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OGC POI Use Cases

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Table of Contents

i. Abstract

<Insert Abstract Text here>

ii. Keywords

The following are keywords to be used by search engines and document catalogues.

ogcdoc, OGC document, <tags separated by commas>

iii. Preface

NOTE

Insert Preface Text here. Give OGC specific commentary: describe the technical content, reason for document, history of the document and precursors, and plans for future work. > Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The Open Geospatial Consortium shall not be held responsible for identifying any or all such patent rights.

Recipients of this document are requested to submit, with their comments, notification of any relevant patent claims or other intellectual property rights of which they may be aware that might be infringed by any implementation of the standard set forth in this document, and to provide supporting documentation.

iv. Submitting organizations

The following organizations submitted this Document to the Open Geospatial Consortium (OGC):

Organization name(s)

v. Submitters

All questions regarding this submission should be directed to the editor or the submitters:

Name Affiliation

Chapter 1. Scope

NOTE Insert Scope text here. Give the subject of the document and the aspects of that scope covered by the document.

Chapter 2. Conformance

This Best Practice defines XXXX.

Requirements for N target types are considered: * AAAA * BBBB

Conformance with this Best Practice shall be checked using all the relevant tests specified in Annex A (normative) of this document.

In order to conform to this OGC® Best Practice, a software implementation shall choose to implement: * Any one of the conformance levels specified in Annex A (normative). * Any one of the Distributed Computing Platform profiles specified in Annexes TBD through TBD (normative).

All requirements-classes and conformance-classes described in this document are owned by the document(s) identified.

Chapter 3. References

The following normative documents contain provisions that, through reference in this text, constitute provisions of this document. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the normative document referred to applies.

Insert References here. If there are no references, state “There are no normative references”.

References are to follow the Springer LNCS style, with the exception that optional information may be appended to references: DOIs are added after the date and web resource references may include an access date at the end of the reference in parentheses. See examples from Springer and OGC below.

Smith, T.F., Waterman, M.S.: Identification of Common Molecular Subsequences. J. Mol. Biol. 147, 195–197 (1981)

May, P., Ehrlich, H.C., Steinke, T.: ZIB Structure Prediction Pipeline: Composing a Complex Biological Workflow through Web Services. In: Nagel, W.E., Walter, W.V., Lehner, W. (eds.) Euro-Par 2006. LNCS, vol. 4128, pp. 1148–1158. Springer, Heidelberg (2006)

Foster, I., Kesselman, C.: The Grid: Blueprint for a New Computing Infrastructure. Morgan Kaufmann, San Francisco (1999)

Czajkowski, K., Fitzgerald, S., Foster, I., Kesselman, C.: Grid Information Services for Distributed Resource Sharing. In: 10th IEEE International Symposium on High Performance Distributed Computing, pp. 181–184. IEEE Press, New York (2001)

NOTE

Foster, I., Kesselman, C., Nick, J., Tuecke, S.: The Physiology of the Grid: an Open Grid Services Architecture for Distributed Systems Integration. Technical report, Global Grid Forum (2002)

National Center for Biotechnology Information, http://www.ncbi.nlm.nih.gov

ISO / TC 211: ISO 19115-1:2014 Geographic information — Metadata — Part 1: Fundamentals (2014)

ISO / TC 211: ISO 19157:2013 Geographic information — Data quality (2013)

ISO / TC 211: ISO 19139:2007 Geographic information — Metadata — XML schema implementation (2007)

ISO / TC 211: ISO 19115-3: Geographic information — Metadata — Part 3: XML schemas (2016)

OGC: OGC 15-097 OGC Geospatial User Feedback Standard. Conceptual Model (2016)

OGC: OGC 12-019, OGC City Geography Markup Language (CityGML) Encoding Standard (2012)

OGC: OGC 14-005r3, OGC IndoorGML (2014)

Chapter 4. Terms and Definitions

This document uses the terms defined in OGC Policy Directive 49, which is based on the ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards. In particular, the word “shall” (not “must”) is the verb form used to indicate a requirement to be strictly followed to conform to this standard and OGC documents do not use the equivalent phrases in the ISO/IEC Directives, Part 2.

This document also uses terms defined in the OGC Standard for Modular specifications (OGC 08-131r3), also known as the ‘ModSpec’. The definitions of terms such as standard, specification, requirement, and conformance test are provided in the ModSpec.

For the purposes of this document, the following additional terms and definitions apply.

This document uses the terms defined in OGC Policy Directive 49, which is based on the ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards. In particular, the word “shall” (not “must”) is the verb form used to indicate a requirement to be strictly followed to conform to this standard and OGC documents do not use the equivalent phrases in the ISO/IEC Directives, Part 2.

This document also uses terms defined in the OGC Standard for Modular specifications (OGC 08-131r3), also known as the ‘ModSpec’. The definitions of terms such as standard, specification, requirement, and conformance test are provided in the ModSpec.

The Glossary includes terms from other standards and specifications that, while not normative, are critical to accurately understand this specification.

For the purposes of this document, the following additional terms and definitions apply.

4.1. location

identifiable geographic place (Source: ISO19112:2019)

4.2. place

identifiable part of any space (Source: ISO19155:2012)

4.3. position

data type that describes a point or geometry potentially occupied by an object or person (Source: ISO19133:2005)

4.4. spatial reference

system for identifying position in the real world (Source: ISO19155:2012)

4.5. stakeholder

individual or organization having a right, share, claim, or interest in a system or in its possession of characteristics that meet their needs and expectations (Source: ISO1588:2015)

4.6. user

individual or organization that uses the system or software to perform a specific function (Source: ISO25000:2014)

Chapter 5. Conventions

This sections provides details and examples for any conventions used in the document. Examples of conventions are symbols, abbreviations, use of XML schema, or special notes regarding how to read the document.

5.1. Identifiers

The normative provisions in this document are denoted by the URI

http://www.opengis.net/spec/{standard}/{m.n}

All requirements and conformance tests that appear in this document are denoted by partial URIs which are relative to this base.

Chapter 6. POI Use Cases

6.1. Last Mile Logistics

Contributed By: Timo Ruohomäki, based on innovation projects from the city of Helsinki.

Motivation: The last mile has often been found to be the most challenging factor in the logistics chain and the most demanding in terms of achieving the desired service level.

Summary

Click to view full use case description

Related Use Cases

Roles:

Devices:

Data:

Dependencies:

Requirements:

Variants:

<Describe possible use case variants, if applicable>

Security Considerations:

<Describe any issues related to security; if there are none, say "none" and justify>

Privacy Considerations:

<Describe any issues related to privacy; if there are none, say "none" and justify>

Comments:

6.2. POI Publication

Contributed By: Koen De Baets

Motivation: <Provide a description of the problem that is solved by the use case and a reason why this use case is important for the users>

Summary

<Provide a summary of the use case. The full use case description should be available through the following link>

Click to view full use case description

Related Use Cases

<Identify any use cases which are related to this one and describe the nature of that relation. Include a hyperlink to each use case.>

Roles:

<List all stakeholders that are involved in the use case. Stakeholders are described in the Stakeholders Section of this document. Each listed stakeholder should be hyperlinked to its description.>

Devices:

<List the target devices, e.g. as a sensor, solar panel, air conditioner>

Data:

<List the type of expected data, e.g. weather and climate data, medical conditions, machine sensors, vehicle data>

Dependencies:

<Identify any dependencies of this use case. Dependencies are described in the Bibliography and Terms and Definitions sections of this document. Each listed dependency should be hyperlinked to its description.>

Requirements:

<Identify the requirements derived from this use case. Requirements are described in the Requirements section of this document. Each listed requirement should be hyperlinked to its description.>

Variants:

<Describe possible use case variants, if applicable>

Security Considerations:

<Describe any issues related to security; if there are none, say "none" and justify>

Privacy Considerations:

<Describe any issues related to privacy; if there are none, say "none" and justify>

Comments:

6.3. Package Drop-off and Pick Up Services

Contributed By: Christine Perey, based on commercial package delivery and return services (e.g., Amazon)

Motivation: For commercial or residential customers, package delivery and pick up logistics requires considerable attention to details (e.g., pick up location, time), and tracing (tracking) for efficient space use, billing and insurance purposes. Customers may end up waiting for either a delivery or a pick up that is late, or miss the connection if the delivery is early, and fuel consumption associated with individual addresses may be greater than services using a pooled location (individually-secured containers within a larger container). Some service providers have developed systems to manage a multi-customer delivery and return location.

Summary

Click to view full use case description

Related Use Cases This use case is somewhat related to the last mile logistics use case.

Roles:

Devices:

Data:

Dependencies:

Requirements:

Variants:

Security Considerations:

There must be unique and secure access codes assigned for the customer dropping off a package and the operator or customer picking up from the same secure cubicle.

Privacy Considerations:

Once the customer agrees to terms and conditions of use, the contents of the cubicle must not be disclosed to other customers or delivery personnel.

Comments:

Chapter 7. POI Detailed Use Cases

7.1. Last Mile Logistics Use Case

The last mile has often found to be the most challenging factor in the logistics chain and the most demanding regarding to the service level. The delivery drivers need to consider the nearest parking spot to the recipient, avoid road constructions or use temporary routes and, in large buildings, find the most suitable access point. On construction sites, the suitable loading areas change often and, as a safety measure, the delivery routes need to be planned in advance. The traffic flows and entrance and exit points are included in the detailed site logistics plan.

The logistics plan heavily relies on geospatial referencing. The entrance and exit points, routes within the site and loading areas are all geospatial features. This information may change with short notice, but up-to-date information about the site logistics need to be maintained by the site logistics planner and shared with the logistics operators, drivers and first responders.

In addition to maintaining the location information, logistics planning involves additional attributes that are maintained as part of the process. The entrance and exit points may have opening hours, routes sometimes have weight and height limits and contact information for the loading deck manager and final recipients need to be easily accessible. It is unlikely that a comprehensive list of all the attributes can be created since cases many have unique needs.

7.2. POI PUblication Use Case

<insert narrative text>

7.3. Package Drop off and Pick Up Services Use Case

For commercial or residential customers, package delivery and pick up logistics requires considerable attention to detail (e.g., pick up location, restrictions, time), and tracing (tracking) for efficient space use, billing and insurance purposes. Customers may end up waiting for either a delivery or a pick up that is late, or miss the connection if the delivery is early, and fuel consumption associated with individual addresses may be greater than services using a pooled location (individually-secured containers). Space in delivery vehicles can also be calculated and optimized when the package details are associated with the point of interest. Some service providers use systems to manage a "multi-customer" delivery and return location.

The customer needs to be assigned or choose a specific section (locked cubicle) that meets the package needs. Each cubicle is a point of interest within a larger "multi-customer" container, within a secured or outdoor business facility. This means that static metadata such as the street address, open hours of the facility, the latest time for drop off, cubicle’s dimensions must be associated with each unit.

In addition to maintaining the static metadata for a cubicle or group of cubicles, there is dynamic data such as the weight of a package (if the cubicle is equipped with weight sensing), a unique access code for a cubicle (to be assigned each time there is a new drop off or pick up scheduled), and time of cubicle access (occupancy status). The dynamic information for each unit (PoI) can be

integrated with a real-time route planning system, to release a cubicle for a future customer's use and customer back end (e.g., for billing).

Chapter 8. Stakeholders

The following tables define a list of stakeholder roles based on the onion model (Alexander 2005).

Role	Normal Operator
Scope	Our System
Description	Role that involves giving routine commands and monitoring outputs from the product

Role	Operational Support
Scope	Our System
Description	Role that involves advising normal operators of a product about how to operate it

Role	Maintenance Operator
Scope	Our System
Description	Role that involves maintaining the product

Role	Interfacing System
Scope	Containing System
Description	Role responsible for neighboring systems that have interfaces to and from the product

Role	Sponsor or Champion
Scope	Containing System
Description	Role responsible for initiating development of the product

Role	Functional Beneficiary
Scope	Containing System
Description	Role that benefits from the results or outputs created by the product

Role	Purchaser
Scope	Containing System
Description	Role responsible for having the product developed

Role	Developer
Scope	Wider Environment
Description	Any of the many roles involved directly in product development

Role	Consultant
Scope	Wider Environment
Description	Any of the many roles involved in supporting some aspect of product development, characteristically from outside the development organization

Role	Supplier
Scope	Wider Environment
Description	A role involved in the manufacture and provision of components for the product

Role	Political Beneficiary
Scope	Wider Environment
Description	Any role in public office or private business that can benefit in terms of power, influence, and prestige through the success of the product

Role	Regulator
Scope	Wider Environment
Description	Any role responsible for regulating the quality, safety, cost or other aspects of the product

Role	Financial Beneficiary
Scope	Wider Environment
Description	Any role that can benefit financially from the success of a product

Role	Negative Stakeholder
Scope	Wider Environment
Description	Role that could be harmed by the product physically, financially, or in any other way that might be found justifiable by the authorities

(SOURCE: Alexander, I. F. (2005). A Taxonomy of Stakeholders: Human Roles in System Development. **International Journal of Technology and Human Interaction (IJTHI)** , 1(1), 23-59. http://doi.org/10.4018/jthi.2005010102)

Chapter 9. Devices

The following tables define a list of devices referenced in the POI Use Cases.

Device	Web Browser
Scope	tbr
Description	A generic web browser.

Chapter 10. Data Categories

The following tables define a list of categories of data, or data types, referenced in the POI Use Cases.

Category	Any
Scope	tbr
Description	Any data type may be used.

Chapter 11. Requirements

One purpose of a Use Case is to derive operational requirements for the planned solution. These are not requiremetents in the software development sense of the term. Rather, they are a further refinement of the Use Cases. They capture a set of functional capabilties which, if supported, would be sufficient to enable performance of the tasks described in the Use Cases.

Annex A: Conformance Class Abstract Test Suite (Normative)

NOTE	Ensure that there is a conformance class for each requirements class and a test for each requirement (identified by requirement name and number)

A.1. Conformance Class A

A.1.1. Requirement 1

Test id:	/conf/conf-class-a/req-name-1
Requirement:	/req/req-class-a/req-name-1
Test purpose:	Verify that…
Test method:	Inspect…

A.1.2. Requirement 2

Annex B: Title ({Normative/Informative})

NOTE	Place other Annex material in sequential annexes beginning with "B" and leave final two annexes for the Revision History and Bibliography

Annex C: Revision History

Date	Release	Editor	Primary clauses modified	Description
2016-04-28	0.1	G. Editor	all	initial version

Annex D: Bibliography

NOTE

Example Bibliography (Delete this note).

The TC has approved Springer LNCS as the official document citation type.

Springer LNCS is widely used in technical and computer science journals and other publications

- For citations in the text please use square brackets and consecutive numbers: [1], [2], [3]

– Actual References:

[n] Journal: Author Surname, A.: Title. Publication Title. Volume number, Issue number, Pages Used (Year Published)

[n] Web: Author Surname, A.: Title, http://Website-Url

[1] OGC: OGC Testbed 12 Annex B: Architecture. (2015).