Tentative MAC/PHY Joint Meeting Minutes
Tuesday, May 11, 1993

The meeting was called to order by Vic Hayes at 8:45 AM. Carolyn Heide secretary.

(1) Roll Call: People in the room were identified from the hotel registration list.

(2) Announcements

Documents: please supply electronic copies to Vic. Please bring double-sided copies to meetings, and with overheads, if you can, try to get more than one slide per page.

(3) Presentation of Submissions

A Compromise MAC Protocol Concept, P802.11-93\75, by Jim Shuessler

Will present only the second half of the paper here because the first half is more specifically relevant to the MAC group.

At the end of the last meeting there was a vote taken that said the MAC independent layer will be done by the PHY group, but Jim would like to have a little more discussion about that area of the model. We haven't done a lot of thinking about how the management stack comes down, and how deep. Steve Chen did a good paper on this. The model on page 3 parallels what's done in the FDDI standard. We might want to re-examine how management fits into our reference model.

The chart on page 3 describes potential functions for the layers.

Goal to open issues - 24.8 already asks what functions are in layers, but believes there should be more specific issues in this area.

Discussion:

Larry van der Jagt: chart says all the MAC is going to do is interface with the DS and some population tracking and the PHY is going to do everything else.

Jim: we have been too broad in our definitions. By wanting an electrical DTE/DCE interface we have opened up an interface that is traditionally inside the PHY.

Larry: we have put it where it is traditional, in the middle of the PHY. You show bandwidth allocation happening in the PHY, packet retransmission, segmentation and packet re-assembly in the PHY - that is not traditional.

Peter Cripps: some of these functions you have in the convergence or media independence layer like framing and access methods, these are traditional MAC things. Does putting them in the PHY imply they will be different per PHY? That implies many MACs and many PHYs rather than one MAC and many PHYs.

Jim: you can't optimize these framing and access methods for every PHY with one scheme. This division of functions recognizes reality.

Dave Bagby: this is not a great idea. It changes the basic philosophy we have been working from - may even require changing the par. Also a correction [Dave reads the motion from the end of the last meeting] - it doesn't say the reference model belongs to the PHY and they get to decide where the functions go.

Jim: what I said was that the PHY may have to do these things, but they are so MAC related a joint meeting must handle this. If we can't meet the goal of the par, do we have to change the par?

Dave: you have to ask the excom if the goal can be changed. I don't yet believe the goal is un-attainable.

Tom Baumgartner: why does this chart imply multiple MACs?

Jim: we have thought of a MAC having several properties - coordination, framing, addressing. I am proposing pushing those functions down.

Tom B: you have pushed those functions down into the PHY to facilitate only one MAC - this model stays with the par.

Larry: this is very non-ISO reference model.

Dave: if you got a standard like this, when you tried to move it to the ISO community you would have a lot of problems. You may have to start over again.

Jim: ISO rubber stamping is desirable.

Peter Chadwick: a MAC totally and wholly independent of PHY considerations cannot be produced. A PHY independent MAC can be produced by pushing MAC functions into the PHY, but you wind up with an unusual assignment of functions.

Chandos Rypinski: disagrees with Peter. It is possible to get a MAC that covers many PHYs (maybe not all). Channelization is the rock of that development- one channel quickly or many slowly is one crucial question that can be solved.

Jim: there is a class of MACs we can make for channelized and another for single channel? If that's the division then FH and IR need different classes of MACs.

Larry: we have talked about MAC independence from PHY, but that doesn't mean that there are no portions of the MAC that change per PHY. Something uploaded from the PHY that enables the MAC to adapt.

Jim: that's a chameleon MAC - multiple MACs hidden.

Larry: but everyone builds exactly the same MAC. There is a common portion and a specific portion per PHY.

Jim: implementation of this could do that, but logically that is many MACs. Those specific portions belong in media independent and convergence layers.

Larry: traditionally those layers are to map one symbol set to another symbol set.

Jim: that is coding in 10baseT and 10base5 - we have a more complex thing.

Peter Cripps: you are asserting that a MAC cannot be made to support multiple PHYs. I see MAC proposals in the MAC group all of which can support multiple PHYs. There is not evidence that they can't work with multiple PHYs.

Jim: noble efforts have been made to that end. My approach is to optimize - take something and make it the best for a particular PHY. Make trade offs.

Peter Cripps: the economies of scale you get by putting these things in the PHY is appealing. That is not what we are convened to do, although it may be easier to do.

Wim Diepstraten: what's left in the MAC? It doesn't do any traditional stuff, only those functions which are unique to wireless. Doesn't see the purpose of that. There is no evidence yet that we can't do single MAC.

Dave: probably easier, but easier does not always equal good solution. Believes functions have been pushed so low that PHY dependent MACs are created with a linguistic trick to make it look different.

Wim: what does this optimize?

Jim: throughput and delay for each PHY. This is just accommodating the physical reality.

Wim: parameterizing the MAC can optimize the MAC for each PHY.

Jim: that creates many MACs. This list of functions per layer has not been done - we have a model of layers without a common understanding of the functions within them. Would like to open some issues. What are functions in the convergence layer? What are the functions in the MAC layer?

Dave: this descriptions of functions per layer is extreme but serves as a good starter for getting people to think about layer functions. The best thing at this point may be to put a note in issues log that points to this paper.

Jim: we don't have a full set of issues in the log for functions per layer.

Vic: will you provide an un-ambiguously worded set of issues for the log?

Jim: yes.

(4) General discussion: none

Meeting adjourned: 9:40 AM