

## Standards and Systems Interoperability: Definitions

**Standardization** is the process of agreeing on standards, which represent the common language that allows the exchange of data between disparate data systems. The goals of standardization are to achieve comparability, compatibility, and interoperability between independent systems, to ensure compatibility of data for comparative statistical purposes, and to reduce duplication of effort and redundancies.

**Standard** is a definition, set of rules or guidelines, format, or document that establishes uniform technical specifications, criteria, methods, processes, or practices that have been approved by a recognized standard development organization, or have been accepted by the industry as *de facto* standards, or *de jure* standards, i.e., formal legal requirements. *De facto* standards have become standards because a large number of organizations have agreed to use them. They have not been formally approved as standards, but they are standards nonetheless.

**Standards Development Organizations (SDOs)** develop and maintain standards. In the US, SDOs are accredited by the American National Standards Institute (ANSI).

**Standards are Technical Documents**, specifications, integration profiles, content profiles, implementation guides, technical reports, and other.

Standards Categories	Examples
Data Standards	Vocabularies and terminologies
Information Content Standards	Reference information models (RIMs), templates, datasets
Identifiers Standards	National Provider Identifier (NPI)
Information Exchange Standards	Message-based, structured document-based, e-mail-based standards, mHealth, IT standards
Privacy and Security Standards	Access control, consent directives, other
Health IT Safety Standards	Risks, safeguards, controls, workforce roles, other
Functional Standards	Procedures, work processes (workflow, dataflow), checklists, use cases
Business Standards	Guidelines, best practices

Source: Health Information Technology Standards Panel (HITSP), 2005. URL: <http://www.hitsp.org>

### Resources

Orlova A. *Health Information Technology Standards and Systems Interoperability Course. Lecture 2: HIT Standards and HIT Standardization*. Johns Hopkins School of Public Health (JHSPH) OpenCourseware. Johns Hopkins University. URL:

<http://ocw.jhsph.edu/index.cfm/go/viewCourse/course/InfStandards/coursePage/index/>

Orlova A. An Overview of Health IT Standards. JAHIMA. 2015. 86(3): 38-40. URL:

<http://bok.ahima.org/doc?oid=107579#.WYo2eVWGO00>

## Standards and Systems Interoperability: Definitions

**Interoperability.** AHIMA supports the definition of interoperability developed in 2007 by Health Level Seven (HL7), standards development organization (SDO), as follows:

**Interoperability** means the ability to <capture, manage\*>, communicate and exchange data accurately, effectively, securely, and consistently with different information technology systems, software applications, and networks in various settings, and exchange data such that clinical or operational purpose and meaning of the data are preserved and unaltered.

HL7. Coming to Terms: Scoping Interoperability for Healthcare. White Paper. 2007.

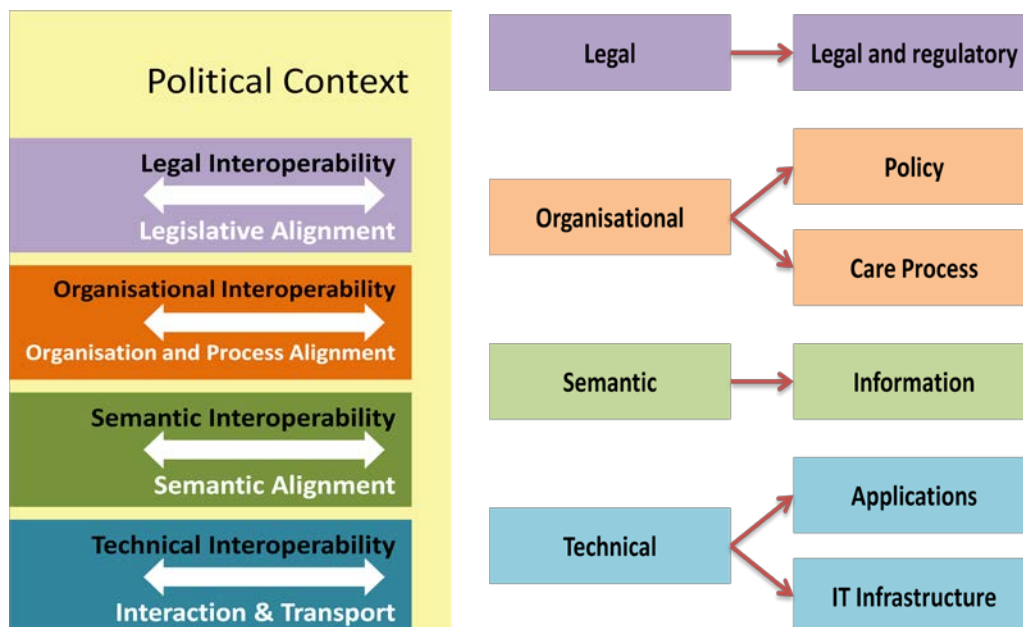
URL: <https://www.hln.com/assets/pdf/Coming-to-Terms-February-2007.pdf>

\*Added by AHIMA to the HL7 definition

HL7's approach to interoperability is based on the following three interoperability components:

1. **Semantic** interoperability—shared content
2. **Technical** interoperability—shared information exchange infrastructure
3. **Functional** interoperability (legal and organizational)—shared rules of information exchanges, i.e., business rules and information governance (“*the rules of the road*”).

### European Union (EU) Interoperability Framework



### Resources

eHealth Network (eHN). *Refined eHealth European Interoperability Framework*. 2015. URL: [http://ec.europa.eu/health/ehealth/docs/ev\\_20151123\\_co03\\_en.pdf](http://ec.europa.eu/health/ehealth/docs/ev_20151123_co03_en.pdf)

Orlova A. Achieving Health Information Systems Interoperability. JAHIMA. 2015. 86(6): 50-52. URL: <http://bok.ahima.org/doc?oid=107668#.WYo2SVWGO00>

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**Interoperability Standards** are special products of standards harmonization activities — a meta-standard (standard about standards), an assembly of standards, interoperability specifications, interoperability guidelines, reference standards portfolio, etc.— that define how individual standards have to work together to enable interoperability between information systems for a specific healthcare domain (care coordination, radiology, laboratory, pharmacy, data reporting, population health, etc.). Interoperability standards are harmonized and intergrated individual standards constrained to meet healthcare and business needs for sharing information between organizations and systems.

The term, **interoperability standards**, was introduced in 2005 by the Health Information Technology Standards Panel (HITSP, <http://www.hitsp.org>). During 2005-2010 HITSP developed various interoperability specifications (interoperability standards) for the US National Use Cases created by the American Health Information Community (AHIC). Today, interoperability standards - Reference Standards Portfolios (RSPs) - are developed by the International Organization for Standardization (ISO) Technical Committee 215 Health Informatics (<http://www.ahima.org/about/global?tabid=ISO>).

### Standards Categories by Interoperability Components

Standards Categories	Examples
<b>SEMANTIC INTEROPERABILITY</b>	
<b>Data Standards</b>	Vocabularies and terminologies
<b>Information Content Standards</b>	Reference information models (RIMs), templates, datasets
<b>Identifiers Standards</b>	National Provider Identifier (NPI)
<b>TECHNICAL INTEROPERABILITY</b>	
<b>Information Exchange Standards</b>	Message-based, structured document-based, e-mail-based standards, mHealth, IT standards
<b>Privacy and Security Standards</b>	Access control, consent directives, other
<b>Health IT Safety Standards</b>	Risks, safeguards, controls, workforce roles, other
<b>FUNCTIONAL INTEROPERABILITY</b>	
<b>Functional Standards</b>	Procedures, work processes (workflow, dataflow), checklists, use cases
<b>Business Standards</b>	Guidelines, best practices

**True interoperability cannot be achieved without ALL these standards to be harmonized to work together.**

#### Resources

Orlova A. The Standardization of Standards. JAHIMA. 2015. 86(5): 50-53. URL: <http://bok.ahima.org/doc?oid=107644#.WYo2YIWGO00>