



Solution Proposal for IR 0XXX International Services Revamp

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Document Revision History

Revision	Date	Description
0.1	12/04/2018	Initial draft

1. Business Drivers

1. USCC would like to deploy policy controls to international roamers to protect the customer from unwanted overages & reduce USCC cost in credits and adjustments.
2. USCC would like to deploy daily travel passes and a customer web portal to remain competitive with our international offerings and create a better customer experience.

4 key areas to develop in order to improve international roaming experience

1. SMS notifications for arrival and limit warnings
2. Policy controls for cap/throttle/suspend usage for voice/data/sms
3. Daily travel passes
4. Customer Web Portal

2. High Level Scope

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

2.1. *Strategic Scope:*

- Provide customers with notifications related to roaming services and substantially improve the customer experience
- Simplify existing product/service offering for international roaming so that customers do not end up incurring unwanted overage
- Add new options for international roaming so that more customers will use our service offering and increase revenue

Note: International Roaming Services are offered for postpaid subscribers only and will continue to be for postpaid subscribers only. Prepaid is out of scope.

2.2. *Tactical Scope:*

Below is a list of Minimal Marketable Features, derived based upon Vision and Scope and follow up value planning discussions with various stake-holders. Bullets within the headers identify Minimal Viable Solution.

2.2.1. Provisioning API Upgrade

- Upgrade/Migrate Syniverse end-point (logical) for the UniRoam Provisioning API that originates at AAM in our environment

Note: Above feature does not provide any new business benefit. It simply preserves current functionality of International Roaming. Vendor (Syniverse) requires us to upgrade the API as the current version is End-Of-Life.

2.2.2. Package Offers for Roaming Services

- The ability to offer packages such that subscriber pays for minutes of voice, KB/MB/GB of data and number of messages as part of a monthly roaming package.
- The ability to create combination of packages and offer that as add-on or part of To-Be-Determined Price Plan.

2.2.3. Usage Notifications

- The ability to monitor where any individual subscriber is in his/her consumption of voice, data and sms while roaming
- Notification when a pre-defined threshold consumption is reached for voice, data and sms

2.2.4. Policy Controls

- Control action when a pre-defined threshold consumption is reached for voice, data and sms. Control action includes severing service and/or degrading service to prevent unwanted overage.

2.2.5. Day Passes for Roaming Services

- The ability to offer day passes for voice, data and sms where customer pays a flat rate for usage allowance
- Customers are able to buy day passes from the roaming location using self-service interaction channels
- Billing experience where customers pay for day passes on their monthly bills

Note: This version does not cover solution for Day Passes (MF# 2.2.5).

2.3. Logistical Scope:

Syniverse is categorized as an IS governs vendor. In this iteration of proposal where the scope excludes Day Passes or Customer Portal, Syniverse will:

- Eliminate functionality that sends usage notifications to customers.
- Provide API (UniRoam Provisioning) specifications for the service that we have to upgrade and migrate to.

- Provide API based method to block/remove UniRoam access for subscriber such that policy controls can be implemented
- Perform migration activities in their environment
- Provide support for end-to-end testing, in support of to-be-determined test strategy

Amdocs is an IS managed vendor. IS will be managing all Amdocs activities for this project. Amdocs will be responsible for:

- Creation of new accumulators (PIT) and associated logic for Voice and SMS. (Data usage accumulators exist in our current implementation)
- Pricing structure in support of how business defines international packages to be
- Usage guiding and rating logic for location specific roaming packages
- Control logic for triggering throttle or barring actions when thresholds are reached
- Generating notification event when thresholds are reached

USCC Provisioning team is an IS team. This team will not have any code changes to make for international roaming usage processing. However, team's engagement will be required to flesh out SLAs for usage notifications. Another scope item where PDC will need to provide SME support is for provisioning changes emanating from API Upgrade and from implementation of policy controls on the network (MBR or barring actions).

USCC Data Integration team is an IS team. This team will be responsible for Notification Hub system component. International service policy controls will have new notifications. DI team will be responsible for the delivery of notifications via the Notification Hub.

USCC EPC team is an IS team that collaborates with Amdocs development. EPC team will need to provide SME inputs for technical enablers (PIT/PRIT) for core Amdocs work. EPC team will then need to use the enablers for defining or updating billing offers as desired by business.

USCC Engineering network team will be responsible for designing network control for Max Bit Rate which will be used to effect data usage control. (To Be Confirmed by engineering: Voice and SMS usage controls will be implemented using UniRoam provisioning).

SANDS / EDW enablement scope is anticipated as part of this request, where business teams may want to get analytical insights over (a) efficacy of current and new roaming services and (b) customer behavior with respect to policy controls.

Note: DANE is not deemed impacted or required as part of the solution because international roaming is an add-on service and not considered part of band management logic.

2.4. Morale Scope:

This solution relies heavily on Syniverse (3PV) for their expertise with UniRoam and Sponsored Roaming products. Aligning with Syniverse for delivery steps, which includes API design and policy controls will bring clarity for other teams doing the work. As such, allowing direct interaction between technical teams will improve chances of quality work.

2.5. Operational Scope:

Overall, the proposed solution and scope does not introduce any technical functionality that is new for USCC IS Operations teams. Specific considerations will need to be provided for:

1. Latency of usage records – Usage notifications are subject to usage records being available and processed. While no changes to our existing SLAs are proposed, latency of Voice and SMS usage when we are handling international service may turn out to be significant. Assessment for best-case and worst-case scenarios based upon existing SLAs is recommended to set customer expectations and eventually manage business expectations. For example, by the time we notify a subscriber about their voice usage, subscriber may have already incurred material incremental usage.
2. Debugging issues – As we expand using UniRoam API for barring action and use our network control for MBR, identifying root causes for issues brings additional teams in the day-to-day operations. With subscribers being in a foreign/roaming location, the urgency to address the issues may be different than current-state.

3. Proposed Solution/Approaches

Only one overall technical solution is being proposed.

3.1. Proposed Solution/Approach 1:

3.1.1. Solution Overview

PIT Set Up: New PITs are required to accumulate international voice and messaging usage. Without the PITs, voice packages (X Minutes for a Month) cannot be created.

Packages/Offer Set Up: EPC work required to define new billing offers. It is expected that there will be pricing refresh initiative, where international services may get bundled within existing to-to-be-determined price plans. Exact scope and delivery method for EPC work stream is subject to specific inputs from business on the go-to-market approach. At that time, a separate assessment will be needed to determine if the scope fits within EPC MR (Micro Release) or not.

Notification Event: Using PITs, TOPS will generate notification events when usage threshold is reached.

Note: For voice and sms, threshold violation detection will not be real-time. This is because we receive usage from serving carrier via TAP-IN files. TAP files are batch mode with multiple system/components in the process loop.

Notification Delivery: DI team will process the notification event from TOPS and deliver/distribute it to the customer. Team should anticipate new parameters (for e.g. country/location) in the notification event. Team should anticipate taking one notification event from TOPS and generating two notifications to the customer. For example, if we severe service, we may have to notify customer how they can get their service restored with a follow up notification.

Bill Presentment: Billing and bill presentment for international roaming services will follow existing framework for how roaming charges get displayed. This applies for allowance based package offers or if services are bundled with existing/domestic plans. No specific solution scope/effort has been carved out for Billing Experience.

Reporting/EDW Enablement:

- TOPS and ODS will have transactional data for international services consumption by our customers.
- Data architecture team will need to review if ODS is sufficient for data sourcing. There may be a need to look at Notification Hub for message delivery, if there are specific reporting requirements.
- Any additional data feeds from Syniverse or Mediation (for usage) is not expected.
- Wholesale-settlement related reporting and analysis is not impacted.

3.1.2. Pros/Cons for the Solution

This is the only advocated solution for the request. No other reliable solution has been identified that satisfies the overall request.

Fixing the existing issue of notifications not being sent out is deemed break-fix/defect fix activity. That is, there could be an immediate solution for notifying customers about the unwanted overage (for data) and there by mitigate the revenue loss. Business should also explore other process changes to mitigate against the revenue losses with applying customer credits.

4. Business Operational Impacts

Go-To-Market approach for revamped international roaming services is still work in progress. International services may or may not get bundled with domestic plans.

Accounting: No known impacts. Introduction of new PIT and Voice/SMS Allowance Packages should follow charge code and journaling as per current set up, where we do offer international roaming services at pay go rates.

Retail: Positioning of revamped international roaming services will need inputs from Retail for associate experience and for needs assessment, recommendations, customer education and information, T's & C's etc.

Customer Care: Will need to answer questions about revamped services and customer experience with the service – for example, if we severe service after certain threshold, how to handle the customer interaction post such a treatment.

Tax: No known impacts

Compliance: Will need to sign off on to-be-defined business process for how we adhere to consent and authorization. Additionally, Terms and Conditions will need to be drafted and communicated to the customer for the changes that they make via SMS Channel.

MCSO/Incentive Management: Revamped international service offerings are anticipated to be commissionable service sales. BAU work is expected to take care of commissions.

SANDS: May need to adjust reporting around the revamped service offerings.

Revenue Assurance: Will need to provide inputs for Bill Presentment for roaming services. RA team may also want to be informed about operations specifically meant for international roamers where debugging exercise may require inputs from Syniverse.

E-Commerce: This iteration of solution proposal is based on E-Commerce channel informing customers about revamped service offerings. Self-service mode for buying or making changes for international roaming is recommended to be part of subsequent marketing features, post Web Evolved (WE) initiative and/or as part of Day Pass solution. Additionally, bill and usage presentment is expected to follow current state of how roaming services get displayed on dashboards.

5. Project Uncertainty Profile

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

Project Cost 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 number of partners and complexity of the solution adds to uncertainty. From a business perspective a number of business processes will need to be adjusted. The benefits are all based on satisfactory customer experience with international roaming services, where we exert limited control over services provided by local carriers.

6. Estimated effort duration

Typically an effort that requires billing system changes, network changes and involves 3rd party vendors takes at least 6-8 months. Note that this is estimated effort duration for all the Marketing Features addressed within this iteration. Opportunities exist for further de-composing requested marketing features to achieve business benefits in multiple iterations – for example, Data Usage Notifications v. Data Usage Controls.

7. Recommendation

There is only 1 solution identified.

8. Governance Recommendation

This project will require an IS PM for TOPS and other USCC IS system changes. Engineering PM may be needed for overseeing PCRf configuration changes to support roaming control implementation. EPM PM may not be needed if IS PM can oversee Syniverse work effort. EPM oversight will be needed for eventual roll out of roaming services, aligning on test strategy and SANDS/Reporting scope of work (if any).

It is possible to carve out IS scope for this effort during delivery planning and enable iterative delivery, where we build technical enablers followed by business services. This should be the initial focus for delivery planning. Marketing Features under Section 2.0 (Tactical Scope) are listed in the order of dependencies to inform delivery planning. For example, Accumulators (2.2.2) are required for Notifications (2.2.3).

9. Guidance for Capex/Opex Determination

This request is for improving upon new service offering. Technical work is for building new technical capabilities, using existing framework.