

## OsmoSGSN - Feature #1959

### SGSN: write regression tests for Authentication

02/24/2017 01:13 PM - neels

<b>Status:</b> Stalled	<b>Start date:</b> 02/24/2017
<b>Priority:</b> High	<b>Due date:</b>
<b>Assignee:</b> lynxis	<b>% Done:</b> 0%
<b>Category:</b>	
<b>Target version:</b>	
<b>Spec Reference:</b>	
<b>Description</b> We need end-to-end tests for the several types of authentication in the SGSN.	
<b>Related issues:</b>	
Related to OsmoSGSN - Feature #1956: UMTS AKA support in OsmoSGSN	<b>Closed</b> <b>02/20/2017</b>
Related to OsmoSGSN - Bug #3177: gprs_gb_parse_dtap doesn't handle AUTH & CIP...	<b>New</b> <b>04/16/2018</b>

### History

#### #1 - 02/24/2017 01:13 PM - neels

Test all of these:

- No authentication
- GSM AKA
- UMTS AKA without AUTS sync
- UMTS AKA with AUTS sync
- UMTS AKA in pre-R99 compatibility mode

Having in mind something like the msc\_vlr tests where messages are fabricated from the MS and the HLR sides from hex strings to play through the various cases.

[https://git.osmocom.org/openbsc/tree/openbsc/tests/msc\\_vlr?h=neels/vlr](https://git.osmocom.org/openbsc/tree/openbsc/tests/msc_vlr?h=neels/vlr)

#### #2 - 02/24/2017 01:14 PM - neels

- Related to Feature #1956: UMTS AKA support in OsmoSGSN added

#### #3 - 05/30/2017 03:37 PM - laforge

- Assignee changed from Osmocom Developers to sysmocom

#### #4 - 01/04/2018 10:56 AM - laforge

Instead of a unit test, this could also be performed from a to-be-implemented SGSN test in TTCN-3.

#### #5 - 04/16/2018 04:26 PM - pespin

- Related to Bug #3177: gprs\_gb\_parse\_dtap doesn't handle AUTH & CIPHER REQUEST messages added

#### #6 - 05/17/2018 01:55 PM - laforge

- Assignee changed from sysmocom to lynxis

#7 - 10/03/2018 12:18 AM - lynxis

- Checklist item [x] No auth added
- Checklist item [ ] GSM AKA added
- Checklist item [x] UMTS AKA without AUTS sync added
- Checklist item [x] UMTS AKA with AUTS sync added
- Checklist item [ ] UMTS AKA in pre-R99 compatibility mode added

#8 - 10/03/2018 12:21 AM - lynxis

[neels](#) with GSM AKA you mean the old SRES based auth?  
[neels](#) what's UMTS aka in pre-R99 compatibility?

#9 - 10/04/2018 11:35 AM - neels

- File 3GPP\_33.102\_Key\_Agreement.png added

#10 - 10/04/2018 11:49 AM - neels

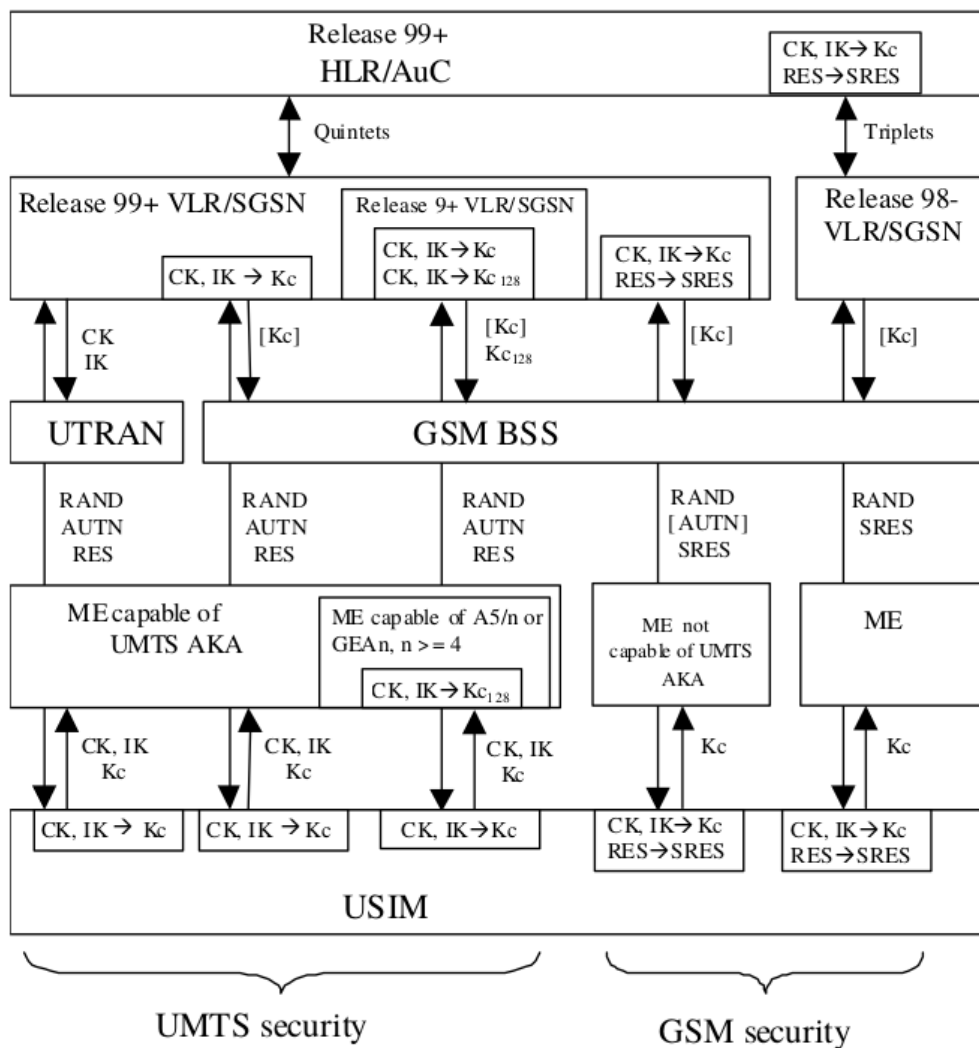


Figure 18: Authentication and key agreement of UMTS subscribers

I meant the second from the right, where everything is R99, i.e. UMTS capable, except for the MS.  
So both HLR, SGSN and USIM can do UMTS, but the phone ignores / will not send AUTN and XRES.

Another valid variant of this that we see in the field is that the MS is R99, but it actually decides to not do UMTS aka.  
So we send out AUTN to it, but it chooses to respond only with an SRES.

See vlr\_auth\_fsm.c in osmo-msc: auth\_fsm\_wait\_auth\_resp() and check\_auth\_resp().

For tests, see:

- msc\_vlr\_test\_gsm\_authen.c, test\_gsm\_milenage\_authen() for pre-R99 with Milenage (UMTS in GSM compat mode)  
A log transcript of what happens is in osmo-msc/tests/msc\_vlr/msc\_vlr\_test\_gsm\_authen.err
- msc\_vlr\_test\_umts\_authen.c, test\_umts\_authen\_only\_sres\_geran(), for an R99 MS responding with GSM AKA.  
osmo-msc/tests/msc\_vlr/msc\_vlr\_test\_umts\_authen.err

(shouldn't this issue be "in progress"?)

**#11 - 10/04/2018 02:29 PM - lynxis**

- Status changed from New to Stalled

#### Files

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3GPP_33.102_Key_Agreement.png	83.2 KB	10/04/2018	needs
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