**3GPP TSG-CT WG4 Meeting #111-e *rev* C4-224078**

**E-Meeting, 18th – 26th August 2022**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **29.244** | **CR** | **0652** | **rev** | **1** | **Current version:** | **17.5.0** |  |
|  | | | | | | | | |
| *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)*.* | | | | | | | | |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Corrections on applicability of Flags | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | CT4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 2022-07-01 |
|  |  | | | |  | |  | | |  |
| ***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 can be 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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | There are two conditons mentioned which trigger the setting of the flag PSDBU. The formating of the texty does not show this clearly.  The table does not show when the Control of Inactive Measurement Flag is applicable. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | PSDBU (PFCP Session Deleted By the UP function) flag setting is clarified.  Control of Inactive Measurement Flag: the applicability of the flag is clearly indicated.  Table headers are corrected. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The condition when to set the PSDBU may be misinterpreted.  It is not mentioned when the Control of Inactive Measurement Flag is applicable. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.2.3.1, 5.18.1, 5.18.2, 7.4.2.1, 7.5.8.1, 7.5.4.4 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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: change setting of the Flag PSDBU. | | | | | | | | |

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

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#### 7.4.2.1 Heartbeat Request

Table 7.4.2.1-1: Information Elements in Heartbeat Request

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Information  elements | P | Condition / Comment | **Appl.** | | | | | **IE Type** |
| **Sxa** | **Sxb** | **Sxc** | **N4** | **N4mb** |
| Recovery Time Stamp | M | This IE shall contain the time stamp when the PFCP entity was started see clause 19A of 3GPP TS 23.007 [24]. | X | X | X | X | X | Recovery Time Stamp |
| Source IP Address | O | This IE may be included when a Network Address Translation device is deployed in the network. See clause 19a in 3GPP TS 23.007 [24]. | X | X | X | X | X | Source IP Address |

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

#### 7.5.8.1 General

The PFCP Session Report Request shall be sent over the Sxa, Sxb, Sxc, N4 and N4mb interface by the UP function to report information related to a PFCP session to the CP function.

Table 7.5.8.1-1: Information Elements in a PFCP Session Report Request

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Information elements | P | Condition / Comment | Appl. | | | | | IE Type |
| Sxa | Sxb | Sxc | N4 | N4mb |
| Report Type | M | This IE shall indicate the type of the report. | X | X | X | X | X | Report Type |
| Downlink Data Report | C | This IE shall be present if the Report Type indicates a Downlink Data Report. | X | - | - | X | X | Downlink Data Report |
| Usage Report | C | This IE shall be present if the Report Type indicates a Usage Report.  Several IEs within the same IE type may be present to represent a list of Usage Reports. | X | X | X | X | FFS | Usage Report |
| Error Indication Report | C | This IE shall be present if the Report Type indicates an Error Indication Report. | X | X | - | X | X | Error Indication Report |
| Load Control Information | O | The UP function may include this IE if it supports the load control feature and the feature is activated in the network.  See Table 7.5.3.3-1. | X | X | X | X | X | Load Control Information |
| Overload Control Information | O | During an overload condition, the UP function may include this IE if it supports the overload control feature and the feature is activated in the network.  See Table 7.5.3.4-1. | X | X | X | X | X | Overload Control Information |
| Additional Usage Reports Information | C | This IE shall be included in one of the additional PFCP Session Report Request messages, if the PFCP Session Modification Response or the PFCP Session Deletion Response indicated that more usage reports would follow (i.e. if the AURI flag was set to "1") (see clause 5.2.2.3.1).  When present, this IE shall indicate the total number of usage reports that need to be sent in all the additional PFCP Session Report Request messages.  This IE may also be included in every additional PFCP Session Report Request message but the last one, with the AURI flag set to 1, to indicate that more usage reports will follow in additional PFCP Session Report Request message. | X | X | X | X | FFS | Additional Usage Reports Information |
| PFCPSRReq-Flags | C | This IE shall be included if at least one of the flags is set to "1".  - PSDBU (PFCP Session Deleted By the UP function): - if both the CP function and UP function support the EPFAR feature,the UP function may set this flag if the UP function needs to delete the PFCP session, e.g. to report all remaining non-zero usage reports for all URRs in the PFCP Session and the PFCP session is being deleted locally in the UP function.  - the UP function shall also set this flag when sending the last PFCP Session Report Request message after having received a PFCP Session Deletion Request (see clause 5.2.2.3.1). | X | X | X | X | FFS | PFCPSRReq-Flags |
| Old CP F-SEID | C | This IE shall be present if the UPF sends the PFCP Session Report Request to a different SMF in an SMF Set. See clauses 5.22.2 and 5.22.3.  When present, it shall indicate the CP F-SEID assigned by the previous SMF to the PFCP session. | - | - | - | X | X | F-SEID |
| Packet Rate Status Report | C | This IE shall be present if the EPFAR is used (see clause 5.18), UP function initiates a PFCP Session release and the CP function has requested in a QER to report the packet rate status when the PFCP session is released.  See Table 7.5.7.1-1. | - | X | - | X | - | Packet Rate Status Report |
| TSC Management Information | C | This IE shall be present if the Report Type indicates TSC Management Information Report.  Several IEs within the same IE type may be present to transfer PMICs for different NW-TT ports. | - | - | - | X | - | TSC Management Information |
| Session Report | C | This IE shall be present if the Report Type indicates a Session Report. See Table 7.5.8.6-1.  Several IEs within the same IE type may be present to represent a list of Session Reports. | - | - | - | X | - | Session Report |
| Cause | O | This IE may be present to provide additional reason for sending the PFCP Session Report Request message, e.g. for a UP function initiated PFCP session deletion due to the corresponding L2TP session being terminated. | - | X | - | X | - | Cause |

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

#### 7.5.4.4 Update URR IE within PFCP Session Modification Request

The Update URR grouped IE shall be encoded as shown in Figure 7.5.4.4-1.

Table 7.5.4.4-1: Update URR IE within PFCP Session Modification Request

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Octet 1 and 2 | |  | | Update URR IE Type = 13 (decimal) | | | | | | | | | | | | |
| Octets 3 and 4 | |  | | Length = n | | | | | | | | | | | | |
| Information elements | | P | | Condition / Comment | | Appl. | | | | | | | | IE Type | | |
| Sxa | | Sxb | | Sxc | | N4 | |
| URR ID | | M | | This IE shall uniquely identify the URR among all the URRs configured for that PFCP session | | X | | X | | X | | X | | URR ID | | |
| Measurement Method | | C | | This IE shall be present if the measurement method needs to be modified.  When present, this IE shall indicate the method for measuring the network resources usage, i.e. whether the data volume, duration (i.e. time), combined volume/duration, or event shall be measured. | | X | | X | | X | | X | | Measurement Method | | |
| Reporting Triggers | | C | | This IE shall be present if the reporting triggers needs to be modified.  When present, this IE shall indicate the trigger(s) for reporting network resources usage to the CP function, e.g. periodic reporting or reporting upon reaching a threshold, or envelope closure, or when an SMF instructs an UPF to report the reception of the End Marker packet from the old I-UPF during a Service Request procedure (see clauses 4.2.3.2 and 4.23.4.3 in 3GPP TS 23.502 [29]). | | X | | X | | X | | X | | Reporting Triggers | | |
| Measurement Period | | C | | This IE shall be present if the Measurement Period needs to be modified.  When present, it shall indicate the period for generating and reporting usage reports. | | X | | X | | X | | X | | Measurement Period | | |
| Volume Threshold | | C | | This IE shall be present if the Volume Threshold needs to be modified. When present, it shall indicate the traffic volume value after which the UP function shall report network resources usage to the CP function for this URR. | | X | | X | | X | | X | | Volume Threshold | | |
| Volume Quota | | C | | This IE shall be present if the Volume Quota needs to be modified.  When present, it shall indicate the Volume Quota value. | | - | | X | | X | | X | | Volume Quota | | |
| Time Threshold | | C | | This IE shall be present if the Time Threshold needs to be modified. When present, it shall indicate the time usage after which the UP function shall report network resources usage to the CP function for this URR. | | X | | X | | X | | X | | Time Threshold | | |
| Time Quota | | C | | This IE shall be present if the Time Quota needs to be modified.  When present, it shall indicate the Time Quota value. | | - | | X | | X | | X | | Time Quota | | |
| Event Threshold | | C | | This IE shall be present if Event Threshold needs to be modified.  When present, it shall indicate the number of events after which the UP function shall report to the CP function for this URR. | | - | | X | | X | | X | | Event Threshold | |
| Event Quota | | C | | This IE shall be present if Event Quota needs to be modified.  When present, it shall indicate the Event Quota value. | | - | | X | | X | | X | | Event Quota | |
| Quota Holding Time | | C | | This IE shall be present if the Quota Holding Time needs to be modified.  When present, it shall contain the duration of the Quota Holding Time. | | - | | X | | X | | X | | Quota Holding Time | | |
| Dropped DL Traffic Threshold | | C | | This IE shall be present if the Dropped DL Threshold needs to be modified.  When present, it shall contain the threshold of the DL traffic being dropped. | | X | | - | | - | | X | | Dropped DL Traffic Threshold | | |
| Quota Validity Time | | C | | This IE shall be present if Quota Validity time was not sent earlier or quota validity time value needs to be modified. | | - | | X | | - | | X | | Quota Validity Time | | |
| Monitoring Time | | C | | This IE shall be present if the Monitoring Time needs to be modified. When present, this IE shall contain the time at which the UP function shall re-apply the volume or time threshold. | | X | | X | | X | | X | | Monitoring Time | | |
| Subsequent Volume Threshold | | C | | This IE shall be present if the Subsequent Volume Threshold needs to be modified and volume-based measurement is used.  When present, it shall indicate the traffic volume value after which the UP function shall report network resources usage to the CP function for this URR for the period after the Monitoring Time. | | X | | X | | X | | X | | Subsequent Volume Threshold | | |
| Subsequent Time Threshold | | C | | This IE shall be present if the Subsequent Time Threshold needs to be modified. When present, it shall indicate the time usage value after which the UP function shall report network resources usage to the CP function for this URR for the period after the Monitoring Time. | | X | | X | | X | | X | | Subsequent Time Threshold | | |
| Subsequent Volume Quota | | C | | This IE shall be present if the Subsequent Volume Quota needs to be modified.  When present, it shall indicate the Volume Quota value which the UP function shall use for this URR for the period after the Monitoring Time. | | - | | X | | X | | X | | Subsequent Volume Quota | | |
| Subsequent Time Quota | | C | | This IE shall be present if the Subsequent Time Quota needs to be modified.  When present, it shall indicate the Time Quota value which the UP function shall use for this URR for the period after the Monitoring Time. | | - | | X | | X | | X | | Subsequent Time Quota | | |
| Subsequent Event Threshold | | O | | This IE shall be present if the Subsequent Event Threshold needs to be modified.  When present, it shall indicate the number of events after which the UP function shall report to the CP function for this URR for the period after the Monitoring Time. | | - | | X | | X | | X | | Subsequent Event Threshold | |
| Subsequent Event Quota | | O | | This IE shall be present if the Subsequent Event Quota needs to be modified.  When present, it shall indicate the Event Quota value which the UP function shall use for this URR for the period after the Monitoring Time. | | - | | X | | X | | X | | Subsequent Event Quota | |
| Inactivity Detection Time | | C | | This IE shall be present if the Inactivity Detection Time needs to be modified.  When present, it shall indicate the duration of the inactivity period after which time measurement needs to be suspended when no packets are received during this inactivity period. | | - | | X | | X | | X | | Inactivity Detection Time | | |
| Linked URR ID | | C | | This IE shall be present if linked usage reporting is required. When present, this IE shall contain the linked URR ID which is related with this URR (see clause 5.2.2.4).  Several IEs with the same IE type may be present to represent multiple linked URRs which are related with this URR. | | - | | X | | X | | X | | Linked URR ID | | |
| Measurement Information | | C | | his IE shall be included if any of the following flag is set to "1" or if the change of flag(s) from "1" to "0" results in the IE becoming set to all zeros.  Applicable flags are:  - Inactive Measurement Flag: this flag shall be set to "1" if the measurement shall be paused (inactive). The measurement shall be performed (active) if the bit is set to "0" or if the Measurement Information IE is not present in the Update URR IE.  - Reduced Application Detection Information Flag: this flag may be set to "1", if the Reporting Triggers request to report the start or stop of application, to request the UP function to only report the Application ID in the Application Detection Information, e.g. for envelope reporting.  - Immediate Start Time Metering Flag: this flag may be set to "1" if time-based measurement is used and the UP function is requested to start the time metering immediately at receiving the flag.  - Send Start Pause of Charging Flag: this flag may be set to "1" by the CP function if the UP Function is requested to send a Start Pause of Charging indication to the upstream GTP-U entity(s) when the Dropped DL Traffic Threshold is reached.  - Applicable for Start of Pause of Charging Flag: this flag may be set to "1" if the URR is applicable for Start of Pause of Charging, so that the UP function shall stop the usage measurement for the URR when receiving Start Pause of Charging indication from the peer downstream GTP-U entity.  - Control of Inactive Measurement Flag: the flag shall be set to "1" if the CP function requests the UP function to stop or resume the usage measurement for the URR with the "ASPOC" flag set to "1" according to the value of Inactive Measurement Flag. | | -  -  -  X  -  - | | X  X  X  -  X  X | | -  -  X  -  -  - | | X  X  X  X  X  X | | Measurement Information | | |
| Time Quota Mechanism | | C | | This IE shall be present if time-based measurement based on CTP or DTP needs to be modified. | | - | | X | | - | | - | | Time Quota Mechanism | | |
| Aggregated URRs | | C | | This IE shall be included if the Aggregated URRs IE needs to be modified. See Table 7.5.2.4-2.  Several IEs with the same IE type may be present to provision multiple aggregated URRs.  When present, this IE shall provide the complete list of the aggregated URRs. | | - | | X | | - | | - | | Aggregated URRs | | |
| FAR ID for Quota Action | | C | | This IE shall be present if the FAR ID for Quota Action IE needs to be modified. This IE may be present if the Volume Quota IE or the Time Quota IE or Event Quota IE is newly provisioned in the URR and the UP Function indicated support of the Quota Action.  When present, it shall contain the identifier of the substitute FAR the UP function shall apply, for the traffic associated to this URR, when exhausting any of these quotas. See NOTE 1, NOTE 2. | | - | | X | | X | | X | | FAR ID | | |
| Ethernet Inactivity Timer | | C | | This IE shall be present if the Ethernet Inactivity Timer needs to be modified. When present, it shall contain the duration of the Ethernet inactivity period. | | - | | - | | - | | X | | Ethernet Inactivity Timer | | |
| Additional Monitoring Time | | O | | This IE shall be present if the additional Monitoring Time needs to be modified. When present, this IE shall contain the time at which the UP function shall re-apply the volume or time or event threshold/quota. See Table 7.5.2.4-3.  The CP function shall provide the full set of Additional Monitoring Times IE(s). The UP function shall replace any Additional Monitoring Times IE(s) provisioned earlier by the new set of received IE(s). | | X | | X | | X | | X | | Additional Monitoring Time | | |
| Number of Reports | | O | | This IE may be present if the Number of Reports need to be changed. When present, it shall indicate the number of usage reports to be generated by the URR. See also clauses 5.2.2.2.1 and 5.2.2.3.1. | | X | | X | | X | | X | | Number of Reports | | |
| Exempted Application ID for Quota Action | | C | | This IE shall be present if Application ID for Quota Action needs to be changed.  When present, it shall contain an Application ID matching packets that shall be exempted from applying the FAR ID for Quota Action when the quota has been exhausted.  Several IEs with the same IE type may be present to provide multiple Application IDs.  The CP function shall always provide a complete list of Application IDs.  See NOTE 3. | | - | | X | | X | | X | | Application ID | | |
| Exempted SDF Filter for Quota Action | | C | | This IE shall be present if the SDF Filter for Quota Action needs to be changed.  When present, it shall contain a SDF Filter matching packets that shall be exempted from applying the FAR ID for Quota Action when the quota has been exhausted.  Several IEs with the same IE type may be present to provide multiple SDF Filters.  The CP function shall always provide a complete list of SDF Filters.  See NOTE 3. | | - | | X | | X | | X | | SDF Filter | | |
| User Plane Inactivity Timer | | C | | This IE shall be present if the User Plane Inactivity Timer needs to be modified.  When present, it shall contain the duration of the User Plane Inactivity Timer. | | - | | - | | - | | X | | User Plane Inactivity Timer | | |
| NOTE 1: The substitute FAR used when exhausting a Volume Quota or Time Quota may be set to drop the packets or redirect the traffic towards a redirect destination as specified in clause 5.4.7.  NOTE 2: If the FAR as indicated in the FAR ID for Quota Action is removed after being provisioned, the UP function shall behave as if the FAR ID for Quota Action is not provisioned and shall apply the default behaviour per local configuration when the quota is exhausted.  NOTE 3: The Exempted Application ID for Quota Action IE or Exempted Filter ID for Quota Action IE may be provisioned as the Restricted-Filter-Rule AVP or Filter ID AVP which is included in Final-Unit-Indication AVP from the online charging system when the Final-Unit-Action AVP is set to "REDIRECT" or "RESTRICT\_ACCESS". See also 3GPP TS 32.299 [18]. | | | | | | | | | | | | | | | | |

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