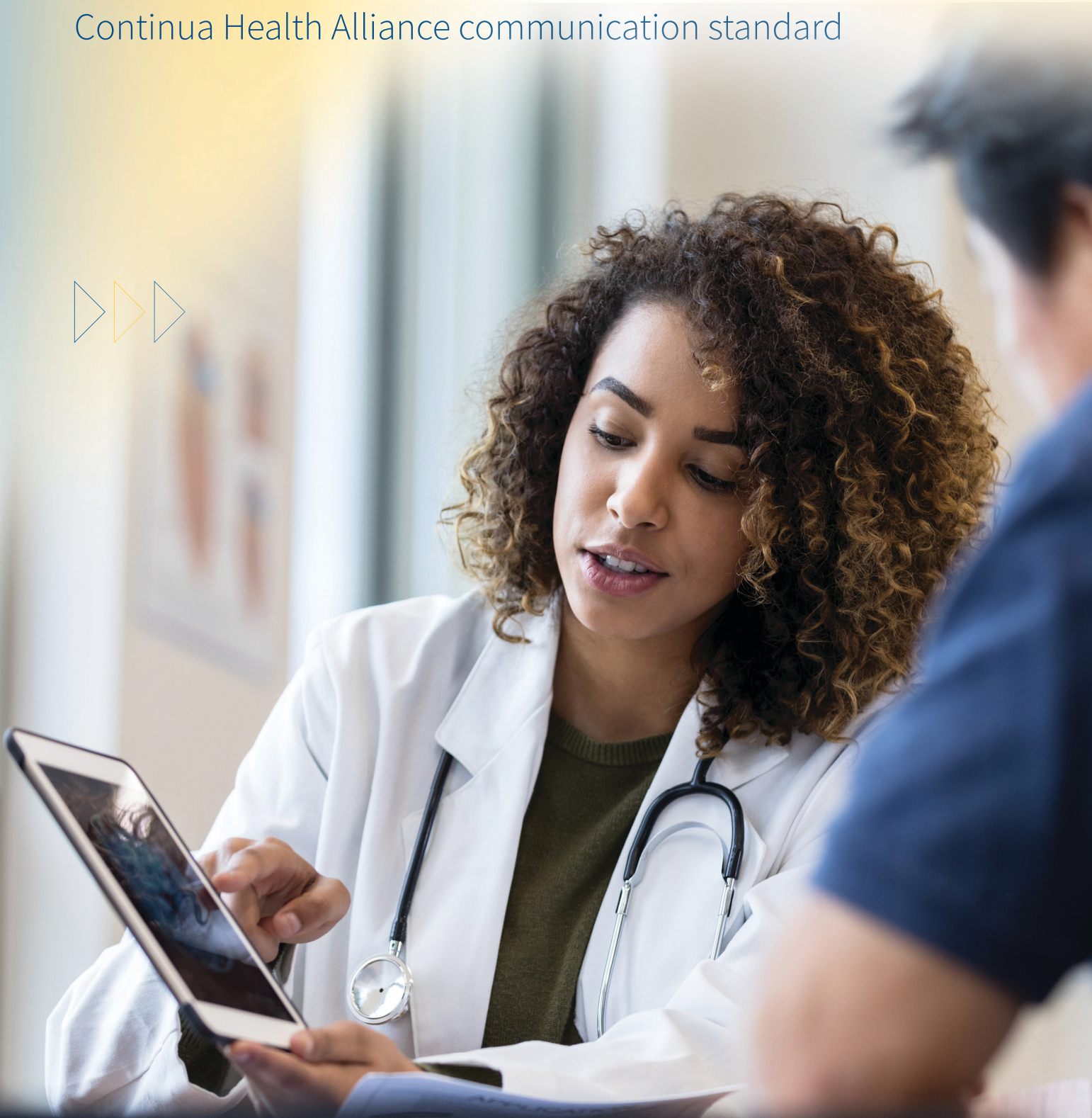


Brochure



EtherMind IEEE - 11073 Stack

Build highly interoperable products which supports the
Continua Health Alliance communication standard



Introduction

The Continua Health Alliance (CHA) is an international industry group of healthcare and technology companies working towards creating an interoperable healthcare system. CHA defines guidelines for various systems/devices to communicate over different interfaces such as the Personal Area Network (PAN), LAN and WAN, by recommending interoperable standards and specifications. LTIMindtree has a **complete implementation of the IEEE 11073 standards** and supports all defined device specializations for both the **host and the device**.

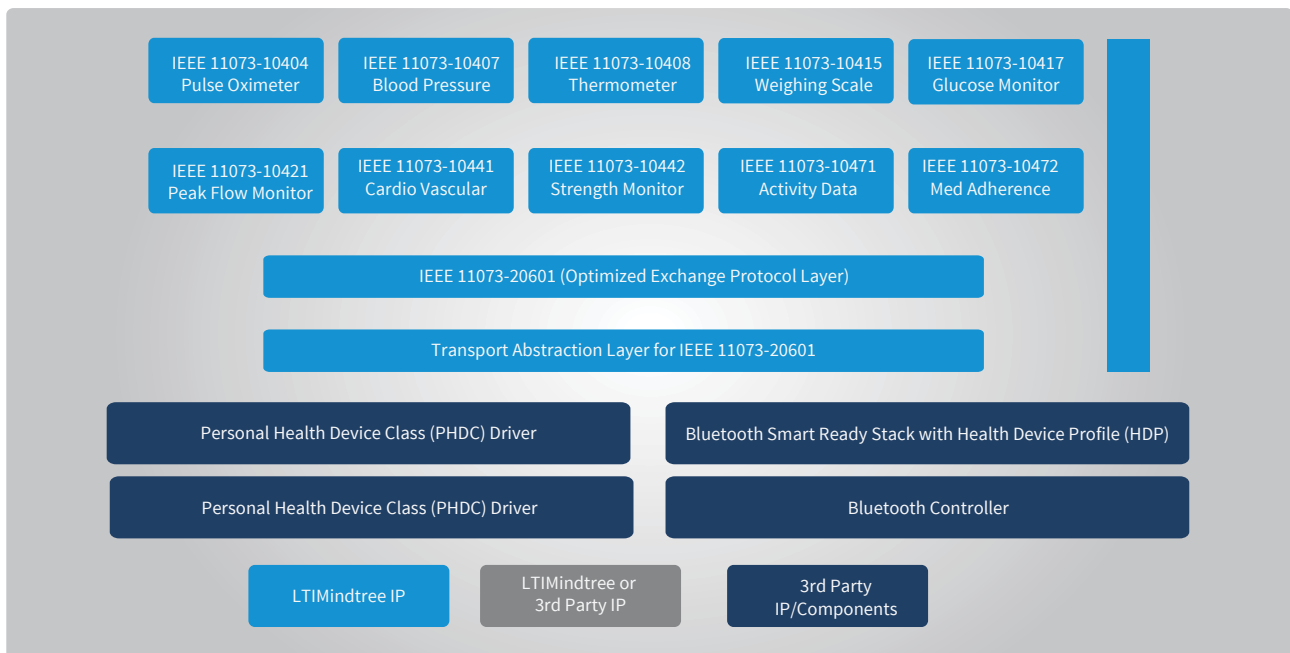
Bluetooth and USB are defined as the transport layer for PAN and Zigbee is defined as transport for LAN interface. For the PAN and LAN interfaces, CHA defines use of IEEE 11073 personal health device communication standards for exchange of device-specific information between devices/Agents such as weight scales, thermometers, blood pressure monitors, glucose meters and hosts/Managers such as laptops, smartphones, PCs and tablets. Each of these standards is called a device specialization in IEEE terms.

LTIMindtree's Ethermind IEEE-11073 Solution Offering

The solution comprises of IEEE-11073-20601 (Optimized Exchange Protocol), comprehensive suite of IEEE-11073 Manager and Agent roles for a host of device specializations (IEEE-11073-104xx) as adopted by the Continua Design Guideline. Our implementation supports Agent (Sensor device) & Manager (Collector device) roles for all device specializations over Bluetooth Health Device Profile (HDP) & USB Personal Health Device Class (PHDC) transport.

EtherMind IEEE 11073 Manager is an implementation of Manager roles for various device specializations including blood glucose meters and pulse oximeters. Targeted at devices such as smartphones, PCs, laptops and tablets, the IEEE-11073 manager provides interfaces to plug into OEM-specific GUI/ MMI.

EtherMind IEEE 11073 Agent is an offering which supports a host of device specializations as per the Continua Design Guideline 2014 specifications. Devices include blood pressure monitors, weighing scales, cardiovascular fitness and activity monitors, thermometers, glucose meters, pulse oximeters, strength fitness equipment, and independent living activity, peak flow and adherence monitors. The Agent implementations are specially designed to fit into resource-constrained systems like 8-bit micros with minimal RAM, Flash memory and MIPS.



Reduced technical risk

- Certified and compliant to Continua Health Alliance Design Guideline
- Integrated in multiple products by OEMs
- Comprehensive offering supporting array of managers and agents as mentioned in Continua Guideline

Faster time-to-market

- Complete implementation in ANSI C to enable easy portability across various.

microcontrollers

- Transport abstraction to enable use of IEEE layers on either Bluetooth or USB transports.
- OS abstraction layer to enable easy porting cross OS platforms.

Cost optimization

- Extremely low memory footprint

Key Deliverables

- IEEE stack written in ANSI C consisting of: IEEE 11073-20601 (Optimized exchange layer for agent and manager)
- Device specialization(s) requested by customer.
- Source code of transport abstraction layer and operating system abstraction layer
- Source code of sample applications to illustrate the use of APIs for IEEE Stack

Documentation:

- API documents for IEEE layers optimized exchange layer and device specializations.
- API documents for the transport abstraction layer
- API documents for the operating system abstraction layer
- User manual describing how to build and run the sample application

Continua Certification

LTIMindtree's EtherMind IEEE- 11073 stack is an optimized, abstracted, and layered solution which is Continua Health Alliance certified (Search for Mindtree) supporting multiple platforms to suit the needs of OEMs in medical, health, and fitness industry segments as well as PC and mobile phone manufacturers.

With CHA's defined interoperable system, one vendor's device will be able to seamlessly communicate with other vendor's host, and all these devices can easily become part of a larger healthcare system.

LTIMindtree's CHA- certified EtherMind IEEE-11073 Stack can be used in both the small sensor devices and relatively larger collector/monitoring equipment hosts such as laptops, smartphones, tablets and PCs, interacting with each other using wired or wireless PAN or LAN.

LTIMindtree Leadership

LTIMindtree has provided inputs to several IEEE specifications and CHA during the development, verification and qualification process of its IEEE-11073 Stack. LTIMindtree's implementation will also be used as a reference system by multiple CHA certification houses to ensure interoperability of the new systems under certification. Leveraging our experience and expertise in Bluetooth SIG and CHA certification, we offer consultancy services and assist manufacturers with qualification in various forums. We also have the expertise to realize new specifications; we help manufacturers realize new use cases. LTIMindtree's lead engineers have been on the Bluetooth Architecture Review Board (as Councilors) and on the Medical Working Group (Co-chair).

LTIMindtree's customers of the IEEE-11073 IP include Roche Diagnostics USA and Germany. Roche's medical products are mass produced with LTIMindtree's IEEE-11073 IP over both the USB and the Bluetooth transports. QNX Software Systems, Canada has integrated the LTIMindtree IEEE 11073 IP and Bluetooth IP with its popular QNX Operating System.

Bluetooth Leadership Credentials

LTIMindtree is a pioneer in Bluetooth IP licensing and providing engineering services for semiconductor companies and OEMs.

100+
Design
wins

100mn+
Products shipped
with IP

50+
Unplug Fests
attended.

Co-creator of
4.X & 5.X

Get in Touch

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About LTIMindtree

LTIMindtree is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 82,000+ talented and entrepreneurial professionals across more than 30 countries, LTIMindtree — a Larsen & Toubro Group company — combines the industry-acclaimed strengths of erstwhile Larsen and Toubro Infotech and Mindtree in solving the most complex business challenges and delivering transformation at scale. For more information, please visit <https://www.ltimindtree.com/>