

# Discussion paper for TSGVVEC

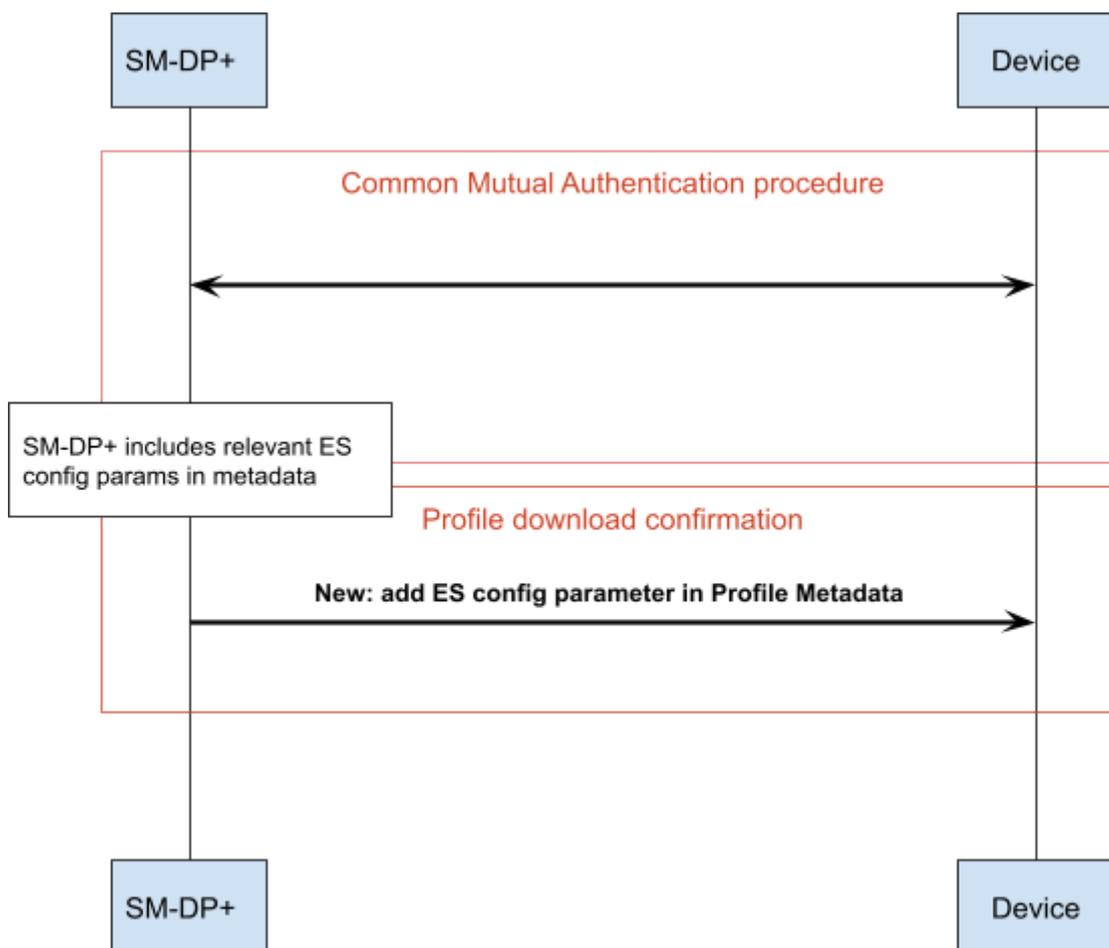
Google inc. - May 2022.

## Context:

- The method specified in clause 2.1 of TS.43 to determine the FQDN has been made optional in CR1044 because the specified method was:
  - Barely used by mobile carriers
  - Not able to determine the ES FQDN of an MVNO solely based on MCC/MNC
- As the mobile industry is moving toward eSIM, there is an opportunity to provide the ES capabilities supported by respectively the Carrier and the SM-DP+ via the eSIM protocol.
- The eSIM protocol has been enhanced to provide eSIM capabilities and proprietary information that the present discussion paper proposes to review.

## Proposal: add supported TS.43 info in eSIM Profile metadata

### High level sequence diagram



**Approach: leverage profile metadata extensibility to provide ES configuration**

The Profile metadata defined in the eSIM specification has two fields that can be used to provide proprietary/service-specific information

```
StoreMetadataRequest ::= [37] SEQUENCE { -- Tag 'BF25'
  [...]
  serviceSpecificDataStoredInEuicc [34] VendorSpecificExtension OPTIONAL, -- Tag 'BF22'
  serviceSpecificDataNotStoredInEuicc [35] VendorSpecificExtension OPTIONAL -- Tag 'BF23'
}

VendorSpecificExtension ::= SEQUENCE OF SEQUENCE {
  vendorOid [0] OPENTYPE.&typeId, -- OID of the vendor who defined this specific extension
  vendorSpecificData [1] OPENTYPE.&Type
}
```

- **serviceSpecificDataStoredInEuicc**: this field will keep the service-specific info in the eUICC memory
- **serviceSpecificDataNotStoredInEuicc**: this field will only be used by the Device and will not be stored in the eUICC memory.

**Proposed way forward:** It is recommended to use the “serviceSpecificDataStoredInEuicc” field to carry TS.43 configuration supported by the mobile carrier.

## ES config format in Profile Metadata

(Applicable for V2.4+ and V3)

The following is a data object definition proposal of GSMA TS.43 capabilities supported by the Carrier / MVNOs and that can be included in **serviceSpecificDataStoredInEuicc**.

```
vendorOid gsmaTs43Oid OBJECT IDENTIFIER

ServiceProviderTs43Config ::= SEQUENCE{ -- Tag 'xxxx'
  serviceProviderTs43Capabilities [x] ServiceProviderTs43Capabilities, - Tag 'xxxx'
  ts43SupportedRelease VersionType -- Tag 'xxxx'
}

VersionType ::= OCTET STRING(SIZE(2)) -- major/minor version are coded as binary value on
byte 1/2, e.g. '01 08' for v1.8.

ServiceProviderTs43Capabilities ::= SEQUENCE of SEQUENCE{ -- Tag 'xxxx'
  entitlementServerFqdn [x] UTF8String (SIZE(0..64)), -- Tag 'xxxx'
  entitlementServerAppIds [x] SEQUENCE of AppId OPTIONAL, -- Tag 'xxxx'
  entitlementServerSupportedAuths [x] AuthenticationMethods OPTIONAL -- Tag 'xxxx'
}

AppId ::= INTEGER {voiceovercellular(2003),vowifi(2004), smsoip(2005),
odsacompanion(2006), odsapprimary(2009), dataplaninfo(2010),
odsaserverinitiatedrequest(2011)}

AuthenticationMethods ::= BIT STRING {
eapakaauthentication(0)
openidconnectauthentication(1)
smsotpauthentication(2)
}
```

### Requirements / principles

- The ES capabilities supported by the mobile carrier shall at least include the FQDN address of the entitlement Server.
- The above field is defined as a SEQUENCE of SEQUENCE, this means that a service provider that has multiple ES FQDNs achieving different purposes (e.g. FQDN#1 for vowifi and FQDN#2 for ) can also be supported.

- For each configured ES FQDN, the service provider may further indicate the supported services that are specified in the TS.43 specification e.g. ODSA Primary, voice over cellular, etc....
- For each configured ES FQDN, the service provider may further indicate the supported authentication methods that are specified in the TS.43 specification e.g. EAP-AKA, OIDC, etc...

## **ES capability indication by the Device**

Proposal to ask eSIM Group to include in DeviceInfo an optional field indicating the support of TS.43.