ITU-T Telecommunication Standardisation Sector
Study Group 15
Q.2&3/15 Rapporteur Meeting
Eibsee, 24-27 September 1996

Document AVC-1045

21 September 1996

SOURCE : Stuart Dunstan, Siemens Ltd
TITLE : Comments on AVC-1034
PURPOSE : Proposal

1. Introduction

This note comments on AVC-1034 [1] and proposes that no changes are required in H.245 [2].

2. Scenario described in AVC-1034

The scenario described in AVC-1034, is illustrated in Figure 1. Figure 1 is just the first capability exchange depicted in Figure II.3-4/H.245.

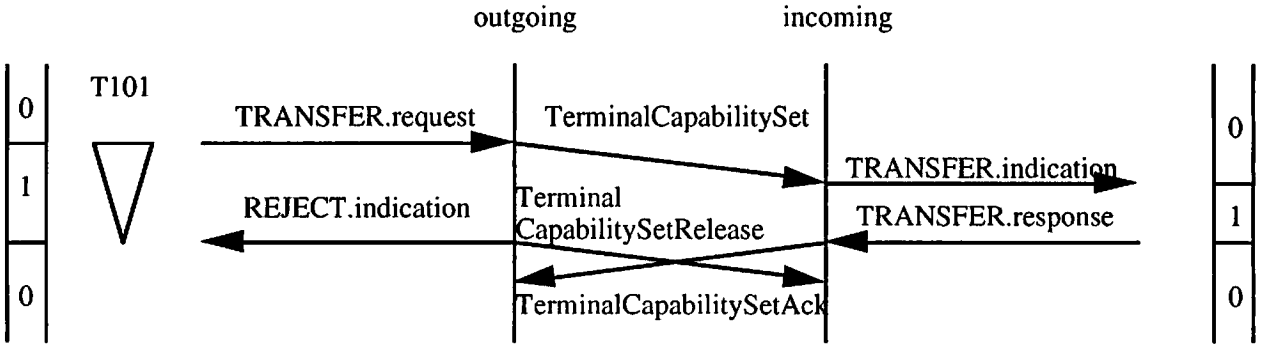

Figure 1. Capability exchange with Timer T101 expiry.

In Figure 1, the TerminalCapabilitySetRelease message has arrived at the in-coming CESE after response from the in-coming CESE user. At the out-going CESE the TerminalCapabilitySetAck message is ignored. The capability exchange has failed.

Of this scenario AVC-1034 says

> "... the outgoing CESE user thinks the exchange timed out & the incoming CESE user thinks the exchange was successful ..."

AVC-1034 refers to this as a "race condition".

2. Response to AVC-1034

Clarification of the CESE states and primitives is required. In the CESE protocol the

- out-going CESE is active, in that it can initiate and terminate capability exchanges
- in-coming CESE is passive, in that it simply responds to requests from the out-going CESE

The in-coming CESE has no concept of the success or failure of capability exchanges - no such "state" information exists. It matters not to the in-coming CESE whether the capability exchange is successfully completed or not. The in-coming CESE may be asked to send another capability set by the out-going CESE if the capability exchange could not be successfully completed.

Timer T101 ensures that the CESE protocol does not wait indefinitely. Its purpose is to deal with exception conditions. Its value must be judiciously chosen such that it is greater than the sum of end-to-end transmission delays and in-coming CESE user response times.

It is the task of the system Recommendation to define what is to be done in the case of timer T101 expiry e.g. initiate another capability exchange, perhaps with a larger T101 value.

In Figure 1, the fact that a TerminalCapabilitySetAck has arrived at the out-going CESE in the IDLE state is of little consequence. Simplicity of design says it should always be ignored. The out-going CESE can initiate another capability exchange when required. If it were not ignored, a non-compliant in-coming CESE could send unsolicited TerminalCapabilitySetAcks to the out-going CESE which would be passed to the out-going CESE user.

Note that similar scenarios to that described in Figure 1 occurs in

- close logical channel signalling
- multiplex table signalling entity
- mode request signalling entity

4. Conclusion

It has not been the intention of the CESE to inform the in-coming CESE user that a capability exchange has been successfully completed. A three way handshake would be required to do this. The meaning "the out-going CESE user understands my capabilities" should not be given to the TRANSFER.response primitive.

With the correct meaning attributed to CESE states and primitives, no ambiguous states or race conditions exist. No changes are required to the CESE protocol in H.245.

References

[1] AVC-1034, "Ambiguous state possible after timer T101 expires during TerminalCapabilitySet exchange", IBM, October 1996

[2] ITU-T Recommendation H.245, "Control protocol for multimedia communication", 27 November, 1995 (h245ncm4.ww2).