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Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 4: Protocol testing specification for Direct Mode Operation (DMO); Sub-part 10: Abstract Test Suite (ATS) for Direct Mode Gateway (DM-GATE)

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Contents

Foreword

This European Telecommunication Standard (ETS) has been produced by the Terrestrial Trunked Radio (TETRA) Project of the European Telecommunications Standards Institute (ETSI).

This ETS consists of 4 parts as follows:

Part 1: "Radio";

Part 2: "Protocol testing specification for Voice plus Data (V+D)";

Part 4: "Protocol testing specification for Direct Mode Operation (DMO)";

Part 5: "Security".

Transposition dates	
Date of adoption of this ETS:	4 June 1999
Date of latest announcement of this ETS (doa):	30 September 1999
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 March 2000
Date of withdrawal of any conflicting National Standard (dow):	31 March 2000

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1 Scope

This ETS contains the Abstract Test Suites (ATS) to test the Terrestrial Trunked Radio (TETRA) Direct Mode Operation (DMO) Gateway V+D interface at layer 3, i.e. the GateWay Call Control (GWCC) and the GateWay Mobility Management (GWMM) protocol. The GWCC and GWMM protocols are specified in ETS 300 396-1 [1] and in ETS 300 396-5 [2]. The Test Suite Structure and Test Purposes (TSS&TPs) for these ATSs are defined in ETS 300 394-4-8 [4].

The objective of this test specification is to provide a basis for approval tests for TETRA equipment giving a high probability of air interface inter-operability between different manufacturer's TETRA equipment.

The ISO standard for the methodology of conformance testing, ISO/IEC 9646-1 [6], ISO/IEC 9646-2 [7], ISO/IEC 9646-3 [8] and ISO/IEC 9646-5 [9], as well as the ETSI rules for conformance testing, ETS 300 406 [5] and ETR 141 [10] are used as a basis for the test methodology.

Annex A provides the Tree and Tabular Combined Notation (TTCN) part of this ATS in an electronic file.

Annex B provides the partial Protocol Implementation eXtra Information for Testing (PIXIT) Proforma of this ATS.

Annex C provides the Protocol Conformance Test Report (PCTR) Proforma of this ATS.

2 References

2.1 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] ETS 300 396-1: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 1: General network design".

[2] ETS 300 396-5: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 5: Gateways".

[3] ETS 300 396-8-3: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 4: Protocol testing specification for Direct Mode Operation (DMO); Sub-part 8: Test Suite Structure and Test Purposes (TSS&TP) for Direct Mode Gateway (DM-GATE)".

[4] ETS 300 394-4-8 (1998): "Terrestrial Trunked Radio (TETRA); Part 4: Protocol testing specification for Direct Mode Operation (DMO); Sub-part 8: Test Suite Structure and Test Purposes for Direct Mode Gateway (DM-GATE)".

[5] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[6] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts". (See also ITU-T Recommendation X.290 (1991)).

[7] ISO/IEC 9646-2 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 2: Abstract Test Suite Specification". (See also ITU-T Recommendation X.291 (1991)).

[8] ISO/IEC 9646-3 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 3: The Tree and Tabular Combined Notation (TTCN)". (See also ITU-T Recommendation X.292 (1992)).

[9] ISO/IEC 9646-5 (1994): "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 5: Requirements on test laboratories and clients for the conformance assessment process". (See also ITU-T Recommendation X.292 (1992)).

2.2 Other references

[10] ETR 141 (1994): "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; The Tree and Tabular Combined Notation (TTCN) style guide".

3 Definitions and abbreviations

3.1 TETRA definitions

For the purposes of this ETS, the definitions given in ETS 300 396-5 [2] apply.

3.2 TETRA abbreviations

For the purposes of this ETS the following TETRA abbreviations apply:

GWCC	GateWay Call Control
GWMM	GateWay Mobility Management
MAC	Medium Access Control
MS	Mobile Station
MS-GW	Mobile Station Gateway
SDS	Short Data Service

3.3 ISO 9646 definitions

For the purposes of this ETS the following ISO/IEC 9646-1 [6] definitions apply:

Abstract Test Suite (ATS)
Abstract Test Method (ATM)
Implementation Conformance Statement (ICS)
Implementation Under Test (IUT)
Implementation eXtra Information for Testing (IXIT)
Lower Tester (LT)
PICS proforma
PIXIT proforma
Point of Control and Observation (PCO)
Protocol Implementation Conformance Statement (PICS)
Protocol Implementation eXtra Information for Testing (PIXIT)
Service Access Point (SAP)
Single Party Testing (SPyT)
System Under Test (SUT)
Upper Tester (UT)

For the purposes of this ETS the following ISO/IEC 9646-3 [8] definitions apply:

TTCN.GR
TTCN.MP

For the purposes of this ETS the following ISO/IEC 9646-5 [9] definitions apply:

Protocol Conformance Test Report (PCTR)
PCTR proforma

3.4 ISO 9646 abbreviations

For the purposes of this ETS the following ISO/IEC 9646-1 [6] abbreviations apply:

ASP	Abstract Service Primitive
ATM	Abstract Test Method
ATS	Abstract Test Suite
IUT	Implementation Under Test
LT	Lower Tester
PCO	Point of Control and Observation
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statements
PIXIT	Protocol Implementation eXtra Information for Testing
SAP	Service Access Point
SPyT	Single Party Testing
SUT	System Under Test
TC	Test Case
TP	Test Purpose
TTCN	Tree and Tabular Combined Notation
TSS	Test Suite Structure
UT	Upper Tester

For the purposes of this ETS the following ISO/IEC 9646-5 [9] abbreviations apply:

PCTR	Protocol Conformance Test Report

4 Abstract Test Method (ATM)

This clause describes the ATM used for testing the GWCC and GWMM. The test method selected is the embedded variant of the remote test method used in Single Party Testing (SPyT) context, as defined in ISO/IEC 9646-2 [7], clause 11. This test method has been selected, because:

- it does not imply specific requirements to the Implementation Under Test (IUT);

- the upper Service Access Point (SAP) of the IUT cannot be directly observed;

- the variety of the possible TETRA implementations is a serious technical obstacle for the adoption of a different ATM;

- this test method places minimum limitations in the realization of conformance testing.

The selected test method is illustrated in figure 1.

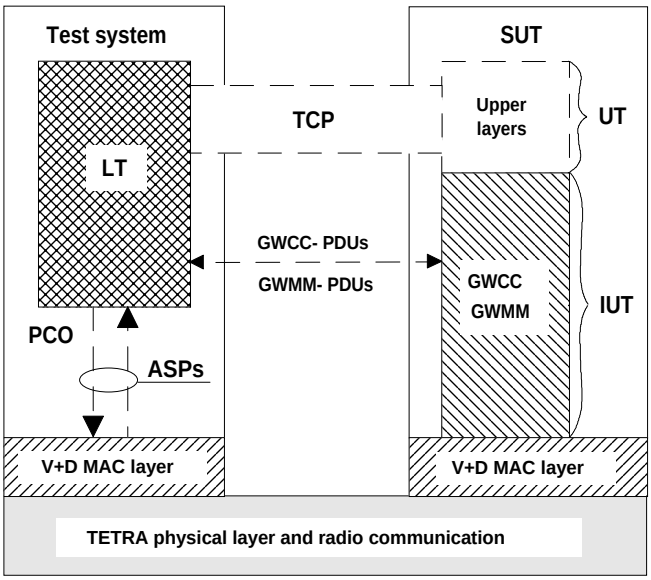

Figure 1: Remote SPyT test method for TETRA DMO GWCC and GWMM protocols

4.1 Lower Tester (LT)

A LT is located in a remote TETRA test system. It controls and observes the behaviour of the IUT.

4.2 Upper Tester (UT)

There is no explicit UT in the remote test method, but the layers above inside the System Under Test (SUT) are used implicitly for testing the GWMM and GWCC.

4.3 Test Co-ordination Procedures (TCP)

The implicit send events defined by the provider of an implementation in annex B serve the purpose of the TCP. They are used as an input to the IUT communicating with the UT to initiate test events at the V+D MLE layer.

4.4 Point of Control and Observation (PCO)

All test events at the PCO carrying service user data are specified in terms of GWCC and GWMM layer PDUs. Only few Abstract Service Primitives (ASPs) are used for control or observation purposes.

4.5 Non-testable test purposes and implementation matters

The purpose of this ATS is to test the V+D interface of the gateway. The observable behaviour on the V+D Air Interface (AI) in some cases is dependent on the behaviour on the DMO AI of the gateway. This interface is not controlled by the test system, so it is assumed that the behaviour on the DMO AI is always consistent with the requirement for this interface. However it also means that some of the test purposes become non-testable. The following test purposes have been identified as being non-testable in the selected test configuration, and therefore no abstract test cases are specified for the test purposes: DMO_GATE_GWCC_CM_BV_TI_03 and DMO_GATE_GWCC_CM_BV_TI_06.

For test suite implementation, the upper layer may be realized as a MS-GW or as a simulation of its valid behaviour, in order to test the dynamic behaviour of the gateway on the V+D AI.

5 ATS conventions

This clause describes the conventions applied to define the two ATSs and gives the naming conventions chosen for the different elements of the ATSs.

The ATS conventions are intended to give a better understanding of the ATS but they describe also the conventions made for the development of the ATS, thus for any later maintenance purposes or further development of the ATS, the conventions described in this clause shall be considered.

5.1 Naming conventions

5.1.1 Declarations part

This subclause describes the naming conventions chosen for the elements of the ATS declarations part.

5.1.1.1 Test suite type and structured type definitions

The test suite type and test suite structured type identifiers describe the information elements, and each whole word included in the name is written in lowercase starting by an uppercase letter:

EXAMPLE:	Priority_Level_Type	simple type;
	SSI_Type	simple type;
	ITSI_Type	structured type.

In the case an abbreviation is included in the declaration name, there is an underscore ("_") before and/or after it, separating it from the rest of the identifier. This rule with abbreviations apply to all the naming conventions in the whole test suite.

5.1.1.2 Test suite operations definitions

The test suite operation identifiers are composed of strings in uppercase letters starting by the uppercase string "TSO_". The different strings in the definition are separated with underscores.

EXAMPLE: TSO_UPLANE_IS_TRANSMITTING.

5.1.1.3 Test suite parameter declarations

The test suite parameter identifiers are composed of strings in uppercase letters starting by the uppercase string "PIC_" or "PIX_" and separated by underscores.

If the test suite parameter references a PICS item, the prefix "PIC_" is used.

EXAMPLE 1: PIC_CIRCUIT_MODE_CALL.

If the test suite parameter references a PIXIT item, the prefix "PIX_" is used.

EXAMPLE 2: PIX_DM_MS_ITSI.

Complete names as defined in the specifications are used.

5.1.1.4 Test case selection expression definitions

The naming conventions for the test case selection expression definitions use free text starting with an uppercase letter. The name of the expression shall explain clearly the selection rule. The test case selection expressions are generally logical combinations of the PICS element definitions.

5.1.1.5 Test suite constant declarations

The test suite constant identifiers are composed of strings in uppercase letters starting by the uppercase string "TSC_".

EXAMPLE: TSC_MS_VITSI.

Complete names as defined in the specifications are used. However, in the parameters including a dot character, the dot is replaced by an underscore.

5.1.1.6 Test suite variable declarations

The test suite variable identifiers are composed of string in lowercase letters starting by the lowercase string "tsv_".

If the test suite variable represents a system parameter or value, the name defined in the specifications is used. However, in the variables including a dot character, the dot is replaced by an underscore.

5.1.1.7 Test case variable declarations

The test case variable identifiers are composed of strings in lowercase letters starting by the lowercase string "tcv_".

EXAMPLE: tcv_result.

5.1.1.8 PCO declarations

The point of control and observation identifiers are composed of three to six capital letters, beginning with an "L", as there are only LTs.

EXAMPLE: LGWCC Represents a PCO on GWCC module for PDUs.

5.1.1.9 Timer declarations

Two kinds of timers can be distinguished:

1) standardized:

   Those defined in the standard, e.g. T303, use the same name as in the standard, beginning with capital "T".

As there is a tolerance margin accepted for these timers, two values are needed:

- the minimum value allowed, which will use the suffix "_Min";
- the maximum value allowed, which will use the suffix "_Max".

EXAMPLE 1: T303_Min, T303_Max.

2) non-standardized:

   Those not defined in the standard, i.e. for execution use, e.g. a timer waiting for a response. These timers begin with the prefix "T_", followed by a string in lowercase letters with each word in the following string starting with an uppercase letter.

EXAMPLE 2: T_IUT_Response;
T_NoResponse.

5.1.1.10 ASP type definitions

ASP definitions follow the specification in the ETS 300 396-5 [2] when a corresponding definition exists. If not, a free name is used.

5.1.1.11 PDU type definitions

The identifier of a PDU is given in a string in uppercase letters, which represents the layer message.

EXAMPLE:	U_SETUP_Type	for the U-SETUP layer 3 PDU;
	D_DISCONNECT_Type	for the D-DISCONNECT layer 3 PDU.

5.1.1.12 Alias definitions

No alias definitions are used in the test suite.

5.1.2 Constraints part

This subclause describes the naming conventions chosen for the elements of the ATS constraints part.

Constraint identifiers commence with uppercase. The remaining part of the name is separated from the beginning with an underscore and is written in lowercase with each word starting with an uppercase letter.

Identifier names of elements concerning the same subject have equivalent names in the declaration and the constraint part.

- Declaration part: D_CONNECT_Type;
- Constraint part: D_CONNECT_Direct.

The name of the modified constraint describes the particularity of the modified constraint:

EXAMPLE 1:	-	Declaration part:	U_SETUP_Type;
	-	Constraint part:	U_SETUP_GC_Direct.

If formal parameter lists are used, the variable names are written in lowercase. The variable name is the same as the name of the element it is representing starting with prefix "cpa_".

EXAMPLE 2: cpa_location_update_type.

5.1.3 Dynamic part

This subclause describes the naming conventions chosen for the elements of the ATS dynamic part.

5.1.3.1 Test case identifier

The identifier of a TC is built according to the test purpose name, as in table 1.

Table 1: TC naming convention

DMO/<ts>/<fm>/<ss>/<tt>/<uu>/<nn>		
<ts> = test suite type	MSMS	MS to MS (see 300 394-4-1)
	MSGW	MS connected to a gateway
	GATE	Gateway
	REPx	Repeater type x (see 300 394-4-4)
<fm> = functional entity in a layer	DMCC	Direct Mode Call Control (layer 3)
	MAC	Upper MAC (layer 2)
<ss> = test group	letters such as:	abbreviation of the group name (optional)
	CM	Circuit Mode (layer 3)
	SDS	Short Data Service (layer 3)
tt = Type of testing	CA	Capability Tests
	BV	Valid Behaviour Tests
	BI	Invalid Behaviour Tests
	TI	Timer expiry and counter mismatch tests
<uu> = test subgroup	letters	abbreviation of the subgroup name (optional)
<nn> = sequential number	01-99	Test Purpose Number

5.1.3.2 Test step identifier

The test step identifier is built with a string of lowercase letters leaded by a string of capital letter and joined by an underscore character. The first string indicates the main function of the test step; e.g. PRE for preamble, PST for postamble, CS for check state steps, LTS for local tree name and STP for general step. The second string indicates the meaning of the step.

EXAMPLES: PRE_Idle_To_Active;
PST_DisconnectCall;
CS_Check_Idle.

5.1.3.3 Default identifier

Two default identifiers are used, namely OtherwiseFail.

5.2 TC and TP naming

There is a single name for both the TC identifiers and the TP identifiers.

Annex A (normative): ATS for TETRA DMO Gateway MAC layer

The ATS is written in TTCN according to ISO/IEC 9646-3 [8].

The ATS itself contains a test suite overview part which provides additional information and references.

A.1 The TTCN Graphical form (TTCN.GR)

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (dmo_gate.PDF contained in archive 3944ae1.ZIP) which accompanies the present document.

A.2 The TTCN Machine Processable form (TTCN.MP)

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (dmo_gate.MP contained in archive 3944ae1.ZIP) which accompanies the present document.

NOTE: According to ISO/IEC 9646-3 [8], in case of a conflict in interpretation of the operational semantics of TTCN.GR and TTCN.MP, the operational semantics of the TTCN.GR representation takes precedence.

Annex B (normative): Partial PIXIT proforma for TETRA DMO Gateway MAC layer protocol

The PIXIT proforma is based on ISO/IEC 9646-5 [9]. Any additional information needed can be found in this international standard document.

B.1 Identification summary

Table B.1

PIXIT number:	
Test laboratory name:	
Date of issue:	
Issued to:	

B.2 ATS summary

Table B.2

Protocol specification:	ETS 300 396-5 [2]
Protocol to be tested:	GWCC and GWMM
ATS specification:	ETS 300 394-4-10
Abstract test method:	Remote test method, embedded variant

B.3 Test laboratory

Table B.3

Test laboratory identification:	
Test laboratory manager:	
Means of testing:	
SAP address:	

B.4 Client identification

Table B.4

Client identification:	
Client test manager:	
Test facilities required:	

B.5 SUT

Table B.5

Name:	
Version:	
SCS number:	
Machine configuration:	
Operating system identification:	
IUT identification:	
PICS reference for IUT:	
Limitations of the SUT:	
Environmental conditions:	

B.6 Protocol layer information

B.6.1 Protocol identification

Table B.6

Name:	TETRA - DMO - Gateway Air Interface ETS 300 396-5 [2]
Version:	
PICS references:	ETS 300 396-8-3 [3]

B.6.2 IUT information

B.6.2.1 Implicit send events

Table B.7: Implicit send events

Item	PIXIT (See note)	Related implicit send message (PDU)	Invocation description
1	IMP_U_LOCATION_UDPATE_PDU	True if it is possible to cause the IUT to send an U-LOCATION UDPATE PDU.	
2	IMP_U_SDS_DATA_PDU	True if it is possible to cause the IUT to send an U-SDS DATA PDU.	
3	IMP_U_SDS_STATUS_PDU	True if it is possible to cause the IUT to send an U-SDS STATUS PDU.	
4	IMP_U_SETUP_PDU	True if it is possible to cause the IUT to initiate an outgoing call.	
5	IMP_U_TX_CEASED_PDU	True if it is possible to cause the IUT to send a U-TX CEASED PDU.	
6	IMP_U_TX_DEMAND_PDU	True if it is possible to cause the IUT to send a U-TX DEMAND PDU.	
NOTE: The PIXIT names for the implicit send events in this table are the same as those of the test steps in which the implicit send events are used.			

B.6.2.2 Parameter values

Table B.8: Parameter values

Item	Parameter	Parameter type	Explanation	Value or reference
1	PIX_ITSI	ITSI_Type	ITSI of the IUT.	
2	PIX_DM_MS_ITSI	ITSI_Type	ITSI of the DM-MS (MW-GW)	
3	PIX_T303	INTEGER	Duration of the T303 in the IUT in seconds.	

Table B.9: SDS parameter values

Item	Parameter	Parameter type	Explanation	Value or reference
1	PIX_SDS_USER_TYPE	ShortDataType_ID_Type	Which kind of user defined SDS is supported?	
2	PIX_SDS_STATUS	PrecodedStatusType	SDS message suitable for predefined SDS message sent to the IUT.	
3	PIX_SDS_USER_MSG_1	UserDefinedData1Type	SDS message suitable for type 1, if PIX_SDS_USER_TYPE indicates '1'.	
4	PIX_SDS_USER_MSG_2	UserDefinedData2Type	SDS message suitable for type 2, if PIX_SDS_USER_TYPE indicates '2'.	
5	PIX_SDS_USER_MSG_3	UserDefinedData3Type	SDS message suitable for type 3, if PIX_SDS_USER_TYPE indicates '3'.	
6	PIX_SDS_USER_MSG_4	UserDefinedData4Type	SDS message suitable for type 4, if PIX_SDS_USER_TYPE indicates '4'.	

Annex C (normative): Protocol Conformance Test Report (PCTR) proforma for TETRA DMO Gateway MAC layer protocol

The PCTR Proforma is based on ISO/IEC 9646-5 [9]. Any additional information needed can be found in this referenced document.

C.1 Identification summary

C.1.1 Protocol conformance test report

Table C.1

PCTR number:	
PCTR date:	
Test laboratory identification:	
Accreditation status	
Accreditation reference	
Technical authority	
Signature:	
Test laboratory manager:	
Signature:	

C.1.2 IUT identification

Table C.2

Name:	
Version:	
Protocol specification:	
PICS:	
Previous PCTR if any:	

C.1.3 Testing environment

Table C.3

PIXIT number:	
ATS specification:	
Abstract test method:	Remote test method, embedded variant
Means of testing identification:	
Period of testing:	
Conformance log reference(s):	
Retention date for log reference(s):	

C.1.4 Limits and reservation

Additional information relevant to the technical contents or further use of the test report, or the rights and obligations of the test laboratory and the client, may be given here. Such information may include restriction on the publication of the report.

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C.1.5 Comments

Additional comments may be given by either the client or the test laboratory on any of the contents of the PCTR, for example, to note disagreement between the two parties.

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C.2 IUT conformance status

This IUT has or has not been shown by conformance assessment to be non-conforming to the specified protocol specification.

Strike the appropriate words in this sentence. If the PICS for this IUT is consistent with the static conformance requirements as specified in clause C.3 in this report and there are no "FAIL" verdicts to be recorded in clause C.6 strike the words "has or", otherwise strike the words "or has not".

C.3 Static conformance summary

The PICS for this IUT is or is not consistent with the static conformance requirements in the specified protocol.

Strike the appropriate words in this sentence.

C.4 Dynamic conformance summary

The test campaign did or did not reveal errors in the IUT.

Strike the appropriate words in this sentence. If there are no "FAIL" verdicts to be recorded in clause C.6 of this report strike the words "did or", otherwise strike the words "or did not".

Summary of the results of groups of test:

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C.5 Static conformance review report

If clause C.3 indicates non-conformance, this subclause itemizes the mismatches between the PICS and the static conformance requirements of the specified protocol specification.

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C.6 Test campaign report

Table C.4

ATS reference	Selected	Run	Verdict	Observations (see note)
DMO_GATE_GWCC_CM_BV_SU_01	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_02	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_03	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_04	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_05	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_06	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_07	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_08	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_09	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_10	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_SU_11	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CD_01	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CD_02	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CD_03	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CC_01	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CC_02	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_01	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_02	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_03	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_04	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_05	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_06	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_07	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_08	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_CT_09	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_TI_01	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_TI_04	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_TI_02	Yes/No	Yes/No		
DMO_GATE_GWCC_CM_BV_TI_05	Yes/No	Yes/No		
DMO_GATE_GWCC_SDS_01	Yes/No	Yes/No		
DMO_GATE_GWCC_SDS_02	Yes/No	Yes/No		
DMO_GATE_GWCC_SDS_03	Yes/No	Yes/No		
DMO_GATE_GWCC_SDS_04	Yes/No	Yes/No		
DMO_GATE_GWMM_CA_01	Yes/No	Yes/No		
DMO_GATE_GWMM_CA_02	Yes/No	Yes/No		
DMO_GATE_GWMM_CA_03	Yes/No	Yes/No		
DMO_GATE_GWMM_BV_01	Yes/No	Yes/No		
DMO_GATE_GWMM_BV_02	Yes/No	Yes/No		
DMO_GATE_GWMM_BV_03	Yes/No	Yes/No		
DMO_GATE_GWMM_BV_04	Yes/No	Yes/No		
DMO_GATE_GWMM_BV_05	Yes/No	Yes/No		
NOTE: Reference to any observations made in clause C.7 in this report.				

C.7 Observations

Additional information relevant to the technical content of the PCTR are given here.

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Annex D (informative): Bibliography

- ITU-T Recommendation X.290: "OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - General concepts".

- ITU-T Recommendation X.291: "OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - Abstract test suite specification".

- ITU-T Recommendation X.292: "OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications - The Tree and Tabular Combined Notation (TTCN)".

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