



Introduction to LonWorks LNS Network and HMI Software

Value Plus Service

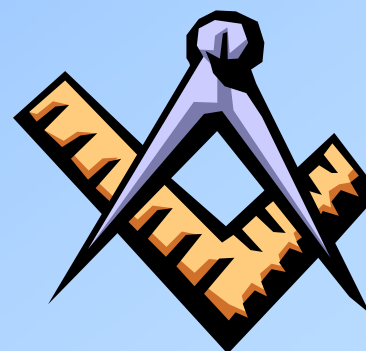
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Goal & Objectives

- Understand the functions of a Building Control System
- Understand what is different about Open Systems (Open Protocol)





Today's Situation

- Proprietary systems can use a single product
- Open systems promotes multiple tool-sets

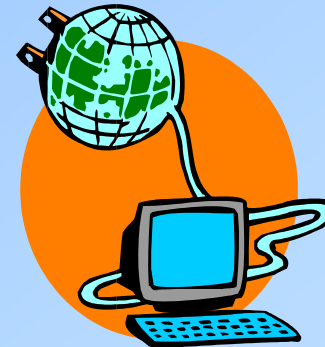


- Users are faced with more complex technologies
- The user's needs are the same as ever;
Get the job done, we are all too busy!



How Did We Get Here?

- Proprietary vendors had to provide everything
- They liked the hold it had over their customers
- Users now want open systems and integrators to help them achieve their requirements
- Technologies such as LON are now with us





So, where do we go from here?

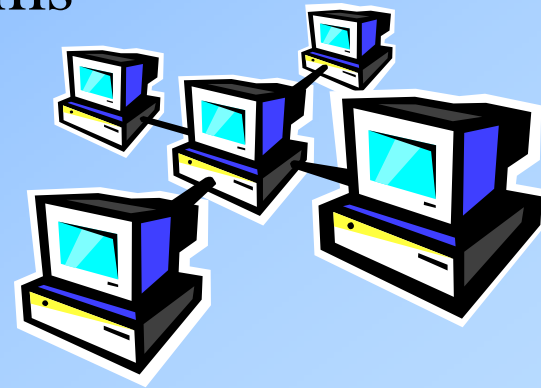
- Go back to vendor specific host products for LON (yuck)
- Accept that we now live in a world of multi tool host & lets move on...





System Connectivity Issues

- Legacy systems represent a large investment; connectivity is required
- Connect & manage different systems (HVAC, Security, Lighting Control, Fire Alarm...)
- Installation & maintenance must be 'clean' and reliable





Configuration / Programming Software

- Programs control sequences
- Supports initial install & system maintenance
- Uses graphical metaphor for visual understanding of a given sequence





Operator Interface

- AKA HMI (Human Machine Interface) and GUI (Graphical User Interface)
- The software provides a “mimic panel” feel for ease of operator use
- It’s the operator interface for non-technical users
 - **WYSIWYNTS** (What You See Is What You Need To See)
 - Operate system by **WPK** (Without Prior Knowledge)
- Use of open visualization technologies (browsers, etc.)





LonWorks Technology

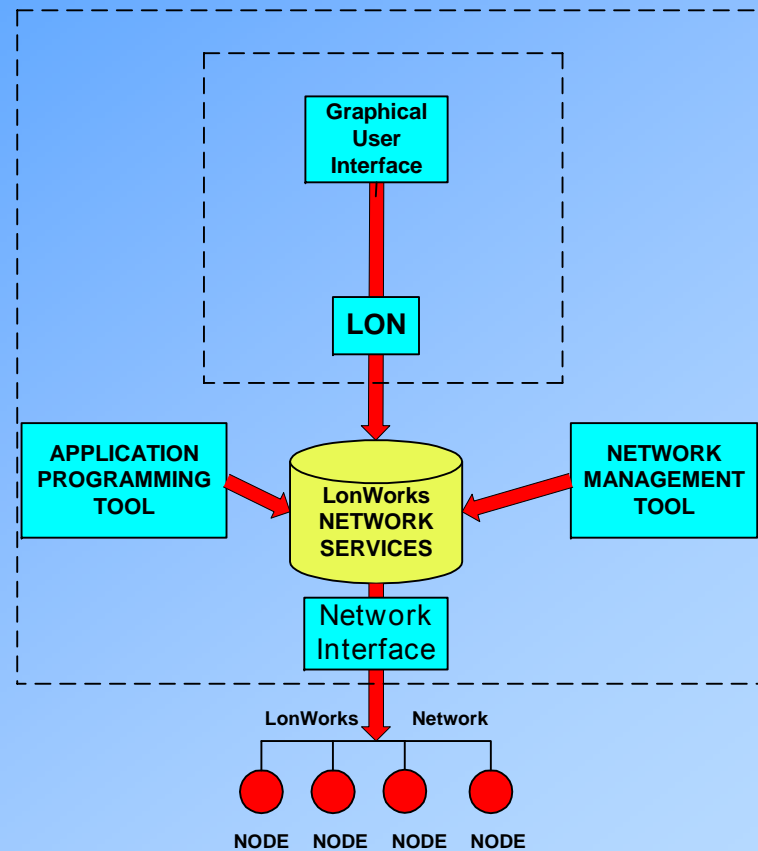


Software Tools

- Functional System Areas:
 - System Configuration - Network Management
 - Configuration and Application Programming
 - Operator Interface (HMI, GUI)



LNS Architecture



Network Management



- The network management tool describes the logical structure of the LonWorks network (Subnet, Channels, Nodes)
- It creates “network variable binding” that transfer information from node to node in an LNS network



LonWorks Network Services

- LNS is an open database system created by Echelon Corporation
- LNS requires vendors to pay a small royalty fee to Echelon to support the software development.



- LonMark Interoperability Association
 - www.lonmark.org
- LonMaker for Windows *by Echelon Corporation*
 - www.echelon.com