

**Notes of 2011-12-14 meeting between Dave Walden and Gary Robinson**  
(notes taken by Dave and then edited by Gary)

Gary and I met on December 14, 2011, in his apartment on India Row in Boston. Many of the following questions are follow-ups to Gary's notes on the paper by Sirbu and Hughes.

Q1. What was Gary's background prior to DEC?

Gary came out of Bell Labs where he did error control work for modems. Then he joined Honeywell working with magnetic tape systems. Honeywell bought GE's computer business. Thus, they had to deal with lots of different tape systems around the (internal) Honeywell world. Then needed a standard digital interface from a controller to a tape drive. Next Gary was with Inforex, where he was asked to go to a February meeting in Florida, so of course he was willing to attend. This turned out to be the first meeting for the X3T9.2 standards (minicomputer interfaces), X3T9, the parent committee was bogged down with the IBM 360/370 data channel interface. Gary worked on a tape drive interface, i.e., X3T9.2. This didn't go anywhere because tape drives (and their interfaces) were replaced with disk drives. When Gary left Inforex, he went to Datatrol, but he continued attending the X3T9 and X3T9.2 meetings. He was then looking for a new job and was offered a job in DEC's PDP-8 group. But he heard about another job in DEC's standards group and took that job instead.

Q2. Was the DIX group already going in some way when Gary got to DEC?

The background is that Xerox had a contract with Intel, and DEC had contracts with National Semiconductor and AMC. Before he got to DEC, there were communications among them, but no "DIX" group. Dave Rogers at DEC and Dave Lidell at Xerox wanted a LAN standard.

Gary arrived at DEC in March 1980. DEC had a standards group, and Gary joined that group. A year or so later he became leader of the group.

There had been a meeting in San Francisco in February where Marius Graube and others decided to apply for a PAR. This was approved and the first P802 meeting was held in May 1980 in Gaithersburg. Pat White of DEC asked Gary to attend that meeting. There were lots of people at that meeting but only a couple of people had standards experience: Gary, and Dave Carlson. Gary knew the X3 (now INCITS) standards.

Because he knew standards, Gary was then asked to push the CSMA/CD standard (i.e., a standard for Ethernet products). Robert Printis at Xerox and Paul Arst at Intel were his counter parts in what then became known as the DIX group. (Gary didn't know why National Semiconductor and AMC were not part of DIX but did attend P802.) Since DEC was the only company of the 3 that had a Standards group and experience, Gary was asked to lead.

Q3. Was there already a close connection between the DIX group and the IEEE P802 group?

Not close. Gary would have taken the standard they were trying to develop to T9 which had a good standards process. But Marius Graube was already pushing IEEE P802. Gary and his team thought that Marius was pushing this as a way to get Ethernet open to the public because at that point Ethernet was still company confidential. But the DIX group had already made the decision to open up about Ethernet, so ultimately there was no pressure between Graube to get Ethernet open and DIX trying to keep it closed.

The move to bring CSMA/CD into the open forced IBM (i.e., Dan Sze) to contribute its Token Ring because it meant that they then also had to bring Token Ring forward, and Token Ring (out of IBM's Zurich Laboratory) was not yet ready to go public, and no decision had been made to make it public. (Other names Gary mentioned were Bob Grow and Bob Love. Also Jim Carlo at TI.) Robert Donnan replaced Dan Sze as head of Token Ring.

Q4. Tell me what you know about IEEE standards before P802.

Only MSC existed, with which Gary had been involved. Gary also mentioned Future Bus, Paul Borell being interested in DEC's backplane bus, Paul being in London, and Gary later going to work for Paul at SUN. He also mentioned Clyde Camp. At SUN Gary met Steve Diamond. Steve was in software standards, and Gary was involved with computer standards.

Q5. Tell me about your approach to getting a standard created, etc.

He did everything he could to level the playing field: (a) creation of the .1, .2, .3, .4 and .5 dots allowed CSMA/CD and Token Ring to co-exist; (b) he helped choose the chair of .3 and of 802 itself; (c) he brought standards processes and procedures to bear; (d) he brought the X3 (INCITS) procedures to P802

Q6. How did you get involved with the Computer Society Standards Activity Board?

Gary had broad experience: MSC, 802, T9.2, and T9.3. He was very involved with NBS/NIST on T9, X3 (INCITS), etc. There he met Helen Wood. She became president of the computer Society, and she asked for his involvement in the SAB.

Q7. Was the Blue Book already in existence at the time you joined the DIX effort?

Blue Book 1 existed before Gary became involved. But it was unsuitable to become a standard. It had too many problems to overcome [I can't remember the examples of such problems that Gary gave]. It did not comply with the ISO 7 layer model, it was not complete, for instance it said there was a minimum frame size but did not define it (Later Don Loughry of HP forced that to closure), among others.

Originally Xerox had a 2-3 megabit Ethernet using a LAM tap. DEC wanted 10 megabits. Richard Siefert (and Jesse Lipcon?) at DEC implemented a 10 megabit board and spec. Ron Crane, a great guy, did 100 megabits at 3COM. The Bluebooks designs included work by all DIX members.

Q8. What was the involvement with ECMA?

Token bus didn't bother them much, but IBM with its focus on Token Ring would try to hold them up from doing a CSMA/CD standard. At DEC, Gary worked with the Europeans on standards, and they agreed to bring the Blue Book to ECMA (i.e., in addition to the IEEE P802 committee). [Jan Sherpenheisen was from DEC and Treasurer of ECMA at the time. So ECMA moved along and published parts of the Blue Book. Showing such activity for a year or two got the IEEE standards effort on board again.

At the Phoenix meeting, it was agreed that there would be three access methods. Metcalfe was present. Bob Donnan was pushing Token Ring, and Gary et al were pushing CSMA/CD. Mike Krikow was the Token Bus supporter. They agreed not to vote against each other. Later, sometimes people pushing CSMA/CD had to be reminded to stay calm and not disagree with flaws they saw in Token Ring.

Gary routinely talked with his wife, Natalie Robinson, a clinical social worker, about the standards activities. She was the one that recommended reframing which resulted in the dot categories.

The intent of forming the dot committees was to allow each access method to vote on its own access method and not block its sister access method.

Lots of personal contact is useful in standards work. Gary and his wife knew Prentis and his wife well.

Q9. Other

Gary mentioned RevCom happening on his first day. The first meeting of RevCom included P754, Floating Point. DEC and IBM were against this (another story), so Gary voted NO, but lost the vote and it became a famous IEEE Standard.

Geoff Thompson was 802.3 chair for a long time, and someone should talk to him.

Robert Prentis, of Xerox at that time is also very important.

In the chart of categories of 802, 802.3 should be CSMA/CD, not Ethernet. The former is the standard name. The latter is an unprotected product name which was not introduced into the standard until long after 802.3 was a standard (by Geoff).