

802.3as Frame Expansion

Changes to Clause 4

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Agenda

- **Half & Full Duplex**
- **FCS coverage**
- **Frame size**
- **Constants**
- **Sample frames**

Half & Full Duplex

- **All changes apply equally to half and full duplex modes**
- **Or should we limit it to full duplex?**
 - **This would remove half-duplex repeater constraints**

FCS coverage

- **What is the maximum length that FCS can cover?**
 - **~9000 bytes ???**
- **Assumption is that FCS can cover at least the maximum of the proposed new lengths (2k)**

Frame sizes

Frame Sizes	802.3-2002	802.3as
Minimum basic MAC frame size	64 octets	64 octets
Maximum basic MAC frame size	1518 octets	1518 octets
Minimum Tagged MAC frame size	64 octets	N/A
Maximum Tagged MAC frame size	1522 octets	N/A
Minimum Envelope MAC frame size	N/A	68 octets
Maximum Envelope MAC frame size	N/A	TBD octets

Use to update Clause 4.2.2



Allowable implementations - Clause 4.4.2

Parameters	10M, 100M	1G	10G
slotTime			
interFrameGap			
attemptLimit	No change		
backoffLimit			
jamSize			
maxBasicFrameSize	1518 octets	1518 octets	1518 octets
maxEnvelopeFrameSize	TBD octets	TBD octets	TBD octets
minFrameSize	64 octets	64 octets	64 octets
burstLimit	No change		
ifsStretchRatio	No change		

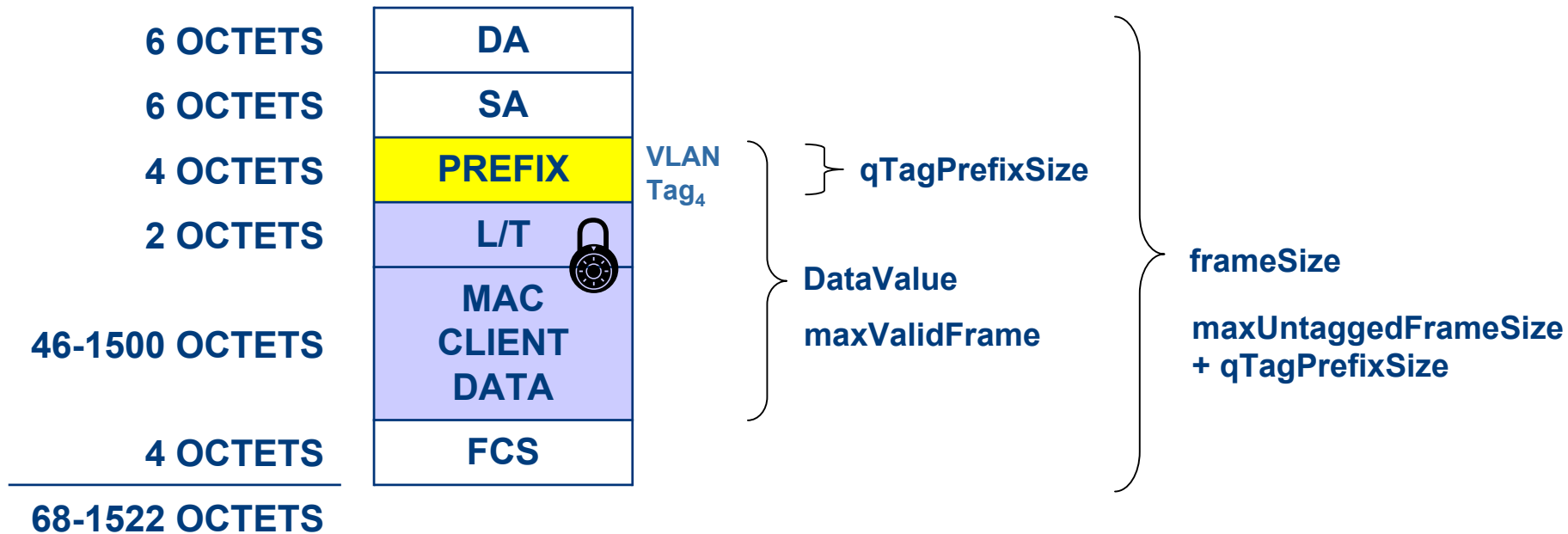
Clause 4.2.7.1 - constants

Current	802.3as
frameSize = address + L/T + data + CRC	frameSize = address + L/T + prefix + data + suffix + CRC
minFrameSize = 64 octets	No change
maxUntaggedFrameSize = 1518 octets	maxBasicFrameSize = 1518 octets maxEnvelopeFrameSize = TBD octets
qTagPrefixSize = 4 octets	prefixSize = 2 ... max[2, maxEnvelopeFrameSize – suffixSize] octets
	suffixSize = 0 ... max[0, maxEnvelopeFrameSize – prefixSize] octets
maxValidFrame	No change
DataValue = includes VLAN tag	DataValue = does not include VLAN tag
	PrefixValue
	SuffixValue

Constants - 802.3-2002

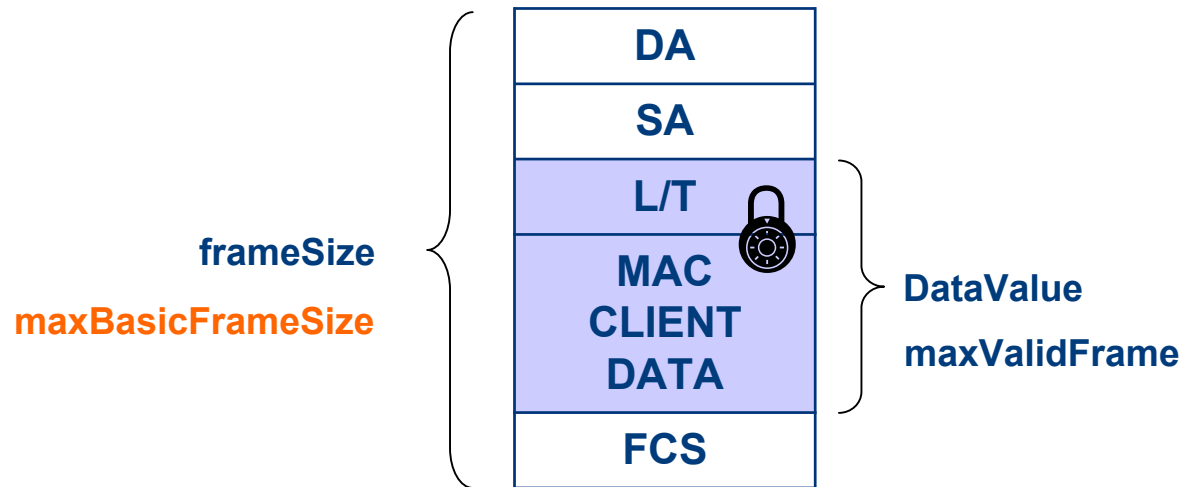
802.1Q Tagged Frame

Envelope MAC frame

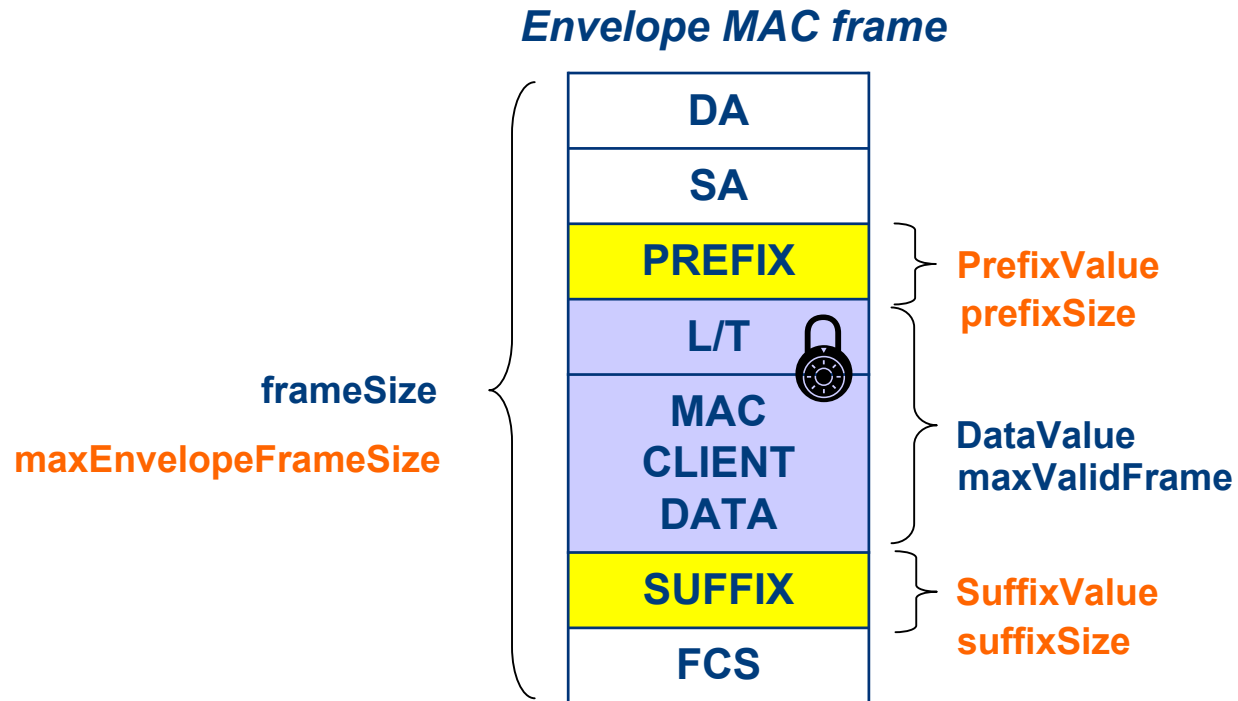


Constants - 802.3as

Basic MAC frame

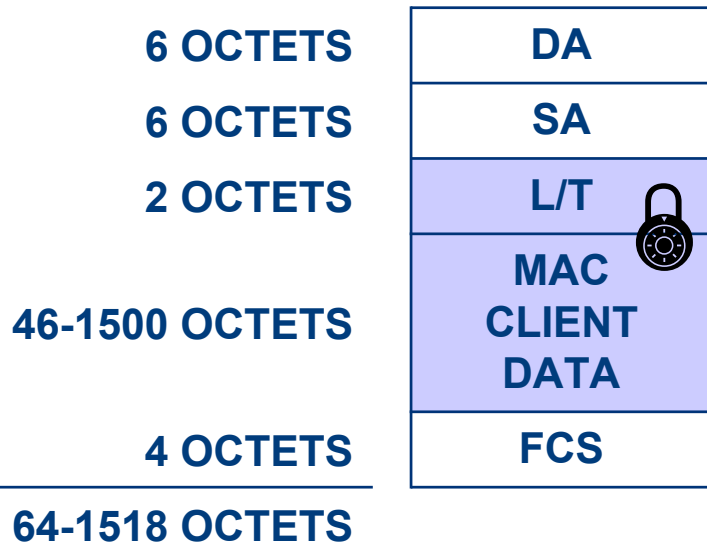


Constants - 802.3as



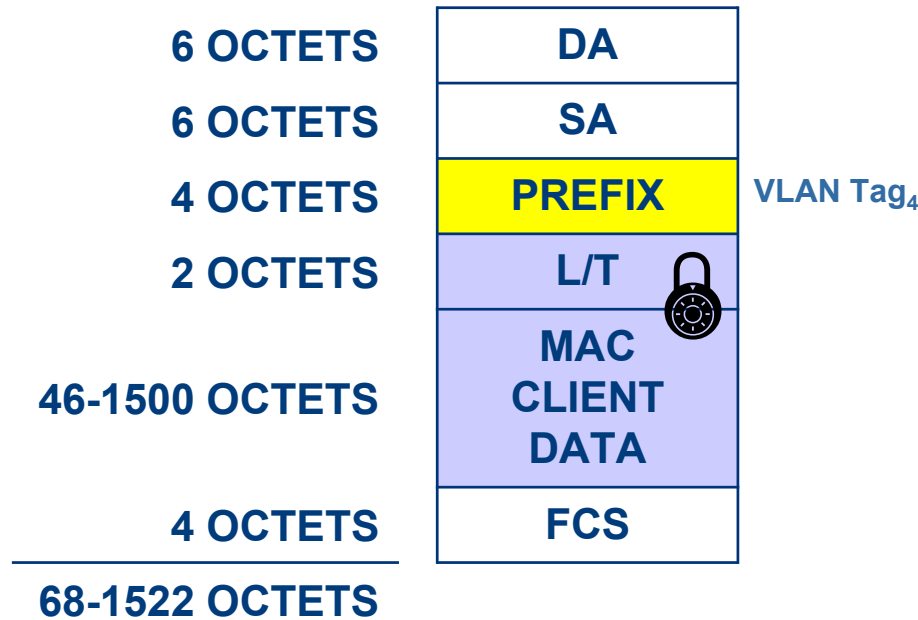
Sample frames (1/3)

Basic MAC frame



802.1Q Tagged Frame

Envelope MAC frame

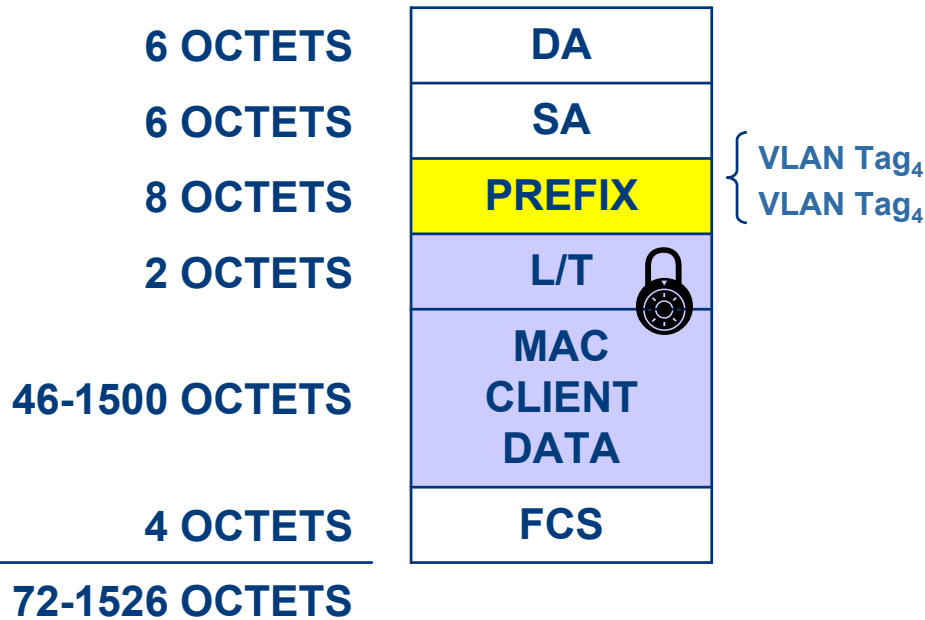


PREFIX=4, SUFFIX=0

Sample frames (2/3)

802.1ad Double Tagged Frame

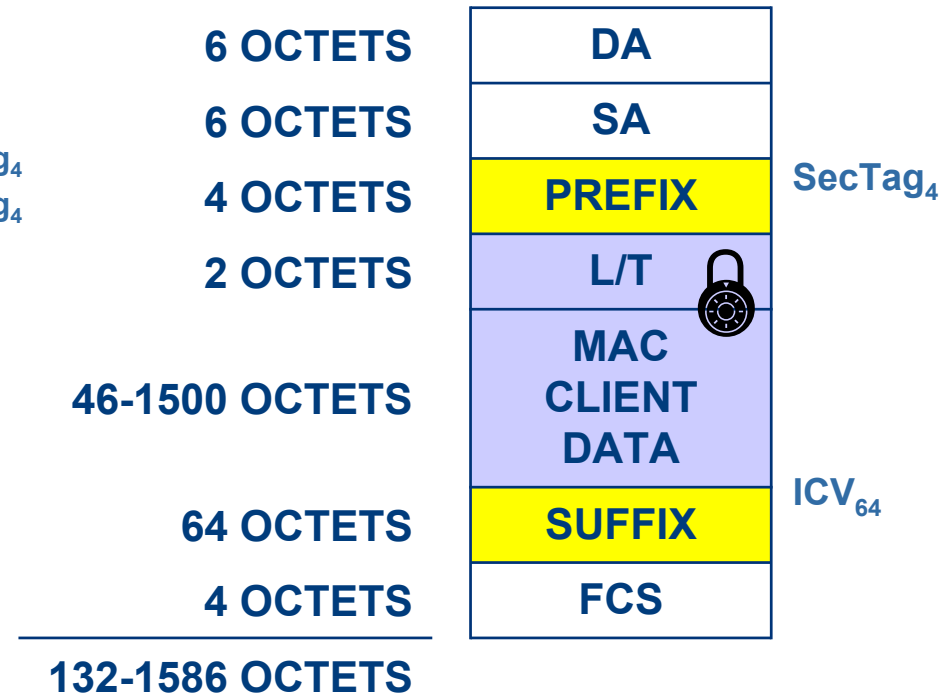
Envelope MAC frame



PREFIX=8, SUFFIX=0

802.1AE MACSec Frame

Envelope MAC frame

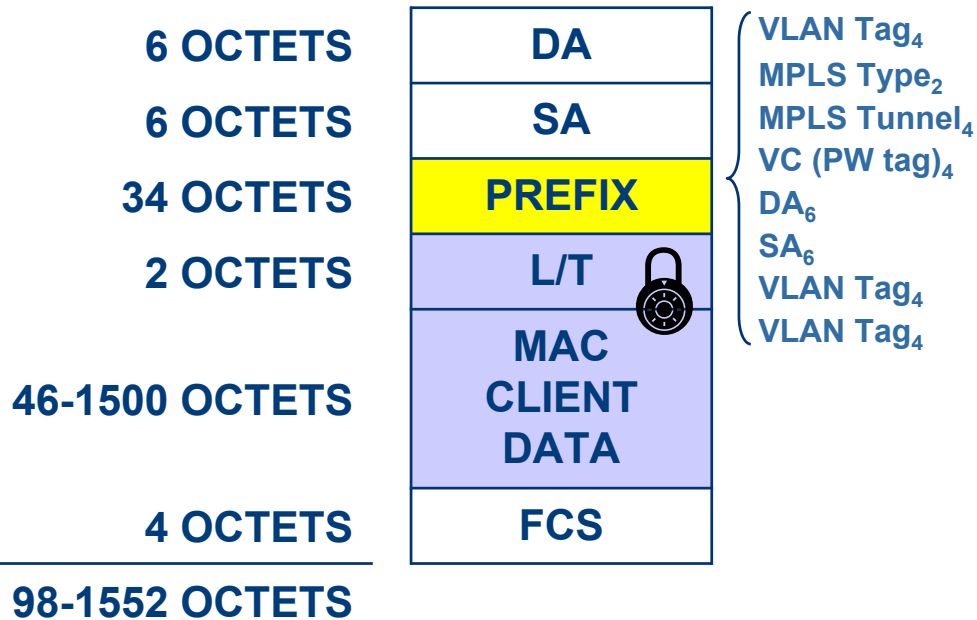


PREFIX=4, SUFFIX=64

Sample frames (3/3)

MPLS

Envelope MAC frame



PREFIX=34, SUFFIX=0