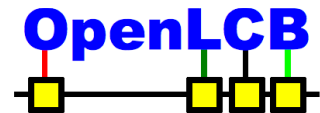# NMRAnet® / OpenLCB Project

Report to NMRA Board

Winter Meeting
Atlanta, Georgia
Feb 8-10 2013

What is It?

NMRAnet is a new open accessory / throttle bus designed by modellers for modellers to work along side DCC. Its goals are to be simple and easy for small layouts, but also extensible for larger, more comprehensive or sophisticated layouts, including the specific challenges of modular club layouts. It also provides a compatibility path for new products to be developed to that will lead to a time when we can share/mix-n-match best-of-breed equipment on layouts much like we can with DCC locos and Accessories.

It is being developed in public by the OpenLCB Development team, and being reviewed and vetted by the NMRAnet group.

Who are We?

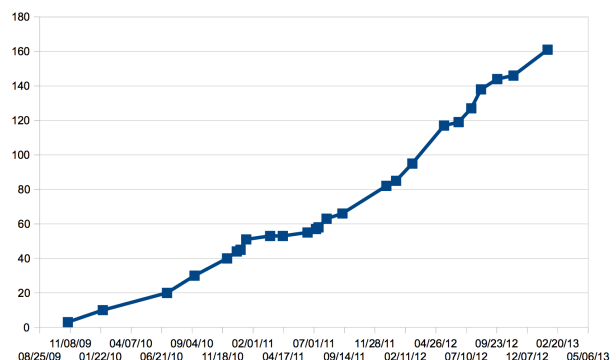There are two groups developing and ratifying the NMRAnet Standards:
- The OpenLCB Development Group, which uses an egroup and Sourceforge to develop them, and
- The NMRAnet Group, which uses an egroup and the NMRAnet webpages to publicize, review and vet the proposed NMRAnet Standards documents.

Both groups continue to have a vibrant and active membership. Membership in the OpenLCB egroup continues rise, above 160 members now, and there are 50-250 posts a month, with topics ranging from the practical to the sublime. The NMRAnet egroup has 52 members.

OpenLCB Yahoo Group Membership

NMRAnet® Trademarked

With the help of some early adopters, the NMRAnet was successfully trademarked.

NMRAnet Presentations

Activities over the last year include several demonstrations at train shows, including the NMRA and Springfield, and smaller meetings.

- Alex Shepherd presented at the anAMRA (American Model Railroaders Association) in Hamilton NZ in October 2012.

- Don Goodman-Wilson presented two clinics at the 2012 NMRA National Convention in Grand Rapids:
  An Introduction to OpenLCB / NMRAnet S-9.7.
  OpenLCB / NMRAnet for Developers and DIY.

- Ken Cameron has presented NMRAnet / OpenLCB at:
  2013 Springfield Show twice: Introducing NMRAnet / OpenLCB. 50 and 35.
  Fall 2012 NMRA NER convention, Syracuse: JMRI overview. 50 people.

Standards and Documentation

The group has made good progress on the protocols, and their documentation as Standards and Technical Notes. Progress is communicated on the web by way of a Dashboard at http://www.openlcb.org/trunk/documents/OpenLCBDashboard.html .

The OpenLCB group has developed and adopted a package of documents which it has passed to the NMRAnet egroup for public discussion and review.

After changes have been made through cooperation of the two groups, the package of Standars will be presented to the NMRA Board for consideration of adoption.

Previously Adopted Standards:

1. S-9.7.1 NMRAnet® Physical Layer
2. TN-9.7.1 NMRAnet® Physical Layer Technical Note

Standards submitted for review by the NMRAnet group:

1. GenCommonInfoTN – General Information Technical Note
2. GenGlossaryTN – General Glossary Technical Note
3. GenUniqueIdS – Unique Node Identifiers Standard
4. GenUniqueIdTN – Unique Node Identifiers Technical Note
5. CanFrameTransferS/TN – CAN Frame Standard and Technical Note
6. GenEventTransportS/TN – General Event Transport Standard and TN
7. GenDatagramTransportS/TN – General Datagram Transport Standard and TN

OpenLCB / NMRAnet Development Kit

The kit was funded, designed, assembled and distributed to 20 model railroaders around the world, including New Zealand, Australia, Canada, USA, Spain, Holland, the UK and Denmark.

Use highlights:

- Don Goodman-Wilson, Ken Cameron, David Harris and others demonstrated the DevKit, and use of its nodes for layout control and traction.

- Ken Cameron demonstrated the DevKit at the Springfield Show this January.

- The UK: ... to use the dev kit components in an extension I'm currently building to the railway and ... using them for a combination of the following ...report block occupancy, control point motors, control led signals, report control panel switch changes, ...integrate support into my current software to allow a seamless mix and match of components.

- ... the philosophy of my little business is to offer to spanish market high quality products no one more offers in Spain, I'm sure there is a big job to do introducing openlcb in Spain.

- ... creating touch user interfaces for control of model railroads. The device I built, that I briefly described in my application to the OPENLCB Yahoo group, had a small (3.4") color LCD with touch as the means of controlling turnouts with servos... that a network connection to the servos (and what ever else needed, or wanted to be controlled) would reduce the rats nest of wires that a large layout would require.

Continuing Development

Various members continue to develop reference firmware, software and Apps for Windows, OSX, iOS, and Androids platforms, in C, C++, Objective C, Java, Pascal, and assembler.

What needs to be done

The OpenLCB will continue to develop and document Standards and these will be passed through the process outlined above.

The NMRA needs to help this process by continued promotion, including articles, adverts and clinics.

The NMRAnet group also has to develop a testing and certification process by which manufacturers can earn the right to use teh NMRAnet trademark.