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**Information technology -- Software reuse -- Concept of
operations for interoperating reuse libraries**

信息技术 软件重用 互操作重用库的操作概念

(English Translation)

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Foreword

This guideline is for reference only. The suggestions and opinions on this technical document are directed to the standardization administration under the State Council Department reflected.

Appendix A to Appendix B of this guidance document are informative.

The guidance of technical documents by the People's Republic of China Ministry of Industry and Information Technology.

The guidance of technical documents by the National Information Technology Standardization Technical Committee.

The guiding technical documents drafting unit. Xi'an University of Electronic Science and Technology, China Electronics Standardization Institute.

Introduction

Software reuse is an effective method to improve software development productivity, reduce development cost and improve development quality for a long time now and in the future Paragraph, which has received widespread attention. One of the keys to the success of software reuse is standardization. Various reusable software resources Standardized interoperability between production libraries is one of the key factors in improving software reuse.

Reusing libraries is an essential element in the strategy of reusing software and related information. In the past, software reuse passed People and organizations to determine the structure of information preservation. Therefore, regulating the process of preservation and positioning, it will be possible in a wider range of people and activities in the software reuse. In this way, reuse repositories are suitable centers of activity for these canonical processes and are also suitable interviews with shareable knowledge products Ask the place.

The task of this technical paper is to identify how to make a set of reusable libraries work together to produce a larger size than these reusable libraries the sum of the entities. The concept of software reuse is based on both reusing software assets and reusing knowledge. Knowledge has many different expressions and supporters each style provides some means of expression that makes knowledge obvious. For a specific reuse of the library, its knowledge and services are selected by the library's operations staff based on the requirements of their user community. However, such expressions and services may not be easy with them He reuses the library to communicate. However, knowledge of this reusable library may also be valuable to other reusable user groups. therefore, Making these resources available to a wider community of users is also a major factor driving reusable library interoperability.

Some infrastructure that promotes information exchange will create a market and will create an economic incentive for reuse. The infrastructure the first is a minimal set of common conventions and certain basic technical competencies, where the basic technical ability is to support a variety of the ability to exchange various products and services. In particular, the network of interoperable reusable libraries described in this technical note will produce a A market based on the cooperation and capabilities of its member libraries.

In order to create a true marketplace that will allow producers and consumers to do business with integrity, one must do something basic Read These operational concepts include.

- Interoperability mechanisms using standard interfaces and protocols. The use of standard interfaces and protocols will make it easy to bring new libraries, technologies and workers Add to interoperable reusable library network;
- Packaging information exchange models and global identification patterns;

- Some assets may be similar but different assets due to changes or changes in version. Therefore, there should be available Information about the relationship between assets;
Commercial support, from standard, trusted licensing mechanisms and billing mechanisms, and common commercial conventions;
- Protect the library against unauthorized access. This protection depends on some security mechanisms, as well as some non-easy Loss, non-repudiation, auditable record of records of authorized users' identification, location and business activities, but still However, the protection of personal privacy;
- through the cooperation between the member libraries agreed to provide the market support;
- retail through local user interface;
- Interoperability standards among member libraries to provide automated support for interoperability and market integrity;
- Training of pool staff on global capabilities and constraints on interoperable reuse library networks.

In implementing these concepts of operation, members of the library will be extended from their own local, unique work environment to a large Batch extended products and services, the resulting interoperable reuse library network will be a non-hierarchical network, it is in those who it provides interoperability among independently managed libraries supported by government, industry, business and academia. This pattern will not stop this one these independent libraries establish a hierarchical library structure for their local user groups.

Future interoperability Reuse library networks will not be just a technical structure. Those operating concepts about market support in organization, policy, Business and other aspects have a corresponding meaning. For example, some organizations can provide the minimum amount of services needed to run the network, these the service binds some autonomous member libraries to a network of interoperable reusable libraries. Fan of such services involved Wai may evolve from the evolution of interface and protocol standards to maintaining some common business conventions for participants in the market. The goal here is to produce Create an environment conducive to providing more and more software reuse products and services.

Certain services in an interoperable reusable library network may have limitations in the use of an irregular library. For example, security One of the elements involved is the requirement to authenticate users of interoperable reusable library networks. If a particular library does not support this necessary reference Do not, then some of the security-related services in the interoperable reuse library network will not be available here. However, such non-standard may be is acceptable to us because only one part of the services of an interoperable reusable library network may serve the non-standard library Support for that

user group.

It is expected that the network of interoperable reusable libraries mentioned in this guidance document will inspire the software community to develop and maintain a software approach. Substantial changes. Software jobs gain access to advanced expertise and products from previous projects, reducing duplication of learning and negligence. With create Compared to new data, data maintenance, collection and organization will be more important tasks. The economic implications of creating new software items may become more pronounced for difficulty. Enhancing prototype development capabilities will lead to a closer relationship between engineering teams and users.

This instructional technical document is an operational concept document. This document can be used as a reference when describing a software reuse market Test, where the market deployed a reusable library interoperability network (NIRL). The existence of reusable library interoperability networks is a prerequisite for this market Conditions, in order to make the market run under some public agreement, the software for the entire software community to provide software reuse products and service.

This guidance and technical documents should be GB/T 26223-2010 "information technology software reuse reuse library interoperability data model Basic interoperability data model".

Information technology software reuse Interoperability Reuse library concept of operation

1 Scope

This guidance document defines the necessary operational concepts applicable to reusable library interoperable networks. This guidance document it is not a matter of designing a detailed reusable library interoperability network nor about how to implement the concepts of operations described in this guidance document A plan this guideline technical document is intended to describe the context of those standardized work on interoperability between reuse libraries. In developing this operation summary it has been noticed that the following assumptions should be avoided. All aspects of reusable library interoperability must be governed by the standard. Which strong Tune down one of the smallest aspects of standardization that allows it to evolve as the reuse methodology and practice evolve.

2 Normative references

The following documents contain provisions which, through reference in this Guidance Document, become the provisions of this Guidance Note document. All dated Reference documents, all subsequent amendments (not including errata content), or revisions do not apply to this guidance document, however, drums Recipients of the agreement based on this guidance document are encouraged to study whether the latest versions of these documents are applicable. All undated references the latest version of this document