**3GPP TSG-CT WG1 Meeting #136-eC1-22xxxx**

**E-Meeting, 12th – 20th May 2022 (was C1-223517)**

|  |
| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **24.368** | **CR** | **0061** | **rev** | **2** | **Current version:** | **17.2.0** |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network |  | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  | Allow configurable attach and TAU retries for some lower layer failures |
|  |  |
| ***Source to WG:*** | Qualcomm Incorporated, Verizon, NTT DOCOMO |
| ***Source to TSG:*** | C1 |
|  |  |
| ***Work item code:*** | TEI17 |  | ***Date:*** | 05-15-2022 |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** | Rel-17 |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | Currently, 2G/3G refarming is ongoing and 4G might be the only available option in remote/rural areas. When the UE enters such an area with marginal coverage and NAS attempts Attach or TAU procedure, the lower layer might not be able to have successful RACH procedure and NAS can exhaust the 5 attempts of Attach or TAU procedure spaced out by timer T3411 and timer T3402 starts with the default value of 12 minutes. It is possible that the user might move into better coverage location but NAS will not re-attempt Attach or TAU procedure sooner than timer T3402.For RACH specific failures (T300 expiry or cell re-selection/selection while T300 is running) where lower layer reports “failure to establish the RRC connection” to NAS (see subclause 5.3.3.5 and subclause 5.3.3.6 in TS 36.331), it is useful to give the UE the fexibility to retry Attach and TAU procedure beyond retry with back-off timer T3411 and the strict 5 attempts currectly allowed by specification. |
|  |  |
| ***Summary of change:*** | A configuration parameter to allow flexible retries for attach and TAU is introduced. The UE has the option to keep retrying the pending attach or TAU procedure using smaller back-off timer MinRetryTimer (similar or different value to T3411) for maximum of MaxMinRetry attempts (e.g. 5) then afterwards using back-off timer MaxRetryTimer (similar or different value to T3402) for one or more attempts. |
|  |  |
| ***Consequences if not approved:*** | When the UE enters 4G only coverage with weak signal condition, the UE might not allow service recovery earlier than default T3402 value = 12 minutes although the UE might move to an area with better signal condition sooner |
|  |  |
| ***Clauses affected:*** | 4, 5.10.zx (New), 5.10.zy (New), 5.10.zz1 (New), 5.10.zz2 (New), Annex A |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | Rev1: Same as C1-221197 |

**\*\*\*\*\*\*\***

\* \* \* First Change \* \* \* \*

# 4 NAS configuration MO

The NAS configuration MO is used to manage configuration parameters related to NAS functionality for a UE supporting provisioning of such information. The presence and format of the non-access stratum configuration file on the USIM is specified in 3GPP TS 31.102 [6].

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

The OMA DM Access Control List (ACL) property mechanism (see OMA-ERELD-DM-V1\_2 [2]) may be used to grant or deny access rights to OMA DM servers in order to modify nodes and leaf objects of the NAS configuration MO.

The following nodes and leaf objects are possible in the NAS configuration MO as described in figure 4-1:

##

Figure 4-1: The NAS configuration Management Object (1 of 3)



Figure 4-2: The NAS configuration Management Object (2 of 3)



Figure 4-3: The NAS configuration Management Object (3 of 3)

\* \* \* Next Change \* \* \* \*

## 5.10zx /*<X>*/CustomLLFailureRetry

The interior node contains configuration parameters to enable the custom retry in case of lower layer failure to establish the RRC connection during an attach or tracking area updating procedure, see 3GPP TS 24.301 [5].

- Occurrence: ZeroOrOne

- Format: node

- Access Types: Get, Replace

- Values: N/A

## 5.10zy /*<X>*/ CustomLLFailureRetry/MinRetryTimer

The MinRetyTimer leaf contains the minimum retry timer value in seconds for the lower layer failure to establish the RRC connection during an attach or tracking area updating procedure, see 3GPP TS 24.301 [5].

- Occurrence: One

- Format: int

- Access Types: Get, Replace

- Values: 1-255

## 5.10zz1 /*<X>*/ CustomLLFailureRetry/MaxRetryTimer

The MaxRetyTimer leaf contains the maximum retry timer value in seconds for the lower layer failure to establish the RRC connection during an attach or tracking area updating procedure, see 3GPP TS 24.301 [5].

- Occurrence: One

- Format: int

- Access Types: Get, Replace

- Values: 1-1024

## 5.10zz2 /*<X>*/ CustomLLFailureRetry/MaxMinRetry

The MaxMinRetry leaf contains the maximum number of allowed consecutive retries with MinRetryTimer for the lower layer failure to establish the RRC connection during an attach or tracking area updating procedure, see 3GPP TS 24.301 [5].

- Occurrence: One

- Format: int

- Access Types: Get, Replace

- Values: 1-20

\* \* \* Next Change \* \* \* \*

Annex A (informative):
NAS configuration 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.

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"http://www.openmobilealliance.org/tech/DTD/dm\_ddf-v1\_2.dtd">

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 <Dynamic/>

 </Scope>

 <DFTitle>List of manufacturer-assigned UE radio capability IDs.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName>Vendor ID</NodeName>

 <DFProperties>

 <AccessType>

 <Get/>

 <Replace/>

 </AccessType>

 <DFFormat>

 <chr/>

 </DFFormat>

 <Occurrence>

 <One/>

 </Occurrence>

 <DFTitle>Vendor ID.</DFTitle>

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 </DFType>

 </DFProperties>

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 <NodeName></NodeName>

 <DFProperties>

 <AccessType>

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 </DFFormat>

 <Occurrence>

 <OneOrMore/>

 </Occurrence>

 <Scope>

 <Dynamic/>

 </Scope>

 <DFTitle> List of manufacturer-assigned UE radio capability IDs and associated radio configurations.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName>RCI</NodeName>

 <DFProperties>

 <AccessType>

 <Get/>

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 </AccessType>

 <DFFormat>

 <chr/>

 </DFFormat>

 <Occurrence>

 <One/>

 </Occurrence>

 <DFTitle>Radio Configuration Identifier.</DFTitle>

 <DFType>

 <MIME>text/plain</MIME>

 </DFType>

 </DFProperties>

 </Node>

 <Node>

 <NodeName>UERadioConfigLTE</NodeName>

 <DFProperties>

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 </AccessType>

 <DFFormat>

 <bin/>

 </DFFormat>

 <Occurrence>

 <ZeroOrOne/>

 </Occurrence>

 <DFTitle>UE radio configuration asosciated with the RCI encoded as specified in TS 36.331.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 </Node>

 <Node>

 <NodeName>UERadioConfigNR</NodeName>

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 </DFFormat>

 <Occurrence>

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 <DFTitle>UE radio configuration asosciated with the RCI encoded as specified in TS 38.331.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 </Node>

 </Node>

 </Node>

 <Node>

 <NodeName>RLOSAllowedMCCList</NodeName>

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 <node/>

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 <Occurrence>

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 <Scope>

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 </Scope>

 <DFTitle>List of RLOS allowed MCCs.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName></NodeName>

 <DFProperties>

 <AccessType>

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 <Occurrence>

 <OneOrMore/>

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 <Scope>

 <Dynamic/>

 </Scope>

 <DFTitle> List of RLOS allowed MCCs.</DFTitle>

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 <DDFName/>

 </DFType>

 </DFProperties>

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 <NodeName>MCC</NodeName>

 <DFProperties>

 <AccessType>

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 </AccessType>

 <DFFormat>

 <chr/>

 </DFFormat>

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 <DFTitle>MCC value of a RLOS allowed MCC.</DFTitle>

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 </DFProperties>

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 </Node>

 </Node>

 <Node>

 <NodeName>SNPN\_Configuration</NodeName>

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 </DFFormat>

 <Occurrence>

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 </Occurrence>

 <Scope>

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 </Scope>

 <DFTitle>Configuration parameters regarding a UE operating in SNPN access operation mode.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName></NodeName>

 <DFProperties>

 <AccessType>

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 </AccessType>

 <DFFormat>

 <node/>

 </DFFormat>

 <Occurrence>

 <OneOrMore/>

 </Occurrence>

 <Scope>

 <Dynamic/>

 </Scope>

 <DFTitle>List of {SNPN identifier, configuration parameters regarding 3GPP PS data off for a UE which selected an entry of "list of subscriber data" with the subscribed SNPN identified by the SNPN identifier, configured UE retry wait time value for a UE which selected an entry of "list of subscriber data" with the subscribed SNPN identified by the <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName>SNPN\_identifier</NodeName>

 <DFProperties>

 <AccessType>

 <Get/>

 <Replace/>

 </AccessType>

 <DFFormat>

 <chr/>

 </DFFormat>

 <Occurrence>

 <One/>

 </Occurrence>

 <DFTitle>SNPN identity of the subscribed SNPN of an entry of "list of subscriber data", for which the 3GPP\_PS\_data\_off leaf or SM\_RetryWaitTime leaf is applicable.</DFTitle>

 <DFType>

 <MIME>text/plain</MIME>

 </DFType>

 </DFProperties>

 </Node>

 <Node>

 <NodeName>3GPP\_PS\_data\_off</NodeName>

 <DFProperties>

 <AccessType>

 <Get/>

 <Replace/>

 </AccessType>

 <DFFormat>

 <node/>

 </DFFormat>

 <Occurrence>

 <ZeroOrOne/>

 </Occurrence>

 <Scope>

 <Dynamic/>

 </Scope>

 <DFTitle>Configuration parameters regarding 3GPP PS data off for a UE in the SNPN identified by the SNPN\_identifier leaf.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName>Exempted\_service\_list</NodeName>

 <DFProperties>

 <AccessType>

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 <Replace/>

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 <DFFormat>

 <node/>

 </DFFormat>

 <Occurrence>

 <One/>

 </Occurrence>

 <Scope>

 <Dynamic/>

 </Scope>

 <DFTitle>List of services which are exempted of 3GPP PS data off for a UE in the SNPN identified by the SNPN\_identifier leaf.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName>Device\_management\_over\_PS</NodeName>

 <DFProperties>

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 <Occurrence>

 <One/>

 </Occurrence>

 <Scope>

 <Dynamic/>

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 <DFTitle>Device management over PS which is a 3GPP PS data off exempt service for a UE in the SNPN identified by the SNPN\_identifier leaf.</DFTitle>

 <DFType>

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 </DFType>

 </DFProperties>

 </Node>

 <Node>

 <NodeName>Bearer\_independent\_protocol</NodeName>

 <DFProperties>

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 </AccessType>

 <DFFormat>

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 </DFFormat>

 <Occurrence>

 <ZeroOrOne/>

 </Occurrence>

 <Scope>

 <Dynamic/>

 </Scope>

 <DFTitle>Bearer\_independent\_protocol which is a 3GPP PS data off exempt service for a UE in the SNPN identified by the SNPN\_identifier leaf.</DFTitle>

 <DFType>

 <MIME>text/plain</MIME>

 </DFType>

 </DFProperties>

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 </Node>

 <Node>

 <NodeName>Exempted\_service\_list\_non\_subscribed\_SNPN</NodeName>

 <DFProperties>

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 </AccessType>

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 <DFTitle>List of services which are exempted of 3GPP PS data off for a UE in non-subscribed SNPN.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName>Device\_management\_over\_PS</NodeName>

 <DFProperties>

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 <Occurrence>

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 <DFTitle>Device management over PS which is a 3GPP PS data off exempt service for a UE in non-subscribed SNPN.</DFTitle>

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 <NodeName>Bearer\_independent\_protocol</NodeName>

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 <Occurrence>

 <ZeroOrOne/>

 </Occurrence>

 <Scope>

 <Dynamic/>

 </Scope>

 <DFTitle>Bearer\_independent\_protocol which is a 3GPP PS data off exempt service for a UE in non-subscribed SNPN.</DFTitle>

 <DFType>

 <MIME>text/plain</MIME>

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 </Node>

 <Node>

 <NodeName>SM\_RetryWaitTime</NodeName>

 <DFProperties>

 <AccessType>

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 </AccessType>

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 </DFFormat>

 <Occurrence>

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 </Occurrence>

 <DFTitle> SM\_RetryWaitTime for a UE in the SNPN identified by the SNPN\_identifier leaf</DFTitle>

 <DFType>

 <MIME>text/plain</MIME>

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 <Node>

 <NodeName>Timer\_T3245\_Behaviour</NodeName>

 <DFProperties>

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 </AccessType>

 <DFFormat>

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 </DFFormat>

 <Occurrence>

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 <DFTitle> Timer\_T3245\_Behaviour for a UE in the SNPN identified by the SNPN\_identifier leaf</DFTitle>

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 <Node>

 <NodeName>NoEUTRADisablingIn5GS</NodeName>

 <DFProperties>

 <AccessType>

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 </AccessType>

 <DFFormat>

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 </DFFormat>

 <Occurrence>

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 </Occurrence>

 <DFTitle> NoEUTRADisablingIn5GS.</DFTitle>

 <DFType>

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 </DFType>

 </DFProperties>

 </Node>

 <Node>

 <NodeName>Re\_enable\_N1\_upon\_reattach</NodeName>

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 </AccessType>

 <DFFormat>

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 </DFFormat>

 <Occurrence>

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 </Occurrence>

 <DFTitle> Re enable N1 upon reattach.</DFTitle>

 <DFType>

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 <Node>

 <NodeName>CustomLLFailureRetry</NodeName>

 <DFProperties>

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 <DFFormat>

 <node/>

 </DFFormat>

 <Occurrence>

 <ZeroOrOne/>

 </Occurrence>

 <DFTitle> Configuration parameters for custom retry in case of lower layer failure to establish the RRC connection.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 <Node>

 <NodeName> MinRetryTimer</NodeName>

 <DFProperties>

 <AccessType>

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 </DFType>

 </DFProperties>

 </Node>

 <Node>

 <NodeName> MaxRetryTimer</NodeName>

 <DFProperties>

 <AccessType>

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 <Occurrence>

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 <DFTitle> MaxRetryTimer .</DFTitle>

 <DFType>

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 <DFFormat>

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 <Occurrence>

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 </AccessType>

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 </DFFormat>

 <Occurrence>

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 </Occurrence>

 <DFTitle>A collection of all extension objects.</DFTitle>

 <DFType>

 <DDFName/>

 </DFType>

 </DFProperties>

 </Node>

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</MgmtTree>

\* \* \* End of Changes \* \* \* \*