



3GPP Specification Compliance for SMF Interfaces

This chapter covers the following topics:

- [Feature Summary and Revision History, on page 1](#)
- [Feature Description, on page 2](#)
- [Configuring Interfaces, on page 3](#)
- [Sample Configuration, on page 4](#)

Feature Summary and Revision History

Summary Data

Table 1: Summary Data

Applicable Product(s) or Functional Area	SMF
Applicable Platform(s)	SMI
Default Setting	Enabled – Always-on
Related Changes in this Release	Not Applicable
Related Documentation	Not Applicable

Revision History

Table 2: Revision History

Revision Details	Release
First introduced.	Pre-2020.02.0

Feature Description

The SMF currently supports either the December 2018 compliance version of 3GPP specification or the June 2019 compliance version of 3GPP specification for the SMF interfaces such as N1, N2, N4, N7, N10, N11, N40, and Nnrf. The SMF processes the messages from these interfaces as per the compliance profile configured for the corresponding services. For information on the compliance profile configurations, see the [Configuring Interfaces, on page 3](#) section.

Currently, only IE encoding and decoding is supported. The existing features work with the June 2019 specification versions. No additional features in the June 2019 version are supported.



Note

The SMF continues to support the older versions of 3GPP specifications and the compliance profile configuration controls the same for the SMF interfaces.

Standards Compliance

The SMF is one of the control plane (CP) NFs of the 5G core network. The SMF uses different interfaces to communicate with the other NFs or nodes. For example, the N4 interface exists between the SMF and User Plane Function (UPF). Each of the SMF interfaces comply to a specific version of the 3GPP specification depending on the compliance version supported.

Use the following table to determine the compliance mapping of each SMF interface and the 3GPP Standards specification versions.

Interface	Relationship	3GPP Specification	Version
N11	Between AMF and SMF	29.518 29.502	For December 2018 Compliance Support: 15.2.0 For June 2019 Compliance Support: 15.4.0
N7	Between PCF and SMF	29.512	For December 2018 Compliance Support: 15.2.0 For June 2019 Compliance Support: 15.4.0
N4	Between UPF and SMF	29.244	For December 2018 Compliance Support: 15.2.0 For June 2019 Compliance Support: 15.4.0
Nnrf	Between NRF and SMF	29.510	For December 2018 Compliance Support: 15.0.0 For June 2019 Compliance Support: 15.4.0
N10	Between UDM and SMF	29.503	For December 2018 Compliance Support: 15.2.1 For June 2019 Compliance Support: 15.4.0

Interface	Relationship	3GPP Specification	Version
N40	Between SMF and CHF	32.291	For December 2018 Compliance Support: 15.1.0 For June 2019 Compliance Support: 15.3.0
N1	Between UE and SMF	24.501	For December 2018 Compliance Support: 15.2.0 For June 2019 Compliance Support: 15.4.0
N2/NGAP	Between RAN and SMF	38.314	For December 2018 Compliance Support: 15.2.0 For June 2019 Compliance Support: 15.4.0

Configuring Interfaces

Use the following commands to configure the SMF interfaces in compliance with the 3GPP specifications.

```

configure
  profile compliance profile_name
    service
      n1 version full version_format spec spec_version
      uri_version uri_version
      n2 version full version_format spec spec_version
      uri_version uri_version
      namf-comm version full version_format spec spec_version
      uri_version uri_version
      nchf-convergedcharging version full version_format
      spec spec_version
      uri_version uri_version
      nnrf-disc version full version_format spec spec_version
      uri_version uri_version
      nnrf-nfm version full version_format spec spec_version
      uri_version uri_version
      npcfc-smpolicycontrol version full version_format spec spec_version
      uri_version uri_version
      nsmf-pdusession version full version_format spec spec_version
      uri_version uri_version
      nudm-sdm version full version_format spec spec_version
      uri_version uri_version
      nudm-uecm version full version_format spec spec_version
      uri_version uri_version
    range
  !
  !

```



Important Service selection is based only on the specification version. In future releases, the full API version will be used.

NOTES:

- **version full:** Specifies the API full version for each service in the following format:
 <Major-version>.<Minor-version>.<patch-version>.[alpha-<draft-number>]
 The format is specified in *3GPP TS 29.501 V15.2.0, section 4.3.1.1*.
- **version spec:** Specifies the 3GPP specification version number. It can be one of the following values:
 - 15.0.0
 - 15.1.0
 - 15.2.0
 - 15.2.1
 - 15.4.0



Important Configuring the 3GPP specification version value depends on the SMF interface. Not all the preceding versions are options for the SMF interfaces. Only a combination of the preceding versions exist as options for the 3GPP version compliance configuration. For details on the compliance version, see the [Standards Compliance, on page 2](#) section.

For example, to support 3GPP June 2019 specification compliance for the N7 (PCF) interface, configure the specification version as *15.4.0*.

The default version number depends on the SMF interface. For example, the default version is *15.2.0* for the N7 interface. Similarly, for the N10 interface, the default version is *15.2.1*.

- **version uri:** Specifies the API version URI for each service in the following format:
 "v" concatenated with a number
 It can be both v1 and v2, or either v1 or v2.
 For example, for the compliance version 15.4.0 in the NRF configuration for the service type nudm-sdm/nudm-uecm, mandate the configuration of the uri-version in the version to 'v2'. For compliance version 15.2.1, this configuration is optional.
 For example, version v1: (- url: '{apiRoot}/nsmf-pdusession/v1')
- **service:** Specifies the service names as cited in *3GPP TS 29.510 V15.2.0, section 6.1.6.3.11*.

Sample Configuration

The following is a sample output of the interface configuration:

```
product smf(config-compliance-comp1)# show full
profile compliance comp1
  service nsmf-pdusession
    version uri v1
    version full 1.0.0
    version spec 15.2.0
product smf(config-service-nsmf-pdu)# compliance-profile comp1
product smf(config)# show full-configuration profile smf
profile smf smf1
  service name nsmf-pdu
  -----
  compliance-profile comp1
  -----
!
!
```

