Summary:
La Jolla MAC Layer Discussions

Submission   Slide 1   Bruce Kraemer, Harris Semiconductor Corp.

La Jolla Questions about WPAN

- Can a proper subset of 802.11 MAC be used for PAN?

- Can a subset of the 802.11 MAC lead to a significant implementation simplification and power consumption reduction?

- By what means and by how much can the MAC be simplified? What ratio of cost reduction might be expected?

- What incremental benefit can be derived from simplifying the RF (PHY) relative to the MAC?

Submission   Slide 2   Bruce Kraemer, Harris Semiconductor Corp.

Commentary on MAC

- Best way to coexist with 802.11 is to reuse 802.11.
- Power savings "could" be accomplished by selecting a subset of options from those available in 802.11 and then hard wiring those options.
- Ad hoc and AP complexity are comparable.
- Ad hoc still requires ATIM
- Authentication and WEP are significant contributors to MAC complexity.
- Chris Zegelin foresees single RF and single MAC devices.
- Master slave - is the lowest power arrangement

Submission   Slide 3   Bruce Kraemer, Harris Semiconductor Corp.

MAC Commentary (Cont.)

- Removing AP function would greatly simplify MAC - but adds complexity every where else.
- Device MAC could be simplified to talk to ad hoc only
- How does association work in ad hoc network.
- Temporary access point assignment to reduce power consumption.
- Current MAC is not optimized for low power - there are better ones.
- Network coalescing adds great complexity which should be concentrated in AP.

Submission   Slide 4   Bruce Kraemer, Harris Semiconductor Corp.

Review of the 802.11 MAC

What option set of the 802.11 MAC would be appropriate for WPAN?

Submission Slide 5 Bruce Kraemer, Harris Semiconductor Corp.

Options to KEEP

- Single BSS
- Peer to peer data frame type
- IBSS Beacon/join

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Options to EXTEND

- Add a new power management protocol

Options to REMOVE or make OPTIONAL

- Reduces real time computational load
- MIB
- PCF
- RTS/CTS
- Fragmentation
- NAV

- WEP
- Association/authentication
- TIM/DTIM
- Multiple rates
- ESSID
- to DS / from DS
- Wireless DS