

Standard

Frequently Asked Questions

1. What are the key end-user benefits of the ISA100.11a standard?

- a. Interoperability with a wide-range of communications protocols, including HART, Profibus, Foundation Fieldbus and Device Net
- b. Scalability by supporting a high number of field devices with a single network gateway
- c. Short latency, or fast response time of 100 ms or less from the time data is generated by a field device, to the time the data is viewed through a client system.
- d. Lower maintenance due to superior battery life. With ISA100.11a, field devices are not forced to route data as part of a meshing scheme found in other wireless protocols.

2. What is the status of the standards?

The ISA100 family of standards is an end user-driven, complementary family of standards that address important market requirements.

The ISA100.11a industrial wireless standard was approved in September 2009 by the ISA100 Industrial Wireless Standards Committee. Twenty-three of twenty-four end-users on the voting roster voted to approve the standard.

Like any standard, the ISA100.11a standard will continue to extend its scope and capabilities over time. The ISA100 committee is in the process of discussing the future steps for ISA100.11a.

3. When will ISA100.11a standard compliant products be commercially available?

In response to strong end user demand, many vendors are currently developing products that follow the standard with the first certified products expected in 2010.

Fully tested and approved ISA100.11a products from multiple vendors have already been deployed successfully by the ISA Wireless Compliance Institute (WCI) at an end user test site in Texas. Please visit www.isa100wci.org to view a video of the user test.

4. Is the ISA100.11a standard interoperable, even though it is so flexible?

Yes. The ISA100.11a standard is a robust and flexible standard. However, every ISA100.11a registered device must conform to mandatory baseline behavior in order to comply with the standard. This mandatory behavior is defined in the standard to ensure interoperability among multiple vendors' devices.

5. How easy will the ISA100.11a standard be to use? Are there guidelines on how to use it?

The ISA100.11a standard is very powerful in capabilities, and was strategically designed to allow vendors to develop ease of use capabilities for its deployment and use. ISA100 has a subcommittee responsible for drafting guideline documents.

6. Can the ISA100.11a standard easily integrate into WiFi or Ethernet networks?

Yes. The ISA100.11a has designed in a secure end to end transport function using 6LowPan, an IETF standard. This enables a universal backbone routing function for the sensor networks deployed in a facility. Vendors can now build products that can easily integrate securely to any IP network, wired or wireless.

7. Does the ISA100.11a standard support legacy protocols like HART, Profibus, Foundation Fieldbus, DeviceNet, etc.?

Yes. The ISA100.11a has a designed in universal application interface layer that enables communication to any host system protocol. Vendors can build products to support various protocols while end-users only need to deploy one wireless sensor network.

8. Does the ISA100.11a standard use Internet Protocol (IP)? Is that a performance or security concern for industrial installations?

The ISA100.11a standard utilizes the internet protocol at a high layer above the lower layer wireless protocols. This design completely insulates all wireless information in the sensor network from being externally viewed or unsecured in the open IP world. This way, end users get the best of both worlds, a high performance transport mechanism commercially available from many vendors and the confidentiality of information flowing across that network.

9. Will products using the ISA100.11a standard be able to co-exist with other RF networks?

Yes, the ISA100.11a standard has designed in many features to help with co-existence with other wireless networks. Additionally, ISA100.11a is built upon the IEEE 802.15.4-2006 standard which has been proven to coexist in very congested environments.

10. What kind of update intervals can I expect from ISA100.11a standard based products?

The ISA100.11a standard was designed to provide latency performance of 100ms or faster. Based on current market requirements, most systems initially deployed will be designed to provide “wire-like” process automation performance providing 1 second updates as a standard part of their product offerings.

11. Will the ISA100.11a standard support a device mesh?

Yes, the ISA100.11a standard was designed to offer mesh functionality at the device or sensor level in networks ranging from very small to very large. This is an option, not a requirement of the standard. As an option, this gives end-users greater flexibility in configuring a wireless network.

12. Does the ISA100.11a standard have profiles?

Yes, the ISA100.11a standard was designed with role profiles that define mandatory behaviors for all device types. These mandatory behaviors must be met by every ISA100.11a device in order to be compliant to the standard.

13. There have been discussions regarding the convergence of the ISA100.11a and WirelessHART standards. What is the status of that effort?

The ISA100 Wireless Compliance Institute fully supports the approved ISA100.11a standard. The role of WCI is to provide conformance programs and supporting services for approved standards. The ISA Industrial Wireless Standards Committee has established the ISA100.12 working group to study convergence. We recommend contacting committee co-chairmen Wayne Manges with ORNL or Patrick Schweitzer with ExxonMobil Research & Engineering for progress updates on that initiative.

14. If I am a vendor that is interested in developing products in accordance with the ISA100.11a standard, when will development tools be available?

Nivis, a network technology company based in Atlanta, GA is the first supplier to distribute an ISA100.11a Integration kit. This kit facilitates the integration of ISA100.11a wireless communication technology with your products and is available now.

15. Please explain the process for certifying and registering products as compliant with the ISA100.11a standard?

The ISA100 Wireless Compliance Institute (WCI) accredits test labs to conduct conformance testing, using accredited test tools developed by the WCI. Suppliers will submit products directly to these labs with full confidentiality for conformance testing.

When a product is determined to meet ISA100.11a conformance criteria, it will be registered and published as a certified product on the WCI website, www.isa100wci.org.

Most suppliers also purchase the **WCI ISA100 Wireless Test Kit (WTK)**. This test platform is identical to that used by the WCI accredited test labs to certify conformance. Suppliers typically include the WTK in their own product validation testing prior to submitting products to a WCI-accredited test facilities for certification.

16. When will WCI be accepting products to be certified and registered as compliant with the ISA100.11a standard?

WCI member organizations and early adopters are already working with early versions of the integration kits and WTK. Commercially-available test kits will be available during the first half of 2010. WCI accredited test labs will be certified and able to perform device conformance tests in June 2010.