



Qsig Encapsulation Over SIP

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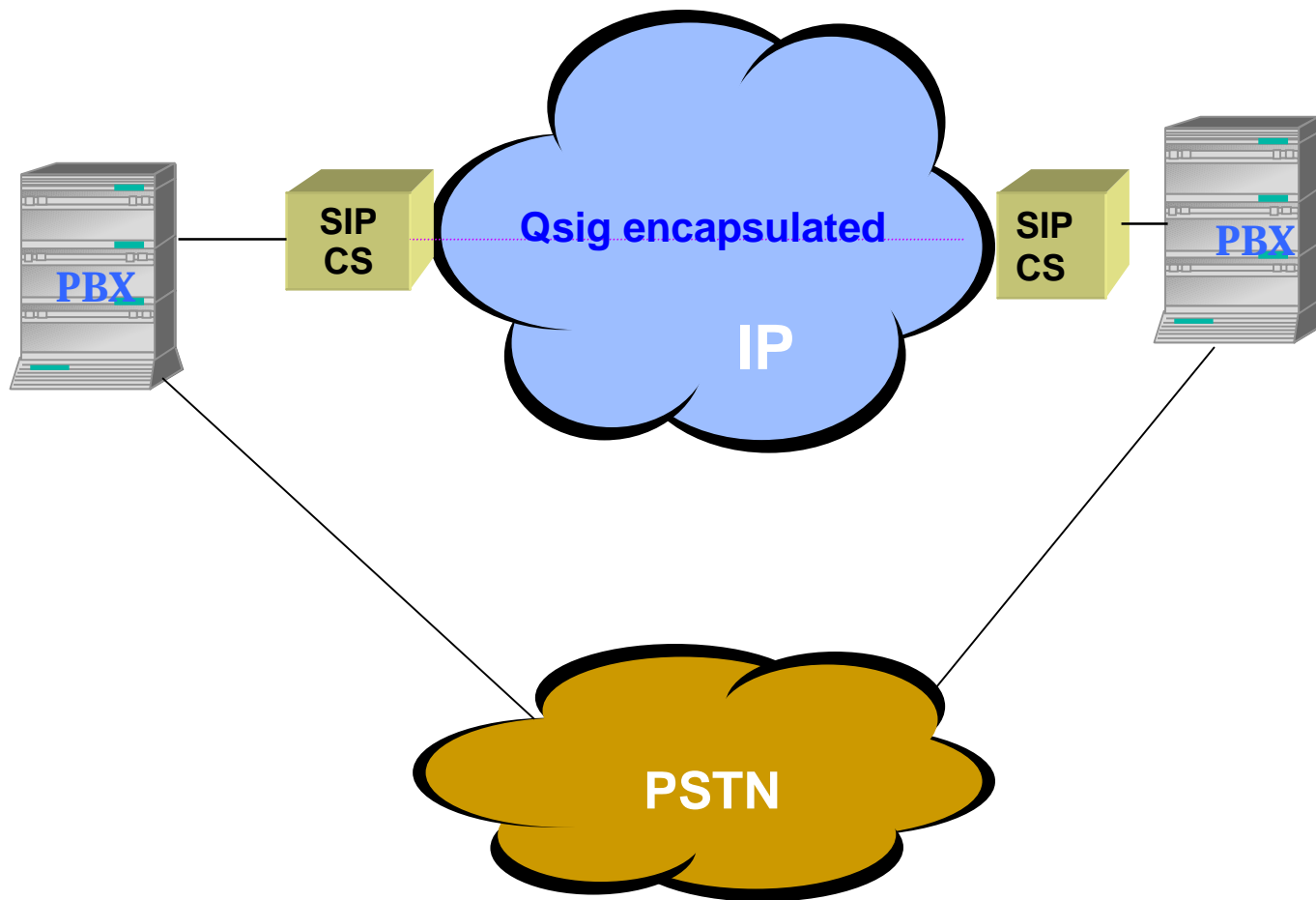
What is Qsig?

- **Qsig is a family of standards providing connectivity between corporate network switches, Centrex switches as well as corporate network to Centrex switches.**
- **Qsig specifies a set of supplementary services, the service specific "Qsig" signalling protocols for the exchange of information between switches across an interface at the "Q" reference point.**
- **Qsig basic call is a symmetrical (peer-to-peer) version of ISDN DSS1.**
- **QSIG generic procedures provide support for the supplementary services. These procedures allow for standardized and proprietary supplementary services to coexist.**

What is needed?

- **Transport of QSIG signaling between call servers as part of the payload of SIP messages.**
- **Support of in-band tones and announcement**
- **Transport of mid-call information in both directions**
 - **Qsig messages that do not map easily to SIP messages**
 - **Qsig supplementary service information**
 - **Notifications**
- **All these requirements are similar to ISUP**

Architecture



What extensions are required for PBX signaling?

- **A “best current practices” for private network PBX signaling with QSIG as an alternative to ISUP**
 - Mapping between QSIG and SIP
- **A SIP/QSIG MIME type**
- **SIP INFO method**
- **SIP 183 Session progress message**

Illustrative example

```
INVITE sip:14084955072@sc1.nortelnetworks.com SIP/2.0
  From: sip:14085655675@sc10.nortelnetworks.com
  To: sip:14084955072@sc1.nortelnetworks.com
  Call-ID: 1231999021712095500999@sc12.nortelnetworks.com
  Content-Length: ..
  Content-Type: multipart/mixed; boundary=unique-boundary-1
  MIME-Version: 1.0
```

```
--unique-boundary-1
```

```
Content-Type: application/SDP; charset=ISO-10646
```

```
v=0
```

```
o=audet 2890844526 2890842807 5 IN IP4 134.177.64.4
```

```
s=SDP seminar
```

```
c=IN IP4 MG141.nortelnetworks.com
```

```
t= 2873397496 2873404696
```

```
m=audio 9092 RTP/AVP 0 3 4
```

```
--unique-boundary-1
```

```
Content-type:application/QSIG;version=ISO
```

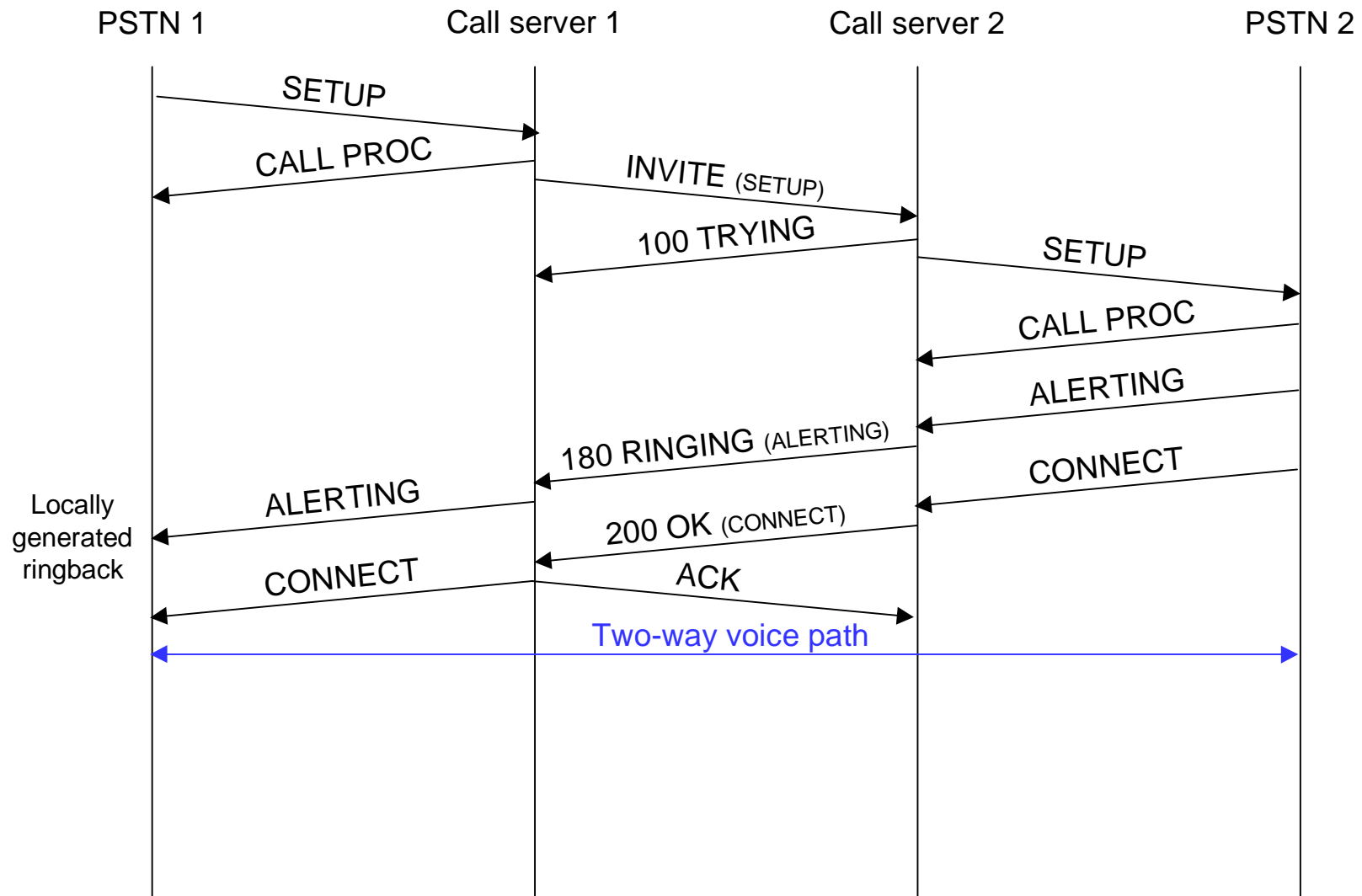
```
Content-Transfer-Encoding: binary
```

```
08 02 55 55 05 04 02 90 90 18 03 a1 83 01
```

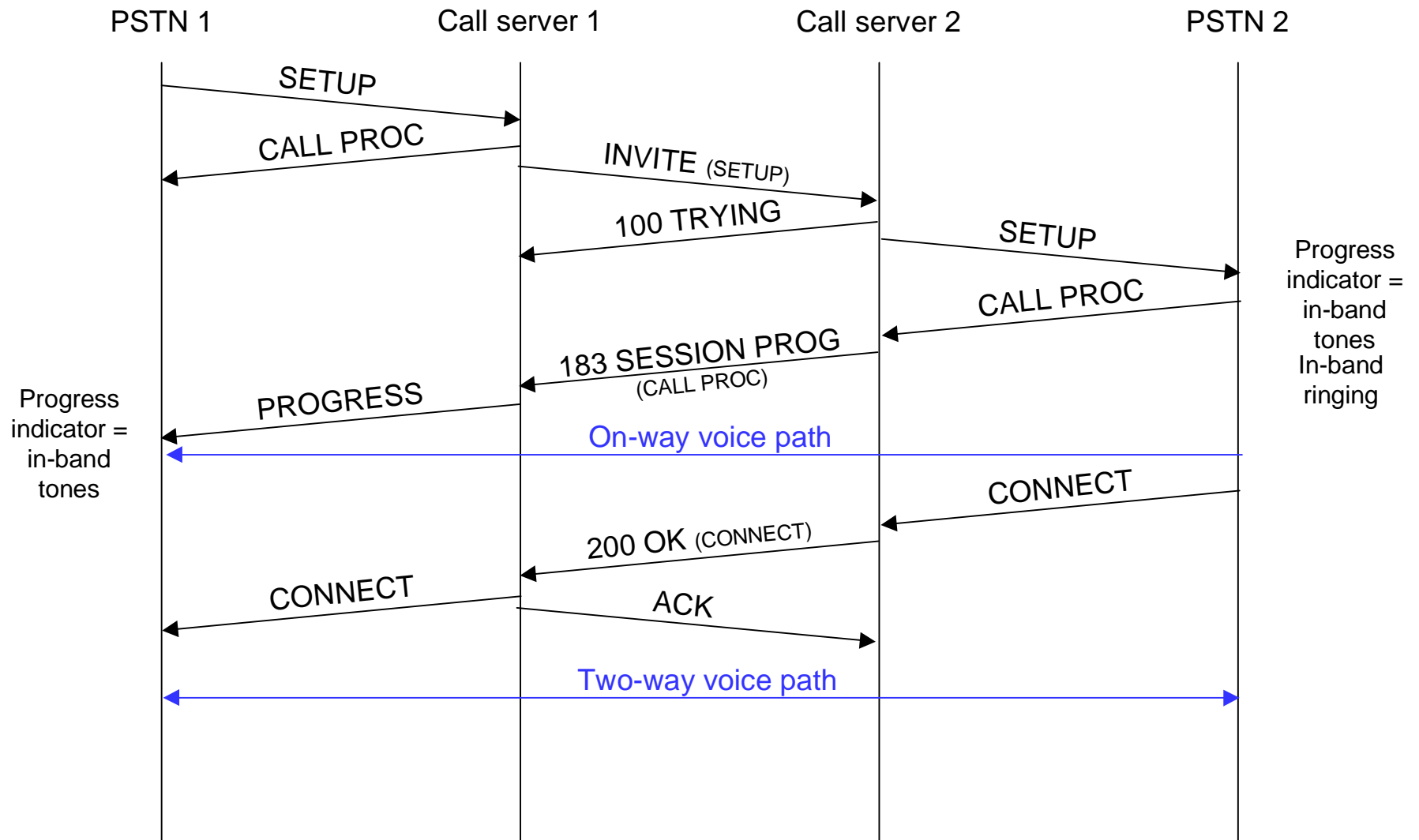
```
70 0a 89 31 34 30 38 34 39 35 35 30 37 32
```

Supporting Slides

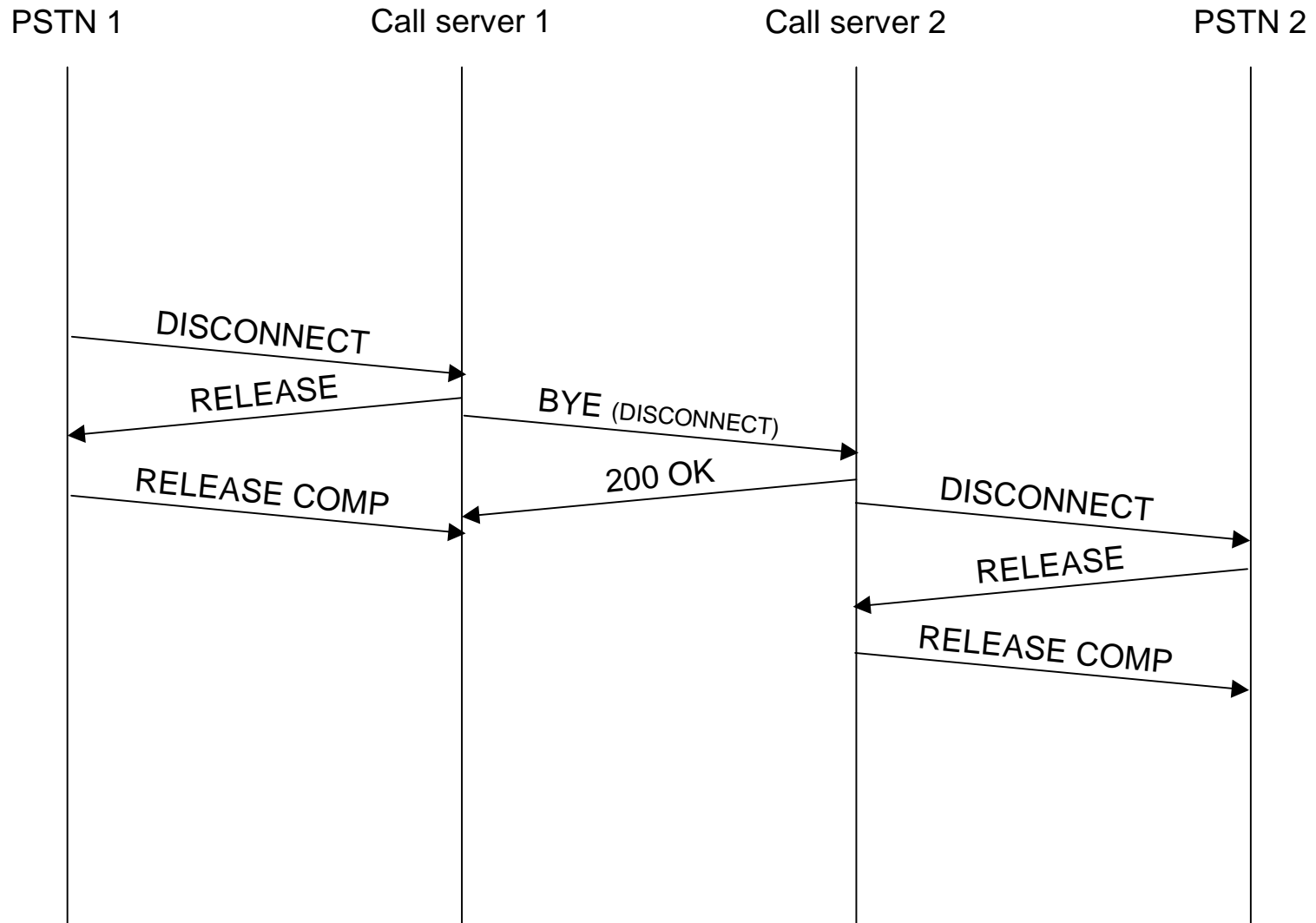
Call setup with locally generated tones



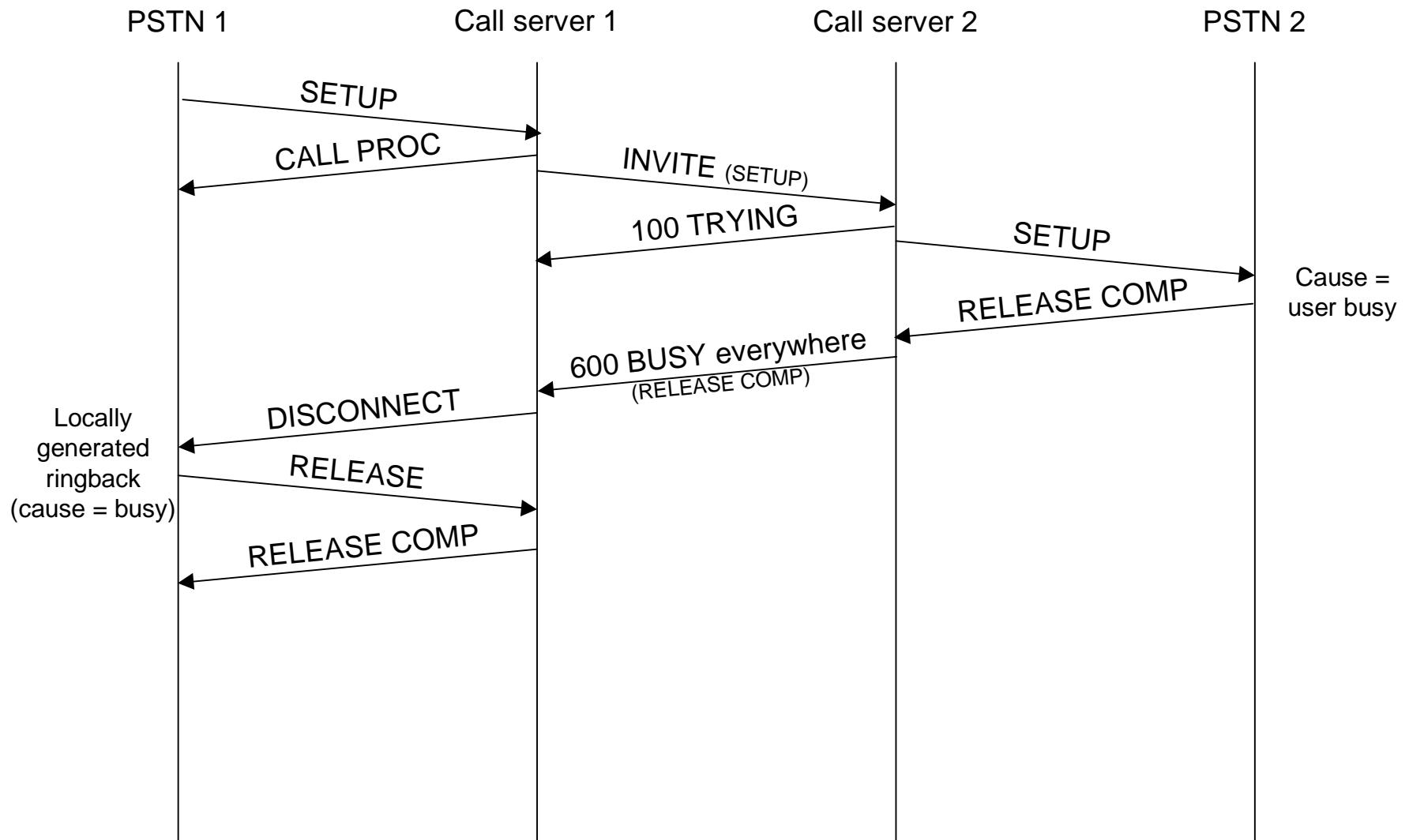
Call setup with far-end generated tones



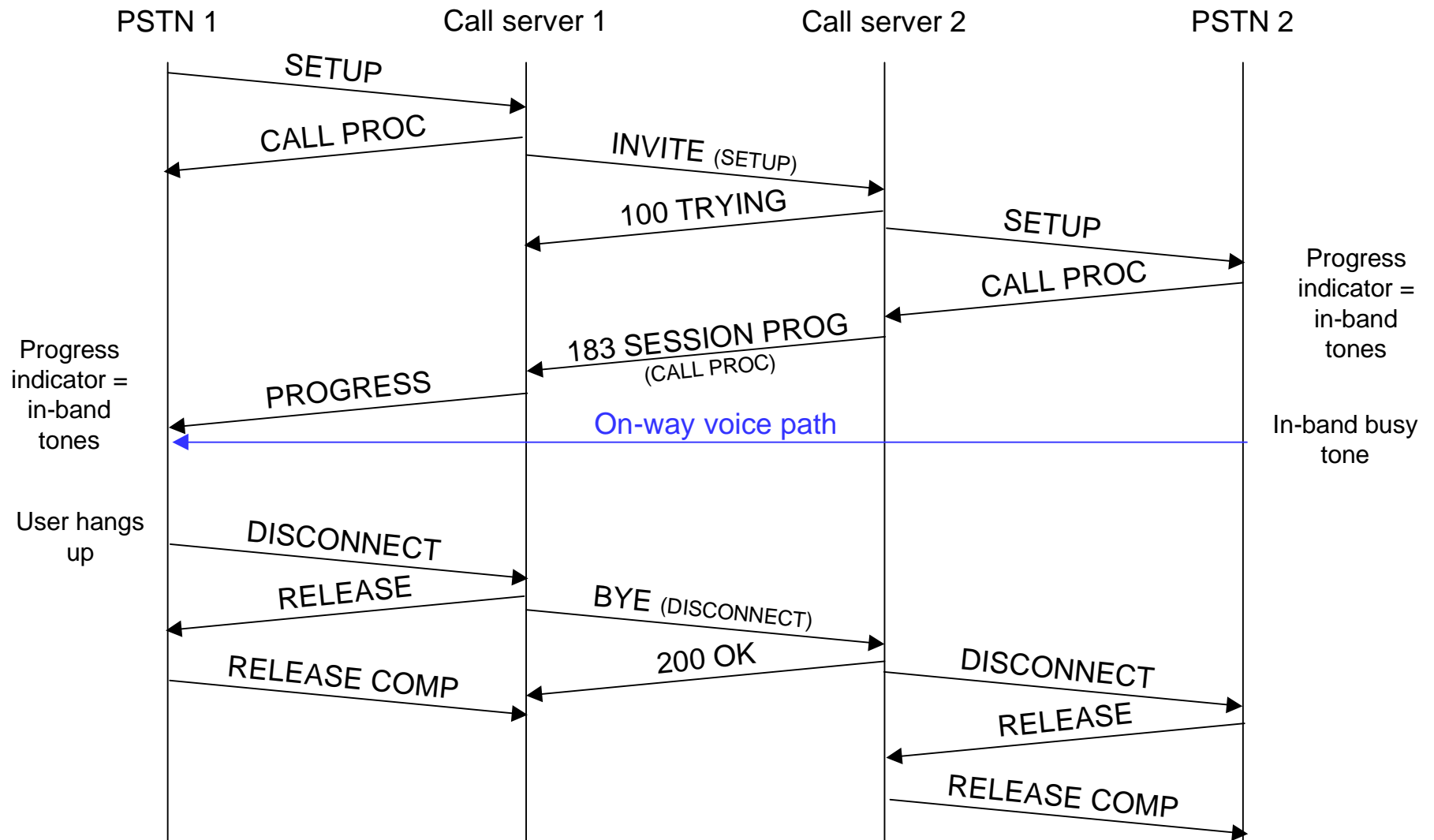
Call tear-down



User busy with locally generated tones



User busy with far-end generated tones



Transfer of mid-call messages

