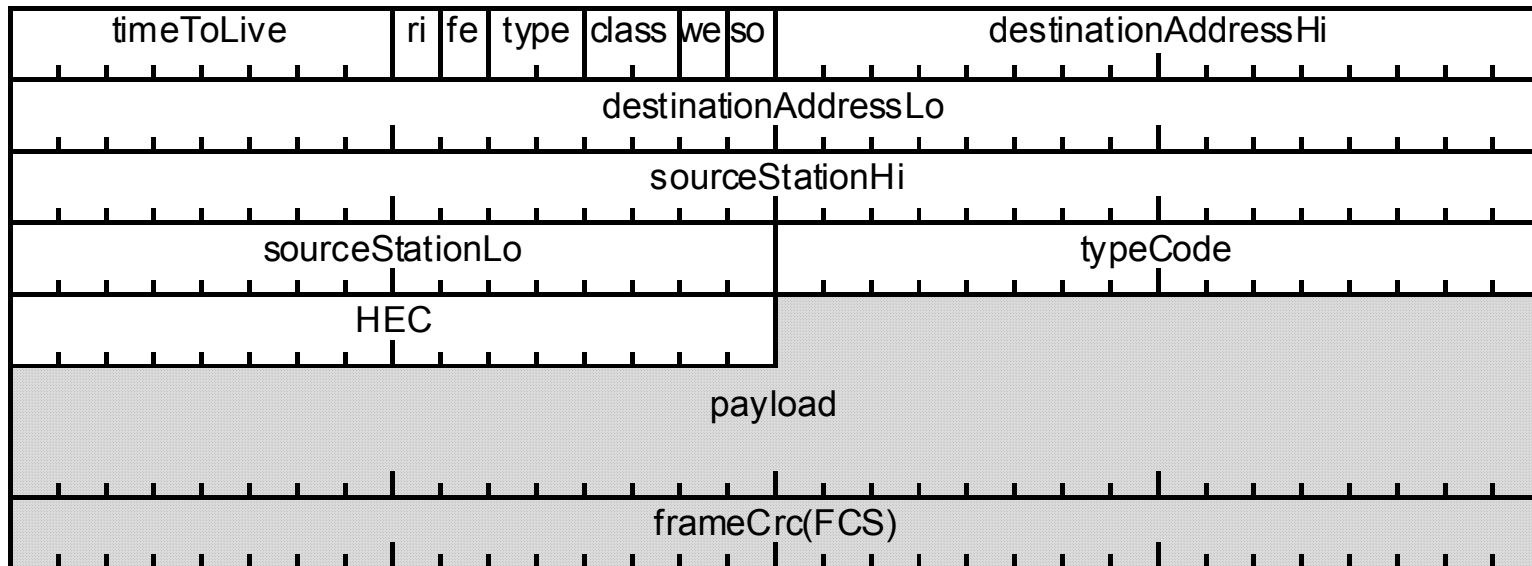


802.17 Flooding

- Prepared for 802.17, March 2002
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Minimal control-field changes

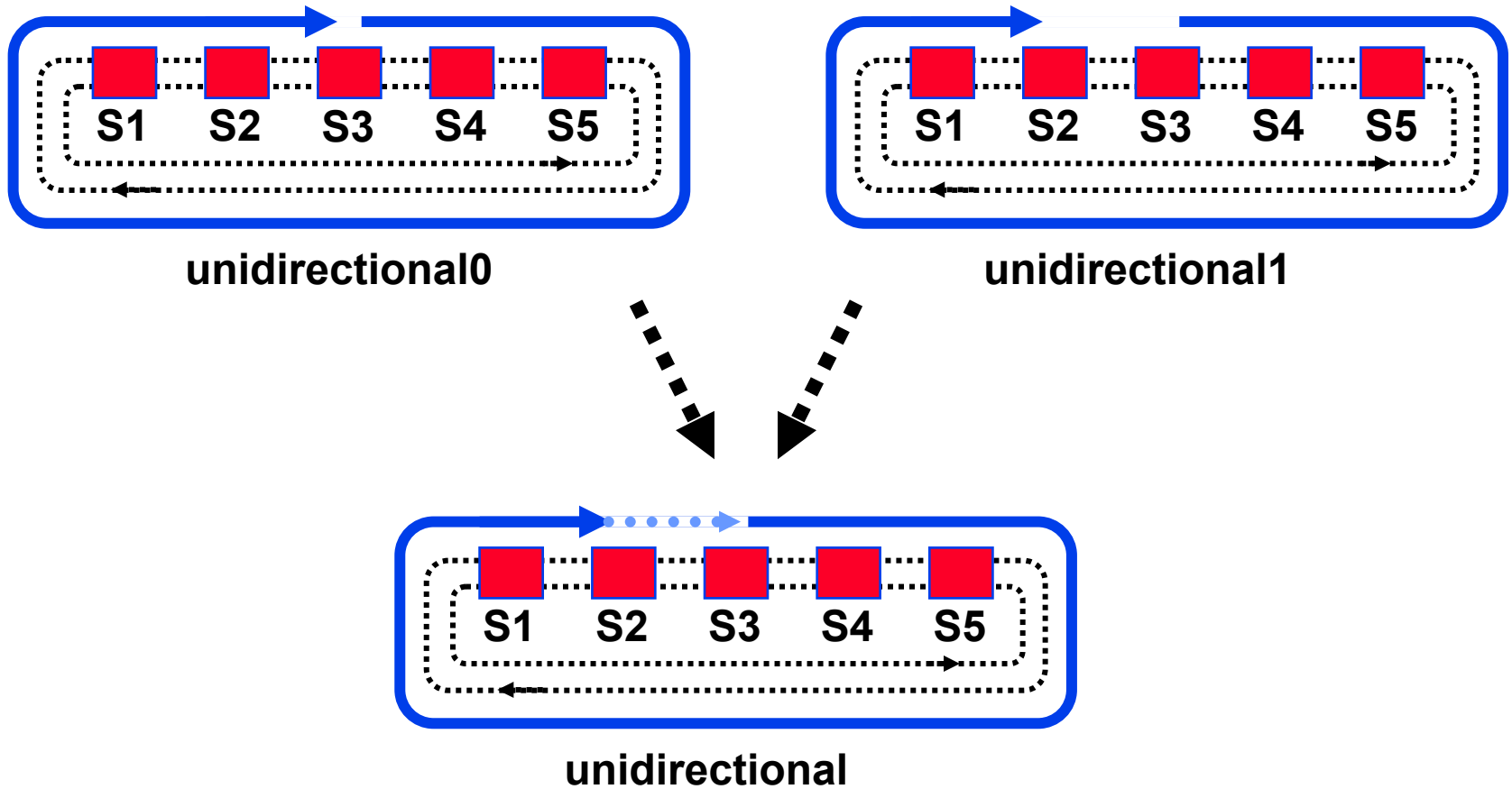


type: FT_LOCAL_DIRECT FT_LOCAL_FLOOD,
 FT_GLOBAL_DIRECT FT_GLOBAL_FLOOD
class: FC_CONTROL_A FC_CONTROL_C
so: 0—relaxed 1—strict

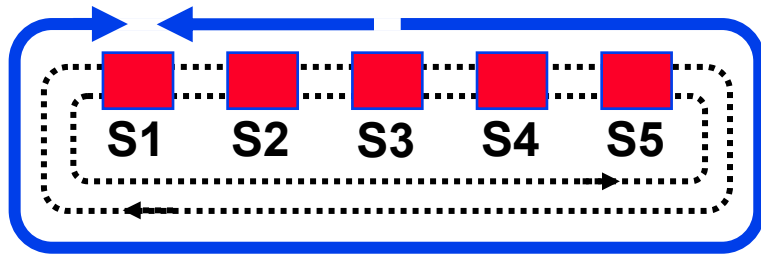
Possible control-field codings

type field	control	Format
0-LOCAL_NO_FLOOD	0	LOCAL_DATA_NO_FLOOD
	1	LOCAL_CONTROL
1-LOCAL_FLOOD	0	LOCAL_DATA_FLOOD
	1	LOCAL_CONTROL_COMPACT
2-EXTEND_NO_FLOOD	0	EXTEND_DATA_NO_FLOOD
3-EXTEND_FLOOD	0	EXTEND_DATA_FLOOD

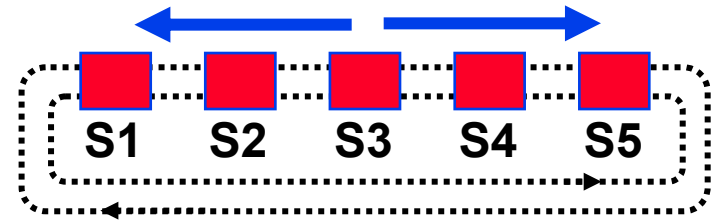
Unidirectional flooding



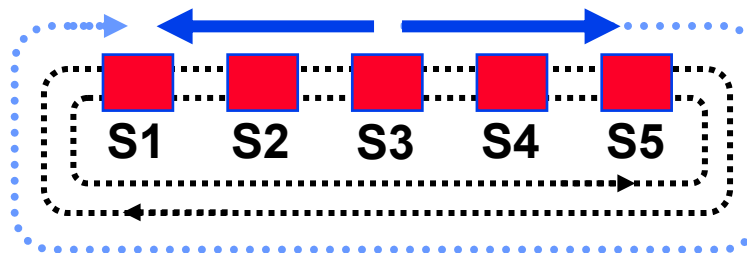
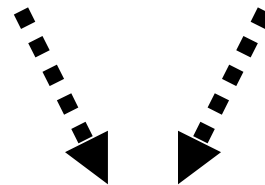
Bidirectional flooding



bidirectional1

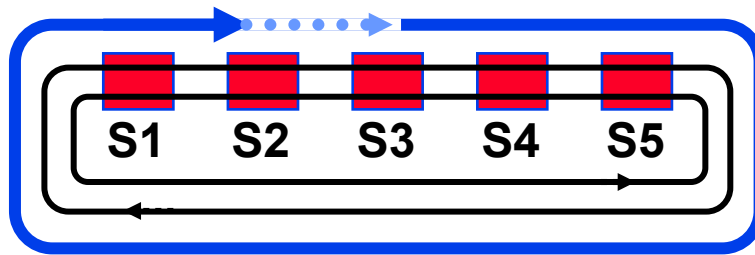


bidirectional2



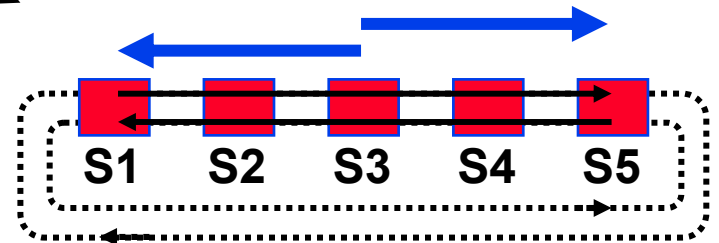
bidirectional

Purge consistency assistance



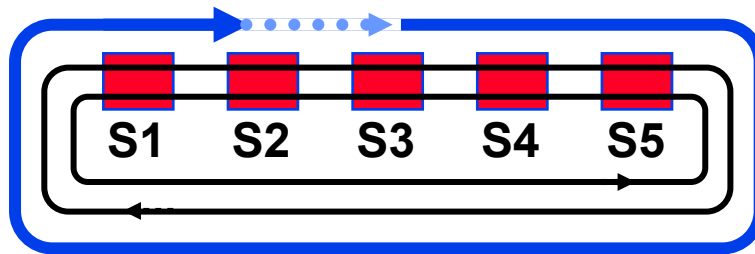
1) Unidirectional loop

2) Purge during rediscovery



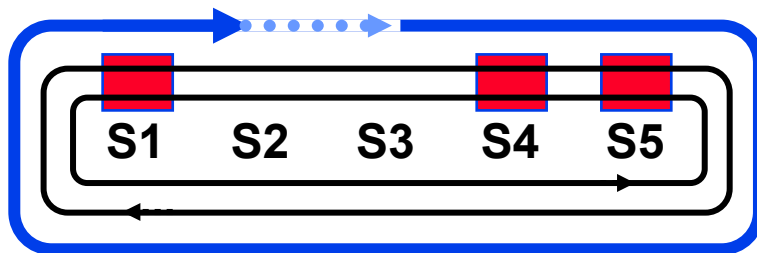
3) Unidirectional chain

Destination consistency check (for quiet pass-through)



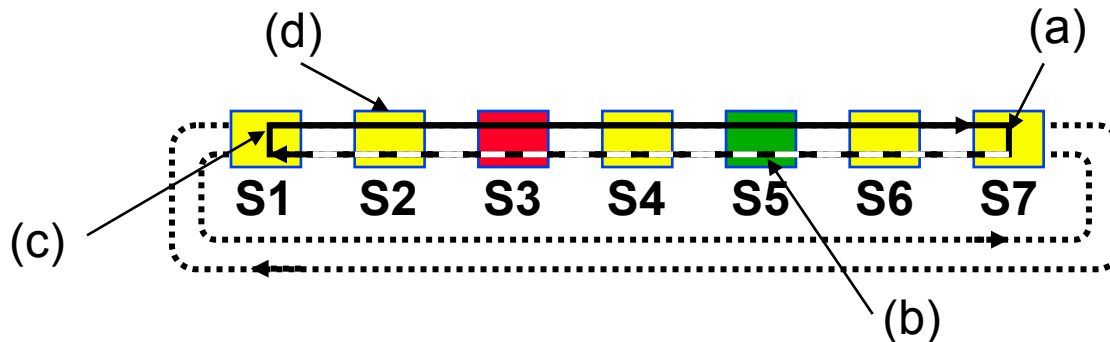
1) All stations active

2) If (minorFault)
BeCautiousTillConfirmed();



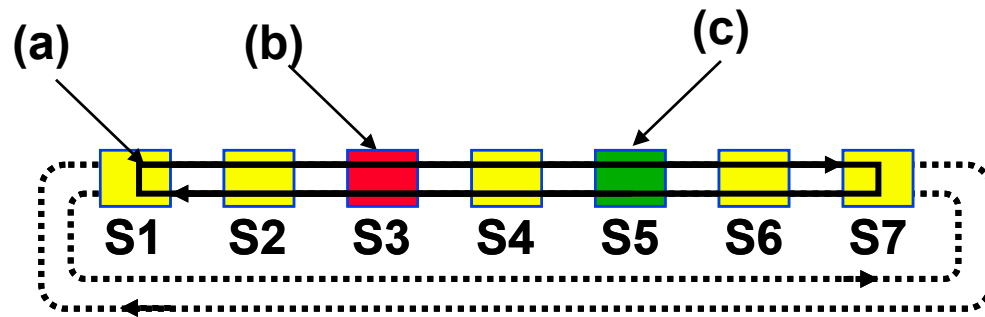
3) Some stations active

Wrapped sequence checks



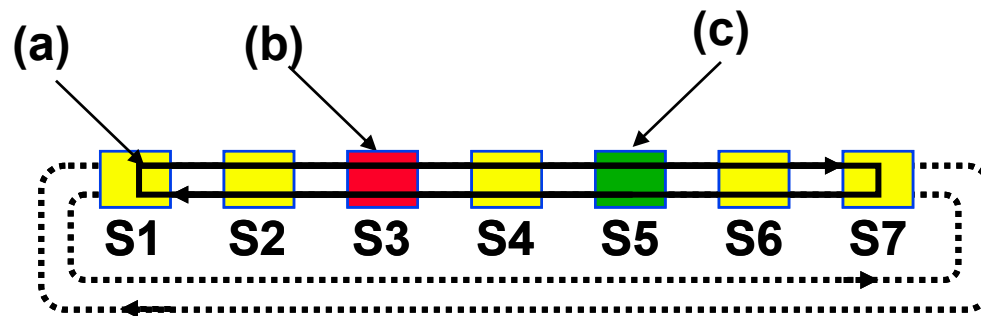
- a) First edge station:
Discard if not wrap eligible (`frame.we==0`)
- b) Return by source:
 - i) Discard if not wrap eligible
 - ii) Mark wrap-ineligible
- c) Second edge station:
Discard if wrap eligible (`frame.we==1`)
- d) On original run:
Discard if strict and contained (`purgeNow==1`)

Copy checks



- a) Intermediate: copy flooded frames to client
- b) Destination: copy frame to client
- c) Source: don't copy source-stripped frame to client

Frame removals

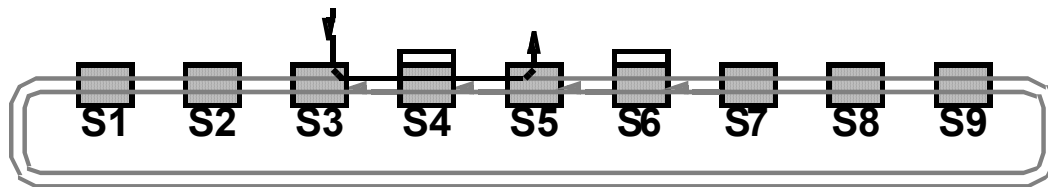


- a) Intermediate:
 - 1) flooded with expired timeToLive → normal removal
 - 2) nonflooded with expired timeToLive → abnormal removal
- b) Destination nonflooded: remove the frame
- c) Source stripped: remove the frame

Local flooding

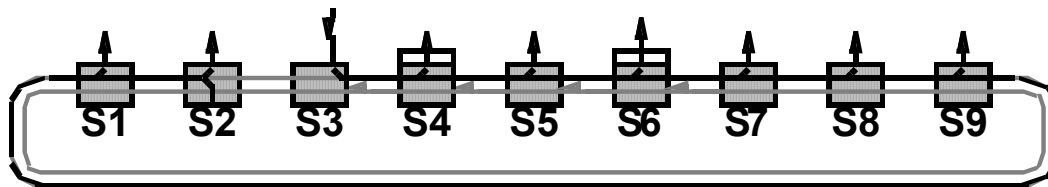
- **The same format for all frame transmissions**
- **sourceStationID is always the local station**
- **destinationMacAddress is always an end address**

Local-source flooding (1)



1) Local unicast

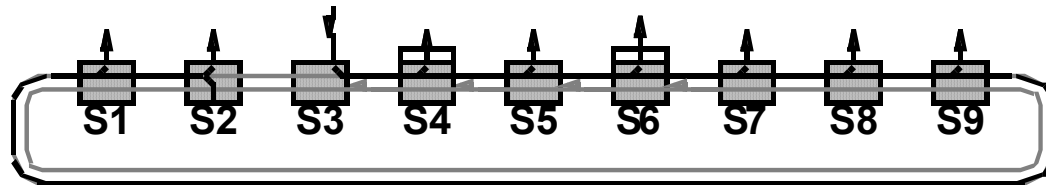
TTL=2	flags	2
DMAC=S5		6
SSID=S3		6
HEC		2
type		2
payload		N
FCS		4



2) Locally sourced unidirectional multicast

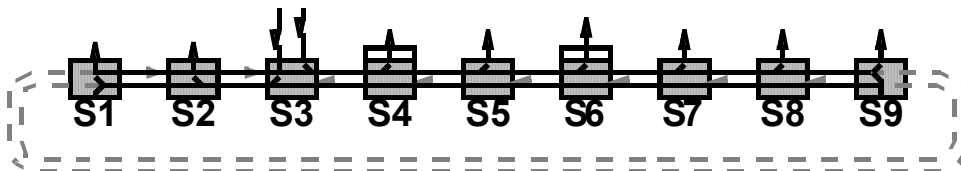
TTL=8	flags	2
groupAddress		6
SSID=S3		6
HEC		2
type		2
payload		N
FCS		4

Local-source flooding (2)



3) Locally sourced unidirectional remote unicast

TTL=8	flags	2
groupAddress		6
SSID=S3		6
HEC		2
type		2
payload		N
FCS		4

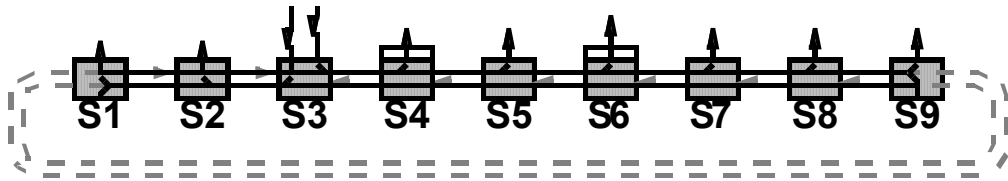


4) Locally sourced steer-protected multicast

TTL=6	flags	
groupAddress		
SSID=S3		
HEC		
type		
payload		
FCS		

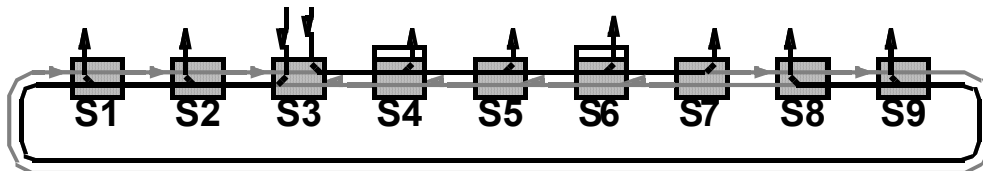
TTL=2	flags	2
groupAddress		6
SSID=S3		6
HEC		2
type		2
payload		N
FCS		4

Local-source flooding (3)



5) Locally sourced steer-protected remote unicast

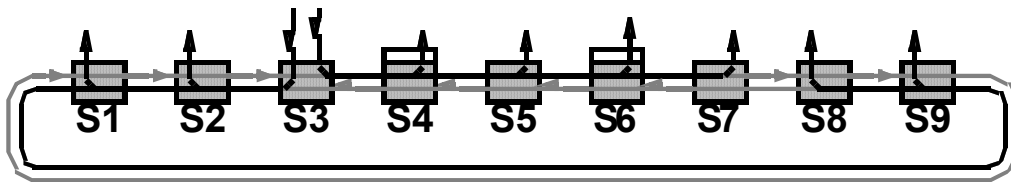
TTL=6	flags	2
destinationMac		6
SSID=S3		6
HEC		2
type		2
payload		N
FCS		4



6) Locally sourced bidirectional remote unicast

TTL=6	flags	2
destinationMac		6
SSID=S3		6
HEC		2
type		2
payload		N
		4

Local-source flooding (4)



7) Locally sourced bidirectional multicast

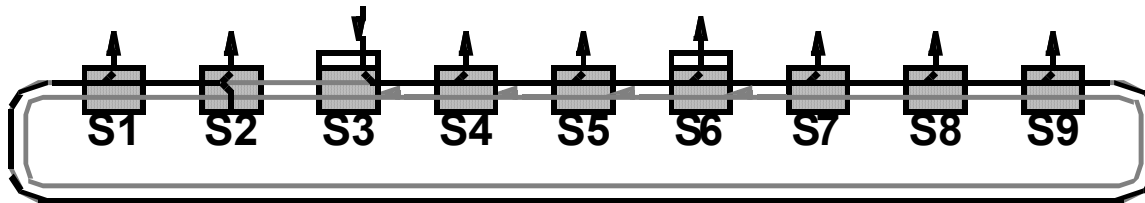
TTL=6	flags	2
groupAddress		6
SSID=S3		6
HEC		2
type		2
payload		N
FCS		4

TTL=2	flags	2
groupAddress		6
SSID=S3		6
HEC		2
type		2
payload		N
FCS		4

Remote flooding

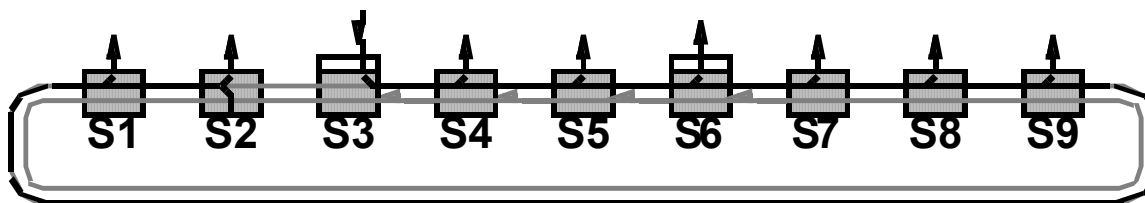
- **The same format for all remote-sourced frames**
- **sourceStationID is always the local station**
- **destinationAddress is always an end address**
- **The payload always contains:**
 - destinationMacAddress—the end-point destination**
 - sourceMacAddress—the end-point source**

Remote-source flooding (1)



1) Remote-source unidirectional flood

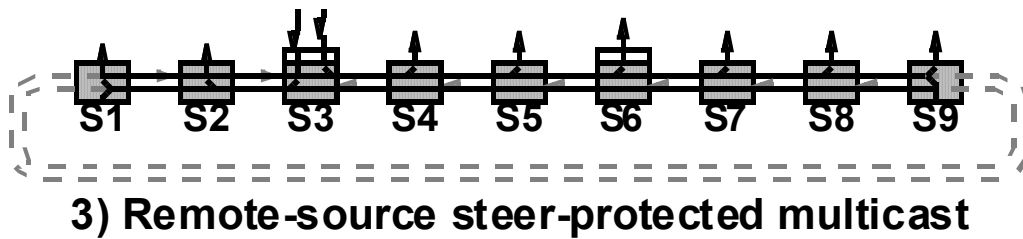
TTL=8	flags	2
destinationMac		6
SSID=S3		6
HEC		2
destinationMac		6
sourceMac		6
type		2
payload		N
FCS		4



2) Remote-source unidirectional multicast

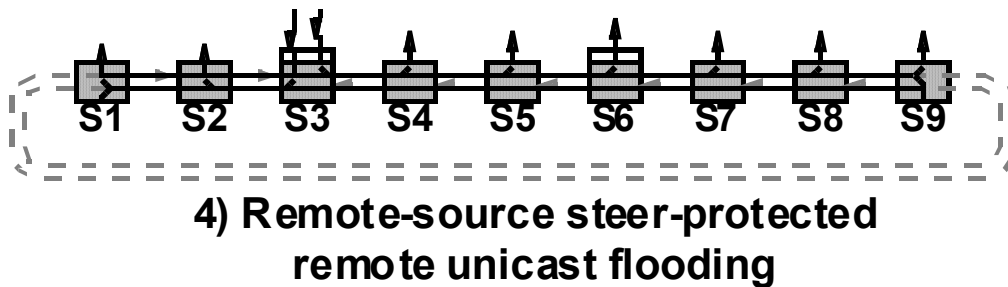
TTL=8	flags	2
groupAddress		6
SSID=S3		6
HEC		2
groupAddress		6
sourceMac		6
type		2
payload		N
		4

Remote-source flooding (2)



TTL=6	flags	2
groupAddress		6
SSID=S3		6
HEC		2
groupAddress		6
sourceMac		6
type		2
payload		N
		4

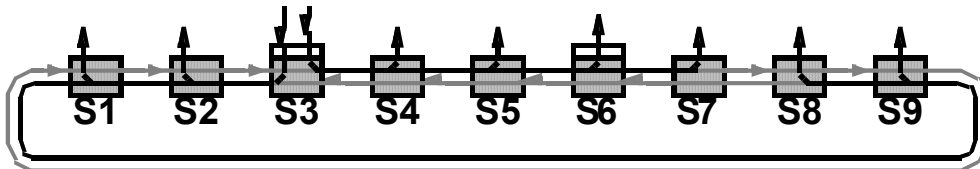
TTL=2	flags	2
groupAddress		6
SSID=S3		6
HEC		2
groupAddress		6
sourceMac		6
type		2
payload		N
		4



TTL=6	flags	2
destinationMac		6
SSID=S3		6
HEC		2
destinationMac		6
sourceMac		6
type		2
payload		N
FCS		4

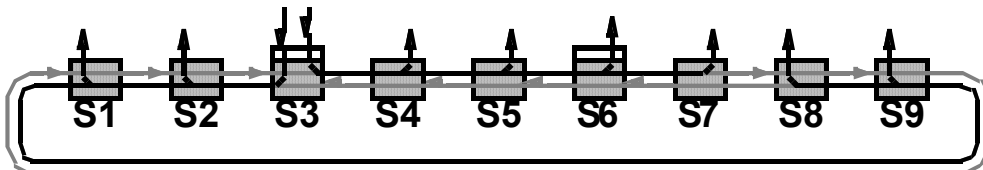
TTL=2	flags	2
destinationMac		6
SSID=S3		6
HEC		2
destinationMac		6
sourceMac		6
type		2
payload		N
FCS		4

Remote-source flooding



5) Remote-source bidirectional remote unicast

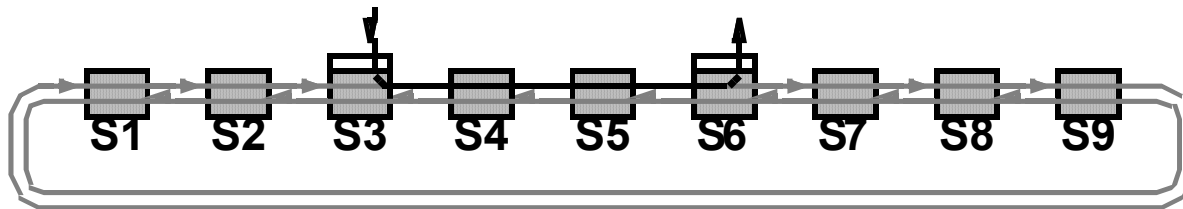
TTL=4	flags	2
destinationMac	destinationMac	6
SSID=S3	SSID=S3	6
HEC	HEC	2
destinationMac	destinationMac	6
sourceMac	sourceMac	6
type	type	2
payload	payload	N
		4



6) Remote-source bidirectional multicast

TTL=4	flags	2
groupAddress	groupAddress	6
SSID=S3	SSID=S3	6
HEC	HEC	2
groupAddress	groupAddress	6
sourceMac	sourceMac	6
type	type	2
payload	payload	N
FCS	FCS	4

Remote-source flooding



7) Remote-source learned remote unicast

TTL=4	flags	2
DSID=S6		6
SSID=S3		6
HEC		2
destinationMac		6
sourceMac		6
type		2
payload		N
FCS		4

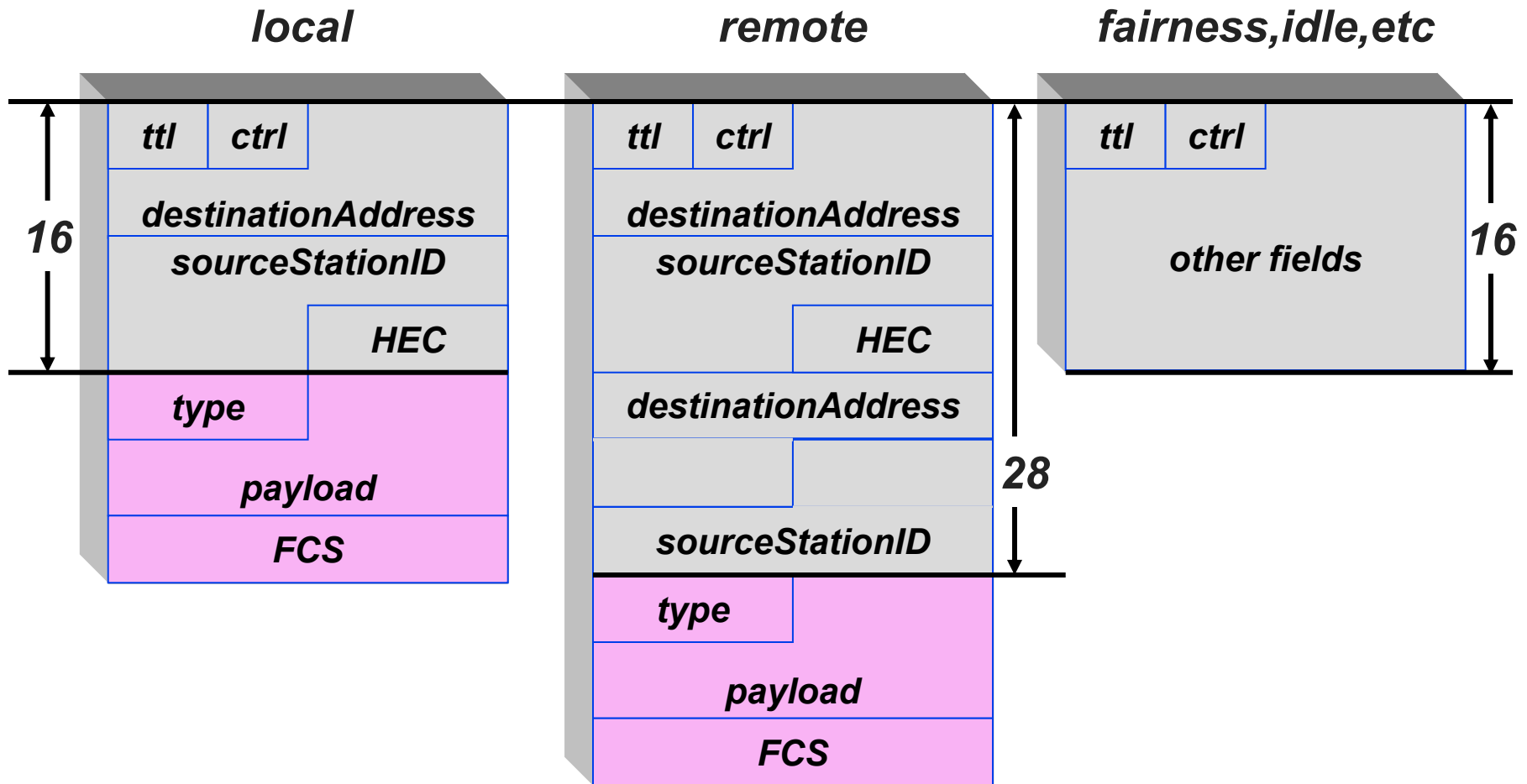
Flooding conclusions

- Fully capable
 - Unidirectional/bidirectional & steer/wrapped (bidirectional-wrap flood & true bypass)
- Context containment
 - Assumed for any “healing” event
 - Assumed for passthrough information
- Passthrough
 - If (minorFault) purgeHere=TRUE
 - If (purgeHere==TRUE&&strict) loss=1;
 - If (heartBeatOK) purgeHere=FALSE;

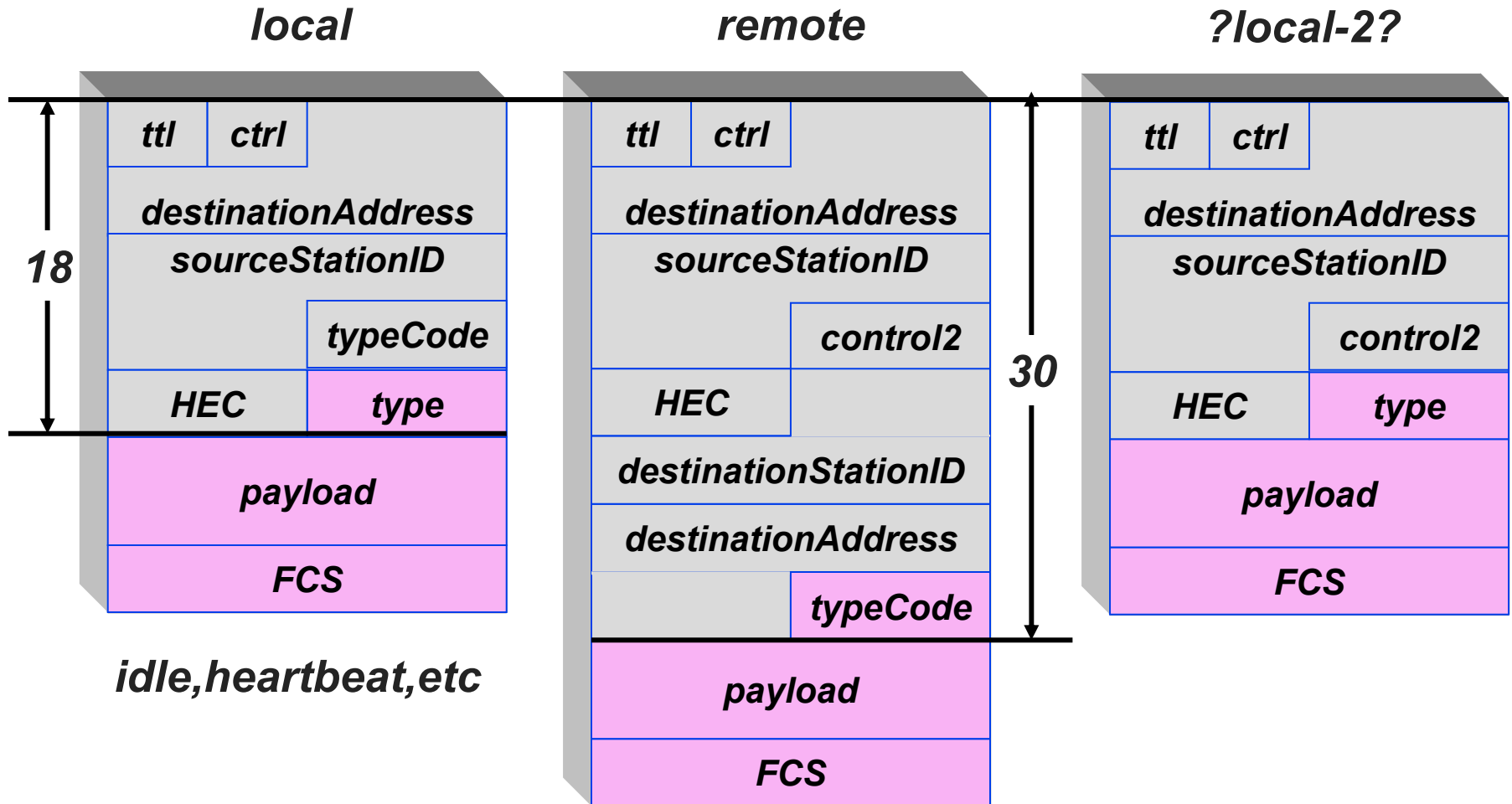
Header format summaries

- Prepared for 802.17, March 2002
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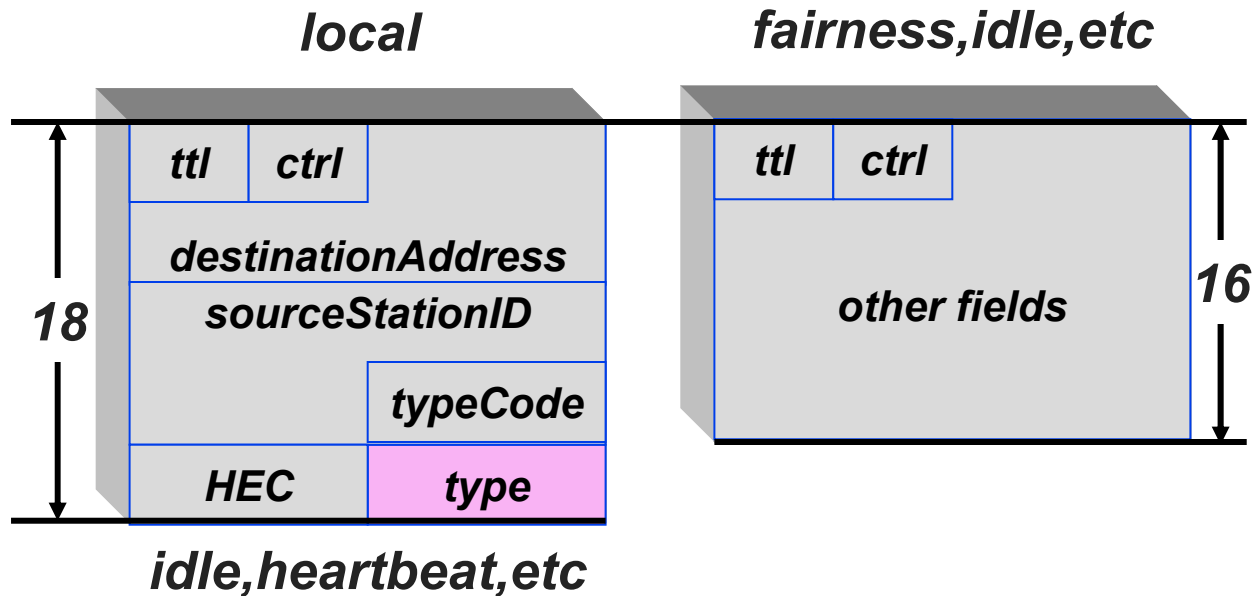
Frame formats (AD)



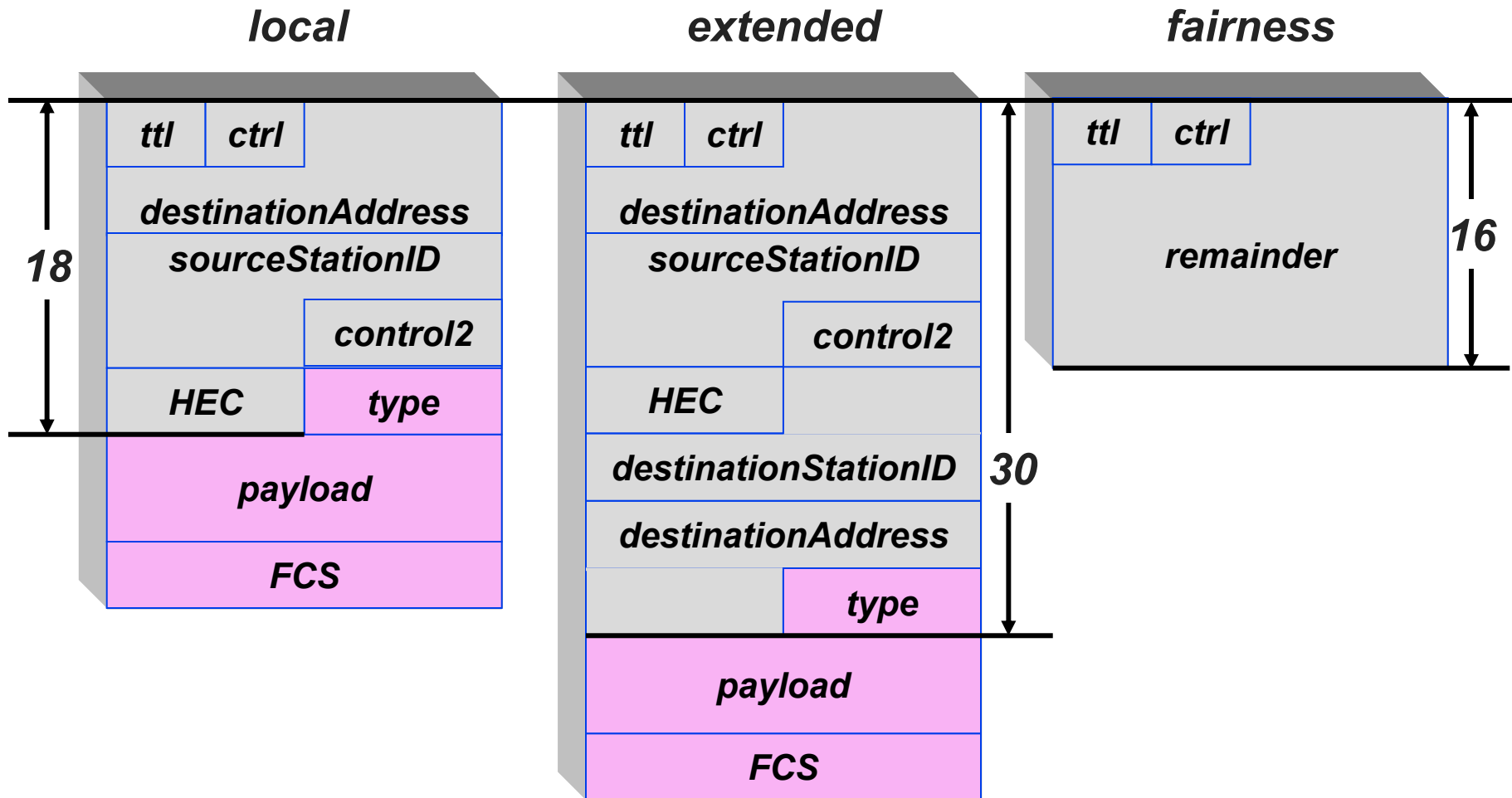
WH frame formats (#1)



WH frame formats (#2)



MM frame formats (#1)



MM frame formats (#2)

