


REFERENCE O-3001-3 version 2.0.0	 INTERNATIONAL UNION OF RAILWAYS
Company / Organization	UIC ERTMS/GSM-R Operators and Functional Group

Test specifications for GSM-R MI related requirements **Part 3: SIM Cards**

ACCESS:

☒ Public

☐ Restricted

☐ Confidential

Document Data Sheet

Title of the document	Test specifications for GSM-R MI related requirements; Part 3: SIM Cards
Reference, version number and date	REFERENCE O-3001-3 version 2.0.0; Date: 04.07.2025
Number of pages	17
Prepared by	UIC - Operators and Functional Group
Approved by	UIC ERIG Chairman Jean-Michel Evangelou

ISBN 978-2-7461-2592-6

Warning

No part of this publication may be copied, reproduced or distributed by any means whatsoever, including electronic, except for private and individual use, without the express permission of the International Union of Railways (UIC). The same applies for translation, adaptation or transformation, arrangement or reproduction by any method or procedure whatsoever. The sole exceptions - noting the author's name and the source - are "analyses and brief quotations justified by the critical, argumentative, educational, scientific or informative nature of the publication into which they are incorporated" (Articles L 122-4 and L122-5 of the French Intellectual Property Code).

© International Union of Railways (UIC) - Paris, 2025

Evolution Sheet

Revision	Date	Contributor	Object of revision
0.0.1	14-06-2017	UIC-OG	Creation based on O-3001
0.0.2	20-07-2017	UIC-OG	Update after UIC SIM-WG
0.0.3	08-11-2017	UIC-OG	Update following review
1.0.0	09-01-2018	UIC-OG	Approved version, published
1.0.1	29-11-2018	UIC-OFG	First draft adding more details to test spec
1.0.2	11-01-2019	UIC-OFG	Update
1.0.3	12-02-2019	UIC-OFG	EF _{LP} removed for EDOR
1.0.4	27-03-2019	UIC-OFG	EF _{LP} added for EDOR
1.0.5	23-01-2020	UIC-OFG	Editorial changes
1.1.0	08-04-2021	UIC-OFG	Final version
1.1.1	08-11-2023	UIC OFG	Editorial changes
1.1.2	11-12-2023	UIC OFG	Reference documents updated Note in Chapter 1.1 added Last page added Editorial changes
1.1.3	23-05-2025	UIC OFG	Stable draft approved by UIC
2.0.0	04.07.2025	UIC	Final version

Contents

Evolution Sheet	3
Contents	4
1 Object.....	5
1.1 Purpose of the document.....	5
1.2 Abbreviations.....	5
1.3 Reference Documents	5
2 Test Configuration	6
2.1 Overview.....	6
2.2 Equipment required.....	6
2.3 Network configuration	6
2.4 SIM cards.....	6
3 Completion of the Functional tests	7
3.1 General.....	7
3.2 Structure of the tests.....	7
3.3 Completion of the tests	7
3.4 SIM card configuration	7
4 EIRENE MI Requirements for SIM card	8
4.1 Cab Radio SIM card.....	8
4.2 EDOR SIM card.....	14

1 Object

1.1 Purpose of the document

This document contains the test cases that are necessary for the functional validation of a SIM card according to the EIRENE specifications FRS (see [1]) and SRS (see [2]). The test cases cover all the requirements that have been identified as mandatory for interoperability (MI) according to the EIRENE specification and which can be validated using functional tests. QoS and performance requirements for voice and non-safety related data communications are not in the scope of this document.

Note: For a complete overview of compliance of FRS and SRS MI requirements with test cases, please refer to the document O-3001-5 Cross Reference Table.

1.2 Abbreviations

EDOR	ETCS data only radio
EIRENE	European Integrated Railway Radio Enhanced Network
GSM-R	GSM-Railway, GSM train radio system
MI	Mandatory for Interoperability
SIM	Subscriber Identification Module

1.3 Reference Documents

- [1] UIC, EIRENE Functional Requirements Specification
| Version: 8.1.0
- [2] UIC, EIRENE System Requirement Specification
| Version: 16.1.0
- [3] UIC, FFFIS for GSM-R SIM Cards
Doc.-Nº: P38 T 9001 version 6.0.0
- [4] COMMISSION IMPLEMENTING REGULATION (EU) 2023/1695 of 10 August 2023
on the technical specification for interoperability relating to the control-command and
signalling subsystems of the rail system in the European Union and repealing Regulation
(EU) 2016/919
- [5] UIC, Test specifications for GSM-R MI related requirements, Part 5: Cross Reference
Table
Doc.-Nº: UIC O-3001-5 | version: 1.0.0

2 Test Configuration

2.1 Overview

Following components of the EIRENE GSM-R system are needed to execute the tests:

- Cab Radio SIM card
- EDOR SIM card

2.2 Equipment required

- Card reader for SIM cards including SIM card reading tool

2.3 Network configuration

None.

2.4 SIM cards

The SIM cards need to be compliant to [3] and will be provided by the network operator or test lab operator.

3 Completion of the Functional tests

3.1 General

The following chapters contain a detailed description of all functional tests provided for the SIM card.

3.2 Structure of the tests

The tests are structured as follows:

- test title
- purpose of the test
- precondition for the test
- reference to specific requirement(s)
- completion of the test in individual steps

3.3 Completion of the tests

The tests are carried out with the SIM card reader tool and the SIM card.

3.4 SIM card configuration

The SIM cards need to be compliant to [3].

4 EIRENE MI Requirements for SIM card

4.1 Cab Radio SIM card

Purpose: This test is to show that the Cab radio SIM card is compliant to the clauses classified as MI in [3].

Precondition: SIM card and SIM card reading facility available.

References:

EIRENE SRS: § 4.1.5

FFFIS for GSM-

R SIM Cards Chapters § 5, § 6, § 7, § 8

Note: The SIM examples in section 9.1 of [3] may be helpful during the test process.

Test Procedure:

Step	Procedure	Result / Effect
A1	Insert the SIM card into the card reader unit of the SIM reading facility.	SIM card is readable by the SIM reader facility.

Case 1: Test steps related to chapter 5 Common Mandatory GSM Files of [3]

Step	Procedure	Result / Effect
B1	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) ICCID.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B2	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) LP.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B3	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) IMSI.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B4	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) KC.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B5	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) HPLMN.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B6	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) SST.	The presence and the structure comply to [3].
B7	Check according to section 5.2.1 of [3] the content of the Elementary File (EF) SST.	The content complies to [3]. The content of the Elementary File is partly operator dependent.
B8	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) BCCH.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B9	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) ACC.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B10	Check according to section 5.3.1 of [3] the content of the Elementary File (EF) ACC.	The content comply to [3].
B11	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) FPLMN.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B12	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) LOCI.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B13	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) AD.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B14	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) PHASE.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.

Case 2: Test steps related to chapter 6 Optional GSM Files Mandated for GSM-R of [3]

Step	Procedure	Result / Effect
C1	Check according to section 6.1.4 and 6.3 of [3] the presence, the structure and the content of the Elementary File (EF) CBMI.	The presence, the structure and the content comply to [3].
C2	Check according to section 6.1.4 and 6.4 of [3] the presence, the structure and the content of the Elementary File (EF) VGCS.	The presence, the structure and the content comply to [3].
C3	Check according to section 6.1.4 and 6.4 of [3] the presence, the structure and the content of the Elementary File (EF) VGCSS.	The presence, the structure and the content comply to [3].
C4	Check according to section 6.1.4 and 6.5 of [3] the presence, the structure and the content of the Elementary File (EF) VBS.	The presence, the structure and the content comply to [3].
C5	Check according to section 6.1.4 and 6.6 of [3] the presence, the structure and the content of the Elementary File (EF) eMLPP.	The presence, the structure and the content comply to [3].
C6	Check according to section 6.1.4 and 6.7 of [3] the presence, the structure and the content of the Elementary File (EF) AAeM.	The presence, the structure and the content comply to [3].
C7	Check according to section 6.1.4 and 6.8 of [3] the presence, the structure and the content of the Elementary File (EF) ADN.	The presence, the structure and the content comply to [3].
C8	Check according to section 6.1.4 and 6.9 of [3] the presence, the structure and the content of the Elementary File (EF) SMS.	The presence, the structure and the content comply to [3].
C9	Check according to section 6.1.4 and 6.9 of [3] the presence, the structure and the content of the Elementary File (EF) SMSS.	The presence, the structure and the content comply to [3].
C10	Check according to section 6.1.4 and 6.9 of [3] the presence, the structure and the content of the Elementary File (EF) SMSP.	The presence, the structure and the content comply to [3].
C11	Check according to section 6.1.4 and 6.10 of [3] the presence, the structure and the content of the Elementary File (EF) MSISDN.	The presence, the structure and the content comply to [3].
C12	Check according to section 6.1.4 and 6.12 of [3] the presence, the structure and the content of the Elementary File (EF) SDN.	The presence, the structure and the content comply to [3].

Case 3: Test steps related to chapter 7 EIRENE Files of [3]

Step	Procedure	Result / Effect
D1	Check according to section 7.1.2 and 7.1.3 of [3] the location of all EIRENE Elementary Files on the SIM card.	The location comply to [3].
D2	Check according to section 7.1.5 of [3] the identifier of the Dedicated File.	The identifier comply to [3].
D3	Check according to section 7.1.8 and 7.2 of [3] the presence, the structure and the content of the Elementary File (EF) FN.	The presence, the structure and the content comply to [3].
D4	Check according to section 7.1.8, 7.3 and 7.4 of [3] the presence, the structure and the content of the Elementary File (EF) CallConfC.	The presence, the structure and the content comply to [3].
D5	Check according to section 7.1.8, 7.3 and 7.5 of [3] the presence, the structure and the content of the Elementary File (EF) CallConfI.	The presence, the structure and the content comply to [3].
D6	Check according to section 7.1.8 and 7.6 of [3] the presence, the structure and the content of the Elementary File (EF) Shunting.	The presence, the structure and the content comply to [3].
D7	Check according to section 7.1.8 and 7.7 of [3] the presence, the structure and the content of the Elementary File (EF) GsmrPLMN.	The presence, the structure and the content comply to [3].
D8	Check according to section 7.1.8 and 7.8 of [3] the presence, the structure and the content of the Elementary File (EF) IC.	The presence, the structure and the content comply to [3].
D9	Check according to section 7.1.8 and 7.9 of [3] the presence, the structure and the content of the Elementary File (EF) NW.	The presence, the structure and the content comply to [3].

Case 4: Test steps related to chapter 8 EIRENE Files Supporting Numbering plan of [3]

Step	Procedure	Result / Effect
E1	Check according to section 8.1.4 and 8.1.5 of [3] the location of all EIRENE Elementary Files on the SIM card.	The location comply to [3].
E2	Check according to section 8.1.6 of [3] the identifier of the Dedicated File.	The identifier comply to [3].
E3	Check according to section 8.1.8, 8.4 and 8.9 of [3] the presence, the structure and the content of the Elementary File (EF) CT.	The presence, the structure and the content comply to [3].
E4	Check according to section 8.1.8, 8.4 and 8.10 of [3] the presence, the structure and the content of the Elementary File (EF) SC.	The presence, the structure and the content comply to [3].
E5	Check according to section 8.1.8, 8.6 and 8.11 of [3] the presence, the structure and the content of the Elementary File (EF) 5to8digits.	The presence, the structure and the content comply to [3].
E6	Check according to section 8.1.8, 8.6 and 8.12 of [3] the presence, the structure and the content of the Elementary File (EF) 2digits.	The presence, the structure and the content comply to [3].
E7	Check according to section 8.1.8, 8.6 and 8.13 of [3] the presence, the structure and the content of the Elementary File (EF) 8digits.	The presence, the structure and the content comply to [3].
E8	Check according to section 8.1.8, 8.6 and 8.14 of [3] the presence, the structure and the content of the Elementary File (EF) 9digits.	The presence, the structure and the content comply to [3].
E9	Check according to section 8.1.8, 8.6 and 8.15 of [3] the presence, the structure and the content of the Elementary File (EF) SSSSS.	The presence, the structure and the content comply to [3].
E10	Check according to section 8.1.8, 8.6 and 8.16 of [3] the presence, the structure and the content of the Elementary File (EF) LLLLL.	The presence, the structure and the content comply to [3].
E11	Check according to section 8.1.8, 8.6 and 8.17 of [3] the presence, the structure and the content of the Elementary File (EF) Location.	The presence, the structure and the content comply to [3].

E12	Check according to section 8.1.8, 8.6 and 8.18 of [3] the presence, the structure and the content of the Elementary File (EF) FreeNumber.	The presence, the structure and the content comply to [3].
E13	Check according to section 8.1.8, 8.5 and 8.19 of [3] the presence, the structure and the content of the Elementary File (EF) FC.	The presence, the structure and the content comply to [3].
E14	Check according to section 8.1.8, 8.5 and 8.20 of [3] the presence, the structure and the content of the Elementary File (EF) Service.	The presence, the structure and the content comply to [3].
E15	Check according to section 8.1.8, 8.5 and 8.21 of [3] the presence, the structure and the content of the Elementary File (EF) Call.	The presence, the structure and the content comply to [3].
E16	Check according to section 8.1.8, 8.5 and 8.22 of [3] the presence, the structure and the content of the Elementary File (EF) FctTeam.	The presence, the structure and the content comply to [3].
E17	Check according to section 8.1.8, 8.5 and 8.23 of [3] the presence, the structure and the content of the Elementary File (EF) Controller.	The presence, the structure and the content comply to [3].
E18	Check according to section 8.1.8, 8.5 and 8.24 of [3] the presence, the structure and the content of the Elementary File (EF) Gateway.	The presence, the structure and the content comply to [3].
E19	Check according to section 8.25 of [3] the presence, the structure and the content of the Elementary File (EF) IC.	The presence, the structure and the content comply to [3].

4.2 EDOR SIM card

Purpose: This test is to show that the EDOR SIM card is compliant to the clauses classified as MI in [3].

Precondition: SIM card and SIM card reading facility available.

References:

EIRENE SRS: § 4.1.5

FFFIS for GSM-R

SIM Cards Chapters § 5, § 6, § 7

Note: The SIM examples in section 9.1 of [3] may be helpful during the test process.

Test Procedure:

Step	Procedure	Result / Effect
A1	Insert the SIM card into the card reader unit of the SIM reading facility.	SIM card is readable by the SIM reader facility

Case1: Test steps related to chapter 5 Common Mandatory GSM Files of [3]

Step	Procedure	Result / Effect
B1	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) ICCID.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B2	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) LP.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B3	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) IMSI.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B4	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) KC.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B5	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) HPLMN.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B6	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) SST.	The presence and the structure comply to [3].
B7	Check according to section 5.2.1 of [3] the content of the Elementary File (EF) SST.	The content complies to [3]. The content of the Elementary File is partly operator dependent.
B8	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) BCCH.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B9	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) ACC.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B10	Check according to section 5.3.1 of [3] the content of the Elementary File (EF) ACC.	The content comply to [3].
B11	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) FPLMN.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B12	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) LOCI.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B13	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) AD.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.
B14	Check according to section 5.1.3 of [3] the presence and the structure of the Elementary File (EF) PHASE.	The presence and the structure comply to [3]. The content of the Elementary File is operator dependent.

Case 2: Test steps related to chapter 6 Optional GSM Files Mandated for GSM-R of [3]

Step	Procedure	Result / Effect
C1	Check according to section 6.1.4 and 6.6 of [3] the presence, the structure and the content of the Elementary File (EF) eMLPP.	The presence, the structure and the content comply to [3].
C2	Check according to section 6.1.4 and 6.7 of [3] the presence, the structure and the content of the Elementary File (EF) AAeM.	The presence, the structure and the content comply to [3].
C3	Check according to section 6.1.4 and 6.12 of [3] the presence, the structure and the content of the Elementary File (EF) SDN.	The presence, the structure and the content comply to [3].
C4	Check according to section 6.1.4 and 6.13 of [3] the presence, the structure and the content of the Elementary File (EF) KcGPRS.	The presence, the structure and the content comply to [3].
C5	Check according to section 6.1.4 and 6.14 of [3] the presence, the structure and the content of the Elementary File (EF) LOCIGPRS.	The presence, the structure and the content comply to [3].

Case 3: Test steps related to chapter 7 EIRENE Files of [3]

Step	Procedure	Result / Effect
D1	Check according to section 7.1.2 and 7.1.3 of [3] the location of all EIRENE Elementary Files on the SIM card.	The location comply to [3].
D2	Check according to section 7.1.5 of [3] the identifier of the Dedicated File.	The identifier comply to [3].
D3	Check according to section 7.1.8 and 7.7 of [3] the presence, the structure and the content of the Elementary File (EF) GsmrPLMN.	The presence, the structure and the content comply to [3].

END OF DOCUMENT

Printed by
International Union of Railways
16, rue Jean Rey 75015 Paris - France
June 2025
Legal deposit July 2025
ISBN 978-2-7461-2592-6