



5G CORE

Product Data Sheet

# 5G Network Slice Selection Function (NSSF)

## ✓ Business Benefits

- Key function of the 5G Core service-based signaling network, providing comprehensive network slicing management
- Network-wide administration and signaling of network slice policies and availability
- Intelligent Network Slice Selection
- Roaming Support for Slice specific SLAs
- Part of the Titanium InterGenerational™ Cloud-Native Framework interworking of HTTP2, Diameter, SS7 & SIP signaling
- “Deploy anywhere” installation on premises or in the cloud via Containers

## Product Data Sheet

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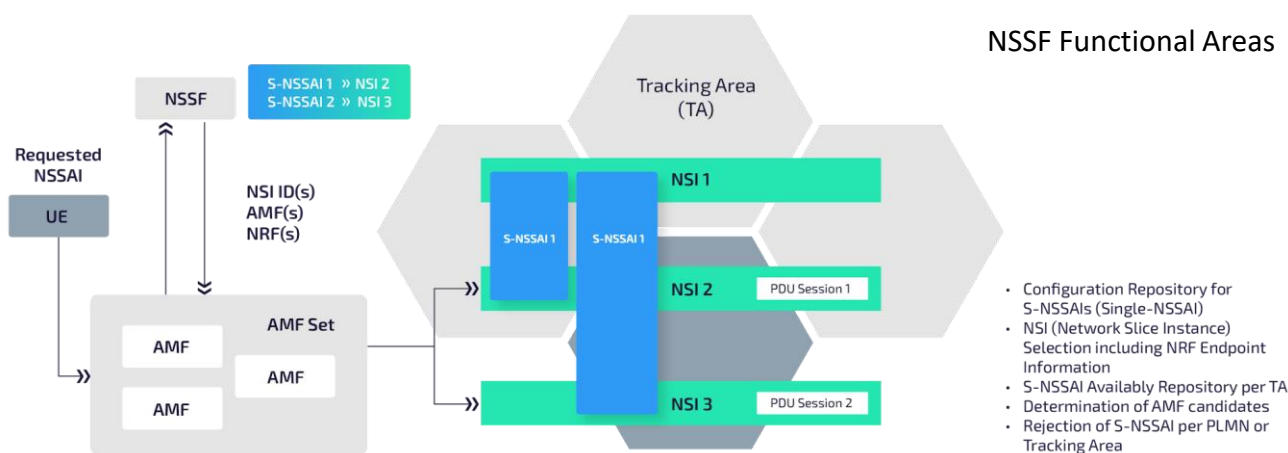
### + Overview

The NSSF provides the Network Slice Selection API for AMFs (Access and Mobility Function) for Registration, UE Configuration Update and PDU Session Establishment as well as the NSSAI Availability API (Network Slice Selection Assistance Information).

For Slice Selection service operations, the NSSF considers the slice availability as well as the operator's policies on restrictions, slice mapping and configuration.

For roaming the requirements for the Home-NSSF and Visited-NSSF are addressed and all 5G service bus signaling needs to support customized network slice instances are addressed, including the standardized Slice/Service types for different industries and customer segments:

- eMBB: Enhanced Mobile Broadband
- URLLC: Ultra-reliable Low Latency Communication
- MIoT: Massive Internet of Things
- V2X: Vehicle to X Communication



### + Key Capabilities

#### Network Slicing Policies

For each of the operator's serving PLMN-IDs, a list of serving S-NSSAIs with the related mapping to the home S-NSSAIs can be configured per home PLMN, as well as the list of restricted S-NSSAIs in each tracking area. Network Slice Instance (NSI) specific NRF endpoint configuration and identifier is also stored centrally in the NSSF.

#### NSSAI Availability Updates

NSSF serves as a repository for the availability of S-NSSAIs in each PLMN/TA and the related AMF ID or AMF Set as signaled by the AMFs to the NSSF.

#### NSSF Network Slice Selection

In response to AMF requests, NSSF responds, depending on the request options, with the list of allowed/configured NSSAI, NRF endpoint information, NSI identifier, target AMF Set candidate AMFs and the rejected S-NSSAI per PLMN and TA.

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### Key Capabilities (continued)

#### Roaming Functions

Slice Information mapping information between home and visited network is provided. Also, acting as V-NSSF, Home Routing PDU Session. Establishment requests are adapted and forwarded to the appropriate V-NSSF to respond with the NSI Information configured in the Home PLMN

#### Provisioning

A graphical user interface is provided for the administration of network slicing data . Alternatively, an open REST API is exposed for OSS integration.

#### Dissectors

The Titan.ium Dissector facility includes Predefined & User-defined HTTP2 dissectors allowing retrieval of any information contained in an HTTP2 message, which can then be used for routing or service logic.

#### Dissector-based Rules Engine

Routing & Service logic processing is supported by Titan.ium's powerful Rules Engine allowing programmable logical expressions (And/Or/Not) on different Dissector parameters as needed. Also provided are pre-defined functions that can be applied to optimize User programmable processing logic.

#### Configurable Actions

The programmable Rules Engine also allows the user to configure context-specific actions.

#### Transaction Detail Records (TDRs)

The NSSF allows configurable generation of TDRs for inbound and/or outbound service transactions. The operator can select which Information Elements (IE) to include.

#### Overload Protection

NSSF replicas and instances monitor their traffic load interacting with the HTTP Service Router to throttle traffic and/or auto-scale NSSF services as needed to handle overload.

#### Statistics and Key Performance Indicators (KPI)

The NSSF generates Statistics and KPIs so that external servers can retrieve them for performance and health tracking.

### Optional Features

The following features may optionally be added to the NSSF deployment as needed.

#### HTTP2 Message Transformation

This feature enables the operator to invoke configurable message Dissectors and Rules-based Actions to transform message content as needed, for example to aid in 5G to 3G/4G interworking.

#### HTTP2 Traffic Mirroring

Traffic mirroring interface towards external Probing/Monitoring/Analytics system via gRPC protocol. It provides observability over alarms, events and statistics.

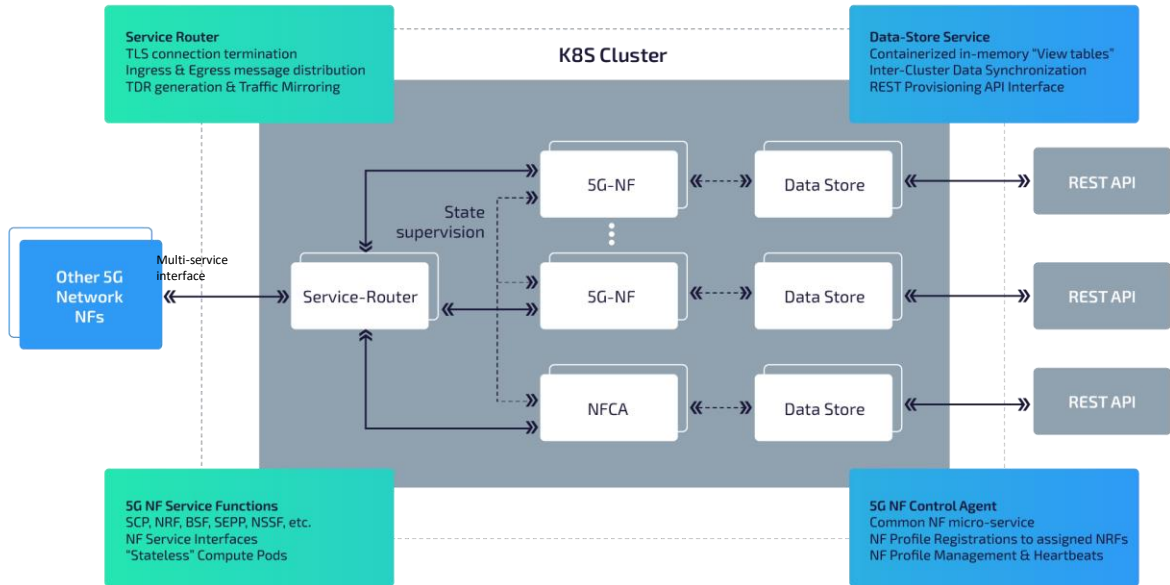
#### Additional Related Products

Titan.ium also offers an Element Management System (EMS) system which may be used for centralized configuration, performance and fault management of distributed NSSFs as needed.

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### 5G Network Slice Selection Function (NSSF)

#### 5G Container-Native Architecture



The NSSF is implemented as a set of containerized micro-services, decomposed into a Service-Router function, NSSF compute front-end functions, and back-end Data Store micro-service for persistent storage. All component micro-services may be replicated within a Kubernetes (K8S) Cluster for both resiliency & scalability purposes. In addition, two or more K8S Clusters may comprise a single Titanium platform system deployment to achieve multi-site system geo-redundancy, with cross-site Datastore replication to ensure a common view of NSSF persistent data.

The Service-Router provides HTTP1/2 routing services and securely exposes SBI interfaces to external IP networks. All Titanium platform, 5G NFs share a common "Network Function Control Agent" (NFCA) micro-service, responsible for common NF management, e.g., to handle Registration of NF-Profiles to their assigned NRF(s) and keep these NF-Profile registrations up to date via heart-beats.

#### Contact Titanium platform Today

Please visit [www.titaniumplatform.com](http://www.titaniumplatform.com) for product or solution information. For configuration and pricing details, please contact your local account representative via [sales@titaniumplatform.com](mailto:sales@titaniumplatform.com)

#### About Titanium platform

Titanium platform Platform is a leader in signaling, routing, subscriber data management, and security software and services. Our solutions are deployed in more than 80 countries by over 180 companies, including eight of the world's top ten communications service providers and all of the top five. Titanium platform supports any network, domain, signaling protocol, and infrastructure with advanced routing capabilities and a unified end-user experience.

