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Priority-based Buffer Management Schemes For Real-Time Video Transmission

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MPEG1, MPEG4, H.263 (Inter/Intra Frame)

(ADroptail, ARED, ActiveDrop, DropRandom)

(PSNR)

1.

가 MPEG1, MPEG4, H.263

가

가

3

가

가

가

가

가

가

가

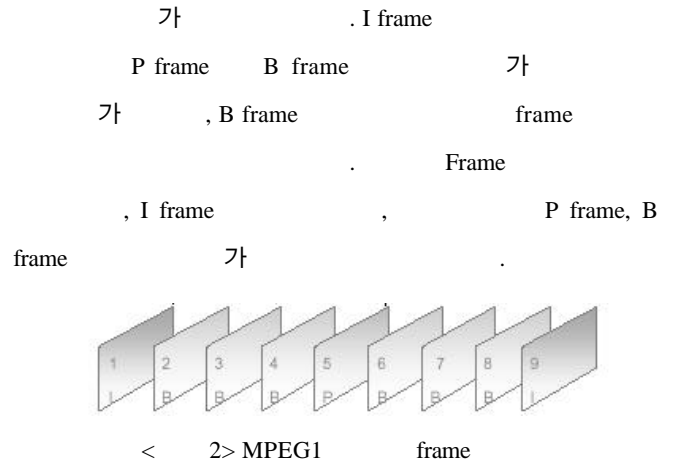
ARED, ActiveDrop, DropRandom

ADropTail, 3

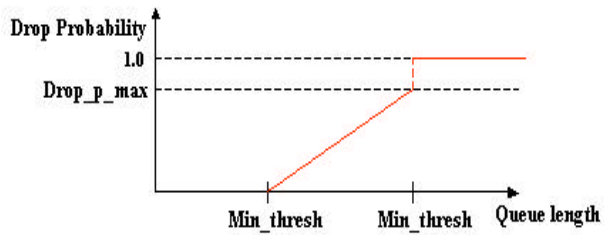
, B frame I P frame
 P frame I frame
 I frame
 가 < 2 > , 7 B
 frame 5 P frame 9 I frame
 가 MPEG1
 frame 가 ,
 가 I frame
 P frame B frame 가
 가 , B frame frame
 Frame
 , I frame , P frame, B
 frame 가

2.

, DropTail
 DropTail
 RED[2] 가 RED < 1 >



3.2



< 1 > RED

MPEG1, MPEG4, H.263 가
 [3]
 IP TOS(Type of Service)
 (Diffrentiated Services)

3.

- **ADropTail:** ADropTail I frame

3.1

가 가 , B frame 가
 가 가 가 ,

MPEG1, MPEG4, H.263

, DCT
 I frame, P frame, B frame < 2 >
 , MPEG1 frame 가 MPEG1

- **ARED :** ARED ADropTail

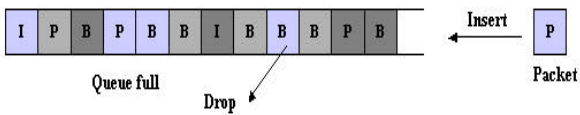
가

ActiveDrop:

P, B frame
P frame
frame

DropRandom:

가
P frame
, P frame
frame
B frame
P frame



< 3> DropRandom

4.

, MPEG1, MPEG4
가
PSNR , PSNR
가
(x, y) , RGB
PSNR

PSNR
PSNR 가

NS-2 , < 4>

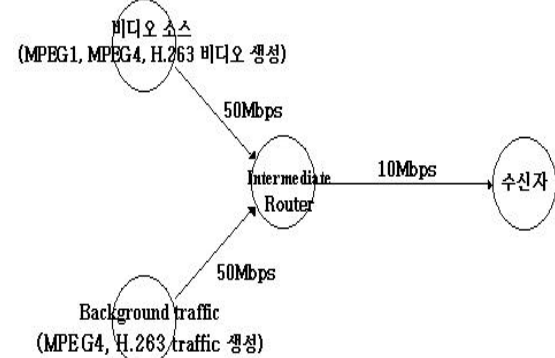
MPEG4

NS-2

MPEG1,

MPEG4, H.263

[5]



< 4>

PSNR

< 5>

가 가

PSNR

PSNR

가

RED,

ARED, ADropTail

< 6>

가

가

PSNR

< 7>, < 8>

PSNR

20

NS-2

< 4>

MPEG1,

가

40

가

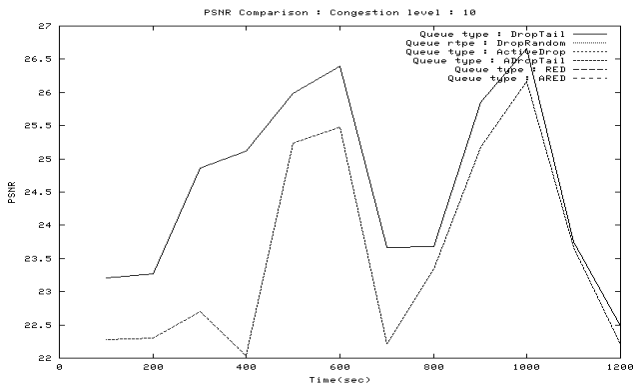
ActiveDrop, DropRandom

5.

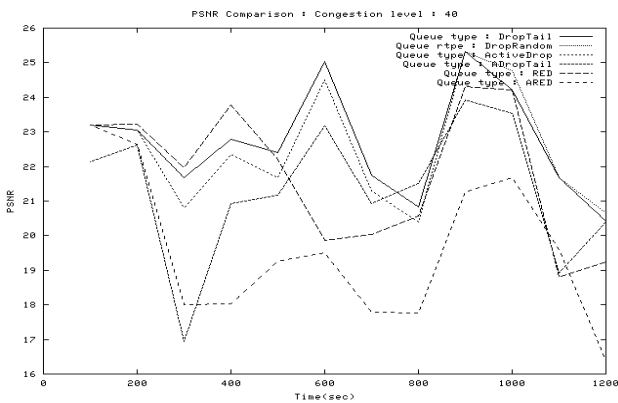
MPEG1, MPEG4, H.263

가

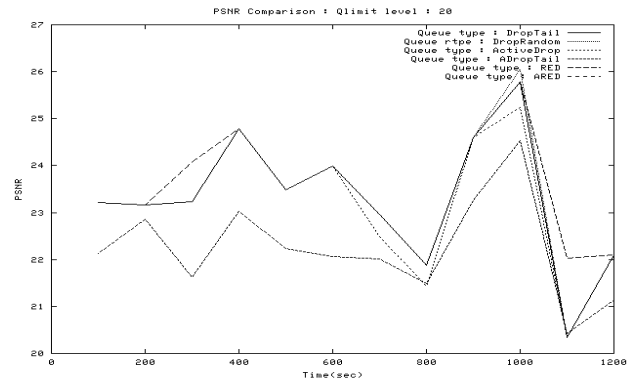
가



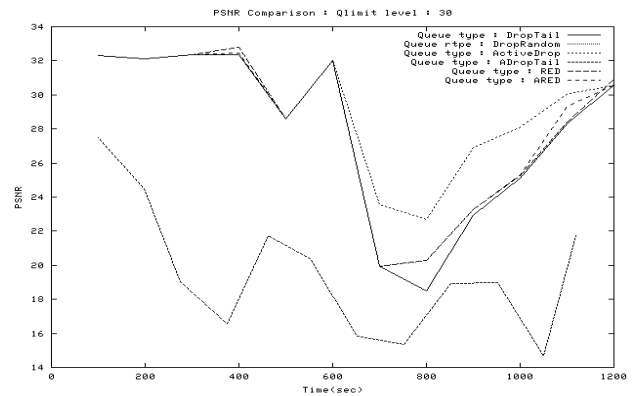
< 5> 가 PSNR



< 6> 가 PSNR



< 7> 가 20 , PSNR



< 8> 가 40 , PSNR

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[3] S.-Y. Wang and B. Bhargava, "A Fragmentation Scheme for Multimedia Traffic in Active Networks", Reliable Distributed Systems, 1998. Proceedings. Seventeenth IEEE Symposium on , 1998, Page(s): 437 -442

[4] Gringeri et al., "Robust Compression and Transmission of MPEG-4 Video," ACM Multimedia '99, Orlando, FL, Oct. 1999

[5] Frank H.P. Fitzek and Martin Reisslein, "MPEG-4 and H.263 Video Traces for Network Performance Evaluation", Technical Report: TKN-00-06 October 2000