SAFESPOT INTEGRATED PROJECT - IST-4-026963-IP

DELIVERABLE

SP8 – HOLA – Horizontal Activities

Assessment and Review Methodology

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Abbreviation List

AM:	ASSESSMENT MODERATOR
CAV:	COMMUNITY ADDED VALUE CRITERION OF SAFESPOT PROJECT
CM:	NUMBER OF PROJECT'S OR SUBPROJECTS CONSORTIUM MEETINGS PERFORMED SO FAR
CS:	CONSORTIUM SYNTHESIS FACTOR OF SAFESPOT PROJECT
CSO:	COMMUNITY SOCIAL OBJECTIVES CRITERION OF SAFESPOT PROJECT
EMP:	IMPACT OF SAFESPOT PROJECT TO EMPLOYMENT
EU (or EC):	EUROPEAN UNION (OR EUROPEAN COMMISSION)
IF:	INCREMENTAL INNOVATION FACTOR OF THE PROJECT
IP:	INTEGRATED PROJECT
MI:	MARKET IMPACT FACTOR OF SAFESPOT PROJECT
OAF:	OVERALL ASSESSMENT FUNCTION OF SAFESPOT PROJECT
PAD:	PROJECT ASSESSMENT DIAGRAM, A NEW FORM OF DIAGRAM ESTIMATING PROJECT PROGRESS BY THE VALUE OF A NUMBER OF RELEVANT CRITERIA, ON A THREE-MONTH BASIS
PF:	PARTICIPANT FACTOR, CHARACTERISING THE QUALITY AND TIMENESS OF PARTICIPANT IN WORK
PM:	IP MANAGEMENT PERFORMANCE
PS:	SUB PROJECT SCHEDULING FACTOR
SP:	SUBPROJECT
QAM:	QUALITY ASSURANCE MANAGER OF SAFESPOT PROJECT
QM:	QUALITY MARK OF PROJECT DELIVERABLE
QoL:	QUALITY OF LIFE IMPACT OF SAFESPOT PROJECT
RL:	RESOURCE LEVEL FACTOR OF SAFESPOT PROJECT PARTICIPANT
RPM:	RESOURCES, PARTNERSHIP AND MANAGEMENT CRITERION OF SAFESPOT PROJECT
RUN:	RELATION TO USER NEEDS FACTOR
SAF:	SAFETY IMPACT OF SAFESPOT PROJECT
TQC:	TECHNICAL QUALITY CRITERION OF SAFESPOT PROJECT
UN:	USER NEEDS
TR:	TECHNICAL RISK FACTOR OF THE PROJECT
WS:	PARTNER SUCCESS RATE
WF:	WORKPACKAGE FACTOR, CHARACTERISING THE PROGRESS LEVEL OF WORKPACKAGE OF THE PROJECT

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EXECUTIVE SUMMARY

The need for monitoring tools for the SAFESPOT Integrated Project is dictated by the significant size of the research work that is planned and the complex structure that was necessarily selected so that the work is better divided to interrelated sub-projects, each following its own workplan and aiming at its own targets that all together constitute the SAFESPOT project. Since the beginning of the project, therefore, it was decided to define the assessment and review procedures that will help the management's monitoring tasks and improve the decision making process.

The present document describes the assessment and review methodology to be applied to the project for its duration. The defined assessment procedures is indicating that each six months an assessment report will be issued, that will rate the project's performance. The assessment report will merge the input received by each sub-project leader who will be responsible for rating the respective sub-project's progress and work performed.

The project's performance is determined by a set of pre-defined criteria covering not only quantitative aspects such as resources or work package delays in months, but also qualitative such as the deliverables' quality marks or the projects impact to the society. For the defined criteria, specific values will be appropriately selected in a range between 1 and 5 and then specific assessment formulas will be calculated so that quantitative results can be summed and compared against the defined thresholds. In addition, the values will be monitored through time with the use of diagrams so that general tendencies and especially slight but not obvious declinations can be timely identified and brought to the attention of the interested parties.

The assessment reports will be submitted to the attention of the Core Group with special indications on possible problematic areas and failures in specific criteria which raise an alarm and require the attention of the relevant partners involved. Proposed compensating measures may be also included to the reports for the consideration by the Core Group. The relevant decisions and precautions taken will be included to the subsequent report along with possible conclusions on their impact to the updated values.

The assessment procedure therefore is planned to serve as a monitoring tool for the SAFESPOT project by periodically defining exact values on the project's performance and picturing the results. In this way, areas that need attention are defined and alarms are raised on time, before critical failures influence the entire project's success. The success of the tool, of course is proportional to the objectivity and attention of the people setting the performance values at each assessment report and therefore special attention will be given to correct application of the methodology by the Core Group and the project Coordinator.

1. Introduction

1.1. General

The present report describes the background methodology for the assessment reports that will be issued every six months for the duration of the project.

Establishing a review and assessment procedure since the beginning of each project is considered critical for its success. The review and assessment procedure that is described to this report aims to closely monitor the performance of the SAFESPOT project and timely identify any possible quantitative or qualitative deviations. In this way the need for compensating measures, if any, will be forwarded for discussion to the SAFESPOT Core Group well in advance before they actually create critical situations.

1.2. Contribution to the SAFESPOT Objectives

Assessment and review reports constitute a useful tool for periodically monitoring the progress of SAFESPOT project. The combination of qualitative and quantitative criteria whose values are reconsidered every six months offer the opportunity for an insight look of the project and assist the core group in their decision making tasks. In addition the consideration of the general resources consumption per period is able to efficiently validate the budget distribution and allocation at the sub-project level.

Assessment and review methodology will contribute to the SAFESPOT project by offering a sound basis for monitoring the most critical factors influencing the project's overall success.

1.3. Methodology

The methodology described has already been applied to similar ITS projects, such as the AIDE Integrated project (6th Framework) and the COMUNICAR project (5th Framework). It is also based on the evaluation criteria set by the European Commission for evaluating proposals.

For SAFESPOT project's assessment a multicriteria approach for assessing its progress is defined. The 4 main assessment criteria that will be implemented are the following:

- TQC (Technical Quality Criterion),
- CAV (Community Added Value criterion)
- CSO (Community Social Objectives)
- RPM (Resources, Partnership and Management criterion)

These are based on five fundamental principles:

1. principle of correlation
2. clarity
3. relevance
4. interoperability
5. flexibility

Each of the evaluation criteria is composed by a wide variety of single factors, associated with the quality of each sub project deliverable, the relevant prospects of its outcomes in the Market, the project participants' level of contributions, etc. Definition of the criteria and the different parameters such as the Incremental innovation factor (IF) may be updated if it is decided that these changes will help assess the project in a better way.

For all of these factors, qualitative and quantitative, a value within a 0-5 scale is estimated using both objective and subjective criteria. Then the criteria formulas are calculated so that the results can be compared against the defined thresholds, which is the value 3. To the overall evaluation function formula weighting factors for each of the criteria are also considered so that the most critical aspects influencing the project's success are also the factors with the heaviest impact to the assessment results.

Based on the above, the Assessment report for the SAFESPOT project is composed, based upon a six-month period estimation of all the above mentioned factors and criteria and applied through a Project Assessment Diagram (PAD).

1.4. Deliverable structure

This deliverable initially describes the Assessment report procedure to be followed at chapter 2. To chapter 3 the Assessment criteria implemented for defining the sub-project's performance are analysed in detail. The additional criteria used at the IP level are described to chapter 4 while the overall assessment consolidation is presented in chapter 5.

2. Assessment Report Procedure

2.1. Assessment Levels

SAFESPOT assessment will take place in two levels. At IP level and at Sub project level.
Each SP leader will be responsible of editing the assessment review for the specific sub project every six months. This report will include 2 of the 4 Assessment criteria, the Technical Quality Criterion (TQC) and the Resources, Partnership and Management Criterion (RPM) that will be calculated for each one of the Sub projects separately.

In turn, CRF and ICCS will be responsible of releasing every six months the Overall Assessment report of the SAFESPOT IP. For this, the SP assessment reports will be consolidated and the other two Assessment criteria will be calculated, namely the Community Added Value Criterion (CAV) and the Community Social Objectives (CSO). In this way the IP Assessment report will include all 4 Assessment criteria for the IP level. In addition, the Overall Assessment Function formula will be included to the IP Assessment report and while the results will be also presented in a graphical way, using the Assessment diagram.

The results of this 6-month internal assessment will be used by the Project Coordinator and the Core Group to initiate internal and external audits and propose risk mitigation strategies whenever necessary.

The methodology defined will be under constant revision in order to be adapted to the specific project and according to the findings from each implementation.

2.2. Adaptation of criteria, scales and thresholds for SAFESPOT project

The Consortium decided to follow the EU proposed assessment criteria, scales, thresholds, weighing factors, etc., as basis to its own multicriteria assessment strategy.

However, it adapted each criterion, based upon the particular project's aims and relevance to each category of criteria. In doing so the following principles were used:

- **Principle of correlation:** Each criterion should remain as close as possible to its EU based definition as well as the relevant quantifiable objectives established for it within SAFESPOT Technical Annex.

- **Principle of clarity:** Whenever possible the project's aims and the relevant criteria are being quantified either by using objective (i.e. % of improvement) or subjective (i.e. usability, efficiency, etc. scales) measurements.

- **Principle of relevance:** Some criteria that are related to SAFESPOT project aims and type of research are either omitted (weighing factor = 0) or regarded with very low weighting factors and without or with low thresholds. This is also in line with the relevant policy of EU project evaluations.

- **Principle of interoperability:** SAFESPOT criteria should be able to be applied (at least partially) to all types of its activities (i.e. definition of specifications, design of subsystems, development of modules, integration activities, measurements and testing, management activities, dissemination and exploitation), thus should be able to encompass evaluation tools of different aspects within a unique criterion.

- **Principle of flexibility:** Criteria that are proposed within this Report may be proven to be non-optimum for assessment of various aspects of the project. Therefore, the Consortium reserves the right to adapt any of the proposed criteria or apply it in a more flexible way during the course of the project. Still, every possible effort will be devoted, to stay near the initial criteria, so that subsequent project assessments may be compared to each other, according to the principle of correlation.

2.3. Assessment reports process

As mentioned above the outcome of the assessment procedure would be the 6 monthly assessment report. The steps for issuing the assessment report are described below:

1. At the first week of the final month of the semester the Assessment moderator sends to all SP leaders the assessment templates which are made especially for each sub project.
2. At the first week of the final month of the semester the Assessment moderator also sends the template for the IP assessment to the project coordinator
3. At the end of the second week the SP leaders send the filled templates to the Assessment moderator. The SP leaders should take special care of selecting representative values for all criteria so that the outcome is indicative of the actual sub-project situation. In addition the SP leaders may choose to send specific comments for each criterion that they find necessary. The comments will be also included to the report.
4. At the end of the second week the Coordinator also sends to the Assessment moderator the IP assessment template.

5. At the end of the third week the Assessment moderator sends to the Core Group and SP leaders the consolidated Assessment report for review. To this report the SP level and IP level assessment is included. Also specific comments on eventual problematic areas are pointed out and recommendations for special attention are addressed to the Core Group. In addition the Assessment moderator may propose to the report compensating measures for eventual problems arisen.
6. The core group, SP leaders and coordinator review the report and send comments to the Quality Moderator by the middle of the fourth week. Special attention on behalf of the core group and the coordinator is needed to this step so that the assessment reports pictures the actual situation of the project on one hand and that the eventual problems have been accurately pointed out. The coordinator may wish to include into the report the decisions and actions taken as a result of the previous assessment report and how these are reflected by the updated values.
7. End of the fourth week: the Assessment moderator sends the final six-monthly assessment report to the coordinator as final for submission to the EC.
8. The Core Group and the Coordinator thereafter will have to take a look at the special recommendations and the results of the assessment report so that decisions are taken and actions are realised timely before a critical failure affects the project's success.

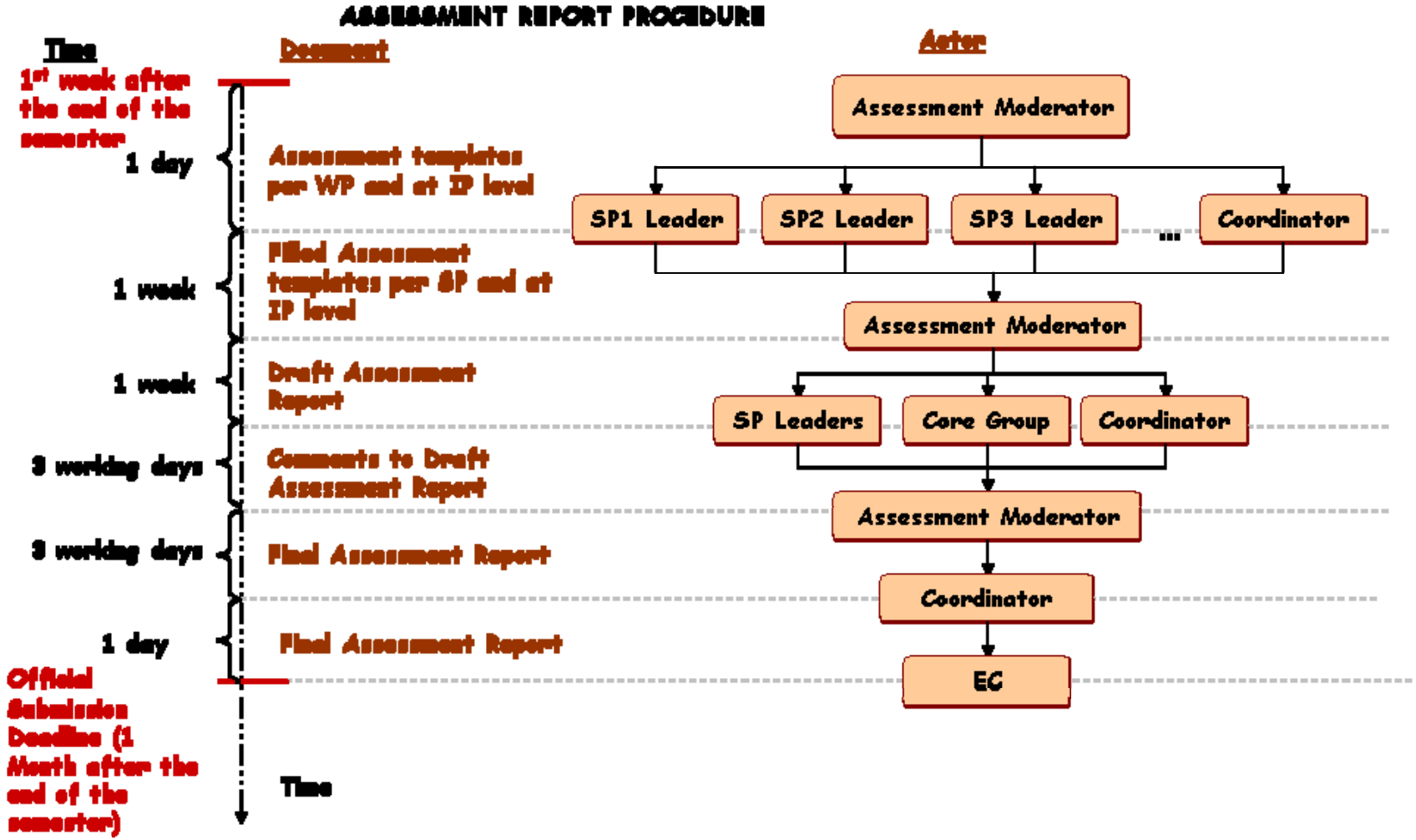


Figure 1 Assessment report procedure Flow Diagram

3. SAFESPOT Assessment criteria- Sub Project level

Each Sub project Leader will issue a Sub Project Assessment Report for the Sub project every six months. For the report the Technical quality criterion (TQC) and the Resources, Partnership and Management criterion (RPM) will be calculated.

For the definition of the values to calculate the formulas, the SP Leader must decide upon the most appropriate value that reflects the status of his/her sub project in the most representative way according to the guidelines given.

3.1. Technical quality criterion (TQC)

The TQC is calculated according to the following formula:

$$(TQC_{SPX}) = \frac{\frac{\sum_{i=1}^{n}(QM)i}{2n} + (IF) + (TR) + (PF) + \frac{\sum_{k=1}^{m}(WF)k}{m}}{s}$$

Where s = 5.

Quality Mark (QM)

$(QM)_i$ = Quality Mark (divided by two) of Project Deliverable i, as given within the relevant Peer Review Report (see Quality Manual). The overall Quality Mark for each Deliverable is the mean value of the individual Marks given for it, encompassing the following issues:

- response to user needs
- clarity of presentation of achievements
- depth and extent of coverage
- relevance
- deliverable layout
- content precision and cohesion
- correspondence to project, sector and program objectives
- contribution to state of the art

According to the SAFESPOT Quality manual, the SAFESPOT deliverables are reviewed by three reviewers which are members of the consortium, preferably experts at the deliverable's area but without active involvement to its composition. The deliverables are rated at a scale between 1 and 10 with 1 being the rejection mark and 10 the "accepted without reservations or modifications" mark.

If n = 0, the term $\frac{\sum_{i=1}^{n}(QM)i}{2n}$ is considered equal to 0 and then s = 4.

(QM) = Quality mark of the deliverable

n = number of Deliverables that have been submitted to EU within the specific period

The division with 2 is necessary for the normalization of the Quality Mark to the scale of 5 as used to all other assessment criteria, since the deliverable's quality is rated at a range between 1 and 10 by the reviewers.

Incremental innovation factor (IF)

IF = Incremental innovation factor of the project. This starts at 0, at the beginning of the project and is revised to a higher mark, whenever a key innovation is achieved. Project expected major innovations are derived from the relevant Technical Annex. Thus for each of the Sub projects, Incremental innovation factor is defined in a different way. The calculation of the Incremental innovation factor (IF) of each Subproject is up to the Subproject Leader and the SP Consortium. Due to the existence of separate modules, whose functionality is somehow independent from one another, there could be several IFs. However, there should be an overall IF concerning each SP.

Incremental innovation factors SP1

For **SP1** Incremental innovation factor is translated to:

IF_{CSDF} = Cooperative Sensor Data Fusion
0 – Not available
1 – Specifications available
2 – Design available
3 – Development and delivery
4 – Integration in SAFEPROBE vehicles
5 – Cooperative sensor data fusion tested in SAFEPROBE vehicles

IF_{SP} = SAFEPROBE Platform
0 – Not available
1 – Specifications available
2 – Design of the architecture of the SAFEPROBE platform available
3 – Development and delivery
4 – Integration in SAFEPROBE vehicles
5 – SAFEPROBE platform is fully functional (hosts cooperative data fusion and all communication components, tested and delivered to the applications WPs)

Therefore the Incremental innovation factor of SP1 is calculated as indicated below:

$$IF = \frac{(IF)_{CSDF} + (IF)_{SP}}{2}$$

Incremental innovation factors SP2

The Incremental innovation factor consists of the four following elements:

$(IF)_{IRQ}$ INFRASENSE Requirements
0 – Not available
1 – Preliminary examination of role of the infrastructure in cooperative sensing
2 – Review of state-of-the-art of roadside sensing carried out
3 – Compilation of specific User Needs for INFRASENSE complete
4 – Definition of basic scenarios and draft requirements for roadside sensing
5 - Final INFRASENSE requirements for roadside sensing and actuation

$(IF)_{ISP}$ INFRASENSE Specifications
0 – Not available
1 – Preliminary specifications for roadside sensing and actuation systems
2 – Review of data input for incident detection and data fusion
3 – Specifications for detection algorithms
4 – Specifications for data fusion
5 - Final specifications for INFRASENSE platform

$(IF)_{IMP}$ INFRASENSE Implementation
0 – Not available
1 – Prototype technique for fusion for non-homogeneous data available
2 – New improved incident detection algorithms available
3 – Prototype wireless sensor network available
4 – Interface with traffic management systems available
5 - Completion of validation process for all INFRASENSE modules

$(IF)_{INT}$ INFRASENSE Platform Testing
0 – Not available
1 – INFRASENSE Platform Validation Plan available
2 – Performance of in-lab tests undertaken
3 – Performance of on-road and test track tests undertaken
4 – INFRASENSE demonstrators achieve expected performance
5 - Full analysis of results and guidelines for use of modules available

Therefore the Incremental innovation factor of SP2 is calculated as indicated below:

$$IF = \frac{(IF)_{IRO} + (IF)_{ISP} + (IF)_{IMP} + (IF)_{INT}}{4}$$

Incremental innovation factors SP3

For **SP3** Incremental innovation factor is translated to:

$(IF)_{POS}$ SINTECH Positioning (POS)
0 – Not available
1 – Technical Scenarios, user needs and requirements for *Positioning* described and consolidated across technical tasks and other SPs.
2 –Methods for *Positioning* compared with state-of-the-art technologies. Selected methods are specified.
3 – Methods for *Positioning* implemented. Performance tested by simulation or by testing with a prototypical implementation
4 – Performance of *Positioning* validated within the vehicular environment
5 – FINAL *Positioning* modules fully integrated and used by SafeSpot applications

$(IF)_{LDM}$ SINTECH Local Dynamic Maps (LDM)
0 – Not available
1 – Technical Scenarios, user needs and requirements for *Local Dynamic Maps* described and consolidated across technical tasks and other SPs.
2 –Methods for *Local Dynamic Maps* compared with state-of-the-art technologies. Selected methods are specified.
3 – Methods for *Local Dynamic Maps* implemented. Performance tested by simulation or by testing with a prototypical implementation
4 – Performance of *Local Dynamic Map* validated within the vehicular environment
5 – FINAL *Local Dynamic Map* modules fully integrated and used by SafeSpot applications

$(IF)_{VANET}$ SINTECH Vehicular Ad Hoc Network (VANET)
0 – Not available
1 – Technical Scenarios, user needs and requirements for *VANET* described and consolidated across technical tasks and other SPs.
2 –Methods for *VANET* compared with state-of-the-art technologies. Selected methods are specified.
3 – Methods for *VANET* implemented. Performance tested by simulation or by testing with a prototypical implementation
4 – Performance of VANET validated within the vehicular environment.
5 – FINAL *VANET* modules fully integrated and used by SAFESPOT applications

Therefore the Incremental innovation factor of SP3 is calculated as indicated below:

$$IF = \frac{(IF)_{POS} + (IF)_{LDM} + (IF)_{VANET}}{3}$$

Incremental innovation factors SP4

Purpose of SP4 – SCOVA subproject is to specify and to develop a set of applications based on co-operative systems implementing the Safety Margin Assistance concept. These applications are grouped into four clusters, as showed below:

Application	Cluster
Road Intersection Safety	Lateral Collision (LATC)
Lane Change Manoeuvre	
Safe Overtaking	
Head On Collision Warning	Longitudinal Collision (LONC)
Rear End Collision	
Speed Limitation and Safety Distance	
Frontal Collision Warning	
Road Condition Status – Slippery Road	Road Departure (RODP)
Curve Warning	
Vulnerable Road User Detection and Accident Avoidance	Vulnerable Road User (VURU)

For every cluster of applications, the level of accomplishment of the related Incremental innovation factor can be defined on the basis of a quality index associated to the development stage which is reached inside the cluster concerning:

- Needs and Requirements
- Specifications
- Implementation
- Test and Evaluation
- Validation

So, the Incremental innovation factors of SP4 – SCOVA can be established as follow:

$(IF)_{LATC}$ SCOVA Lateral Collision (LATC)

0 – Not available

1 – Use Case, User Needs and Requirements for applications in the *Lateral Collision Cluster* described and consolidated across the related technical tasks.
2 – Application specifications for applications in the *Lateral Collision Cluster*, including parameters for V2V and V2I communication, HMI.
3 – On vehicle implementation of applications in the *Lateral Collision Cluster*, including system tuning and function parameters refinement.
4 – Technical and functional test of application in the *Lateral Collision Cluster*; functional validation, assessed through simulation tools and with preliminary vehicle set ups (indoor, at a laboratory level, or outdoor, in test track environments).
5 – Formal evaluation of the applications and functions in the *Lateral Collision Cluster*, in the final test site environment, and assessment of the obtained performances.

$(IF)_{LONC}$ SCOVA Longitudinal Collision (LONC)

0 – Not available
1 – Use Case, User Needs and Requirements for applications in the *Longitudinal Collision Cluster* described and consolidated across the related technical tasks.
2 – Application specifications for applications in the *Longitudinal Collision Cluster*, including parameters for V2V and V2I communication, HMI.
3 – On vehicle implementation of applications in the *Longitudinal Collision Cluster*, including system tuning and function parameters refinement.
4 – Technical and functional test of application in the *Longitudinal Collision Cluster*; functional validation, assessed through simulation tools and with preliminary vehicle set ups (indoor, at a laboratory level, or outdoor, in test track environments).
5 – Formal evaluation of the applications and functions in the *Longitudinal Collision Cluster*, in the final test site environment, and assessment of the obtained performances.

$(IF)_{RODP}$ SCOVA Road Departure (RODP)

0 – Not available
1 – Use Case, User Needs and Requirements for applications in the *Road Departure Cluster* described and consolidated across the related technical tasks.
2 – Application specifications for applications in the *Road Departure Cluster*, including parameters for V2V and V2I communication, HMI.
3 – On vehicle implementation of applications in the *Road Departure Cluster*, including system tuning and function parameters refinement.
4 – Technical and functional test of application in the *Road Departure Cluster*; functional validation, assessed through simulation tools and with preliminary

vehicle set ups (indoor, at a laboratory level, or outdoor, in test track environments).

5 – Formal evaluation of the applications and functions in the *Road Departure Cluster*, in the final test site environment, and assessment of the obtained performances.

$(IF)_{VURU}$ SCOVA Vulnerable Road User (VURU)

0 – Not available

1 – Use Case, User Needs and Requirements for applications in the *Vulnerable Road User Cluster* described and consolidated across the related technical tasks.

2 – Application specifications for applications in the *Vulnerable Road User Cluster*, including parameters for V2V and V2I communication, HMI.

3 – On vehicle implementation of applications in the *Vulnerable Road User Cluster*, including system tuning and function parameters refinement.

4 – Technical and functional test of application in the *Vulnerable Road User Cluster*; functional validation, assessed through simulation tools and with preliminary vehicle set ups (indoor, at a laboratory level, or outdoor, in test track environments).

5 – Formal evaluation of the applications and functions in the *Vulnerable Road User Cluster*, in the final test site environment, and assessment of the obtained performances.

Therefore the Incremental innovation factor of SP4 is calculated as indicated below:

$$IF = \frac{(IF)_{LATC} + (IF)_{LONC} + (IF)_{RODP} + (IF)_{VURU}}{4}$$

Incremental innovation factors SP5

COSSIB currently has only one incremental innovation factor, since the use cases are under consideration and the applications are not decided yet. The definition of the complete incremental innovation factors is subject to change.

(IF) COSSIB applications

1 - Identify the most important use cases (on the basis of statistical analysis of accident data and expert experience);

2 - Define the safety margins' for different types of road vehicle, and their functional dependence on the various parameters and environmental factors;

3 -Integration of the relevant components (developed in SP2) into these scenario-based applications;

4 - Testing and validation of the applications;
5 - Analysis of the results and conclusions regarding the performance of the applications, their practical feasibility, and recommendation for their real-life deployment.

Incremental innovation factors SP6

IF(SP6.1) Organisational Architecture
0 - Noting available
1 - Adjusted/Revised Methodology tools and instruments & Selection of applications/services
2 - Initial Macro and sub processes of value chain of selected systems available
3 - Initial definition of roles, means/responsibilities defined
4 - Initial Overall flow chart for each selected service available
5 - Consolidated organizational architecture available

IF(SP6.2) Business models
= - Nothing available
1 - Service and business model definition
2 - Strength and weaknesses of business models available
3 - Preliminary ranking of business models
4 - Final ranking of business models

IF(SP6.3) Deployment Programme
0- Not available
3- Draft Deployment Programme available
5- Final Deployment Programme

$$IF = \frac{(IF)_{6.2} + (IF)_{6.3} + (IF)_{6.1}}{3}$$

Incremental innovation factors SP7

For **SP7** Incremental innovation factor is translated to:

$(IF)_{GAC}$ SCORE Global Architecture Convergence

0 – Not available
1 – Collection of user needs and requirements in coordination with the ITS cluster.
2 – Analysis and prioritisation of SAFESPOT system architecture requirements.
3 – Specification of the global system reference architecture.
4 – Deployment of the reference architecture supporting all the SafeSpot required functions.

5 – Final SafeSpot consolidated architecture.

$(IF)_{SCE}$ SCORE Standardization Certification and Exploitation

0 – Not available
1 – Contribution to the emergence of standards in the field of V2V and V2I cooperative systems.
2 – Extension of the Telematics certification approach to V2V and V2I cooperative systems.
3 – Building of a certification reference plan in agreement with standardization bodies.
4 – Full Interoperability and conformance test of the implementations prototypes.
5 – Definition of a European common exploitation strategy.

$$IF = \frac{(IF)_{GAC} + (IF)_{SCE}}{2}$$

For the first six months of the project and only if no innovations are foreseen for this period for a SP then *IF* can be 0 and *s* can be reduced by 1.

Technical Risk Factor (TR)

(TR) = Technical Risk factor, which initially is set at 5. Whenever a key problem is identified this factor may drop down to lower marks. Indicatively the following factors are mentioned (as reference, not exclusively).

(TR) = 1, if the overall project outcome might not be achieved
(TR) = 2, if the sub project outcome will have technical characteristics that deviate from its aims up to 50%
(TR) = 3, if one of the main Deliverables of the project is not achievable anymore
(TR) = 4, if a non-critical subsystem does not operate well. May be raised again to 5 when this is fixed or replaced
(TR)= 5 if there is no Risk identified

Participant Factor (PF)

(PF) = Participant Factor, which characterises the quality of performance of the Consortium participant

(PF) = 1, if more than 5 participants have a work success $(WS)_P$ rate below 3
(PF) = 2, if more than 3 participants have a work success $(WS)_P$ rate below 3
(PF) = 3, if at least 1 participant has a work success $(WS)_P$ rate below 3
(PF) = 4, if none of the participants has a work success $(WS)_P$ rate below 3, but there are tensions within some Partners or problems to be foreseen

(PF) = 5, If none of the participants has a work success $(WS)_P$ rate below 3 nor are any other problems visible

Partner work success rate (WS)

$(WS)_P$ = Partner work success rate, ranging from 1 (Partner not performing at all) to 5 (Partner performing high quality work in due time). Calculated for each Partner by the SP Leader, and known only to him and the Project Coordinator, based as much as possible objective criteria (achievement of his/her specific work objectives, delivery of reports/deliverables on time with a good quality).

Work Package Factor (WF)

$(WF)_k$ = Workpackage Factor, which characterises the progress of the Workpackage k of the sub project

(WF)= 1, if the WP work has not started 3 months after its planned commencement date or if its work is delayed more than 3 months (including relevant workpackage Deliverables)
(WF)= 2, if the WP work has not started 3 months after its planned commencement date or if its work is delayed more than 2 months (including relevant workpackage Deliverables)
(WF)= 3, if the WP work has not started 2 months after its planned commencement date or if its work is delayed more than 1 months (including relevant workpackage Deliverables)
(WF)= 4, if the work in this workpackage is on-time or even before the planned time and no input to other workpackage is pending
(WF)= 5, if the workpackage has been successfully terminated, with accepted Deliverables by EU or by QCB with Quality Marks above 7 for each of the relevant Deliverables
m= number of workpackages that have or should have started already

In the end each subproject concludes to a specific value for the Technical Quality Criterion.

3.2. Resources, partnership and management criterion (RPM)

This criterion is calculated based for each of the Sub projects individually on the following formula:

$$(RPM) = \frac{\frac{\sum_{i=1}^{N}(RL)}{N} + (PS) + (CS)}{3}$$

N=Number of participants to the specific SP

Resource Level Factor (RL)

$(RL)_i$ = Resource Level factor of Participant i. It is calculated as:

(RL)= 1, if there is a deviation of the participants actual versus planned resources of over $\pm$ 50%
(RL)= 2, if there is a deviation of the participants actual versus planned resources of $\pm$ 20% - 50%
(RL)= 3, if there is a deviation of the participants actual versus planned resources of $\pm$ 10% - 20%
(RL)= 4, if there is a deviation of the participants actual versus planned resources of below $\pm$ 10%
(RL)= 5, if there is a deviation of the participants actual versus planned resources of below $\pm$ 2%

Following a linear distribution of their mms to every task which is considered to be the planned distribution of resources.

Sub Project Scheduling Factor (PS)

(PS) = Sub Project scheduling factor. It is not related to the progress of single Workpackages and Deliverables (for them see factor (WS) in Section 3.1) but to the overall sub project progress and especially activities that are in its critical path or Deliverables that are preconditions to other project activities or even to other projects within the same cluster.

(PS) =1 if the sub project as a total is delayed over 6 months
(PS)=2 if the sub project as a total is delayed over 3 months
(PS)=3 if the sub project as a total is delayed over 1 month
(PS)=4 if the sub project as a total is on time
(PS)=5 if the sub project as a total is on time and with no foreseeable delays in the future

Consortium Synthesis Factor (CS)

(CS) = Consortium synthesis factor. It is calculated as follows:

(CS) =1 if the SP leader or at least 2 key participants abandoned the project or were forced out of it without proper replacement

(CS)=2 if the SP leader abandoned the project or was forced out of it, but has been replaced or if 1 key participant abandoned the project or was forced out of it without proper replacement

(CS)=3 if 1 key participant abandoned the project or was forced out of it but was properly replaced

(CS)=4 if no change in the Consortium has been implemented

(CS)=5 if additional (i.e. Sponsoring) Participants have been added with the aim to further strengthen the Consortium or sponsor (i.e. co-fund) its activities (not as a result of a Consortium's lack of expertise)

3.3. Sub Project Assessment thresholds

In the end Sub project leader will reach to a conclusion regarding the SP Assessment and will be able to identify the process of work by comparing the outcome with the following evaluation thresholds, as set for SAFESPOT project.

TYPE OF ACTION	SELECTION CRITERIA				
	Scientific/ technological excellence, innovation		Resources, Partnership and Management		Overall
	Weight	Threshold	Weight	Threshold	Threshold
SAFESPOT PROJECT	6,5	3	3.5	3	3

Table 1 Selection criteria weights and thresholds

For the overall Sub project Assessment Function the following formula will be calculated:

$$(OAF)_{SPx} = 0.65 \cdot (TQC) + 0.35 \cdot (RPM)$$

Therefore for the Subproject Assessment to be positive $(OAF)_{SPx} \geq 3$

These will be pictured by the following indicative assessment diagram.

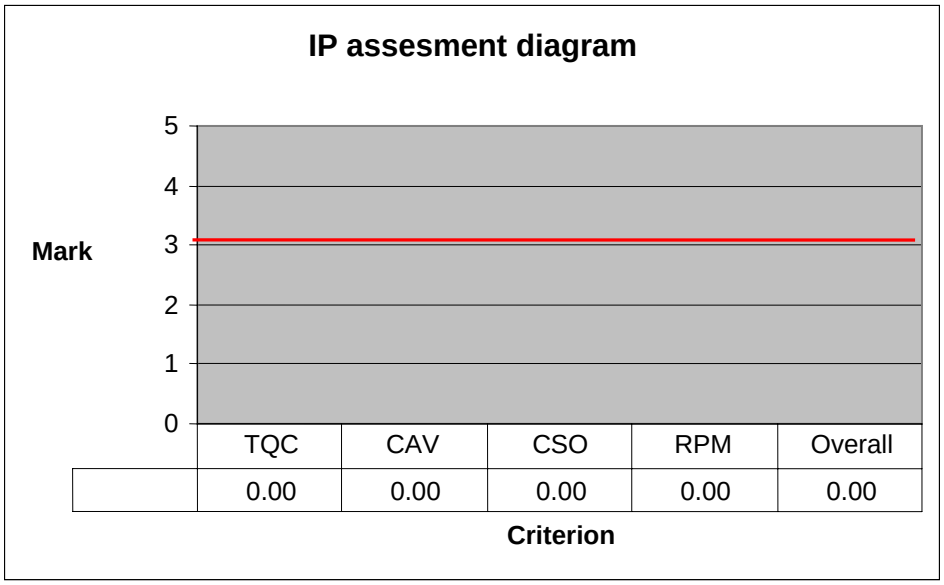


Figure 2 IP Assessment Diagram

4. SAFESPOT *Assessment IP level*

For IP level the coordinator will have to report on all 4 Assessment criteria. In addition an overall Assessment will have to take place and the Assessment Diagram to be shaped.

4.1. Technical Quality Criterion (TQC)

For the Technical Quality Criterion at IP level, the average of all Technical Quality values of each sub project will be used. Therefore the following formula will be implemented:

$$TQC_{IP} = \frac{TQC_{SP1} + TQC_{SP2} + TQC_{SP3} + TQC_{SP4} + TQC_{SP5} + TQC_{SP6} + TQC_{SP7} + TQC_{SP8}}{8}$$

4.2. Community added value criterion (CAV)

The Community Added value criterion is calculated as follows:

$$(CAV) = \frac{(RUN) + (MI)}{l}$$

ℓ = 2 before Month 18 and 3 after it

Relation to User Needs factor (RUN)

(RUN) = Relation to User Needs factor, based on the level and extend that this project covers user needs, will be defined initially relevant User needs deliverables of SAFESPOT and updated whenever subjective evaluation results are coming from the users. Before or alternatively the relevant factor (POTENTIAL IMPACT) given by the external evaluators during the proposal evaluation is used (mark = 4.5). It may later change if new developments in the Market (i.e. introduction into the Market of new competitive system will reduce the (RUN). This value will be calculated each time by the coordinator in cooperation with the core group and the SP leaders.

Market Impact Factor

(MI) = Market Impact factor, defining the expected impact of SAFESPOT project outcomes to the relevant Market

It will have initially the value 3, and will start taking other values, after Month 18 or later (depending on the project's workflow).

It will later take the following values:

(MI)= 1, if the Technological Implementation Plan, first or final version at Months 18 and 48 respectively) estimates low Market penetration chances or does not provide sufficient estimations for them
(MI)= 2, if the Technological Implementation Plan and/or Socio economic analysis of SAFESPOT or their early drafts show a Cost Benefit ratio that is too low for serious Market penetration
(MI)= 3, if CB ratios and Technological Implementation Plan drafts or final versions show inconclusive results, but still with good Market prospects
(MI)= 4, for a good CB ratio
(MI)= 5, for a good CB ratio and a very promising Technological Implementation Plan

4.3. Community Social Objectives criterion (CSO)

This criterion is calculated as follows:

$$(CSO) = \frac{(QoL) + (SAF) + (EMP)}{3}$$

Quality of Life impact (QoL)

(QoL) = Quality of Life impact. For SAFESPOT PROJECT:

(QoL) = 1, if SAFESPOT system usability ratings in the Pilots (or a priori analysis of UN) have a mean value below 3 in a 0-9 scale
(QoL) = 2, if SAFESPOT system usability ratings in the Pilots (or a priori analysis of UN) have a value between 3-5 in a 0-9 scale
(QoL) = 3, if SAFESPOT system usability ratings in the Pilots (or a priori analysis of UN) have a value between 5-6 in a 0-9 scale
(QoL) = 4, if SAFESPOT system usability ratings in the Pilots (or a priori analysis of UN) have a value between 7-8 in a 0-9 scale
(QoL) = 5, if SAFESPOT system usability ratings in the Pilots (or a priori analysis of UN) have a value above 8 in a 0-9 scale

Initial value (before first user acceptance survey): (QoL) = 3

Safety Impact (SAF)

(SAF) = Safety impact. For SAFESPOT project:

(SAF)= 1, if tests show a negative traffic safety impact of SAFESPOT systems

(SAF)= 2, if tests show a non-significant traffic safety impact of SAFESPOT systems
(SAF)= 3, if tests show a somehow positive traffic safety impact of SAFESPOT systems
(SAF)= 4, if tests show a clearly positive traffic safety impact of SAFESPOT systems
(SAF)= 5, if tests show a potential traffic safety enhancement over 20% by SAFESPOT systems

Initial value (before relevant test results) : (SAF) = 3

Impact to employment (EMP)

(EMP) = Impact to employment

It is assumed that the Market Impact factor (MI) will also define the relevant employment rate.

Therefore for SAFESPOT project it is accepted that:

$$(EMP) = (MI)$$

Initial value (before (MI) starts being calculated): (EMP) = 3

4.4. Resources, partnership and management criterion (RPM)

This criterion is calculated based on the following formula, encompassing the individual SPs RPM value:

$$(RPM_{IP}) = \frac{(RPM_{SP1}) + (RPM_{SP2}) + (RPM_{SP3}) + (RPM_{SP4}) + (RPM_{SP5}) + (RPM_{SP6}) + (RPM_{SP7}) + (RPM_{SP8}) + PM}{9}$$

PM: IP management Performance

1. IP coordinator leaves the project or is replaced or failure at delivering Annual or Financial Statements at least within two months after the EC deadline.
2. Poor performance of the IP management or/and complains from at least 10 partners.
3. Complain from at least 3 partners on IP management, or/and at least two subsequent progress or financial reports not accepted by EC.
4. IP management is good, no complains from partners, at least one progress or financial report not accepted by EC.
5. IP management is very good, no complains from partners, all progress reports and other financial and administrative reports delivered to EC on time and accepted.

This factor is calculated with a unanimous decision from the Core Group.

4.5. Weighting Factors and Overall Assessment Function (OAF)

4.5.1. Weighting factors and thresholds

The Consortium decided to target the following weighting factors. In addition, thresholds have been added to the areas that were not covered in the EU Table.

TYPE OF ACTION	**SELECTION CRITERIA**								
	Scientific/ technological excellence, innovation		Community Added value and contribution to EU policies		Contribution to Community Social objectives		Resources, Partnership and Management		Overall
	Weight	Threshold	Weight	Threshold	Weight	Threshold	Weight	Threshold	Threshold
SAFESPOT PROJECT	4	3	1,5	3	1,5	3	3	3	3

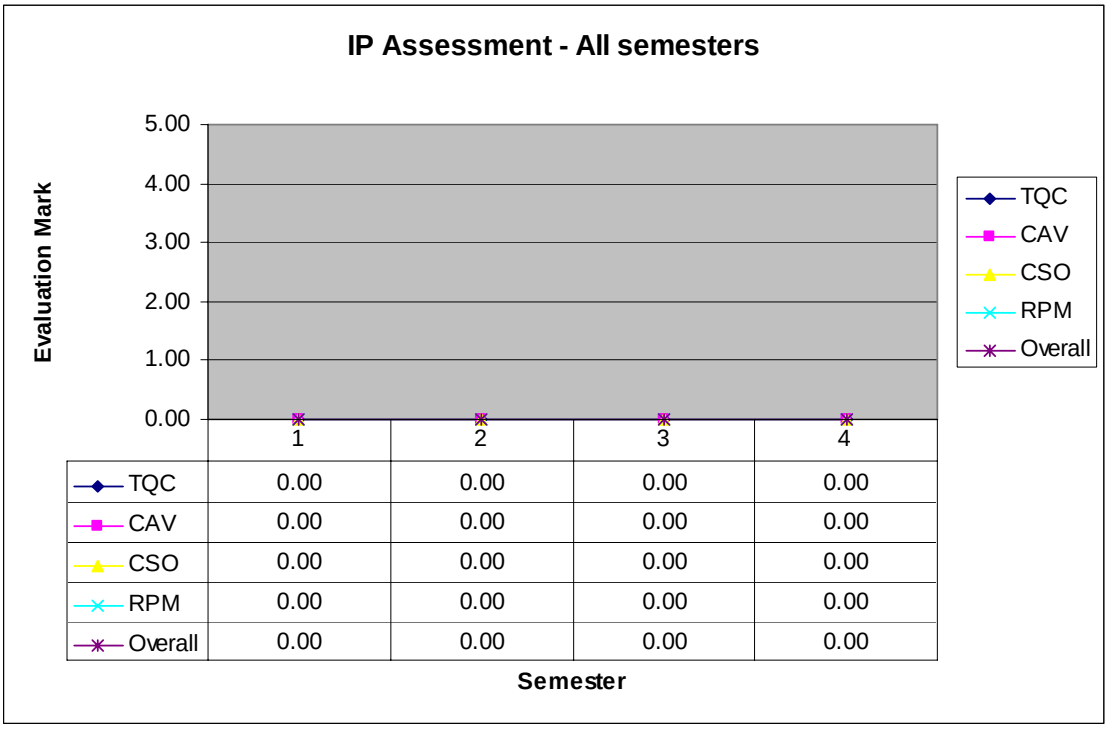
4.5.2. Overall Assessment Function (OAF)

Based upon the assessment criteria and the above defined weighting factors of Section 4.5.1, the Overall Assessment Function of the SAFESPOT project is calculated as:

$$(OAF)_{ip} = 0{,}4 \cdot (TQC)_{ip} + 0{,}15 \cdot (CAV) + 0{,}15(CSO) + 0{,}3 \cdot (RPM)_{IP}$$

5. Assessment Consolidation

In order to guarantee the continuous and thorough internal monitoring of any SAFESPOT project evolution, the Overall Assessment Function (OAF) as well as all its sub criteria will be re-calculated every 6 months and will be imported to a **Project Assessment Diagram** where the progress of the values will be compared through time. On one axis the evaluation marks will be inserted and on the other the semesters. In this way general tendencies will be easily identified.



	1	2	3	4
TQC	0.00	0.00	0.00	0.00
CAV	0.00	0.00	0.00	0.00
CSO	0.00	0.00	0.00	0.00
RPM	0.00	0.00	0.00	0.00
Overall	0.00	0.00	0.00	0.00

Figure 3 IP Assessment values progress through time

It should be underlined that the eventual decline in the value of a criterion, even below its threshold value will not be considered as a reason for red-alert or notification of the EU services but merely an issue that requires action. The Coordinator, together with the Core Group, the SP Leader and any related Partner will devise an action plan and will wait the next six month period to estimate the success of the proposed solution.

Nevertheless, if 3 criteria or more criteria or 1 of the Overall Assessment Function remain below their threshold for subsequent 6-month periods, the Coordinator may decide to inform the EU and may propose significant changes to the Core Group, including changes in Partner budgets, project work programme and time-plan or even Participant changes.

The reports will include special conclusion sections where mitigation strategies will be proposed if necessary and the results of previous compensating measures will be discussed having as a basis the current evaluation marks.

Not only the OAF will be monitored but also every criteria separately in order to be sure that all possible problems in any level will be recognised as soon as possible in order to avoid critical issues for the IP.

6. Conclusions

Starting from the need to establish a set of quantifiable and objective criteria and an associated methodology to assess internally the progress of the project, the consortium devised a set of criteria, weighting factors and thresholds, that aim to as accurately as possible reflect project status. They are based upon the EU-defined R&D proposals evaluation criteria, weighting factors and thresholds, as they are used within 5^{th} and 6^{th} FW program of EU. They have however to be detailed and in some cases adapted, to the particular issues, of the SAFESPOT Project.

These assessment criteria will be evaluated each 6-month period of the project, and their relevant evolution will be monitored by the Projects Assessment Diagram. Conditions for internal and external action, according to the course of this Diagram have been defined.

The whole process is viewed by the consortium as a dynamically evolving one and relevant criteria and evaluation framework parameters will be assessed and optimised during the project duration. Still, they are considered to be a useful tool in the hands of the project's management for the early recognition of project problems and for the safe prognosis of project final outcome.

7. References

AIDE Report “Assessment and Evaluation methodology” (AIDE IP, 6th FW, IST-1-507674-IP)