



**ERA 2015 11 FWC 01 contract
- Final report -**



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1. Version History

Date	Person	Modification
25/08/2016	Fourdin N.	Creation
29/08/2016	Beerens B	Page layout, conclusion, introduction
29/08/2016	Ricco X.	Review
29/08/2016	Girardi A.	Review
16/09/2016	Test team	Update
16/09/2016	Beerens B, Ricco X.	Review
16/09/2016	Girardi A.	Review
29/09/2016	Beerens B	Update
29/09/2016	Beerens B, Ricco X.	Review

2. Introduction

The goal of this report is to verify the implementation of 44CRs in the EVC software.

39 test sequences have been created by Multitel to verify the new behavior expect by the SRS 3.6.0.

This document report too the results from the Baseline Compatibility Assessment of the new Baseline 3 Release 2.

This BCA consists of checking that B3R2 is fully backward/forward compatible with B3MR1

These test sequences were created following the report made by the European Railway Agency
ERA_CR_Recommendation_2015_rpt_160519.docx

The details solution for each CR were used to build and verify the implementation of the CR in the EVC.

[http://www.era.europa.eu/Document-](http://www.era.europa.eu/Document-Register/Documents/ERA_CR_Recommendation_2015_attachments_160519_1.zip)

[Register/Documents/ERA_CR_Recommendation_2015_attachments_160519_1.zip](http://www.era.europa.eu/Document-Register/Documents/ERA_CR_Recommendation_2015_attachments_160519_1.zip)

[http://www.era.europa.eu/Document-](http://www.era.europa.eu/Document-Register/Documents/ERA_CR_Recommendation_2015_attachments_160519_2.zip)

[Register/Documents/ERA_CR_Recommendation_2015_attachments_160519_2.zip](http://www.era.europa.eu/Document-Register/Documents/ERA_CR_Recommendation_2015_attachments_160519_2.zip)

3. Equipment under test

The EVC under test was an EVC provide by Mermec. The EVC (which implemented 44 CRs) used was set to two different versions:

- B3R2:
 - used to check compliancy with [TS with CR implementation]
 - used to achieve the BCA analysis with [TS with no CR implementation].

- B3MR1:
 - used to achieve the BCA analysis with [TS with CR implementation].



4. Progress statement

#	CR	CR Analysis	Test Sequence(s) Designed	Number of Test Sequences	Test Sequence(s) Verified	Test Sequence(s) Run	Test Sequence(s) Validated	Test Sequence(s) Reviewed	CR Result
1	0239	Done	Done	1	Done	Done	Done	Done	Pass
2	0299	Done	Done	1	Done	Done	Done	Done	Pass
3	0740	Done	Done	5	Done	Done	Done	Done	Pass
4	0852	Done	Done	1	Done	Done	Done	Done	Pass
5	0933	Done	Done	2	Done	Done	Done	Done	Pass
6	1014	Done	Done	1	Done	Done	Done	Done	Pass
7	1033	Done	Done	1	Done	Done	Done	Done	Pass
8	1086	Done	Done	1	Done	Done	Done	Done	Pass
9	1087	Done	Done	2	Done	Done	Done	Done	Pass
10	1089	Done	Done	2	Done	Done	Done	Done	Pass
11	1091	Done	Done	1	Done	Done	Done	Done	Pass
12	1094	Done	Done	3	Done	Done	Done	Done	Pass
13	1107	Done	Done	1	Done	Done	Done	Done	Pass
14	1117	Done	Done	4	Done	Done	Done	Done	Pass
15	1122	Done	Done	1	Done	Done	Done	Done	Pass
16	1129	Done	Done	1	Done	Done	Done	Done	Pass
17	1152	Done	Done	2	Done	Done	Done	Done	Pass
18	1172	Done	Done	1	Done	Done	Done	Done	Pass
19	1184	Done	Done	2	Done	Done	Done	Done	Pass
20	1187	Done	Done	2	Done	Done	Done	Done	Pass
21	1190	Done	Done	1	Done	Done	Done	Done	Pass
22	1197	Done	Done	3	Done	Done	Done	Done	Pass
23	1236	Done	Done	2	Done	Done	Done	Done	Pass
24	1249	Done	Done	2	Done	Done	Done	Done	Pass
25	1250	Done	Done	2	Done	Done	Done	Done	Pass
26	1254	Done	Done	1	Done	Done	Done	Done	Pass
27	1260	Done	Done	1	Done	Done	Done	Done	Pass
28	1262	Done	Done	2	Done	Done	Done	Done	Pass
29	1277	Done	Done	1	Done	Done	Done	Done	Pass
30	1280	Done	Done	1	Done	Done	Done	Done	Pass



#	CR	CR Analysis	Test Sequence(s) Designed	Number of Test Sequences	Test Sequence(s) Verified	Test Sequence(s) Run	Test Sequence(s) Validated	Test Sequence(s) Reviewed	CR Result
31	0539	Done	Done	1	Done	Done	Done	Done	Pass
32	1084	Done	Done	1	Done	Done	Done	Done	Pass
33	1125	Done	N/A	0	CR has no impact on EVC software -> a test sequence is not applicable in this case				N/A
34	1163	Done	Done	1	Done	EVC does not implement the TIU "Station Platform"			N/A
35	1164	Done	Done	1	Done	Done	Done	Done	Pass
36	1221	Done	Done	1	Done	Done	Done	Done	Pass
37	1222	Done	Done	1	Done	Done	Done	Done	Pass
38	1237	Done	N/A	0	Not testable with current SS094 specifications. A test sequence is not applicable in this case as there is no functional requirements in the SS026				N/A
39	1242	Done	N/A	1	CR has no impact on EVC software -> a test sequence is not applicable in this case				N/A
40	1245	Done	Done	1	Not testable as STM interface is not available from EVC				N/A
41	1265	Done	Done	2	Done	Done	Done	Done	Pass
42	1266	Done	N/A	0	CR has no impact on EVC software -> a test sequence is not applicable in this case				N/A
43	1273	Done	N/A	0	CR has no impact on EVC software -> a test sequence is not applicable in this case				N/A
44	1283	Done	Done	1	Done	Done	Done	Done	Pass

5. SS076 Test Sequences for the CR requested in Annex 1.

See embedded files included in the sequence column of the table below:

#	CR	Sequence(s)
1	CR0239	 TS-CR0239.ZIP
2	CR0299	 TS-CR0299.ZIP
3	CR0539	 TS-CR0539.ZIP
4	CR0740	 TS-CR0740.ZIP
5	CR0852	 TS-CR0852.ZIP
6	CR0933	 TS-CR0933.ZIP
7	CR1014	 TS-CR1014.ZIP
8	CR1033	 TS-CR1033.ZIP
9	CR1084	 TS-CR1084.ZIP
10	CR1086	 TS-CR1086.ZIP
11	CR1087	 TS-CR1087.ZIP
12	CR1089	 TS-CR1089.ZIP
13	CR1091	 TS-CR1091.ZIP
14	CR1094	 TS-CR1094.ZIP
15	CR1107	 TS-CR1107.ZIP

16	CR1117	 TS-CR1117.ZIP
17	CR1122	 TS-CR1122.ZIP
18	CR1125	 TS-CR1125.ZIP
19	CR1129	 TS-CR1129.ZIP
20	CR1152	 TS-CR1152.ZIP
21	CR1163	 TS-CR1163.ZIP
22	CR1164	 TS-CR1164.ZIP
23	CR1172	 TS-CR1172.ZIP
24	CR1184	 TS-CR1184.ZIP
25	CR1187	 TS-CR1187.ZIP
26	CR1190	 TS-CR1190.ZIP
27	CR1197	 TS-CR1197.ZIP
28	CR1221	 TS-CR1221.ZIP
29	CR1222	 TS-CR1222.ZIP
30	CR1236	 TS-CR1236.ZIP
31	CR1237	 TS-CR1237.ZIP
32	CR1242	 TS-CR1242.ZIP

33	CR1245	 TS-CR1245.ZIP
34	CR1249	 TS-CR1249.ZIP
35	CR1250	 TS-CR1250.ZIP
36	CR1254	 TS-CR1254.ZIP
37	CR1260	 TS-CR1260.ZIP
38	CR1262	 TS-CR1262.ZIP
39	CR1265	 TS-CR1265.ZIP
40	CR1266	 TS-CR1266.ZIP
41	CR1273	 TS-CR1273.ZIP
42	CR1277	 TS-CR1277.ZIP
43	CR1280	 TS-CR1280.ZIP
44	CR1283	 TS-CR1283.ZIP

6. A B3 on-board version (SRS 340) with 44 of the CR requested from Annex A.

See embedded files included in the report column of the table below:

#	CR	Report
1	CR0239	 CR0239.ZIP
2	CR0299	 CR0299.ZIP

3	CR0539	 CR0539.zip
4	CR0740	 CR0740.zip
5	CR0852	 CR0852.ZIP
6	CR0933	 CR0933.ZIP
7	CR1014	 CR1014.ZIP
8	CR1033	 CR1033.ZIP
9	CR1084	 CR1084.zip
10	CR1086	 CR1086.ZIP
11	CR1087	 CR1087.ZIP
12	CR1089	 CR1089.ZIP
13	CR1091	 CR1091.ZIP
14	CR1094	 CR1094.ZIP
15	CR1107	 CR1107.ZIP
16	CR1117	 CR1117.zip
17	CR1122	 CR1122.ZIP
18	CR1125	N/A
19	CR1129	 CR1129.ZIP

20	CR1152	 CR1152.ZIP
21	CR1163	 CR1163.zip
22	CR1164	 CR1164.zip
23	CR1172	 CR1172.ZIP
24	CR1184	 CR1184.ZIP
25	CR1187	 CR1187.zip
26	CR1190	 CR1190.ZIP
27	CR1197	 CR1197.ZIP
28	CR1221	 CR1221.zip
29	CR1222	 CR1222.zip
30	CR1236	 CR1236.ZIP
31	CR1237	N/A
32	CR1242	N/A
33	CR1245	N/A
34	CR1249	 CR1249.zip
35	CR1250	 CR1250.ZIP
36	CR1254	 CR1254.ZIP
37	CR1260	 CR1260.ZIP
38	CR1262	 CR1262.ZIP

39	CR1265	 CR1265.zip
40	CR1266	N/A
41	CR1273	N/A
42	CR1277	 CR1277.ZIP
43	CR1280	 CR1280.ZIP
44	CR1283	 CR1283.ZIP

7. BCA (Backward Compatibility Analysis)

Following document referenced ERA_BCA_B3R2, issue 1.1.0, dated 13/05/2016.

MULTITEL adopted the same BCA methodology concept as defined in Chapter 2. COMPATIBILITY ASSESSMENT in order to technically acknowledge the results coming from this analysis (i.e. by running IN-LAB test sequences to validate the assumptions in such BCA report).

The first step of the applied methodology consisted in the analysis and the design of the SS076 Test sequences for the CR also shown as [TS with CR implementation] on the bottom right of the figure below. Then, such test were executed, validated and reviewed against the reference [EVC B3MR2] that can be seen on the top left of the figure. A report for each CR which justify the implementation or not of the CR will be found in chapter 6 of this document.

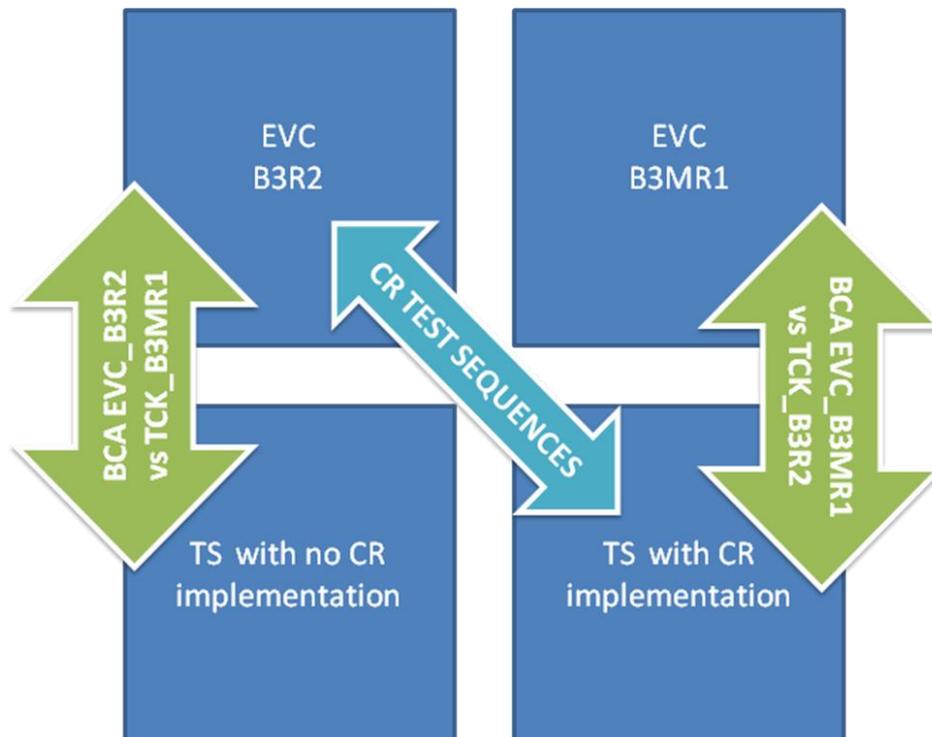


Figure 1 - methodology used to achieve the BCA analysis reports

The following questions were assessed during the BCA analysis INLAB execution plan:

Q1: Can a B3 MR2 Onboard implementing that CR run a normal service on a B3 MR2 Trackside not compliant to that CR?

Q2: Can a B3 MR2 Onboard not implementing that CR, run a normal service on a B3 MR2 Trackside that implements that CR?

If the answer is:

Yes - Onboard can run a normal service

No - Onboard cannot run a normal service

N/A - "No relevant compatibility issue (e.g. pure editorial changes). "

In order to achieve the BCA "EVC_B3MR2 vs TCK_B3MR1", the unit under test version was set to B3MR2 version and executed against [TS with no CR implementation] reference which corresponds to the list of test sequences impacted by the CRs. If, during execution, the onboard could run a normal service over [TS with no CR implementation] reference, then Q1 was answered Yes.

In order to achieve the BCA "EVC_B3MR1 vs TCK_B3MR2", the unit under test version was set to B3MR1 version and executed against the same [TS with CR implementation] reference. If, during execution, the onboard could run a normal service over [TS with CR implementation] reference, then Q2 was answered Yes.

To perform the CR individual assessments, a strict focus on the content of the specifications has been observed. Project or product specific considerations, quantified or not, were on purpose not considered.

Result of the BCA analysis

See embedded file below:



BCA-Report-vFINAL.xlsx

Conclusions

The results found are not all in line with ERA BCA Report.

We have found 5 compatibility issues/recommendations during the BCA analysis that have been reported in the table below::

CR	Comment
CR0933	An on-board not implementing this CR would be unable to use the order to contact last known RBC due to the deletion of the RBC ID/Phone number when entering UN or SN mode
CR1089	The display of a text message shall not have impact on "Onboard can run a normal service". Moreover, a track in MR1 shall never use a spare value therefore, it makes no sense to say that an onboard will not run a normal service in such condition.
CR1184	It must be considered that handover with only one mobile terminal is considered now as a degraded situation
CR1249	There can be some trackside issue under reduced adhesion conditions
CR1262	The train can run in normal service but if RBC need to contact the EVC, this can lead to safety issue.