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Re: 850 nm solutions

- **To:** "THALER,PAT (A-Roseville,ex1)" <pat_thaler@agilent.com>; "Rick Walker" <walker@cutter.hpl.hp.com>; <stds-802-3-hssg@ieee.org>
- **Subject:** Re: 850 nm solutions
- **From:** "Roy Bynum" <rabynum@mindspring.com>
- **Date:** Sat, 29 Apr 2000 18:05:54 -0500
- **References:** <1BEBA5E8600DD4119A50009027AF54A0C5F0EB@axcs04.cs.itec.hp.com>
- **Reply-To:** "Roy Bynum" <rabynum@mindspring.com>
- **Sender:** owner-stds-802-3-hssg@ieee.org

Pat,

What I am curious about what you say is that it is "different" "groups" that came up with "Hari" and "XAUI", but those "groups" seem to contain the same "people", and are representing the same "vendors" in the "different" "groups". If it is the same "people" then it is effectively the same "group" in the different organizations. Technical details aside, it is the massive similarities that demonstrate the "commonality" and the repeated efforts to insert it into an "unrelated" standard. When an organization is then formed that has limited closed membership with the effective purpose of creating voting blocks within the open organizations then the process of creating "open" standards becomes skewed. As a potential customer of the results of the IEEE P802.3ae TF, I find this disturbing.

Thank you,
Roy Bynum

----- Original Message -----

From: THALER,PAT (A-Roseville,ex1) <pat_thaler@agilent.com>
 To: Roy Bynum <rabynum@mindspring.com>; THALER,PAT (A-Roseville,ex1) <pat_thaler@agilent.com>; Rick Walker <walker@cutter.hpl.hp.com>; <stds-802-3-hssg@ieee.org>
 Sent: Friday, April 28, 2000 6:40 PM
 Subject: RE: 850 nm solutions

> Roy,
 >
 > Your note seems to imply that Hari was developed within Infiniband and then
 > introduced from
 > there into 802.3. This is not my understanding of its history. The
 > Infiniband group developed/
 > is developing a 2.5 Gbaud/s serial link for use in 1-wide, 4-wide, and
 > 12-wide configurations
 > using the 8B/10B code. Somewhat in parallel with this, people from the Fibre
 > Channel and
 > Ethernet communitities got together to look at what might be good interfaces
 > to use between
 > physical layer chips for 10 Gbit/s implementations and came up with Hari and
 > Sali which
 > are roughly equivalent to the current proposals for XAUI and XGMII. These
 > people also
 > chose the 8B/10B code for Hari. Since one 4x2.5 Gbit'isn 8B/10B interface is
 > pretty much
 > like another, there is similarity between Hari and the Infiniband x4
 > interface though
 > there is a 25% speed difference.
 >
 > The interfaces were each developed by communities focused on their market's
 > needs. In my
 > opinion, the decision to use different speeds was driven by differences in
 > the respective
 > market needs.
 >
 > An interface at these speeds is analog. This is particularly true if it is
 > to serve the
 > length of traces likely to be found between transceivers and switch chips.
 > Taking analog
 > considerations into account when we develop the standard will enable
 > cost-effective,
 > robust designs. XAUI is very suitable to the use for which it has been
 > proposed.
 >
 > The point of my note was: if we were going to standardize a short run copper
 > link, it
 > would make sense to look at what could be done on a 4-wide connection vs. a

> 10 Gbit
 > serial connection. Our existing decision has been to not do a short copper
 > link -
 > probably driven in part by the low usage of 1000BASE-CX.
 >
 > Regards,
 > Pat Thaler
 >
 > -----Original Message-----
 > From: Roy Bynum [<mailto:rbynum@mindspring.com>]
 > Sent: Wednesday, April 26, 2000 6:43 PM
 > To: THALER,PAT (A-Roseville,ex1); Rick Walker; stds-802-3-hssg@ieee.org
 > Subject: Re: 850 nm solutions
 >
 >
 > Pat,
 >
 > For Infiniband, I think that HARI is a very good solution. I question the
 > way that it was introduced and developed as part of the
 > effort in something that is not Infiniband. If people want to make products
 > for Infiniband, I have no problem with that. As a
 > customer, I question the motivations of my vendors to have me pay for the
 > development of technology that was actually intended for
 > another use. I wonder how much that has already increased the price of the
 > product that I will be receiving. I wonder even more
 > how much the vendor was actually trying to develop something for my use
 > instead of somebody else, and gave me, the customer, the
 > "left overs". I wonder how much better the product, that I may buy, would
 > have been better if the vendor had not been **developing**
 > **technology for another use.**
 >
 > As a customer, I was hoping to receive an 802.3 Ethernet product that
 > treated the interface to the optical domain as a digital
 > optical system, not an analog copper system, which you refer to for the use
 > of HARI. As a customer I was hoping that the vendors
 > would listen to me and my requirements and look at it as an opportunity to
 > enter a market that is as large as the global Internet,
 > instead of staying in the collective enterprise space. Vendors that are not
 > looking at the market correctly have already lost their
 > market share in the Internet backbone, and they are about to start loosing
 > it at the access edge as well. History has shown that
 > customers will get what they want one way or another.
 >
 > The response of a BIG customer,
 > Thank you,
 > Roy Bynum
 >
 >
 >
 > ----- Original Message -----
 > From: THALER,PAT (A-Roseville,ex1) <pat_thaler@agilent.com>
 > To: Rick Walker <walker@cutter.hpl.hp.com>; <stds-802-3-hssg@ieee.org>
 > Sent: Wednesday, April 26, 2000 1:08 PM
 > Subject: RE: 850 nm solutions
 >
 >
 >
 >
 > > Infiniband will be using something very similar to the HARI interface over
 > > short copper links though the distance goal is, I think, 6 m. To travel
 > > over
 > > short copper cables, it may make sense to use a 4 wide signal from HARI
 > > rather than 10 Gbit/s serial.
 > >
 > > -----Original Message-----
 > > From: Rick Walker [<mailto:walker@cutter.hpl.hp.com>]
 > > Sent: Wednesday, April 19, 2000 4:58 PM
 > > To: stds-802-3-hssg@ieee.org
 > > Subject: Re: 850 nm solutions
 > >
 > >
 > >
 > > > Jim Tatum writes:
 > > > But why does it matter? Why limit the users? Why not put in the table.
 > > > It
 > > > costs nothing. Just put in what the model and data tell us to. It is
 > > > my opinion that a large percentage of 10GB style links are going to be
 > > > very short, less than 10m. If you look at the way many fiber ports
 > > > are being used today, many are in the 10m range. Also, since copper
 > > > cables are going to be EXTREMELY challenged to go that distance at
 > > > 10GB, why not let the market choose the lowest cost solution using
 > > > 850nm VCSELS and 62.5um fiber?
 > > >
 > > > FWIW, I agree that 10G across CAT-6 or other twisted pair would be very
 > > > difficult. However 10G across coaxial cable is fairly easy. It can be

> > done with 0.1" diameter coaxial cable using simple NRZ data encoding. A
> > simple FIR pre-equalizer can double this distance. Without a doubt
> > copper would be the cheapest solution for links under 10M. I would
> > estimate a mature chipset price of about \$50 per end and \$15 for the
> > cable.
> >
> > This performance was demonstrated in 1998 using a 25GHz bipolar chipset.
> > See: Walker, R. C., K. Hsieh, T. A. Knotts and C. Yen, "A 10Gb/s
> > Si-Bipolar TX/RX Chipset for Computer Data Transmission" , ISSCC Digest
> > of Technical Papers 41(February 1998), 302,303,450.
> >
> > A Copper PHY was voted down by the committee because it was thought that
> > there was no market for this type of low-cost short distance link.
> >
> > kind regards,
> > --
> > Rick Walker

- **References:**

- [RE: 850 nm solutions](#)
 - *From:* THALER,PAT (A-Roseville,ex1)
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