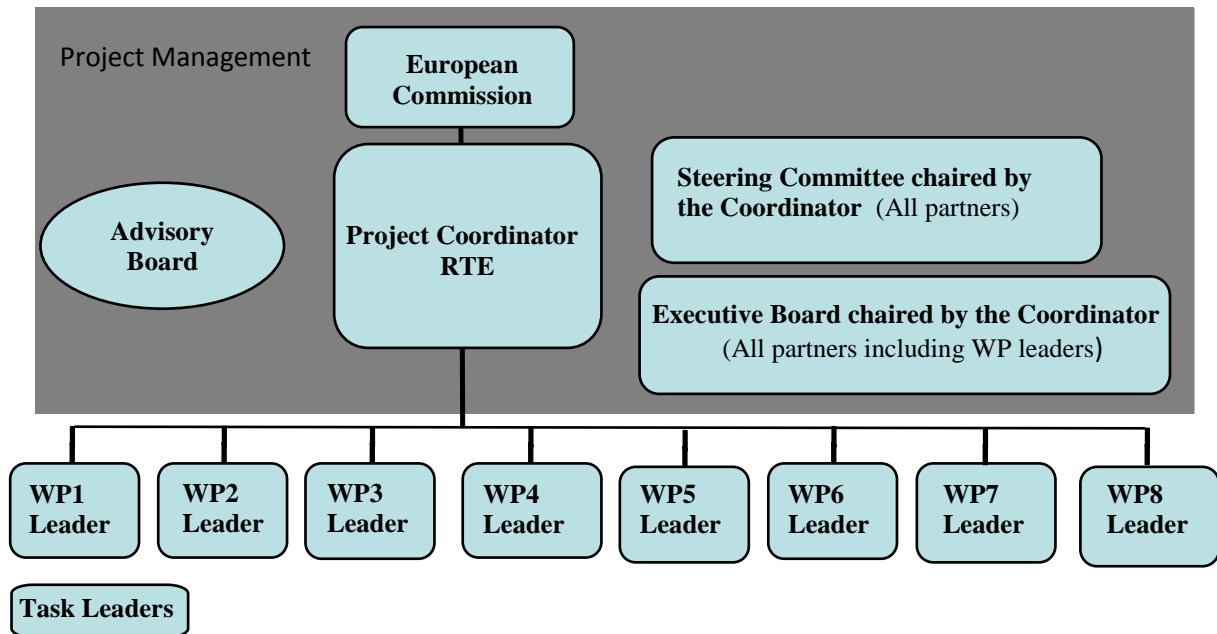
More precisely, this document includes:

- Description of the governance structure of the project,
- Reporting procedure,
- Procedure for validation and approval of project deliverables,
- Procedure for validation of milestones achievement and list of associated means of verification,
- Procedure for information exchange,
- Annex 1: Key Performance Indicators,
- Annex 2: Risk Management Plan,
- Annex 3: Dissemination Plan,
- Annex 4: Template for Quarterly and Annual WP Progress Reports,
- Annex 5: Template for Biannual Financial Reports,
- Annex 6: Members of the Steering Committee, Members of the Executive Board and contact list for financial issues.

2. GOVERNANCE STRUCTURE

The organizational structure of the project comprises the following bodies and figures:

- The Steering Committee,
- The Executive Board,
- The Work Package Committees,
- The Advisory Board,
- The Coordinator,
- The Work Package Leaders,
- The Task Leaders.



The main functions of the above bodies are listed in the following chapters. In addition, the iTesla CA describes in detail the operational procedures for all the above bodies and in particular as regards:

- Chairmanship of the meetings,
- Representation in meetings,
- Preparation and organization of meetings,
- Voting rules and quorum,
- Veto rights,
- Minutes of meetings.

2.1. Steering Committee

The Steering Committee is the ultimate decision-making body of the iTesla Consortium and is in charge of the overall project risk management. It consists of one representative of each partner (see list of members in Annex 6). Its main functions are:

- To provide strategic directions for both the Project Coordinator and the Executive Board,
- To take the major decisions regarding the work to be done by the project partners,
- To share the project achievements among all the partners.

The strategic management of the Steering Committee includes in particular the following tasks:

- Periodic monitoring of the fulfillment of project objectives and monitoring of the associated Key Performance Indicators (see list of KPIs in Annex 1),
- Periodic evaluation of project risks (see Risk Management Plan in Annex 2),
- Adjustments of the project trajectory when needed or in case of unforeseen events and communication of these adjustments to all partners,
- Proposals to the European Commission for changes to Annex I of the GA (i.e. changes to the Description of Work and to the associated Consortium budget),
- Consultation of the Advisory Board about any technical question or potential risk,
- Entry of a new partner into the iTesla Consortium and approval of the settlement on the conditions of the accession of such a new partner,
- Withdrawal of a partner from the iTesla Consortium and approval of the settlement on the conditions of the withdrawal,

- Termination of a defaulting partner’s participation in the iTesla Consortium and measures relating thereto,
- Withdrawals from background list or substitution of one background component by another one with equivalent characteristics, addition to the list of Affiliated Entities and to the list of Third Parties,
- Changes to the Consortium Agreement (voting rights, access rights to Background and Foreground for instance),
- Proposal to the European Commission for a change of the Coordinator,
- Appointment of Executive Board members, Advisory Board members and Work Package Leaders.

2.2. Executive Board

The Executive Board is the supervisory body for the execution of the project and is responsible for the proper implementation of the decisions of the Steering Committee. It consists of one representative of each partner including all the WP Leaders.

The operational management of the Executive Board includes in particular the following tasks:

- Monitor the progress of work on the basis of the information collected by the Coordinator and the Work Package Leaders, assess the compliance with the technical objectives of each Work Package as described in the Description of Work and, if necessary, propose modifications of the Description of Work to the Steering Committee,
- Coordinate the work of the different Work Packages,
- Review, validate and approve the project deliverables,
- Review, validate and approve the reports concerning verification of milestones achievement,
- Assess and manage the risks within each Work Package, based on the reporting from the WP Leaders:
 - o Technical risks: identifying with the WP Leaders the barriers to overcome in order to meet each WP objectives,
 - o Risks of delay in delivery : identifying with the WP Leaders:
 - any schedule change or delay in producing the expected deliverables,
 - the impact on the overall deliverable production agenda,
 - the organization changes which allow to catch up on delays,
 - or possible amendment for schedule change to produce the deliverables,
 - o Human skills risks: identifying with the WP Leaders the required personnel to perform critical tasks, the possible skills conflicts within each organization and proposing solutions to meet deadlines,
 - o Budget risks: identifying with the WP leaders possible cost overruns due to project changes,
- Maintain and update the “Risk Management Plan” (Annex 2) in order to ensure that project risks are permanently identified,
- Support the Coordinator in preparing meetings with the European Commission and in preparing necessary data,
- Prepare the content and timing of press releases and joint publications by the Consortium or proposed by the European Commission in respect of the procedures of the GA and the CA and propose them to the Steering Committee.

2.3. Work Package Committee

A Work Package Committee consists of the WP Leader and one representative of each partner having a task within this WP. Each Work Package Committee will manage the respective Work Package, in particular with regard to:

- The timely delivery of the WP deliverables to the Executive Board and to the Coordinator,
- Reviewing the quality of the deliverables,
- Formulating an implementation plan for the activities within the Work Package for the future period, which can imply proposing to the Executive Board changes to the Description of Work,
- Alerting the Executive Board and the Coordinator in case of delay in the performance of the Work Package or in case of breach of responsibilities of any partner,
- Analyzing and documenting, at the request of the Executive Board and/or the Coordinator a presumed breach of responsibilities of a partner under the Work Package and preparing a proposal for remedies,
- Proposing any exchange of tasks and related budgets between the partners in the Work Package.

2.4. Advisory Board

The Advisory Board is a group of external acknowledged experts able to provide recommendations at the request of the Steering Committee about any technical question that may arise in the course of the project. It is a consultative body having an independent view on the project objectives and results.

2.5. Coordinator

The Coordinator is the legal entity acting as the intermediary between the project and the European Commission. The Coordinator, in addition to its responsibilities as a project partner, performs the tasks assigned to it as described in Annex II of the GA.

In particular, the Coordinator is responsible for:

- Being the single contact point with the European Commission for contractual and financial matters,
- Making sure that the contractual objectives are met,
- Monitoring compliance by the partners with their obligations,
- Collecting, reviewing to verify consistency and submitting reports and other deliverables (including financial statements and related certifications) to the European Commission,
- Reporting project progress to the Steering Committee,
- Transmitting documents and information connected with the Project, to and between Work Package Leaders, as appropriate, and any other partners concerned,
- Administering the European Commission financial contribution and fulfilling the financial tasks.

2.6. Work Package Leaders

The Work Package Leaders have the following functions:

- Coordinating on a day-to-day basis the progress of the technical work under the Work Package according to the time schedule,
- Monitoring the quality of the work to achieve the expected results,

- Following up decisions made by the Steering Committee and/or the Executive Board insofar as they affect the Work Package,
- Communicating any documents and information connected with the Work Package between its members and, if relevant, to the Executive Board,
- Submitting the implementation plan of the Work Package to the Executive Board for review,
- Advising the Coordinator of any discrepancy with the Description of Work, including any delay in delivery,
- Preparing the progress reports summarizing the work performed,
- Coordinating with other WP Leaders the information flow required by WP inter-dependencies.

2.7. Task Leaders

The Work Package's work is broken down into different tasks. The Task Leaders have the following functions:

- Coordinating on a day-to-day basis the progress of the technical work of the task according to the time schedule,
- Monitoring the quality of the work to achieve the expected results,
- Submitting the implementation plan of the Task to the Work Package Committee for review,
- Advising the Work Package Leader in case of delay or deviations in the performance of the task.

3. REPORTING PROCEDURE

The reporting procedure described below will contribute to control the fulfillment of the technical objectives of the project and the compliance with costs and schedule. The following reports will be provided during the course of the project:

- Quarterly WP Progress Reports,
- Annual WP Progress Reports,
- Biannual Financial Reports.

3.1. Quarterly WP Progress Reports

Each WP Leader must prepare a WP Progress Report in collaboration with the partners involved in this WP by the end of every three month period and submit it to the Project Coordinator one week before the Executive Board meeting. This report will summarize the main progress made during the past three months. In particular, this report will include the following information:

- Description of progress of work for each task of the WP,
- Progress towards the completion of the deliverables and milestones of the WP,
- Differences between the work expected to be carried out in accordance with the Description of Work and the work actually carried out,
- Difficulties encountered and proposed solutions,
- Activity forecast for the next six months,
- Updated WP Risk Management Plan,

- Updated WP schedule for the remaining duration of the WP and actions to be taken in case of deviation,
- Any other useful information for the Project Coordinator and the Executive Board.

Annex 4 gives a template for Quarterly WP Progress Reports.

The Project Coordinator will merge all WP Progress Reports together into a Quarterly Project Progress Report and send it to the members of the Executive Board and the Steering Committee.

3.2. Annual WP Progress Reports

Each WP Leader must prepare an annual WP Progress Report by the end of each year on the basis of the four Quarterly WP Progress Reports of the year and submit it to the Project Coordinator two weeks before the Executive Board meeting.

Annex 4 gives a template for Annual WP Progress Reports.

These reports will serve the Project Coordinator as a basis for the contractual periodic reports to the European Commission.

3.3. Biannual Financial Reports

Each partner must submit to the Project Coordinator a financial report by the end of every six month period (two weeks before the meeting of the Steering Committee). This report will summarize the use of resources during the past six months (for the partner and the associated third parties if any). In particular, this report will include the following information:

- Statement of the use of resources for each task in which the partner is involved and actions to be taken in case of deviation,
- Financial statement in accordance with the template provided in Annex 5 with the relevant information needed to support the expenses and claim the EC contribution,
- Updated budget for the remaining duration of the project,
- Any other useful information for the Project Coordinator and the Steering Committee.

Annex 5 gives a template for Biannual Financial Reports (consistent with Form C in Annex VI of the GA).

The Project Coordinator will merge all partners' reports together into a project financial report and send it to the members of the Steering Committee.

These reports will serve the Project Coordinator as a basis for the contractual periodic reports to the European Commission.

4. PROCEDURE FOR VALIDATION AND APPROVAL OF DELIVERABLES

4.1. Deliverable Types and Identification

The list of contractual project deliverables as agreed with the European Commission in the Description of Work is given below. There are three types of deliverables:

- Reports (R) (i.e. technical reports and management reports),
- Prototypes (P) (i.e. software prototypes and mock-ups),
- Others (O) (i.e. documents and dissemination tools such as the project website and training materials).

And three levels of dissemination:

- Public (PU),
- Restricted (TSO) i.e. restricted to Consortium members, TSOs members of ENTSO-E and the Commission Services,
- Confidential (CO) i.e. for Consortium members and the Commission Services only.

Del.n°	Deliverable name	WP	Nature	Dissemination level	Delivery date
D1.1	Formulation of the overall problem encountered by TSOs	WP1	R	PU	M3
D1.2	Formalization of a plausible functional solution	WP1	R	CO	M6
D1.3	Definition of the overall IT architecture and recommendations of coherent IT solutions	WP1	R	CO	M9
D1.4	Definition of use cases for WP7	WP1	R	PU	M13
D2.1	Definition of required external data needs	WP2	R	PU	M9
D2.2	Definition of the IT solution for internal and external data flows	WP2	R	CO	M18
D2.3	Conversion tools from external formats to internal formats	WP2	P	PU	M15/ M30
D2.4	Modelling of uncertainties for offline and inline security assessment	WP2	R	PU	M18
D2.5	Prototype data mining tools and data flow manager	WP2	P	CO	M30
D3.1	Requirements for validation of Phasor Time domain simulations and limitations of current modelling approaches	WP3	R	PU	M9
D3.2	Methodology to validate device models, aggregated models and large power system models	WP3	R	PU	M26
D3.3	Mock-up of a solution to validate device models, aggregated models and large power system models	WP3	P	CO	M36
D4.1	Methodology for sampling of external stochastic variables	WP4	R	CO	M18
D4.2	Implementation of the above methodology and Methodology and implementation for building of the starting points for time domain simulations	WP4	P	CO	M21
D4.3	Definition of Expected Results from time domain simulations	WP4	R	CO	M18
D4.4	Extraction of screening rules (methodology and time domain simulations) and implementation of the methodology	WP4	R	CO	M27
D4.5	Overall approach integrated in the framework	WP4	P	CO	M33
D5.1	Definition of inline security assessment methodology	WP5	R	CO	M12/M33
D5.2	Functional architecture and specification of inline security assessment framework	WP5	R	CO	M18/M33
D5.3	Delivery of hardware/software prototypes. User manual	WP5	P	CO	M30-M45
D5.4	Results of internal validation tests performed by the TSO consortium partners	WP5	R	CO	M36-M45
D6.1	Report on weak points of defense plans in the pan-European grid and proposed harmonization methodologies for coordinated defense plans	WP6	R	TSO	M24

Del.n°	Deliverable name	WP	Nature	Dissemination level	Delivery date
D6.2	Report on use of renewables, PMU measurements and distributed energy resources in defense plans	WP6	R	TSO	M36
D6.3	Improvements to power system restoration methodologies and procedures	WP6	P	TSO	M42
D7.1	Definition of the Methodology for Integration and Validation of the Toolbox – Definition and Collection of the Common Data Set	WP7	R	CO	M15
D7.2	Results from Static Online Security Assessment, Off-line Validation of Dynamic Models, Off-line Definition of Screening Rules, Online Dynamic Security Assessment and Improvements of Defense and Restoration Procedures	WP7	R	Partly CO Partly PU	M46
D8.1	Project web site	WP8	O	PU/CO	M3
D8.2.1,2,3,4	Workshop materials and training materials for the use of the toolbox	WP8	O	PU	M6, M25, M37, M47
D8.3	Plan for Using and Disseminating the Knowledge	WP8	R	CO	M13, M25 M37, M48
D8.4	Recommendations to ENTSO-E regarding operating rules	WP8	R	TSO	M46
D8.5	Coordination work plan between iTesla and Umbrella	WP8	R	PU	M3
D9.1,2,3,4	Annual activity report (technical and financial)	WP9	R	CO	M13, M25 M37, M49
D9.2	Final activity report (technical and financial)	WP9	R	Partly CO Tech. part PU	M49
D9.3	Quality management plan	WP9	R	PU	M3

4.2. Deliverable Validation and Approval

Each R-type or O-type deliverable will be validated and approved according to the following steps:

For validation:

- The deliverable is reviewed and validated by the concerned WP Leader and Task Leaders.
- Then the deliverable is sent by the WP Leader to the Coordinator for submission to the Executive Board. Two EB members are appointed by the Executive Board to review and validate the document. The WP Leader takes into account the different comments received from the reviewers and issues an updated version of the deliverable. Depending on the size and complexity of the deliverable, this step will last between one and two weeks.
- Then the Coordinator circulates this updated version to the EB members.

For approval:

- Depending on the results of the above validation process, the Executive Board decides whether or not to approve the deliverable. If it is not approved, the Coordinator asks the WP Leader about the corrective actions to be taken as well as the deadline for implementing such actions. This step will last between one and two weeks depending on the requested corrective actions.

Each P-type deliverable will be validated and approved according to the following steps:

For validation:

1. Each partner involved in the development of a P-type deliverable proposes a validation plan beforehand in accordance with his own quality procedures. This validation plan is reviewed and validated by the concerned WP Leader and Task Leaders.
2. Then this validation plan is sent by the concerned WP Leader to other WP Leaders (at least one) for cross-validation. The WP Leader takes into account the different comments received and issues an updated version of the validation plan. This step will last one week or less.
3. The WP Leader verifies that the validation process has been conducted in accordance with the validation plan, then reviews and validates the validation report.
4. Then the validation report is sent by the WP Leader to the Coordinator for submission to the Executive Board. Two EB members are appointed by the Executive Board to review and validate the document. The WP Leader takes into account the different comments received from the reviewers and issues an updated version of the document. Depending on the size and complexity of the requested corrective actions, this step will last between one and two weeks.
5. Then the Coordinator circulates the updated version of the validation document to the EB members.

For approval:

6. Depending on the results of the above validation process, the Executive Board decides whether or not to approve the deliverable. If it is not approved, the Coordinator asks the WP Leader about the corrective actions to be taken as well as the deadline for implementing such actions. This step will last between one and two weeks depending on the requested corrective actions.

5. PROCEDURE FOR VALIDATION OF MILESTONES ACHIEVEMENT

5.1. Milestone Identification and Associated Means of Verification

A milestone is a special event that allows the project partners to measure how the project is progressing and to check the fulfillment of the different project objectives. Compared with deliverables, milestones are more global indicators to measure how much overall progress has been made. The list of contractual project milestones as agreed with the European Commission in the Description of Work is given below. For each milestone, means of verification have been defined to validate its achievement. These means will be defined in greater detail in the course of the project.

Milestone n°	Milestone name	WP involved	Expected date	Means of verification
MS1	Definition of the overall architecture and use cases	WP1	M13	Coherence check by the TSOs of the Advisory Board (i.e. TSOs which are not in the iTesla Consortium) and approval by the Steering Committee.
MS2	Availability of the data management system and data mining system	WP2	M30	Validation of the expected performance of the data management system on the basis of the detailed specifications. Approval by the Steering Committee.
MS3	Solution for the validation of device models	WP3	M30	Validation of the dynamic model of the new HVDC link between France and Spain with the proposed solution. Approval of this validation by experts of REE and RTE in HVDC components (experts not involved in the iTesla Project).
MS4	Solution for the validation of large power system models	WP3	M36	Comparison of simulations of the inter-area oscillation modes within the European power system by comparison with measurements (PMU measurements). Factual verification based on this comparison.
MS5	Elaboration of starting points for time-domain simulations	WP4	M21	Validation of the consistency of the generated starting points with a load flow calculation. Comparison between the computed anticipated states and a realized snapshot (i.e. analysis of deviations of power flows and voltages). Factual verification based on this comparison.
MS6	Completeness of the proposed solution to offline generation of screening rules	WP4	M27	Coherence check of the generated rules in the specific case of inter-area oscillations within the European power system by the TSOS of the Advisory Board (i.e. TSOs which are not in the iTesla Consortium) and complementary validation by the TSOs of the iTesla Consortium.

Milestone n°	Milestone name	WP involved	Expected date	Means of verification
MS7	Completeness of the proposed solution to static inline security assessment at national level only	WP5	M36	Validation of results (i.e. set of decisions during 2 critical days) by comparison between the new approach and the current one (i.e. with tools already available at the iTesla TSOs or at Coreso). Factual verification based on this comparison. Coherence check by the TSOS of the Advisory Board (i.e. TSOs which are not in the iTesla Consortium) and complementary validation by the TSOs of the iTesla Consortium.
MS8	Improvements to defense plans in Europe	WP6	M36	Validation of the proposed improvements by means of simulations of one large power system disturbance (for instance the one that occurred on the 4 th of November 2006). Coherence check by the TSOS of the Advisory Board (i.e. TSOs which are not in the iTesla Consortium) and complementary validation by the TSOs of the iTesla Consortium.
MS9	Completeness of the integrated toolbox and application to the risk-based security assessment at European or regional level	WP7	M48	Validation of results (i.e. set of decisions during 2 critical days) by comparison between the new approach and the current one (i.e. with tools already available at the iTesla TSOs or at Coreso). Approval by the TSOs of the iTesla Consortium.
MS10	Toolbox exploitation and industrialization plan	WP8	M36 and M48	Approval by the Steering Committee, by the TSOs that will use the toolbox after the project and by the EC.

5.2. Validation Procedure

The verification of a milestone achievement is initiated and managed by the concerned Work Package Leader at the request of the Executive Board. The Work Package Leader provides two documents to the Project Coordinator:

- before the verification, a document describing how the milestone achievement will be evaluated,
- after the verification, a document summarizing the findings of the team in charge of this verification.

Both documents are reviewed, validated and approved by the Executive Board with the same procedure as for deliverables.

6. PROCEDURE FOR INFORMATION EXCHANGE

For contractual issues, registered mail must be used for exchanging documentation. The address of the Coordinator is the following:

RTE
Att: Christian LEMAITRE / Nathalie LUCAZEAU
Immeuble “Le Colbert”
9 Rue de la Porte de Buc
BP 561
78005 VERSAILLES CEDEX
FRANCE

For coordination and management issues, electronic mail is the regular way of communication. Email addresses for each project partner are listed in Annex 6. Considering the number of partners, the recipients must be selected carefully. Contact details of members of each Consortium body are regularly updated by the Coordinator. To avoid waste of time, the ‘Subject’ field of each email must mention:

- The Consortium body to which the email is sent,
- The WP number when the email is relevant to one WP only,
- And the reason why the email is sent: For Action, For Information, For Validation, For Decision.

For document exchanges and technical discussions, the document management system and the online discussion forum of the iTesla development platform must be used (deliverable D1.3 describes the iTesla development platform in detail). Therefore, no technical documents should be attached to emails.

The iTesla development platform will be in operation at the beginning of the second half of 2012. Meanwhile, the restricted area of the iTesla website (www.itesla-project.eu) must be used for document exchanges (deliverable D8.1 describes the administration strategy of this website and in particular the access levels).

7. TEMPLATES FOR DELIVERABLES, REPORTS AND PRESENTATIONS

All deliverables, technical reports, minutes of meetings and presentations must follow the templates and graphic charter provided in the framework of WP8 (deliverables of task 8.1). This document follows the template for deliverables.

ANNEX 1. KEY PERFORMANCE INDICATORS

In the framework of the periodic monitoring of the fulfillment of the project objectives by the Steering Committee, Key Performance Indicators (KPIs) will be regularly evaluated by the Coordinator and the concerned WP leader(s). These indicators will be evaluated on the basis of the tests defined in WP1 and will not require additional tests. The list of KPIs, as defined in the Description of Work, is given below. This list will be completed and described in greater detail in the course of the project.

Objectives	Measurable results and associated Key Performance Indicators
O1: To propose a toolbox architecture and use cases for its validation	<p>Successful tests of the new approach to assess the security of the system, proposed by iTesla, at least at the regional level have been carried out (this new approach takes into account uncertainties as well as the relevant dynamic phenomena). These tests have been defined in WP1 and will be performed in WP7.</p> <p>KPI: The toolbox functionalities allow to carry out completely the tests of all the use cases defined at the beginning of the project in WP1 (these use cases combine two types of control zones and four level of technical complexity).</p>
O2: To collect, manage and transform the data required by the toolbox operation	<p>Different use cases (integrating the data needed to test the iTesla approach) have been defined and implemented for the validation tests of the iTesla toolbox.</p> <p>An adequate data management system has been put in place to support the above tests including dynamic data.</p>
O3 : To validate dynamic models of components of the Pan European System using off-line analysis	<p>PMU measurements of several European countries are accessible to iTesla partners</p> <p>Validations of simulations of inter-area oscillation modes within the European power system with PMU measurements have been successful. Validations of system components models have been successful (for instance, simulation of the new HVDC link between France and Spain)</p> <p>KPI n°1: Simulations and PMU measurements show the same inter-area oscillation modes.</p> <p>KPI n°2: The dynamic model of the new HVDC link between France and Spain shows a behavior which is consistent with the one expected by experts in HVDC components (not involved in the iTesla project) at RTE and REE.</p>
O4 : To develop tools for the off line definition of screening rules to assess the security at Pan European level	<p>Rules aimed at preventing inter-area oscillations within the pan-European system have been successfully generated by tools developed for the offline definition of screening rules.</p> <p>KPI: Simulations show that the generated rules are able to classify different situations of the power system according to the possible occurrence of inter-area oscillations.</p>

Objectives	Measurable results and associated Key Performance Indicators
O5 : To develop tools for the in-line security assessment	The decision making process (optimization of preventive and curative measures from 2 days ahead to real time) based on the risk-based approach proposed by iTesla has been tested during two critical days. The new approach and the current one are compared
O6 : To review and assess the potential for more robust defense and restoration plans	<p>Simulations of at least one large disturbance has been performed (for instance the one that occurred on the 4th of November 2006) including improvements proposed in WP6.</p> <p>KPI: Simulations show a behavior of the grid close to what happened in reality for at least one large disturbance (for instance on the 4th of November 2006).</p>
O7 : To validate the overall integrated toolbox performance	<p>Successful tests of the new approach to assess the security of the system, have been performed at least at regional level, (which in turn assumes a suitable integration of the offline definition of screening rules with the in-line security assessment).</p> <p>An adequate data management system has been put in place to support the above tests. These tests have been defined in WP1 and performed in WP7.</p> <p>KPI: Results obtained with the new approach (i.e. set of decisions) compared to the ones obtained with the current approach (i.e. with tools currently available at the iTesla TSOs or at Coreso) provide a more relevant set of decisions during two critical days.</p>
O8 : To disseminate the project findings to regulatory bodies, the TSO of the European Union and other stakeholders in view of progressive knowledge sharing and adoption of the resulting toolbox	<p>Different workshops and training sessions have been organized as described in WP8 to disseminate the methodology.</p> <p>The toolbox is now ready for the industrialization process as described in the plan for exploitation.</p> <p>KPI: Three training sessions have been organized with participation of at least 15 TSOs (in addition to the 7 TSOs involved in the iTesla project).</p>

ANNEX 2. RISK MANAGEMENT PLAN

The Risk Management Plan will be updated every three months by the WP Leaders in the framework of their respective Quarterly WP Progress Report. The Executive Board will scrutinize this updated version at each EB meeting and will inform the Steering Committee about the points that merit attention.

The Risk Management Plan was initialized before the start of the project in the Description of Work. This initial version is given below:

Risk Management Plan v0:

The major overarching risks of the project are:

- The minimum level of static data required to make the toolbox useful for pan European coordination: it is believed by the mere use of existing data as exchanged by TSOs, for instance at Coreso level, but processed differently is enough to bring extra added value aside of what is done to-day.
- The access to dynamic data generated by TSOs: the development of an internal iTesla format together with a converter available in an open source mode is expected to facilitate data exchanges.
- The access to experimental real time data to make time simulations reliable: a parallel demonstration project run with EC funding (Twenties) will bring PMU data across Europe by 2013, in time with the present project needs to validate time domain simulation tools.
- The computational burden which reveals inextricable within delays not compatible with operational TSO requirements: the use of adequate computing facilities should lead to acceptable computational burden in line with the recent findings of the Pegase project.
- The availability of the Pegase outputs: iTesla has been designed assuming pessimistic performances of the modules (optimization, time domain simulation), and considering the performances reached by Pegase in June 2011, knowing that such performances will keep increasing until the end of the project. It is thus a conservative approach.
- Reaching the overall performance of the proposed approach: “off line computations” could be performed to obtain a sub optimal solution “on line”. Moreover, outer loops around modules exist in the approach and parallel processing will allow tackling very large and complex problems for a given set of performances of the modules.

The table below lists detailed WP risks and mitigation plans.

	Potential risk or failure mode	Effect of failure	Severity of effect	Probability of occurrence	Mitigation plan
WP1	Not enough TSOs on board the consortium to cover a large spectrum of operational issues	Reduced acceptance from the TSO community	Low	Low	TSOs in the Advisory Board bring more insights in other operational issues
	Lack of flexibility and openness of the toolbox				Review of the detailed specifications with the Advisory Board
WP2	Sharing dynamic data more difficult (conversion issues) than foreseen	Toolbox not fully representative	Low	Medium	Standardized interfaces for “black box” models
	The expected results from data mining are less promising in terms of capturing spatial correlations of state variables	Sub optimal solutions for the criteria			Involve experts in data mining as member of the Advisory Board
WP3	Validation of dynamic models away from nominal conditions Difficulty to require accurate dynamic models of power components (reliable security assessment at system level). Access to PMU data more difficult than foreseen	Doubt about the reliability of the security assessment poorly validated models. Poorer validation of dynamic models	Medium	Medium	Robustness of the security assessment vs. modelling uncertainties (increased computation power) Link with other on-going projects in EU27 and beyond
WP4	Difficulties to have an access to adequate computing facilities dedicated to our test runs.	Less ambitious numerical validation with a lack of scalability	Medium	Low	Different solutions and providers are foreseen.
WP5	Challenges in optimization and dynamic security Simplifications giving unreliable security assessment Too many false alarms/too dangerous situations undetected.	Lower impact than expected	Medium	Medium	Propose trade-offs between complexity versus ease of use. Use experience from the involved TSOs about simplifications
WP6	Restricted number of defense plans available for study Simulation tools of complex meshed systems are not able to predict the transients of restoration processes	Project scope limited	Medium	High	A robust analysis methodology to face a lack of data or tools
WP7	Tests at pan European level for the dynamic aspects is not feasible since data not available	Less added value	Medium	High	Scale down at regional level to show the added value

ANNEX 3. DISSEMINATION PLAN

A full work package has been designed for dissemination activities (WP8). This work package is critical to ensure the uptake of the simulation platform facilities by TSOs that are not partners of the iTesla Project. It is designed based on the use of four media:

- The Internet with a special site dealing with public information regarding the project and available for consultation by any stakeholder involved or interested by TSOs operational issues (equipment manufacturers, research centers, regulators, policy makers).
- A set of dedicated workshops targeting the TSO audience in Europe and TSOs within countries that are interconnected with the European system: these workshops aim at keeping the TSO community updated on work progress, and motivated for training sessions that will be delivered to encourage the internal use of the tools by any candidate TSO.
- A set of two dedicated workshops dedicated to regulatory bodies, with the help of ACER, and towards equipment manufacturers regarding standards for data exchanges.
- A set of specific trainings which will be developed and delivered by project partners in order to have the platform adopted and used by TSOs and research centers that have not participated in the development work.

Web site

The intent of this web site is to provide public information about the project goals and status (updated every 3 months) to any stakeholder interested in the project (www.itesla-project.eu).

Workshops towards the TSO community

Three dedicated workshops will be organized with all the TSO community invited to attend. These workshops will have a single goal, will last one day, will be held in Sophia-Antipolis (France) and will not exceed 60 participants from TSO's organization:

- Workshop N°1 (Month 6 after kick-off): Description of the project, registration of potential candidates for the next dissemination events, expectations about the tool architecture and use from the TSOs that are not partners of the project,
- Workshop N°2 (M25): Description of the first results, review of the high level specifications for the final validation steps,
- Workshop N°3 (M37): Description of the intermediate simulation results before full validation, presentation and tuning of the training contents, based on prototype training sessions held with experts from the project partners.

It is believed that such workshops will anticipate on any take up issues by the other TSOs, and will therefore facilitate the early acceptance of the simulation toolbox by the registered TSOs.

Workshops towards regulatory bodies

Regulatory bodies will be invited to attend two dedicated workshops, beyond a formal information leaflet after the kick-off meeting about the project existence and overarching goals. These two

workshops, held jointly with ACER, aim at presenting the outputs, outcomes and impacts of the iTesla project for the TSOs and regulatory bodies (dwelling upon the potential of simulations using risk-based approaches, as well as the impacts on defense plans and restoration scenarios at pan European level).

Common workshops iTesla/Umbrella

Three common workshops will be organized by iTesla and Umbrella with all the partners of both projects invited to attend:

- Workshop on innovative tools needed for the future and stable system operation (M6) to exchange information about respective project objectives, dissemination, key drivers, results of previous studies (knowledge sharing and information exchange),
- Workshop on intermediate results (M25) (exchange and present information about intermediate results and deliverables),
- Workshop on final results n°3 (M46) (exchange and present information about final results).

Training session

Three training sessions will be organized to train experts from TSOs, research centers and equipment manufacturers to use the iTesla toolbox.

Result exploitation workshops to prepare knowledge sharing

The consortium will provide the European Commission with a progressive set of documents describing the platform exploitation process beyond the end of the present project. Three two day exploitation workshops (M23, M35, M47) with the Steering Committee members will be organized using tools designed to prepare business plans for the toolbox exploitation by three types of stakeholders, thus delivering a Plan for Using and Disseminating Knowledge (deliverable D8.3):

- The TSO community, including TSOs which are not consortium members but belong to ENTSO-E,
- Equipment manufacturers (IT systems providers and software providers) with potential sales beyond EU27,
- Research centers belonging to the consortium.

The results of these workshops are inputs to the tasks foreseen by the EC in the framework of the SET PLAN in order to share knowledge gained by EC supported projects.

Publications and other dissemination activities

The dissemination of the project progress and findings will be complemented by different means, such as participating in specialized conferences and technical workshops such as:

- CIGRE,
- IEEE,
- ENTSO-E workshops,

- IEEE PowerTech: Anchor conference of the IEEE Power & Energy Society in Europe, held in odd years,
- Power Systems Computational Conference (PSCC): International conference held every three years,
- IASTED European Congress on Power and Energy Systems (EuroPES): An international conference held every year,
- Electric Power Quality and Supply Reliability Conference: Organized by the Tallinn University of Technology, on a two year frequency basis, it is targeted to researchers and professionals in the areas of power systems, with main participation from Central East and North Europe.

The Executive Board is responsible for validating the content of joint publications and timing of press releases by the Consortium or proposed by the European Commission in respect of the procedures of the GA Section II 30.3.

Chapters 8.3.1 and 8.3.2 of the CA and Section II.30.3 of the GA describe in detail the procedure that must be followed by each partner as regards publications. In particular, the Executive Board must be informed 45 days before any publication. If no objection is made within 30 days after receipt of this notification, the publication is permitted. An objection has to include a precise request for necessary modifications. If an objection has been raised, the involved partners 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 partner shall not unreasonably continue the opposition if appropriate actions are performed following the discussion.

ANNEX 4. TEMPLATE FOR QUARTERLY AND ANNUAL WP PROGRESS REPORT

See file *Template_WP_ProgressReport.docx*

ANNEX 5. TEMPLATE FOR BIENNIAL FINANCIAL REPORT

See file *Template_BFR.xlsx*

ANNEX 6. CONTACT DETAILS

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