

SOURCE : Japan
TITLE : Technical problems and procedures
PURPOSE : Discussion

This document describes the discussion in Japan about the technical problems and the procedures in the experts group activity. Research activities for ATM video coding among participating organizations in Japan are also described.

1. Technical problems

The following items were picked up as the technical problems necessary to be worked out or clarified. Especially, item (1) was recognized as the most urgent task considering the SGXVIII activity.

- (1) Requirments for network condition
 - Cell loss rate, cell delay, cell delay jitter, AAL structure etc.
- (2) Merits of variable bit-rate coding
- (3) Coding scheme suitable for ATM environment
 - Versatile coding algorithm independent of service and bit-rate
 - Constant quality control
- (4) Interface between terminal and network
- (5) Cell loss compensation
- (6) Cell delay jitter compensation
- (7) Source clock recovery at decoder
- (8) Multimedia multiplexing
- (9) Picture format
 - Multi formats ranging from CIF to HDTV according to the application
 - A unified compatible format for various video signals (by using a layered structure etc.)
- (10) Compatibility with existing audiovisual recommendations

2. Procedures

To cope with the problems described in section 1, following procedures

procedures are proposed taking the past CCITT activities into account.

- (1) Step by step method based on a reference model (H.261 base or not?)
- (2) Verification by hardware

3. Activities in Japan

Extensive studies have already been carried out in Japan concerning ATM video coding. State of the art activities of participating organizations in Japan are described in Table 1. Video demonstrations will be presented at the meeting for the marked (*) items.

Table 1 : Activities of participating organizations in Japan

Organization	Activities	Demo
NTT	<ul style="list-style-type: none">- 2-layer coding schemes and experimental codec based on interframe prediction and DCT- Adaptive sub-band coding for HDTV signals- Source modeling of coded video signals	*
KDD	<ul style="list-style-type: none">- Average bit-rate control method- Cell assembly methods for coded video signals	*
Fujitsu	<ul style="list-style-type: none">- Variable bit-rate coding scheme based on interframe in DCT coefficient domain- Experimental variable bit-rate HDTV codec	*
Hitachi	<ul style="list-style-type: none">- Experimental terminal adapter- Layered coding scheme based on intraframe prediction and DCT	
Mitsubishi	<ul style="list-style-type: none">- Variable bit-rate coding scheme based on H.261 (under planning)	
NEC	<ul style="list-style-type: none">- Multiplexer for 3 channels of variable bit-rate coded NTSC signals	
OKI Electric	<ul style="list-style-type: none">- Quality controlled variable bit-rate coding scheme based on H.261- Layered variable bit-rate coding scheme based on a sub-band system	
Sharp	<ul style="list-style-type: none">- 2-layer coding scheme based on H.261	