**3GPP TSG-CT WG1 Meeting #128-eC1-210769**

**Electronic meeting, 25 February – 5 March 2021**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.604** | **CR** | **0189** | **rev** | **-** | **Current version:** | **16.0.0** |  |
|  | | | | | | | | |
| *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 | **x** | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | Rapporteur review: fixed some editorials, drafting rule violations | | | | | | | | | |
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| ***Source to WG:*** | BlackBerry UK Ltd. | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | TEI17 | | | | |  | ***Date:*** | | | 08-02-2021 |
|  |  | | | |  | |  | | |  |
| ***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-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | - Spotted a MUST, see TS 21.801: “*Do not use "must" as an alternative for "shall". (This will avoid any confusion between the requirements of a standard and external statutory obligations).*”  - Spotted an ELSE  - Spotted a style issue | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Replace MUST with SHALL.  Replace ELSE with OTHERWISE  Fixed style issue | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Specification contains a MUST; unclear if the requirement is strictly to be followed in order to conform to the standard (see TS 21.801). | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.5.2.6.1, 4.6.7, 4.6.11 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | implemented suggestions received from Ericsson both online and offline. | | | | | | | | |

\*\*\* First change \*\*\*

##### 4.5.2.6.1 Checking of the diversion limits

When receiving an initial INVITE request and the AS determines that the AS shall divert a communication the AS shall check if diverting the communication exceeds the number of diversions allowed within the network. The AS shall calculate the number of diversions by examination of the History-Info header;

- using the entries including a cause-param URI parameter with cause values specified in subclause 4.5.2.6.2.2; or

- examine the entries in the Index entries parameter,

to see if another diversion is allowed due to network provider allowed limit of diversions

If the number of diversions exceeds the given limit then:

- if the diverted-to destination is known to be a non-retargeting destination (e.g. Voicemail), then it is based on operator policy to allow the communication diversion to be executed;

- if the network option "AS behaviour when the maximum number of diversions for a communication is reached" is set to "Reject the communication", then the AS shall send one of the following responses to the originating user:

a) if communication diversion forwarding busy a 486 (Busy Here);

b) if communication forwarding no reply, a 480 (Temporarily Unavailable);

c) if communication forwarding unconditional a 480 (Temporarily Unavailable);

d) if communication deflection, a 480 (Temporarily Unavailable);

e) if communication forwarding not logged in, a 480 (Temporarily Unavailable); or

f) if communication forwarding not reachable, a 480 (Temporarily Unavailable), and

include in the response a Warning header field indicating that the communication is released due to the extension of diversion hops (e.g. "Too many diversions appeared"); and

- if the network option "AS behaviour when the maximum number of diversions for a communication is reached" is set to "Deliver the communication to the latest diverting party", then the communication shall be delivered to the latest diverting party.

\*\*\* Next change \*\*\*

### 4.6.7 Communication Diversion Services (CDIV)

CFU, CFNL, and CFB when NDUB is used are all determined immediately when an initial INVITE request is received, and take precedence over CDIV services that are based on a response (CD, CFNRc, CFNR, and CFB when UDUB is used). CFU take precedence over all other CDIV services and the CDIV AS shall evaluate the rule associated with CFU before CFNL and CFB when NDUB is used. As CFNL and CFB cannot occur simultaneously there is no interaction. For CDIV services that are based on a response, the response received first will invoke the associated CDIV service.

For the indication of communication diversion to the diverting user service, the provision and activation of at least one redirection service is a pre-requirement to provision and activate the indication of communication diversion to the diverting user service

\*\*\* Next change \*\*\*

### 4.6.11 Communication Waiting (CW)

**Communication Forwarding Unconditional (CFU):** CW has no impact on CFU. The communication will be forwarded without regard to the terminating party's state. The CFU service can be activated while a call is waiting without changing the state of the waiting call. A forwarded communication can result in the communication waiting service.

**Communication Forwarding Busy (CFB):** No impact, i.e. neither service affects the operation of the other service. A forwarded communication can result in the communication waiting service.

NOTE 1: If the terminating party is NDUB, the CW service will not be invoked, and the CFB service is invoked if it was activated.

**Communication Forwarding No Reply (CFNR):** If the terminating party has activated the CFNR service, then the CW AS still shall offer a waiting communication. If the CFNR timer expires before an answer is received, then the CFNR service shall be invoked and the CDIV AS shall forward the communication. The CDIV AS cancels the communitication to the served user. A forwarded communication can result in the communication waiting service.

**Communication Forwarding on Not Logged-in (CFNL):** No impact, i.e. neither service affects the operation of the other service.

NOTE 2: If a party with an active communication waiting logs out, all active and offered communications would be released.

**Communication Deflection (CD):** When receiving the communication waiting indication, terminating party can invoke the CD service. A deflected communication can result in the communication waiting service.

**Communication Forwarding on Subscriber Not Reachable (CFNRc):** No impact, i.e. neither service affects the operation of the other service.

*condition2*

</cp:conditions>

<cp:actions>

<forward-to>

<target>

*targetAddress1*

</target>

<notify-caller>true</notify-caller>

</forward-to>

</cp:actions>

</cp:rule>

To give more guidance, an example of such a rule is shown below:

<cp:rule id="*rule66*">

<cp:conditions>

<ss:busy/>

<ss:media>audio</ss:media>

<cp:identity>

<cp:one>id=serveduser@domain</cp:one>

</cp:identity>

</cp:conditions>

<cp:actions>

<forward-to>

<target>

*targetAddress1*

</target>

<notify-caller>true</notify-caller>

</forward-to>

</cp:actions>

</cp:rule>

When the service processes a set of rules it shall start executing the first rule. If:

- the rule has no <conditions> element;

- the rule has an empty <conditions> element; or

- conditions are present and they all evaluate to true;

then the rule matches and the specified action is executed. When a rule matches remaining rules in the rule set shall be discarded. Applied to the fragment above this means that only if the expression (*condition1* AND *condition2*) evaluates to true that then the *rule66* matches and the forward-to action is executed.

When the rule does not match the following rule shall be selected and the same procedure repeated, until a matching rule is found or the set of remaining rules is empty.

The "id" attribute value of a rule shall uniquely identify the rule within a rule set. This can be used in XCAP usage to address one specific rule.