

OsmoSGSN - Feature #1959

SGSN: write regression tests for Authentication

02/24/2017 01:13 PM - neels

Status: Closed	Start date: 02/24/2017
Priority: High	Due date:
Assignee: lynxis	% Done: 100%
Category:	
Target version:	
Spec Reference:	
Description We need end-to-end tests for the several types of authentication in the SGSN.	
Related issues:	
Related to OsmoSGSN - Feature #1956: UMTS AKA support in OsmoSGSN	Closed 02/20/2017
Related to OsmoSGSN - Bug #3177: gprs_gb_parse_dtap doesn't handle AUTH & CIP...	New 04/16/2018

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

#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

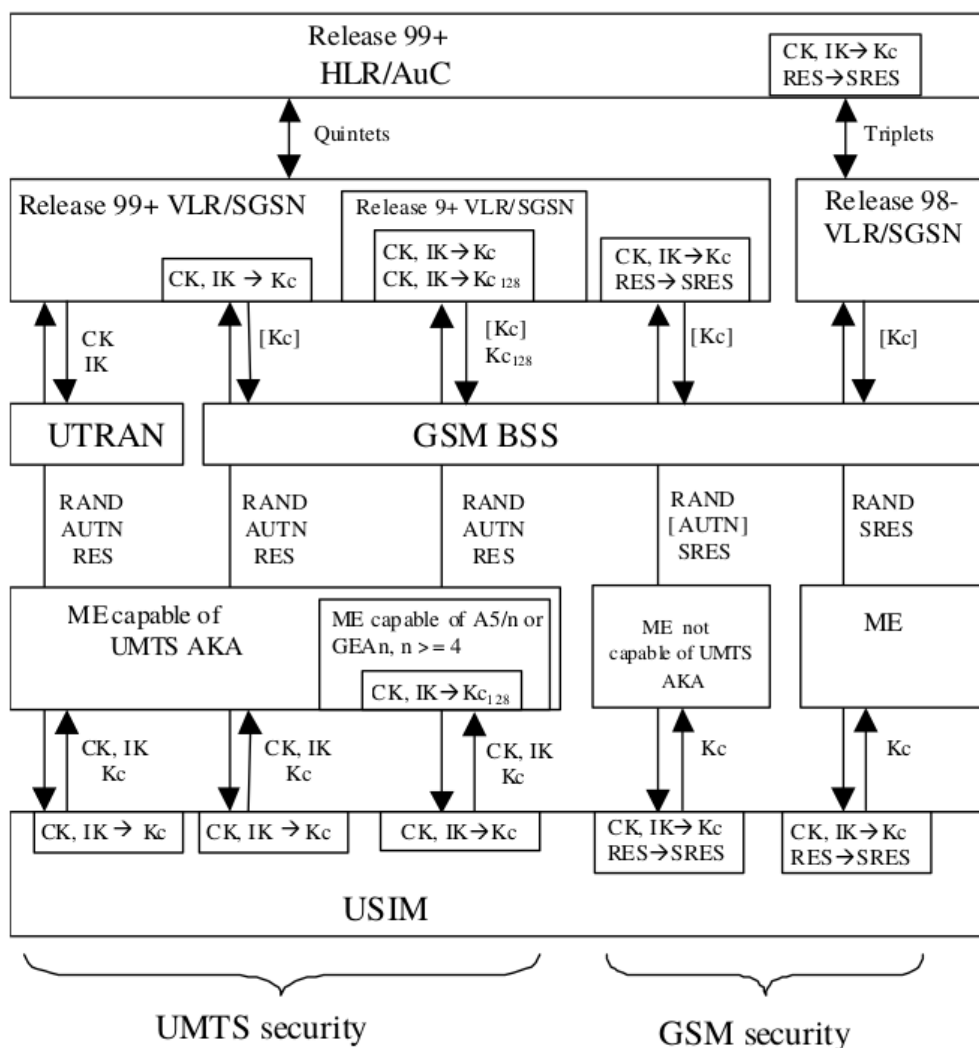


Figure 18: Authentication and key agreement of UMTS subscribers

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

#12 - 04/11/2019 01:50 PM - lynxis

- Status changed from Stalled to In Progress

#13 - 04/15/2019 07:34 AM - laforge

#14 - 04/18/2019 11:03 AM - lynxis

- Checklist item [x] GSM AKA set to Done

Checklist item [x] UMTS AKA in pre-R99 compatibility mode set to Done

- **UMTS AKA in pre-R99 compatibility mode added** is already checked since 0ecb2e351649 ("sgsn: test umts aka with gsm sres response")
[Wed May 2 09:14:36 2018]
test case: SGSN.TC_attach_umts_aka_gsm_sres
- **GSM AKA** is checked by:
test case: SGSN.TC_attach

#15 - 04/18/2019 11:05 AM - lynxis

- Status changed from In Progress to Resolved

- % Done changed from 0 to 100

The only missing point here is the UTRAN UMTS AKA auth check, but as long we don't have a RANAP TTCN3 implementation we can not do that.

#16 - 04/18/2019 02:20 PM - lynxis

- Status changed from Resolved to Closed

Files

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