

Apricot 2005 Kyoto

Editing & Exchanging Digital Video Over the Internet - How's and Why's

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Today's Agenda

- Introduction of Past Video Transfer Experiments
- Introduction of CCBank Project
- How the CCBank Network is Made
- Editing Video Over the Network
- Live Video Broadcasting
- Operational Issues
- Future Plans for the CCBank Project
- Summary

Using Broadband Internet for Various Trial Tests

1999 N+I1999 D1 over IP

Interop New Business Seminar (NY Jazz relay, JNEX, MBS Media Show)

InterBEE mpeg over ATM

2000 N+I2000 DVCPROHD over IP

Koshien (Japan High School Baseball Tournament+BS Digital Broadcast)

InterBEE2000 News Studio in the Broadband Internet Era

2001 N+I2001 Multi Stream 1HD+3SD over IP

Internet Exposition (Inpaku) DVTS IPv6 Multicast

2002 N+I2002 Uncompressed HD over MAPOS over IP

InterBEE2002 Makuhari – Odaiba Relay Broadcast

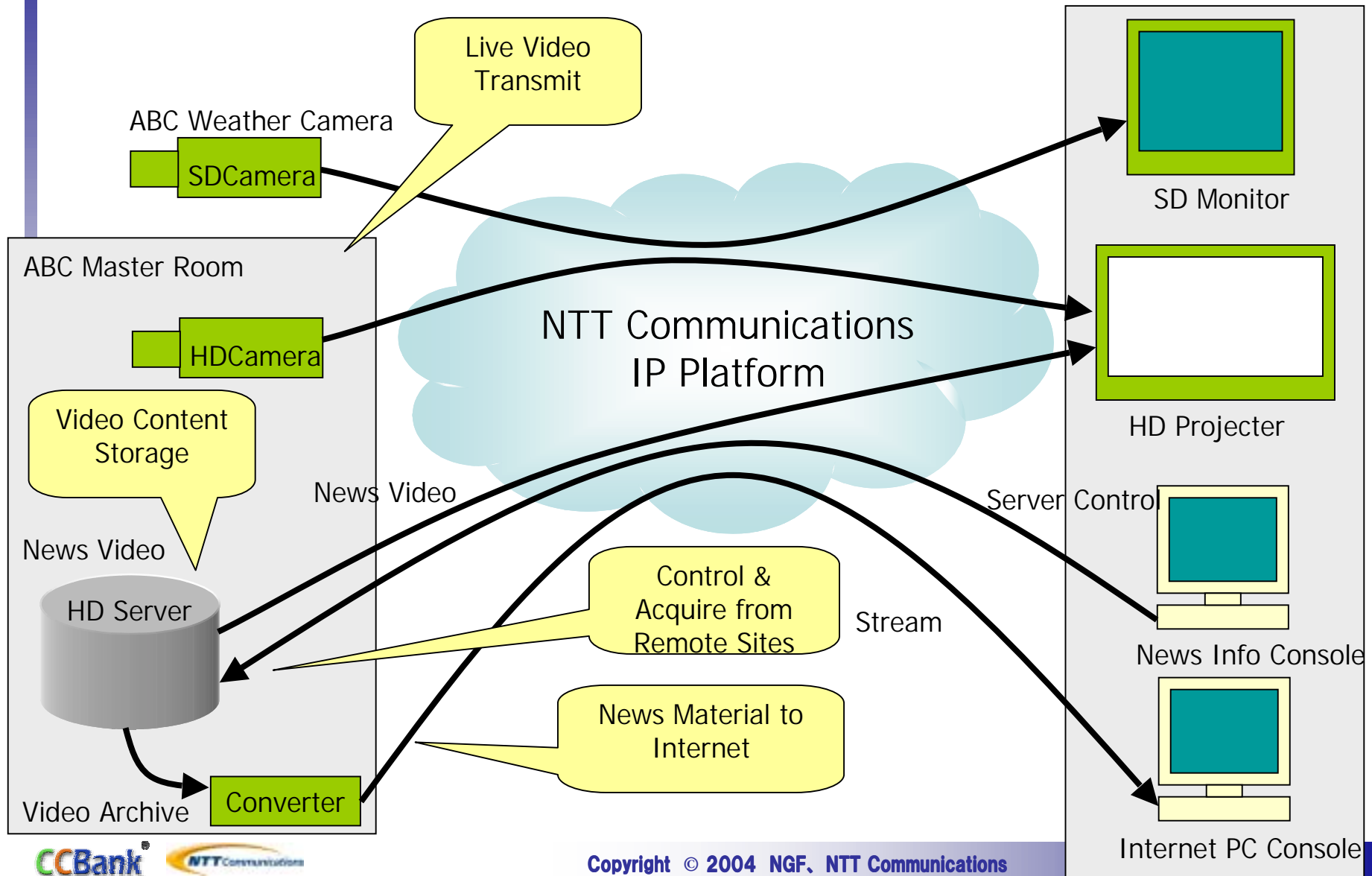
2003 N+I2003 Using EoMPLS leased line to test quality of broadcast video (CATV)

2004 N+I2004 Digital Assessment System & Community Channel
(Programs made by local CATV operators) editing over the network

NAB2004 Uncompressed HDTV video transfer experiment from Japan to United States

Example 1 : News Studio for the Broadband Internet Era

Seamless Distribution of Video from HDTV Video to PC Stream Using Broadband Internet



Example 1: Image of Demonstration of News Studio

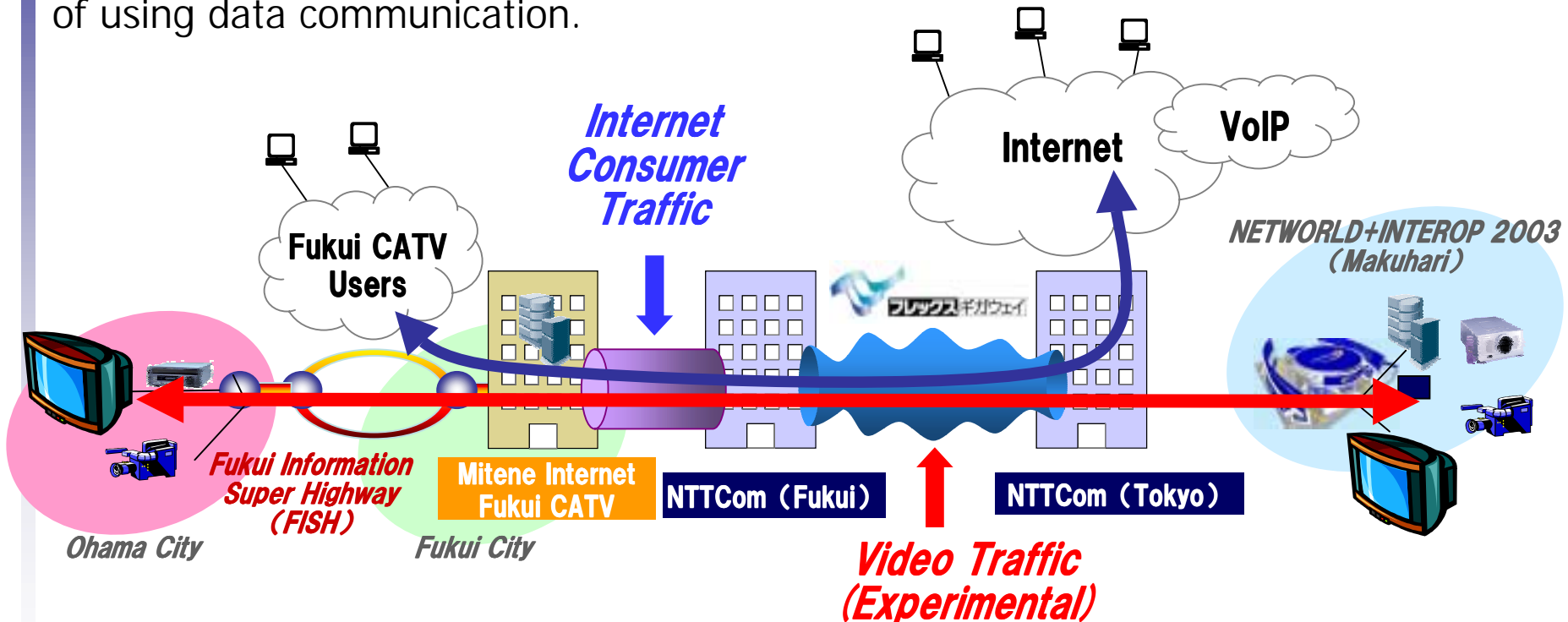


How the Demo was Proceeded

1. Explanation of Experiment
2. Live Broadcast with ABC Master Room
3. Weather Camera Live Broadcast
4. Archived Search System Explanation
5. Demonstration of Archived Search System (Video from Baseball Game)
6. Explanation of DVCPRO Codec

Example 2: Video Transfer Using Gigastream Type-F @ N+I 2003

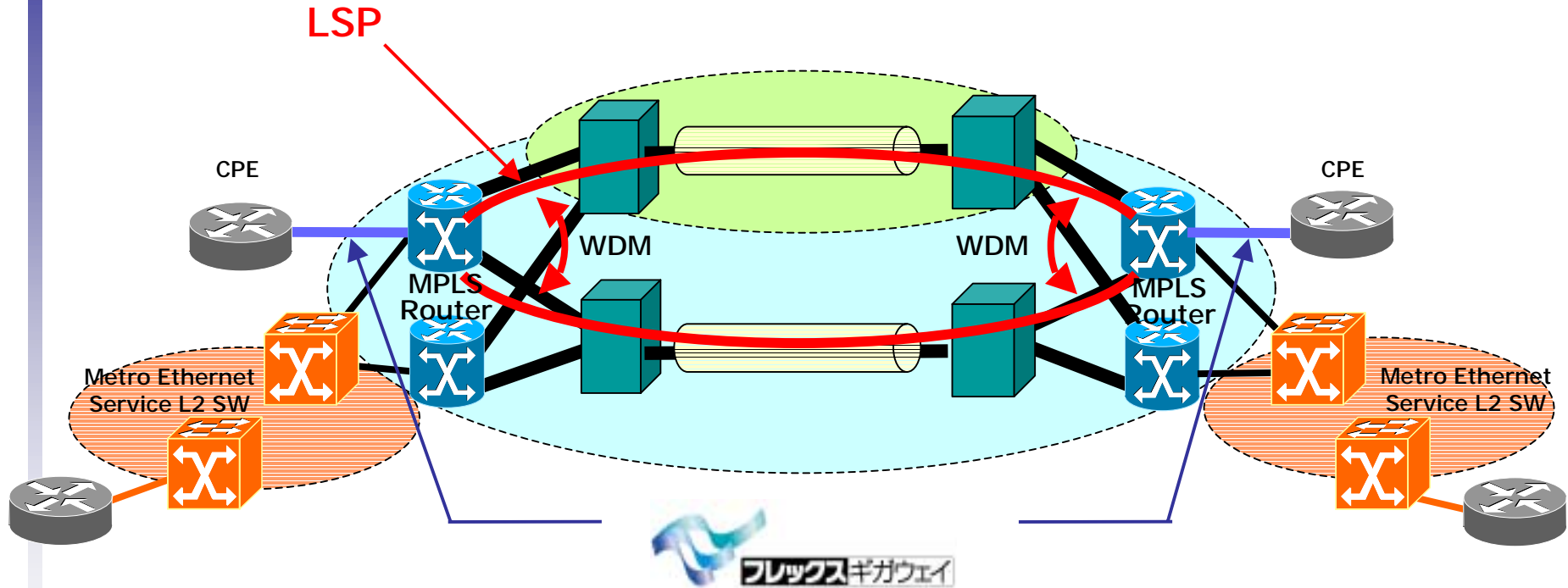
Mitene Internet, who uses Gigastream Type-F Service and cooperating with Fukui Cable TV, we transmitted video from Fukui prefecture government office to Tokyo. Also, we also used video materials from the video archives to show the advantages of using data communication.



We have also done similar video transfer experiments at Cable TV 2003 (7/23-25 @ Tokyo BigSite)

Example2: How was this done?

Using Usage-Based Charge Service (such as Gigastream Type-F), CATV and ISP were able to pass video traffic when Internet traffic is small



- 2 route dual network. Line reroute is done by MPLS LSP(*), and is done in less than 1 second (Fast Reroute)
- Network is very simple. Some customers are already using this service to connect to metro ethernet service to make a backbone
- Customers are charged by usage, and also can use 802.1q VLAN Tagging to ensure bandwidth for quality sensitive traffic

Introduction of CCBank Project

Nation-wide Collaboration of
TV Program Production
And
Mutual TV Program Distribution Channel
System Experiment

CCBank[®]

Goals

- Multiple CATV operators collaborate on making, sharing, and distributing TV programs
- Concept is “One Contents – Multi Use”, effect and cost is to be discussed
- Network, Provisioning, Operations, and Rights are to be discussed also

Outline

Japan Cable and Telecommunications Association NGF-WG(Next Generation Forum) and companies below are the participants of this experiment

NTT Communications Inc, Satellite Communications Network, Cisco Inc, Tokyo Electron Inc, Powerplay Inc.

■(1) Archive Type Demonstration Experiment

We placed on the Internet and Video Exchange Private Network, a system called DAM (Digital Asset Management System), which is used by CATV operators to exchange/distribute video materials.

■(2) Live Broadcast Type Demonstration Experiment

By constructing a live video broadcast private network nationwide, CATV operators can exchange live video, VOD video, DV materials. User management, status management can also be done on the live video broadcast private network.

CATV Experiment Figure

— Video Material
— VoIP

Video Archive & Transmission Server

exchange point

Operator

Cisco Systems

Call Manager

Smart Location System

NTT Exchange

TEL

DAM

Content Holder



Content Maker



CATV Operator

Operator

Operator

Operator

CATV Operator Video Material

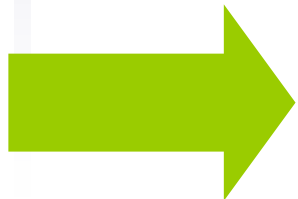
Role of Each Experiment

■(1) Archive Type Demonstration Experiment

- Video Material Upload / Download
- Access and various management done via web interface
- Preview using streaming
- User / Content Management
- Archive Search Features

■(2) Live Broadcast Type Demonstration Experiment

- Uncompressed DV Video Live Transfer
- Remote Session Management (Video Switching) via web interface
- Pro-Spec Mic Voice System by VOIP manager
- User / DV Session Management



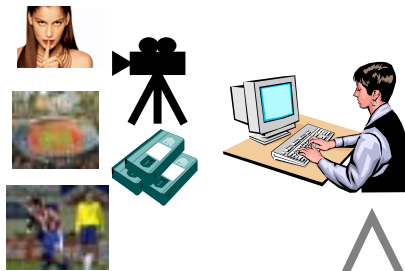
Our Goal is to

- Free Editors from scheduling restricts
- Free TV productions from location restricts

(1) Archive Type Demonstration Experiment: Using Database Operations

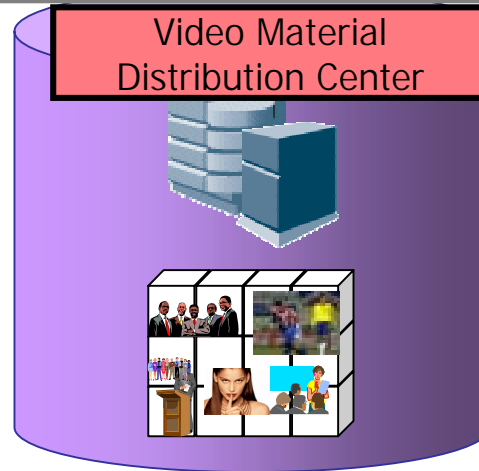
Easy, Simple, and Realtime Video Material Exchange Service Using IP Network

Regist & Upload Video Materials



Internet

Archive (Collect/Store) of Video Materials



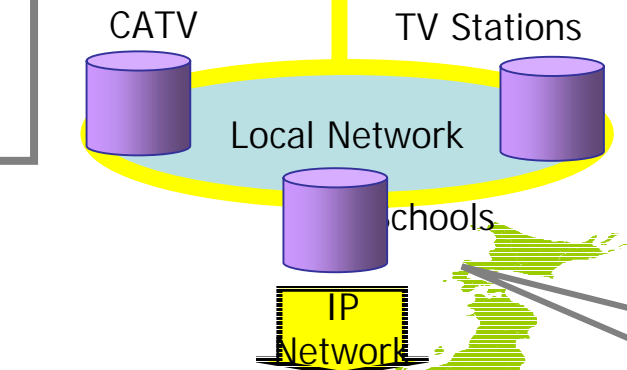
Internet

Search, View, Acquire Video Materials



- Video Material Registration using Web Browsers
- Operations can be done by editor/production's schedules
- Can use various video formats as source material

- Video material can be searched by keyword search
- Operations can be done by editor/production's schedules
- Video materials are pro-spec broadcast quality
- Progress of Program Production can be checked remotely



Content Distribution, Sales, Marketing to other local networks

- By joining the network, other media, industries can mutually use the system
- Marketing, Content Distribution to other local networks is possible

DAM Client (1)



DAM Client (2)



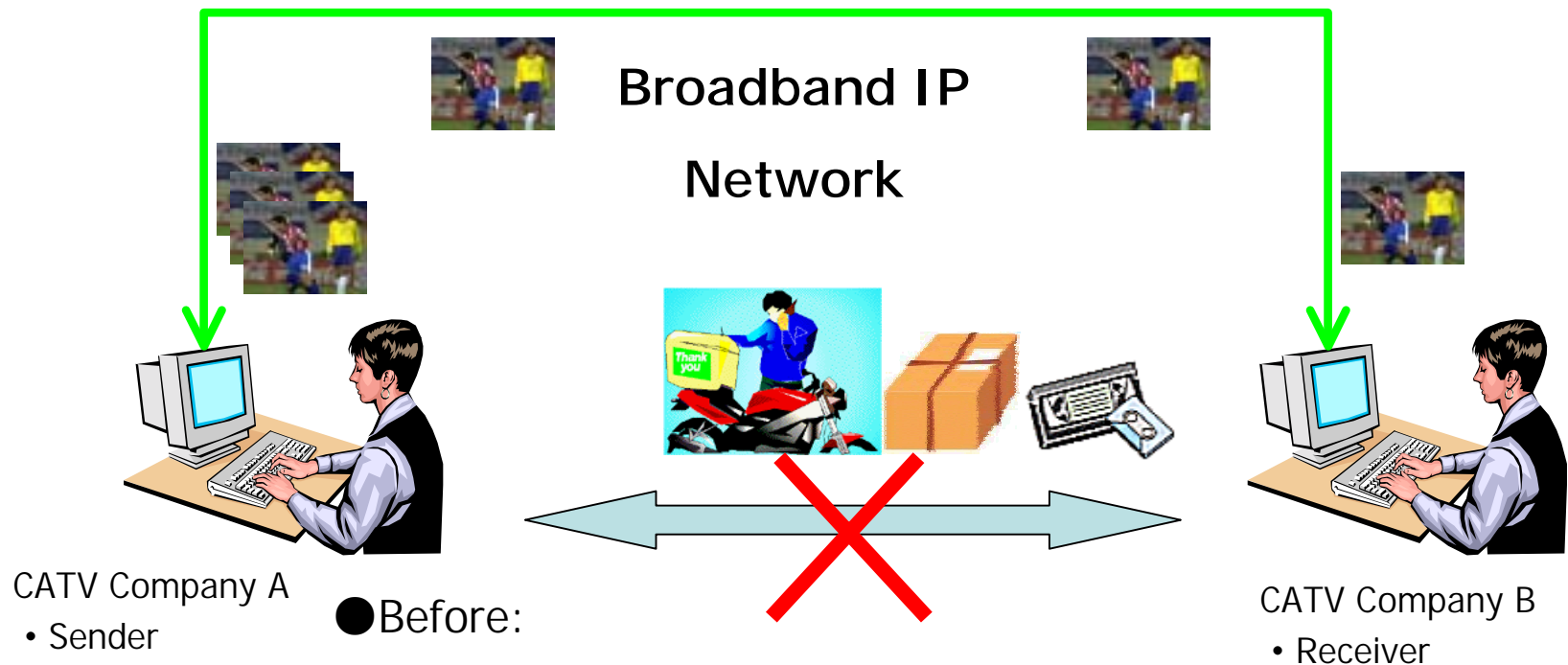
(2) Live Broadcast Type Demonstration Experiment: Use of Video Transfer System

<Example: Between CATV stations, Editing Productions, etc.

Used for Exchanging/Distributing Video Material (Master Contents)>

● **FROM NOW**, Media Type: Digital Data

Distributing Method: IP Transfer



Live Experiments Done on the year 2004

- Events

1. 52nd Yokohama International Parade Hamappre! (IP Unicast Live Broadcast)

iTSCOM.net Odakyu CableVision YOU Television, Yokohama CableVision, Yokohama TV, Fukui Cable TV

2. 88th High School Sumo Tournament in Kanazawa (IP Multicast Live Broadcast)

Kanazawa Cable TV Net, Fukui Cable TV, Akita Cable TV, Obihiro City Cable, iTSCOM.net

3. CATV2004 (Live Demo by using DAM to remote management)

iTSCOM.net, Ehime CATV, Fukui Cable TV, Tyuukai TV, Satellite Communication Network

4. Networld+Interop Tokyo 2004 (Multi Location Live Broadcast)

iTSCOM.net, Fukui Cable TV, Kanazawa CableTV Net,, Kurashiki Cable TV

5. InterBEE 2004 (Live remote management by DAM, Multi Location Live Broadcast, Remote Narration)

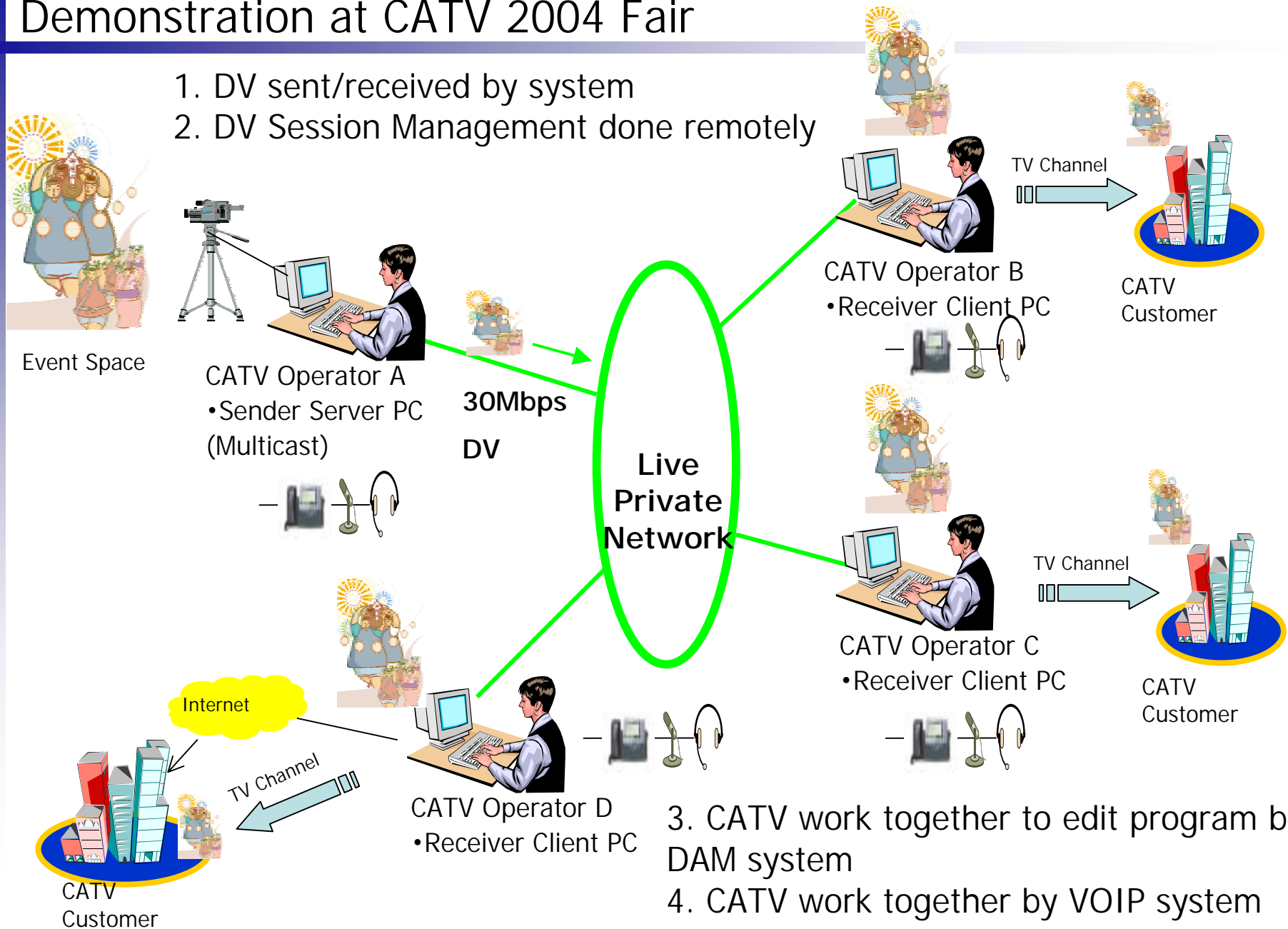
iTSCOM.net, Fukui CableTV, Kanazawa CableTV Net, Kurashiki Cable TV, Akita Cable TV, Ehime CATV, Tyuukai TV, Ooita CableTelecom, Chita Medias Network, Tokoname NewTV

- Program Production / Distribution

1 "Ageing Japan" (2004/10-)

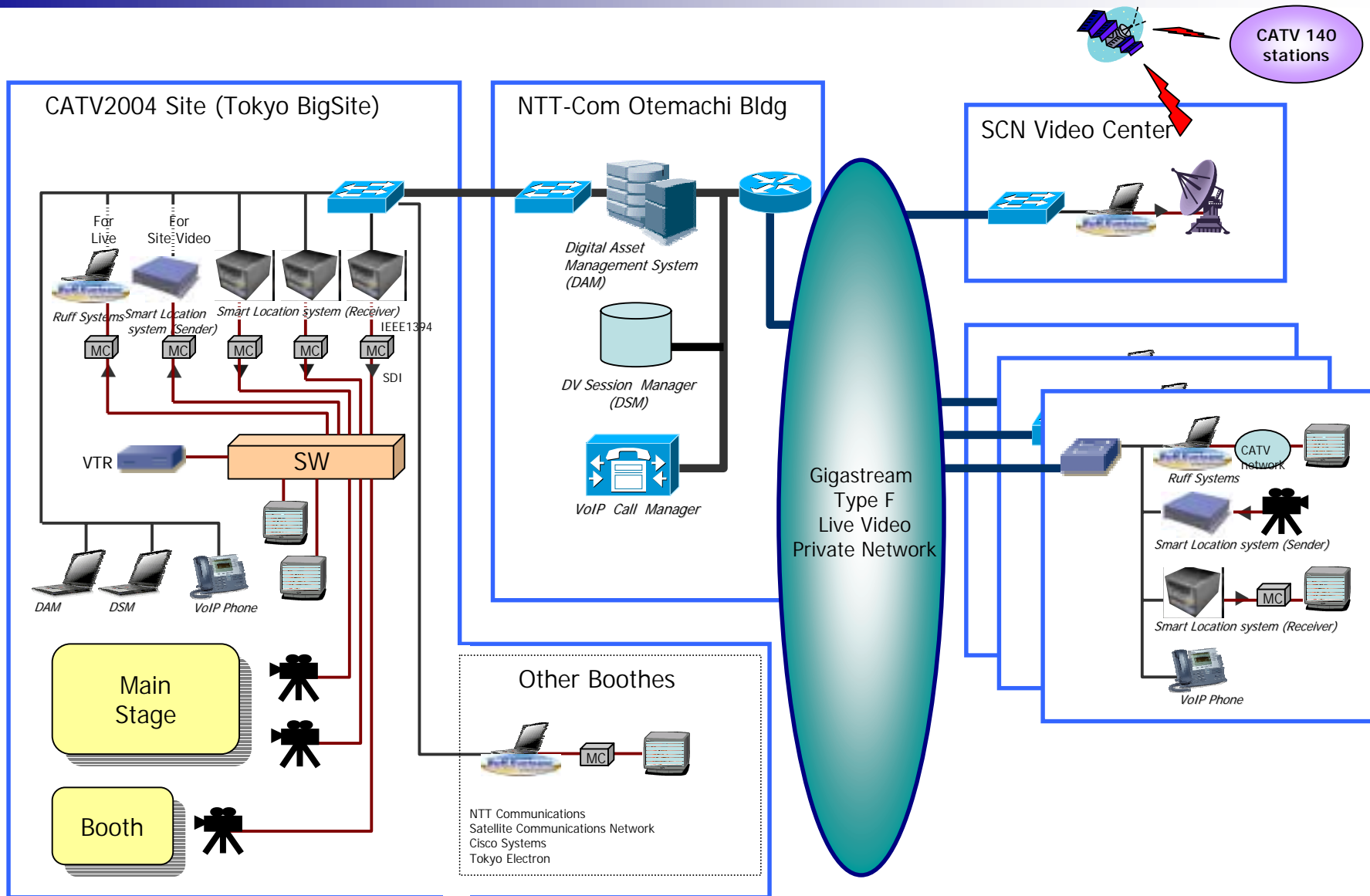
Demonstration at CATV 2004 Fair

1. DV sent/received by system
2. DV Session Management done remotely



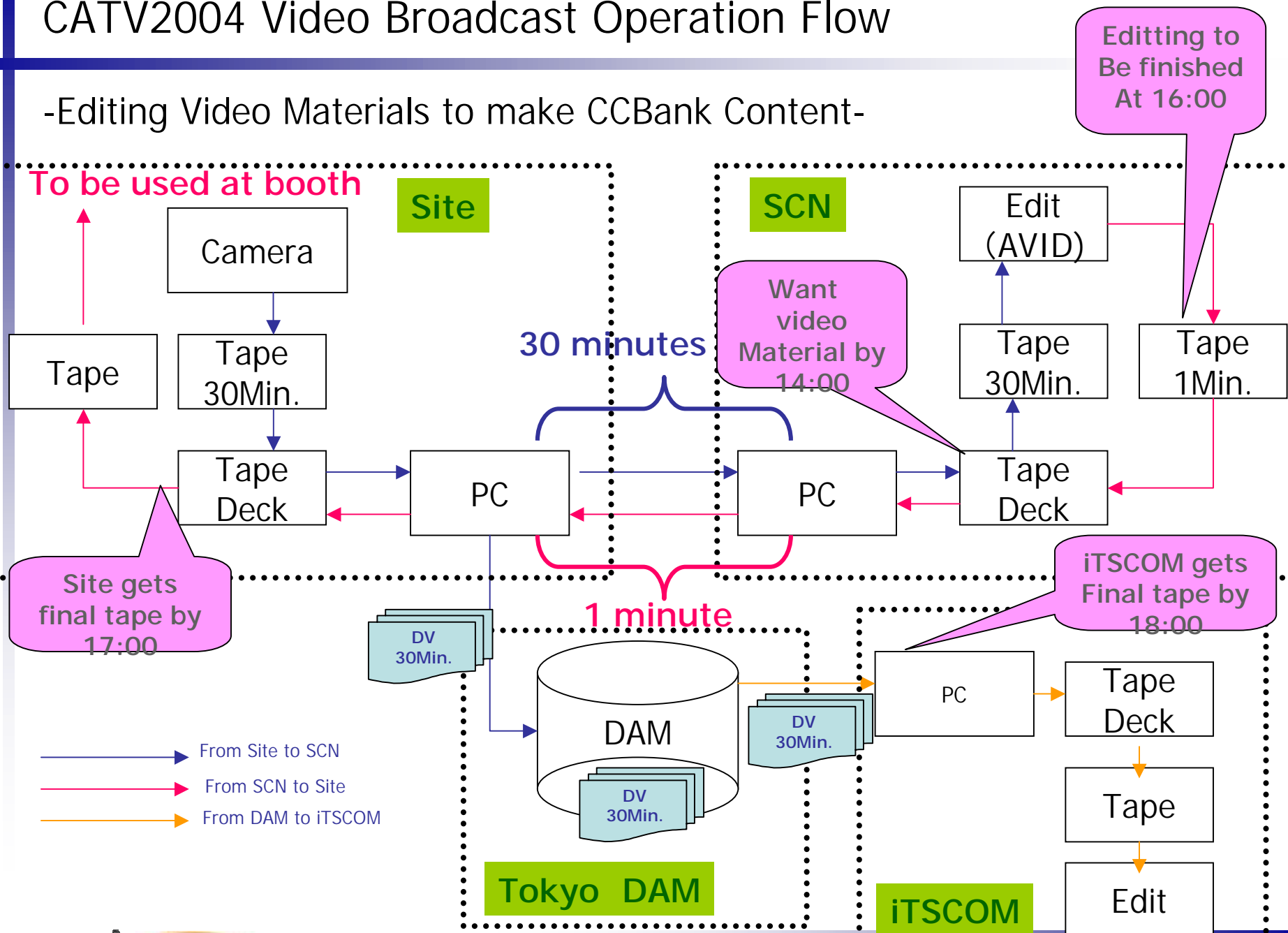
3. CATV work together to edit program by DAM system
4. CATV work together by VOIP system

CATV2004 Network Configuration



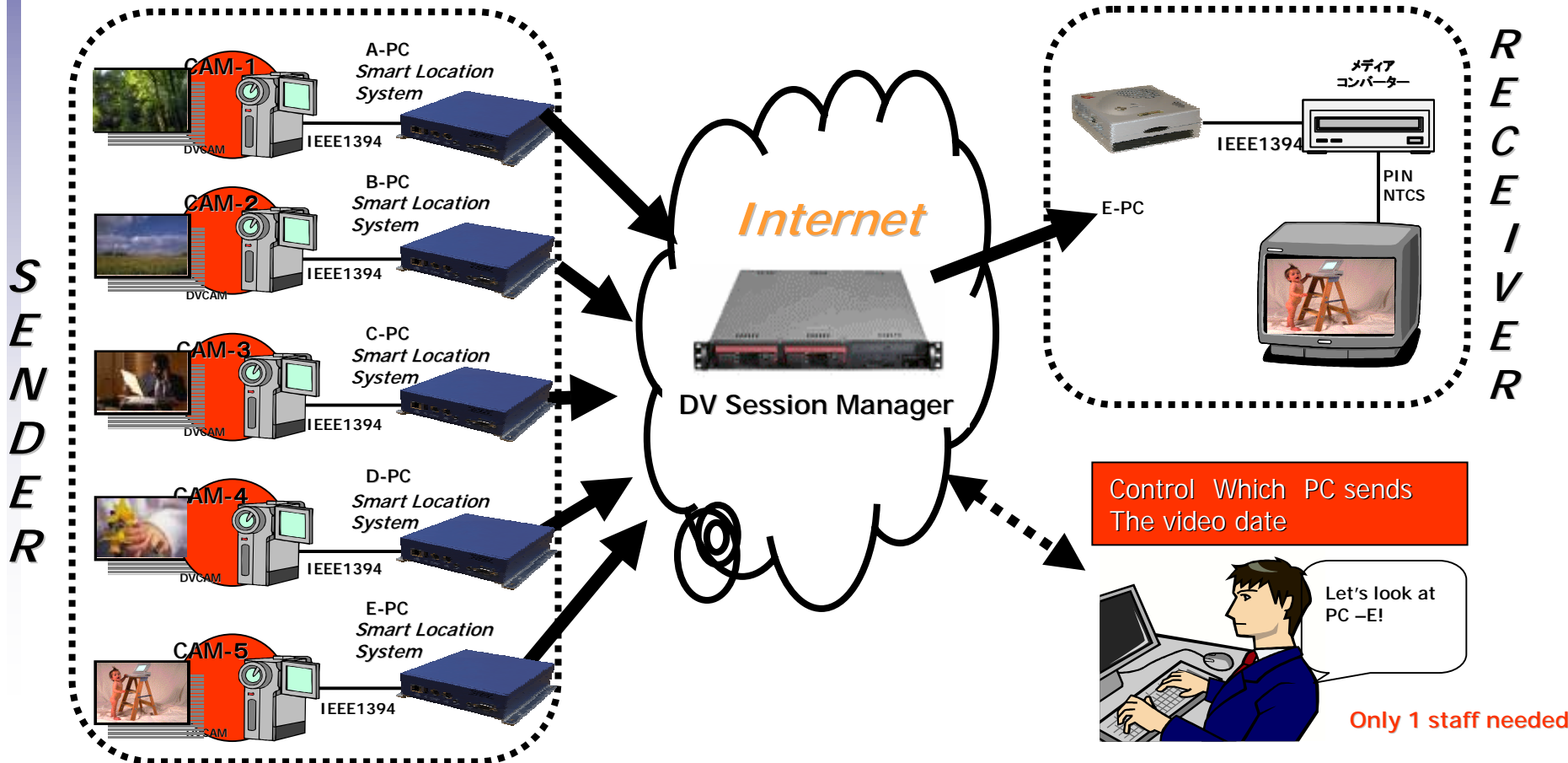
CATV2004 Video Broadcast Operation Flow

-Editing Video Materials to make CCBank Content-



Smart Location System and DV Session Manager

- ▶ Smart Location System: DV Sender/Receiver Box
 - Connect IEEE1394 and Ethernet and power on to send and receive DV video contents
- ▶ DV Session Manager – remotely (web) control numerous DV sessions
 - Manage sender / receiver member management, status management
 - Easy control allows staff reduction, cost reduction, etc.



Networld+ Interop Tokyo 2004 Using DV Session manager

ShowNetTV Studio (Makuhari)

Using DV Session Manager to have a live broadcast session with multiple TV stations nationwide



IPv4 Multicast

IPv4 Unicast

IP Network (Internet)

iTSCOM.net

Kurashiki Cable TV

Fukui Cable TV

Kanazawa Cable Television



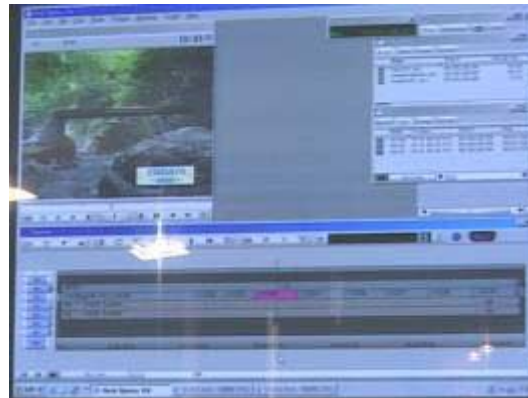
TV Network

InterBEE2004 Experiment Booth Outline

- Demonstration
 - CATV Community Channel Live Broadcast
 - Usage of DAM to do live editing of TV program
 - We used video content stored in DAM (searched and downloaded by the DAM system). We used a non-linear editing system to edit the content inside the booth
 - Remote Narration Recording Demonstration
 - We used Smart Location System to link 2 places together by DV video, and did a narration recording as if we were at a single location

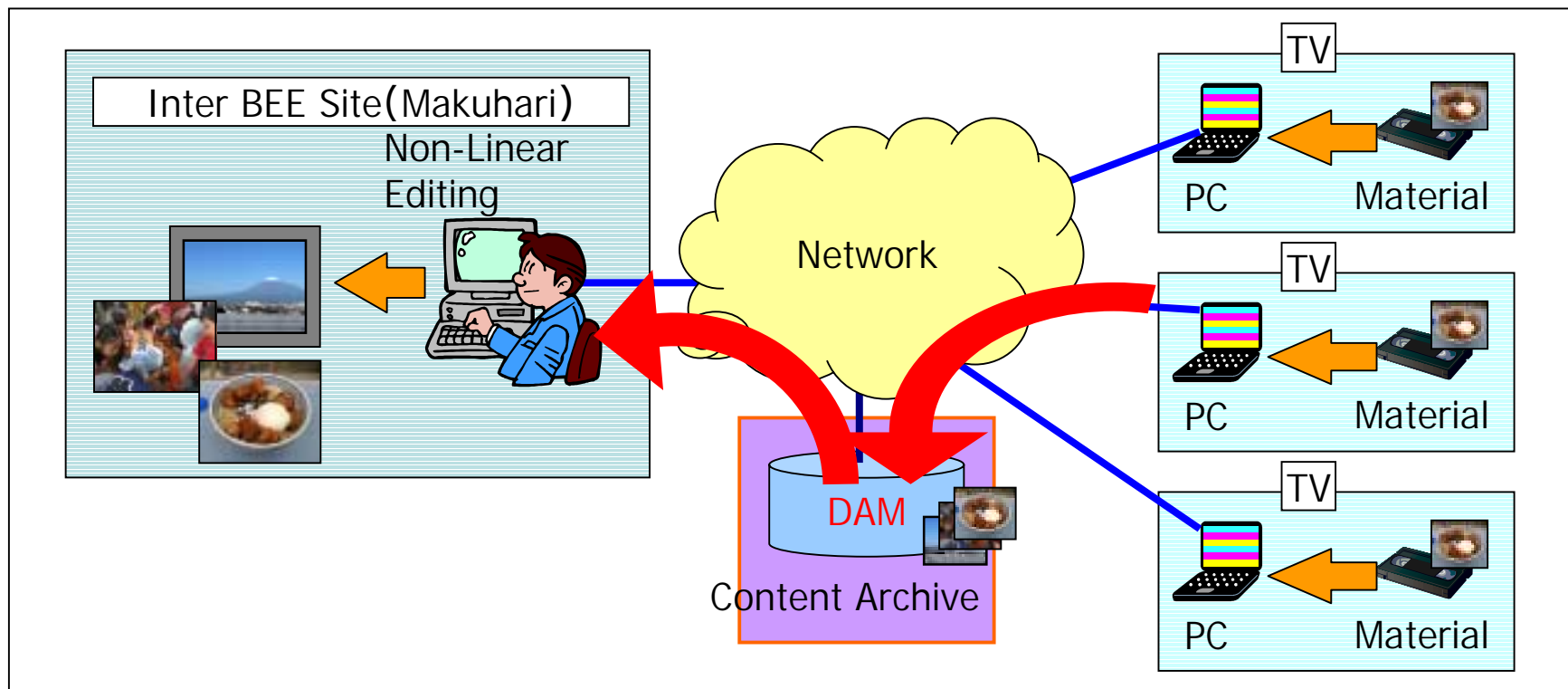
DAM Live Editing Demo

- We used video content stored in DAM (searched and downloaded by the DAM system). We used a non-linear editing system to edit the content inside the booth



The Operation of Live Editing using the DAM System

- Check for video contents which is currently under editing
- Get the video material from DAM
- Re-edit the material by the downloaded video material
- Upload the finished video material to DAM



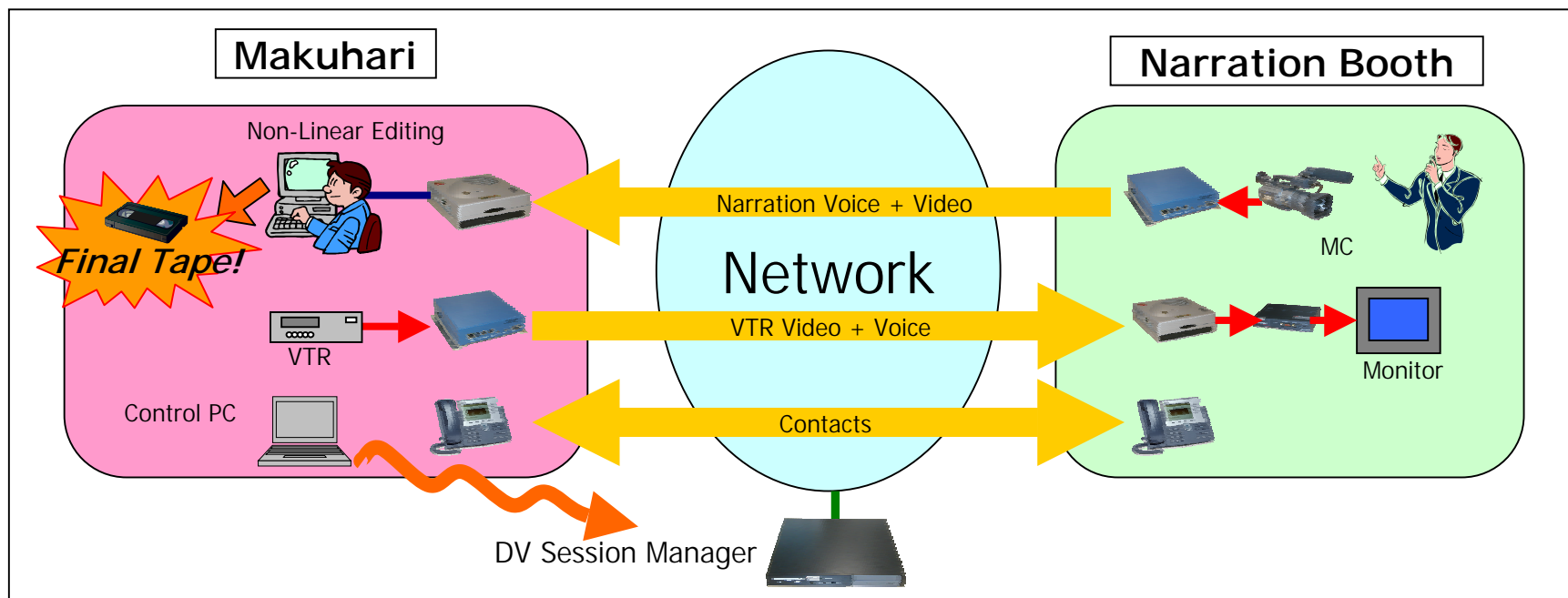
Remote Narration Recording Demonstration

- We used Smart Location System to link 2 places together by DV video, and did a narration recording as if we were at a single location

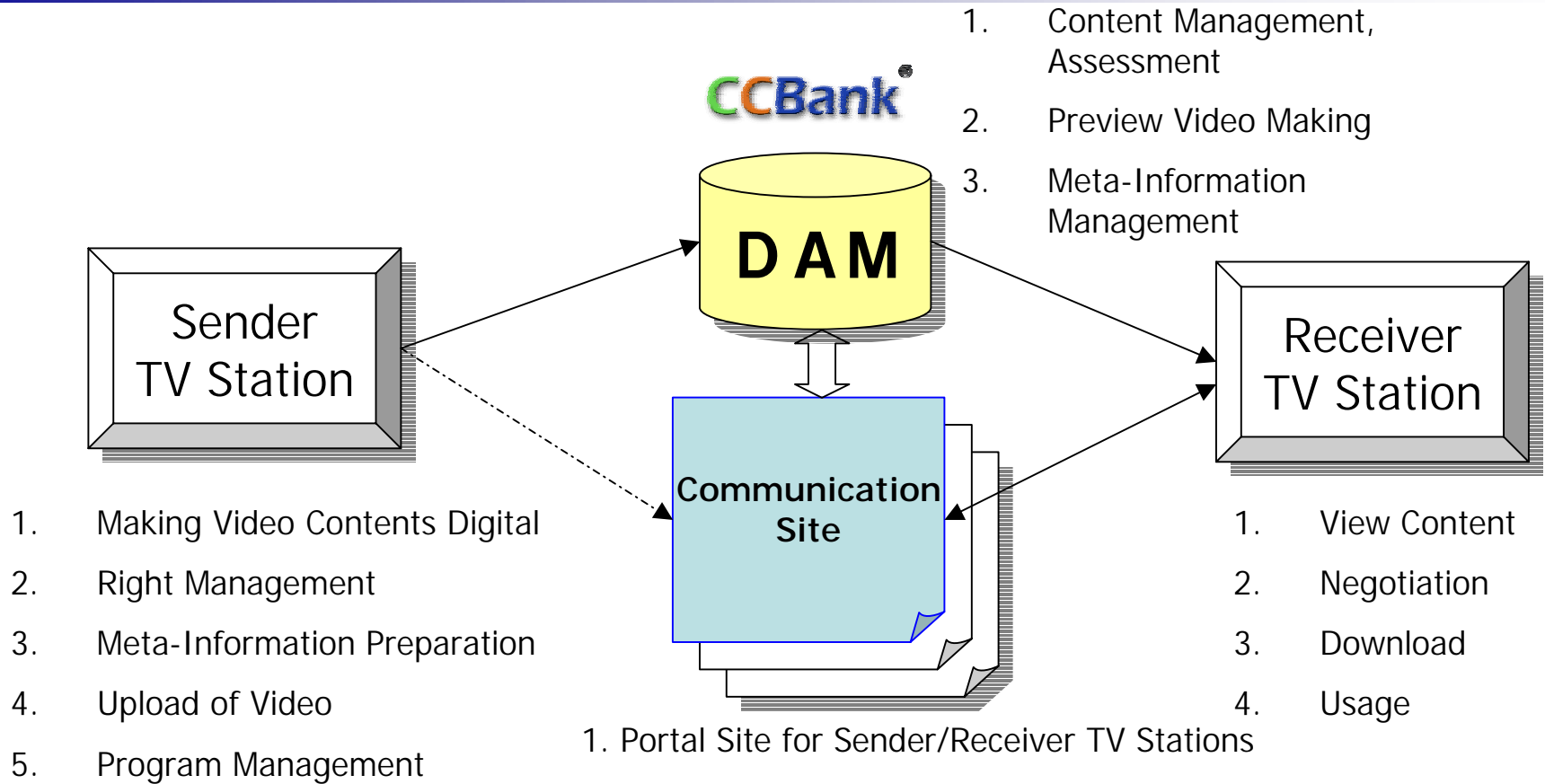


Operation Behind Remote Narration Recording

- Send VTR Video from Makuhari to Narrator
- Record Narration Voice to VTR, and send the video to Makuhari
- Record Narration Voice by Non-Linear Editing Machine
- Instructions from director are done by IP Phone
- Final tape is made real-time at the booth

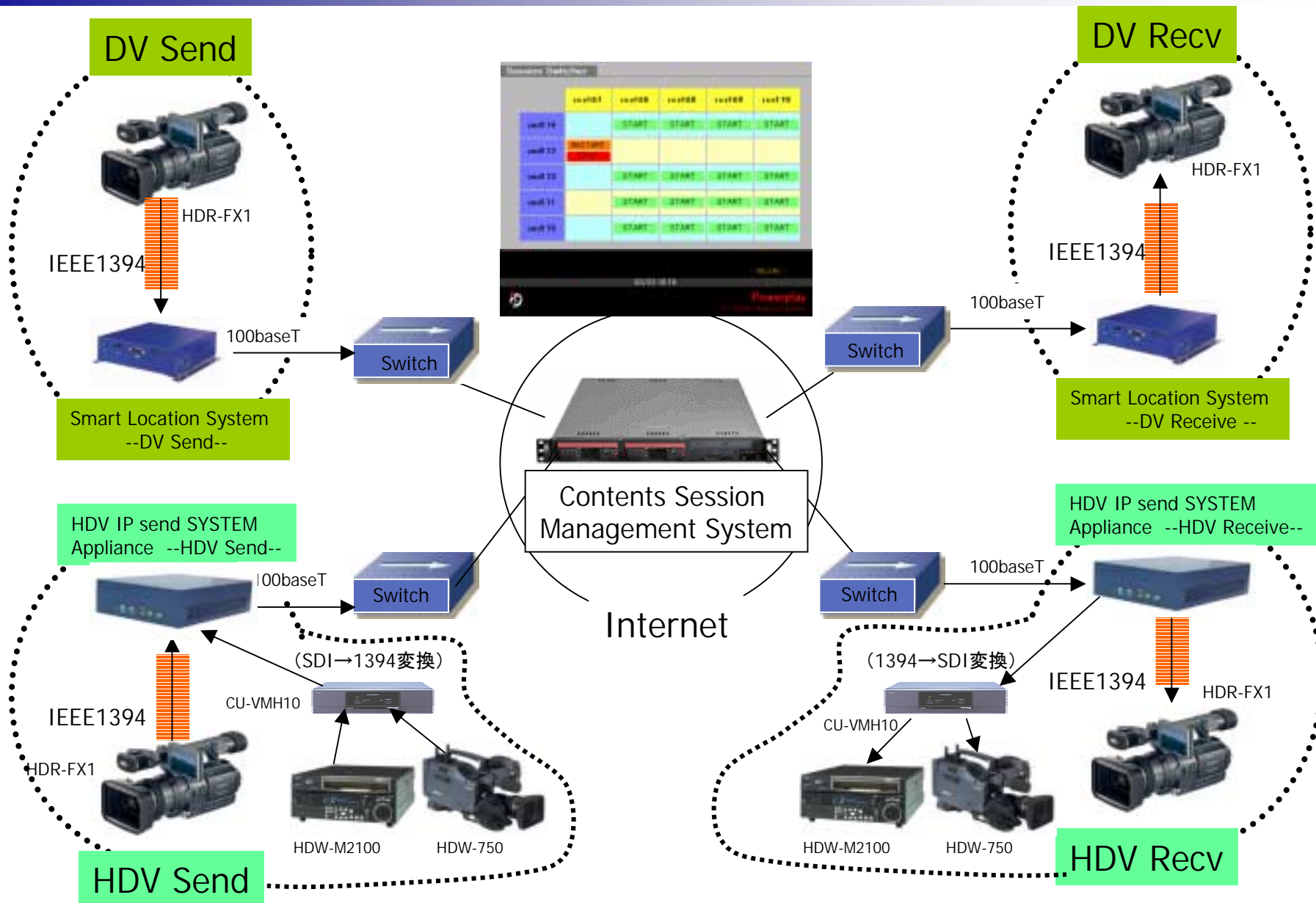


DAM & Communication Portal Sites

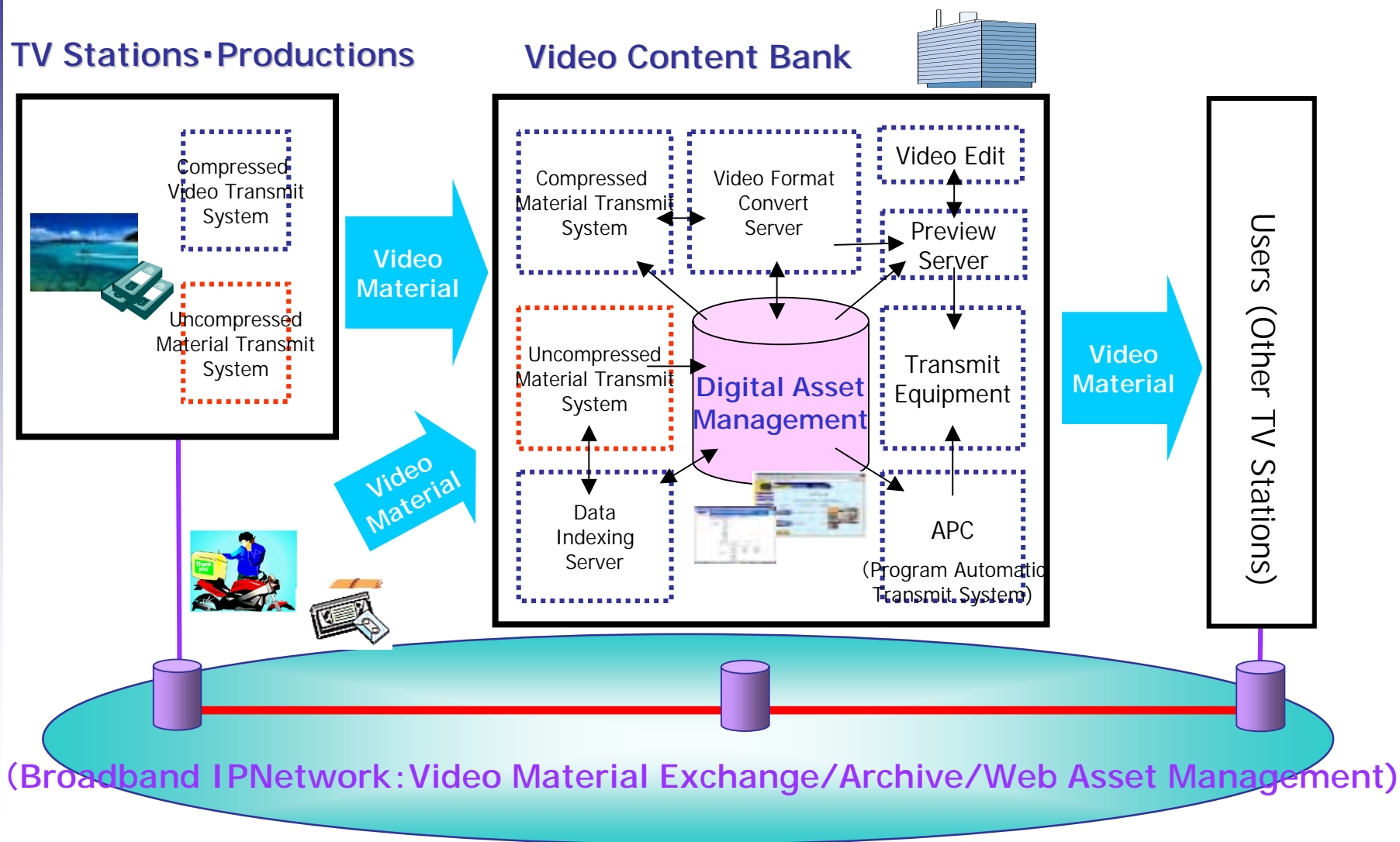


Future Plans (1) - Smart Location System HDV1080i

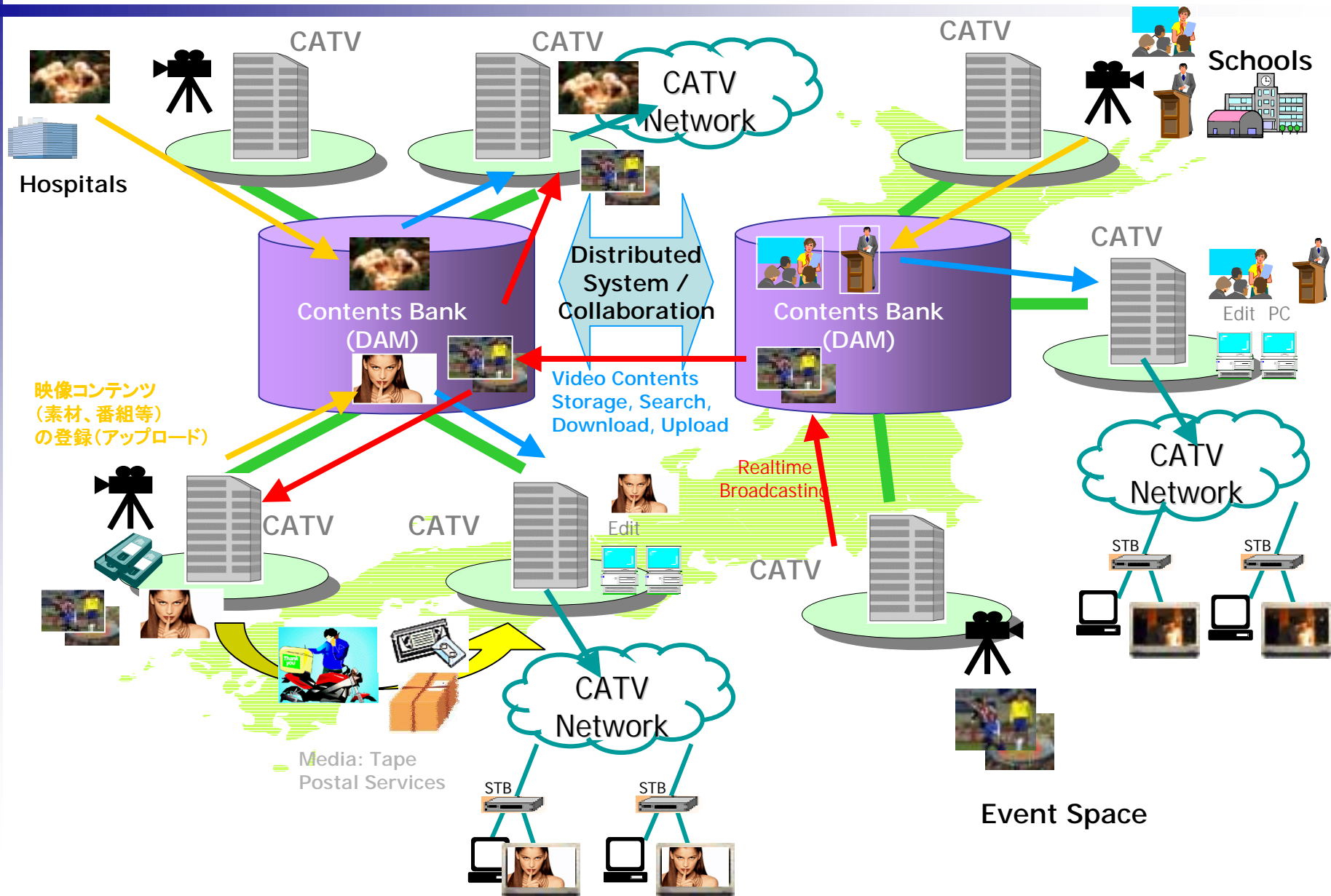
Contents Session Management System for DV / HDV



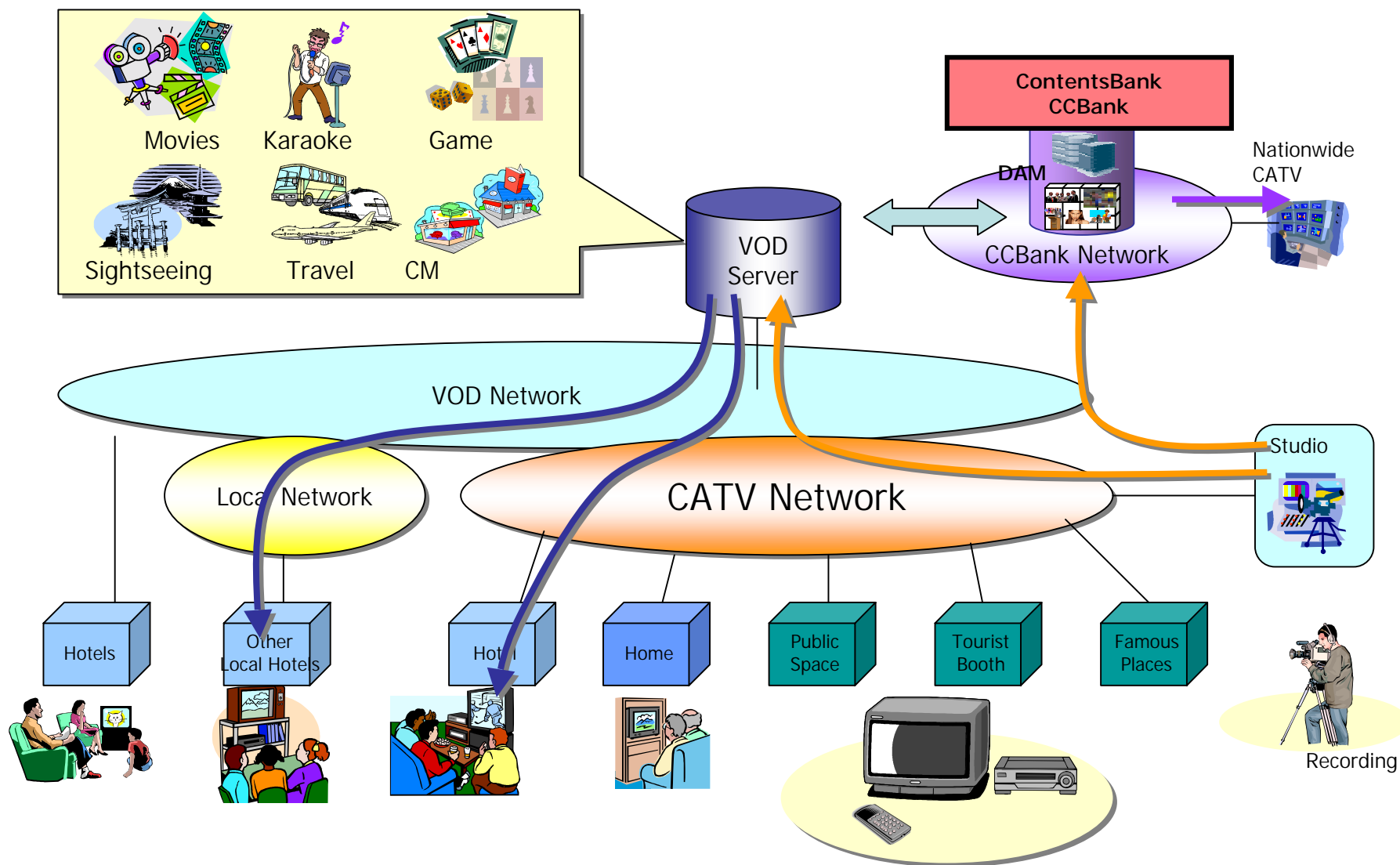
Future Plans(2) – Further Development of DAM System



Future Plans (3) – Multiple DAM Collaboration



Future Plans (4) – CCBank Collaborates with VOD System



Thank You Very Much!!