

IEEE Recommended Practice for Common Framework of Location Services for Healthcare

IEEE Engineering in Medicine and Biology Society

Developed by the
Standards Committee

IEEE Std 1847™-2019

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Standards Committee
of the
IEEE Engineering in Medicine and Biology Society

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IEEE SA Standards Board

Abstract: A common framework of Location Services for Healthcare (LS-H) is contained in this recommended practice. The framework includes LS-H conceptual information model and LS-H common terminology.

Keywords: conceptual model, healthcare, IEEE 1847™, Location Services

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Introduction

This introduction is not part of IEEE Std 1847-2019, IEEE Recommended Practice for Common Framework of Location Services for Healthcare.

This recommended practice contains a common framework of location services for healthcare (LS-H). LS-H provides subject location data and other relevant subject data to information systems on a healthcare enterprise network. Other information systems provide identifying information and/or consume this data. This framework is intended to:

- a) Improve interoperability between LS-H and other systems
- b) Help to avoid costly redundancy of converging LS-H products
- c) Maximize reuse and utility of the functionality of an overall LS-H system
- d) Improve consumer confidence in LS-H systems as a standardized offering enabling greater adoption to occur

The framework includes 1) Conceptual Information Model and 2) terminology. This framework will serve as a foundation for future LS-H standards.

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1. Overview

1.1 Scope

This recommended practice contains a common framework of IEEE SA location services for healthcare (LS-H). LS-H includes hardware and software that provides location information for clinical and non-clinical healthcare use cases. The framework includes 1) common terminology and 2) a conceptual information model.

1.2 Purpose

This common framework is a foundation for future LS-H standards and recommended practices intended to improve healthcare efficiency and value. Healthcare provider organizations desire these technologies to automatically track and trace items and people for a large variety of use cases such as asset tracking, surgical workflow, and patient elopement. These technologies have many potential benefits such as inventory optimization, reducing patient wait times, and increasing patient and staff safety.

Prior to this framework, industry lacked common terminology and a model to frame interoperability development. Implementers experienced challenges of non-standardized solutions such as custom interfaces, multiple redundant infrastructures, long implementations, and difficult sustainment. LS-H standards and recommended practices will increase interoperability, reduce redundancy, increase adoption, increase innovation, and improve consumer confidence.

1.3 Word usage

The word *shall* indicates mandatory requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted (*shall* equals *is required to*).^{1, 2}

The word *should* indicates that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required (*should* equals *is recommended that*).

¹ The use of the word *must* is deprecated and cannot be used when stating mandatory requirements; *must* is used only to describe unavoidable situations.

² The use of *will* is deprecated and cannot be used when stating mandatory requirements; *will* is only used in statements of fact.