802.11 Frame Body Contents

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802.11 frame information contents

- Specifies information required for each frame
  - field name
  - data type
    - » fixed length
    - » variable length
  - length of info if fixed length
- Does not specify how the information items are encoded with in the frame.
  - separate proposals will cover encoding issues.

Presentation

Frame types

- Data
- Control
- Management

Frame Subtypes

- Data
  - Asynchronous Data
  - CF Up
  - CF Down
- Control
  - RTS
  - CTS
  - ACK
  - CF-ACK

Frame Subtypes

- Management
  - POLL
  - Beacon
  - ATIM
  - Probe
  - Association
  - Reassociation
  - Disassociation
  - Authentication
  - Privacy

Frame information contents.

Data contents

- Asynchronous Data
  - MSDU
- CF Up
  - MSDU
- CF Down
  - MSDU

RTS contents

- Null
  - header contains all needed information

CTS contents

- Null
  - header contains all needed information

ACK contents

- Null
  - header contains all needed information

CF-ACK contents

- Null
  - header contains all needed information

POLL contents

- PSP and POLL are both used as names for the same frame in B2; editors please clean up.
- SID

Beacon contents

- Time stamp
  - B2 4.3.1
    - » fixed length, 4 octets
- Weight
  - B2 4.3.9
    - » fixed length, 2 octets
- Beacon interval
  - B2 4.3.2
    - » fixed length, 1 octet
- DTIM period
  - B2 4.3.5
    - » fixed length , 1 octet
- continued...

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Beacon contents

- DTIM count
  - B2 4.3.4
    - » fixed length, one octet
- Channel sync info
  - Referenced in B2, but not fully defined.
    - » Hop sequence, where in sequence etc.
  - variable length structure
- ESS ID
  - string
    - » variable length
    - » max size of 128 octets
- continued...

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Beacon contents

- TIM
  - B2 4.3.3
    - » variable length
- Broadcast indicator
  - B2 4.3.6
    - » fixed length, Boolean

ATIM contents

- Null
  - header contains all needed information

Probe contents

- Request / Response indicator
  - Fixed length, Boolean
- Request:
  - null

Probe contents

- Response:
  - » Same as beacon w/o TIM and Broadcast indicator
  - Time stamp
    - » B2 4.3.1
      - fixed length, 4 octets
  - Weight
    - » B2 4.3.9
      - fixed length, 2 octets
  - Beacon interval
    - » B2 4.3.2
      - fixed length, 1 octet
  - DTIM period
    - » B2 4.3.5
      - fixed length , 1 octet
  - continued...

Probe contents (response)

- DTIM count
  - » B2 4.3.4
    - fixed length, one octet
- Channel sync info
  - » Referenced in B2, but not fully defined.
    - Hop sequence, where in sequence etc.
  - » Variable length structure
- ESS ID
  - » string
    - variable length
    - max size of 128 octets

Association contents

- Request / Response indicator
  - Fixed length, Boolean
- Request:
  - Privacy Algorithm number
    - » fixed length, 2 octets
      - length determined by 802.10
      - value = current privacy algorithm in use

Association contents

- Response:
  - Status value
    - » Boolean
    - » values:
      - Successful
      - Not successful
  - Not Successful, followed by
    - » Error indication
      - fixed length, one octet
      - specific error codes TBD
  - Successful, followed by
    - » SID
      - B2 4.3.7
        - fixed length, 2 octets
      - item not included in msg in B2, required after Association as the SID is the index into a TIM

Reassociation contents

- Request / Response indicator
  - Fixed length, Boolean
- Request:
  - Current AP address
    - » fixed length, 6 octets
  - Privacy Algorithm number
    - » fixed length, 2 octets
      - Length determined by 802.10
      - value = current privacy algorithm in use

Presentation

Reassociation contents

- Response:
  - Status value
    - » Boolean
    - » values:
      - Successful
      - Not successful
  - Not Successful, followed by
    - » Error indication
      - fixed length, one octet
      - specific error codes TBD
  - Successful, followed by
    - » SID
      - B2 4.3.7
        - fixed length, 2 octets
      - item not included in msg in B2, required after Association as the SID is the index into a TIM

Disassociation contents

- null
  - all needed information in header
  - msg from STA to AP
    - » "I'm disassociating"
    - » SA = STA disassociating
    - » DA = old AP
  - msg from AP to STA
    - » "you're being disassociated"
    - » SA = old AP
    - » DA = STA being disassociated

Privacy contents

- Transaction sequence number
  - Fixed length, 1 octet
  - values: 1, 2

Privacy contents

- Transaction sequence = 1:
  - Supported algorithm list
    - » variable length structure
    - » structure fields
      - Number of algs supported
        - fixed length, one octet
      - Privacy Algorithm number
        - fixed length, 2 octets
        - one field for each alg supported

Privacy contents

- Transaction sequence = 2:
  - Status value
    - » Boolean
    - » values:
      - Successful
      - Not successful
  - Not Successful, followed by
    - » Error indication
      - fixed length, one octet
      - specific error codes TBD
  - Successful, followed by
    - » Privacy Algorithm number
      - fixed length, 2 octets
      - Privacy algorithm selected

Authentication contents

- Transaction sequence number
  - Fixed length, 1 octet
  - values: 1, 2, 3, 4, 5, 6
- Transaction is started by S1, to S2
  - general for STA to STA
  - For infrastructure S1 = STA, S2 = AP
- Challenge response information notation
  - 3 structures
    - » authentication alg dependent contents
    - » variable length
    - » contained in authentication transaction msgs

Authentication notation

- Challenge (by, of)
  - » by challenging STA, of STA being challenged.
  - » variable Length structure
    - Len fixed, 2 octets
    - rest = alg dependent challenge contents
- Challenge_Response (by, to)
  - » by STA that was challenged, to STA issued challenged
  - » variable length structure
    - Len fixed, 2 octets
    - rest = alg dependent response contents
- Challenge_Result (from, to)
  - » from STA challenging STA, to responding STA
  - » variable length structure
    - Len fixed, 2 octets
    - rest = alg dependent result contents

Authentication contents

- Transaction sequence = 1:
  - Supported algorithm list
    - » variable length structure
    - » structure fields
      - Number of algs supported
        - fixed length, one octet
      - Authentication Algorithm number
        - fixed length, 2 octets
        - one field for each alg supported

Authentication contents

- Transaction sequence = 2:
  - Status value
    - » Boolean
    - » values:
      - Successful
      - Not successful
  - Not Successful, followed by
    - » Error indication
      - fixed length, one octet
      - specific error codes TBD

Authentication contents

- (Transaction 2 continued)
- Successful, followed by
  - » Identity assertion by S2
    - not in frame body
    - contained implicitly in msg header
      - SA = S2
  - » Authentication Algorithm number
    - fixed length, 2 octets
    - Authentication algorithm selected
    - determines how contents of subsequent frames parsed for rest of this authentication transaction sequence.

Authentication contents

- Transaction sequence = 3:
  - Challenge (by S1, of S2)
  - Identify assertion by S1
    - » implicitly in msg header
      - SA = S1
- Transaction sequence = 4:
  - Challenge_Response (from S2, to S1)
  - Challenge (by S2, of S1)

Authentication contents

- Transaction sequence = 5:
  - Challenge_Result (from S1, to S2)
  - Challenge_Response (from S1, to S2)
- Transaction sequence = 6:
  - Challenge_Result(from S2, to S1)

Motion:

- That the information contents of frames as described in 94/214a be adopted and that the draft be updated to reflect this.