Japan Broadcasting Corporation

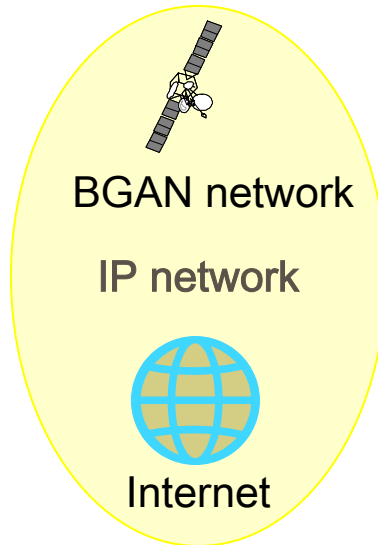## Latest file transfer situation at NHK

Ken Kudo, Senior Engineer of News Department
Tokyo ISOG Meetings
May 13, 2009

Contents

1. Latest topics, file transfer and live report by IP network
   - *News coverage of the 2008 Sichuan earthquake in China*
   - *Transmission on the sea from the coast of Eastern Somalia*

2. New reception server system for file transfer

   Integrated file reception and playback are available

3. Remote Camera Monitoring system

   A huge streaming and storing system for remote cameras

Latest topics

The Sichuan big earthquake in China
was transmitted using IP equipment

IP Video Phone

Streambox

PC

BGAN network

IP network

Internet

IP Video decoder

Streambox

FTP server

Latest topics

Transmission on the sea from Somalia

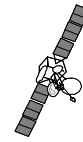using satellite equipment
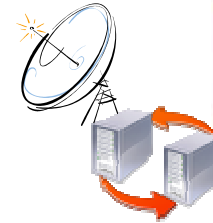

IP Video Phone

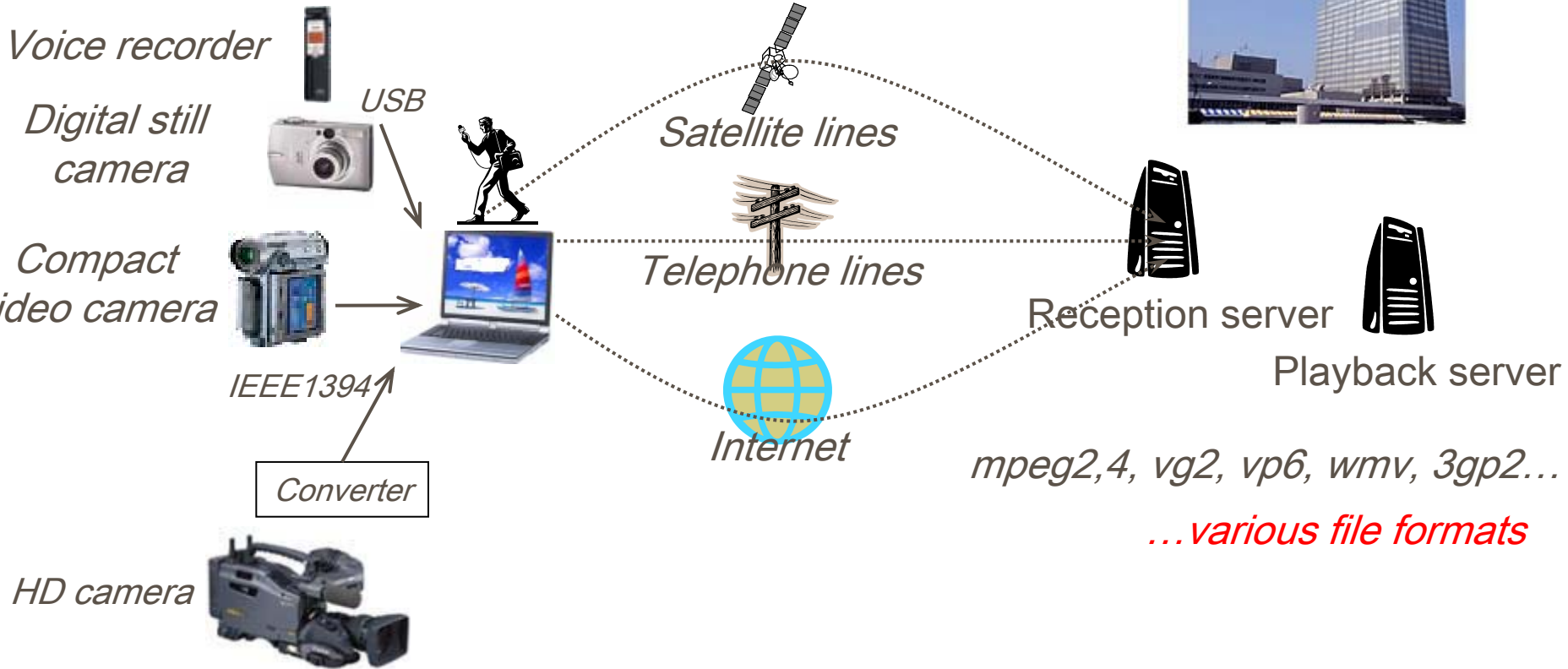Streambox

PC

M4 (ISDN)
auto tracking antenna

BGAN

Inmarsat

Broadcast center

Background of file transmission

Material delivery using commercial equipments, personal tools

Useful personal tools

Voice recorder

Digital still camera

USB

Compact video camera

IEEE1394

Converter

HD camera

Satellite lines

Telephone lines

Internet

Reception server

Playback server

mpeg2,4, vg2, vp6, wmv, 3gp2…

…various file formats

A totally Integrated Reception System is desirable

New reception server system

1. Various file formats must be playback
   - *Video file format; wmv, mp4, mov, avi……*
   - *Audio file format; wma, mp3, m4a…..*

2. A new application that will display the remaining transmission time
   - *This system gets the file size from header information in the file.*
   - *In order to get material ready in time for a news program.*

3. Transfer protocol
   - *FTPS (File Transfer Protocol) is main method.*
   - *HTTPS (Hyper Text Transfer Protocol) is available*
   - *Fast file transfer application is available*

4. Supporting various aspect ratios
   - *4:3 ratio and 16:9 ratio.*
   - *There is capturing it with a special aspect picture*
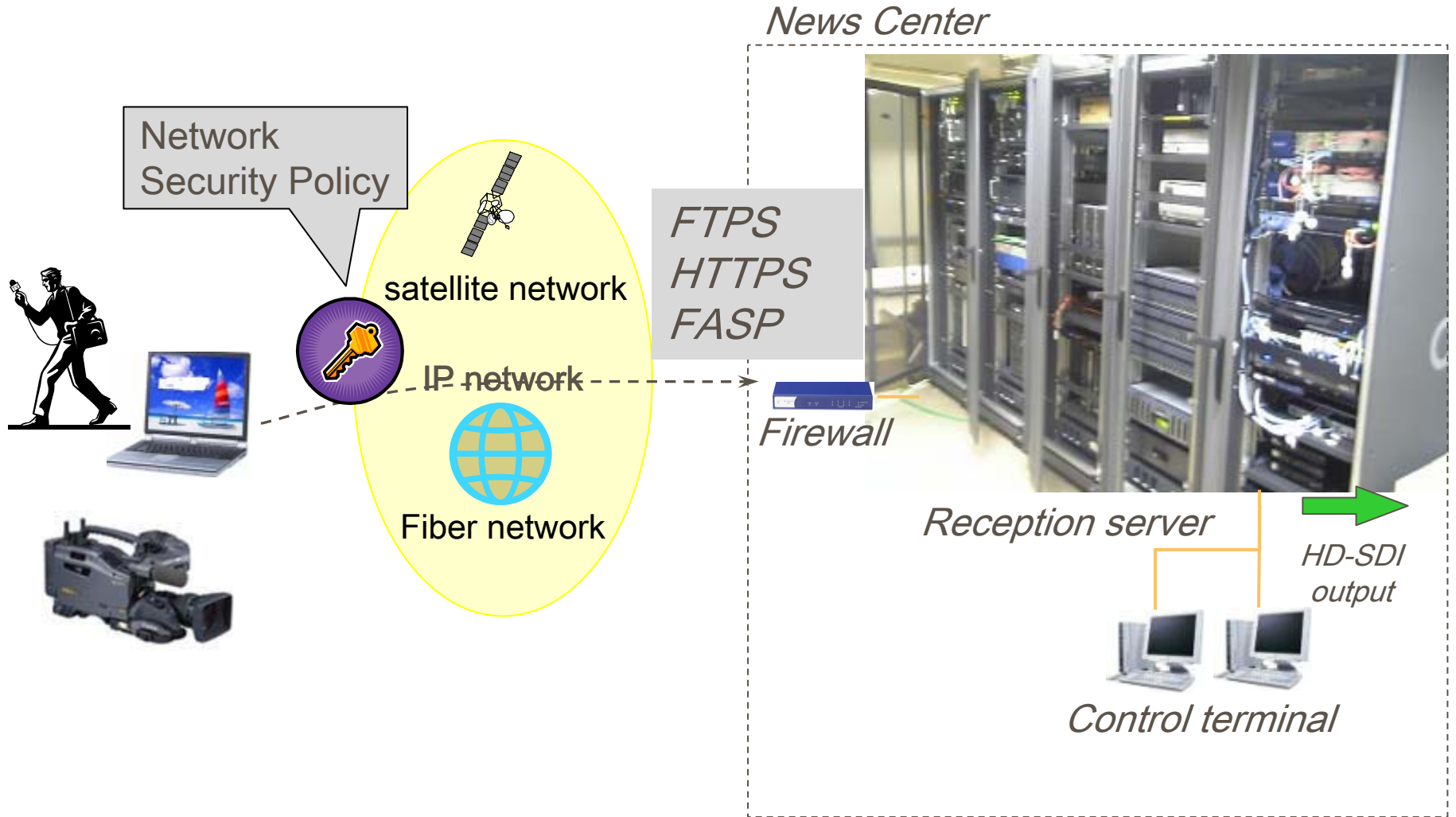
New reception server system

Transferring percentage

131,680KB／187,434KB [n] (69%)

Estimate end of the transmission time

2009 / 5 /13   14:35:00

New reception server system

Network Security Policy

satellite network

IP network

Fiber network

FTPS
HTTPS
FASP

News Center

Firewall

Reception server

HD-SDI output

Control terminal

New reception server system

Adjustment ratio

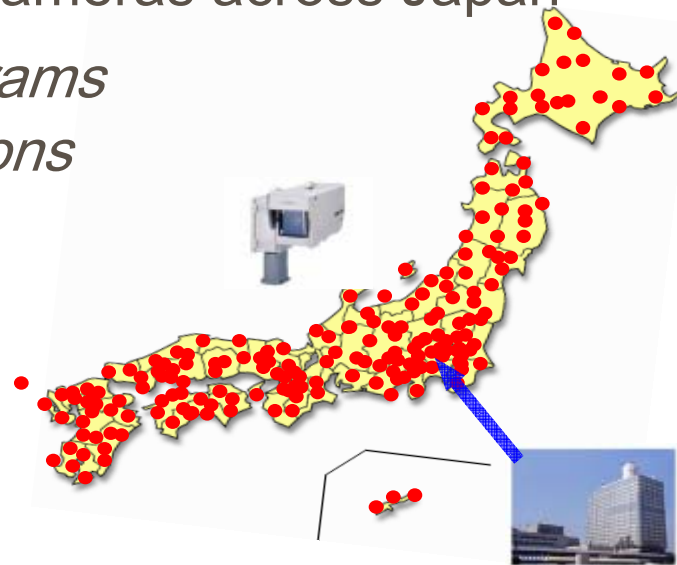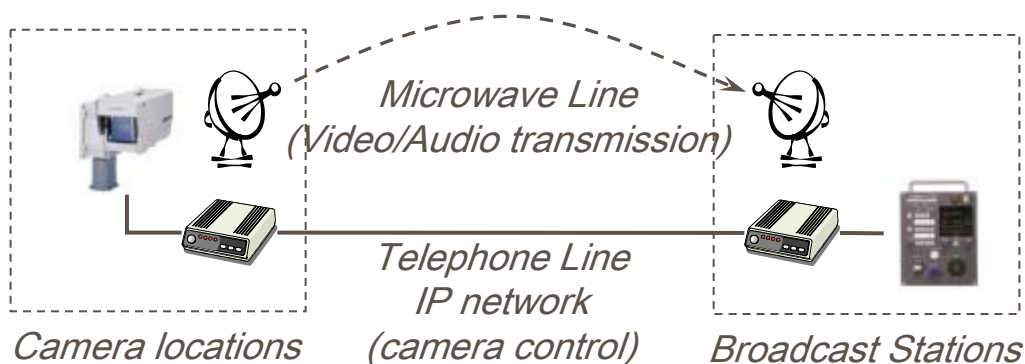Original | 16:9 | 4:3 SQ | Custom | 4 : 3

送出サイズ

Remote Camera Monitoring System

REMOTE CAMERAS at NHK

NHK has installed around 450 remote cameras across Japan

- *Attractive daily weather report programs*
- *Remote control from broadcast stations*

Microwave Line
(Video/Audio transmission)

Telephone Line
IP network
(camera control)

Camera locations

Broadcast Stations

NHK Broadcasting Center
(TOKYO)

If cameras catch these instants ...

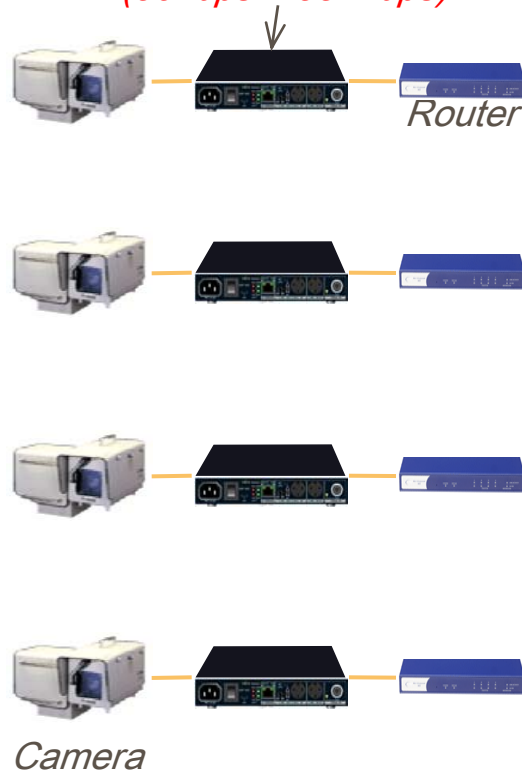Earthquake

Accident

Incident

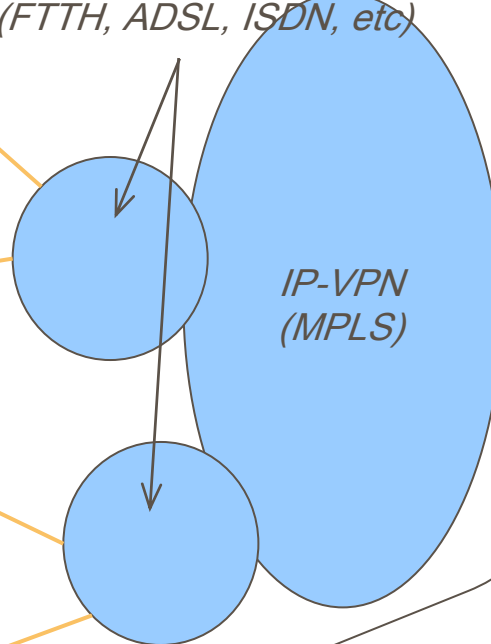*A few minutes for making up transmission / control Lines*

Remote Camera Monitoring System

Video Streaming/Storing/Playback System for emergency newscasts

(2) Mpeg-4 Real-time IP Encoder (50kbps ~ 384kbps)

Access Line Network (FTTH, ADSL, ISDN, etc)

Preview Terminals

Router

IP-VPN (MPLS)

200Mbps

Transmission Terminals

HD-SDI output

Management Servers (2.7TB)

Camera

(1) Secured VPN

(3) Receiving System (at news center)

Remote Camera Monitoring System

Recoded files of Cargo plane failed its landing

2009.3.23 Narita Air port

Thank you