Electromagnetic compatibility and Radio spectrum Matters (ERM);
Conformance testing for Mode 1 of the digital Private Mobile Radio (dPMR);
Part 2: Test Suite Structure and Test Purposes (TSS&TP) specification
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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document is part 2 of a multi-part deliverable. Full details of the entire series can be found in part 1 [i.2].
1 Scope

The present document specifies the conformance Test Purposes (TPs) for the Peer-to-Peer Digital Private Mobile Radio (dPMR) standard, TS 102 658 [1]. TPs are defined using the TPLan notation described in ES 202 553 [i.1]. Test purposes have been written based on the test specification framework described in TS 102 351 [2] and based on the methodology defined in ISO/IEC 9646-2 [3].

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.


2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] ETSI ES 202 553: "Methods for testing and Specification (MTS); TPLan: A notation for expressing test Purposes".

[i.2] ETSI TS 102 726-1: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Conformance testing for Mode 1 of the digital Private Mobile Radio (dPMR); Part 1: Protocol Implementation Conformance Statement (PICS) proforma".
3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

- **BS2**: Mode 2 Repeater
- **CF**: (Test) ConFiguration
- **CSF**: Configured Services and Facilities
- **dPMR**: digital Private Mobile Radio
- **ISF**: Initial Services and Facilities
- **IUT**: Implementation Under Test
- **M1**: Mode 1
- **M2**: Mode 2
- **M3**: Mode 3
- **MS**: Mobile Station
- **OACSU**: Off Air Call Set-Up
- **PTT**: Push To Talk
- **RC**: Requirements Catalogue
- **RQ**: ReQuirement
- **TP**: Test Purpose
- **TSS**: Test Suite Structure

4 Test Suite Structure (TSS)

The Test Suite Structure is based on the dPMR Requirements Catalogue (TS 102 795 [4]). It is defined by the groups within the following TPPlan specification of test purposes. The numbering is not contiguous so that new TPs can be added at a later date without the need to completely renumber the TSS groups.

The test purposes have been divided into four groups:

- Group 1: Common requirements.
- Group 2: Services.
- Group 3: Channel access.
- Group 4: Addressing

The sub-grouping of these three group follows the structure of the RC. Some of the sub-groups of the RC contained no testable requirement. Headings for those sub-groups are in this test purpose document in the node group to give a full view on the relation between RQ and TSS&TP.
5.1.8 Superframe
5.1.8.1 Traffic channel
5.1.8.2 Voice TCH

5  Test Purposes (TP)

The test purposes have been written in the formal notation TPlan. Configurations that are referenced by test purposes are shown in annex A. TPlan user definitions are listed in annex B.

5.1  Framing

```plaintext
TP id : TP_PMR_0401_01
summary : 'Payload frame length with voice data'
RQ ref : RQ_001_0401
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0401_01
with { IUT in standby }
ensure that {
  when { IUT is requested to start a Voice_Transmission }
  then { IUT sends Voice_Transmission containing 384 bit Payload_Frames }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0401_02
summary : 'Payload frame length with Type 1 data'
RQ ref : RQ_001_0401
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0401_02
with { IUT in standby }
ensure that {
  when { IUT is requested to start a T1_Transmission }
  then { IUT sends T1_Transmission containing 384 bit Payload_Frames }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0401_03
summary : 'Payload frame length with Type 2 data'
RQ ref : RQ_001_0401
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0401_03
with { IUT in standby }
ensure that {
  when { IUT is requested to start a T2_Transmission }
  then { IUT sends T2_Transmission containing 384 bit Payload_Frames }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0401_04
summary : 'Message frame length'
RQ ref : RQ_001_0401
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0401_04
with { IUT in standby }
ensure that {
  when { IUT is requested to start a Voice_Transmission }
  then { IUT sends Voice_Transmission starting with a 384 bit Message_Frame }
}
```
--- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0402_01
summary: 'There are an integral number of superframes in a dPMR transmission'
RQ ref: RQ_001_0402
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0402_01
with { IUT in standby }
ensure that {
  when { IUT is requested to start a Voice_Transmission }
  then { IUT sends a Voice_Transmission containing an integral_number of Superframes }
}

--- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0403_01
summary: 'There are four payload frames in a superframe in a voice transmission'
RQ ref: RQ_001_0403
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0403_01
with { IUT in standby }
ensure that {
  when { IUT is requested to start a Voice_Transmission }
  then { IUT sends a Voice_Transmission containing Superframes (each containing 4 Payload_Frames) }
}

--- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0403_02
summary: 'There are four payload frames in a superframe in a Type 1 data transmission'
RQ ref: RQ_001_0403
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0403_02
with { IUT in standby }
ensure that {
  when { IUT is requested to start a T1_Transmission }
  then { IUT sends a T1_Transmission containing Superframes (each containing 4 Payload_Frames) }
}

--- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0403_03
summary: 'There are four payload frames in a superframe in a Type 2 data transmission'
RQ ref: RQ_001_0403
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0403_03
with { IUT in standby }
ensure that {
  when { IUT is requested to start a T2_Transmission }
  then { IUT sends a T2_Transmission containing Superframes (each containing 4 Payload_Frames) }
}

--- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0404_01
summary : 'A voice transmission is composed of header frame, integral superframes, end frame'
RQ ref : RQ_001_0404
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0404_01
with { IUT in standby }

e nsure that {
   when { IUT is requested to start a Voice Transmission }
   then { IUT sends a Voice Transmission containing a Message Frame
           followed by an integral number of Superframes
           followed by an End Frame }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0404_02
summary : 'A Type 1 data transmission is composed of header frame, integral superframes, end frame'
RQ ref : RQ_001_0404
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0404_02
with { IUT in standby }

e nsure that {
   when { IUT is requested to start a T1_Transmission }
   then { IUT sends a T1_Transmission containing a Message Frame
           followed by an integral number of Superframes
           followed by an End Frame }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0404_03
summary : 'A Type 2 data transmission is composed of header frame, integral superframes, end frame'
RQ ref : RQ_001_0404
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0404_03
with { IUT in standby }

e nsure that {
   when { IUT is requested to start a T2_Transmission }
   then { IUT sends a T2_Transmission containing a Message Frame
           followed by an integral number of Superframes
           followed by an End Frame }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0405_01
summary : 'Header and end frame in manual connection request'
RQ ref : RQ_001_0405
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0405_01
with { IUT in standby }

e nsure that {
   when { IUT is requested to send Connection_Request }
   then { IUT sends a Connection_Request }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0405_02
summary : 'Header and end frame in automatic connection request'
RQ ref : RQ_001_0405
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0405_02
with { IUT in standby and OACSU_enabled }  
ensure that {  
    when { IUT is requested to send a Voice_Transmission to an individual_address }  
    then { IUT sends a Connection_Request }  
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0406_01
summary : 'Header frame is used to acknowledge connect request'
RQ ref : RQ_001_0406
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0406_01
with { IUT in standby }  
ensure that {  
    when { IUT receives a Connection_Request }  
    then { IUT sends an Ack_Frame }  
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0406_02
summary : 'Acknowledge frame is used to acknowledge type 1 data transmission'
RQ ref : RQ_001_0406
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0406_02
with { IUT 'receiving a T1_Transmission' }  
ensure that {  
    when { IUT receives End_Frame indicating Ack_Request }  
    then { IUT sends an Ack_Frame }  
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0406_03
summary : 'Acknowledge frame is used to acknowledge Type 2 data transmission'
RQ ref : RQ_001_0406
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0406_03
with { IUT 'is receiving T2_Transmission' }  
ensure that {  
    when { IUT receives End_Frame indicating Ack_Request }  
    then { IUT sends an Ack_Frame }  
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0406_04
summary : 'Acknowledge frame is used to acknowledge Type 3 data transmission'
RQ ref : RQ_001_0406
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0406_04
with { IUT 'is receiving T3_Transmission'

ensure that {
    when { IUT receives End Frame indicating Ack_Request }
    then { IUT sends a Ack_Frame }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0407_01
summary : 'Header and end frame pairs in manual disconnection request'
RQ ref : RQ_001_0407
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0407_01
with { IUT 'is in standby

ensure that {
    when { IUT is requested to send Disconnection_Request }
    then { IUT sends a Disconnection_Request }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0407_02
summary : 'Header and end frame pairs in automatic disconnection request'
RQ ref : RQ_001_0407
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0407_02
with { IUT is 'sending T1_Transmission' to TESTER

ensure that {
    when { IUT completes T1_Transmission }
    then { IUT sends a Disconnection_Request }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0407_03
summary : 'Header and end frame pairs in automatic disconnection request'
RQ ref : RQ_001_0407
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0407_03
with { IUT is 'sending T2_Transmission' to TESTER

ensure that {
    when { IUT completes T2_Transmission }
    then { IUT sends a Disconnection_Request }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id: TP_PMR_0407_04
summary: 'Header and end frame pairs in automatic disconnection request'
RQ ref: RQ_001_0407
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0407_04

with { IUT is 'sending T3_Transmission' to TESTER

ensure that {
    when { IUT completes T3_Transmission }
    then { IUT sends a Disconnection_Request }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0408_01
summary: 'Header frame and End frame pair is used to respond to a status request'
RQ ref: RQ_001_0408
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0408_01

with { IUT in standby }

ensure that {
    when { IUT receives a Message_Frame containing a Message_Type indicating Status_Request followed by an End_Frame} }
    then { IUT sends a Status_Response }

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0601_01
summary: 'Colour Codes'
RQ ref: RQ_001_0601
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0601_01

with { IUT in standby and configured with a valid CC_value }

ensure that {
    when { IUT is requested to send a Voice_Transmission }
    then { IUT sends a Voice_Transmission with colour_code set to the CC_value }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0601_02
summary: 'Colour Codes'
RQ ref: RQ_001_0601
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0601_02

with { IUT in standby and not configured with a CC_value }

ensure that {
    when { IUT is requested to send a Voice_Transmission }
    then { IUT sends a Voice_Transmission with colour_code set to the CC_value determined from CC_algorithm }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
5.1.1 Addressing

5.1.1.1 All Call

TP id : TP_PMR_0838_01
summary : 'Broadcast Calls'
RQ ref : RQ_001_0838
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0838_01
with { IUT in standby }

ensure that {
    when { IUT is requested to make a Broadcast_Call }
    then { IUT sends Voice_Transmission with Message_Frame
              containing Communications_Format set to '0000b'}
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

5.1.1.2 Dialling Plan

TP id : TP_PMR_1310_01
summary : 'Transmitting individual call'
RQ ref : RQ_001_1310
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1310_01
with { IUT configured for Standard_User_Interface and in standby }

ensure that {
    when { IUT is requested to send a Voice_Transmission to an individual_address }
    then { IUT sends a Voice_Transmission
              containing a Message_Frame
              containing Called_Station_ID
              set to the Tx_B2_conversion of the individual_address
        }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1310_02
summary : 'Receiving individual call'
RQ ref : RQ_001_1310
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1310_02
with { IUT and configured for Standard_User_Interface in standby }

ensure that {
    when { IUT receives a Voice_Transmission
              containing Called_Station_ID
              set to Tx_B2_conversion of the IUT individual_address }
    then { IUT outputs the 'audible test tone' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_1310_03
summary: 'Transmitting group call with wildcards'
RQ ref : RQ_001_1310
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1310_03
with { IUT configured for Standard User Interface and wildcards
        and in standby }

ensure that {
    when { IUT is requested to send a Voice_Transmission to a wildcard_group_address }
    then { IUT sends a Voice_Transmission with Message_Frame
            containing Called_Station_ID set to the Tx_B2_conversion of that
            wildcard_group_address }
}

TP id : TP_PMR_1317_01
summary: 'Standard user interface transmitting All Call'
RQ ref : RQ_001_1317
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1317_01
with { IUT configured for Standard User Interface and in standby }

ensure that {
    when { IUT is requested to send a Voice_Transmission to all_call_address }
    then { IUT sends a Voice_Transmission
            with Message_Frame
            containing Called_Station_ID set to 'F8 33 A6h' }
}

TP id : TP_PMR_1317_02
summary: 'Standard user interface All Call within prefix'
RQ ref : RQ_001_1317
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1317_02
with { IUT configured for Standard User Interface and in standby }

ensure that {
    when { IUT is requested to send a Voice_Transmission to all_call_within_a_prefix_address }
    then { IUT sends a Voice_Transmission with Message_Frame
            containing Called_Station_ID set to the Tx_B2_conversion of the
            all_call_within_a_prefix_address }
}
TP id : TP_PMR_1317_03
summary : 'Standard user interface Receiving All Call'
RQ ref : RQ_001_1317
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1317_03
with { IUT configured for Standard User Interface and in standby }

ensure that {
  when { IUT receives a Voice Transmission containing Called_Station_ID set to 'F8 33 A6h' and containing 'audible test tone as payload' }
  then { IUT outputs 'the audible test tone' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1317_04
summary : 'Standard user interface receiving All Call within a prefix'
RQ ref : RQ_001_1317
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1317_04
with { IUT configured for Standard User Interface and in standby }

ensure that {
  when { IUT receives a Voice_Transmission containing Called_Station_ID set to the Tx_B2 conversion of an all_call_within_a_prefix_address valid for the individual_address of the IUT and containing 'audible test tone as payload' }
  then { IUT outputs 'the audible test tone' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1403_01
summary : 'Call not initiated without using no hash or send key'
RQ ref : RQ_001_1403
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1403_01
with { IUT configured for Standard_User_Interface and in standby }

ensure that {
  when { IUT has seven_digit_address entered or selected }
  then { IUT does not transmit }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1403_02
summary : 'Call initiated when using hash or send key'
RQ ref : RQ_001_1403
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1403_02
with { IUT configured for Standard_User_Interface and in standby }

ensure that {
  when { IUT has a seven_digit_address entered or selected before the hash_key or dedicated_send_key pressed }
  then { IUT sends a Voice_Transmission }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
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TP id : TP_PMR_1416_01
summary : 'Call initiated when using 7 digit dialing string'
RQ ref : RQ_001_1403
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1416_01
with {
    IUT configured_for_Standard_User_Interface
    and in standby
}
ensure that {
    when { IUT has a seven_digit_address entered or selected
        before the hash_key or dedicated_send_key pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
        containing Called_Station_ID set to the Tx_B2_conversion of the
seven_digit_address }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1417_01
summary : 'Abbreviated dialling for individual calls'
RQ ref : RQ_001_1417
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1417_01
with {
    IUT configured_for_Standard_User_Interface
    and in standby
    and configured_for_abbreviated_dialling
}
ensure that {
    when { IUT has a valid abbreviated_dialling_string entered or selected -- valid means here
        agreeing with the MS specific abbreviated address configuration
        before IUT hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission with Message_Frame
        containing Called_Station_ID set to the Tx_B2_conversion of the
        'address resulting from substituting the abbreviated_dialling_string for
the least significant digits of the IUT individual address' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1417_02
summary : 'Abbreviated dialling works for group call'
RQ ref : RQ_001_1417
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1417_02
with {
    IUT configured_for_Standard_User_Interface
    and in standby
    and configured_for_wildcards
    and configured_for_abbreviated_dialling
}
ensure that {
    when { IUT has a valid abbreviated_dialling_string containing a wildcard entered or selected --
        valid means here agreeing with the MS specific abbreviated address configuration
        before the hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
        containing Called_Station_ID set to the Tx_B2_conversion of the
        'address resulting from substituting the abbreviated_dialling_string for the
least significant digits of the IUT individual address' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_1418_01
summary : 'Masked dialling works for individual calls'
RQ ref : RQ_001_1418
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1418_01
with { IUT configured for Standard User Interface
and in standby
and 'a dialling string input mask enabled'
}
ensure that {
    when { IUT has a valid dialling_string entered or selected -- valid means the exact number
of digits as in mask
        before IUT hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
            containing Called_Station_ID set to the Tx_B2_conversion of the
            'address resulting from substituting the masked_dialling_string for
            those digits of the IUT individual address that fall within the input mask'
    }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1418_02
summary : 'Masked dialling for group'
RQ ref : RQ_001_1418
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1418_02
with { IUT configured for Standard User Interface
and in standby
and configured for wildcards
and 'a dialling string input mask enabled'
}
ensure that {
    when { IUT has a valid dialling_string containing a wildcard entered or selected -- valid means the exact number of digits as in mask
        before IUT hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
            containing Called_Station_ID set to the Tx_B2_conversion of the
            'address resulting from substituting the masked_dialling_string for
            those digits of the IUT individual address that fall within the input mask'
    }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1418_03
summary : 'Abbreviated masked dialling works for individual calls'
RQ ref : RQ_001_1418
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1418_03
with { IUT configured for Standard User Interface
and in standby
and 'a dialling string input mask enabled'
and configured for abbreviated_dialling
}
ensure that {
    when { IUT has a valid abbreviated_masked_dialling_string entered or selected
        before IUT hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
            containing Called_Station_ID set to the Tx_B2_conversion of the
            'address resulting from substituting the abbreviated_masked_dialling_string for
            those digits of the IUT individual address that fall within the least significant digits of the input mask'
    }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_1418_04
summary : 'Abbreviated masked dialling for group'
RQ ref : RQ_001_1418
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1418_04
with { IUT configured for Standard_User_Interface
    and in standby
    and configured for wildcards
    and configured for abbreviated dialling
    and 'a dialling string input mask enabled'
}
ensure that {
    when { IUT has a valid abbreviated_masked_dialling_string containing a wildcard entered or selected
        before IUT hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
        containing Called_Station_ID set to the Tx_B2 conversion of the
        'address resulting from substituting the abbreviated_masked_dialling_string for those digits of the IUT individual address that fall within the least significant digits of the input mask'
    }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1420_01
summary : 'Broadcast with wildcard group address'
RQ ref : RQ_001_1420
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1420_01
with { IUT configured for Standard_User_Interface
    and in standby and configured for wildcards
}
ensure that {
    when { IUT has a broadcast_command and valid wildcard_group_address entered or selected
        before hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
        containing Called_Station_ID set to the Tx_B2 conversion of that wildcard_group_address and
        containing Communications_Format set to '0000b'
    }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1420_02
summary : 'Broadcast with abbreviated wildcard group address'
RQ ref : RQ_001_1420
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1420_02
with { IUT configured for Standard_User_Interface
    and in standby and configured for wildcards
    and configured for abbreviated dialling
}
ensure that {
    when { IUT has a broadcast_command and a valid abbreviated_dialling_string containing a wildcard entered or selected
        before IUT hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
        containing Called_Station_ID set to the Tx_B2 conversion of the
        'address resulting from substituting the abbreviated_dialling_string for the least significant digits of the IUT individual address' and
        containing Communications_Format set to '0000b'
    }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id: TP_PMR_1420_03
summary: 'Broadcast with abbreviated masked wildcard group address'
RQ ref: RQ_001_1420
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_1420_03
with {
  IUT configured for Standard_User_Interface
  and in standby and
  configured for wildcards
  and configured for abbreviated dialling
  and 'a dialling string input mask enabled'
}
ensure that {
  when { IUT has a broadcast_command and a valid abbreviated_masked_dialling_string containing a
         wildcard entered or selected
         before IUT hash_key or dedicated_send_key is pressed }
  then { IUT sends a Voice_Transmission
         with Message Frame
         containing Called Station ID set the Tx B2 conversion of the
         'address resulting from substituting the abbreviated_masked_dialling_string for those
digits of the IUT individual address that fall within the least significant digits of the input
mask' and
         containing Communications_Format set to '0000b' }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_1420_04
summary: 'Broadcast with numeric group address'
RQ ref: RQ_001_1420
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_1420_04
with {
  IUT configured for Standard_User_Interface and
  in standby and
  programmed with a numeric_group_address
}
ensure that {
  when { IUT has a broadcast_command and the numeric_group_address entered or selected
         before hash_key or dedicated_send_key is pressed }
  then { IUT sends a Voice_Transmission
         with Message Frame
         containing Called_Station_ID set to the Tx_B2_conversion of that
         numeric_group_address and
         containing Communications_Format set to '0000b' }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_1420_05
summary: 'Broadcast with abbreviated numeric group address'
RQ ref: RQ_001_1420
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_1420_05
with {
  IUT configured for Standard_User_Interface and
  in standby and
  programmed with a numeric_group_address and
  configured for abbreviated_dialling
}
ensure that {
  when { IUT has a broadcast_command and a valid abbreviated_dialling_string 'for the
         numeric_group_address' entered or selected
         before IUT hash_key or dedicated_send_key is pressed }
  then { IUT sends a Voice_Transmission
         with Message Frame
         containing Called_Station_ID set to the Tx_B2_conversion of that
         numeric_group_address and
         containing Communications_Format set to '0000b' }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_1420.06
summary: 'Broadcast with abbreviated masked numeric group address'
RQ ref : RQ_001_1420
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1420.06

with { IUT configured for Standard_User_Interface
    and in standby and
    programmed with a numeric_group_address and
    configured for abbreviated dialling and
    'a dialling string input mask enabled'
}

ensure that {
    when { IUT has a broadcast command and a valid abbreviated_masked_dialling_string 'for the numeric_group_address' entered or selected
        before IUT hash_key or dedicated_send_key is pressed }
    then { IUT sends a Voice_Transmission
        with Message_Frame
        containing Called_Station_ID set to the Tx_B2_conversion of the numeric_group_address
        and
        containing Communications_Format set to '0000b'
    }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1420.07
summary: 'Broadcast with invalid numeric group address'
RQ ref : RQ_001_1420
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1420.07

with { IUT configured for Standard_User_Interface and
    in standby and
    programmed with a numeric_group_address
}

ensure that {
    when { IUT has a broadcast command and a seven_digit_address different from the numeric_group_address entered or selected
        before hash_key or dedicated_send_key is pressed }
    then { IUT notifies Call_Fail
    }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1421.01
summary: 'Status call with specific address'
RQ ref : RQ_001_1421
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1421.01

with { IUT configured for Standard_User_Interface and
    in standby
}

ensure that {
    when { IUT has a status_command and a status_code set to '09' and a valid seven_digit_address entered or selected
        before IUT hash_key or dedicated_send_key is pressed }
    then { IUT sends a Status_Call
        with Message_Frame
        containing Called_Station_ID set to the Tx_B2_conversion of the seven_digit_address
        and
        containing Message_Type set to '0111b'
        and
        with End_Frame
        containing End_Type set to '01b'
        and
        containing ARQ set to '00b'
        and
        containing STAT set to '01001b'
    }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id: TP_PMR_1423_01
summary: 'Forced talkgroup call with specific address'
RQ ref: RQ_001_1423
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_1423_01
with { IUT configured for Standard_User_Interface and
not_programmed_with_a_numeric_group_address and
in standby
}
ensure that {
  when { IUT has a talkgroup_command and a seven_digit_address entered or selected
  before IUT hash_key or dedicated_send_key is pressed }
  then { IUT sends a Voice_Transmission
  with a Message_Frame
  containing Called_Station_ID set to the Tx_B2_conversion of the
  seven_digit_address }
}

TP id: TP_PMR_1424_01
summary: 'Call cancel'
RQ ref: RQ_001_1424
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_1424_01
with { IUT configured for Standard_User_Interface and
in standby and
configured_for_polite_to_own_CC
}
ensure that {
  when { TESTER sends a continuous Voice_Transmission using 'a signal level of >-102 dBm' and
  IUT is requested to make a Voice_Transmission }
  then { IUT does not transmit }
  when { IUT hash_key is pressed twice -- call only cancelled here!
  before the TESTER terminates the continuous Voice_Transmission }
  then { IUT does not transmit }
}

5.1.1.3 Talking Party ID

TP id: TP_PMR_0803_01
summary: 'Talking Party ID'
RQ ref: RQ_001_0803
TP type: conformance
Role: M1, M2, M3
config: CF_dPMR_01
TC ref: TC_PMR_0803_01
with { IUT in standby and TPID_is_enabled
}
ensure that {
  when { IUT receives a Voice_Transmission from TESTER }
  then { IUT notifies the Own_Station_ID of the TESTER }
}
5.1.2 Base Station framing

TP id : TP_PMR_0409_01
summary : 'Call set up'
RQ ref : RQ_001_0409
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0409_01
with { IUT in idle }

ensure that {
  when { IUT receives a Connection_Request to a valid individual_address }
  then { IUT sends the Connection_Request on downlink followed by preservation_frames
         with Message_Type set to '0100b' and PM bit set to '1' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0410_01
summary : 'Ack to Call set up'
RQ ref : RQ_001_0410
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0410_01
with { IUT sends Connection_Request then preservation_frames }

ensure that {
  when { IUT receives an acknowledgement to the Connection_Request }
  then { IUT inserts the acknowledgement on downlink between preservation_frames
         and 'maintains bit synchronisation' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0411_01
summary : 'transmit items'
RQ ref : RQ_001_0411
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0411_01
with { IUT in idle }

ensure that {
  when { IUT receives a transmit_item from a MS that is party_to_call }
  then { IUT sends the transmit_item on downlink followed by preservation_frames
         with Message_Type set to '0100b' and PM bit set to '1' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0412_01
summary : 'transmit items'
RQ ref : RQ_001_0412
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0412_01
with { IUT sends preservation_frames }

ensure that {
  when { IUT receives a transmit_item from a MS that is party_to_call }
  then { IUT inserts the transmit_item on downlink between preservation_frames
         and 'maintains bit synchronisation' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0413_01
summary : 'Disconnect'
RQ ref : RQ_001_0413
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0413_01
with { IUT sends preservation_frames

ensure that {
    when { IUT receives a Disconnection_Request from a MS that is party to call }
    then { IUT inserts the Disconnection_Request on downlink after a complete preservation_frames
          and 'maintains bit synchronisation' then returns to idle }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0414_01
summary : 'status'
RQ ref : RQ_001_0414
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0414_01
with { IUT in idle

ensure that {
    when { IUT receives a Status_Request from a valid individual address }
    then { IUT sends the Status_Request on downlink followed by preservation_frames
          with Message_Type set to '0100b' and PM bit set to '1' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0415_01
summary : 'status'
RQ ref : RQ_001_0415
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0415_01
with { IUT sends preservation_frames

ensure that {
    when { IUT receives a Status_Response from an address that is party to call }
    then { IUT inserts the Status_Response on downlink after a complete preservation_frame
          and 'maintains bit synchronisation' then returns to idle }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0416_01
summary : 'short data'
RQ ref : RQ_001_0416
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0416_01
with { IUT is idle

ensure that {
    when { IUT receives a Short_Data_Call from a valid address }
    then { IUT transmits preservation_frames on downlink
          then inserts the Short_Data_Call after a complete preservation_frame then returns to idle }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

ETSI
TP id : TP_PMR_0417_01
summary: 'call divert'
RQ ref : RQ_001_0417
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0417_01
with { IUT is idle and has a Call_Divert for a valid address to a Divert_Address
ensure that {
    when { IUT receives a transmit_item addressed to the valid address }
    then { IUT transmits the transmit_item on the downlink using the Divert_Address instead of the valid address }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0418_01
summary: 'call divert'
RQ ref : RQ_001_0418
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0418_01
with { IUT is idle and has a Call_Divert for a valid address to a Divert_Address
    IUT receives a Call_Divert cancel from a different valid address
ensure that {
    when { IUT receives a transmit_item addressed to the valid address }
    then { IUT transmits the transmit_item on the downlink using the Divert_Address instead of the valid address }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0419_01
summary: 'call set up to line'
RQ ref : RQ_001_0419
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0419_01
with { IUT is idle }
ensure that {
    when { IUT receives a Connection_Request addressed from a valid address to a line_connection address }
    then { IUT transmits preservation_frames on downlink }
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0419_02
summary: 'call set up to line'
RQ ref : RQ_001_0419
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0419_02
with { IUT receives a Connection_Request addressed to a line_connection address
    and transmits preservation_frames on downlink }
ensure that {
    when { IUT receives an acknowledgement to the Connection_Request }
    then { IUT inserts the acknowledgement on downlink after a preservation_frame
        and 'maintains bit synchronisation'}
}
-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0419_03
summary : 'call set up to line'
RQ ref : RQ_001_0419
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0419_03
with { IUT receives a Connection_Request addressed to a line_connection address
 and transmits preservation_frames on downlink
 }
ensure that {
 when { IUT receives a NACK to the Connection_Request }
 then { IUT inserts the NACK on downlink after a preservation_frame
 and returns to idle }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0420_01
summary : 'call set up to line'
RQ ref : RQ_001_0420
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0420_01
with { IUT receives an acknowledgement to a Connection_Request addressed to a line_connection address
 }
ensure that {
 when { IUT inserts the acknowledgement on downlink after a preservation_frame
 then { IUT transmits the line_connection source on the downlink }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0421_01
summary : 'call set up from line'
RQ ref : RQ_001_0421
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0421_01
with { IUT in idle
 }
ensure that {
 when { IUT receives a Connection_Request from a line_connection address }
 then { IUT transmits the Connection_Request on the downlink and then preservation_frames }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0422_01
summary : 'Co-channel BS access'
RQ ref : RQ_001_0422
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0422_01
with { IUT is 'part of a co-channel network' and is idle
 IUT is 'BS number x' of a 'network of n total BS'
 }
ensure that {
 when { IUT receives a BS_Access_Header addressed to 'COCHI0'}
 then { IUT transmits a BS_Access_Header response
 in the 'frame pair starting 2(n-x)+1 frames after the original BS Access Header' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0423_01
summary : 'Co-channel BS access'
RQ ref : RQ_001_0423
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0423_01
with {
  IUT is 'part of a co-channel network and has transmitted a BS Access Header response to a COCHI0 header'
  IUT is 'BS number x' of a 'network of n total BS'
}
ensure that {
  when { IUT receives an acknowledgement addressed to 'COCHIx' }
  then { IUT transmits preservation_frames on the downlink }
}

TP id : TP_PMR_0424_01
summary : 'Co-channel BS access'
RQ ref : RQ_001_0424
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0424_01
with {
  IUT is 'part of a co-channel network'
  IUT is 'BS number x' of a 'network of n total BS' and receives an acknowledgement addressed to 'COCHIx'
}
ensure that {
  when { IUT receives BS_Access_Header addressed to 'COCHI0' from same MS address as the 'COCHIx' acknowledgement }
  then { IUT transmits a BS Access Header response in the 'frame pair starting 2(n-x)+1 frames after the original BS Access Header' }
}

TP id : TP_PMR_0425_01
summary : 'Co-channel BS access'
RQ ref : RQ_001_0425
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0425_01
with {
  IUT is 'part of a co-channel network'
  IUT is 'BS number x' of a 'network of n total BS' and receives an acknowledgement addressed to 'COCHIx'
}
ensure that {
  when { IUT receives a transmit_item addressed to 'COCHI not equals x' from same MS address as the 'COCHIx' acknowledgement }
  then { IUT returns to idle }
}

TP id : TP_PMR_0427_01
summary : 'Co-channel BS access'
RQ ref : RQ_001_0427
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0427_01
with {
  IUT is 'part of a co-channel network'
  IUT is idle
}
ensure that {
  when { IUT receives Connection_Request from a line_connection }
  then { IUT transmits a BS Access Header response to the MS address in the Connection_Request }
}
5.1.3 Channel Access

TP id : TP_PMR_1004_01
summary : 'Interference on channel'
RQ ref : RQ_001_1004
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1004_01
with { IUT in standby and configured_for_polite_to_own_CC

ensure that {
    when { TESTER sends a continuous Voice_Transmission using an invalid colour_code and 'a signal level of >-102 dBm' and
        IUT is requested to make a Voice_Transmission }
    then { IUT sends the Voice_Transmission }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_1005_01
summary : 'Tx WAIT Time'
RQ ref : RQ_001_1005
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_1005_01
with { IUT in standby }

ensure that {
  when { TESTER sends a Voice_Transmission with an End_Frame containing Tx_WAIT set to a non_zero value and
          IUT is requested to send a PTT_Call during the Tx_WAIT time }
  then { IUT does not transmit during the Tx_WAIT time }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1007_01
summary : 'Acknowledgement response time'
RQ ref : RQ_001_1007
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1007_01
with { IUT in standby and configured_for_impolite_channel_access }

ensure that {
  when { TESTER sends a continuous Voice_Transmission using 'a signal level of >-102 dBm' and
          sends a Voice_Transmission using 'a signal level of >-82 dBm'
          with an End_Frame containing ARQ set to '01b' }
  then { IUT sends an Ack_Frame }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1007_02
summary : 'Acknowledgement response time'
RQ ref : RQ_001_1007
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1007_02
with { IUT in standby and configured_for_polite_to_own_CC and configured_to_use_Tack }

ensure that {
  when { TESTER sends a continuous Voice_Transmission using 'a signal level of >-102 dBm' and
          sends a Voice_Transmission using 'a signal level of >-82 dBm'
          with an End_Frame containing ARQ set to '01b' }
  then { IUT sends an Ack_Frame within T_Ack seconds }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1008_01
summary : 'Party to call'
RQ ref : RQ_001_1008
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1008_01
with { IUT in standby }

ensure that {
  when { TESTER sends a continuous Voice_Transmission using a wildcard_group_address or numeric_group_address of the IUT and
          IUT is requested to send a PTT_Call to the same wildcard_group_address or numeric_group_address }
  then { IUT sends the PTT_Call }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_1009_01
summary : 'Polite to CC'
RQ ref : RQ_001_1009
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1009_01
with { IUT in standby and configured_for_polite_to_own_CC }

ensure that {
    when { TESTER sends a continuous Voice_Transmission 'not addressed to the IUT' and
           IUT is requested to send a Voice_Transmission }
    then { IUT does not transmit }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1010_01
summary : 'Polite to CC'
RQ ref : RQ_001_1010
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1010_01
with { IUT in standby and configured_for_impolite_channel_access }

ensure that {
    when { TESTER sends a continuous Voice_Transmission 'not addressed to the IUT' and
           IUT is requested to send a Voice_Transmission }
    then { IUT sends that Voice_Transmission }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1011_01
summary : 'Polite to own group'
RQ ref : RQ_001_1011
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1011_01
with { IUT in standby and configured_for_polite_to_own_group }

ensure that {
    when { TESTER sends a continuous Voice_Transmission to an individual address
           that is 'also a member of a group configured in the IUT' and
           IUT is requested to send a Voice_Transmission }
    then { IUT does not transmit }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_1012_01
summary : 'Multiple acknowledgements'
RQ ref : RQ_001_1012
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_1012_01
with { IUT in standby and configured_for_impolite_channel_access and configured_for_multiple_acks }

ensure that {
    when { TESTER sends a continuous Voice_Transmission using 'a signal level of >-102 dBm' and
           sends a Voice_Transmission using 'a signal level of >-82 dBm'
           with an End Frame containing ARQ set to '01b' }
    then { IUT sends up to 4 Ack_Frames }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
**5.1.3.1 OACSU**

<table>
<thead>
<tr>
<th>TP id</th>
<th>TP_PMR_0840_01</th>
</tr>
</thead>
<tbody>
<tr>
<td>summary</td>
<td>'OACSU'</td>
</tr>
<tr>
<td>RQ ref</td>
<td>RQ_001_0840</td>
</tr>
<tr>
<td>TP type</td>
<td>conformance</td>
</tr>
<tr>
<td>Role</td>
<td>M1, M2</td>
</tr>
<tr>
<td>config</td>
<td>CF_dPMR_01</td>
</tr>
<tr>
<td>TC ref</td>
<td>TC_PMR_0840_01</td>
</tr>
</tbody>
</table>

Ensure that

When

* TESTER sends a continuous Voice_Transmission using 'a signal level of >-102 dBm' and
  sends a Voice_Transmission using 'a signal level of >-82 dBm'
  with an End_Frame containing ARQ set to '01b'

Then

* IUT sends up to 4 Ack_Frames within T_Ack seconds

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

<table>
<thead>
<tr>
<th>TP id</th>
<th>TP_PMR_0840_02</th>
</tr>
</thead>
<tbody>
<tr>
<td>summary</td>
<td>'OACSU'</td>
</tr>
<tr>
<td>RQ ref</td>
<td>RQ_001_0840</td>
</tr>
<tr>
<td>TP type</td>
<td>conformance</td>
</tr>
<tr>
<td>Role</td>
<td>M1, M2</td>
</tr>
<tr>
<td>config</td>
<td>CF_dPMR_01</td>
</tr>
<tr>
<td>TC ref</td>
<td>TC_PMR_0840_02</td>
</tr>
</tbody>
</table>

Ensure that

When

* IUT has sent OACSU_Connection_Request

Then

* IUT notifies 'that Voice_Transmission can start'

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
5.1.3.2 PTT Call

5.1.4 END frame

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id: TP_PMR_0985_01
summary: 'END Frame'
RQ ref: RQ_001_0985
TP type: conformance
Role: M1, M2
config: CF_dPMR_01
tc ref: TC_PMR_0985_01
with { IUT in standby

ensure that {
when { IUT is requested to send a Status_Response }
then { IUT sends a Status_Response

containing End_Frame
containing End_Type set to "01" }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0986_01
summary: 'END Frame'
RQ ref: RQ_001_0986
TP type: conformance
Role: M1, M2
config: CF_dPMR_01
tc ref: TC_PMR_0986_01
with { IUT in standby

ensure that {
when { IUT is requested to send a Connection_Request }
then { IUT sends a Connection_Request

containing End_Frame
containing ARQ field set to "01" }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id: TP_PMR_0987_01
summary: 'END Frame'
RQ ref: RQ_001_0987
TP type: conformance
Role: M1, M2
config: CF_dPMR_01
tc ref: TC_PMR_0987_01
with { IUT in transmitting a Voice_Transmission and configured for 1 Superframe Tx_WAIT

ensure that {
when { IUT is requested to end the Voice_Transmission }
then { IUT sends an End_Frame

containing Tx_WAIT field set to "0100" }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

5.1.5 Message frame

TP id: TP_PMR_0901_01
summary: 'Message frame'
RQ ref: RQ_001_0901
TP type: conformance
Role: M1
config: CF_dPMR_01
tc ref: TC_PMR_0901_01
with { IUT in standby

ensure that {
when { IUT is requested to make a Voice_Transmission }
then { IUT sends a Voice_Transmission

with Message_Frame
containing PM set to '0b'
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0911_01
summary: 'Message frame'
RQ ref : RQ_001_0911
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0911_01
with { IUT in standby and configured for 'peer to peer'
}
ensure that {
  when { IUT is requested to make a Voice_Transmission }
  then { IUT sends a Voice_Transmission
            with Message_Frame
            containing Communications_Format set to 01b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0911_02
summary: 'Message frame'
RQ ref : RQ_001_0911
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0911_02
with { IUT in standby and configured for 'duplex BS2 access'
}
ensure that {
  when { IUT is requested to make a Voice_Transmission }
  then { IUT sends a Voice_Transmission
            with Message_Frame
            containing Communications_Format set to 10b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0911_03
summary: 'Message frame'
RQ ref : RQ_001_0911
TP type : conformance
Role : BS2
config : CF_dPMR_01
TC ref : TC_PMR_0911_03
with { IUT in standby }
ensure that {
  when { IUT receives a Voice_Transmission }
  then { IUT sends a Voice_Transmission on the downlink
            with Message_Frame
            containing Communications_Format set to 11b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0960_01
summary: 'Message Frame Sync'
RQ ref : RQ_001_0960
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0960_01
with { IUT in standby }
ensure that {
  when { IUT requested to send a 'non packet transmission '
  then { IUT sends a transmit_item
            containing Message_Frame
            containing Frame_Sync
            set to 'FF 5F 75 D5 77h'
      }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
5.1.5.1 Message Information field

Void.

5.1.6 Payload

5.1.6.1 Packet data

---

**TP id**: TP_PMR_0808_01
**summary**: 'T3 data transmission'
**RQ ref**: RQ_001_0808
**TP type**: conformance
**Role**: M1, M2, M3
**config**: CF_dPMR_01
**TC ref**: TC_PMR_0808_01

with {
  IUT in standby
}

ensure that {
  when { IUT is requested to send a T3_Transmission }
  then { IUT sends a T3_Transmission
           containing a Message Frame
           containing Communications_Mode
           set to '100b' }
}

---

**TP id**: TP_PMR_0817_01
**summary**: 'Type 3 Data positive acknowledgement'
**RQ ref**: RQ_001_0817
**TP type**: conformance
**Role**: M1, M2, M3
**config**: CF_dPMR_01
**TC ref**: TC_PMR_0817_01

with {
  IUT in standby
}

ensure that {
  when { IUT receives a T3_Transmission }
  then { IUT sends a Ack_Frame containing Ack_type set to '001b' }
}

---
TP id : TP_PMR_0818_01
summary : 'Type 3 Data negative acknowledgement'
RQ ref : RQ_001_0818
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0818_01
with { IUT in standby

ensure that {
    when { IUT receives a T3_Transmission with a packet_data_frame containing a data_checksum set to an invalid_CRC_D value
        then { IUT sends a Ack_Frame containing Ack_type set to '010b' and MI_information set to 'the number of the packet_data_frame before the one containing the invalid_CRC'}
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0819_01
summary : 'Type 3 Data call completion'
RQ ref : RQ_001_0819
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0819_01
with { IUT is 'sending the last packet of a T3_Transmission'

ensure that {
    when { IUT receives a Ack_Frame containing Ack_type set to '001b'
        then { IUT sends a Disconnection_Request}
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0820_01
summary : 'Type 3 Data negative acknowledgement'
RQ ref : RQ_001_0820
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0820_01
with { IUT is 'sending a T3_Transmission'

ensure that {
    when { IUT receives a Ack_Frame containing Ack_type set to '010b' and MI_information set to a packet_data_frame number
        then { IUT sends 'the previous T3_Transmission starting with the packet_data_frame following that packet_data_frame number' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0821_01
summary : 'Type 3 Data unused bytes'
RQ ref : RQ_001_0821
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0821_01
with { IUT in standby

ensure that {
    when { IUT is requested to send a T3_Transmission 'with a payload of 1400 bytes'
        then { IUT sends T3_Transmission with the eighth packet_data_frame containing data_length set to 140 and last 40 data_bytes set to '00h'}
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0822_01
summary : 'Type 3 Data CRC'
RQ ref : RQ_001_0822
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0822_01

ensure that {
    when { IUT is requested to send a T3_Transmission }
    then { IUT sends a T3_Transmission
        with every packet_data_frame
        containing data_checksum set to the valid CRC_D value }
}

TP id : TP_PMR_0949_01
summary : 'Packet data frame'
RQ ref : RQ_001_0949
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0949_01

ensure that {
    when { IUT is requested to make a T3_Transmission }
    then { IUT sends a T3_Transmission
        with each packet
        containing colour_code
        set to D7 55 F7h }
}

TP id : TP_PMR_0950_01
summary : 'Packet data frame'
RQ ref : RQ_001_0950
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0950_01

ensure that {
    when { IUT is requested to make a T3_Transmission }
    then { IUT sends a T3_Transmission
        with each packet
        containing N
        set to sequentially from 000b for the first packet to 111b for the last packet }
}

TP id : TP_PMR_0951_01
summary : 'Packet data frame'
RQ ref : RQ_001_0951
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0951_01

ensure that {
    when { IUT is requested to make a T3_Transmission }
    then { IUT sends a T3_Transmission
        with each packet
        containing LEN
        set to 180 }
}
5.1.6.2 Short data

---

**TP id**: TP_PMR_0501_01  
**summary**: 'Short data delivery'  
**RQ ref**: RQ_001_0501  
**TP type**: conformance  
**Role**: M1, M2  
**config**: CF_dPMR_01  
**TC ref**: TC_PMR_0501_01

with {  
IUT in standby
}

ensure that {

when {  
IUT is requested to send a SDD_Call to TESTER
}
then {  
IUT sends SDD_Call with each UDT_Frame containing 72 bits
}

}

---

**TP id**: TP_PMR_0502_01  
**summary**: 'Short data delivery'  
**RQ ref**: RQ_001_0502  
**TP type**: conformance  
**Role**: M1, M2  
**config**: CF_dPMR_01  
**TC ref**: TC_PMR_0502_01

with {  
IUT in standby
}

ensure that {

when {  
IUT is requested to send a binary SDD_Call to TESTER
}
then {  
IUT sends SDD_Call with the first byte each UDT_Frame containing 11110001b
}

}

---

**TP id**: TP_PMR_0503_01  
**summary**: 'Short data delivery'  
**RQ ref**: RQ_001_0503  
**TP type**: conformance  
**Role**: M1, M2  
**config**: CF_dPMR_01  
**TC ref**: TC_PMR_0503_01

with {  
IUT in standby
}

ensure that {

when {  
IUT is requested to send a bcd SDD_Call to TESTER
}
then {  
IUT sends SDD_Call with the first byte each UDT_Frame containing 11110010b
}

}

---
TP id : TP_PMR_0504_01
summary : 'Short data delivery'
RQ ref : RQ_001_0504
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0504_01
with { IUT in standby }

ensure that {
when { IUT is requested to send an ISO7 SDD_Call to TESTER }
then { IUT sends SDD_Call with the first byte each UDT_Frame containing 11110011b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0505_01
summary : 'Short data delivery'
RQ ref : RQ_001_0505
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0505_01
with { IUT in standby }

ensure that {
when { IUT is requested to send an ISO8 SDD_Call to TESTER }
then { IUT sends SDD_Call with the first byte each UDT_Frame containing 11110100b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0506_01
summary : 'Short data delivery'
RQ ref : RQ_001_0506
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0506_01
with { IUT in standby }

ensure that {
when { IUT is requested to send an NMEA SDD_Call to TESTER }
then { IUT sends SDD_Call with the first byte each UDT_Frame containing 11110101b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

5.1.6.3 T1 data

TP id : TP_PMR_0934_01
summary : 'T1 data transmission'
RQ ref : RQ_001_0934
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0934_01
with { IUT in standby }

ensure that {
when { IUT is requested to send a T1_Transmission }
then { IUT sends T1_Transmission containing a Message_Frame containing Communications_Mode set to '01b'}
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
5.1.6.4  T2 data

TP id : TP_PMR_0939_01
summary : 'T2 data transmission'
RQ ref : RQ_001_0939
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0939_01
with { IUT in standby }

ensure that 
{ when { IUT is requested to send a T2_Transmission } 
  then { IUT sends T2_Transmission
          containing a Message_Frame
          containing Communications_Mode
          set to '011b' } }

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

5.1.6.5  Voice

5.1.6.5.1  Voice and attached data

TP id : TP_PMR_0837_01
summary : 'Attached Data group calls'
RQ ref : RQ_001_0837
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0837_01
with { IUT in standby and preset_with_AD_test_data }

ensure that 
{ when { IUT is requested to make a Group_AD_Call } 
  then { IUT sends Voice_Transmission
          with Message_Frame
          containing Communications_Mode set to '101b' }

  when { IUT is requested to terminate the Group_AD_Call during the first Payload_Frame of a Superframe } 
  then { IUT sends 'AD_test_data in penultimate and last Payload_Frames' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0837_02
summary : 'Attached Data individual calls'
RQ ref : RQ_001_0837
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_0837_02
with { IUT is preset with AD_test_data }

ensure that 
{ when { IUT is requested to send a Individual_AD_Call } 
  then { IUT sends Voice_Transmission
          containing Message_Frame
          containing Communications_Mode set to '101b' }

  when { IUT is requested to terminate the Individual_AD_Call during the first Payload_Frame of a Superframe } 
  then { IUT sends 'AD_test_data in penultimate and last Payload_Frames' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
5.1.6.5.2 Late entry

<table>
<thead>
<tr>
<th>TP id</th>
<th>TP_PMR_0802_01</th>
</tr>
</thead>
<tbody>
<tr>
<td>summary</td>
<td>'Late Entry - Transmit Called Station Id'</td>
</tr>
<tr>
<td>RQ ref</td>
<td>RQ_001_0802</td>
</tr>
<tr>
<td>TP type</td>
<td>conformance</td>
</tr>
<tr>
<td>Role</td>
<td>M1, M2, M3</td>
</tr>
<tr>
<td>config</td>
<td>CF_dPMR_01</td>
</tr>
<tr>
<td>TC ref</td>
<td>TC_PMR_0802_01</td>
</tr>
<tr>
<td>with</td>
<td>IUT in standby</td>
</tr>
</tbody>
</table>

```plaintext
ensure that {
  when { IUT is requested to make PTT_Call }
  then { IUT sends a Voice_Transmission
           with each first Payload_Frame
              containing ID0
              set to upper 12 bits 'of Called_Station_ID specified in Message_Frame' and
           with each second Payload_Frame
              containing ID2
              set to lower 12 bits 'of Called_Station_ID specified in Message_Frame'
  }
}
```

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

<table>
<thead>
<tr>
<th>TP id</th>
<th>TP_PMR_0802_02</th>
</tr>
</thead>
<tbody>
<tr>
<td>summary</td>
<td>'Late Entry - Transmit Own ID'</td>
</tr>
<tr>
<td>RQ ref</td>
<td>RQ_001_0802</td>
</tr>
<tr>
<td>TP type</td>
<td>conformance</td>
</tr>
<tr>
<td>Role</td>
<td>M1, M2, M3</td>
</tr>
<tr>
<td>config</td>
<td>CF_dPMR_01</td>
</tr>
<tr>
<td>TC ref</td>
<td>TC_PMR_0802_02</td>
</tr>
<tr>
<td>with</td>
<td>IUT in standby</td>
</tr>
</tbody>
</table>

```plaintext
ensure that {
  when { IUT is requested to make PTT_Call }
  then { IUT sends a Voice_Transmission
           with each third Payload_Frame
              containing ID1
              set to upper 12 bits 'of Own_Station_ID specified in Message_Frame' and
           with each third Payload_Frame
              containing ID3
              set to lower 12 bits 'of Own_Station_ID specified in Message_Frame' and
  }
}
```

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

<table>
<thead>
<tr>
<th>TP id</th>
<th>TP_PMR_0802_03</th>
</tr>
</thead>
<tbody>
<tr>
<td>summary</td>
<td>'Late Entry - Communications mode and format'</td>
</tr>
<tr>
<td>RQ ref</td>
<td>RQ_001_0802</td>
</tr>
<tr>
<td>TP type</td>
<td>conformance</td>
</tr>
<tr>
<td>Role</td>
<td>M1, M2, M3</td>
</tr>
<tr>
<td>config</td>
<td>CF_dPMR_01</td>
</tr>
<tr>
<td>TC ref</td>
<td>TC_PMR_0802_03</td>
</tr>
<tr>
<td>with</td>
<td>IUT in standby</td>
</tr>
</tbody>
</table>

```plaintext
ensure that {
  when { IUT is requested to make PTT_Call }
  then { IUT sends a Voice_Transmission
           containing same Communications_Mode and Communications_Format 'as specified in Message_Frame'
  }
}
```

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0802_04
summary : 'Late Entry - Receive'
RQ ref : RQ_001_0802
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0802_04
with { IUT in standby }

ensure that {
  when { IUT receives Voice_Transmission
        containing no Message_Frame and
        containing an 'audible test tone as payload' }
  then { IUT outputs the 'audible test tone' after a 'short delay' }
}

--- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

5.1.6.5.3 Slow user data

TP id : TP_PMR_0836_01
summary : 'Slow User Data group calls'
RQ ref : RQ_001_0836
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0836_01
with { IUT in standby and preset_with_SLD_test_data }

ensure that {
  when { IUT is requested to make a Group_SLD_Call }
  then { IUT sends Voice_Transmission
          containing a Message_Frame
          containing the Communications_Mode
          set to '001b' and
          containing first Payload_Frame
          containing CCH_data
          set to first 2 bytes of SLD_test_data and
          containing second Payload_Frame
          containing CCH_data
          set to second 2 bytes of SLD_test_data }
}

--- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0843_01
summary : 'Slow User Data individual calls'
RQ ref : RQ_001_0843
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0843_01
with { IUT in standby and preset_with_SLD_test_data }

ensure that {
  when { IUT is requested to make a Individual_SLD_Call }
  then { IUT sends Voice_Transmission
          containing a Message_Frame
          containing Communications_Mode set to '001b' and
          containing first Payload_Frame
          containing CCH_data
          set to first 2 bytes of SLD_test_data and
          containing second Payload_Frame
          containing CCH_data
          set to second 2 bytes of SLD_test_data }
}

--- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
TP id : TP_PMR_0921_01
summary : 'Slow User Data group calls'
RQ ref : RQ_001_0921
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0921_01
with { IUT in standby and preset_with_SLD_test_data
        ensure that {
            when { IUT is requested to make a Group_SLD_Call }
            then { IUT sends Voice_Transmission
                    containing a Message_Frame
                    containing the Communications_Mode
                    set to '001b' and
                    containing first Payload_Frame
                    containing CCH_data
                    set to first 2 bytes of SLD_test_data and
                    containing second Payload_Frame
                    containing CCH_data
                    set to second 2 bytes of SLD_test_data }
        }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0921_02
summary : 'Slow User Data individual calls'
RQ ref : RQ_001_0921
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0921_02
with { IUT in standby and preset_with_SLD_test_data
        ensure that {
            when { IUT is requested to make a Individual_SLD_Call }
            then { IUT sends Voice_Transmission
                    containing a Message_Frame
                    containing the Communications_Mode
                    set to '001b' and
                    containing first Payload_Frame
                    containing CCH_data
                    set to first 2 bytes of SLD_test_data and
                    containing second Payload_Frame
                    containing CCH_data
                    set to second 2 bytes of SLD_test_data }
        }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

5.1.7 Power save

TP id : TP_PMR_1101_01
summary : 'Powersave preamble'
RQ ref : RQ_001_1101
TP type : conformance
Role : M1, M2
config : CF_dPMR_01
TC ref : TC_PMR_1101_01
with { IUT in standby and powersave_enabled
        ensure that {
            when { IUT is requested to send a Voice_Transmission to TESTER }
            then { IUT sends Voice_Transmission
                    containing each Message_Frame
                    containing preamble set to '5F 5F 5F 5F 5F 5F 5F 5F 5Fh' }
        }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
5.1.8 Superframe

5.1.8.1 Traffic channel

---

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ETSI
TP id : TP_PMR_0905_01
summary : 'Traffic channel superframe'
RQ ref : RQ_001_0905
TP type : conformance
Role : M1
config : CF_dPMR_01
TC ref : TC_PMR_0905_01
with { IUT in standby }

ensure that {
  when { IUT is requested to make a Voice_Transmission }
  then { IUT sends a Voice_Transmission with each Payload_Frame containing PM set to '0b' }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0906_01
summary : 'Traffic channel superframe'
RQ ref : RQ_001_0906
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0906_01
with { IUT in standby }

ensure that {
  when { IUT is requested to make a Voice_Transmission }
  then { IUT sends a Voice_Transmission with each Payload_Frame containing V set to 00b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0909_01
summary : 'Traffic channel superframe'
RQ ref : RQ_001_0909
TP type : conformance
Role : M1
config : CF_dPMR_01
TC ref : TC_PMR_0909_01
with { IUT in standby }

ensure that {
  when { IUT is requested to make a Voice_Transmission }
  then { IUT sends a Voice_Transmission with each Payload_Frame containing F set to 01b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

TP id : TP_PMR_0910_01
summary : 'Traffic channel superframe'
RQ ref : RQ_001_0910
TP type : conformance
Role : M1, M2, M3
config : CF_dPMR_01
TC ref : TC_PMR_0910_01
with { IUT in standby }

ensure that {
  when { IUT is requested to make a Normal_Priority Voice_Transmission }
  then { IUT sends a Voice_Transmission with each Payload_Frame containing EP set to 0b }
}

-- xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
5.1.8.2 Voice TCH

Void.
Annex A (normative):
dPMPR conformance test configurations

Figure A.1: Configuration CF_dPMR_ISF_01_C

Figure A.2: Configuration CF_dPMR_ISF_02_C

Figure A.3: Configuration CF_dPMR_CSF_01_C

Figure A.4: Configuration CF_dPMR_CSF_02_C

Figure A.5: Configuration CF_dPMR_CSF_03_C

Figure A.6: Configuration CF_dPMR_ISF/CSF_01_C
In the configuration CF_dPMR_ISF/CSF_01_C and CF_dPMR_ISF/CSF_01_C either all entities are ISF or all are CSF.
Annex B (normative):
dPMR TPLan conformance testing user definitions

---***Cross references***

xref PICS_doc {DTS/ERM-TGDMR-0nn-1}

---***Definitions***

def header type -- as in "TP type"

-- Entities

def event PTT_Call -- voice transmission directly initiated by the PTT switch

def event End_Frame {Ack Request, ARQ, End_Type} -- alias EF

def event Ack_Frame {Ack_type}

def event Ack_Frames -- Up to 4 Ack frames repeated with 300-500ms intervals

def event Payload_Frame {CCH_data, ID0, ID1, ID2, ID3}

def event Payload_Frames

def event preservation_frame

def event Superframe {Payload_Frames}

def event Superframes {Payload_Frames}

def event Frame

def event Frames

def event Voice_Transmission -- directly following sequence of HF, SFs, EF with audible tone as payload

def event T1_Transmission -- directly following sequence of HF, SFs, EF with Type 1 data in payload

def event T2_Transmission -- directly following sequence of HF, SFs, EF with Type 2 data in payload

def event T3_Transmission -- directly following sequence of HF, 8 PDFs, EF with Type 3 data in payload

def event Short_Data -- directly following sequence of HF, up to 4 UDT frames, EF

def event Connection_Request {MessageFrame, EndFrame} -- Manually initiated, e.g., PTT double click,

def event BS_Access_Header

def event Disconnection_Request {MessageFrame1, EndFrame1, MessageFrame2, EndFrame2}

def event Status_Response {MessageFrame, EndFrame}

def event Individual_SLD_Call

def event Group_SLD_Call

def event Broadcast_Call

def event Individual_AD_Call

def event Group_AD_Call

def event OACSU_Call

def event Status_Call {MessageFrame, EndFrame}

def event Call_Fail -- non-specified kind of user notification in case of a call failure

def event hash_key

def event dedicated_send_key

def event broadcast_command

def event talkgroup_command

def event packet

def event NACK -- opposite of a positive acknowledgement

def event transmit_item -- any single dPMR format transmission

-- Values

def value bit

def value integral_number

def value individual_address

def value Call_Data -- Comms Mode, Comms Format, Caller, Callee IDs, Common_ID

def value Message_Type {Status_Request}

def value Own_Station_ID

def value Called_Station_ID

def value Communications_Mode

def value Communications_Format
def value format_coding
def value CRC_D
def value colour_code
def value CC_value -- a value from 0 to 63
def value Frame_Sync
def value Status_Request
def value status_code -- a value from 0 to 31
def value Ack_Request
def value error
def value packet_data_frame { data_bytes, data_length, data_checksum }

def value MI_type
def value MI_information -- only the information part of CI (=call information)
def value wildcard_group_address -- a 7 digit group address containing a wildcard in the last four digits

def value numeric_group_address -- a 7 digit talkgroup address

def value AD_test_data -- 40 bytes of data to be buffered in the IUT

def value T3_test_data -- 1440 bytes of data to be buffered in the IUT

def value wildcards

def value STAT

def value preamble

def value Tx_WAIT

def value T_Ack

def value all_call_address -- ******* (7 wildcard symbols)
def value all_call_within_a_prefix_address -- n****** (6 wildcard symbols)
def value seven_digit_address

def value abbreviated_dialling_string

def value number

def value wildcard

def value masked_dialling_string

def value dialling_string

def value abbreviated_masked_dialling_string

def value field

def value fields

def value End_Data

def unit bits

def unit bytes

def unit MHzs

def unit seconds

-- Conditions

def condition standby

def condition transmit

def condition idle -- state of BS where carrier is dropped (or idle frames transmitted for non-COCHI BS)
def condition OACSU_enabled -- radio configured for Off Air Call Set-up

def condition has_received_an_End_Frame_with_Acknowledge_Request

def condition TPID_is_enabled

def condition has_sent_OACSU_Connection_Request

def condition configured_for_abbreviated_dialling

def condition masked_dialling

def condition configured_for_Standard_User_Interface

def condition preset_with_SLD_test_data

def condition preset_with_AD_test_data

def condition invalid_CRC

def condition configured_for_impolite_channel_access

def condition configured_for_polite_to_own_CC

def condition configured_for_polite_to_own_group

def condition configured_for_multiple_acks

def condition configured_to_use_Tack

def condition powersave_enabled

def condition programmed_with_a_numeric_group_address

def condition not_programmed_with_a_numeric_group_address

def condition Normal_Priority

def condition Emergency_Priority

def condition party_to_call

-- Keywords - (Pre)conditions

-- Keywords - (Pre)conditions

def word configured

def word entered

def word selected

def word Tx_B2_conversion -- B2 Algorithm forward conversion

def word Rx_B2_conversion -- B2 Algorithm reverse conversion

def word CC_algorithm -- CC number = 64 x (f modulo 0,4) where f is the channel freq in MHz
-- Keywords - Stimuli
  def word start
  def word make
  def word requested
  def context {is -requested to}
  def word completes
  def word cancel
  def word terminate
  def word terminates
  def word pressed

-- Keywords - Responses
  def word outputs
  def word output
  def word notifies
  def word returns
  def word send
  def word determined

-- Keywords - other
  def word set
  def context {set to}
  def word up
  def context {up to}
  def word instead
  def context {instead of}
  def word same
  def word their
  def word upper
  def word lower
  def word each
  def word every
  def word first
  def word second
  def word third
  def word fourth
  def word eighth
  def word last
  def word except
  def word for
  def word followed
  def word by
  def context {followed by}
  def word using
  def word part
  def word between
  def word twice
  def word does
  def word has
  def word non_zero
  def word source
  def word time
  def word during
  def word continuous
  def word sequentially
  def word valid
  def word invalid
  def word different
  def word indentical
  def word complete
Annex C (informative):
Bibliography

ETSI TS 102 726-3: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Conformance testing for Mode 1 of the digital Private Mobile Radio (dPMR); Part 3: Interoperability Test Suite Structure and Test Purposes (TSS&TP) specification".
## History

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