Donantonio: bibliographic system for automatic distribuited publication

Specifications of requisites for Donantonio

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1. Introduction

This document is a Specification of Software Requeriments (SSR) for the bibliographic system for automatic distribuited publication Donantonio. All this contents has been elaborated considering the needs observed by the experience of the authors of Internet's publication. This specification has been structured inspired in the directrixes gived by the standard IEEE *Recommended Practice for Software Requirements Specification ANSI/IEEE 830 1998.*

1.1. Purpose

The object of the specification is to define in a clear and exact way all the functionalities and restrictions of the system it wants to build. The document goes directed so much to the development equipment, like the members of the projects of free documentation and the community of possible end users. This document will be the communication channel between the implied parts, taking part in its preparation, members from each part. This specification is subject to revisions by the implied parts, specially by the potentials usuaries, that will be picked up by successive versions of the document, until reach its approval. Once approved it will serve as base to the equipment of development for the construction of the new system.

1.2. Scope of the system.

This system is required as a result of the increasing complication of the publication workings of documentation of free software.

It's evident the needed of a informatic system that it automates the publication workings of documents in Internet, in such form that are guaranteed the easy location of them and a fast availability to the users.

Using bibliographical norms it can become general the use and application of the system to any type of information susceptible to be classified.

The scope of the developed system reaches until the production of clients and servers for Donantonio, communication protocols between them and user interfaces; preferring the design of a system that can be embedded in other compatible applications so these can as well be compatible applications (clients, servers or interfaces) with Donantonio.

1.3. Definitions, acronyms and abbreviations

1.3.1. Definitions

Resource

    Element accessible through a URL susceptible to be classified bibliographically.

Scheme

    It describes the syntax of a description.

Description

    Instance of a scheme that it identifies by metadata, in a unequivocal way to a resource.

Library

 Collection of descriptions.

Server

 Node that takes care of donantonio's queries.

Client

 Node that produce donantonio's queries.

Query

 Request of a subgroup of descriptions expressed in a standardized language.

1.3.2. Acronyms

SSR

 Specification of Software Requirements

GFDL

 GNU Free Documentation License

GPL

 GNU Public License

RDF

 Resource Description Framework, standard of the World Wide Web Consortium (W3C) for the codification and handling of metadata using the markup language XML.

URL

 Uniform Resource Locator, scheme used for the localization of a internet resource.

XML

 eXtended Markup Language, standard of the W3C.

1.3.3. Abbreviations

They have not been defined.

1.4. References

- IEEE Recommended Practice for Software Requirements Specification. ANSI/IEEE std. 830, 1998.

OMF, GNU, GFDL, GPL, RDF, XML, URL? *Note: In the previous list the really necessary references must go. That is, a sieve on the list that appears in specifications.sgml*

1.5. Document's General Vision

This document is formed by three sections. This section is the Introduction and provides a general vision of the SSR. In the Section 2 we give a general description of the system, with the purpose of knowing the main functions what must make the system, the data associate and the factors, restrictions, supposed and dependencies that affect the development, without enter in excessive details. In section 3 the requirements are defined in detail what must satisfy the system.

2. General Description

2.1. Perspective of the Product

This system will not interact with any other software system

2.2. Functions of the system

2.2.1. Publication of resources

The system will allow to publish resources located in any place of Internet.

Each resource will be located by its description, that will be in the Donantonio servers, and therefore, it will not have why to coincide with the publication place of the resource.

2.2.2. Descriptions's Registry

Each description will have a publication point, from which a donantonio server incorporates it to his library through the registry process.

The registry will be distributed, in the systems that we will denominate *donantonio servers*.

2.2.3. Quey and replication of descriptions

The *donantonio servers* will include mechanisms or protocols to admit the total or partial replication of the descriptions, that will ask for the called *donantonio clients*.

For this aim, the servers will have to be able to take care of queries of descriptions, for which the corresponding mechanisms or protocols will be defined.

2.2.4. User's Mechanisms for searches

The *donantonio User Interface* will implement suitable mechanisms of navigation and search of the information

2.2.5. Distribution

The descriptions could be replicated through donantonio networks.

A hierarchy in the server network does not setted, that is, all will treat between equals

2.3. User Features

The made system will have to offer an intuitive user interface, easy to learn and simple to handle. The system will have to display a high degree of usability. The desirable thing would be that a new user became familiar with the system in short time, for the immediate use for the functions of resources search.

2.4. Restrictions

The system will be free software (in agreement with the GNU-GPL license or similar) and will have to be free those components that it reuses.

The system will be designed according to a client/server model.

The system will based its communications on standard Internet protocols.

The different subsystems must have a simple design and implementation, independent of the platform or the programming language.

The servers must be able to attend queries of a concurrently way.

2.5. Suppositions and dependencies

2.5.1. Suppositions

It is assumed that the requirements described in this document are stable once is approved by the design team taking care of suggestions of the community. Any request of changes in the specification must be approved by the design team and be managed by the same one.

2.5.2. Dependencies

The Donantonio system works independently, with no need to communicate with other external systems, reason why there are no dependencies respect to other systems.

3. Specific requirements

In this section the it shows the functional requirements that will have to be satisfied by the system. All the requirements exposed here are ESSENTIAL, that is, a system would not be acceptable that does not satisfy some of the requirements presented here. These requirements have been specified considering, among others, the criterion of testing: given a requirement, it would have easily to be demonstrable if it is satisfied or not by the system.

Note: It is convenient to make the "requirements matrix", that confronts the requirements with the verification method.

3.1. Functional requirements

3.1.1. REQ01: Registry of descriptions

The system must register descriptions of resources (metadata and the corresponding URL localizer).

3.1.2. REQ02: Visibility of the descriptions

All donantonio server will implement query mechanisms that allow to select from a client a set of the descriptions that this one has.

3.1.3. REQ03: Transportability of the descriptions

All donantonio server will allow the export of a selected set of descriptions.

3.1.4. REQ04: Selection of descriptions

All donantonio client will implement query mechanisms that allow acess in a server to a set of the descriptions that this one has.

3.1.5. REQ05: Replication of descriptions

All donantonio client will be able to replicate a set of descriptions obtained from donantonio server through a selection criterion of the defined ones in REQ04.

3.1.6. REQ06: Independence between servers

The servers will be independent to able give the service independently to the clients.

3.1.7. REQ07: unicity of the descriptions

The descriptions will have to be unique in each library.

3.2. External interfaces requirements

3.2.1. User's interfaces

3.2.1.1. REQ08: User Interface

The system will count with an user interface who allows to make the queries of descriptions easily and to access to the referenced resources of a query.

3.2.2. Hardware Interfaces

They have not been defined.

3.2.3. Software interfaces

They have not been defined.

3.2.4. Communication interfaces

3.2.4.1. REQ09: Standard protocols in Internet

The servers, clients and applications donantonio will communicate to each other through standard protocols in Internet, whenever it is possible. For example, to transfer files (resources or blocks of descriptions) existing protocols will have to be used (FTP or another convenient one).

3.3. Performance Requeriments

3.3.1. REQ10: Response time

The response times to the interactive queries will have to be reduced, considering a efficient communication network.

3.3.2. REQ11: Concurrence

The system will have to support concurrent attention to the queries.

3.4. Development requisites

3.4.1. REQ12: Life's Cicle.

The chosen life's cycle to develop the system will be the evolutionary prototype, so changes and new functions can be incorporated easily.

3.5. Technological requirements

3.5.1. REQ13: Bibliographical norms

The bibliographical schemes to use in the system will be expressed in RDF.

3.6. Attributes

3.6.1. REQ14: Free Software

The system will be free software and, therefore, any software component that it will be reused will have to be free.

3.6.2. REQ15: Portability

The system will be designed portable. It will have to be possible to implement applications donantonio in diverse languages and platforms.

3.6.3. REQ16: Maintenance

The system is susceptible to be extended. Therefore it will have to be designed easily supported, applying for his development the methodologies what it be precise for that.

3.7. Other requisites

4. Appendices

4.1. Licence

Donantonio: Specification of Software Requirements

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