

Solution Proposal for IR 630

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Document Revision History

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| --- | --- | --- |
| Revision | Date | Description |
| 1.0 | 07/15/2019 | Initial Version |
|  |  |  |

# Business Drivers

U.S. Cellular has committed to the FCC that subscriber protection from calling number spoofing commonly associated with illegal robocall will be deployed in the second half of 2019. All other major carriers are also deploying robocall combating solutions in 2019 as well. It is desirable that basic robocall identification be made available to our Volte customers for free and without dependencies on the user’s device and a requirement to use a device app. Additional value-added services (e.g., calling name) may be incorporated into the solution at a future date, provided to the customer for an additional fee and may make use of a device app.

The functionality to be deployed will utilize the industry defined SHAKEN/STIR framework. This framework will have the originating network authenticate the user’s authority to use the calling number and the terminating networks verify that the call has been authenticated. This information will be provided to the robocall analytics engine as an additional input in the determination of the caller’s reputation.

# High Level Scope

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

***In*:**

* Support of the SHAKEN/STIR framework, including certificate management, as defined by ATIS.
* Support inter-carrier exchange of the SHAKEN/STIR related information via a SIP connection.
* US Cellular customers roaming in another carrier’s Volte network will be protected if the other carrier has implemented the SHAKEN/STIR framework.
* Robocall analytics enhanced using the SHAKEN/STIR related information.
* Prepaid and Postpaid customers
* New and Current customer enablement
* Display of a call category on the native device display
* Ability to opt-out of Robo Call blocking
* Determine which calls (if any) will be blocked proactively at the network level and provide the customer the option to opt-out of this functionality. Determine the user experience (including customer opting-out) based on the following conditions:
  + Pay App vs. Free App vs. No App
  + Volte vs. CDMA
  + is vs. Android
  + Feature Phone vs. Smartphone
* Ability to report robocall activity.
* Associate Communications and Training
* Operational Readiness items (Cellsite, How to Guides, Troubleshooting, etc.)
* Marketing Readiness items (Customer Communications, updates to online content, etc.)
  + Go to Market Strategy
* Procurement Activities (RFP’s, Vendor engagement, Contract changes, etc.)
  + Vendor Trial
* Addressing impacts for existing Call Guardian customers (Note: we could stay with Call Guardian)

***Out*:**

* It is not possible to exchange SHAKEN/STIR related information over ISUP signaling. The solution is not able to provide protection when ISUP is present anywhere along the path.
* Charging for basic protection.
* Monetization and support for additional value-added services.
* Changes to existing billing offer
* Changes bill presentment
* Rebranding of Call Guardian App

## Functional Capabilities:

### FC1 – Ability to provision new attributes needed to enable Robocall feature on the network.

Two new initial Filter Criteria(If) *ROBOCALLORIG* and *ROBOCALLTERM need to be assigned volte subscribers as part of hss provisioning.* , populating subscriber records with these IFCs activates the Robocall feature for an end-user.

### FC2– Ability to opt-out/opt-in of Robo calls blocking.

Functional capability needed to opt-in or opt-out the subscriber out of robo call blocking is needed for associates and customers.

### FC3 – Ability to enable existing (current subscribers) for robocall

The initial Filter Criteria(IFc) ROBOCALLORIG and ROBOCALLTERM need to be provisioned for existing VOLTE subscribers so that RObocall feature will be enabled for them.

### FC4 – Ability to handle potential impact to Call Detail Records(CDRs)

Ability to handle any new reason codes that might be introduced in the CDR’s as part of the robo call implementation

## Operational Capabilities:

### SC1 – Training and process changes for associates due to the introduction of the new functionality being introduced to block Robocalls.

### SC2 – Reporting and Analytics from Call Guardian App. There are no reporting needs identified from the IS side.

# Capability Prioritization and Sequencing.

This section lists the capabilities in the order of priority and/or sequencing where applicable. Priority is informed by multiple factors (a) Value Realization (b) Maturity of Solution (c) Resource Constraints (d) Budget …

Sequencing is informed and applicable when there are dependencies that when adhered to enable realization of business value.

|  |  |  |
| --- | --- | --- |
| **Capability** | **Recommended MVS/MVP** | **Value Rationale** |
| FC1, FC2,FC4,SC1 | MVS 1 | Capabilities that can be rolled out later were moved to MVS2 |
| FC3 | MVS2 |
| SC2 | MVS 2 |

# Solution/Approaches

All the below solution approaches will be for VOLTE subscribers. CDMA subscriber base is not covered; they will mmmmmj mmkj

## Proposed Solution/Approach 1:

### Solution Overview

Opt-in/Opt-out /Provision New Volte Subscribers

* Create a new EPC billing offer with zero charge which will be added to all volte subscribers , this billing offer will basically enable provisioning the attributes needed to enable the robocall feature on the network (HSS)
* As part of the life cycle event triggers that monitors pricing plan changes, SCUBE will monitor the DBCID for this billing offer, update the MDN profile . Scrappe will accordingly provision(opt-in) or de-provision (Opt-out)the robocall attributes on the network (HSS).
* Mediation changes will be needed based on the finalization of how the CDRs will look like for dropped calls on the network.

Existing Subscribers

* Engineering can work with the vendor to write a script to add the IFC’s (new provisioning elements) onto the network without IS involvement.

### Capabilities Included/Excluded

None

### Pros/Cons for the Solution

**Pros**

* No dependency on TOPS major release.
* No separate web tool needed for opt-in/opt-out.
* Faster migration of the existing subscriber base without IS involvement

**Cons**

* Opt-in/Opt-out is dependent /integrated with the Point of sale i.e subscriber order changes.
* TNS Master DB might be out of sync with TOPS
* Need to make sure that there will be no impact to call completion or call messaging due to removing the IFC’s on the network when the billing offer is removed.

## Proposed Solution/Approach 2:

### Solution Overview

Opt-in/Opt-out /Provision New Subscribers

* Create a new EPC billing offer with zero charge which will be added to all volte subscribers , this billing offer will basically enable provisioning the attributes needed to enable the robocall feature on the network (HSS)
* As part of the life cycle event triggers that monitors pricing plan changes, SCUBE will monitor the DBCID for this billing offer, update the MDN profile . Scrappe will accordingly provision(opt-in) or de-provision (Opt-out)the robocall attributes on the network (HSS).
* Mediation changes will be needed based on the finalization of how the CDRs will look like for dropped calls on the network.

Existing VOLTE Subscribers

* Enabling the robocall features for the existing subscriber base will done by leveraging the volume trigger events in DANE by creating a file with the subscriber base that needs to be converted which can be done up to 100-200K at once depending on the limitations of the switch

### Capabilities Included/Excluded

None

### Pros/Cons for the Solution

**Pros**

* No dependency on TOPS major release.
* No separate web tool needed for opt-in/opt-out.
* Faster migration of the existing subscriber base

**Cons**

* Opt-in/Opt-out is dependent /integrated with the Point of sale i.e. subscriber order changes.
* TNS Master DB might be out of sync with TOPS
* Need to make sure that there will be no impact to call completion or call messaging due to removing the IFC’s on the network when the billing offer is removed.

## Proposed Solution/Approach 3:

### Solution Overview

Opt-in/Opt-out /Provision New Subscribers

* The Solution over view involves making changes to TOPS to provision the two new attributes (IFC’s) needed to enable the Robo call feature on the network for new subscribers
* A web interface will be developed for associates/customers for opting-out/opting-in of RoboCalls.
* Mediation changes will be needed based on the finalization of how the CDRs will look like for dropped calls on the network.

Existing VOLTE Subscribers

* MOA for existing subscribers to add the 2 IFC attributes to existing VOLTE subscriber base.

NOTE: How this web interface will communicate with the TNS Master DB still needs to be determined.

### Capabilities Included/Excluded

None

### Pros/Cons for the Solution

**Pros**

* Leverage the existing interfaces with in TOPS

**Cons**

* MOA can take really long to run for the existing subscriber base and will not be contented with others projects already in line for MOA via Tops
* Dependent on TOPS major release and there is a risk of not abling to make it by October.
* There are still some unknowns with how the API integration will work with TNS(robocall DB)

# Recommendation.

The recommended solution for the short term MVP is to go with solution approach 1 in order to meet the committed time lines for FCC.

Long term solution or later MVP’s can involve building a web solution integrated with TNS Master DB for opt-in/opt-out.

# Impacted Teams and Functions.

Teams impacted by capabilities for Recommended Solution 3:

|  |  |
| --- | --- |
| **Capability** | **Teams Impacted/Needed** |
| FC 1 - Ability to provision new attributes needed to enable Robocall feature on the network. | EPC, Dane |
| FC2 – Ability to opt-out/opt-in of Robo calls blocking. | EPC, Dane |
| FC3 – Ability to provision robocall attributes for existing (current subscribers) | Engineering |
| FC 4 – Ability to handle potential impact to Call Detail Records(CDRs) | Mediation |
| SC2 – Reporting | Call Guardian |

# Impacted Business Process Areas.

|  |  |
| --- | --- |
| **Capability** | **ASOM Level A Mapping** |
| FC1, FC3 ,FC4 | Customer orders a product, Customer consumes service |
| SC4 Reporting and Analytics | Product Life Cycle, Manage Enterprise Operations |

* **Accounting/Tax –** None.
* **Customer Service-- Training** needs to be provided to associates on how to field any calls regarding the implementation of this functionality and any new tools that might be introduced for opt-in/opt-out functionality.
* **Operations--**  None
* **Supply Chain** --- None.
* **Brand** – None.

# Estimated effort duration

The estimated effort duration for this would be around 2-4 months.

# Governance Recommendation

EPM Governance is recommended.

# Guidance for Capex/Opex Determination.

The recommendation for IR 630 would be to go with Capex.