

INSTRUCTIONS FOR IMPLEMENTING DUAL IMSI AT HLR END FOR RESOLVING OTP SMS ISSUE WHILE ON INTERNATIONAL ROAMING.

Present Scenario

At present BSNL Subs with International Roaming facility are provided with DUAL IMSI SIMs i.e, one of Home LSA & other WB LSA IMSI for Int. Roaming as BSNL has Int. Roaming agreement with WB IMSI only. BSNL Customer after reaching destination country has to follow network selection procedure in SIM toolkit as follows

SIM tool Kit-- Network -- International —Cellone in his handset. The SRS at Kolkata is translating the received WB IMSI to HOME LSA IMSI for Location update.

While SMS Delivery is based on IMSI & Voice call is based on MSRN, when a subscriber of BSNL sends SMS to BSNL customer on International Roaming, BSNL SMSC on query to HLR after finding its VLRID routes the SMS to Kolkata-SRS if the VLR is of Intl VLR. SRS Kolkata takes care of IMSI Translation & our Intl roaming customer gets SMS delivered.

Now in case of other operator customer sending SMS to BSNL Intl roamer, other operator SMSC queries our HLR & gets IMSI, VLR ID. Based on VLR ID & IMSI other operator SMSC tries to deliver SMS. But in the VLR the Subs IMSI is not available as HLR sends Home LSA IMSI whereas customer is attached to that VLR with WB IMSI. As Kolkata SRS does not come into picture for IMSI conversion, SMS is not being delivered.

Proposed Solution

DUAL IMSI (HOME LSA & WB IMSI Both) need to be defined at HLR end for all Intl roaming customers so that when customer makes required settings in his handset, DUAL IMSI (i.e, WB IMSI) is enabled at HOME LSA HLR end. Whenever a query comes to HLR; HLR responds with WB IMSI.

When a request comes from other operator SMSC for SMS delivery, Home LSA HLR replies with WB IMSI & Intl VLR ID and SMS is delivered in this case.

When a request comes from BSNL customer end, SMSC routes to SRS & SRS have to route without any IMSI translation.

All requests via SRS should be routed without any IMSI translation.

The above proposal is put forth to all SZ HLRs & IR Kolkata. IR Kolkata also provisionally recommended solution and accordingly testing performed for voice, SMS, DATA (GPRS) and following observations are made. Testing Traces of VLR, HLR, SMSC, GGSN are shared with IR Kolkata team.

TEST RESULTS

VOICE Calls:-

Defined DUAL IMSI (AP & WB IMSI) at HLR end for test no Intl Roaming scenario simulated by routing full-length WB-Test IMSI from local MSC towards HLR for LU. Found LU successful. Tested I/c & OG calls & found OK.

SMS:

Intl roaming scenario simulated, made test SMS from BSNL & Other operators for both MO & MT scenarios and both are found successful. In both cases HLR replied with WB IMSI.

At present SMS MO Gateway is configured for allowing SZ-Circles IMSI range only. For MO SMS to be successful SZ-SMSC should allow WB IMSI series also. (As each circle has certain range of IMSI series for Intl roaming, SZ-SMSC needs to allow the WB-IMSI range belonging to SZ-Circles only).

DATA (GPRS):-

Intl roaming scenario simulated, GPRS browsing tested & found successful. When the Intl roaming customer initiates a DATA Session from foreign SGSN it reaches SZ-GGSN, Chennai. As IMSI translation is stopped, customer reaches SZ-GGSN with WB IMSI {40474}, as the IMSI series belongs to EZ, SZ- GGSN routes it to EZ-GGSN & customer is now served with EZ-GGSN. Testing found OK.

CDRs for all International roaming customers will now be available at EZ-GGSN instead of SZ-GGSN.

Alternately IR Kolkata has proposal for routing DATA session with IMSI translation if required so that browsing happens from SZ-GGSN itself.

Billing

Billing for International roaming customers is done based on TAP files. There shall not be any issue in case of billing as understood from discussion with IR Kolkata team & SZ-Roaming Billing team. The CDRs generated at local SMSC & GGSN are discarded if the VLR GT is other than +91 in case of SMSC CDRs and other than MCC=404 in case of GGSN CDRs.

IR-Kolkata team shall share the TAP files with IMSI translation as being done presently in the proposed scenario also. There shall not be any change in TAP files only change is at NE end.

Summary

@IR Kolkata: IMSI translation need to be stopped. GT translation needs to continue. IMSI translation in TAP files need to continue for billing purpose as being done at present. Need to co-ordinate with all Zonal billing center regarding billing issues in revised scenario if any.

@HLR: DUALIMSI need to be defined at HLR end.

@ Zonal SMSC: Need to allow International roaming WB-IMSI series pertaining to Zonal Circles for MO SMS.

@Zonal Billing: As billing for International roaming customer is done based on TAP files no configuration changes are required at billing end. TAP files shall be shared by IR team with IMSI translation. Need to coordinate with IR-Kolkata regarding billing issues if any.