

## Slides of the Proposed Text of Synchronization Channel for the IEEE 802.16m Amendment

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Venue:

IEEE 802.16m-08/053r1, “Call for Comments and Contributions on Project 802.16m Amendment Working Document”,

Target Topic: “DL PHY control structure, especially mapping”

Base Contribution:

C80216m-09\_0334.doc

Purpose:

To be discussed and adopted by TGM for the 802.16m amendment

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# Proposed Text of Synchronization Channel for the IEEE 802.16m Amendment

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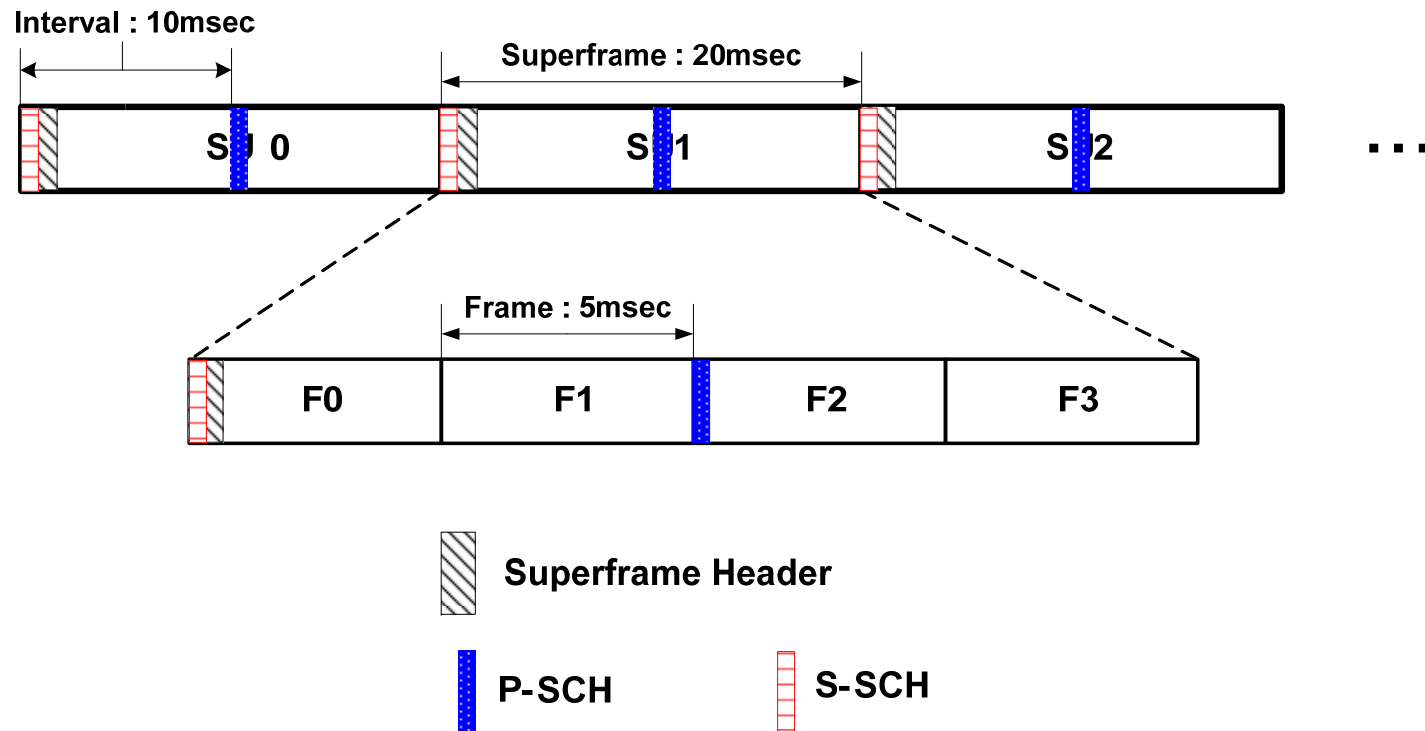
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# About This Contribution

- Goal and scope of this contribution
  - Propose synchronization channel structure and symbol design for IEEE 802.16m amendment text
- Issue to be addressed in this contribution
  - Overhead and location of SCH
  - 768 Number of cell IDs
  - Information carried by P-SCH
  - SCH symbol structure
  - Sequences for P-SCH and S-SCH

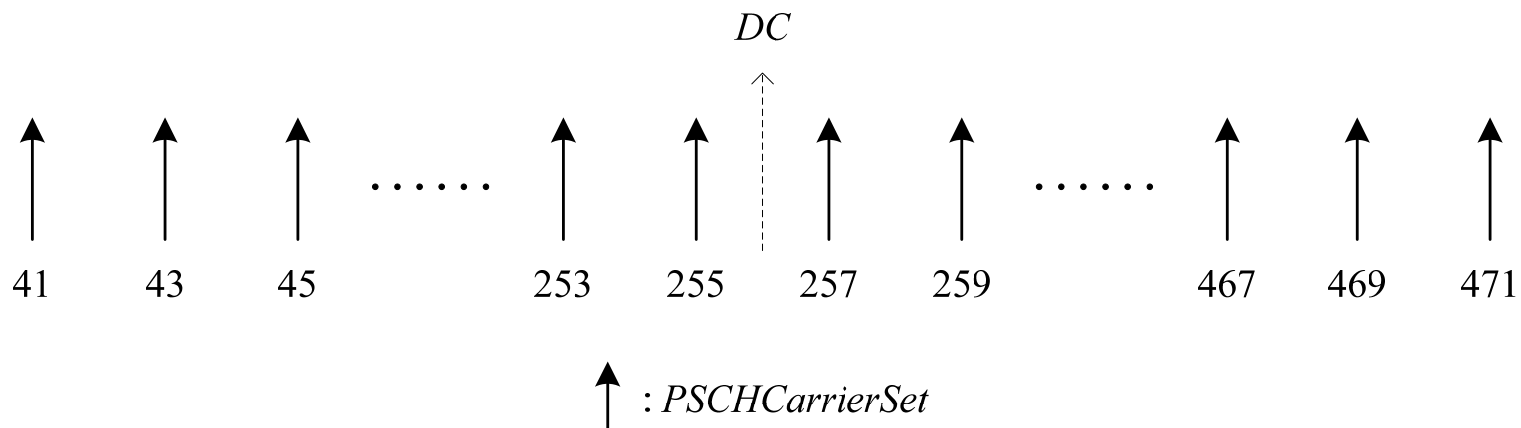
# Overhead and Location of SCH

- One P-SCH symbol and one S-SCH symbol exist within superframe
- P-SCH and S-SCH are separated by two frames.
- S-SCH is located in the first symbol of the superframe header.



# P-SCH

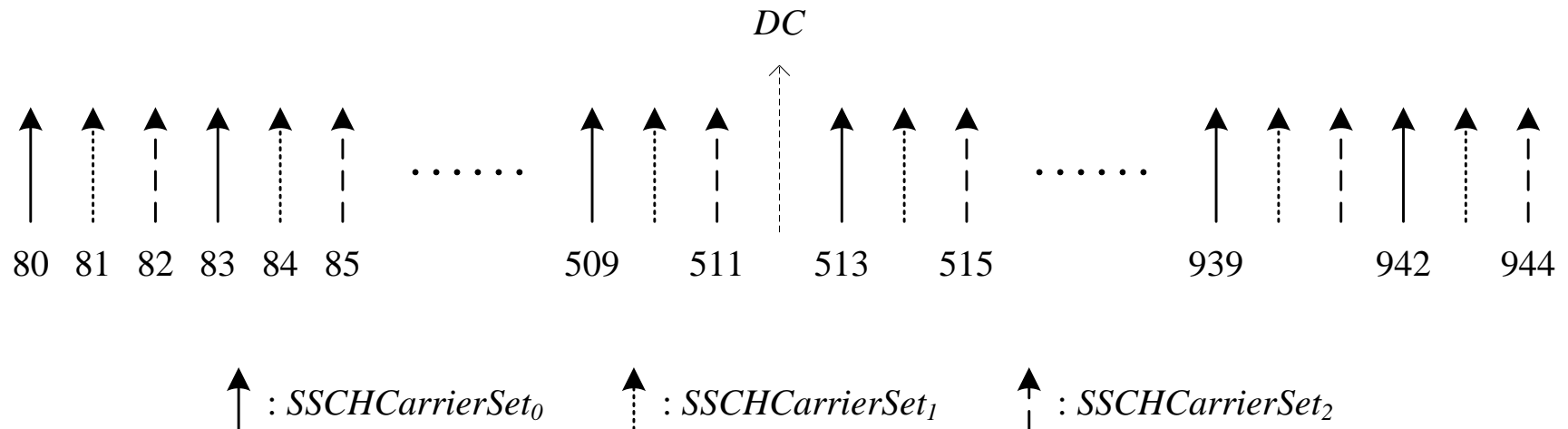
- P-SCH carries the information of ABS type.
- Support time synchronization by auto-correlation
- Sequences have low PAPR and good cross-correlation property



Index	BS type	Series to modulate	PAPR (dB)
0	Macro	B2143168C07B2B21431573F84D4DEBCE973F84DB21431573F84DF3	3.82947
1	Femto	FC3F30033C30003C0CF333C30056959AA9969AA56959A666965517	3.81600
2	Relay	00070B377985B55525E622CD0E03F8F4C8867A4A9525E622CD0EA3	3.58150
3	Hot zone	FD952E7E74164026AD1818BE9BFD952E718BE9BFD952E718BE9BDC	3.57615

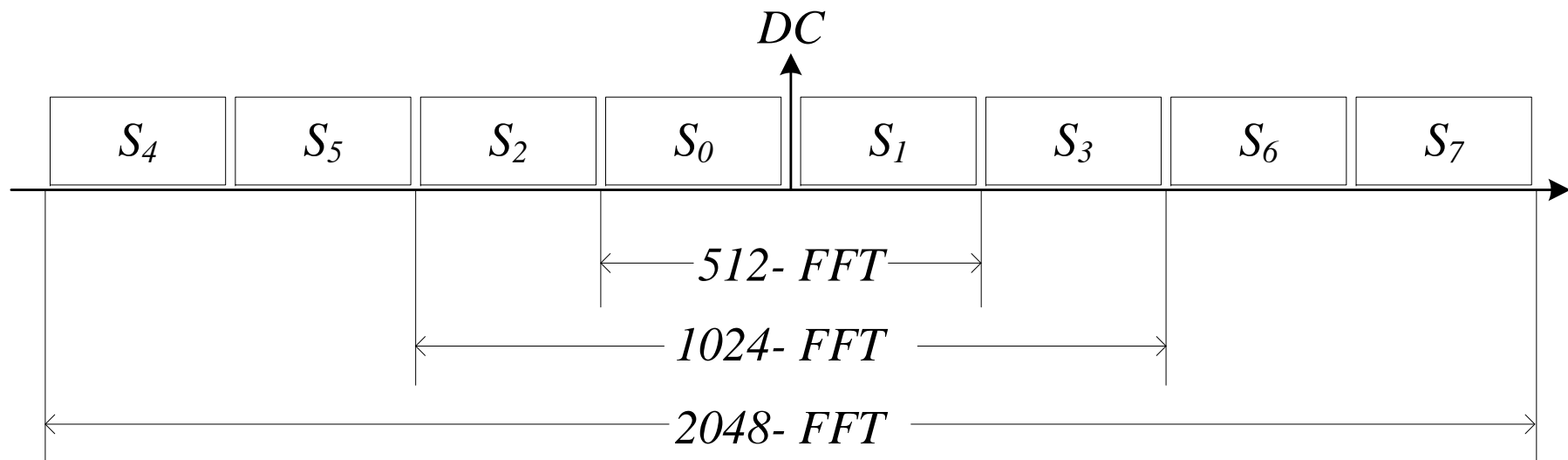
# S-SCH

- S-SCH carries 768 identical cell IDs
  - 768 cell ID = 256 sequences X 3 segments
- Frequency reuse 3
- Example: symbol structure for 1024-FFT



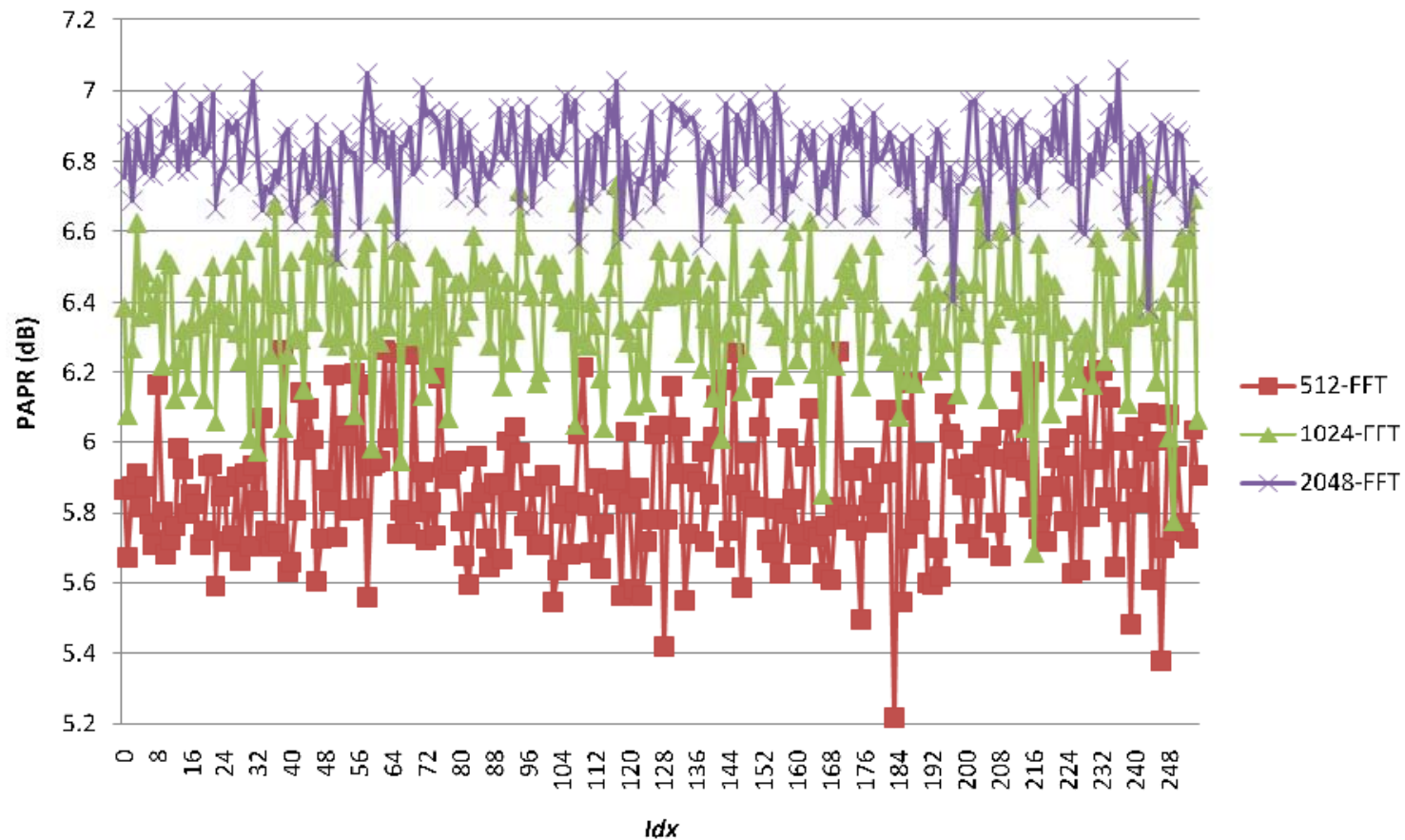
# S-SCH

- Scalable structure
  - 8 sequence block can cover all the 512, 1024, and 2048 FFT sizes
  - Can support MS with small bandwidth
  - Low memory requirements to store sequences



# S-SCH

- Cross-correlation is optimized under the differential decoding
- Sequences have low PAPR
  - Max PAPR: 6.27dB for 512-FFT, 6.74dB for 1024-FFT, 7.06dB for 2048-FFT





# Text Proposal to 802.16m amendment

- Proposal text is captured in the contribution IEEE C80216m-09/0334 or its latest version