PCF Time Bounded Services

Tim Phipps,
Symbionics

Current Specification Status

- Distributed Coordination Function (DCF)
  - Yes
- Point Coordination Function (PCF)
  - Yes
- Distributed Time Bounded Services (DTBS)
  - Agreed in principle
- PCF Time-Bounded Services (PCF TBS)
  - No, Why not...
Alternatives

- DTBS using Active Signalling
  - Rejected because it would require an energy based CCA
- DTBS using different Inter-Frame Spacings
  - Long delays for asynchronous traffic to access medium
  - Very inefficient with more than two priority levels
- PCF TBS
  - Similar to PCF asynchronous traffic

Arguments For PCF TBS

- In any situation in which a PCF is viable, PCF TBS will be viable also
- Low average delay between packets on the air
What is needed?

- Connection ID in CF Up and CF Down packets
- Request to be included on the polling list
  - Similar to the mechanism used with asynchronous traffic

**AP Initiates Connection**

- AP requests a connection
  - With a maximum payload and an assigned connection ID
- STA grants connection
  - With connection ID
  - Can refuse by not responding
**STA Initiates Connection**

- STA requests a connection
  - With a maximum payload
- AP grants connection
  - With assigned connection ID
  - Can refuse by not responding

**Changes to Frame Formats**

- **Data Frames**
  - For CF-Up and CF-Down the Duration field can be reused as a connection ID field.
    - Duration field has no meaning in Contention Free Period
- **Management Frame Sub-Types**
  - Connection Request
  - Connection Grant
  - End Connection