

# CAPIF utilization by 3GPP Service APIs

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# Outline



## CAPIF in 3GPP Rel-15:

1. SA6 completed stage-2 CAPIF
2. SA2 has specified CAPIF utilization for northbound APIs of SCEF (EPS) and NEF (5GS)
3. CT3 is ongoing (35% completed) stage-3 CAPIF
  - Approval Target – June, 2018

# 1. SA6 completed stage-2 CAPIF

# Service API aspects v/s Framework aspects - Definitions



## Service API aspects (aka Functional APIs)

- Based on "3GPP network services and capabilities" such as subscriber management, mobility management, transport and other communication services
- for consumption by external 3rd party applications

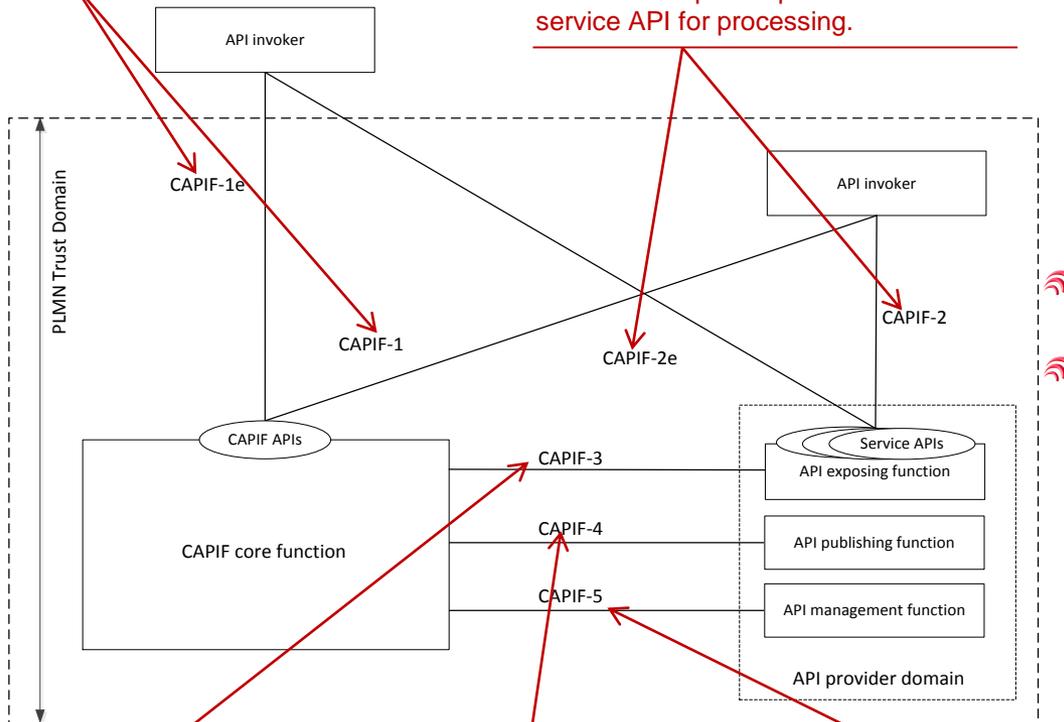
## Framework aspects

- typically horizontal in nature and caters to "common functionality" such as onboarding, offboarding, publishing, unpublishing, update service API, discovery, authentication, registration, authorization, logging, charging, monitoring, configuration, topology hiding, required by Northbound Service APIs (fully complementing Service API aspects)
- for consumption by external 3rd party applications and API provider

# CAPIF introduction for Framework aspects

Provides authentication, authorization, Discovery of northbound API and framework events

Carries authentication and authorization. The service specific part of the service API invocation is out of scope of SA6. The service specific part is sent to the service API for processing.



Provides access control, logging, charging, provides authentication and authorization support

Publish the northbound APIs

Monitoring, policy configurations, API invoker provisioning

CAPIF is the Common API framework for 3GPP northbound APIs operated by the CAPIF provider (TS 23.222)

- CAPIF provider can be a PLMN operator
- API provider can be a PLMN operator or any trusted 3<sup>rd</sup> party organization who is a provider of northbound APIs.
- CAPIF offers the northbound APIs to the API invoker

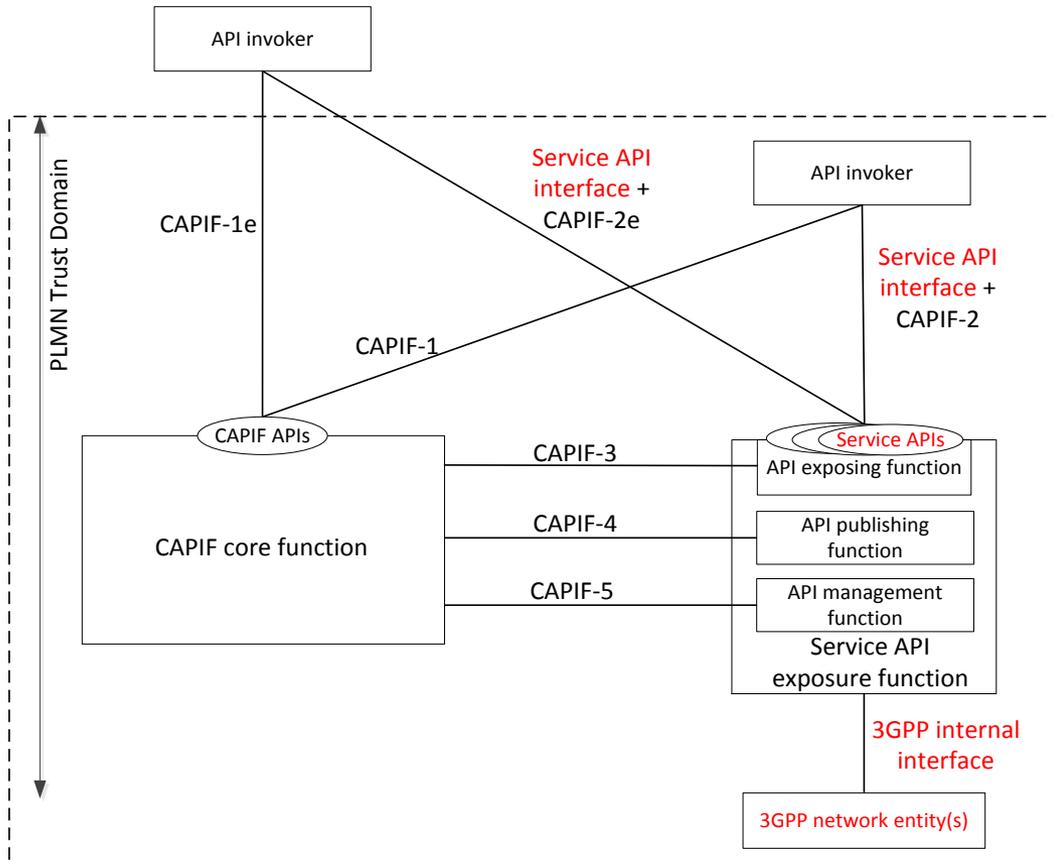
PLMN Trust domain – Same definition as trust domain in TS 23.682

API provider domain – The functions to be supported by the API provider to be compliant with the framework specified by CAPIF

- **PLMN operator is an API provider**

*CAPIF only provides the framework related functions and does not provide any northbound APIs related to 3GPP core network services.*

# B.0 CAPIF utilization by service API provider

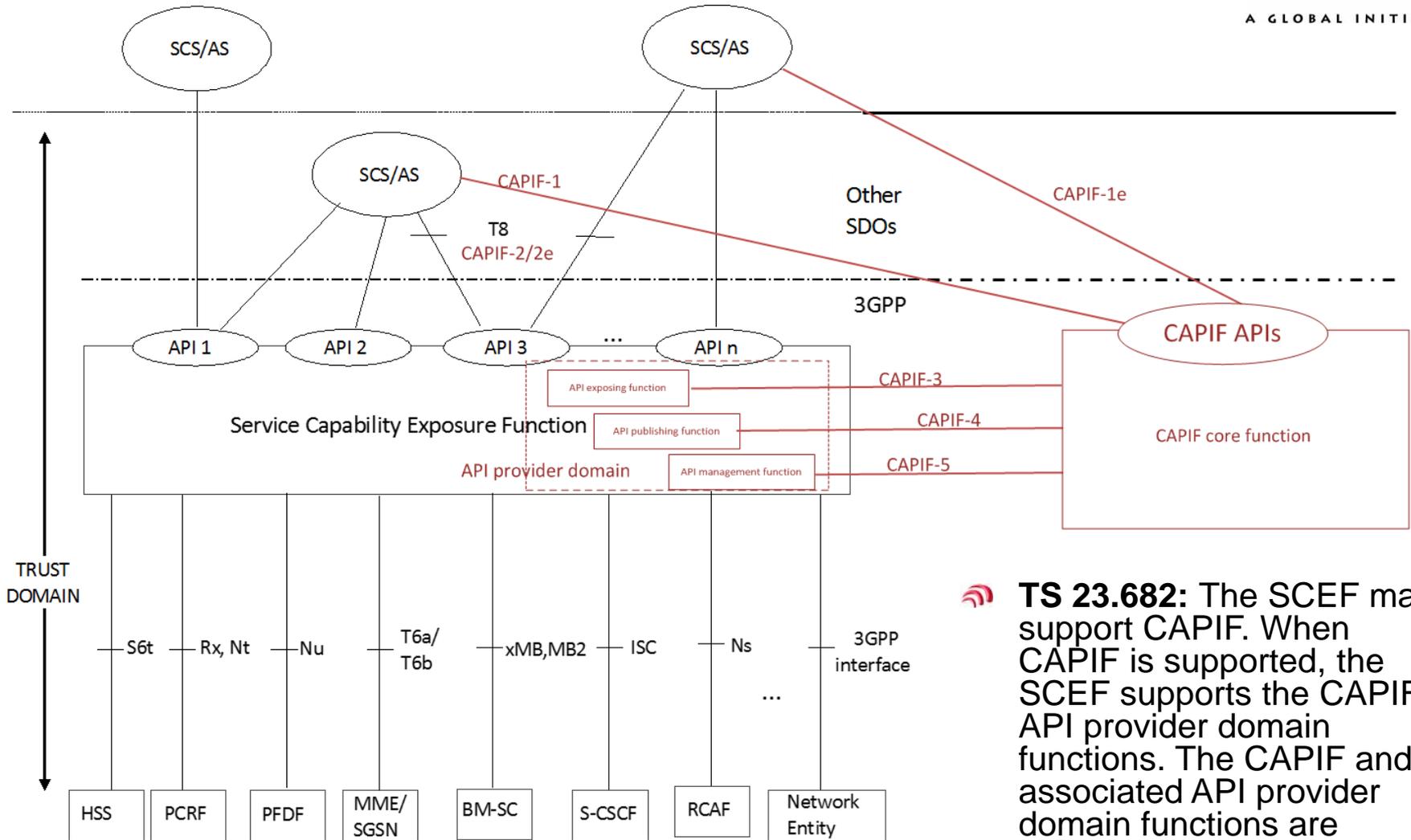


## API provider integration with CAPIF

- Must specify ***functional relationship*** of service API exposure function with the functions of API provider domain in CAPIF
- Must specify the ***reference point relationships*** of the service API exposure function with CAPIF-2/2e/3/4/5

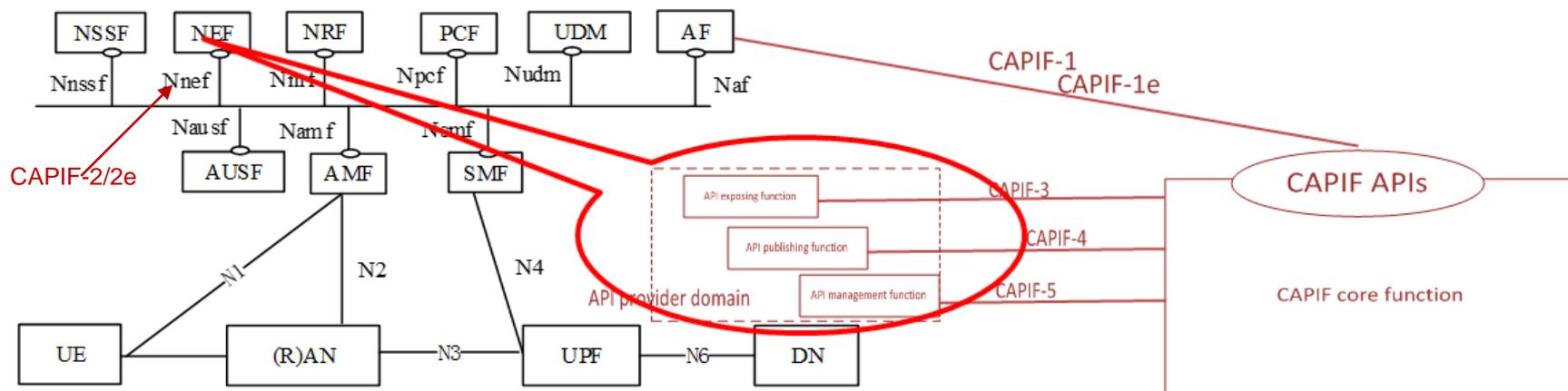
2. SA2 has specified CAPIF utilization for northbound APIs of SCEF (EPS) and NEF (5GS)

# CAPIF utilization for SCEF (EPS)



 **TS 23.682:** The SCEF may support CAPIF. When CAPIF is supported, the SCEF supports the CAPIF API provider domain functions. The CAPIF and associated API provider domain functions are specified in TS 23.222.

# CAPIF utilization for NEF (5GS)



 **TS 23.501:** When an NEF is used for external exposure, the CAPIF may be supported. When CAPIF is supported, an NEF that is used for external exposure supports the CAPIF API provider domain functions. The CAPIF and associated API provider domain functions are specified in TS 23.222 [64].

3. CT3 is ongoing (35% completed) stage-3  
CAPIF

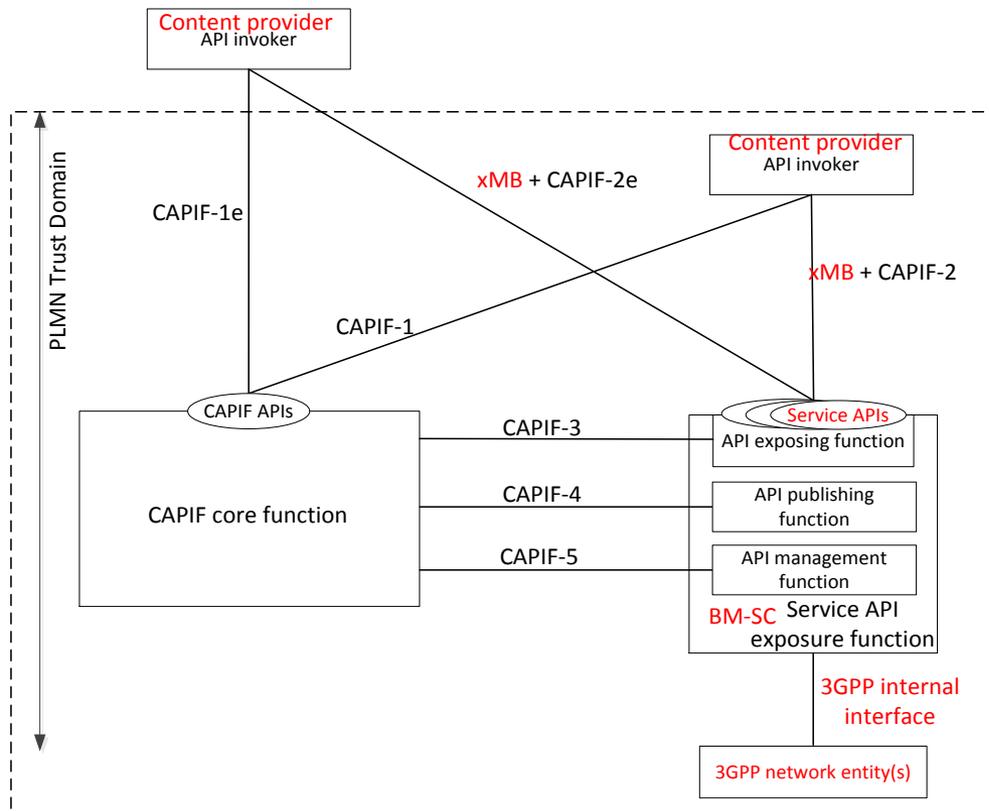
## CT3 status

- 📶 CT3 is defining stage-3 aspects of CAPIF for the stage-2 that is available in TS 23.222
- 📶 CT3 is coordinating with SA3 for security aspects
- 📶 CT3 has agreed on API design aspects and supporting features such as notifications, feature negotiations
- 📶 CT3 has agreed on 2 CAPIF APIs (CAPIF events API, API invoker management API)
- 📶 Approval Target for TS 29.222 – June, 2018

# Summary

📶 xMB APIs are “Service APIs” in CAPIF terminology

📶 To utilize CAPIF for xMB APIs:



📶 Must specify **functional relationship** of BM-SC with the functions of API provider domain in CAPIF

📶 Must specify the **reference point relationships** of the BM-SC with CAPIF-2/2e/3/4/5

📶 Stage 2 specification example:  
The BM-SC shall support CAPIF for xMB APIs and the CAPIF API provider domain functions. The CAPIF and associated API provider domain functions are specified in TS 23.222.