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To: **TSG T2, TSG-S2, SA**
Copy: **TSG S5, TSG-S1 OSA Adhoc**

Source: **TSG SA1**

Title: **Reply to LS on Terminal Capabilities**
(Tdoc SP-000651 = TSG S1 (01) 010 = Vhe ad (00) 105)

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Introduction

TSG SA1 VHE Adhoc Group would like to thank TSG T2 for their LS on Terminal Capabilities. The document was directed by SA1 plenary (6th – 9th Feb.) to its VHE adhoc group.
The content of the LS was considered valuable input for the development of the concept of a Virtual Home Environment and similar ideas had already been discussed within the group.

Discussion

The following points were observed when discussing the paper:

- **Requirement for transmission of Terminal Capabilities**
  There is definitely a requirement that (non- terminal based) services - in the network or by third parties - can find out about the current terminal capabilities of a user's device. A service may e.g. decide on its way of service delivery based on the current terminal capabilities.
- **Status quo is unsatisfactory**
  The terminal capabilities currently available by GSM mechanisms through the network are too limited. Additional terminal capabilities based on this information (e.g. IMEI) and additional sources (e.g. manufacturer specifications of terminals) can at best be a rough guess of the terminal's capabilities *at the time of*

manufacture.
Terminal capabilities can currently only be delivered from MExE or WAP-terminals, and can provide more detailed information on the device' capabilities, but are limited to these kind of devices.

- **Information content of Terminal Capabilities**
  The example list in paragraph 5 of the received LS on information elements was considered to be a good starting point for the basic information content of terminal capabilities.
- **Terminal capability information may consist of considerable data**
  Apart from this basic information additional terminal capability information may be needed. This could, depending on the degree of detail required, lead to considerable amount of data that needs to be transferred to the network.
- **Storage requirement in "capability store"**
  For each terminal, terminal capabilities may require much storage space in an operator's database (called 'Capability Store' in the LS).
- **Dynamic change of capabilities**
- Changes to the terminal (attaching devices..) could potentially require frequent synchronisation of the "capability store" with the terminal. **Two approaches to handle storage problem**
  Therefore, depending on use cases, an operator may choose different approaches to handle terminal capabilities of his users:
  - Store most of the terminal capabilities in the 'Capability Store'. This approach could be chosen if most terminals have quasi-static capabilities and only require seldom updates.
  - Store only minimal (or no) terminal capabilities in the 'Capability Store' and request further information from the device only when needed. This approach could be chosen if most terminals capabilities are dynamic and involve large amounts of data.

Limitations to transmission of Terminal Capabilities

- **Possible restrictions for terminals with "distributed" terminal functionality**
  Functionality of modern terminals may be "distributed" in the sense, that additional Terminal Equipment is attached to them via e.g. IP or bluetooth connection. Such a TE and it's software may not be capable to support a general Terminal Capabilities mechanism.

Other Comments

It is noted that TSG-S5 has a Terminal Management WID, and are considering support of functionality discussed in this LS and the T2 LS. TSG-S5 also has a Service Provisioning WID, which although not directly related to Terminal Management, may have some common aspects.

Conclusion

Discussion led to the view that unless a terminal was able to deliver terminal capabilities (and any changes to the terminal capabilities either spontaneously or on demand), that network exploitation of terminal capabilities would not be possible. For the reasons indicated above it was felt that:-

All future terminals should be mandated to be capable, within the limitations of the terminal, to supply terminal capability information either spontaneously or on demand from the network.

This terminal capability information could also be supported in a much more flexible manner. For example, intelligent devices (e.g. MExE devices) could send additional terminal capabilities, and basic devices could support a minimal set of terminal capability notifications.

TSG SA1 VHE Adhoc Group would like to thank TSG T2 for their work and would like to emphasise their wish to continue collaboration on that subject.

Attached: T2's LS

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