





( 1 )

가 RE-INVITE  
Fast Update 가 SIP INFO  
I- . SIP  
INFO , SIP INFO content-  
type “ application/media\_control+xml ”  
XML ,  
가 SIP INFO SIP  
INFO  
200 OK 가 ,  
SIP INFO  
DTMF IETF  
RFC4733 DTMF  
, IETF RFC6086 SIP INFO  
,  
IETF BFCP  
(Binary Floor Control Protocol)  
H.264

3.

/ / / ,  
가 가 가 , I-  
SIP INVITE , DTMF 가 가 가  
가 IETF BFCP  
INVITE TCP  
BFCP UDP  
, REFER TCP NAT/Firewall 가  
BYE UDP UDP/BFCP,  
SIP TCP/BFCP, TCP/TLS/BFCP  
SDP , RTCP I-  
G.711 , RTCP I-  
G.722, AMR, AMR WB , RTCP I-  
H.264 , H.263 RTCP  
RTP , RTCP(Real 가  
Time Transport Control Protocol) RTCP I-  
RTP/AVPF 가  
SIP INFO 가 RTCP  
가 FIR(Full Infra Request) , FIR  
RTCP PSFP(Payload-

specific FB message) FMT 4 . ( 4.  
 2) SDP  
 "RTP/AVPF" RTCP  
 'fir'

```
m=video 6002 RTP/AVPF 96 97
...
a=rtcp-fb:* ccm fir
```

( 2) RTP/AVPF SDP

PTZ(Pan-Tilt-Zoom)

(Far-End Camera

Control, FECC)

MCU

DTMF . ( 3) SDP  
 " application/h224 "  
 " a=rtmpmap " " h224 "  
 4800

**Acknowledgment**

```
m=application 49158 RTP/AVP 100
a=rtmpmap:100 h224/4800
a=sendrecv
```

( 3) FECC SDP

NAT

가

SBC(Session Border Controller)

NAT

SBC

STUN/TURN/ICE

가

UPnP

NAT

가

가

XMPP

SIMPLE

가

가

FEC(Forward Error Correction)

가

가

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