

**अनिवार्य आवश्यकताएँ**

**संख्या : TEC40182606**

**Essential Requirements**

**ER No. : TEC40182606**

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## **5G Core**

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MTCTE के तहत जारी:

Issued under MTCTE by:

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**Telecommunication Engineering Centre**

**Government of India**

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

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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: Only 3GPP release 16 or above specifications shall be considered wherever 3GPP standards are referred in this ER.

*Note: Annexures referred to in this ER 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

### 1.1 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 Clause 9.1.3 Annex-N
1.1.2	AN Release-AMF	3GPP TS 23.502 Clause 4.2 Annex-N
1.1.3	Initial Registration and Deregistration-AMF	3GPP TS 23.501 Clause 5.3.2 Annex-N 3GPP TS 24.501 Clause 5.5.1, 5.5.2 Annex-N 3GPP TS 23.502 Clause 4.2.2 Annex-N
1.1.4	Mobility Management-Location Report-AMF	3GPP TS 23.501 Clause 5.4, 5.3.3 Annex-N 3GPP TS 23.502 Clause 4 Annex-N
1.1.5	NRF Communication- AMF	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N
1.1.6	PDU Session Establishment and Deletion-AMF	3GPP TS 23.502 Clause 4.3.2,4.3.4 Annex-N 3GPP TS 24.501 Clause 6.4 Annex-N
1.1.7	PDU Session Establishment Support- AMF	3GPP TS 23.501 Clause 5.6 Annex-N
1.1.8	Service Request-AMF	3GPP TS 23.502 Clause 4.2.3 Annex-N 3GPP TS 24.501 Clause 5.6.1 Annex-N
1.1.9	SMF selection-AMF	3GPP TS 23.502 Clause 4.3.2.2 Annex-N 3GPP TS 23.501 Clause 6.3 Annex-N

1.1.10	Support for both IPv4-IPv6-Dual stack based PDUs-AMF	3GPP TS 23.501 Clause 5.6 Annex-N
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## 2. Variant 2 : AuSF

### 2.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
2.1.1	N12 interface from AMF	3GPP TS 29.509 Clause 5.2 Annex-N
2.1.2	N13 interface from UDM	3GPP TS 29.509 Clause 5 Annex-N 3GPP TS 29.503 Clause 5.4.2 Annex-N
2.1.3	NRF Communication-AuSF	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N
2.1.4	Support for 5G AKA-AuSF	3GPP TS 29.509 Clause 5.2.2.2 Annex-N 3GPP TS 33.501 Clause 6.1.3 Annex-N
2.1.5	Support for UE Authentication-AuSF	3GPP TS 29.509 Clause 5.2.2.2 Annex-N 3GPP TS 33.501 Clause 6.1 Annex-N

## 3. Variant 3 : BSF

### 3.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
3.1.1	Interface from PCF	3GPP TS 29.521 Clause 4.2 Annex-N
3.1.2	NRF Communication-BSF	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N
3.1.3	Support for Nbsf management deregister-BSF	3GPP TS 29.521 Clause 4.2.3 Annex-N

## 4. Variant 4 : CHF

### 4.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
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4.1.1	N28 interface towards PCF	3GPP TS 29.594 Clause 4.2 Annex-N 3GPP TS 29.513 Clause 5.3 Annex-N
4.1.2	N40 interface towards SMF	3GPP TS 32.291 Clause 5.2.2 Annex-N
4.1.3	NRF Communication-CHF	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N

## 5. Variant 5 : NEF

### 5.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
5.1.1	N29 Interface towards SMF	3GPP TS 29.591 Clause 4.3 Annex-N
5.1.2	N51 Interface towards AMF	3GPP TS 29.518 Clause 5.3 Annex-N
5.1.3	NRF Communication-NEF	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N

## 6. Variant 6 : NSSF

### 6.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
6.1.1	N22 interface from AMF	3GPP TS 29.531 Clause 5.2, 5.3 Annex-N
6.1.2	N31 interface from NSSF	3GPP TS 29.531 Clause 5.2 Annex-N
6.1.3	NRF Communication-NSSF	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N
6.1.4	Support for Network Slice Selection-NSSF	3GPP TS 29.531 Clause 5.2 Annex-N

## 7. Variant 7 : PCF

### 7.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
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7.1.1	Interface towards AMF-PCF	3GPP TS 29.507 Clause 4.2 Annex-N 3GPP TS 29.513 Clause 5.1 Annex-N
7.1.2	Interface towards SMF-PCF	3GPP TS 29.512 Clause 4.2 Annex-N 3GPP TS 29.513 Clause 5.2 Annex-N
7.1.3	NRF Communication-PCF	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N

## 8. Variant 8 : SMF

### 8.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
8.1.1	Handover and Roaming-SMF	3GPP TS 23.502 Clause 4.11.1 Annex-N 3GPP TS 23.501 Clause 4.2 Annex-N
8.1.2	N4 Association for Node and Session-SMF	3GPP TS 23.502 Clause 4.4.1, 4.4.3 Annex-N 3GPP TS 29.244 Clause 6.2, 6.3 Annex-N
8.1.3	NRF Communication-SMF	3GPP TS 23.502 Clause 4.17 Annex-N 3GPP 29.510 Clause 5.2.2. 5.4.2 Annex-N
8.1.4	PDU Session Activation and Deactivation-SMF	3GPP TS 23.502 Clause 4.3 Annex-N 3GPP TS 24.501 Clause 6.3, 6.4 Annex-N
8.1.5	PDU Session Establishment-SMF	3GPP TS 23.502 Clause 4.3.2 Annex-N 3GPP TS 24.501 Clause 6.4.1 Annex-N
8.1.6	PDU Session Release-SMF	3GPP TS 23.502 Clause 4.3.4 Annex-N 3GPP TS 24.501 Clause 6.3.3, 6.4.3 Annex-N
8.1.7	Support configuration of QFI 5QI ARP-SMF	3GPP TS 23.501 Clause 5.7 Annex-N

## 9. Variant 9 : SMSF

### 9.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
9.1.1	Interface towards AMF-SMSF	3GPP TS 23.502 Clause 5.2.2.2 Annex-N 3GPP TS 29.540 Clause 5.2.2 Annex-N

9.1.2	NRF Communication-SMSF	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N
9.1.3	Support for SM Service Activate-SMSF	3GPP TS 23.502 Clause 5.2.9.2 Annex-N 3GPP TS 29.540 Clause 5.2.2.2 Annex-N
9.1.4	Support for SM Service Deactivate-SMSF	3GPP TS 23.502 Clause 5.2.9.2 Annex-N 3GPP TS 29.540 Clause 5.2.2.3 Annex-N

## 10. Variant 10 : UDM

### 10.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
10.1.1	Interface between UDM and HSS interworking	3GPP TS 23.632 Clause 4 Annex-N 3GPP TS 29.503 Clause 5.2.2.2, 5.3.2, 5.4.2.4, 5.8.2 Annex-N
10.1.2	N10 Interface from SMF	3GPP TS 29.503 Clause 5.2.2, 5.3.2 Annex-N
10.1.3	N13 Interface from AuSF	3GPP TS 29.503 Clause 5.4.2 Annex-N
10.1.4	N21 Interface from SMSF	3GPP TS 29.503 Clause 5.2.2, 5.3.2 Annex-N
10.1.5	N8 Interface with AMF	3GPP TS 29.503 Clause 5.2.2.2, 5.3.2, 5.6.2 Annex-N
10.1.6	NRF Communication - UDM	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N
10.1.7	Support for 5G AKA based Milenage TUAK and Test Algorithm-UDM	3GPP TS 33.501 Clause 6.1.3 Annex-N
10.1.8	Support for Event Exposure Service-UDM	3GPP TS 29.503 Clause 5.5.2 Annex-N
10.1.9	Support for Subscriber Data Management Service	3GPP TS 29.503 Clause 5.2.2 Annex-N
10.1.10	Support for UE Authentication Service-UDM	3GPP TS 29.503 Clause 5.4.2.2 Annex-N
10.1.11	Support for UE Context Management Service-UDM	3GPP TS 29.503 Clause 5.3.2 Annex-N

## 11. Variant 11 : UDR

### 11.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
11.1.1	NRF Communication-UDR	3GPP TS 29.500 Clause 4.3 Annex-N 3GPP TS 23.502 Clause 4.17 Annex-N 3GPP TS 29.510 Clause 5.2.2, 5.4.2 Annex-N
11.1.2	Support for Get Auth Subscriber Data-UDR	3GPP TS 29.505 Clause 5.2.2.3 Annex-N
11.1.3	Support for Get Context Data-UDR	3GPP TS 29.505 Clause 5.2.32.3 Annex-N
11.1.4	Support for Get SMF registration-UDR	3GPP TS 29.505 Clause 5.2.8.3 Annex-N
11.1.5	Support for Get UE Data subscription-UDR	3GPP TS 29.505 Clause 5.2.20.3 Annex-N

## 12. Variant 12 : UPF

### 12.1 Parameters Linked with Product Variant

S.No.	Parameter Name	Standard Name
12.1.1	N3 Procedures - UPF	3GPP TS 23.501 Clause 5.8.2 Annex-N
12.1.2	N4 Procedures - UPF	3GPP TS 23.502 Clause 4.4 Annex-N 3GPP TS 29.244 Clause 6.2, 6.3 Annex-N