

Second edition  
2013-03-15

**AMENDMENT 1**  
2014-11-15

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**Intelligent transport systems —  
Communications access for land  
mobiles (CALM) — Access technology  
support**

**AMENDMENT 1**

**iTeh STANDARD PREVIEW**  
*Systemes intelligents de transport — Accès aux communications des  
services mobiles terrestres (CALM) — Support à la technologie d'accès*  
**(standards.iteh.ai)**  
*AMENDEMENT 1*

ISO 21218:2013/Amd 1:2014

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Reference number  
ISO 21218:2013/Amd.1:2014(E)

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Published in Switzerland

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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The committee responsible for this document is ISO/TC 204, *Intelligent transport systems*.

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# Intelligent transport systems — Communications access for land mobiles (CALM) — Access technology support

## AMENDMENT 1

*Page 2, Terms and definitions*

*Add at the end:*

3.7

temps atomique international

time since 00:00:00 UTC, 1 January, 2004, identical with UTC except that no leap seconds need to be added

*Page 3, Abbreviated terms*

*Add:*

TAI Temps Atomique International

UTC Temps Universel Coordonné/Coordinated Universal Time

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*Page 5, 6.2.1.1 CI classes*

*Add at the end of the first sentence:* [ISO 21218:2013/Amd 1:2014](https://standards.iteh.ai/catalog/standards/sist/fe85a7ec-5175-4fd0-ae94-910075dfd835/iso-21218-2013-amd-1-2014)

A CI shall support exactly one of these CI classes presented in Table 1.

*Page 6, Table 1*

*Delete all occurrences of the term “wireless”.*

*Delete the character “w” in the terms contained in column “Communication interface class”*

*Replace the character sequence “lan” in the terms contained in the column “Communication interface class” by the character sequence “il”.*

*Page 6, last sentence (before Table 2 on page 7)*

*Delete the end of the sentence “in line with requirements presented in Table 3”.*

*Page 7, 6.2.1.3*

*Delete the whole 6.2.1.3.*

*Page 11, bullet c) sub-bullet 2)*

*Add:*

“not applicable for receive-only CIs (CIC-14)”.

*Page 12, bullet d)*

*Add:*

“not applicable for receive-only CIs (CIC-14)”.

Page 18, third paragraph below Figure 7

Replace the first three sentences with the corrected versions:

“Each RX/TX-CI shall maintain at least one RX-VCI for reception of frames. There is a single UC-VCI for every known peer CI. The RX-VCI of a CI is shared by all of its TX-VCIs.”

Page 21, Table 4

Replace “GeneralizedTime” by “Time48IAT”.

Page 29, Table 10

Insert:

TIMEOUT	2	Lifetime of pending packet expired prior to transmission of the packet
PRIORITY	3	Priority of the packet is smaller than the minimum required priority given in I-Parameter “MinimumUserPriority”

Page 32, Table A.1

Delete information on I-Param No 1. This parameter is no longer supported.

Page 33, Table A.1

Delete information on I-Parm No 14 and 15. This parameter is no longer supported.

Page 37-46, Annex B

Replace whole annex by the following one:

  
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 Annex B  
 (normative)  
<https://standards.itech.ai/cfn/standards/sist/fe85a7ec-5175-4fd0-ae94-910075dfd835/iso-21218-2013-amd-1-2014>

**ASN.1 definitions**

**B.1 Use of modules**

The ASN.1 modules specified in Annex B.2 shall be used. ASN.1 BASIC-PER, UNALIGNED, as specified in ISO/IEC 8825-2, shall apply.

In order to achieve octet alignment enabling cheap implementations, “fill” bits were defined. All fill bits shall be set to the value ‘0’b.

**B.2 ASN.1 modules**

CALM11sap {iso(1) standard(0) calm-11-sap(21218) asnm-1 (1)} DEFINITIONS AUTOMATIC TAGS ::=BEGIN

-- EXPORTS;

IMPORTS

ITS-scuId FROM CALMmanagement { iso (1) standard (0) calm-management (24102) local (1) asnm-1 (1) }

ErrStatus, COMMUPDOWN FROM CALMmsap { iso (1) standard (0) calm-management (24102) msap (3) asnm-1 (1) }

MediumCost FROM CITSapplReq {iso(1) standard(0) cits-applReq (17423) asnm-1 (1) }

LogicalChannelType FROM CITSapplMgmtComm {iso(1) standard(0) cits-applMgmt (17419) comm

```

(3) }
;

-- End of IMPORTS

Alt ::= INTEGER(0..65535) -- Resolution 0,1 m.

CIaClass ::= INTEGER{
    unknown          (0),
    ciac-1           (1),
    ciac-2           (2),
    ciac-3           (3)
} (0..255)

CIclass ::= INTEGER{
    unknown          (0),
    cic-l1           (1),
    cic-l2           (2),
    cic-l3           (3),
    cic-l4           (4),
    cic-l5           (5),
    cic-il1          (254),
    cic-il2          (255)
} (0..255)

Link-ID ::= SEQUENCE{
    remoteCIID       EUI64,          -- Link-ID
    localCIID        EUI64          -- CI in peer ITS-S(s)
}                                     -- Unique ID of local CI

CIstatus ::= INTEGER{
    not-existent     (0),
    existent         (1),
    unknown          (2),
    registered       (4),
    active           (8),
    connected        (64),
    suspended        (64),
    inactive         (128)
} (0..255)

CommProfile ::= SEQUENCE (SIZE(0..255)) OF I-Param

Connect ::= INTEGER{
    automatic        (0),
    manual           (255)
} (0..255)

IN-SAPaddress ::= INTEGER(0..255)

DataRate ::= INTEGER(0..4294967295) -- in 100 bit/s

DataRatesNW ::= SEQUENCE{
    minimum          DataRate,      -- available to the appl.
    maximum          DataRate      -- minimum possible value
}                                     -- maximum possible value

Directivity ::= SEQUENCE{
    mode             DirMode,
    dirPredef        INTEGER(0..255), -- 0: see dirVar
    fill             BIT STRING (SIZE(7)),
    dirVar           SEQUENCE (SIZE(0..1)) OF DirVar
}

DirMode ::= INTEGER{
    fixed            (0),
    tracking          (255)
} (0..255)

```

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```
DirVar ::= SEQUENCE {
    bsAzimuth      INTEGER(-32768..32767), -- -180 - +180
    bsElevation    INTEGER(-128..127),    -- -90 - +90
    openHorizontal  INTEGER(0..255),      -- 0 - 180
    openVertical   INTEGER(0..255)       -- 0 - 180
}

TxPowMax ::= INTEGER(0..255) -- unit, minimum value and step size defined by access
technology (medium)

Errors ::= SEQUENCE (SIZE(0..255)) OF SingleError

SingleError ::= SEQUENCE {
    paramNo      INTEGER(0..255), -- ref number of parameter
    errStatus    ErrStatus        -- IS24102-3
}

Gs ::= INTEGER(0..65535) -- Resolution 0,01 m/s.

KineVectIn ::= SEQUENCE {
    dut          Time48IAT, -- date and universal time
    lat          Lat,      -- latitude
    lon          Lon,      -- longitude
    alt          Alt,      -- altitude / elevation
    gs           Gs,       -- ground speed
    tta         Tta,      -- true track angle
}

KineVectOut ::= SEQUENCE {
    dut          Time48IAT, -- date and universal time
    fill        BIT STRING (SIZE(5)), -- used for octet alignment in PER
    options     SEQUENCE (SIZE(0..5)) OF KineVectOptions -- options
}

KineVectOptions ::= CHOICE {
    lat          Lat,      -- latitude
    lon          Lon,      -- longitude
    alt          Alt,      -- altitude
    gs           Gs,       -- ground speed
    tta         Tta,      -- true track angle
}

Lat ::= INTEGER(-2147483648..2147483647) -- equals  $\pm \pi/2$ 

Lon ::= INTEGER(-2147483648..2147483647) -- equals  $\pm \pi$ 

LLServiceAddr ::= SEQUENCE {
    csap        IN-SAPaddress,
    linkID      Link-ID
}

MACAddress ::= OCTET STRING (SIZE(6))

MediumUsage ::= SEQUENCE {
    receive     INTEGER(0..255),
    transmit    INTEGER(0..255)
}

MedType ::= INTEGER {
    unknown     (0),
    any         (1),
    iso21212    (2), -- 2G
    iso21213    (3), -- 3G
    iso21214    (4), -- IR
    iso21215    (5), -- M5
    iso21216    (6), -- MM
    iso25112    (7), -- 802.16e
    iso25113    (8), -- HC-SDMA
    iso29283    (9), -- 802.20
}


```

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```

iso17515          (10), -- LTE
iso15628          (128), -- DSRC
can               (254),
ethernet          (255)
} (0..255)

MedUseObsTime ::= SEQUENCE {
    value          INTEGER(0..1023), -- valid parameter number (10 bits in PER)
    unit           TimeUnit
} -- 2 octets in PER

TimeUnit ::= INTEGER {
    microseconds   (0),
    milliseconds   (1),
    seconds         (2),
    minutes         (3),
    hours           (4),
    days            (5),
    weeks           (6),
    months          (7),
    years           (8)
} (0..63) -- 6 bits in PER

Notify ::= SEQUENCE (SIZE(0..255)) OF INTEGER(0..255) -- valid parameter number

PeerRXpower ::= INTEGER(0..255)

PARAMS ::= CLASS {
    &paramRef INTEGER(0..255),
    &Parameter
}

IPARAM ::= PARAMS

I-Params IPARAM ::= {errors | commProfile | properties | manuDeviceID | iTs-scuId | medID |
localCIID | timeoutReg | macAddress | macAddrTemp | ciClass | ciaClass | ciStatus | notify
| medType | regInfo | connect | simPin | providerInfo | minUserPriority | queueLevel |
queueLowTh | queueAlarmTh | distancePeer | commRangeRef | timeOfLastRecep | inactTimeLimit
| mediumUsage | medUseObsTime | peerMAC | virtualCIs | minPrioCrossCI | rxSens | txPower |
txPowMax | peerRXpower | dataRate | dataRateNW | dataRatesNW | dataRateNWreq | directivity
| blockLength | freeAirTime | frameLengthMax | kineVectIn | kineVectOut | cost |
reliability | logicalChannel, ...}

I-Param ::= SEQUENCE {
    paramNo       IPARAM.&paramRef({I-Params}),
    parameter     IPARAM.&Parameter({I-Params}{@paramNo})
}

errors           IPARAM ::= {&paramRef 0, &Parameter Errors}
commProfile      IPARAM ::= {&paramRef 2, &Parameter CommProfile}
properties       IPARAM ::= {&paramRef 3, &Parameter Properties}
manuDeviceID    IPARAM ::= {&paramRef 4, &Parameter UTF8String}
iTs-scuId       IPARAM ::= {&paramRef 5, &Parameter ITS-scuId}
medID           IPARAM ::= {&paramRef 6, &Parameter MedID}
localCIID       IPARAM ::= {&paramRef 7, &Parameter EUI64}
timeoutReg      IPARAM ::= {&paramRef 8, &Parameter INTEGER(0..255)}
macAddress      IPARAM ::= {&paramRef 9, &Parameter MACaddress}
macAddrTemp     IPARAM ::= {&paramRef 10, &Parameter MACaddress}
ciClass         IPARAM ::= {&paramRef 11, &Parameter CIclass}
ciaClass        IPARAM ::= {&paramRef 12, &Parameter CIaClass}
ciStatus        IPARAM ::= {&paramRef 13, &Parameter CIstatus}
notify          IPARAM ::= {&paramRef 16, &Parameter Notify}
medType         IPARAM ::= {&paramRef 17, &Parameter MedType}
regInfo         IPARAM ::= {&paramRef 18, &Parameter RegInfo}
connect         IPARAM ::= {&paramRef 19, &Parameter Connect}
simPin          IPARAM ::= {&paramRef 20, &Parameter SimPin}
providerInfo    IPARAM ::= {&paramRef 21, &Parameter ProviderInfo}
minUserPriority  IPARAM ::= {&paramRef 22, &Parameter UserPriority} -- DEFAULT 0
queueLevel      IPARAM ::= {&paramRef 23, &Parameter QueueLevel}

```