

अनिवार्य आवश्यकताएँ

संख्या : TEC40182401

Essential Requirements

ER No. : TEC40182401

5G Core

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MTCTE के तहत जारी:

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Telecommunication Engineering Centre

Government of India

Khurshid Lal Bhawan, Janpath, New Delhi-110001, INDIA

Essential Requirements for:

5G Core

Certification Scheme: **SCS**

Product Fee Group: **C**

This document lays down the Essential Requirements under MTCTE notified by GoI vide Gazette Notification No. G.S.R. 113 (E) dated 05-09-2017 for 5G Core network elements/functions to be used in Indian Telecom Network.

Note: Annexures referred to in this ER ,if any, are Annexures as mentioned in "Annexures to ERs" No. TEC/SD/DD/TCP-222/02/June19 as updated from time to time and available on MTCTE portal.

This product has the following variants:

1. AMF
2. AuSF
3. BSF
4. CHF
5. NEF
6. NSSF
7. PCF
8. SMF
9. SMSF
10. UDM
11. UDR
12. UPF

1. Variant 1 : AMF

1.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|--------|---|--|
| 1.1.1 | 5G Wireless Emergency Alert broadcast-5G Commercial Mobile Alert System CMAS Broadcast System-AMF | 3GPP TS 23.041 v18.6.0 & above, Clause 9.1.3.5 |
| 1.1.2 | AN Release-AMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.2.6 |
| 1.1.3 | Initial Registration and Deregistration-AMF | 3GPP TS 23.501 v18.9.0 & above, Clause 5.3.2 , 3GPP TS 24.501 v18.10.0 & above Clause 5.5.1 & 5.5.2 3GPP TS 23.502 v18.9.0 & above, Clause 4.2.2 |
| 1.1.4 | Mobility Management-Location Report-AMF | 3GPP TS 23.501 v18.9.0 & above, Clause 5.4.7, 5.3.3.2.5 , 3GPP TS 23.502 v18.9.0 & above, Clause 4.10 |
| 1.1.5 | Multiple PDU Session Establishment-AMF | 3GPP TS 23.501 v18.9.0 & above, Clause 5.6.1 |
| 1.1.6 | Network Slice Specific Authentication and Authorization-AMF | 3GPP TS 24.501 v18.10.0 & above, Clause 4.6.2.4 |
| 1.1.7 | NRF Communication- AMF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1, 4.17.2, 4.17.3, 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3, 5.2.2.4, 5.3.2.2, 5.4.2.2 |
| 1.1.8 | PDU Session Establishment and Deletion-AMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.3.2 , 4.3.4 3GPP TS 24.501 v18.10.0 & above, Clause 6.4.1, 6.4.3 |
| 1.1.9 | Service Request-AMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.2.3 3GPP TS 24.501 v18.10.0 & above, Clause 5.6.1 |
| 1.1.10 | SMF selection-AMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.3.2.2.3 3GPP TS 23.501 v18.9.0 & above, Clause 6.3.2 |

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| 1.1.11 | Support for both IPv4-IPv6-Dual stack based PDUs-AMF | 3GPP TS 23.501 v18.9.0 & above, Clause 5.6.1 |
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2. Variant 2 : AuSF

2.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|-------|------------------------------------|---|
| 2.1.1 | N12 interface from AMF | 3GPP TS 29.509 v18.5.0 & above, Clause 5.2 |
| 2.1.2 | N13 interface from UDM | 3GPP TS 29.509 v18.5.0 & above, Clause 5.3, 5.4 , 3GPP TS 29.503 v18.9.0 & above, Clause 5.4.2.2, 5.4.2.3: |
| 2.1.3 | NRF Communication-AuSF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3 , 5.2.2.4, 5.3.2.2, 5.4.2.2 |
| 2.1.4 | Support for 5G AKA-AuSF | 3GPP TS 29.509 v18.5.0 & above, Clause 5.2.2.2.2 3GPP TS 33.501 v18.9.0 & above, Clause 6.1.3.2 |
| 2.1.5 | Support for UE Authentication-AuSF | 3GPP TS 29.509 v18.5.0 & above, Clause 5.2.2.2, 3GPP TS 33.501 v18.9.0 & above, Clause 6.1.2, 6.1.3 |

3. Variant 3 : BSF

3.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|-------|-----------------------|--|
| 3.1.1 | Interface from PCF | 3GPP TS 29.521 V17.6.0 & above, Clause 4.2.2, 4.2.3, 4.2.5, 4.2.6, 4.2.7, 4.2.8 |
| 3.1.2 | NRF Communication-BSF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause |

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|-------|--|--|
| | | 5.2.2.2, 5.2.2.3, 5.2.2.4, 5.3.2.2, 5.4.2.2 |
| 3.1.3 | Support for Nbsf management deregister-BSF | 3GPP TS 29.521 V17.6.0 & above, Clause 4.2.3 |
| 3.1.4 | Support for Nbsf management discovery-BSF | 3GPP TS 29.521 V17.6.0 & above, Clause 4.2.4 |

4. Variant 4 : CHF

4.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|-------|---------------------------|--|
| 4.1.1 | Interface with SMSF | 3GPP TS 32.291 v18.9.0 & above, Clause 5.2.2.2 5.2.2.3 5.2.2.4 5.2.2.5 |
| 4.1.2 | N28 interface towards PCF | 3GPP TS 29.594 v18.4.0 & above, Clause 4.2.1 4.2.2 4.2.3 4.2.4 3GPP TS 29.513 v18.9.0 & above, Clause 5.3 |
| 4.1.3 | N40 interface towards SMF | 3GPP TS 32.291 v18.9.0 & above, Clause 5.2.2.2, 5.2.2.3, 5.2.2.4, 5.2.2.5, 5.3.2.2 5.3.2.3, 5.3.2.4 |
| 4.1.4 | NRF Communication-CHF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3, 5.2.2.4, 5.3.2.2, 5.4.2.2 |

5. Variant 5 : NEF

5.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|-------|---------------------------|---|
| 5.1.1 | N29 Interface towards SMF | 3GPP TS 29.591 v18.10.0 & above, Clause 4.3.1 4.3.2 |
| 5.1.2 | N51 Interface towards AMF | 3GPP TS 29.518 v18.9.0 & above, Clause 5.3.2 |

| | | |
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| 5.1.3 | NRF Communication-NEF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3 , 5.2.2.4 , 5.3.2.2, 5.4.2.2 |
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6. Variant 6 : NSSF

6.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
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|-------|----------------|---------------|

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| 6.1.1 | N22 interface from AMF | 3GPP TS 29.531 v18.8.0 & above, Clause 5.2, 5.3.1 5.3.2 |
| 6.1.2 | N31 interface from NSSF | 3GPP TS 29.531 v18.8.0 & above, Clause 5.2 |
| 6.1.3 | NRF Communication-NSSF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3 , 5.2.2.4 , 5.3.2.2, 5.4.2.2 |
| 6.1.4 | Support for Network Slice Selection-NSSF | 3GPP TS 29.531 v18.8.0 & above, Clause 5.2 |

7. Variant 7 : PCF

7.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|-------|---|---|
| 7.1.1 | Interface towards AMF-PCF | 3GPP TS 29.507 v18.8.0 & above, Clause 4.2 3GPP TS 29.513 v18.9.0 & above, Clause 5.1 |
| 7.1.2 | Interface towards SMF-PCF | 3GPP TS 29.512 v18.10.0 & above, Clause 4.2 3GPP TS 29.513 v18.9.0 & above, Clause 5.2 |
| 7.1.3 | NRF Communication-PCF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3, 5.2.2.4 , 5.3.2.2, 5.4.2.2 |
| 7.1.4 | Support for AM Policy control create-PCF | 3GPP TS 29.507 v18.8.0 & above, Clause 4.2 |
| 7.1.5 | Support for Policy authorisation create-PCF | 3GPP TS 29.514 v18.10.0 & above, Clause 4.2.2 |
| 7.1.6 | Support for SM Policy control create-PCF | 3GPP TS 29.512 v18.9.0 & above, Clause 4.2.2.1 4.2.2.2 3GPP TS 29.513 v18.9.0 & above, Clause 5.2.1, 5.2.2 |

8. Variant 8 : SMF

8.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|-------|--|--|
| 8.1.1 | Handover and Roaming-SMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.11.1.2 3GPP TS 23.501 v18.9.0 & above, Clause 4.2.4 |
| 8.1.2 | N4 Association for Node and Session-SMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.4.1, 4.4.3 3GPP TS 29.244 v18.2.0 & above, Clause 6.2, 6.3 |
| 8.1.3 | PDU Session Activation and Deactivation-SMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.3.2, 4.3.4 3GPP TS 24.501 v18.10.0 & above, Clause 6.3.3, 6.4.1, 6.4.3 |
| 8.1.4 | PDU Session Establishment-SMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.3.2 3GPP TS 24.501 v18.10.0 & above, Clause 6.4.1 |
| 8.1.5 | PDU Session Release-SMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.3.4 3GPP TS 24.501 v18.10.0 & above, Clause 6.3.3, 6.4.3 |
| 8.1.6 | Registration with NRF Update and Discovery-SMF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3 and 5.3.2.2 |
| 8.1.7 | Support configuration of QFI 5QI ARP-SMF | 3GPP TS 23.501 v18.9.0 & above, Clause 5.7.1.1 5.7.2.1 5.7.2.2, 5.7.4.1 |
| 8.1.8 | NRF Communication-SMF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3, 5.2.2.4, 5.3.2.2, 5.4.2.2 |

9. Variant 9 : SMSF

9.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|-------|----------------------------|--|
| 9.1.1 | Interface towards AMF-SMSF | 3GPP TS 23.502 v18.9.0 & above, Clause |

| | | |
|-------|--|--|
| | | 5.2.2 5.2.9 3GPP TS 29.540 v18.5.0 & above, Clause 5.2.2 |
| 9.1.2 | NRF Communication-SMSF | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3 , 5.2.2.4 , 5.3.2.2, 5.4.2.2 |
| 9.1.3 | Support for SM Service Activate-SMSF | 3GPP TS 23.502 v18.9.0 & above, Clause 5.2.9.2.2 3GPP TS 29.540 v18.5.0 & above, Clause 5.2.2.2 |
| 9.1.4 | Support for SM Service Deactivate-SMSF | 3GPP TS 23.502 v18.9.0 & above, Clause 5.2.9.2.3 3GPP TS 29.540 v18.5.0 & above, Clause 5.2.2.3 |

10. Variant 10 : UDM

10.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|--------|-------------------------|---|
| 10.1.1 | N10 Interface from SMF | 3GPP TS 29.503 v18.9.0 & above, Clause 5.3.2.2.4 5.3.2.3, 5.3.2.4.4, 5.3.2.5.7, 5.3.2.6.5 , 5.3.2.7.2, 5.3.2.12.2, 5.2.2.2.5, 5.2.2.2.13, 5.2.2.2.23, 5.3.2.12.2 |
| 10.1.2 | N13 Interface from AuSF | 3GPP TS 29.503 v18.9.0 & above, Clause 5.4.2 |
| 10.1.3 | N21 interface from SMSF | 3GPP TS 29.503 v18.9.0 & above, Clause 5.3.2.2.5 5.3.2.2.6 5.3.2.3 5.3.2.4.5 5.3.2.4.6 5.3.2.5.5 5.3.2.5.6 5.3.2.6.6 5.3.2.6.7 , 5.2.2.2.7 |
| 10.1.4 | N8 Interface with AMF | 3GPP TS 29.503 v18.9.0 & above, Clause 5.3.2.2.2 5.3.2.2.3 5.3.2.3 5.3.2.4.2 5.3.2.4.3 5.3.2.5.2 5.3.2.5.3 , 5.2.2.2.3, 5.2.2.2.4, 5.2.2.2.6, 5.2.2.2.8, 5.2.2.2.9, 5.2.2.2.11, 5.2.2.2.11, 5.2.2.2.12, 5.2.2.2.13, 5.2.2.2.16, 5.2.2.2.18, 5.2.2.2.19, 5.2.2.2.21, 5.2.2.6.2, 5.2.2.6.3, 5.2.2.6.4, 5.2.2.6.5, 5.2.2.6.6, 5.6.2.2.2, |

| | | |
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| 10.1.5 | NRF Communication - UDM | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3, 5.2.2.4, 5.3.2.2, 5.4.2.2 |
| 10.1.6 | Service based interface between UDM and HSS interworking | 3GPP TS 23.632 v18.6.0 & above, Clause 4.3 3GPP TS 29.503 & above, Clause 5.2.2.2.20, 5.3.2.4.7, 5.3.2.5.10, 5.3.2.8.2, 5.3.2.9.2, 5.3.2.10.2, 5.3.2.11.2, 5.3.2.13.2, 5.4.2.4.2, 5.8.2.2.2, 5.8.2.3.2 |
| 10.1.7 | Support for 5G AKA based Milenage TUAK and Test Algorithm-UDM | 3GPP TS 33.501 v18.9.0 & above, Clause 6.1.3 |
| 10.1.8 | Support for Event Exposure Service-UDM | 3GPP TS 29.503 v18.9.0 & above, Clause 5.5 |
| 10.1.9 | Support for Subscriber Data Management Service | 3GPP TS 29.503 v18.9.0 & above, Clause 5.2 |
| 10.1.10 | Support for UE Authentication Service-UDM | 3GPP TS 29.503 v18.9.0 & above, Clause 5.4 |
| 10.1.11 | Support for UE Context Management Service-UDM | 3GPP TS 29.503 v18.9.0 & above, Clause 5.3 |

11. Variant 11 : UDR

11.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|--------|--|--|
| 11.1.1 | NRF Communication-UDR | 3GPP TS 29.500 v18.8.0 & above, Clause 4.3.1 3GPP TS 23.502 v18.9.0 & above, Clause 4.17.1 4.17.2, 4.17.3 4.17.4 3GPP TS 29.510 v18.10.0 & above, Clause 5.2.2.2, 5.2.2.3, 5.2.2.4, 5.3.2.2, 5.4.2.2 |
| 11.1.2 | Support for Get Auth Subscriber Data-UDR | 3GPP TS 29.505 v18.7.0 & above, Clause 5.2.2.3.1 |
| 11.1.3 | Support for Get Context Data-UDR | 3GPP TS 29.505 v18.7.0 & above, Clause 5.2.32.3.1 |
| 11.1.4 | Support for Get SMF registration-UDR | 3GPP TS 29.505 v18.7.0 & above, Clause 5.2.8.3.1 |

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| 11.1.5 | Support for Get UE Data subscription-UDR | 3GPP TS 29.505 v18.7.0 & above, Clause 5.2.20.3.2 |
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12. Variant 12 : UPF

12.101 Parameters Linked with Product Variant

| S.No. | Parameter Name | Standard Name |
|--------|---------------------|---|
| 12.1.1 | N3 Procedures - UPF | 3GPP TS 23.501 v18.9.0 & above, Clause 5.8.2.3 5.8.2.5 3GPP TS 23.502 v18.9.0 & above, Clause 4.2.10.1, 4.2.10.2 |
| 12.1.2 | N4 Procedures - UPF | 3GPP TS 23.502 v18.9.0 & above, Clause 4.4 3GPP TS 29.244 v18.2.0 & above, Clause 6.2 and 6.3 |
| 12.1.3 | N6 Procedures - UPF | 3GPP TS 29.561 v18.5.0 & above, Clause 11 and 12 3GPP TS 29.244 v18.2.0 & above, Clause 6.2 , 6.3 3GPP TS 29.561 v18.5.0 & above, Clause 9.2, 9.3 |
| 12.1.4 | N9 procedures - UPF | 3GPP TS 23.501 v18.9.0 & above, Clause 5.8.2.3 5.8.2.5 3GPP TS 23.527 v18.5.0 & above, Clause 5 3GPP TS 29.244 v18.2.0 & above, Clause 6.2 , 6.3 |