



Seminář IP telefonie

Miroslav Vozňák
miroslav.voznak@vsb.cz

10:15 – 10:45

H.323 a SIP, principy, prvky, popisu protokolu

ITU – T H.323 Packet-based multimedia communications systems

H.323 v1 (r. 96), H.323 v2 (r. 98),

H.323 v3 (r. 99), H.323 v4, (r.2001), H.323 v5 (r.2003)

Prvky

Gatekeeper

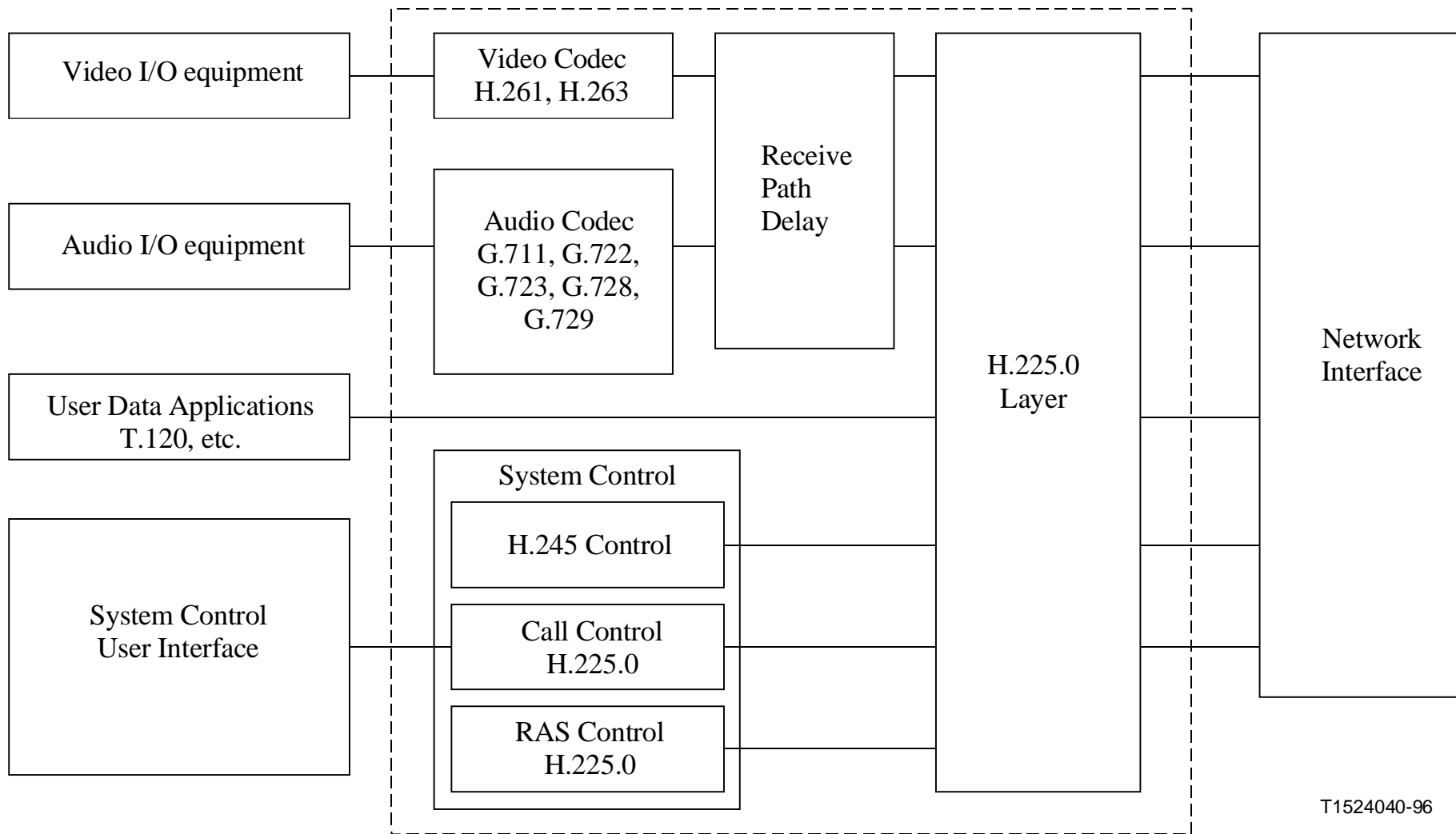
Endpoints – TE, GW, MCU

Signalizace

H.225.0 - RAS Signaling, Call Signaling Q.931

H.245 – Control Signaling

Scope of ITU-T H.323



T1524040-96

zprávy H.225/RAS

RAS – Registration, Admission and Status

zprávy mezi koncovým zařízením a GK

GRQ/GCF/GRJ – Gatekeeper Request/Confirm/Reject UDP 1718 (224.0.1.41)

RRQ/RCF/RRJ - Registration Request/Confirm/Reject

URQ/UCF/URJ –Unregister Request/Confirm/Reject

ARQ/ACF/ARJ – Admission Request/Confirm/Reject

IRQ/IRR/ - Information Request/Request Response, Status

LRQ/LCF/LRJ – Location Request/Confirm/Reject

BRQ/BCF/BRJ – Bandwidth Request/Confirm/Reject

DRQ/DCF/DRJ – Disengage Request/Confirm/Reject

zprávy H.225/Q.931

Q.931 – podobné, ale ne stejné jako v ISDN

SETUP – inicializace spojení

CALL PROCEEDING - sestavování spojení

ALERTING - vyzvánění

CONNECT - přihlášení

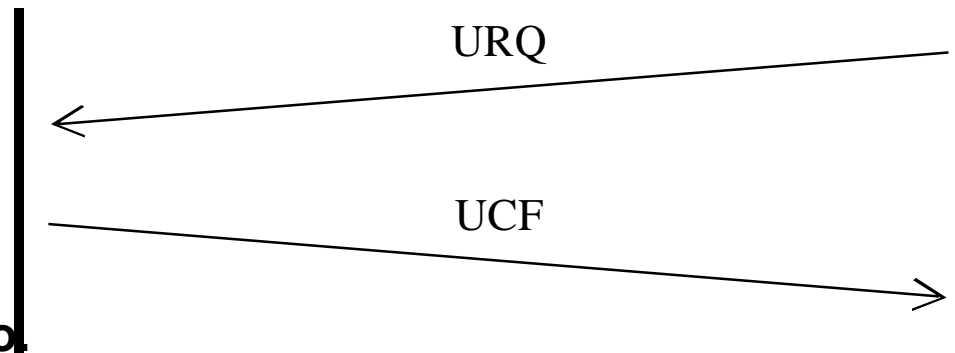
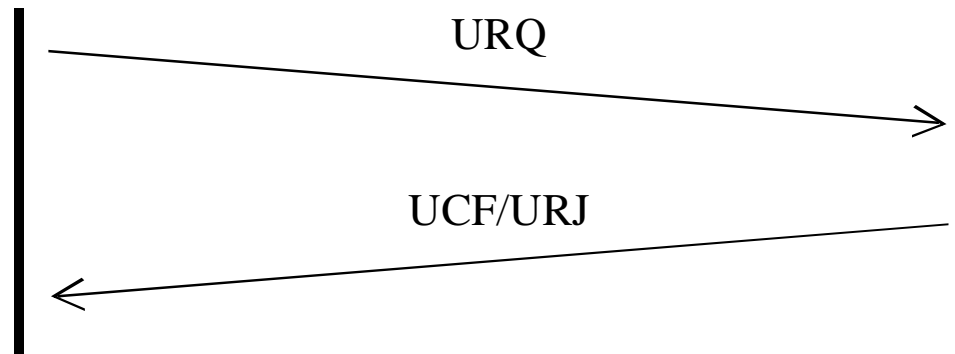
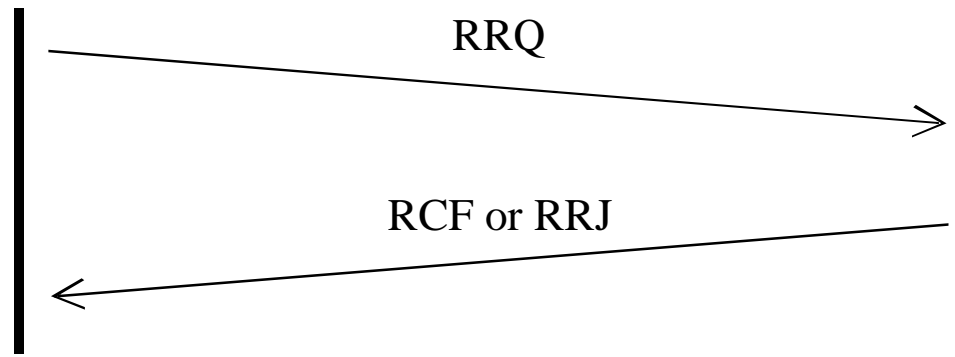
RELEASE - ukončení spojení

Facility, Information, Progress, Status - další typy zpráv

H.323 Registration

Endpoint

Gatekeeper



H.323 Call Signaling

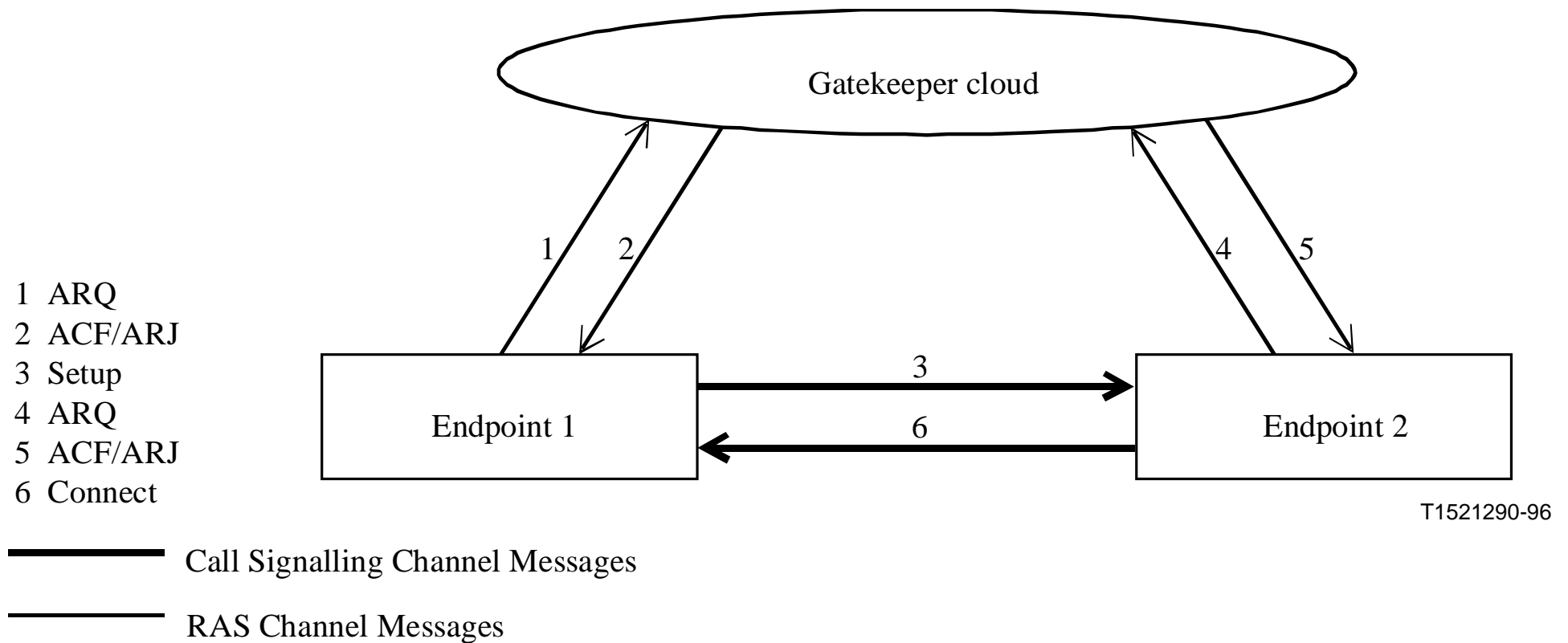
Call Signalling Routing

Direct (endpoint) routed Call signalling	(DRC)
Gatekeeper Routed Call signalling	(GRC)

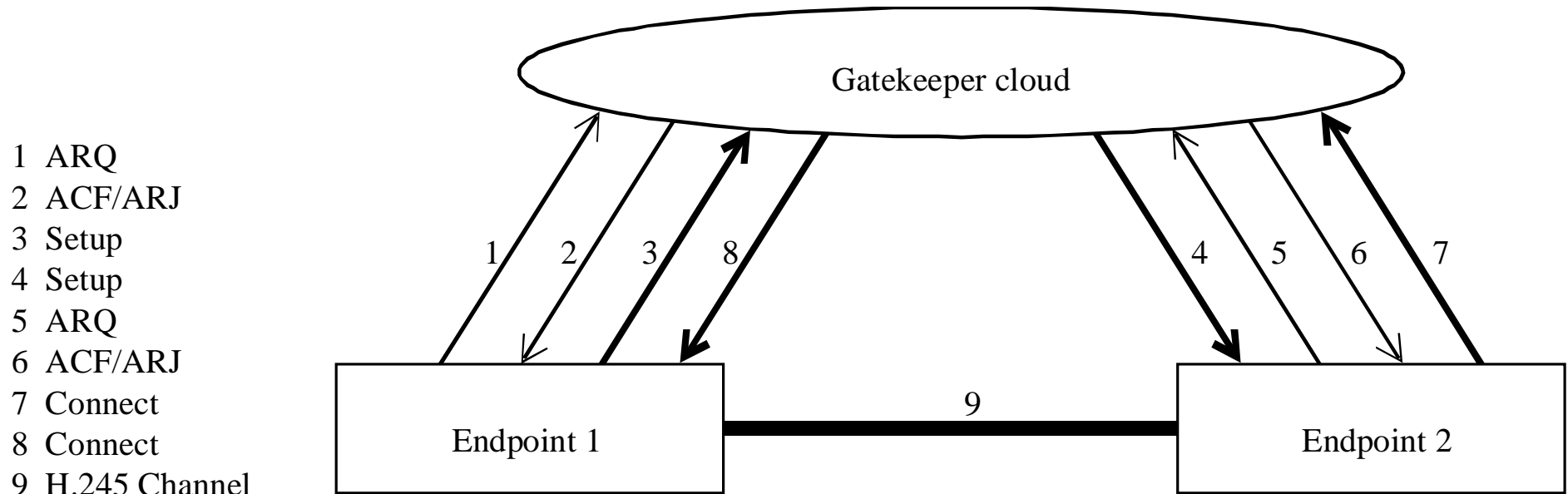
Including H.245 (GK Routed H.245)

Excluding H.245 (Direct H.245)




DRC - Direct Endpoint Call Signaling



GRC with Direct H.245



- 1 ARQ
- 2 ACF/ARJ
- 3 Setup
- 4 Setup
- 5 ARQ
- 6 ACF/ARJ
- 7 Connect
- 8 Connect
- 9 H.245 Channel

-  H.245 Control Channel Messages
-  Call Signalling Channel Messages
-  RAS Channel Messages

T1521300-96

H.245 procedury:

- Master/slave determination
- Capability Exchange
- Logical Channel Signalling
- Mode Request

H.245 messages categories:

- Request, Response, Command, Indication.

H.245 :

- parallel H.245
- Fast Connect, Fast Start prvky uvnitř Q.931

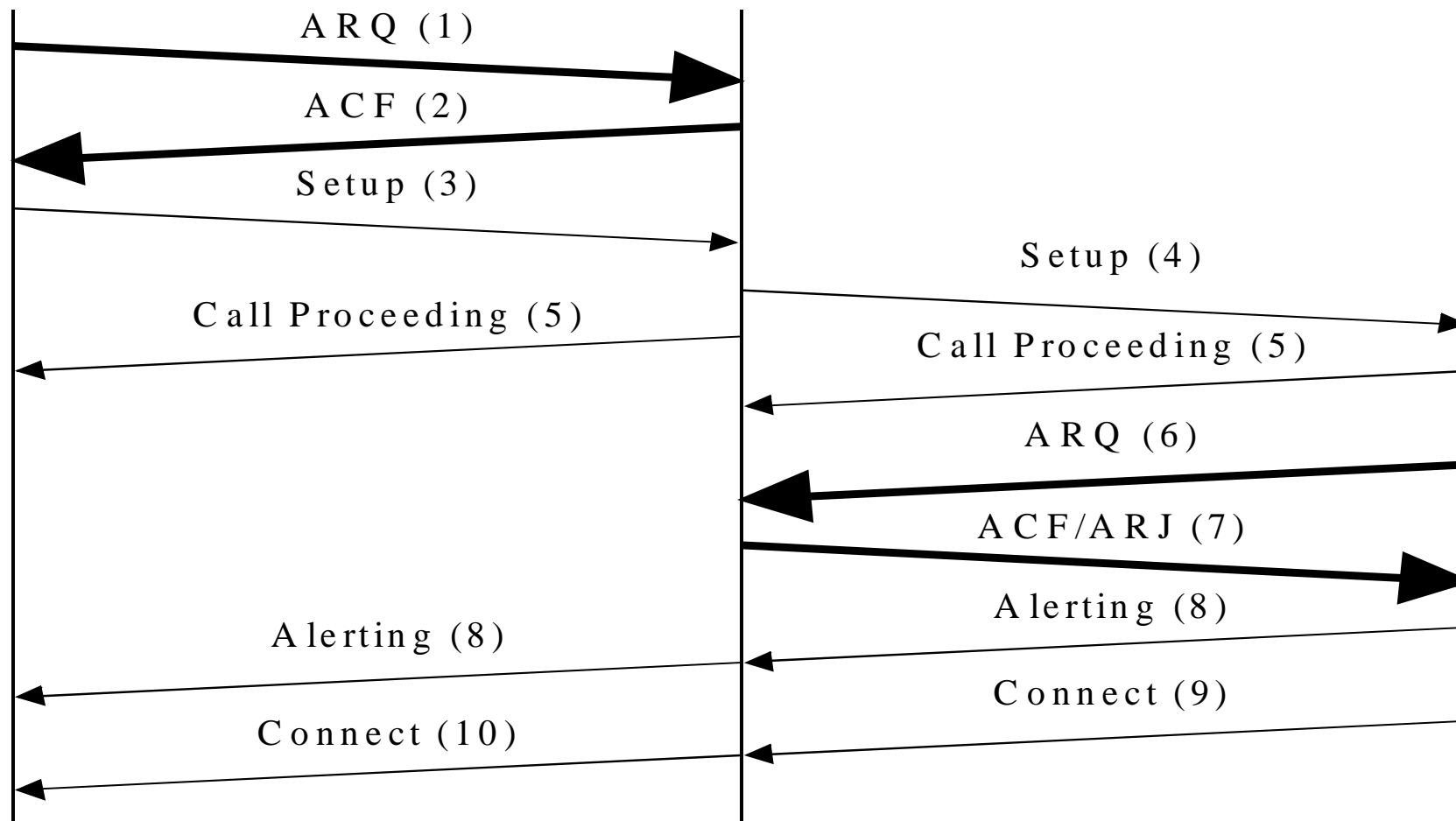
Gatekeeper:

- Address Translation
- Admission Control
- Bandwidth Control
- Zone Management

Endpoint 1

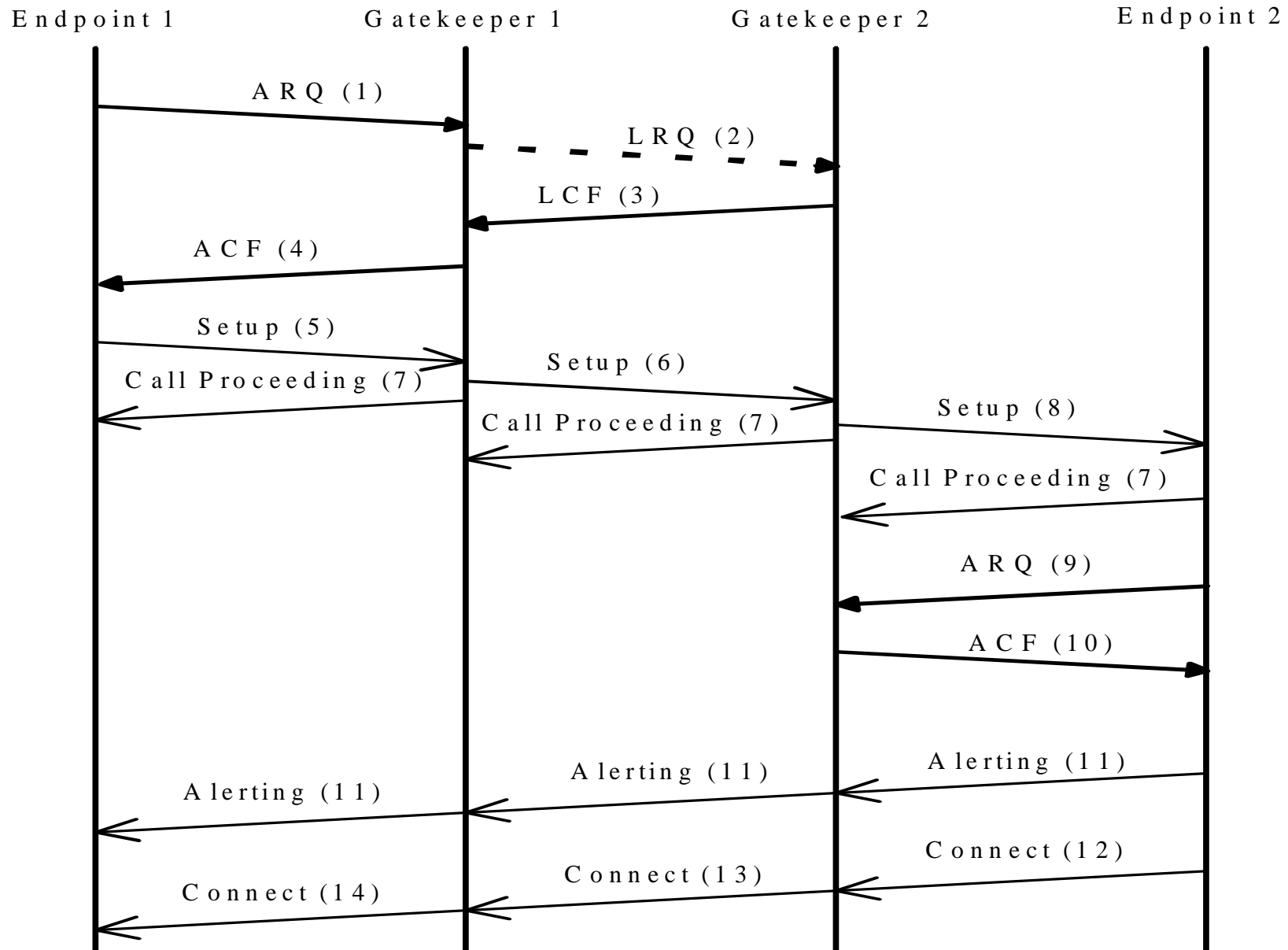
Gatekeeper 1

Endpoint 2



— RAS Messages
— Call Signalling Messages

T1524060-96



——— RAS Messages
 - - - Multicast RAS Messages
 Call Signalling Messages

T1604220-97

AdmissionRequest

CallModel

CallModel: gatekeeperRouted (1)

EndpointIdentifier: 7928_endp

DestinationInfo

Item 0

AliasAddress

AliasAddress: dialedDigits (0)

privateNumberDigits: 1579

srcInfo

Item 0

AliasAddress

AliasAddress: h323ID (1)

h323ID: voznak miroslav

Item 1

AliasAddress

AliasAddress: dialedDigits (0)

privateNumberDigits: 1699

sourceCallSignalAddress

sourceCallSignalAddress: ipAddress (0)

ipAddress

IP: 192.168.1.100 (192.168.1.100)

Port: 1720

AdmissionConfirm

CallModel

CallModel: gatekeeperRouted (1)

destCallSignalAddress

destCallSignalAddress: ipAddress (0)

ipAddress

IP: 192.168.1.13 (192.168.1.13)

Port: 1720

irrFrequency: 120

Q.931 SETUP

Sending complete

Bearer capability

Display 'voznak miroslav'

Calling party number: '1699'

Called party number: '1579'

H.225.0 CS

sourceCallSignalAddress

sourceCallSignalAddress: ipAddress (0)

ipAddress

IP: 192.168.1.100 (192.168.1.100)

Port: 1720

SETUP s Fast Connect

fastStart

Item 0

reverseLogicalChannelParameters

DataType

DataType: audioData (3)

AudioCapability

audioData: g711Alaw64k (1)

g711Alaw64k: 20

OLC_rev_multiplexParameters

h2250LogicalChannelParameters

h2250LogicalChannelParameters

sessionID: 1

TransportAddress

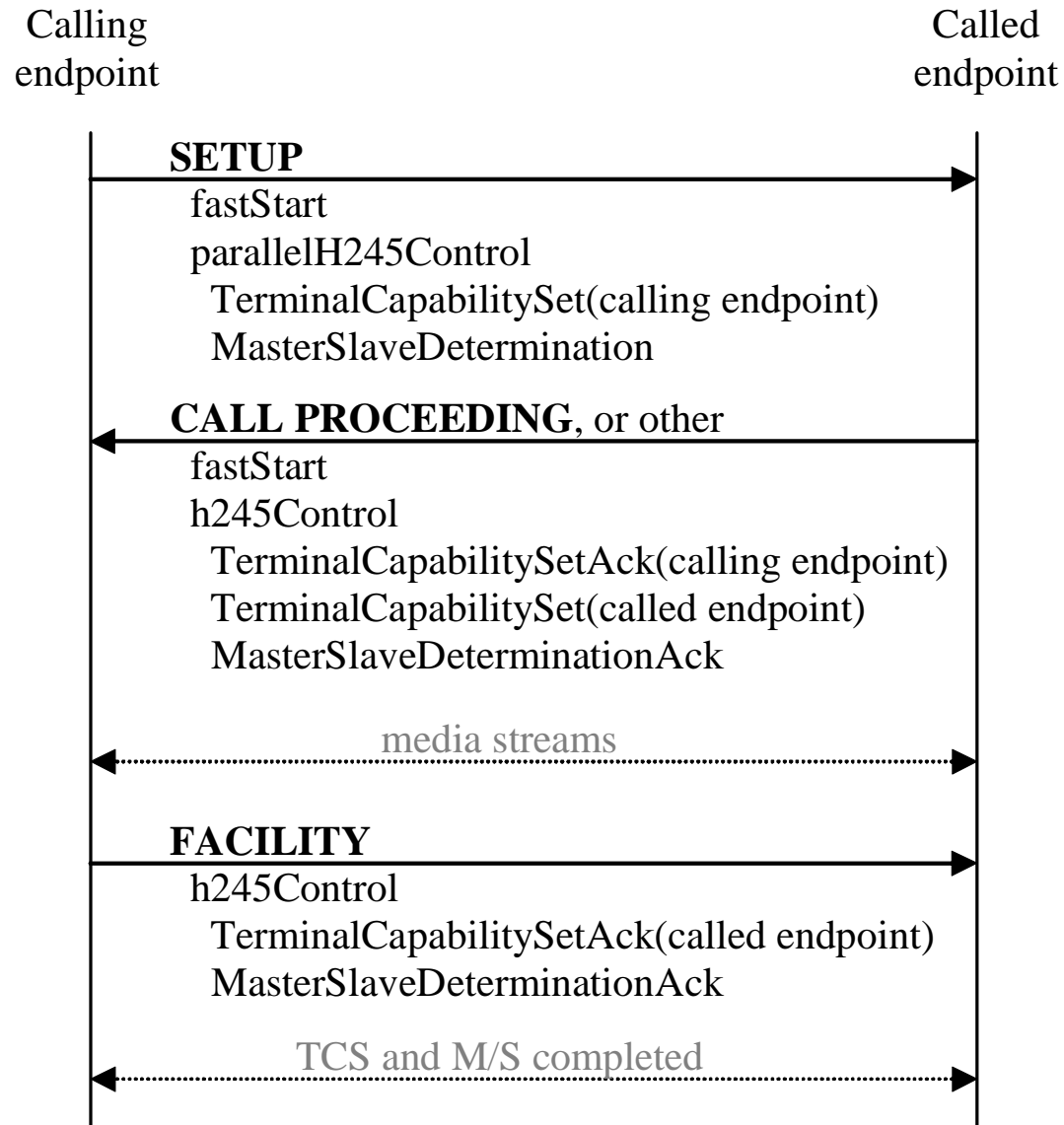
mediaChannel: unicastAddress (0)

iPAddress

network: 195.113.150.119 (195.113.150.119)

tsapIdentifier: 49152

Initiating H.245 tunnelling in parallel with fast connect



Jan Růžička

janru@cesnet.cz

10:15 – 10:45

H.323 a SIP, principy, prvky, popisu protokolu