

ETSI TS 129 524 V16.1.0 (2020-07)



**5G;  
5G System;  
Cause codes mapping between 5GC interfaces;  
Stage 3  
(3GPP TS 29.524 version 16.1.0 Release 16)**



---

**Reference**

RTS/TSGC-0429524vg10

---

**Keywords**

5G

**ETSI**

650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

---

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

---

**Important notice**

---

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format at [www.etsi.org/deliver](http://www.etsi.org/deliver).

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

---

**Copyright Notification**

---

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2020.

All rights reserved.

**DECT™**, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

**3GPP™** and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

**oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners.

**GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

---

## Intellectual Property Rights

### Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

### Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

---

## Legal Notice

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities. These shall be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

---

## Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

# Contents

|   |           |
|---|-----------|
| Intellectual Property Rights .....  | 2         |
| Legal Notice .....  | 2         |
| Modal verbs terminology.....  | 2         |
| Foreword.....   | 4         |
| 1 Scope .....   | 5         |
| 2 References .....  | 5         |
| 3 Definitions, symbols and abbreviations .....  | 6         |
| 3.1 Abbreviations .....   | 6         |
| 4 Mapping between 5GC interfaces causes and 5GMM Cause Codes by AMF.....                          | 6         |
| 4.1 General .....   | 6         |
| 4.2 Mapping between Nausf services causes and 5GMM causes.....                                    | 6         |
| 4.2.1 General.....  | 6         |
| 4.3 Mapping between Nsmf services causes and 5GMM causes .....                                    | 8         |
| 4.3.1 General.....  | 8         |
| 4.3.2 Mapping between Nsmf_PDUSession service causes on N11 and 5GMM causes .....                 | 8         |
| 4.3.2.1 General .....   | 8         |
| 4.3.2.2 Mapping from HTTP to 5GMM Cause Values.....   | 8         |
| 4.4 Mapping between Nudm services causes and 5GMM causes .....                                    | 9         |
| 4.4.1 General.....  | 9         |
| 4.4.2 Mapping between Nudm_UEContextManagement service causes on N8 and 5GMM causes.....          | 9         |
| 4.4.2.1 General .....   | 9         |
| 4.4.2.1 Mapping from HTTP to NAS cause values – Request rejected by UDM.....                      | 9         |
| 4.5 Mapping between Neir services causes and 5GMM causes .....                                    | 9         |
| 4.5.1 General.....  | 9         |
| 4.5.2 Mapping between N5g-eir_EquipmentIdentityCheck Service causes on N17 and 5GMM causes .....  | 10        |
| 4.5.2.1 General .....   | 10        |
| 4.5.2.2 Mapping from HTTP to NAS cause values – Request accepted by EIR.....                      | 10        |
| 4.6 Mapping between Nnssf services causes and 5GMM causes .....                                   | 10        |
| 4.6.1 General.....  | 10        |
| 4.6.2 Mapping between Nnssf_NSSelection service causes on N22 and 5GMM causes .....               | 10        |
| 4.6.2.1 General .....   | 10        |
| 4.6.2.2 Mapping from HTTP to 5GMM Cause Values.....   | 10        |
| 5 Mapping between 5GC interfaces causes and 5GSM Cause Codes by SMF.....                          | 10        |
| 5.1 General .....   | 10        |
| 5.2 Mapping between Npcf service causes on N7 and 5GSM causes .....                               | 11        |
| 5.2.1 General.....  | 11        |
| 5.2.2 Mapping between Npcf_SMPolicyControl Service causes on N7 and 5GSM causes .....             | 11        |
| 5.2.2.1 General .....   | 11        |
| 5.2.2.2 Mapping from HTTP to 5GSM cause values – Request rejected by PCF.....                     | 11        |
| 5.3 Mapping between Nudm service causes on N10 and 5GSM causes .....                              | 11        |
| 5.3.1 General.....  | 11        |
| 5.3.2 Mapping between Nudm_UEContextManagement service causes on N10 and 5GSM causes .....        | 11        |
| 5.3.2.1 General .....   | 11        |
| 5.3.2.2 Mapping from HTTP to 5GSM cause values – Request rejected by UDM due to N10 failures..... | 12        |
| 5.4.1 General.....  | 12        |
| 5.4.2 Mapping from N4 to 5GSM cause values.....   | 12        |
| <b>Annex A (informative): Change history .....</b>  | <b>13</b> |
| History .....   | 14        |

---

# Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- 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 specifies the mapping:

- performed by the AMF between HTTP responses (Status Codes and Protocol or Application Errors) returned by 5GC NFs to the AMF and 5GMM Cause values sent to UEs;
- performed by the SMF between HTTP responses (Status Codes and Protocol or Application Errors) returned by 5GC NFs to SMF and 5GSM Cause values sent to UEs;
- performed by the SMF between N4 errors returned by the UPF and 5GSM Cause values sent to UEs.

---

# 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 29.244: "Interface between the Control Plane and the User Plane Nodes".
- [3] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".
- [4] 3GPP TS 29.531: "5G System; Network Slice Selection Services; Stage 3".
- [5] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".
- [6] 3GPP TS 29.512: "5G System; Session Management Policy Control Service; Stage 3".
- [7] 3GPP TS 29.509: "5G System; Authentication Server Services; Stage 3".
- [8] 3GPP TS 29.502: "5G System; Session Management Services; Stage 3".
- [9] 3GPP TS 29.508: "5G System, Session Management Event Exposure Service; Stage 3".
- [10] 3GPP TS 29.540: "5G System; SMS Services; Stage3".
- [11] 3GPP TS 29.511: "5G System; Equipment Identity Register Services; Stage 3".
- [12] 3GPP TS 29.507: "5G System; Access and Mobility Policy Control Service; Stage 3".
- [13] 3GPP TS 29.525: "5G System; UE Policy Control Service; Stage 3"

---

## 3 Definitions, symbols and abbreviations

### 3.1 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].

|      |   |
|------|---|
| 5GC  | 5G Core Network                         |
| AMF  | Access and Mobility Management Function |
| HTTP | Hypertext Transfer Protocol             |
| NF   | Network Function                        |
| NSSF | Network Slice Selection Function        |
| PCF  | Policy Control Function                 |
| SMF  | Session Management Function             |
| UDM  | Unified Data Management                 |

---

## 4 Mapping between 5GC interfaces causes and 5GMM Cause Codes by AMF

### 4.1 General

This clause defines the mapping performed by the AMF between HTTP responses (status codes and Protocol or Application Errors) returned by NF services contacted by the AMF and the 5GMM cause values sent to UEs.

No mapping is required for:

- the Nsmf\_SMSservice\_Activate, Nsmf\_SMSservice\_Deactivate and Nsmf\_SMSservice\_UplinkSMS operations described in 3GPP TS 29.540 [10].
- the Npcf\_AMPolicyControl service operations described in 3GPP TS 29.507 [12].
- the Npcf\_UEPolicyControl service operations described in 3GPP TS 29.525 [13].

### 4.2 Mapping between Nausf services causes and 5GMM causes

#### 4.2.1 General

This clause defines the mapping performed by the AMF between HTTP responses (status codes and Protocol or Application Errors) returned by AUSF services to the AMF and the 5GMM cause values sent to UEs.

#### 4.2.2 Mapping between Nausf\_UEAuthentication service causes on N12 and 5GMM causes

##### 4.2.2.1. General

This clause defines the mapping for the Nausf\_UEAuthentication service (see 3GPP TS 29.509 [7]). It also contains the mapping in case of a 200 OK is returned but the Authentication has failed.

4.2.2.2 Mapping from HTTP to 5GMM causes values – Request rejected by AUSF

**Table .4.2.2-1: Mapping from HTTP to 5GMM cause values – Request rejected by AUSF**

| HTTP status code on N12  | Protocol or Application Error    | 5GMM cause to UE   |
|--|----------------------------------|--|
| 403 Forbidden  | SERVING_NETWORK_NOT_AUTHORIZED   | Cause #11 – PLMN not allowed<br>Cause #73 – Serving network not authorized<br>Cause #12 – Tracking area not allowed<br>Cause #15 – No suitable cells in tracking area<br><br>(NOTE1) |
|  | AUTHENTICATION_REJECTED          | N/A (NOTE 2)   |
|  | INVALID_HN_PUBLIC_KEY_IDENTIFIER | N/A (NOTE 2)   |
|  | INVALID_HN_PUBLIC_KEY_IDENTIFIER | N/A (NOTE 2)   |
| 404 Not Found  | CONTEXT_NOT_FOUND                | N/A (NOTE 2)   |
|  | USER_NOT_FOUND                   |  |
| 504 Gateway Timeout  | UPSTREAM_SERVER_ERROR            | N/A (NOTE 2)   |
|  | NETWORK_FAILURE                  | N/A (NOTE 2)   |
| 500 Internal Server Error  | AV_GENERATION_PROBLEM            | N/A (NOTE 2)   |
| 501 Not Implemented  | UNSUPPORTED_PROTECTION_SCHEME    | N/A (NOTE 2)   |
| NOTE 1: .One of these 5GMM causes may be used.   |                                  |  |
| NOTE 2: There is no corresponding mapping since the Authentication is rejected and the Authentication Reject message does not have a 5GMM cause. |                                  |  |

4.2.2.3 Mapping from HTTP to 5GMM cause values – Request accepted by AUSF

**Table .4.2.2.3-1: Mapping from HTTP to 5GMM cause values – Request accepted by AUSF**

| HTTP status code on N12 | Protocol or Application Error   | 5GMM cause to UE      |
|-------------------------|---|-----------------------|
| 200 OK                  | The "authResult" in "ConfirmationDataResponse" is set to "AUTHENTICATION_FAILURE" (see clause 6.1.6.2.8 of 3GPP TS 29.509 [7]). | Cause #3 – Illegal UE |
|                         | The "authResult" in "EapSession" is set to "AUTHENTICATION_FAILURE" (see clause 6.1.6.2.8 of 3GPP TS 29.509 [7]).               | Cause #3 – Illegal UE |



## 4.3 Mapping between Nsmf services causes and 5GMM causes

### 4.3.1 General

This clause defines the mapping performed by the AMF between HTTP responses (status codes and Protocol or Application Errors) returned by SMF services to the AMF and the 5GMM cause values sent to UEs.

The AMF may invoke SMF service operations upon receipt of:

- 5GSM messages (e.g. PDU Session establishment request) piggybacked in 5GMM UL NAS TRANSPORT message;
- 5GMM Service Request or Registration Request messages, to establish the user-plane resources of a PDU session.

A 5GMM cause is defined in:

- the DL NAS TRANSPORT message;
- the PDU session reactivation result error cause IE of a REGISTRATION ACCEPT or SERVICE ACCEPT message;
- the REGISTRATION REJECT or SERVICE REJECT message.

The AMF shall support mapping the status code and/or Protocol or Application Error received from the SMF to a 5GMM cause code, where 3GPP TS 24.501 [3] requires a 5GMM Cause to be included in the 5GMM message sent to the UE.

NOTE: REGISTRATION REJECT and SERVICE REJECT messages are rejected only due to 5GMM-specific reasons, i.e. not for problems specific to session management.

### 4.3.2 Mapping between Nsmf\_PDUSession service causes on N11 and 5GMM causes

#### 4.3.2.1 General

This clause defines the mapping for the Nsmf\_PDUSession service (see 3GPP TS 29.502 [8]).

#### 4.3.2.2 Mapping from HTTP to 5GMM Cause Values

**Table 4.3.2.2-1: Mapping from HTTP to 5GMM cause values – Request rejected by SMF**

| HTTP status code on N11  | Protocol or Application Error   | 5GMM cause to UE  |
|--|---|---|
| 200 OK   | The upCnxState IE is set to DEACTIVATED and the Cause IE set to "INSUFFICIENT_UP_RESOURCES" (see clause 5.2.2.3.2.2 of 3GPP TS 29.502 [8]) (NOTE 2) | #92 - Insufficient user-plane resources for the PDU session |
| 403 Forbidden  | OUT_OF_LADN_SERVICE_AREA  | #43 - LADN not available                                    |
| 403 Forbidden  | PRIORITIZED_SERVICES_ONLY   | #28 - Restricted service area                               |
| 404 Not Found  | CONTEXT_NOT_FOUND   | N/A (NOTE 1)  |
|  |   |   |
|  |   |   |
| 504 Gateway Timeout  | NETWORK_FAILURE   | N/A (NOTE 1)  |
| NOTE 1: An N1 SM cause is included by the SMF in the HTTP error response in this case.   |   |   |
| NOTE 2: This corresponds to the scenario where NG-RAN cannot establish user plane resources during the activation of the User Plane connection of a PDU session. |   |   |

## 4.4 Mapping between Nudm services causes and 5GMM causes

### 4.4.1 General

This clause defines the mapping performed by the AMF between HTTP responses (status codes and Protocol or Application Errors) returned by UDM services to AMF and the 5GMM cause values sent to UEs.

### 4.4.2 Mapping between Nudm\_UEContextManagement service causes on N8 and 5GMM causes

#### 4.4.2.1 General

This clause defines the mapping for the Nudm\_UEContextManagement service is described in 3GPP TS 29.503 [5]).

#### 4.4.2.1 Mapping from HTTP to NAS cause values – Request rejected by UDM

**Table 4.4.2.1-1: Mapping from HTTP to 5GMM cause values – Request rejected by UDM**

| HTTP status code on N8  | Protocol or Application Error             | 5GMM cause to UE  |
|---|---|---|
| 403 Forbidden   | UNKNOWN_5GS_SUBSCRIPTION                  | #27 – N1 mode not allowed   |
|   | ACCESS_NOT_ALLOWED                        | #15 "No suitable cells in tracking area", or<br>#12 "Tracking area not allowed"<br>or<br>#72 – Non-3GPP access to 5GCN not allowed (NOTE)     |
|   | RAT_NOT_ALLOWED                           | #15 "No suitable cells in tracking area", or<br>#13 "Roaming not allowed in this tracking area", or<br>#12 "Tracking area not allowed" (NOTE) |
|   | NO_PS_SUBSCRIPTION<br>ROAMING_NOT_ALLOWED | #7 – 5GS services not allowed<br>#11 "PLMN not allowed" or<br>#13 "Roaming not allowed in this tracking area", (NOTE)                         |
| 404 Not Found   | CONTEXT_NOT_FOUND                         | #9 "UE identity cannot be derived by the network"   |
| 404 Not Found   | USER_NOT_FOUND                            | #3 "Illegal UE"   |
| 422 Unprocessable Entity  | UNPROCESSABLE_REQUEST                     | #111 protocol error unspecified   |
| NOTE: Any of those NAS Cause Code values may be sent to the UE, depending on operator's choice. |   |   |

## 4.5 Mapping between Neir services causes and 5GMM causes

### 4.5.1 General

This clause defines the mapping performed by the AMF between HTTP responses (status code and Protocol or Application Errors) returned by the EIR to the AMF and the 5GMM cause values sent to UEs.

## 4.5.2 Mapping between N5g-eir\_EquipmentIdentityCheck Service causes on N17 and 5GMM causes

### 4.5.2.1 General

This clause defines the mapping for the N5g-eir\_EquipmentIdentityCheck service (see 3GPP TS 29.511 [11]).

### 4.5.2.2 Mapping from HTTP to NAS cause values – Request accepted by EIR

**Table 4.5.2.2-1: Mapping from HTTP to 5GMM cause values – Request accepted by EIR**

| HTTP Status on N17 | Protocol or Application information      | 5GMM cause to UE |
|--------------------|--|------------------|
| 200 OK             | Equipment Status is set to "BLACKLISTED" | #6 "Illegal ME"  |

## 4.6 Mapping between Nnssf services causes and 5GMM causes

### 4.6.1 General

This clause defines the mapping performed by the AMF between HTTP responses (Status Code and Protocol or Application Errors) returned by the NSSF to the AMF and the 5GMM cause values sent to UEs.

### 4.6.2 Mapping between Nnssf\_NSSelection service causes on N22 and 5GMM causes

#### 4.6.2.1 General

This clause defines the mapping for the Nnssf\_NSSelection service (see 3GPP TS 29.531 [4]).

#### 4.6.2.2 Mapping from HTTP to 5GMM Cause Values

**Table 4.6.2.2-1: Mapping from HTTP to 5GMM cause values – Request rejected by NSSF**

| HTTP status code on N22 | Protocol or Application Error | 5GMM cause to UE                  |
|-------------------------|-------------------------------|-----------------------------------|
| 403 Forbidden           | SNSSAI_NOT_SUPPORTED          | #62 – No Network Slices available |

---

## 5 Mapping between 5GC interfaces causes and 5GSM Cause Codes by SMF

### 5.1 General

This clause describes the mapping performed by the SMF between HTTP responses (status Code and Protocol or Application Errors) returned by NF services contacted by the SMF and the corresponding 5GSM cause values sent to UEs (in5GSMmessages).

No mapping is required for the Nsmf\_PDUSession service over N11 since the SMF includes the 5GSM cause in 5GSM messages sent in N1 SM Information (see 3GPP TS 29.502 [5]).

No mapping is required for the Nsmf\_PDUSession service over N16 since the 5GSM cause is generated at the H-SMF and provided to the V-SMF in N1 SM Information (see 3GPP TS 29.502 [9]).

No mapping is required for the Nsmf\_EventExposure service specified in 3GPP TS 29.508 [9]

## 5.2 Mapping between Npcf service causes on N7 and 5GSM causes

### 5.2.1 General

This clause defines the mapping performed by the SMF between HTTP responses (status code and Protocol or Application Errors) returned by the PCF to the SMF and the 5GSM causes sent to UEs.

### 5.2.2 Mapping between Npcf\_SMPolicyControl Service causes on N7 and 5GSM causes

#### 5.2.2.1 General

This clause defines the mapping for the Npcf\_SMPolicyControl service (see 3GPPTS 29.512 [6]).

#### 5.2.2.2 Mapping from HTTP to 5GSM cause values – Request rejected by PCF

**Table 5.2.2.2-1: Mapping from HTTP to 5GSM cause values – Request rejected by PCF**

| HTTP status code on N7 | Protocol or Application Error   | 5GSM cause to UE   |
|------------------------|---|--|
| 400 Bad Request        | USER_UNKNOWN  | Cause #29 - User authentication or authorization failed        |
|                        | ERROR_INITIAL_PARAMETERS  | Cause #31 - Request rejected, unspecified                      |
|                        | ERROR_TRIGGER_EVENT   | Cause #31 - Request rejected, unspecified                      |
| 403 Forbidden          | ERROR_TRAFFIC_MAPPING_INFO_REJECTED   | Cause #29 - User authentication or authorization failed        |
|                        | ERROR_CONFLICTING_REQUEST   | Cause #67 - insufficient resources for specific slice and DNN  |
|                        | POLICY_CONTEXT_DENIED   | Cause #29 - User authentication or authorization failed (NOTE) |
|                        | VALIDATION_CONDITION_NOT_MET  | Cause #29 - User authentication or authorization failed        |
| NOTE:                  | Upon receiving the cause POLICY CONTEXT DENIED, the SMF may reject the request, or it may accept the request based on the local policy. |  |

## 5.3 Mapping between Nudm service causes on N10 and 5GSM causes

### 5.3.1 General

This clause defines the mapping performed by the SMF between HTTP responses (status codes and Protocol or Application Errors) returned by the UDM to the SMF and the 5GSM causes sent to UEs.

### 5.3.2 Mapping between Nudm\_UEContextManagement service causes on N10 and 5GSM causes

#### 5.3.2.1 General

This clause defines the mapping for the Nudm\_UEContextManagement service (see 3GPP TS 29.503 [5]).

### 5.3.2.2 Mapping from HTTP to 5GSM cause values – Request rejected by UDM due to N10 failures

**Table 5.3.2.2-1: Mapping from HTTP to 5GSM cause values – Request rejected by UDM due to N10 failures**

| HTTP status code on N10   | Protocol or Application Error | 5GSM cause to UE  |
|---|-------------------------------|---|
| 403 Forbidden   | ROAMING_NOT_ALLOWED           | #29 "User authentication or authorization failed"   |
|   | DNN_NOT_ALLOWED               | #27 "Missing or unknown DNN" or<br>#67 "Insufficient resources for specific slice and DNN"<br>#70 "Missing or unknown DNN in a slice"<br>(NOTE) |
| 404 Not Found   | USER NOT FOUND                | #29 "User authentication or authorization failed"   |
| NOTE: Any of those NAS Cause Code values may be sent to the UE, depending on operator's choice. |                               |   |

## 5.4 Mapping between N4 causes and 5GSM causes

### 5.4.1 General

N4 error handling and cause codes are defined in 3GPP TS 29.244 [2].

The receipt of an N4 error may trigger error handling in SMF. This clause defines the mapping performed by the SMF between when an error received on N4 interface cannot be resolved by SMF and results in the SMF sending a 5GSM message to the UE.

### 5.4.2 Mapping from N4 to 5GSM cause values

**Table 5.4.2-1: Mapping from N4 to 5GSM cause values – Request rejected by SMF due to N4 failures**

| N4 Cause Code          |   | 5GSM cause to UE         |   |
|------------------------|---|--------------------------|---|
| Cause value<br>Decimal | Error description                       | Cause value              | Error description   |
| 64                     | Request rejected (reason not specified) | #31                      | Request rejected, unspecified   |
| 74                     | PFCP entity in congestion               | #26<br>#38<br>#69<br>#67 | Insufficient resources<br>Network Failure<br>Insufficient resources for specific slice<br>Insufficient resources for specific slice and DNN |
| 77                     | System failure                          | #31                      | Request rejected, unspecified   |

## Annex A (informative): Change history

| Change history |           |           |      |     |     |   |             |
|----------------|-----------|-----------|------|-----|-----|---|-------------|
| Date           | Meeting   | TDoc      | CR   | Rev | Cat | Subject/Comment   | New version |
| 2018-10        | CT4#86Bis |           |      |     |     | First version of this new TS including:<br>C4-187375 (Skeleton)<br>C4-187378 (N11 – 5GMM)<br>C4-187391 (N8 – 5GMM – Request rejected)<br>C4-187589 (Scope)<br>C4-187390 (N4 – 5GMM)   | 0.1.0       |
| 2018-12        | CT4#87    |           |      |     |     | The following agreed documents are included:<br>C4-188418 (NSSF)<br>C4-188484 (Nsmf_PDUSession N11 and N16)<br>C4-188486 (Cause 5GMM)<br>C4-188609 (N4)<br>C4-188637 (N8 and 5GMM)<br>C4-188638 (EIR)<br>C4-188640 (N10 and 5GSM)<br>C4-188641 (N7)<br>C4-188642 (Nausf)<br>C4-188643 (N11 5GMM)<br>C4-188647 (Clean-up) (Conclusion from C4-188384 was wrongly reported to be included in 5GSM General Clause while it applied to 5GMM – corrected by Rapporteur).<br>C4-188648 (General 5GSM) | 0.2.0       |
| 2018-12        | CT#82     | CP-183104 |      |     |     | Sent for information and approval   | 1.0.0       |
| 2018-12        | CT#82     | CP-183104 |      |     |     | Approved in CT#82   | 15.0.0      |
| 2019-03        | CT#83     | CP-190031 | 0001 | 2   | F   | Corrections on cause mapping in clause 4  | 15.1.0      |
| 2019-03        | CT#83     | CP-190031 | 003  | 1   | F   | Mapping between N11 causes and 5GMM causes  | 15.1.0      |
| 2019-03        | CT#83     | CP-190031 | 0008 | 1   | F   | Remove EN's in 5.2.2.2  | 15.1.0      |
| 2019-03        | CT#83     | CP-190031 | 0004 | 2   | F   | Corrections to 5GMM and 5GSM causes mappings  | 15.1.0      |
| 2019-06        | CT#84     | CP-191037 | 0012 | -   | F   | Cause mapping updates   | 15.2.0      |
| 2019-06        | CT#84     | CP-191037 | 0013 | 1   | F   | Correction on cause mapping regarding no subscription   | 15.2.0      |
| 2019-06        | CT#84     | CP-191037 | 0014 | 2   | F   | Essential Correction on Error mapping for NSSF Services   | 15.2.0      |
| 2019-06        | CT#84     | CP-191037 | 0015 | 1   | F   | Essential Correction on mapping for N4 to SBI   | 15.2.0      |
| 2019-06        | CT#84     | CP-191037 | 0016 | 1   | F   | Cause mapping corrections   | 15.2.0      |
| 2019-06        | CT#84     | CP-191037 | 0017 | 1   | F   | Add a mapping for N10   | 15.2.0      |
| 2019-12        | CT#86     | CP-193036 | 0019 | 2   | F   | Add new mapping towards Cause #62 (No Network Slices available)   | 16.0.0      |
| 2020-06        | CT#88e    | CP-201034 | 0020 | 1   | F   | Correction of the mapping between PCF service causes and 5GSM causes  | 16.1.0      |

---

# History

| <b>Document history</b> |           |             |
|-------------------------|-----------|-------------|
| V16.1.0                 | July 2020 | Publication |
|                         |           |             |
|                         |           |             |
|                         |           |             |
|                         |           |             |