More than location

What address standards tell us about addresses

We all use addresses to provide direction to a delivery point. In fact, the word "address" comes from the Latin *directus*, to direct. Postal systems for transporting written documents have been around since the invention of writing.

In these early systems, letters were hand delivered from source to destination. In Europe, street addresses were first assigned in the 18th century when urban expansion created a need to identify individual buildings.

An address can be considered the description of a location, not only for postal delivery, but for all kinds of distribution, ranging from physical services such as utilities, goods and emergency dispatch, to more abstract services such as credit applications, tax collection and land administration.

Standardizing addresses streamlines the delivery process, with well-documented benefits for the economy, society and governance. Its benefits are not limited to interoperability of existing address data, but also provide guidelines to countries that are still developing addressing systems.

Some address standards are listed in **Table 1**.

Analyzing common features

In 2008, ISO/TC 211 arranged a workshop, hosted and sponsored by the Danish National Survey and Cadastre, which looked at issues related to the development of an International Standard for addresses. Subsequently, ISO 19160, *Addressing*, a stage zero project for preliminary work on address standardization was proposed and approved, and a first project meeting was held in November 2009 in Quebec, Canada. The project has two objectives:

- Investigate and formulate requirements in relation to addressing
- Make recommendations on whether standards should be developed and if so, how this should be done.

The project's justification points out that addresses lie between geographic information, electronic business and postal systems, amongst others, and therefore, quite a few stakeholders are involved. Most of these either participate in, or are aware of, ISO 19160.

Standardizing addresses streamlines the delivery process.

In an attempt to identify common features of addresses that require standardization, we analyzed a number of address definitions. Instead of finding individual common features shared by all addresses, we found, in the philosopher Wittgenstein's words, a "family resemblance".

When comparing address definitions from two English dictionaries and eight address standards, we found that dictionaries tend to describe an address in the context of sending or directing a piece of mail to a recipient. However, definitions in several address standards do not refer to postal delivery at all. Some, for instance, refer to how a location is identified, while others describe what one would find at the location.

In the comparison above we found references to a road or thoroughfare in two definitions; "postal" or "mail" in three; and "addressee" in one. While it is common in many Euro-centric countries to reference a road network in the address, addresses in countries such as Japan comprise a hierarchy of administrative areas without reference to a thoroughfare.

In comes an International Standard

It seems as if all addresses have something in common, but what is it? The fact that an address describes a location is not common (e.g. P.O. Box). Neither is the delivery point a common feature: BS 7666:2006 states that there is "an object" at the address, not a delivery point. Is an address an object in itself, or is it a reference to which some other object, such as a person or a building, is linked? A "potential delivery point" (UPU S42) would be a reference to which a recipient can be linked in future, while a landmark address (USA, SANS 1883:2009) assumes that there is an object (a landmark) at the address. Alternatively, does an object, such as a person or a building, have attributes to describe it, one of which is the address?

We conclude that addresses do not have a single common feature but rather a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail. An overall similarity in many (but not all) addresses is the description of a delivery point, while a common similarity of detail is the reference to a place name and/or reference to the road network found in many addresses.

Addresses are one of the most common ways of describing a location and because of the network of similarities, there is ample room for misunderstanding. The objective of ISO 19160 is to make recommendations on how to eliminate these misunderstandings. One solution could be an overarching abstract address standard comprising different parts, each addressing a different set of similarities, thus enhancing the understanding of these similarities and improving interoperability.

UPU S42, for example, already includes a well-defined set of postal address similarities. Another set of similarities is the multitude of address-related terms and concepts. A reference model representing a common understanding of addresses could illustrate the similarities, and show connections to other existing standards, standard committees and/or organizations.

Address standards tell us that addresses do not have a single common feature but rather a "family resemblance": a complicated network of overall and common similarities of detail. ISO 19160 aims to identify the different sets of similarities and to make recommendations on how to standardize them.

The full length version of this article, including the authors' biographies, is available in the *ISO Focus+* section on ISO Online (**www.iso.org/bonusarticles**) ■

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Standards Generating Body	Technical Committee	Name
British Standards Institution (BSI)	IST/36, Geographic information	BS7666:2006, *Spatial datasets for geographical referencing*
Danish XML-committee (Joint e-Gov data standards committee)	OIOXML Core Component Working Group	OIOXML Addresseguide (en: Address Guideline) OIOXML Dokumentationsguide for Adressepunkt (en: Guideline for Address Point)
Infrastructure for Spatial Information in Europe (INSPIRE)	Thematic Working Group on Addresses	INSPIRE D2.8.1.5 *Data Specification on Addresses – Guidelines*
Organization for the Advancement of Structured Information Systems (OASIS)	Customer Information Quality	Name (xNL), Address (xAL), Name and Address (xNAL), Party (xPIL) and Party Relationships (xPRL)
Standards Australia and Standards New Zealand	Joint Technical Committee IT-004, Geographical Information	AS/NZS4819:2003, *Geographic information – rural and urban addressing*
South African Bureau of Standards (SABS)	SC71E, Geographic information	SANS1883:2009, *Geographic information – Address*
Universal Postal Union (UPU)	Addressing Group	S42: International postal address components and templates S53: Exchange of name and address data
US Federal Geographic Data Committee (FGDC)	Address Standard Working Group	United States Thoroughfare, Landmark, and Postal Address Data Standard

Table 1 – *Address standards.*