DELIVERABLE

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Authors:

Mr. Hans-Georg Frantz – B.I.M.
Mr. Otto Schallaböck – B.I.M.
Mrs. Lisa Freiberger – B.I.M.
Mr. Marius Jennings – Bristol City Council
Mr. Alejandro Astibia - Pamplona City Council
Mr. Maria de Santo – Vitoria-Gasteiz
Mrs. Mónica Díaz – EVE
Mr. Jure Ratej – ETREL
Mrs. Uršula Krisper – Elektro Ljubljana
Mr. Božidar Govedič – Elektro Maribor
Mr. David García-Pardo – Iberdrola

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Content

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1 EXECUTIVE SUMMARY

This deliverable covers the evaluation results of the solution for the ICT4EVEU project.

The evaluation is based on the Use Cases (UC) defined in previous deliverables mentioned later in this paper.

For all the UC indicators the quality of their values and results has been defined. The allocation of the indicators to the responsible stakeholders (charging stations operators, mobility service providers, authorities, roaming operators) is also undertaken.

A specific questionnaire will be used to gain customer input. The questionnaires will be conducted at two time periods (before and after the realisation). Additionally, two versions of the questionnaire can be utilised depending on the range of realisation (local at the own EMSP or external at other service providers). The usability and quality of the realised services will be interpreted based on the questionnaire results.

The technical tests conducted are described in the specific cases. The technical tests are conducted by evaluators from the project evaluator B.I.M. and the delivery of specific data during the operation by EMSP.

A timetable for the evaluation procedures will also be defined.

2 INTRODUCTION TO THE DOCUMENT

2.1 Objective of document

The objectives are based on the cases defined in chapter 3, their indicators and the responsibilities that are defined.

The document also contains indicators to show specific project content relevant to the evaluators and project partners. The document also gives an overview of the questionnaire that evaluates the EV users' views.

The results of the evaluation will improve usability solutions for users' needs as well as improve the quality of the newly developed services.

2.2 Basic definitions in previous deliverables

Within the ICT4EVEU project several previous deliverables define the basic conditions for validation of this project. These deliverables and the most important points are listed below:

Deliverable 1.4 (List of indicators for successful evaluation)

> The Deliverable 1.4 contains common indicators from the four CIP-ICT-PSP projects. These "high level" indicators will be used to compare common indicators between the projects.

The deliverable 1.4 defines "high level indicators" for all of the four projects. Besides the common indicators, the evaluation of each project is also necessary. The basis for the evaluation is the UC defined in deliverable 2.2.

Deliverable 2.2 (Services for EV user specifications and GMS/IMS integration services design)

> The evaluation is based on the *UC* defined in chapter 3.1.2. and 3.1.3.
>
> To evaluate the planned solutions defined in Deliverable 2.2 in chapters 3.1.2 and 3.1.3 it is necessary to coordinate the defined UC with developed indicators and evaluation levels. This evaluation also includes the high level FOT-NET indicators. FOT-NET is a development of NETwork for Field Operational Tests supported by the European Commission. These indicators were developed together with other European ICT projects in the same fields of research to compare the results.

The different UC are linked to the pilots where they were realised.

The responsibilities for testing were also defined.

2.3 Content and structure of document

Chapter 2.4 defines the necessary terms and definitions to clarify the abbreviations that will be used in the document.

Chapter 3 takes up the UC as defined in Deliverable 2.2 as the starting point for the development of indicators. It summarises the defined UC, shows the implementation of UC across pilot cities, the evaluation methodology and defines the indicators.

Chapter 4 shows the responsibilities for delivering the indicator results.

The user's expectations, experiences and especially the fulfilment of their expectations are evaluated using questionnaires. The definition of the questionnaires for the different stages of the project are defined in Chapter 5

2.4 Terms and definitions

The flowing abbreviations are used across the document.

Abbreviation	Term
BRI	Bristol pilot
CS	Charging Station
EMSP	Electromobility Service Provider
EUIS	End-User Information Services
EV	Electric Vehicle
EVSEO	Electric Vehicle Supply Equipment Operator
GMS	General Management System
GSP	Global Service Provider
IMS	Infrastructure Management System
OEM	Original Equipment Manufacturer
RMS	Roaming Management Services
SLO	Slovenia/Slovenian pilot
SPA	Spain/Spanish pilot
UC	Use Case
WP	Work package

Table 1: Abbreviations

3 EV USER UC MODEL

This chapter defines the cases described previously in Deliverable 2.2 in chapters 3.1.2 and 3.1.3.

3.1 Introduction

The purpose of this chapter is to present a view of the use cases defined In the IC4EVEU project. The document contains a harmonized compilation of the UC applicable to the three pilots: Bristol, Ljubljana-Maribor and Pamplona-Vitoria. These UC represent the basis of the project's work.

The UC are described in chapter 3.5. Information regarding which UC are realised in the different pilots is defined in Table 3: UC implemented in individual pilot sites in chapter 3.3.

3.2 Summary list of UC defined

The following UC define the objects and content of evaluation.

No. (UC Id)	UC Name	Description
1	Charge point reservation	Activities required when a driver wants to advance book to charge the vehicle at one of the charge points.
2	Visualize Charging Points	Activities required when a driver wants to see the status of the charge points in range.
3	Visualize Charging Point Information	Activities required when a driver wants to see more detailed information about a specific charging point.
4	Get Charging Point Recommendation	Activities required when a driver wants to identify the type and / or location of a charge station.
5	Notify charging emergency	The user is notified automatically when a charging emergency is detected.
6	Charge point communication with	Activities required when the charge point transmits or receives data from the Control Centre.

	the Control Centre	
7	Lost/forgotten card	Emergency access procedures.
8	On demand T/C Booking	Direct public access.
9	Normal use of charge point	Driver presents RFiD membership card and charge point opens. Driver presents RFID membership card, charge point opens, cable releases and charge point closed.
10	Power interrupted (electrical fault)	Charge cable released, driver departs.
11	Overstay	Car Park operator imposes excess parking charge.
12	Illegal use of bay	Car Park operator imposes excess parking charge.
13	Billing of charging service	Activities required for payment the charging service.

Table 2: UC Definition

3.3 Implementation of UC across the pilot cities

As the implementation of the UC differs between the pilots, the following table shows which UC will be implemented in each pilot / region.

Use Case	**Bristol Pilot**	**Spanish Pilot**		**Slovenian Pilot**	
	Bristol	**Pamplona**	**Vitoria**	**Ljubljana**	**Maribor**
1. Charge point Reservation	No	Yes(*)	Yes(*)	Yes	Yes
2. Visualize charging points	Yes	Yes	Yes	Yes	Yes
3. Visualize Charging Point Information	Yes	Yes(*)	Yes(*)	Yes	Yes
4. Get charging point recommendation	Yes	No	No	No	No

5. Notify charging emergency[1]	No	No	No	No	No
6. Communication with control center	Yes	Yes	Yes	Yes	Yes
7. Lost/forgotten card	Yes	Yes	Yes	Yes	Yes
8. On demand telephone booking	Yes	Yes	No	No	No
9. Normal use of charge point	Yes	Yes	Yes	Yes	Yes
10. Power interrupted (fault)	Yes	Yes	Yes	Yes	Yes
11. Overstay	Yes	No	No	Yes	Yes
12. Illegal use	Yes	No	No	Yes	Yes
13. Billing of charging service	Yes	Yes(*)	Yes(*)	Yes	Yes

Table 3: UC implemented in individual pilot sites

In SPA Pilot use case Implementation is done in two Releases. Use cases marked with (*) are implemented in Release II. Use Case evaluation will be done after implementation of Release II.

3.4 UC evaluation methodology

3.4.1 Modes of evaluation

Every UC will be evaluated following three modes:

- **User** feedback with questionnaire (see chapter 5): the number of users depends on the motivation and engagement campaigns that will be carried out by the project partners in individual pilots and the number of EV available in the cities and its maximal range (i.e. In SPA Pilot EV needs enough range to reach one city from the other)

.

[1] Needs changed throughout the project development will not be considered in order to assure continued numbering comparable with precedent documents and compatibility with other projects and already existing D 3.1.

- **Technical evaluation** by external experts within the project (B.I.M.): the evaluation follows the cases implemented on the sites together with the OEM and EMSP.
- **Provider data** formed by technical indicators: these are defined in the following chapter and marked with “P” in the list.

3.4.2 Dates of evaluation

To evaluate the improvement of the system two dates were defined:

- Ex-Ante: Evaluation of the actual situation before the solution was implemented. At this point the EV users were asked about their interests in specific actions from the ICT4EVEU project. This occurred between the end of May until the middle of June 2014.
- Ex-Post: Evaluation of the solutions after they were brought in order to get feedback about the EV users’ experience. Quality and benefit to the EV users are expressed also in monetary values. This evaluation is planned to take place after the implementation of the solutions in the pilots and expected to occur in July 2014 and August 2014.

An additional evaluation takes place by the technical experts in the pilots to evaluate the state of development before it goes into operation.

Solutions already implemented in the pilots were also evaluated by the questionnaire to prove the quality of the solutions for the EV and for the EMSP.

3.5 UC

This chapter defines indicators for the UC:

3.5.1 Charge Point Reservation (UC 1)

Participation: SPA, SLO

Indicators:

- Results of evaluation done by users via the questionnaire (Ex-Ante, Ex-Post). The operation of already realised services, the interest in new services will be calculated on the basis of the results by using statistical methods. The same approach will be used to proof the quality of operation of the new services.
- Results of testing of functionality by B.I.M. in cooperation with local project partners (Ex-Post). The success is indicated by the error free trail or, if necessary, highlighting the required corrections.
- P: Number of total requests (Ex-Post).

- P: Number of approved requests (Ex-Post), this shows the correct operation.
- P: Number of rejected requests (Ex-Post) due to EV-user based rejection (e.g. EV user's ID not known, EV user on the black list, charging station out of operation or already reserved for another user).
- P: Number of rejected requests (Ex-Post) due to an already reserved charging station.
- P: Number of technical failures (Ex-Post).

3.5.2 Visualize charging points (UC 2)

Participation: UK, SPA, SLO

Indicators:

- Results of evaluation done by EV users via the questionnaire (Ex-Ante, Ex-Post). The operation of already realised services, the interest in new services and the quality of operation of the new services will be calculated on the basis of the results by using statistical methods.
- Results of testing of functionality done by B.I.M. in cooperation with the local member pilot (Ex-Post). The success is indicated by the error free trail or if necessary highlighting the required corrections.
- P: Percentage of integrated and visible charging points in the pilots information system (Ex-Post).

3.5.3 Visualize charging points information (UC3)

Participation: UK, SPA, SLO

The following information of the charging points will be shown at the information systems.

BR:

- Charge point location (geographical map), address and directions,
- Type of sockets, voltage, max. phase current, charging power,
- Identification data
- Charging service payment conditions,
- Accessibility
- Current status (connected to the system Y/N, free/occupied/out of operation and time of last data update)

PA/VIT:

- Charge point location (geographical map), address and directions,
- Charging service payment conditions
- The information shown depends on whether it is a self-managed charging point or it is from another provider (roaming). Following data is shown in both

scenario: Location Information, Current Status, Available Sockets, SDR Information (if applicable)

LJ/MB:

- Charging point location (geographical map) and address,
- Type of sockets, voltage, max. phase current, charging power,
- Identification data (identification requested Y/N, type of identification),
- Charging service payment conditions,
- EVSEO operating the charging point, phone number
- Accessibility (public, semi-public,),
- Intended for cars, motors, bicycles, ...
- Operation time (day, hours),
- Additional information related to access,
- Current status (connected to the system Y/N, free/occupied/reserved/out of operation – time bar),
- Reservation button.

Indicators:

- Results of testing the functionality done by B.I.M. in cooperation with local project partners (Ex-Post). The success is indicated by the error free trail or if necessary highlighting of the required corrections.
- P: Visibility of the information of the charging points in the pilot's information system (Ex-Post).
- P: Visibility of the actual status (Ex-Post) and other parameters listed above.

3.5.4 Get charging point recommendation (UC 4)

Participation: UK

Indicators:

- Evaluation done by users via the questionnaire (Ex-Ante, Ex-Post). The operation of already realised services, the interest in new services and the quality of operation of the new services will be calculated on the basis of the results by using statistical methods.
- Testing of functionality done by B.I.M. in cooperation with Bristol (Ex-Post). The success is indicated by the error free trail or if necessary highlighting of the required corrections.
- P: Number of total requests (Ex-Post).
- P: Number of solvable requests (Ex-Post).
- P: Number of not solvable requests (Ex-Post).

3.5.5 Notifying Charging Emergency (UC 5)

Not used, needs changed throughout the project development, and will not be realised.

3.5.6 Charge Point communication with the Control Centre (UC 6)

Participation: UK, SPA, SLO

Indicator:

- P: Type and number of detected errors per 100 charging sessions (Ex-Post)

UK, SLO: life system is running, simulation cannot be done, historical errors will be provided by EVSE operator to analyse the system.

3.5.7 Lost RFID Card (UC7)

Participation: UK, SPA, SLO

Indictors:

- Evaluation done by users via the questionnaire (Ex-Ante, Ex-Post). The operation of already realised services, the interest in new services and the quality of operation of the new services will be calculated on the basis of the results by using statistical methods.
- SPA, SLO: The loosing of RFiD cards will be simulated by specific cases:
  - Declaration of lost RFID card by EV user to EVSE Operator and simulation of:
    - Locking procedure of RFID card using service centre
    - Charging procedures without RFID card by help of serving centre (not implemented in SLO pilot)
- UK: CYC will provide the process that has been developed for dealing with lost cards. (Ex-Post)
- P: amount of lost/stolen cards (Ex-Post)

3.5.8 On Demand Telephone Booking (UC 8)

Participation: UK, SPA (Pamplona)

Indicators:

- Evaluation done by users using the questionnaire (Ex-Ante, Ex-Post). The operation of already realised services, the interest in new services and the quality of operation of the new services will be calculated on the basis of the results by using statistical methods.
- Testing of functionality done by B.I.M. in cooperation with Bristol (Ex-Post). The success is indicated by the error free trail or if necessary highlighting the required corrections.
- P: Number of total requests (Ex-Post).
- P: Number of satisfied requests (Ex-Post).

- P: Number of dissatisfied requests (Ex-Post).

3.5.9 Normal use of Charge Point (UC 9)

Participation: UK, SPA, SLO

Indicators:

- Evaluation done by users using the questionnaire (Ex-Ante, Ex-Post). The operation of already realised services, the interest in new services and the quality of operation of the new services will be calculated on the basis of the results by using statistical methods.
- Testing of functionality done by B.I.M. in cooperation with Bristol (Ex-Post). The success is indicated by the error free trail or if necessary highlighting the required corrections.
- Number of completed operations (Ex-Post).
- Number of failed operations (Ex-Post).
- Time in use of single completed operations (Ex-Post).
- Energy consumed for single operations (Ex-Post).
- Energy consumed in total (Ex-Post).

3.5.10 Electric Fault Power Interrupted (UC 10)

Participation: UK, SPA, SLO

Indicators:

- Evaluation done by users using the questionnaire (Ex-Ante, Ex-Post). The operation of already realised services, the interest in new services and the quality of operation of the new services will be calculated on the basis of the results by using statistical methods.
- Testing of functionality done by B.I.M. in cooperation with local project partners (Ex-Post). The success is indicated by the error free trail or if necessary highlighting of the required corrections.
- P: Electric fault based on power outage (Ex-Post)
- P: Disconnection of the charged vehicle during the charging process (Ex-Post) – not applicable on Type 2 sockets.
- P: Error based on problems in the vehicle (Ex-Post).

Comment Bristol: Historic data from the GMS Charge Your Car (CYC) can be offered.

3.5.11 Overstay (UC 11)

Participation: UK, SLO

Drivers exceed the maximum stay conditions, charging or reservation time. Exceeding drivers will be noticed.

Technical Indicators:

- P: Percentage of vehicles remaining longer than 30 minutes after finishing charging.
- P: Number of vehicles fined.

3.5.12 Illegal use (UC 12)

Participation: UK, SLO

Indicators:

- P: Number of enforcement notices issued.

3.5.13 Billing of Charging Services (UC 13)

Participation: UK, SPA

Indicators:

- Evaluation done by users using the questionnaire (Ex-Ante, Ex-Post). The operation of already realised services, the interest in new services and the quality of operation of the new services will be calculated on the basis of the results by using statistical methods.
- Testing of functionality done by B.I.M. in cooperation with Bristol (Ex-Post). The success is indicated by the error free trail or if necessary highlighting of the required corrections.
- P: Number of charging sessions (Ex-Post).
- P: Number of locally issued invoices (Ex-Post).
- P: Number of issued invoices to external users following processes based on RMS (Ex-Post).
- P: Number of not issued invoices due to failures in processes or technical errors (Ex-Post).

As invoices are not issued (EV charging is for free for the time being). Validation will be based on number of communicated Charging Detail Records from EVSE Operators to EMSPs.

3.6 Conclusion

This chapter described the transformation of UC into indicators.

The indicators of the different cases assigned to the concerned participants with questionnaire, evaluation by B.I.M. together with the local OEM, EMSP and the technical data from the providers.

4 RESPONSIBILITIES

4.1 Definition of Responsibilities

The following tables names the responsible partners for the evaluation of the indicators identified in chapter 3.5. The questionnaire is organised by the authority (Bristol) or the EMSP. The EMSP is also in charge of the technical evaluation and the operational data. The RMS is needed should “roaming” also be used for processing data.

4.1.1 Bristol:

Authority: Bristol City Council

CS: charging stations supervised by EVSEO: Source West network (Bristol City Council, South Gloucestershire Councils, Bath & North East Somerset, Gloucestershire County Council and other business sites)

EMSP: Charge Your Car

RMS: Charge Your Car

4.1.2 Pamplona

Authority: Pamplona City Council

EVSEO and EMSP: IBERDOLA

RMS: TECNALIA

4.1.3 Vitoria-Gasteiz

Authority: Vitoria-Gasteiz City Council

EVSEO and EMSP: EVE → IBIL

RMS: TECNALIA

4.1.4 Ljubljana

Authorities: no authority responsible for the SLO pilot in the Ljubljana area

CS: charging stations supervised by EVSEO (Electric Vehicle Supply Equipment Operator): Elektro Ljubljana OVE and Elektro Ljubljana EMSP (Electromobility Service Provider): Elektro Ljubljana OVE

RMS (Roaming Management Services): Etrel

4.1.5 Maribor

Authorities: no authority responsible for the SLO pilot in the Maribor area

CS: charging stations supervised by EVSEO: Elektro Maribor in cooperation with the company DEM (EMSP). DEM is owner of the IMS. DEM operate its own as well as Elektro Maribos CS

EMSP: Elektro Maribor in cooperation with DEM (EMSP)

RMS: Etrel

4.2 Indicators

The indicators are based on chapter 3.5

	UC	Responsible
Questionnaire	1 to 10	EMSP
Using the EV charging identification at another operator or in another city or country		EMSP
Reserving a charging station	1,7	EMSP
Information about charging stations (price, operator, contract person)	2,3	EMSP
Information about charging stations	3,4	EMSP
Lost/forgotten your charging ID-Card	7	EMSP
Quality of charging process	8	EMSP
Failure in charging process	9	EVSEO
Billing information	13	EMSP

Table 4: Indicators

Following the already defined UC we recommend the following questions:
(B = Bristol, L = Ljubljana, M = Maribor, P = Pamplona, V = Vitoria-Gasteiz)

UC	Description	Realised
1	Reservation	P, V, L, M
2	Visualisation	B, P, V, L, M
3	Visualisation and information	B, P, V, L, M
4	Recommendation	B
5	Charging emergency	Not relevant for users
6	Internal Communication	B, P, V, L, M
7	Lost/forgotten card	B, P, V, L, M
8	On demand booking	B, P
9	Normal use	B, P, V, L, M
10	Power interrupted	B, P, V, L, M
11	Overstay	B, L, M
12	Illegal use	B, P, V, L, M
13	Billing	B, P, V, L, M

Table 5: UC in the pilots

5 USER QUESTIONNAIRE (VERSION 19.5.2014 BY B.I.M.)

The ICT4EVEU questionnaire is based on the common indicators in the CIP projects. It is designed in the same structure as in the smartCEM project (only smartCEM gave feedback from the from the four CIP projects) to make it comparable at least between the two projects and finally between all the CIP projects.

The internal discussion at ICT4EVEU regarding the size of the questionnaire led to the decision that the original list of indicators to be reduced to indicators concentrating on the ICT4EVEU project and its specific objectives. A questionnaire that is too long, as mentioned in the previous documents of CIP-indicators, would reduce the return rate. Based on the arguments the following, short, questionnaire was designed.

The ICT4EVEU project concentrates on the development and the evaluation of services. The questionnaire concentrates on these aspects and does not mention general aspects of e-mobility thus reducing the number of questions.

Additional questions can be added for local interests.

There are two segments of the questionnaire: demographic questions and content based questions.

The selection of the right questions (Ex-Ante (a) or Ex-Post (b)) and –local or –external ("roaming")) is done by the questioner. The EV-user only receives the appropriate questionnaire.

5.1 Demographic

The amount of questions is very small as the number of return answers is expected to be low. Therefore, there is no statistical relevance expected.

What is your age? _____

What is your gender? ❑ Female ❑ Male ❑ Prefer not to state

How often and how far did you make a trip with your EV the last month?

Km	< 10	11-25	26-50	51-75	76-100	101-125	126-150	>150
How often								

Are you planning to make a trip to another city or country with your EV?

O Yes O No
O If you stated no, please explain why:

Do you have a contract with a charging service provider?
O Yes, fully registered 0 Yes, on demand with app
O No, have accessed charged points via Pay As You Go

5.2 Content based questions

There are two periods for questioning and therefore two formulations. In the ideal case, one question is set up before the solution is implemented (Ex-Ante) and the other one is used after the solution is realised (Ex-Post).

The Ex-Ante questions test the interest in a specific topic. It is used to get the expectations of the EV users.

The Ex-Post questions test the satisfaction of EV users with a (newly) implemented solution.

The project is based on the implementation of new services that enable the “roaming” at other operators in other cities and countries. There are therefore two questions: one for the own operator and one for foreign services at another operator or in another city or country. The questions concerning the local usages are named “x-local” while the questions concerning foreign usage are named “x-roaming”.

The questionnaire only covers UC that are appropriate to the user.

5.2.1 Instructions

The sub question “a” is raised before the implementation of the service (Ex-Ante). If you are not going to implement this service, use question “a” in both terms.

The sub question “b” is raised after the implementation of the service (Ex-Post). If the service is already implemented, only use this question.

Every pilot can modify the questionnaire according to the local electro mobility situation.

The translation and design of the questionnaire is the responsibility of the local partner as long as the questions are matched.

5.2.2 Questions

UC = Use case

1. Are you interested in using your EV charging identification at another operator or in another city or country?

   a-roaming: I: If yes,
   1. How important is that for you: 1 (very important), 2, 3, 4, 5 (not important at all)
   2. I would accept further registration formalities to subscribe with different operators
   3. I would accept to pay 0 – 1 – 2 € for the registration for other operators

   II: No

   b-roaming: I: If yes,
   1. How important is that for you: 1 (very important), 2, 3, 4, 5 (not important at all)
   2. I would accept further registration formalities to subscribe with different operators
   3. I would accept to pay for the registration for other operators €/ -

   II: No

2. Reserving a charging station (UC 1, 7)

   a-local: Are you interested in reserving a charging point generally?

   I: Yes,
   4. How important is that for you: 1 (very important), 2, 3, 4, 5 (not very important)
   5. I would accept to pay for the reservation €

   II: No

a-roaming: Are you interested in reserving a charging point at another scheme or in another city or country?

I: Yes,

1. How important is that for you: 1 (very important), 2, 3, 4, 5 (not important at all)
2. I would accept to pay 0 – 1 – 2 € for the reservation

II: No

b-local: Have you ever reserved a charging point at your operator?

I: Yes

1. How often: 1, 2, >2 during the last month?
2. Was it successful: Yes always, Sometimes, No never

II: No

b-roaming: Have you ever reserved a charging point at another operator or in another city or country?

I: Yes

1. How often: 1, 2, >2 during the last month?
2. Was it successful: Yes always, Sometimes, No never

II: No

3. Information about charging stations like price, operator, contract partner (UC 2, 3)

b-local: Have you looked for the information of a charging point at your operator?

I: Yes

1. Via internet
2. On an smartphone app

II: No

III: I would accept to pay for the information €: ----

b-roaming: Have you looked for the position of a charging point of another operator or city or country?

I: Yes

1. Via the internet
2. On a smartphone app

II: No

III: I would accept to pay for the information €: ---

4. Information about charging stations (UC 3, 4)

b-local: Have you used the information about the charging points at your operator?

i. Yes
   1. It was useful
   2. It was not useful, please explain why?

II: No

III: I would accept to pay for the information €: ___

b-roaming: Have you used the information about the charge point for another operator, or city, or country?

I. Yes
   1. It was useful
   2. It was not useful, please explain why?

II: No

III: I would accept to pay for the information €: ___

5. Lost/forgotten your charging ID-Card (UC 7)

b-local: Have you ever lost/forgotten your charging RFiD-card, wanted to charge your car and used a different identification method at your operator?

I: Yes, it worked
II: Yes, it didn't work
III: No
IV: I would accept to pay for alternative charging €:___

b-roaming: Have you ever lost/forgotten your charging-ID-card, wanted to charge your car and used a different identification method at another operator or in another city or country?

I: Yes, it worked
II: Yes, it didn't work
III: No
IV: I would accept to pay for alternative charging €: ___

6. Quality of charging process (UC 8)

a-local: Are you generally satisfied with the charging process at your scheme

I: Yes, totally
II: Yes, but usually I have the problem: -----
III: No -----

b-roaming: Are you generally satisfied with the charging process at another scheme or in another city or country

I: Yes, totally
II: Yes, but I had a problem at: -----
III: No, because: -----

7. Failure in charging process (UC 9)

b-local: Did you ever have been involved in a power failure during charging at your scheme?

I: Yes, the problem was solved easily
II: Yes, the problem was solved with problems
III: No

b-roaming: Did you ever have been involved in a power failure during charging at another scheme or in another city or country?

I: Yes, the problem was solved easily; where: ----
II: Yes, the problem was solved with problems; where: ----
III: No

8. Billing information (UC 13)

a-local: Are you satisfied with the billing/charging information of your operator?

I: Yes, totally
II: Yes, with problems: ------
No, why: ----

b-local: Are you satisfied with the billing/charging information of your operator?

I: Yes, totally
II: Yes, with problems: ------
No, why: ----

b-roaming: Are you satisfied with the billing/charging information of your operator covering the information from another operator?

I: Yes, totally
II: Yes, with problems: ------
No, why: ----

6 TIMETABLE

6.1 Table of reports

To evaluate the project and write the deliverables on time the following timetable is necessary:

Number	Content	Final date (end of)	Responsibility
1	Evaluation of data following chapter 3	03.2014	EMSP
2	Analysis of delivered data with D 3.2 and D 3.3 (public)	04.2014	B.I.M.
3	Changes following recommendations	08.2014	EVSEO
4	Private results of analysed data and recommendations D 3.3	08.2014	B.I.M.
5	Private results of analysed data D3.4	08.2014	B.I.M.
6	Final improvements (if necessary)	11.2014	EVSEO
7	Improvement to deploy report	12.2014	B.I.M., EVSEO
8	Public report about final solution	12.2014	ALL

Table 6: Timeline table

6.2 Timetable for testing

The evaluation of the pilots is divided in two dates.

Users interest in the services developed by ICT4EVEU

Ex-Ante: May 2014

Ex-Post: September 2014

Tool: questionnaire → indicators

Developer's performance:

Beta Version: February/March 2014

Final Version: September 2014

Tool: on site visit evaluation with local partners → indicators

Based on the actual developments, the deliverables 3.2.1, 3.3.1 can be delivered in June 2014 and 3.2.2 and 3.3.2 in October 2014.

7 CONCLUSION

The evaluation of the services of the UC is based on indicators with specific values.

The allocation of the indicators to the responsible stakeholders (charging stations operators, mobility service providers, authorities, roaming operators) is also defined for every UC.

A specific questionnaire will be used to gain customer input. The usability and quality of the realised services will be interpreted based on the questionnaire.

To see the improvement of the developments, two periods of questioning were set up. One before (Ex-Ante) and one after realisation (Ex-Post). Additionally, two question types (local or external) were defined to check the fulfilment of needs.

The technical tests are described in the specific cases. The technical tests are executed by evaluators from the project evaluator B.I.M. The delivery of specific data is done during the operation by operators.

A timetable for the evaluation procedures has also been defined.