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General technical requirements for asset management system

资产管理系统通用技术要求

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1 Scope

The document establishes the general principles of the asset management system, gives its system architecture and functional structure and specifies the functional requirements, the performance requirements and the security requirements.

It applies to the design, development, application and maintenance of the asset management systems of all kinds of organization.

2 Normative references

The content of the documents listed below constitutes indispensable provisions of this document through normative reference in the text. For dated references, only the edition corresponding to that date applies; for undated references, the latest edition, including all amendments, applies.

GB/T 20270 Information security technology - Basic security technical requirements for networks; GB/T 20988 Information security technology - Specification for disaster recovery of information systems; GB/T 22080 Information technology - Security techniques - Information security management systems - Requirements; GB/T 22239 Information security technology - Baseline for classified protection of cybersecurity; GB/T 28452 Information security technology - General security technical requirements for application software systems; GB/Z 28828 Information security technology - Guide for personal information protection within public and commercial services information systems; GB/T 33172 Asset management - Overview, principles and terminology.

3 Terms and definitions

The terms and definitions given in GB/T 33172 and the following apply to this document.

3.1 asset management system: information system that realises asset configuration, use, disposal and other related asset management functions through computer, network communication and similar technologies.

4 General principles

4.1 Completeness and practicality: the design of the asset management system should consider covering the management of the whole life cycle of the asset, involving the configuration, use and disposal management processes, and should meet the actual functional needs of asset management for every item of business in the process. At the same time it should make full use of existing resources and avoid duplicated work.

4.2 Ease of operation and maintenance: the design of the asset management system should take full account of the characteristics of different organizations, of the features of the asset management business and of the operating habits of users, and should provide a monitoring mechanism for each functional module of the system and for the interfaces, so that operating errors are found and faults removed in good time.

4.3 Security and reliability: the construction and management of the asset management system should have security management, storage backup and sensitive data control mechanisms; on the basis of guaranteeing availability, they should provide integrity and confidentiality protection for the business data and have a logic control mechanism that keeps the system running stably and reliably, in accordance with the relevant requirements for classified protection of security.

4.4 Loose coupling and ease of extension: the asset management system should adopt a loosely coupled and modular design approach, providing flexible, secure and stable interface services for the external functional modules, so that the modules of the system are easy to extend.

4.5 Conformity and compatibility: the asset management system should conform to the business and technical requirements of asset management, informatization and related fields, should be able to run stably in a variety of deployment environments and should ensure data exchange and sharing with the related business systems.

5 System architecture

5.1 The overall architecture of the asset management system is generally divided into five layers, namely the infrastructure layer, the data access layer, the basic service layer, the business application layer and the presentation layer, as shown in Figure 1 of the

document.

5.2 The infrastructure layer shall provide the informatization foundation of the whole asset management system through computing, network, storage, security service and other resources and services.

5.3 The data access layer shall, through different interfaces, obtain metadata, basic data and business data from the system backend or send call data to the database.

5.4 The basic service layer shall provide functional modules that support the operation, maintenance and management of the business system, namely organization management, department management, user management, authority management, statistical analysis, interface management and data management.

5.5 The business application layer shall be the set of business functions of the system that users can perceive, formed by appropriate classification and combination, and shall be the application meeting the needs of the asset management business, including but not limited to the asset configuration, asset use and asset disposal functional modules.

5.6 The presentation layer shall be the interface that users of the asset management system perceive and interact with, so as to give users a friendly operating experience; it mainly includes the computer terminal and the mobile terminal and supports access through several browsers, online clients and similar means.

6 Functional structure

According to the management needs and the business analysis of asset management, the functional modules of the asset management system mainly comprise business application functional modules and basic service functional modules.

a) The business application functional modules are the management functions covering the whole life cycle of the asset and shall include asset configuration, asset use and asset disposal.

b) The basic service functional modules are the service functions that provide backend management and business extension for the asset management system and shall include organization management, department management, user management, authority management, statistical analysis, data management, log management and interface or business module management.

The framework of the system functional structure is shown in Figure 2 of the document.

7 Functional requirements

7.1.1 Asset configuration: the system shall support the user in carrying out the configuration plan, the configuration execution and the acceptance and warehousing of assets, including

but not limited to the following. For the configuration plan: support for compiling, modifying and approving the asset budget; support for filling in a configuration plan application for several categories of asset at the same time; support for approving and printing the asset configuration plan application form; support for adding, modifying and deleting the configuration standards of the various categories of asset; support for an over-standard warning on the assets whose configuration is applied for, on the basis of the configuration standards already entered and of the assets in stock. For the configuration execution: support for the application for asset configuration execution; support for choosing different execution modes according to the configuration plan; support for linking with the contract, supplier and other related business management systems, so that information and business processes are synchronised; display of the progress of asset execution by visual means. For the acceptance and warehousing: support for the acceptance and registration of the assets whose configuration has been completed; support for linking with the configuration plan application and for checking the linked information; support for searching the configuration plan application information; support for approving and printing the asset acceptance registration; support for adding assets whose acceptance is complete and for the batch import of assets in stock; support for deleting assets entered twice; support for modifying asset information and recording the reason for the modification; support for the batch entry of several assets of the same batch, model and value; support for splitting assets registered and warehoused in batch; support for viewing the information of assets already warehoused; support for label printing.

7.1.2 Asset use: the system shall support the user in carrying out the collection, repair and maintenance, change, return and stocktaking of assets, and this functional module includes but is not limited to the following. Asset collection shall support entering the name of the person collecting, the collecting department, the date of collection and other collection information and shall link it to the warehoused asset information to form a collection order. Asset repair and maintenance shall support the user in recording the assets that have failed in use and whose repair and maintenance has been completed, recording the date of repair, the person handling it, that person's contact details, the cost of the repair, the reason for the repair and similar information. Asset change shall support the transfer and modification of assets and the recording of the reason for the change and of the situation before and after it. Asset return shall support the operation by which the user of an asset returns it, recording the person handling it, the date of return, the reason for the return and similar information. Asset stocktaking shall support the stocktaking of assets and the processing of the stocktaking data, should support the use of mobile terminals for the information collection operation of the stocktaking, shall provide a convenient means of importing data into the system and shall support analysis, presentation and export of the stocktaking results.

7.1.3 Asset disposal: the system shall support the user in carrying out the scrapping, transfer and similar operations, and this functional module shall include but not be limited to