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Title: Relationship between DSM-CC and H.245
Purpose: Information

1. Introduction

Currently, some standardization works are making progress in parallel, concerning audio visual communication applications. One of these is standardization of H.310 system by ITU-T SG15 and others are standardization of VoD system by ATM Forum and DAVIC. The former is mainly targeting conversational services and use H.245 protocol [1], but it also defines terminal types for retrieval services (ROT and SOT). On the other hand, the latter is targeting retrieval services at this moment and supposed to use DSM-CC protocol [2].

This document is to study and clarify the relationship and differences of these protocols.

2. Comparison

DSM-CC mainly consists of the following four different functional protocol sets.

- U-N configuration *
- U-N messages
- U-U interface
- Download *

On the other hand, H.245 consists of the following functional message sets.

- Capability exchange
- C&I signals
- Mode request
- Logical channel signaling
- Master-slave determination *
- Maintenance loop *
- Round trip delay measurement *
- H.233 multiplex table *

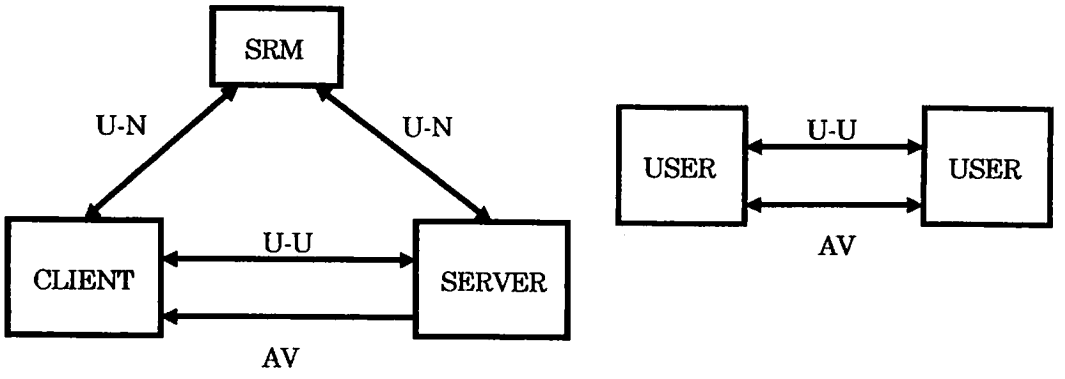
Among these, items with " * " are unique functions for each, and no corresponding functions are defined for another one.

Comparing other items, those items which seem to be closely related in view of their usage are the following two combinations.

U-N messages ⟷ Capability exchange, Mode request, Logical channel signaling
U-U interface ⟷ C&I signals

2.1 U-N messages

System reference models for DSM-CC and H.245 are shown in Fig.1.



(a) DSM-CC (b) H.245

Fig.1 System Reference Models

In the DSM-CC model, only U-U interface signals go through the path designated as " U-U " in the figure and U-N messages go through the path designated as " U-N " in the figure to the SRM (Session and Resource Manager). So, concerning communication channel set up, the SRM takes care of the clients it covers and clients never talk to the server directly. On the other hand in the H.245 model, not only user-to-user control signals but also communication channel set up signals go through the path designated as " U-U " in the figure, and user manages the communication channel set up. In other words, comparing the U-N part of the DSM-CC and H.245, the system environments in which they work are different.

In case of end-to-end ATM, H.245 model may also be able to provide VoD service. However, at least for the server side, U-N model seems more desirable to support from the interoperability point of view, because it can cover more clients under a variety of network configurations.

2.2 U-U interface

Comparing DSM-CC U-U interface and H.245 C&I signals in functionality,

DSM-CC defines commands for VoD services like service navigation and VCR like operation function etc. that server has to provide

and, H.245 defines commands for action in multi-point communication environment etc.

There seems to be no functional duplication between these two.

3. Conclusion

Neither DSM-CC nor H.245 can replace the other because;

for U-N part, the environments in which they work are different,

and, for U-U part, there is no duplication in functionality.

When an H.310 RAST terminal also wants to work in the VoD service environment with SRM in it, it has to support not only H.245 but DSM-CC as well.

References

[1] ITU-T DRAFT H.245 " Control Protocol for Multimedia Communication " July/95

[2] CD ISO/IEC 13818-6 " MPEG-2 Digital Storage Media Command and Control " May/95

[3] MPEG95/225, " Synergy between ISO/IEC MPEG-2 DSM-CC and ITU-T Recommendation H.245 "

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