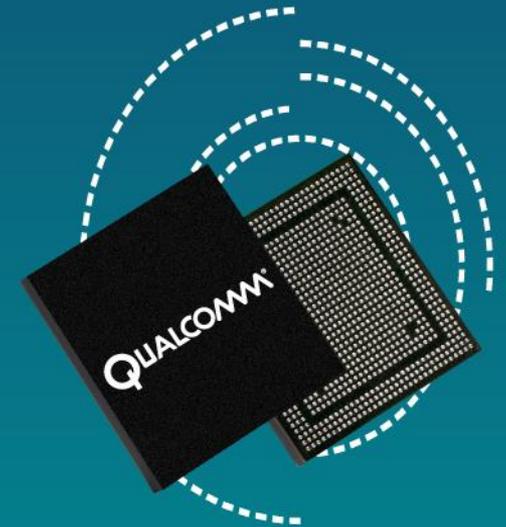




## Options for USAT Pairing C6-140619



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# USAT Pairing – Requirement

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- Requirement from TS 33.187 clause 8:

USAT application pairing is successful when the IMEI or IMEISV retrieved from the terminal matches the value or the range of values the UICC is configured with. USAT application pairing fails if the terminal does not support USAT command PROVIDE LOCAL INFORMATION.

After a UICC reset, the USIM has its PIN in a blocked state before USIM application selection. The PIN is unblocked and disabled after a successful USAT application pairing. An UE supporting USAT application pairing proceeds to Profile download as specified in 31.111 [14]. The USIM immediately sends a proactive command PROVIDE LOCAL INFORMATION requesting the UE's IMEI(SV). The UE then sends the TERMINAL RESPONSE with its IMEI(SV) before starting USIM initialisation procedure.

[...]

# USAT Pairing – Option 1

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- Proposal
  - Introduce the IMEI(SV) value as part of the TERMINAL PROFILE command
  - IMEI could be coded in separate nibbles of the TERMINAL PROFILE command
    - IMEISV requires 16 digits, so it can be coded in 8 bytes
  - UICC can block the PIN of the USIM before the SELECT by DF name happens
    - Specifications already mandate TERMINAL PROFILE to be executed before SELECT of applications.
  
- Pros
  - No timing issues: the UICC immediately has the IMEI before USIM selection
  - Minimal changes on existing procedures (required on both ME and UICC)

# USAT Pairing – Option 2

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- Proposal
  - Introduce a new command "STORE IMEI"
  - The terminal would execute the STORE IMEI as part of the USIM Initialization procedure (TS 31.102 clause 5.1.1.2):
    - after the user verification procedure and USIM Service Table request (to check if USIM supports the procedure)
    - before any additional procedure
  - Similar to "Store ESN\_MEID\_ME" command already available in 3GPP2 (C.S0065-0)
  - In case of invalid IMEI (or no IMEI provided), the card would reject any further attempt to access USIM functionalities (including access to IMSI and AUTHENTICATE command)
  
- Pros
  - Very clear interaction between UICC and ME in terms of timing
  
- Cons
  - Requires a new 3GPP specific command in the UICC
  - Requires extensive changes on both ME and UICC

# USAT Pairing – Option 3

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- Proposal
  - Use the PROVIDE LOCAL INFORMATION – IMEI(SV)
  - Add specific clauses in USIM application selection procedure (TS 31.102 clause 5.1.1.1) to make sure that timing issues are not possible
    - Indicate the USIM application shall be selected only if UICC does not have any active proactive UICC session, as defined in ETSI 102 223 clause 3.1 (*"starts with the status response '91XX' (proactive command pending) and ends with a status response of '90 00' (normal ending of command) after Terminal Response"*)
    - A more optimized version could allow USIM selection after PLI – IMEI(SV), even if proactive session is still active
  - Possible to work without issues on existing terminals, but no guaranteed (due to timing)
    - An old terminal might inconsistently pass or fail the verification
- Pros
  - Re-uses the existing proactive command without changes
- Cons
  - Introduction of delay in USIM initialization even when not required
    - Initialization time is important in some scenarios and is perceived as important

# USAT Pairing – Conclusion

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- Considering the three solutions discussed in this presentation, recommendation is to use option #1.
  - Avoids any delay in USIM initialization
  - Avoids impact in USIM initialization procedures
  - Avoids timing issue with existing devices

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## Questions?

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