

FRAME FORMATS

AN APPROACH BASED ON MINIMAL CHANGES

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The Emphasis

- The emphasis was on changing the functionality as little as possible.
 - » Defer that to another paper (94/171)
 - » Lots of history behind fields
 - Don't want to break something by accident
 - look at each functionality change, one by one
 - » Focus on field order
 - How to PARSE the frame
 - » Better definition for some Elements

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The First Byte

• Version Field

- » Reduce it to two bits
- » Provide two reserved bits

Type Field

- » There are only 9 types currently defined
- » do not need the distinction for data, management etc.
- » 4 bit field

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Second Byte

• The Control Bits

- » To AP, From AP (no change)
 - History
- » Elements Present, More (no change)
- » Power Management Bits (no change)
- » Contention Free
 - Not gone yet, two bits

Retry

- » Redundant, but....
- » Vote to put back if CF goes.

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Metwork ID, Sequence

- Put NID here for consistency
 - » Needed in nearly every frame type
- Sequence #
 - » MSDU-ID is a poor choice of name
 - » Only need to have a "negligible" rate of packet duplication
 - A count is easier and good enough
 - What was the HASH algorithm

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Elements

- Could go in any frame TYPE
 - » Needed for PHY specific needs
 - Microcells for DS PHY
 - » Backward compatibility
- Every frame is handled the same way
 - » Elements are handled consistently
 - » Always in the same place
 - » Refer to flow chart for parse
 - » Placed before any TYPE dependant fields
- Many undefined elements

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Version Field and Elements

- How does the version field work?
 - » VERSION 1 device will:
 - Reject higher version frames
 - Backward compatibility
 - Table driven?
- Elements
 - » VERSION 1 device will:
 - Ignore Elements it doesn't understand
 It can PARSE them but ignore contents
 - Added only when needed

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TYPE Dependant Fields

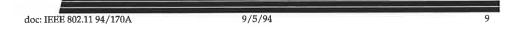
- Duration there etc.
- Minor change
 - » Beacon timestamp, now a fixed field

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- Is the CRC 8 really OK?
 - -NO
 - PHY work suggests CRC 16 OK for very short fields
 - MAC should standardize on one CRC» IEEE 32 CRC



Frame Lengths

No significant change in frame lengths

Frame Type	Old	<u>Ne</u> w
RTS	17	16
CTS	8	12
POLL	20	18
DATA (fragmented)	27(min)	25(min)
ACK (fragmented)	9	13

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Parsing the Frame

- Consistent for every frame type
 - » Simple state machine or code
- Remember that the frame might be bad
 - » May need to back everything out if CRC bad
 - » Need 'temporary' storage anyway

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94/171 - Fixing the Fields

- PHY Specific Elements
- Time Stamp in Beacon
- Removing Asynchronous Contention Free
- Fragmentation Field only when needed
- New LOAD Element
- Restore 'RETRY' bit

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