

MP3

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**

Experiments on an Audio Conferencing Tool using MP3 Codec

Kyoungae Kim*, Sooyeon Kim*, Taewan You*, Jeongkeun Lee*, Youngseok Lee*, Yanghee Choi*,
Jaehoon Jeong**, Seungyun Lee**, Yongjin Kim**

*School of Computer Science and Engineering, Seoul National University

**Electronics and Telecommunications Research Institute

MP3 (MPEG-1 layer 3)

(CD-quality)

(codec)

MP3

, IPv6
MP3

MP3 (codec)

가

1.

MPEG (Moving Pictures Experts Group)

MP3 (MPEG-1

, 5

layer 3)

MP3

가

가

, 128Kbps

CD (Compact Disk)

2.

MP3

MP3

가

RTP (Real-time Transport Protocol)

MP3

가

가

MP3

MP3

가

2

1

MP3

RTP

ATM

IPv6

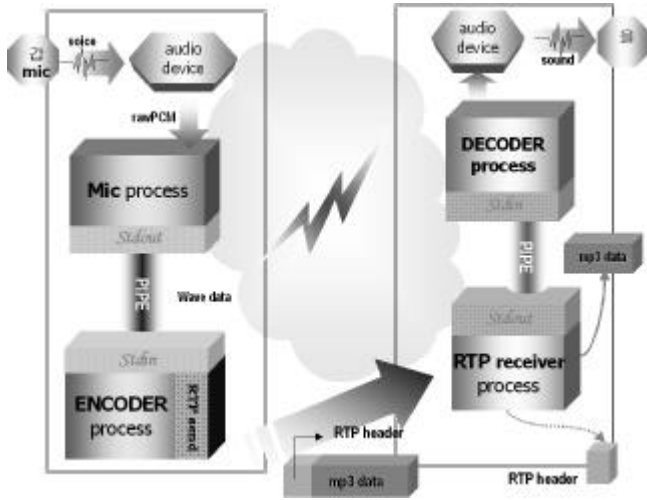
PC

RTP

PC

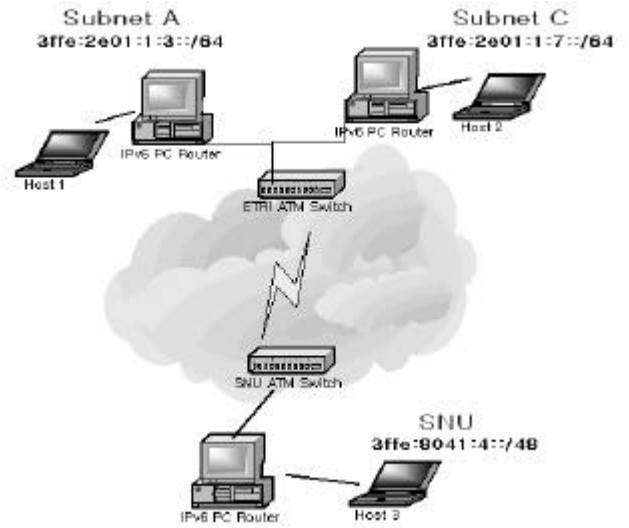
MP3

RTP



1

1



2

4.

MP3

IPv6

/	
IP layer Protocol	IPv6
Application layer Protocol	RTP / RTCP
MP3 encoder	Lame
MP3 decoder	Mpg123
RTP/RTCP module	UCL common library

1

4.1.

(bandwidth)

PCM (Pulse Code Modulation) 가

16

32 kHz, 44.1 kHz, 48 kHz PCM

가 [1], 가 , 44.1 kHz

16 * 141000 * 2 = 1.3 Mbps 가

3.

IPv6 , IPv4

MP3 , 128 -

IPv6 (ETRI)

256 kbps . MP3

2 . ETRI ATM (Asynchronous Transfer Mode)

6 ~ 12

Native IPv6

200 kbps

ETRI

3

, 7 mp3123
 (2304)
 50 ms . , MP3
 lame mp3123
 50 ms
 , 50 ms
 . 5.
 lame (2304)
 50 ms , 5.
 40 ms . MP3
 가 IPv6
 40 ms . 5.
 RTP Receiver 가 mp3123 MP3
 60 ms . Mpg123
 가 (2048
)
 430 ms 가 ,
 . 0
 (16384)가 ,
 200 ms . 가 MP3
 , 880 ms 가 .
 ,
 ,
 100 ms .
 30 ~ 40 ms
 880 ms .
 ,
 880 ms
 ,
 ,
 ,
 , 가
 , 가 , mp3123 가
 mp3123
 . , mp3123

[1] P.Noll,"High quality audio for multimedia: key technologies and MPEG standards," GLOBECOM '99 , Rio de Janeiro, Brasilien, 1999.
 [2] UCL Network and Multimedia Resarch Group , "Robust Audio Tool," <http://www-mice.cs.ucl.ac.uk/multimedia/software/rat>
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 [4] M.J.Karam, F.A.Tobagi,"Analysis of the delay and jitter of voice traffic over the internet," INFOCOM 2001, Anchorage, Alaska USA, April 2001.
 [5] M.McCandless,"The MP3 revolution. IEEE Intelligent Systems," Vol.14,no. 3 , May-June 1999.