

# The Strong Keep Getting Stronger

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Users familiar with LXI know how easy it is to configure test systems thanks to tried-and-true Ethernet tools that simplify instrument discovery and setup. Test and measurement systems integrators finally are able to access powerful new capabilities through LXI.



LXI was founded on the principle that Ethernet can simplify and enhance system integration tasks. That mission is no different today than when the consortium was formed four years ago. We remain committed to developing an easy transition from existing systems architectures by supporting hybrid systems and seeking new ways to enhance the power of LXI.

Application examples from many integrators and member companies demonstrate how LXI has opened doors and simplified tasks that previously had been difficult or impossible. There is no doubt that LXI is changing the way systems are built.

But we continue to enhance LXI. Two exciting new capabilities under development are multicast Domain Name System (mDNS) and an over-the-wire protocol.

The LXI Consortium has adopted mDNS, a technique that *automagically* assigns IP addresses to configure a network without requiring any active user action or special servers. This allows users with little or no networking expertise to connect instruments, computers, and networked peripherals together and expect them to work automatically—just like in the office environment.

As an alternative to the familiar VXI-11, mDNS automatically performs DHCP and DNS functions in the absence of a conventional DNS server, assigning network addresses, identifying computer and network elements by name, and

identifying where to get services. The result is faster, simpler discovery and setup. Of course, the VXI-11 protocol remains intact for users who do not want to use mDNS or have legacy instruments in a hybrid system.

In addition to adding mDNS, the LXI Consortium recently kicked off an over-the-wire protocol effort to simplify instrument-to-instrument and instrument-to-controller communications. The goal is to make it easier for network elements to talk to one another without requiring specialized drivers, eliminating today's *driver hell* where different drivers must be developed for every software environment.

For high-performance and speed-sensitive applications, the over-the-wire protocol simplifies peer-to-peer communications, making it easier to bypass controller-to-instrument communications bottlenecks with instrument subsystems. We don't expect every system will need this capability. But it offers new tools for time-sensitive applications such as scan list execution, emergency shutdown sequences, alarm checking, or other scenarios where instruments must work together and controller prioritization latencies might slow execution times. We also have seen applications where one instrument controls another to automatically perform periodic *in situ* calibration tasks.

The LXI specification continues to get stronger and simpler to use. Integrators report improvements in system performance and the ability to do things that were virtually impossible just a few years ago. LXI clearly is delivering on its promise.

As we expand and enhance the LXI specification and LXI application knowledge, we encourage participation from integrators and instrument vendors. If you would like to participate or you would like to know more about LXI, application examples, or upcoming meetings, please visit us at [www.lxistandard.org](http://www.lxistandard.org).