

ETSI TS 124 105 V16.0.0 (2020-07)



**Universal Mobile Telecommunications System (UMTS);
LTE;
Application specific Congestion control for Data
Communication (ACDC) Management Object (MO)
(3GPP TS 24.105 version 16.0.0 Release 16)**



Reference

RTS/TSGC-0124105vg00

Keywords

LTE,UMTS

ETSI

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Foreword

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- x the first digit:
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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document defines Management Object (MO) that is used to configure the UE with parameters related to Application specific Congestion control for Data Communication (ACDC) functionality.

The MO is compatible with the OMA Device Management (DM) protocol specifications, version 1.2 and upwards, and is defined using the OMA DM Device Description Framework (DDF) as described in the Enabler Release Definition OMA-ERELED-DM-V1_2 [3].

The MO consists of relevant parameters for provisioning of ACDC at a UE.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 22.011: "Service accessibility".
- [3] OMA-ERELED-DM-V1_2: "Enabler Release Definition for OMA Device Management".
- [4] 3GPP TS 23.003: "Numbering, addressing and identification".
- [5] 3GPP TS 31.102: "Characteristics of the USIM Application".
- [6] IETF RFC 3629 (November 2003): "UTF-8, a transformation format of ISO 10646".
- [7] IETF RFC 4122 (July 2005): "A Universally Unique IDentifier (UUID) URN Namespace".
- [8] "Unicode 5.1.0, Unicode Standard Annex #15; Unicode Normalization Forms", March 2008.
<http://www.unicode.org>

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

ACDC	Application specific Congestion control for Data Communication
------	--

4 ACDC MO

The ACDC MO is used to manage configuration parameters related to ACDC functionality for a UE supporting provisioning of such information. The presence and format of the ACDC configuration file on the USIM is specified in 3GPP TS 31.102 [5].

The MO identifier is: urn:oma:mo:ext-3gpp-ACDC-config:1.0.

The OMA DM Access Control List (ACL) property mechanism (see OMA-ERELED-DM-V1_2 [3]) may be used to grant or deny access rights to OMA DM servers in order to modify nodes and leaf objects of the ACDC MO.

The following nodes and leaf objects are possible in the ACDC MO as described in figure 4.1.1 through figure 4.1.2:

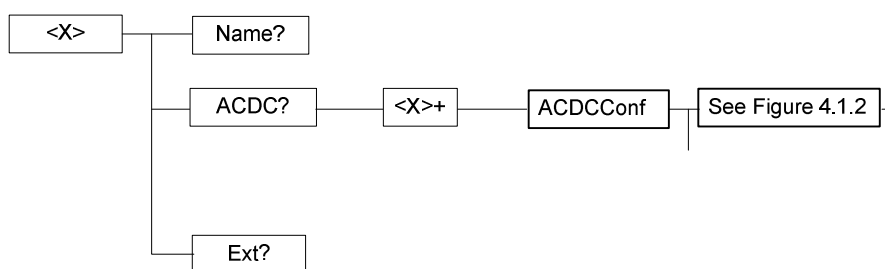


Figure 4.1.1: The ACDC Management Object

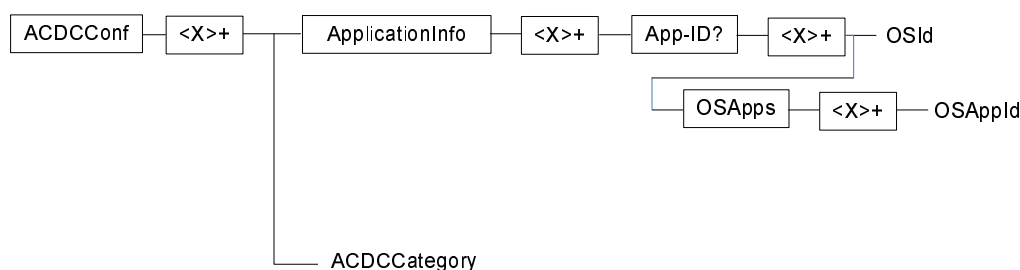


Figure 4.1.2: The ACDC Configuration

5 ACDC MO parameters

5.1 General

This clause describes the parameters for the ACDC MO.

5.2 Node: <X>

This interior node acts as a placeholder for zero or one accounts for a fixed node.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get
- Values: <N/A>

5.3 <X>/Name

The Name leaf is a name for the ACDC MO settings.

- Occurrence: ZeroOrOne
- Format: chr
- Access Types: Get
- Values: <User displayable name>

The User displayable name shall be represented by Unicode characters encoded as UTF-8 as specified in IETF RFC 3629 [6] and formatted using Normalization Form KC (NFKC) as specified in Unicode Standard Annex #15; Unicode Normalization Forms [8].

5.4 ACDC

5.4.1 <X>/ACDC

The ACDC node acts as a placeholder for ACDC information.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get, Replace
- Values: <N/A>

5.4.2 <X>/ACDC/<X>

This interior node acts as a placeholder for one or more ACDC policies.

- Occurrence: OneOrMore
- Format: node
- Access Types: Get, Replace
- Values: <N/A>

5.4.3 <X>/ACDC/<X>/ACDCConf

The ACDCConf node indicates a particular ACDC configuration parameter.

- Occurrence: One
- Format: node
- Access Types: Get, Replace
- Values: <N/A>

5.4.4 <X>/ACDC/<X>/ACDCConf/<X>

This interior node acts as a placeholder for one or more ACDC configuration parameter.

- Occurrence: OneOrMore
- Format: node

- Access Types: Get, Replace
- Values: <N/A>

5.4.5 <X>/ACDC/<X>/ACDCConf/<X>/ApplicationInfo

The ApplicationInfo node indicates a particular application information.

- Occurrence: One
- Format: node
- Access Types: Get, Replace
- Values: <N/A>

5.4.6 <X>/ACDC/<X>/ACDCConf/<X>/ApplicationInfo/<X>

This interior node acts as a placeholder for one or more ApplicationInfo.

- Occurrence: OneOrMore
- Format: node
- Access Types: Get, Replace
- Values: <N/A>

5.4.7 <X>/ACDC/<X>/ACDCConf/<X>/ApplicationInfo/<X>/App-ID

This interior node acts as a placeholder for an ApplicationInfo based on an applicationID.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get, Replace
- Values: N/A

5.4.8 <X>/ACDC/<X>/ACDCConf/<X>/ApplicationInfo/<X>/App-ID/<X>

This interior node acts as a placeholder for one or more combinations of OSId and OSAppId values.

- Occurrence: OneOrMore
- Format: node
- Access Types: Get, Replace
- Values: <N/A>

5.4.9 <X>/ACDC/<X>/ACDCConf/<X>/ApplicationInfo/<X>/App-ID/<X>/OSId

The OSId leaf indicates an operating system identifier.

- Occurrence: One
- Format: chr
- Access Types: Get, Replace

- Values: <operating system identifier>

The format of the operating system identifier is a Universally Unique Identifier (UUID) as specified in IETF RFC 4122 [7].

5.4.10 <X>/ACDC/<X>/ACDCConf/<X>/ApplicationInfo/<X>/AppID/<X>/OSApps

This interior node acts as a placeholder for the list of OS specific application identifiers.

- Occurrence: One
- Format: node
- Access Types: Get, Replace
- Values: <N/A>

5.4.11 <X>/ACDC/<X>/ACDCConf/<X>/ApplicationInfo/<X>/AppID/<X>/OSApps/<X>

This interior node acts as a placeholder for an OS specific application identifiers.

- Occurrence: OneOrMore
- Format: node
- Access Types: Get, Replace
- Values: <N/A>

5.4.12 <X>/ACDC/<X>/ACDCConf/<X>/ApplicationInfo/<X>/AppID/<X>/OSApps/<X>/OSAppId

The OSAppId leaf indicates an OS specific application identifier.

- Occurrence: One
- Format: chr
- Access Types: Get, Replace
- Values: <OS specific application identifier>

Further definition of the format of the OS specific application identifier is beyond the scope of this specification.

5.4.13 <X>/ACDC/<X>/ACDCConf/<X>/ACDCCategory

The ACDCCategory leaf represents indicates the ACDC category for which applications matching the ApplicationInfo belongs.

- Occurrence: One
- Format: int
- Access Types: Get, Replace
- Values: <ACDC category>

The ACDC category indicates the category to which the identified application belongs. Table 5.4.13 gives the decode of the ACDC category. The highest ranked ACDC category means the ACDC category with the lowest value and a UE treats applications assigned to the highest ranked ACDC category as the least restriction to access attempts. The lowest

ranked ACDC category means the ACDC category with the highest value and a UE treats applications assigned to the lowest ranked ACDC category as the most restriction to access attempts.

Table 5.4.13: Values of ACDC category

Value	Description
0	Reserved
1	Highest ranked ACDC category value
2-15	ACDC category value indicating descending order of ranking
16	Lowest ranked ACDC category value

5.5 <X>/Ext

The Ext is an interior node for where the vendor specific information about the NAS configuration MO is being placed (vendor meaning application vendor, device vendor etc.). Usually the vendor extension is identified by vendor specific name under the ext node. The tree structure under the vendor identifier is not defined and can therefore include one or more un-standardized sub-trees.

- Occurrence: ZeroOrOne
- Format: node
- Access Types: Get
- Values: N/A

Annex A (informative): ACDC MO DDF

This DDF is the standardized minimal set. A vendor can define its own DDF for the complete device. This DDF can include more features than this minimal standardized version.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE MgmtTree PUBLIC "-//OMA//DTD-DM-DDF 1.2//EN"
"http://www.openmobilealliance.org/tech/DTD/dm_ddf-v1_2.dtd">

<MgmtTree>
  <VerDTD>1.2</VerDTD>
  <Man>--The device manufacturer--</Man>
  <Mod>--The device model--</Mod>

  <Node>
    <NodeName>ACDC</NodeName>
    <DFProperties>
      <AccessType>
        <Get/>
      </AccessType>
      <Description>ACDC settings</Description>
      <DFFormat>
        <node/>
      </DFFormat>
      <Occurrence>
        <ZeroOrOne/>
      </Occurrence>
      <DFTitle>The ACDC Management Object.</DFTitle>
      <DFType>
        <DDFName/>urn:oma:mo:ext-3gpp-ACDC-config:1.0<DDFName/>
      </DFType>
    </DFProperties>

    <Node>
      <NodeName>Name</NodeName>
      <DFProperties>
        <AccessType>
          <Get/>
        </AccessType>
        <DFFormat>
          <chr/>
        </DFFormat>
        <Occurrence>
          <ZeroOrOne/>
        </Occurrence>
        <DFTitle>User displayable name for the node.</DFTitle>
        <DFType>
          <MIME>text/plain</MIME>
        </DFType>
      </DFProperties>
    </Node>

    <Node>
      <NodeName>ACDC</NodeName>
      <!-- The ACDC node starts here. -->
      <DFProperties>
        <AccessType>
          <Get/>
          <Replace/>
        </AccessType>
        <DFFormat>
          <node/>
        </DFFormat>
        <Occurrence>
          <ZeroOrOne/>
        </Occurrence>
        <DFTitle>ACDC information for access control.</DFTitle>
        <DFType>
          <DDFName/>
        </DFType>
      </DFProperties>

    <Node>
      <NodeName></NodeName>
    </Node>
  </MgmtTree>
```

```

<DFProperties>
  <AccessType>
    <Get/>
    <Replace/>
  </AccessType>
  <DFFormat>
    <node/>
  </DFFormat>
  <Occurrence>
    <OneOrMore/>
  </Occurrence>
  <DFType>
    <DDFName></DDFName>
  </DFType>
</DFProperties>

<Node>
  <NodeName>ACDCConf</NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <node/>
    </DFFormat>
    <Occurrence>
      <One/>
    </Occurrence>
    <DFTitle>ACDC configuration parameter.</DFTitle>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
  </DFProperties>

  <Node>
    <NodeName></NodeName>
    <DFProperties>
      <AccessType>
        <Get/>
        <Replace/>
      </AccessType>
      <DFFormat>
        <node/>
      </DFFormat>
      <Occurrence>
        <OneOrMore/>
      </Occurrence>
      <DFType>
        <DDFName></DDFName>
      </DFType>
    </DFProperties>

  <Node>
    <NodeName>ApplicationInfo</NodeName>
    <DFProperties>
      <AccessType>
        <Get/>
        <Replace/>
      </AccessType>
      <DFFormat>
        <node/>
      </DFFormat>
      <Occurrence>
        <One/>
      </Occurrence>
      <DFTitle>Application information.</DFTitle>
      <DFType>
        <MIME>text/plain</MIME>
      </DFType>
    </DFProperties>

  <Node>
    <NodeName></NodeName>
    <DFProperties>
      <AccessType>
        <Get/>
        <Replace/>
      </AccessType>

```

```

</AccessType>
<DFFormat>
  <node/>
</DFFormat>
<Occurrence>
  <OneOrMore/>
</Occurrence>
<DFType>
  <DDFName></DDFName>
</DFType>
</DFProperties>
<Node>
  <NodeName>App-ID</NodeName>
  <!-- The application ID. -->
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <node/>
    </DFFormat>
    <Occurrence>
      <ZeroOrOne/>
    </Occurrence>
    <DFTitle>application identifier</DFTitle>
    <DFType>
      <DDFName/>
    </DFType>
  </DFProperties>
</Node>
<Node>
  <NodeName></NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <node/>
    </DFFormat>
    <Occurrence>
      <OneOrMore/>
    </Occurrence>
    <DFType>
      <DDFName></DDFName>
    </DFType>
  </DFProperties>
</Node>
<Node>
  <NodeName>OSId</NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <chr/>
    </DFFormat>
    <Occurrence>
      <One/>
    </Occurrence>
    <DFTitle>Operating system identifier</DFTitle>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
  </DFProperties>
</Node>
<Node>
  <NodeName>OSApps</NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>

```

```
<node/>
</DFFormat>
<Occurrence>
  <One/>
</Occurrence>
<DFTitle>OS specific applications</DFTitle>
<DFType>
  <DDFName/>
</DFType>
</DFProperties>

<Node>
  <NodeName></NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <node/>
    </DFFormat>
    <Occurrence>
      <OneOrMore/>
    </Occurrence>
    <DFType>
      <DDFName></DDFName>
    </DFType>
  </DFProperties>

  <Node>
    <NodeName>OSAppId</NodeName>
    <DFProperties>
      <AccessType>
        <Get/>
        <Replace/>
      </AccessType>
      <DFFormat>
        <chr/>
      </DFFormat>
      <Occurrence>
        <One/>
      </Occurrence>
      <DFTitle>OS specific app ID</DFTitle>
      <DFType>
        <MIME>text/plain</MIME>
      </DFType>
    </DFProperties>
  </Node>
</Node>
</Node>
</Node>
</Node>
</Node>
</Node>

<Node>
  <NodeName>ACDCCategory</NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
      <Replace/>
    </AccessType>
    <DFFormat>
      <int/>
    </DFFormat>
    <Occurrence>
      <One/>
    </Occurrence>
    <DFTitle>ACDC category</DFTitle>
    <DFType>
      <MIME>text/plain</MIME>
    </DFType>
  </DFProperties>
</Node>
</Node>
</Node>
</Node>
</Node>
```

```
<Node>
  <NodeName>Ext</NodeName>
  <DFProperties>
    <AccessType>
      <Get/>
    </AccessType>
    <DFFormat>
      <node/>
    </DFFormat>
    <Occurrence>
      <ZeroOrOne/>
    </Occurrence>
    <DFTitle>A collection of all extension objects.</DFTitle>
    <DFType>
      <DDFName/>
    </DFType>
  </DFProperties>
</Node>
</Node>
</MgmtTree>
```


Annex B (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
2015-02					TS skeleton generated for submission at CT1#90	-	0.0.0
2015-02	CT1#90				Includes the following contribution agreed by CT1: C1-150781	0.0.0	0.1.0
2015-08	CT1#93				Implementation of the following contribution agreed by CT1: C1-152934	0.1.0	0.2.0
2015-09	CT-69	CP-150537			Version 1.0.0 created for presentation for information	0.2.0	1.0.0
2015-10	CT1#94				Implementation of the following contributions agreed by CT1: C1-153670 and C1-153671	1.0.0	1.1.0
2015-12	CT-70	CP-150732			Version 2.0.0 created for presentation for approval	1.1.0	2.0.0
2015-12	CT-70				Version 13.0.0 created after approval	2.0.0	13.0.0
2016-03	CT-71	CP-160069	0001		Removal of Editor's note on MO identifier in TS 24.105	13.0.0	13.1.0

Change history							
Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2017-03	-	-	-	-		Update to Rel-14 version (MCC)	14.0.0
2018-06	SA-80					Update to Rel-15 version (MCC)	15.0.0
2020-07	SA-88e	-	-	-		Update to Rel-16 version (MCC)	16.0.0

History

Document history		
V16.0.0	July 2020	Publication