

# **BL & RF Revisited**

Kevin Daines

World Wide Packets

IEEE P802.3ae - September 12-14, 2000

New Orleans, LA

# Outline

- Goals
- Alternate Method
- Implementation Considerations
- Advantages
- Summary

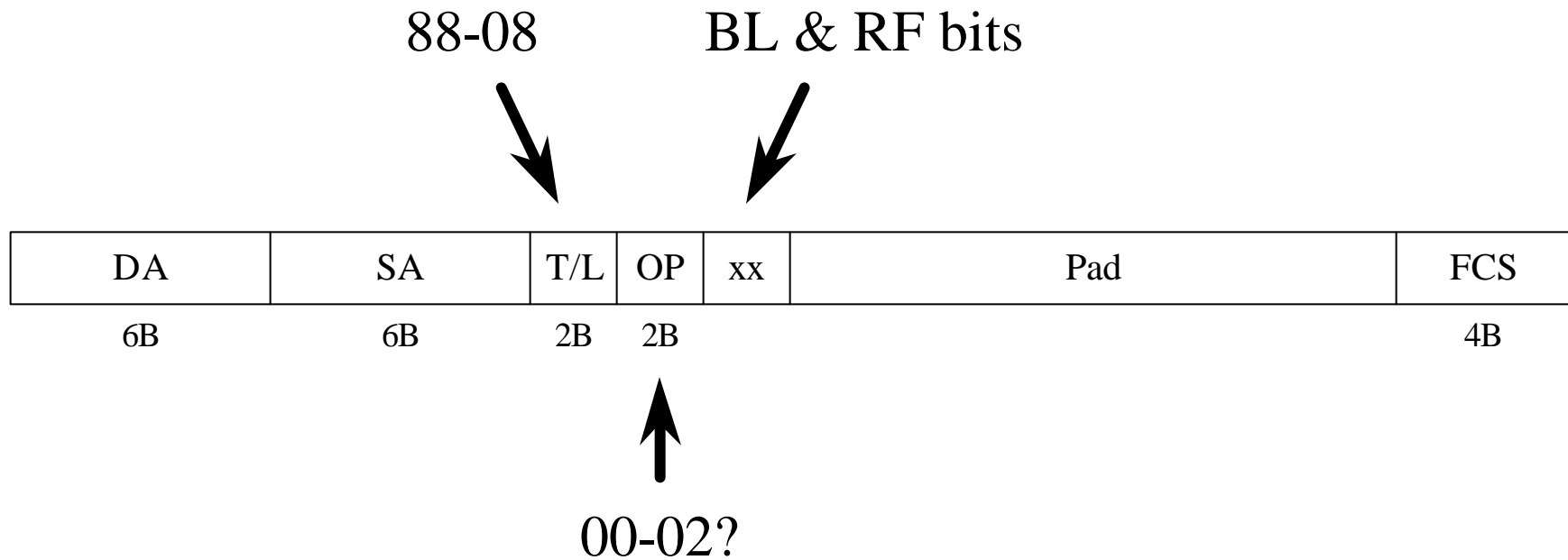
# Goals

- Establish desirability of BL/RF signaling
  - Break Link
    - Indicates link reset imminent
  - Remote Fault
    - Indicates receiver-side problem
- Explore alternate method

# Alternate Method

- BL & RF in MAC Control frame (802.3x style)
  - Why?
    - RF has always been optional, just like MAC Control sublayer (reference 28.2.3.5)
  - What is required to standardize?
    - *New* opcode in Annex 31A
    - *New* Annex 31C with BL/RF bit definitions
      - Room for more OAM&P information, if desired

# MAC Control Frame Format



# Implementation Considerations

- Like 802.3x Flow Control:
  - No need to define/standardize how to transmit
  - Only frame format/interpretation defined
- Minimal bandwidth hit:
  - One min frame (64B) every 125 $\mu$ s
  - 0.05376% overhead at MAC PLS

# Advantages

- BL/RF in MAC Control frame method is...
  - ... **Scalable** backwards *and* forwards  
(10/100/1000 and eventually 100 GbE)
  - ... LAN/WAN **PHY Independent**  
(Works over any signaling protocol)
  - ... **Optional** to implement  
(Leverage 802.3x, frame based)
  - ... **Simple** to standardize, **Simple** to understand  
(Modify one annex, add one annex)

# Summary

Recommend two step process:

1. Decide to make BL & RF an objective

2. Select method:

- a) LSS (Ishida et al, ishida\_1\_0900.pdf)
- b) RF & BF Proposal (Muller et al, muller\_1\_0900.pdf)
- c) MAC Control frame (Daines, daines\_1\_0900.pdf)
- d) Other?