

ACTIVITIES

ACTIVITY 5.1

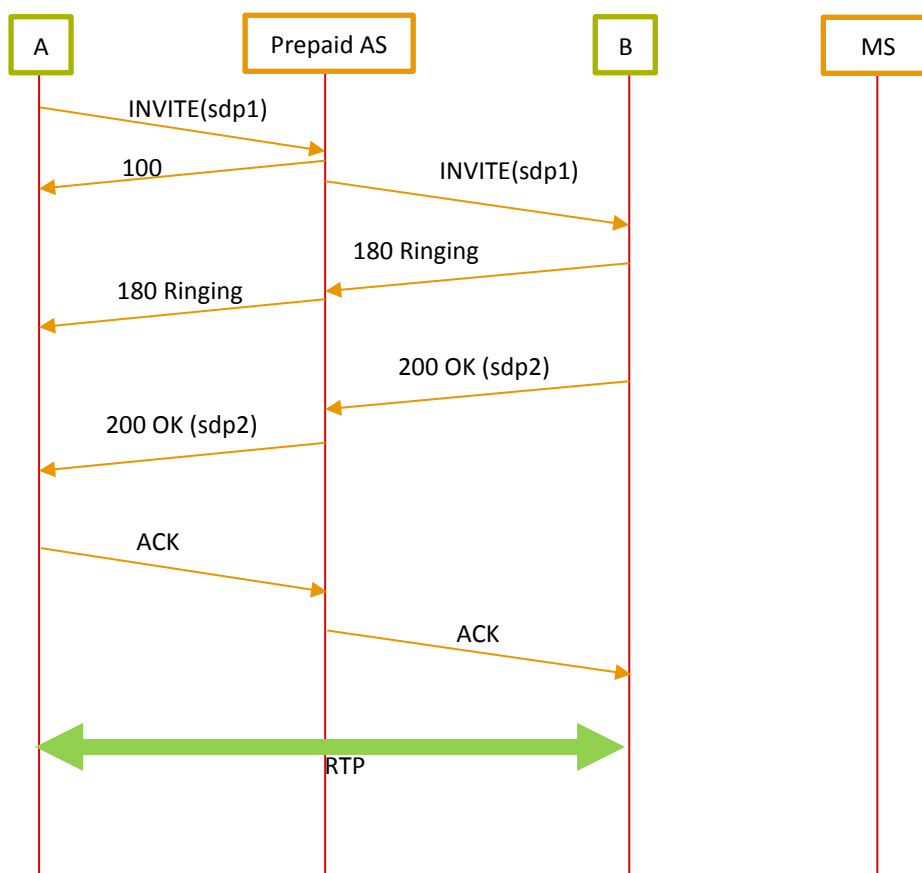
1. Read chapters 1-7 and 10 of RFC 3725 (third party call control)
2. What flow (I, II, III or IV) would be the best choice for connecting a user with an announcement machine?
3. Please fill-in the following table indicating pros and cons of the different flows

Flow	Pros	Cons
I		
II		
III		
IV		

ACTIVITY 5.2

1. Consider the following multimedia communication scenario:
 - a. There are two User Agents A and B that have established a voice call through an Application Server
 - b. The Application Server is acting as a B2BUA and is relaying only the signalling. The media flows directly between A and B. It implements a prepaid service, monitoring the call from A and updating the credit in an external DB.
 - c. There is another network entity called Media Server that behaves as a User Agent and contains an RTP entity. It is able to play announcements
 - d. The Media Server has so far not been involved in the call.
 - e. In order to play announcements, the Media server just needs to receive an INVITE with a SIP URI as follows:
 - i. sip:announcement<nr>@mediaserver.example.com
 - ii. Where <nr> represents a number indicating the concrete announcement

- iii. When the media server receives such an INVITE message, it answers the call generating a 200OK and plays the corresponding announcement
 - iv. When the announcement is finished, the media server sends a BYE message
2. A supports the following media and encodings:
 - a. Audio: A-law, iLBC
3. B supports the following media and encodings:
 - a. Audio: A-law
4. The Media Server supports the following media and encodings:
 - a. Audio: A-law
5. The SIP flow and exchanged SDP messages are shown next:



SDP1:

```
v=0
o=a 2890844526 2890844526 IN IP4 a.lab.example.com
s=
c=IN IP4 a.lab.example.com
t=0 0
m=audio 49170 RTP/AVP 8 97
a=rtpmap:8 PCMA/8000
a=rtpmap:97 iLBC/8000
```

SDP2:

```
v=0
o=a 2808899564 2808899564 IN IP4 b.lab.example.com
s=
c=IN IP4 b.lab.example.com
t=0 0
m=audio 49170 RTP/AVP 8
a=rtpmap:8 PCMA/8000
```

6. After two minutes in the call, A's prepaid credit is exhausted and the Application server needs to release the call. Before the AS release the call it plays an announcement to both A and B indicating that the call is about to finish due to lack of credit. After the announcement is played, the AS releases the call.
 - a. Please depict the full SIP call flow necessary for playing the announcements and releasing the call
 - b. Please indicate the content of the exchanged SDPs in the new messages