

Solution Proposal for IR0583 eSIM Consumer Enablement

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Document Revision History

|  |  |  |
| --- | --- | --- |
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| 1.0 | 12/19/2018 | Initial version |
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# Business Drivers

Devices during and beyond 2018 will have traditional SIM replaced by eSIM (GSMA based) for both Postpaid and Prepaid. USCC currently has no solution to provision these devices in standalone mode. Within the next 5 years, Device Marketing is forecasting that all devices (handsets, tablets, wearables, etc.) will only support eSIM.

This initiative will provide the ability to activate eSIM capable devices (either primary or secondary devices) through the Point of Sale (PoS) system. When the eSIM is on a secondary device, the system will support the provisioning and assignment of the “One Number” feature so that the secondary device and the primary device that it is paired with can make and receive phone calls and messaging using the same mobile number for Postpaid.

# High Level Scope

Describes the high level scope that will be needed to provide a solution as part of this document

## Strategic Scope:

Activation of eSIM capable consumer (USCC and BYOD) devices for postpaid and prepaid subscribers

* Sale of primary device at POS
* Sale of secondary device at POS
* Sale of primary & secondary thru Direct fulfillment
* Activation of primary & Secondary eSIM devices

## Tactical Scope:

* Inventory Management of eSIM
* Enhancements to NDC for supporting the kitting process
* Support for dual SIMs
* Support for oneNumber for postpaid secondary devices
* ADS reporting will need to be adjusted for correct reporting of secondary devices

## Logistical Scope:

* Need to establish SOW with Amdocs for TOPS work
* Need to establish SOW with Gemalto for producing the QR codes per eSIM
* Need to work with OEMs to kit the QR codes
* Need to work with TDS for supply chain related work

## Morale Scope:

* Device marketing and Supply chain will need to figure out who owns the ordering of eSIMs from Gemalto going forward

## Operational Scope:

This section covers items needed to support the ongoing operations of the request. Impacts to ongoing operations should be mentioned.

# Proposed Solution/Approaches

## Proposed Solution/Approach 1:

***In scope***

* Support for eSIM using printed QR code per eSIM profile

***Out of Scope***

* M2M IoT devices and Automotive – A different solution will be required
* Accessory Serialization
* Activation of the primary/secondary device without an interaction with an USCC agent/associate
* Locking of eSIM devices
* Port-in options as part of the Local Profile Assistant (LPA) flow
* Support for more than one profile
* Pre-loaded profile for restricted network connectivity
* Download of eSIM profile using a discovery server
* USCC developed LPA
* eSIM device sale in national retail (Need to be included in WARP 2.0)
* eSIM support for BYOD on the Web (Need to be added to WE)
* Re-use of eSIM
* Support for 2 lines on an 2-SIM device

### Solution Overview

* + A new device attribute will be introduced into SAP for devices and accessories
    - It can possibly take 3 values – eSIM, both or empty (meaning pSIM or no SIM)
    - The default will be empty
  + The above attribute will be part of the SPS template in EPC
  + Gemalto will generate a QR code per eSIM loaded into the SMDP+
  + The OEMs will receive the QR code on the same card they receive the physical SIM (expect that the physical SIM would be replaced with the QR code). All the feeds that Gemalto produces today for the pSIM will be applicable for eSIM as well
  + Depending on the Device, the Card with the physical SIM or the QR code will be kitted by the OEM/Warehouse
  + OEM will send the ASN with the UICCID for both the physical SIM & eSIM devices. TOPS will receive the same from SAP.
  + If it is kitted in the warehouse, the IMEI, UICCID paring will be entered in SAP. TOPS will receive the same from SAP.
  + Similar to the physical SIM cards, a stack of the card with QR code will be sent to the stores, agents, national retail for SIM swap scenarios
  + RIM/RIM lite will display a prompt for orders that need eSIM
  + In the stores after the order is complete, based on above prompt the RWC/CSR will help activate the device/accessory with the QR code
  + eSIM only DF order will also be supported similar to physical SIM DF order
  + Reporting will flow as normal. The iWatch reporting challenges will be addressed before this project goes live.
  + The secondary devices will follow the iWatch reporting flow. The primary device reporting will flow as it does today.
  + The dual primary lines (for dual SIM phones) on USCC will be treated as 2 lines in TOPS
    - Activation commission will be paid on 2 lines
    - The lines can be on two different accounts
    - The subscriptions/lines/profiles corresponding to each SIM as treated as part of that particular account only e.g., suspend for non-pay will affect the line(s) on the non-pay account
  + 2-SIM phones will be supported but with a single activation on USCC network
    - 2-SIM phones have only one IMEI
  + We assume that there will be some EDW work for reporting for dual lines and to support any other supply chain reporting needs.
  + Swap SIM will need a new eSIM to be scanned after TOPS goes thru the swap SIM flow similar to today
  + Swap ESN will need a new eSIM to be scanned as part of the swap ESN TOPS flow.

### Pros/Cons for the Solution

* + Pro:
    - Time to market
    - Gemalto has done this for other carriers
  + Cons:
    - Does not enable the spirit of eSIM introduction i.e. make switching/acquiring carrier service seamless
    - No pure self-care option
    - Apple/other vendors may mandate a self-car option at a later date
    - Short term solution which does not provide any potential supply chain efficiencies

## Proposed Solution 2 (for reference only):

### Solution Overview

* + A new device attribute will be introduced into SAP for devices and accessories
    - It can possibly take 3 values – eSIM, both or empty (meaning pSIM or no SIM)
    - The default will be empty
  + The above attribute will be part of the SPS template in EPC
  + The OEMs/warehouse will send a list of IMEIs & eIDs that are being kitted on behalf of USCC
  + Gemalto will generate reserve and release for download an eSIM per eID in the SMDP+ server
  + Gemalto will send a feed of the IMEI, EID, and UICCID pair will be sent to SAP. TOPS will receive the same from SAP as part of the ready to ship notice for DF orders
  + At the store, **after the order is complete** the RWC/agent will scan a static QR code with the LPA of the phone which will download the eSIM to the device
  + In the DF flow, the customer will receive an instruction sheet that will contain a static QR code which can be scanned to download the eSIM

### Pros/Cons for the Solution

* + Pro:
    - Supply chain efficiencies
  + Cons:
    - **Does not support BYOD, Insurance devices &Walmart Apple devices**
    - Coordination needed between OEMs and Gemalto introducing delays in supply chain.
    - Gemalto has no experience with this flow
    - No pure self-care option

## Proposed Solution 3 (for reference only):

### Solution Overview

* Introduction of an eSIM manager which will enable self-care as well as elimination of physical QR codes
* TOPS will call eSIM manager ->SMDP+ and reserve a profile when a device/accessory needs an eSIM using the eID of the device
* After the order is complete, TOPS will call eSIM manager ->SMDP+ to release the eSIM for download
* The RWC/agent will scan a static QR code using the LPA of the device to download the eSIM on the device
* WARP API will allow for an eID to be received from the national retailer and reserve that eSIM for that order
* All DF orders that have a device/accessory will reserve an eSIM for the device/accessory providing the eID
* SAP will send eID as part of the ready to ship call to TOPS
* The customer will scan a static QR code to download the eID for the device/accessory on receipt of the shipment
* If there is a failure in the order flow the eSIM will be released to the pool using a API call to the eSIM manager ->SMDP+

***Other considerations***

* If self-care is not required, TOPS can possibly be connected directly to SMDP+
* Release of reserved SIMs if not downloaded after 90 days

### Pros/Cons for the Solution

* + Pro: Long-term option
  + Cons:
    - Vendor ecosystem is immature
    - Longer timeline to deliver/certify. More changes in BSS

# Business Operational Impacts

Frontline (including agents) and CSRs will need to be trained on how to handle eSIM as part of ordering flow

# Project Uncertainty Profile

This model will help to communicate, plan, invest, and manage more effectively based on aproject’s measured level of forecast uncertainties.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *P r o j e c t C o s t*  Technical Experience | **Exploration** |  |  |  |
| **Journey** |  | X |  |
| **Commute** |  |  |  |
|  |  | **Refinement** | **Evolution** | **Revolution** |
|  |  | *Business Case*  Operational Experience | | |

**Justification of Profile:** The IS work is fairly standard following existing standard patterns. The benefits are well documented in the business case

# Estimated effort duration

I.S. anticipates that a request of this size will take from 3-6 months for solution #1 to implement after approval and required the necessary contract with the above mentioned vendors.

# Recommendation

IS recommends solution #1 as a short term solution with a subsequent project to explore solution #3, the long term solution for eSIM

# Governance Recommendation

EPM governed with an IS Delivery Manager.

# Guidance for Capex/Opex Determination

This is a new capability with minimal enhancements to existing systems and processes to support eSIM.