

C6-180531



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Objective

- ✘ Provide the device at activation the list of available APNs per application and per subscription
- ✘ Problems to be addressed
 - ✘ UEs are today configured with list APNs per operator per application
 - ✘ In long IoT cases, some devices may not be provisioned with the correct APNs (e.g. not possible for the final operator to provide such information to all possible IoT device OEM)
- ✘ Solution:
 - ✘ Provide the APNs in the subscription
 - ✘ The ME use the list of APNs in the subscription in priority as if it were configured in the ME

2 alternative Solutions

Alternative 1:

- ✦ Define a new file containing APN + Tags, so that the ME can choose the APN per Application based on the Tag

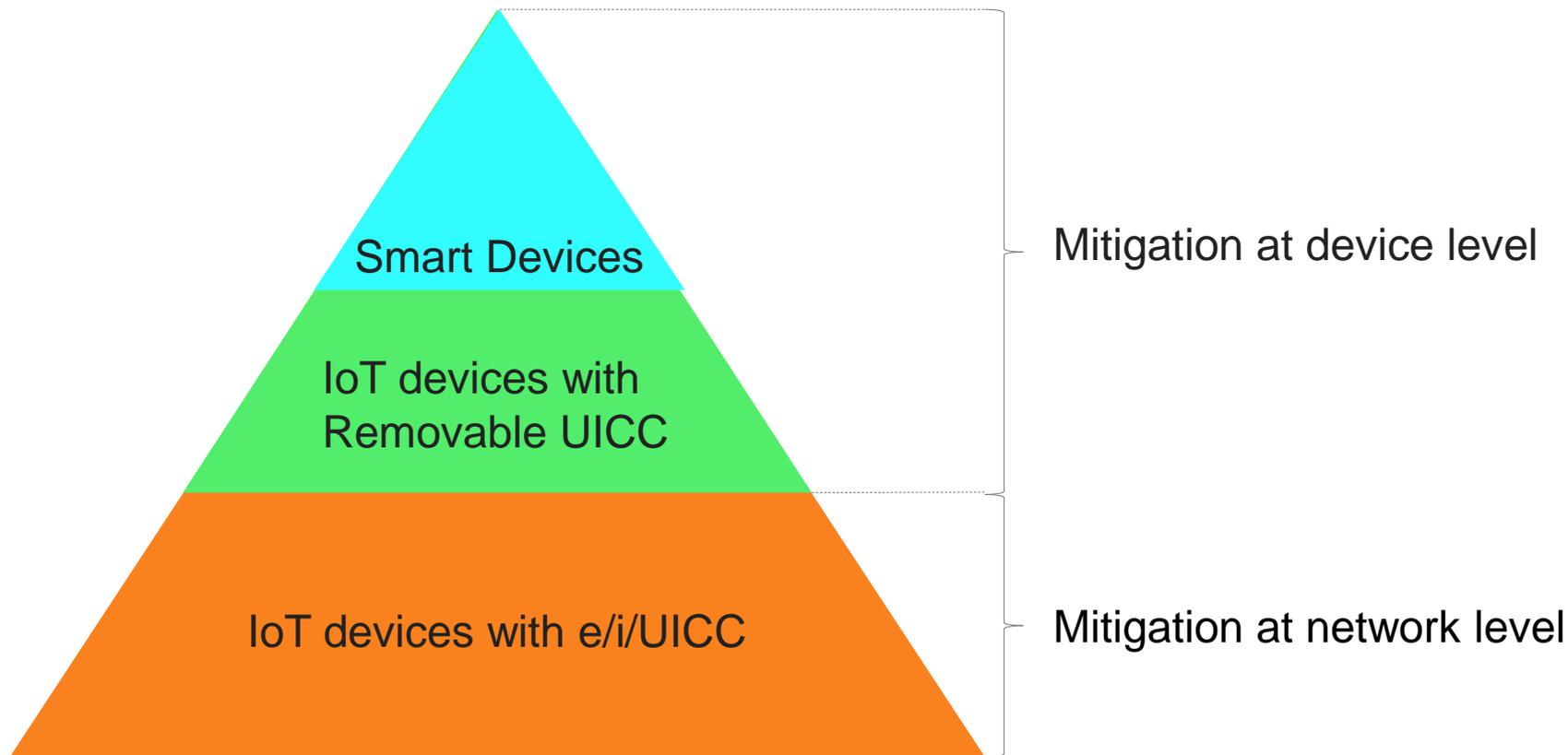
Alternative 2:

- ✦ Reuse of existing EF_ACL (today used as a white list of APNs, no tags)

New APN+Tag file versus Re-use of existing AF_ACL

Solutions	Selection of APN	Backward compatibility
New file storing APN + Tag	ME chose the APN based on the application requesting connectivity and the Tag	Only supportive ME would use these files USIM configured APNs take precedence over APNs configured in ME
Re-use of EF_ACL	No Tag available to determine which APN for use by which Application Could be based on the naming of the APN Or test the APNs in priority order	Devices in previous release would use this file as a whitelist of APNs, which could result in no access.

Compatibility issues may be mitigated

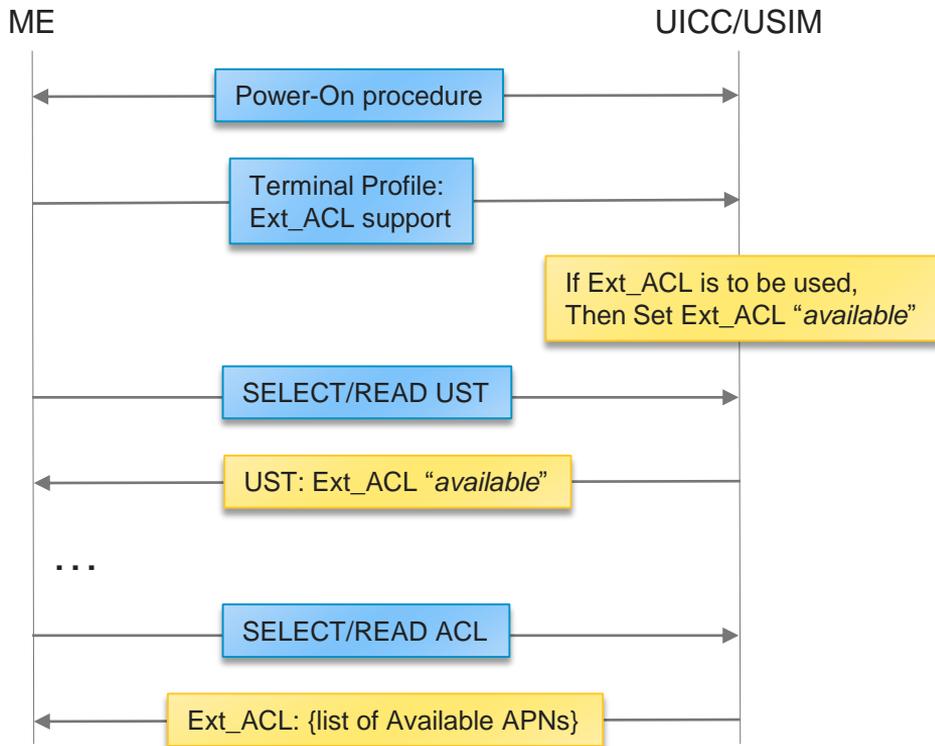


Mitigations mechanisms against backward compatibility issues for alternative 2

Mechanism	Mitigation	Advantage	Drawbacks
Device locking (via USAT pairing)	Mitigation at device level	Applicable to supportive UEs based on IMEISV range	Predefined ranges of IMEISV IMEISV of supportive devices should be known before USIM personalization
Verification of device version before profile download	Mitigation at network level	Matching of Device/Profile done at activation and from the network	Knowledge of EID vs device capability at profile download Matching of Device/Profile may be very complex
Terminal Profile indicates support of Ext_ACL and re-use of existing EF_ACL	Mitigation at USIM activation process	List of Available APNs provided at USIM Activation only when device support is detected	APN selection is based on the APN value

Mitigation Mechanism at ME-USIM interface

Explicit Ext_ACL support indication by ME



Conclusion

Alternative 1:

- ✘ A new file is defined to store a list of APNs and Tags
- ✘ There is no backward compatibility issue
- ✘ The ME need to implement a new feature
- ✘ The selection of APNs may be based on the Tags associated with each APN

Preferred alternative

Alternative 2:

- ✘ Re-use of existing ACL file
- ✘ There is potential backward compatibility issue
- ✘ Mitigation could be done in the USIM
- ✘ The ME need to implement the mitigation mechanism
- ✘ The selection of the APN is based on the value of the APNs or by trying the list of APNs