

Title: Consolidation of CSI-CMI - output of 16h_INTERF_ID Ad-Hoc|

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**Consolidation of CSI-CMI - output of
16h_INTERF_ID Ad-Hoc**

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John Sydor

Main issues

- Analysis of existing situation
- Functional proposal
- Timing proposal

Comparison of the existing schemes

	MSI (Mover)	MS (M post)	SP (Hacker)
MSI	MSI	MSI	MSI
MS	MS	MS	MS
SP	SP	SP	SP
MSI + MS	MSI	MS	MSI
MSI + SP	MSI	MS	MSI
MS + SP	MSI	MS	MSI
MSI + MS + SP	MSI	MS	MSI

Conclusion of the comparison

- Combine CSI and CMI
 - Possible if CSI will use absolute time scheduling
- Combine CMI and CP
 - Not possible: one, at absolute time and the other at flexible times
- Combine CSI and CP:
 - CSI should be at well-known absolute times because of the main usage: signalling of the IP address info

Merging proposal - 1

- Create slots, at absolute times, to be used for DL and UL transmissions
- Name the series of slots “Control Channel”
- Control Channel properties
 - It is defined a multi-frame, with the duration $T_{MF} = 60s$; The multi-frame starts at the absolute time $T_{ABS_MF}=00:30:00$
 - The DL and UL slots are alternated
 - The duration of each slot will be 1(max.2) ms
 - The first 4 slots will be used for synchronization of the systems not having GPS visibility
 - Time, frequency, MAC Frame numbering

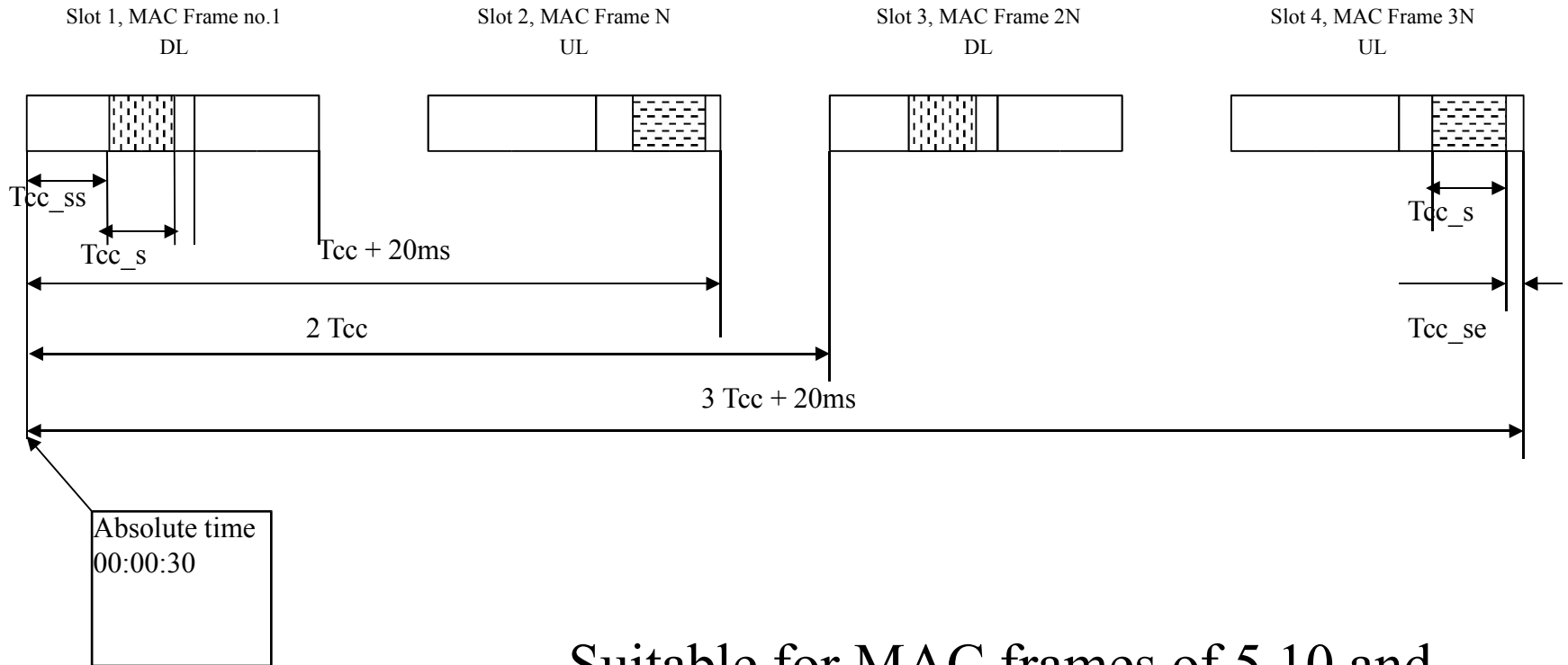
Merging proposal - 2

- A BS transmission will use the DL slots (scheduled during the DL sub-frame)
- A SS transmission will use the UL slots (scheduled during the UL sub-frame)
- CMI will use
 - N_CMI_IBS consecutive slots for IBS; $N_CMI_IBS = 10$
 - N_CMI_OBS consecutive slots for OBS; $N_CMI_OBS = 80$
 - N_CMI_Non16 consecutive slots for IBS; $N_CMI_Non16 = 10$
- CSI will use for IBS, IP info transmission only
 - N_CSI_E DL consecutive DL slots for time energy keying ;
 $N_CSI_E = 10?$
 - N_CSI_F DL consecutive DL slots for frequency-keying CSI;
 $N_CSI_F = 2?$

Merging proposal - 3

- The slots of 1ms duration will repeat every 100ms
 - DL and UL slots are alternated
 - For a 5ms MAC frame a DL slot will appear every 40 frames
 - For a 10ms MAC frame a DL slot will appear every 20 frames
- The slots will be scheduled as CXZ with the attributes:
 - DL/UL control channel
 - sync GPS, sync 2nd tier
 - CMI_IBS, CMI_OBS, CMI_non16
 - CSI_E, CSI_F

Timing of the slots



Suitable for MAC frames of 5,10 and 20ms

Conclusion

- The proposal allows to merge CMI and CSI and retain the main functionality
- It is defined the usage of 116 slots, with 1% overhead
 - May be actually more due to fragmentation
- In a 60s multi-frame there are 600slots
 - 484 slots may be used for BS-BS communication

Comments?