A method which can Improve Capacity of WirelessMAN-CX

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Purpose:

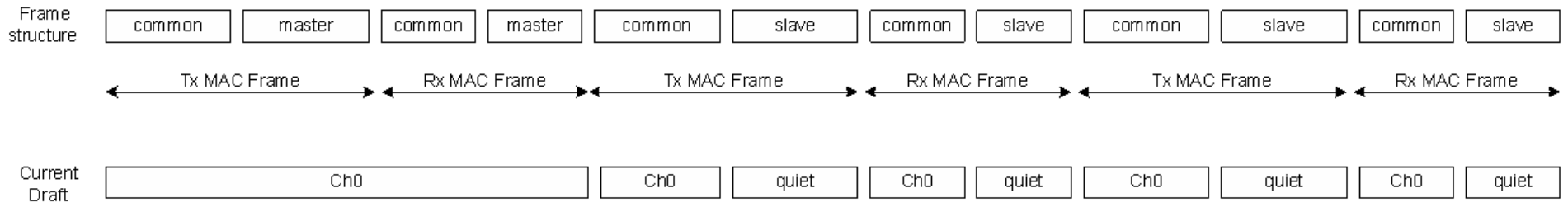
Offer a mechanism that can improve the throughput capacity of system and decrease the probability of occurrence of blind area.

Outline

- Current co-existence mechanism
- Multiple working channel mechanism
- How to implement the proposed mechanism based on current draft standard

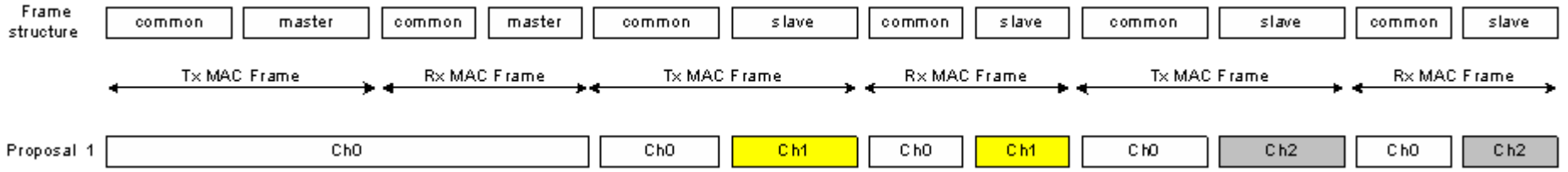
Co-existence Mechanism in Current 16h Draft

- System will share channel with others if no idle channel exist
- A MAC frame is divided into several sub-frame
  - Common sub-frame for non-interference service
  - Master sub-frame for interfered SSs
  - System in slave sub-frame shouldn't create interference to others
    - Lower power, may silence
    - Lower throughput capability



Proposed Multiple Channel Switching Mechanism

- Work on another channel during slave sub-frame



How to Do

- System enters network as defined in 15.1.3
  - Work on an exclusively channel
  - Share channel with other systems
- Sensing and seeking for idle channel during quiet period
  - Using quiet CSI/CMI and CX protocol to find co-existence neighbor on other channels
  - See contribution C80216h-06_105 for more details

How to do
-continue

- If an idle channel or idle sub-frame on non-working channel is found, switching to idle channel during corresponding slave sub-frame
  - Work on an exclusively channel
    - New idle channel is found
      - During one of sub-frame, works on newest idle channel
    - New idle sub-frame on non-working channel is found
      - During corresponding sub-frame, works on newest idle channel
  - Share channel with other systems
    - During corresponding sub-frame, works on newest idle channel

Advantage and Disadvantage of Proposed Mechanism

- System works all time in higher power
  - Throughput capacity is improved.
- The probability of blind area is decreased
  - Because system works on more than one channel
- Additional RF frequency switching time is needed

Modifications to Current 16h Draft Standard

- Modifying the information table
- Add a new section to describe how to realize the multiple channel switching mechanism
- Modify the frame structure
- Channel ID is added into some CXP message

Conclusion

- A multiple working channels mechanism is provided.
  - Throughput capability increases
  - Probability of blind area decreases
- Influence on current 16h draft is introduced.
  - Only a little modification to current 16h draft standard
    - Modify the information table
    - Add section 15.4.4 to describe the implement of multiple working channels
    - Modify the frame structure
    - Channel ID is added into some CXP message