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**Intelligent transport systems —  
Communications access for land  
mobiles (CALM) — ITS station  
management —**

Part 4:

**Station-internal management  
communications  
AMENDMENT 1**

ISO 24102-4:2013/Amd 1:2017

<https://standards.iteh.ai/standards/iso/24102-4/2013-07-01/iso/24102-4-2013-amd-1-2017>  
*Systemes intelligents de transport — Accès aux communications des  
services mobiles terrestres (CALM) — Gestion des stations ITS —*

*Partie 4: Communications de gestion interne à la station*

*AMENDEMENT 1*



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Amendment 1 to ISO 24102-4:2013 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

A list of all parts in the ISO 24102 series can be found on the ISO website.

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# Intelligent transport systems — Communications access for land mobiles (CALM) — ITS station management —

## Part 4: Station-internal management communications

### AMENDMENT 1

Page 4, Figure 3

Replace Figure 3 by the following.

*IIC-Request:*

SourceITS-SCU-ID	DestinationITS-SCU-ID	PDU-Counter	PDU-ID (0)	Data	Sec
------------------	-----------------------	-------------	------------	------	-----

*IIC-Response:*

SourceITS-SCU-ID	DestinationITS-SCU-ID	PDU-Counter	PDU-ID (1)	Data	Error Status	Sec
------------------	-----------------------	-------------	------------	------	--------------	-----

*Data in IIC-Request:*

RqDataID	Length of RqData	RqData
----------	------------------	--------

*Data in IIC-Response:*

RsDataID	Length of RsData	RsData
----------	------------------	--------

*Sec in IIC-Response:*

SecRqID	Length of SecRequest	SecRequest
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*Sec in IIC-Request:*

SecRsID	Length of SecResponse	SecResponse
---------	-----------------------	-------------

**Figure 3 — IIC PDU structure**

Replace Table 1 by the following.

PDU element	IIC-Request	IIC-Response
SourceITS-SCU-ID	ITS-SCU-ID of source ITS-SCU, which produces the request. See parameter "ITS-scuId" specified in ISO 24102-1.	ITS-SCU-ID of ITS-SCU, which produces the response.
DestinationITS-SCU-ID	ITS-SCU-ID of destination ITS-SCU, which shall evaluate the request.	Same as SourceITS-SCU-ID of related request if not requested otherwise in this document.
PDU-Counter	Even number generated from a cyclic counter at the ITS-SCU, which produces the request.	PDU-Counter of related request incremented by one.
PDU-ID	One octet INTEGER value 0.	One octet INTEGER value 1.
Data	Data type identifier RqDataID followed by length of RqData in Integer multiples of an octet and RqData.	Data type identifier RsDataID followed by length of RsData in Integer multiples of an octet and RsData.
ErrorStatus	Not existent.	Existent. 0: No error happened > 0: Number indicating type of error.
Seq	Security type identifier SecRqID followed by the length of SecRequest in Integer multiples of an octet and SecRequest.	Security type identifier SecRsID followed by the length of SecResponse in Integer multiples of an octet and SecResponse.

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Replace Table 2 by the following.

<https://standards.iteh.ai/catalog/standards/sist/f33ed4b7-5eee-4ba2-8042-c48f8af730b4/iso-24102-4-2013-amd-1-2017>

SourceITS-SCU-ID	Destination-ITS-SCU-ID	Description
0		Reserved. Used to indicate "own/local ITS-SCU". Must not be used in communications with other ITS-SCUs.
n.a.	1	ITS-SCU-ID identifying ITS-SCUs with ITS-S host role.
n.a.	2	ITS-SCU-ID identifying ITS-SCUs with ITS-S router role.
3	3	ITS test system (using IICP for upper tester access).
4 - 7		ITS-SCU-ID identifying ITS-SCUs with an implementation specific role.
8 .. 65534		ITS-SCU-ID identifying uniquely a specific ITS-SCU in an ITS station.
n.a.	65535	ITS-SCU-ID identifying all ITS-SCUs.

Page 10, Annex A

Replace Annex A with the following:

**Annex A**  
(normative)

**ASN.1 module**

**A.1 Overview**

The following ASN.1 module is specified in this annex:

— CALMiitsscu { ISO (1) standard (0) calm-management (24102) iitsscu (4) asnm-1 (1)}

**A.2 Module CALMiitsscu**

This module specifies ASN.1 type definitions together with useful ASN.1 value definitions.

Unaligned packed encoding rules (PER) as specified in ISO/IEC 8825-2 shall be applied for this ASN.1 module.

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

```

CALMiitsscu { iso (1) standard (0) calm-management (24102) iitsscu (4) asnm-1 (1)}
DEFINITIONS AUTOMATIC TAGS ::= BEGIN

IMPORTS
  CiaClass, Ciclass, Cistatus, Directivity, Link-ID, LlserviceAddr, MACaddress, MedType FROM
  CALMllsap {iso(1) standard(0) calm-ll-sap(21218) asnm-1 (1)}

ITS-scuId, Param24102No, Param241024FROM:CALMmanagement { iso (1) standard (0)
calm-management (24102) local(1) asnm-1 (1)}

SimFUTcmd, SimFUTreq, SimFLTcmd, SimNUTcmd, SimNLTcmd, SimIUTcmd, SimFLTreq, SimNUTreq,
SimNLTreq, SimIUTreq, ErrStatus, MF-Command-request, MF-Request-request, MN-Command-
request, MN-Request-request, MI-Command-request, MI-Request-request, MA-Command-request,
MA-Request-request, MS-Command-request, MS-Request-request, MI-Get-request, MI-Set-
request, MF-Command-confirm, MF-Request-confirm, MN-Command-confirm, MN-Request-confirm,
MI-Command-confirm, MI-Request-confirm, MA-Command-confirm, MA-Request-confirm, MS-Command-
confirm, MS-Request-confirm, MI-Get-confirm, MI-Set-confirm FROM CALMmsap {iso (1) standard
(0) calm-management (24102) msap (3) asnm-1 (1)}

-- Details on SecRq and SecRs to be provided by a standard on security
;
-- End of IMPORTS

-- Types

-- PDUs --
-- IIC-Request PDU
IIC-Request ::= SEQUENCE {
    sourceITS-scuId          ITS-scuId,
    destinationITS-scuId    ITS-scuId,
    pduCounter              PduCounter,
    requestID               RequestID, -- value zero
    pduRequest              PduRequest,
    secRq                   SecRq
}

RequestID ::= INTEGER {
    request (0)
} (0..255)

SECIICP ::= CLASS {
    &ref                    INTEGER(0..255), -- security type identifier

```

```

    &SecIICP
  }

SecIICPs SECIICP::={noSecurity | octString, ...}

noSecurity          SECIICP::={&ref 0, &SecIICP NULL}
octString           SECIICP::={&ref 1, &SecIICP OCTET STRING (SIZE(0..65535))}

SecRq::=SEQUENCE{
  secRqRef          SECIICP.&ref({SecIICPs}),
  secRq             SECIICP.&SecIICP({SecIICPs}{@secRqRef})
}

IICPREQ::=CLASS{
  &ref              INTEGER(0..255), -- data type identifier
  &IICPrequest
}

IICPrequests IICPREQ::={aliveRq | mFRcmdRq | mFRreqRq | mnRcmdRq | mnRreqRq | miRcmdRq |
miRreqRq | miRgetRq | miRsetRq | mCmdRq | maRcmdRq | maRreqRq | msRcmdRq | msRreqRq |
simFutCmdRq | simFutReqRq | simNutCmdRq | simNutReqRq | simIutCmdRq | simIutReqRq |
simFltCmdRq | simFltReqRq | simNltCmdRq | simNltReqRq, ...}

PduRequest::=SEQUENCE{
  reqRef            IICPREQ.&ref({IICPrequests}), -- data type identifier
  iicpReq           IICPREQ.&IICPrequest({IICPrequests}{@reqRef})
}

aliveRq             IICPREQ::={&ref 0, &IICPrequest ITS-SCUalive}
mFRcmdRq           IICPREQ::={&ref 1, &IICPrequest MF-Command-request}
mFRreqRq           IICPREQ::={&ref 2, &IICPrequest MF-Request-request}
mnRcmdRq           IICPREQ::={&ref 3, &IICPrequest MN-Command-request}
mnRreqRq           IICPREQ::={&ref 4, &IICPrequest MN-Request-request}
miRcmdRq           IICPREQ::={&ref 5, &IICPrequest MI-Command-request}
miRreqRq           IICPREQ::={&ref 6, &IICPrequest MI-Request-request}
miRgetRq           IICPREQ::={&ref 7, &IICPrequest MI-Get-request}
miRsetRq           IICPREQ::={&ref 8, &IICPrequest MI-Set-request}
mCmdRq             IICPREQ::={&ref 9, &IICPrequest McmdRq}
maRcmdRq           IICPREQ::={&ref 10, &IICPrequest MA-Command-request}
maRreqRq           IICPREQ::={&ref 11, &IICPrequest MA-Request-request}
msRcmdRq           IICPREQ::={&ref 12, &IICPrequest MS-Command-request}
msRreqRq           IICPREQ::={&ref 13, &IICPrequest MS-Request-request}
-- simAutCmdRq     IICPREQ::={&ref 242, &IICPrequest SimAUTcmd}
-- simAutReqRq     IICPREQ::={&ref 243, &IICPrequest SimAUTreq}
simFutCmdRq        IICPREQ::={&ref 244, &IICPrequest SimFUTcmd}
simFutReqRq        IICPREQ::={&ref 245, &IICPrequest SimFUTreq}
simNutCmdRq        IICPREQ::={&ref 246, &IICPrequest SimNUTcmd}
simNutReqRq        IICPREQ::={&ref 247, &IICPrequest SimNUTreq}
simIutCmdRq        IICPREQ::={&ref 248, &IICPrequest SimIUTcmd}
simIutReqRq        IICPREQ::={&ref 249, &IICPrequest SimIUTreq}
-- simAltCmdRq     IICPREQ::={&ref 250, &IICPrequest SimALTcmd}
-- simAltReqRq     IICPREQ::={&ref 251, &IICPrequest SimALTreq}
simFltCmdRq        IICPREQ::={&ref 252, &IICPrequest SimFLTcmd}
simFltReqRq        IICPREQ::={&ref 253, &IICPrequest SimFLTreq}
simNltCmdRq        IICPREQ::={&ref 254, &IICPrequest SimNLTcmd}
simNltReqRq        IICPREQ::={&ref 255, &IICPrequest SimNLTreq}

ITS-SCUalive::=SEQUENCE{
  message           AliveMessage,
  its-scuType       ITS-SCUtype
}

AliveMessage::= INTEGER{
  alive (0),
  delete (1),
  new (255)
} (0..255)

ITS-SCUtype::= INTEGER{
  unknown (0),

```



```

host (1),
router (2),
itsTestSystem (3),
any (255)
} (0..255)

```

-- General OBJECT CLASS for management commands

```

MCMD ::= CLASS {
    &refMcmd      INTEGER(0..255), -- allows for 256 commands
    &Mcmd
}

```

```

MCMDREQ ::= MCMD

```

```

McmdRq ::= SEQUENCE {
    mcmdRef      MCMDREQ.&refMcmd ({McmdReqs}),
    mcmd         MCMDREQ.&Mcmd  ({McmdReqs}{@mcmdRef})
}

```

```

McmdReqs MCMDREQ ::= {pingRq | vCIinfoRq | vCIupdateRq | getParam24102Rq | setParam24102Rq |
testIicpRq | testConfigRq, ...}

```

```

pingRq          MCMDREQ ::= {&refMcmd 0, &Mcmd PingIICP}
vCIinfoRq      MCMDREQ ::= {&refMcmd 1, &Mcmd VCI-info-req}
vCIupdateRq    MCMDREQ ::= {&refMcmd 2, &Mcmd VCI-update-req}
getParam24102Rq MCMDREQ ::= {&refMcmd 3, &Mcmd Param24102No}
setParam24102Rq MCMDREQ ::= {&refMcmd 4, &Mcmd Param24102}
testIicpRq     MCMDREQ ::= {&refMcmd 254, &Mcmd TestIicp}
testConfigRq   MCMDREQ ::= {&refMcmd 255, &Mcmd TestConfigIICP}

```

```

PingIICP ::= OCTET STRING (SIZE(0..255))

```

```

VCI-info-req ::= SEQUENCE {
    medType      MedType,
    ciaClass     CIaClass,
    ciClass      CIclass
}

```

```

VCI-update-req ::= SEQUENCE (SIZE(0..255)) OF VCI-Info

```

```

VCI-Info ::= SEQUENCE {
    linkId      Link-ID,
    medType     MedType,
    ciaClass    CIaClass,
    ciClass     CIclass,
    status      Cistatus
}

```

```

TestIicp ::= SEQUENCE {
    fill        BIT STRING (SIZE(6)), -- all bits set to '0'
    action      CHOICE {
-- simulation of a trigger event in the ITS-S management entity of the SUT
-- to perform remote COMMAND access to an MX-SAP in the ITS test system
-- request to send MF-Command-request to ITS test system
        mFrcmd      MFrcmd,
-- request to send MN-Command-request to ITS test system
        mNrcmd      MNrcmd,
-- request to send MI-Command-request to ITS test system
        mIrcmd      MIrcmd,
-- request to send MS-Command-request to ITS test system
        mSrcmd      MSrcmd,
-- request to send MA-Command-request to ITS test system
        mArcmd      MArcmd
    }
}

```

```

-- Upper Tester TX: remote COMMAND accesses to an MX-SAP

```

```

-- MSrcmd ::= SEQUENCE {

```