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SOA application technology standard for power enterprises

电力企业SOA应用技术标准 清晰版

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Foreword

This standard is formulated to standardize the technical framework of SOA application, technical requirements for service realization, and technical requirements for service interaction.

This standard was proposed and interpreted by the Standardization Management Center of the China Electricity Council.

This standard is under the jurisdiction of the Power Industry Information Standardization Technical Committee.

Drafting organizations of this standard. China Southern Power Grid Co., Ltd., Dingxin Information Technology Co., Ltd., Yunnan Power Grid Co., Ltd.

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1 Scope

This standard specifies the SOA application technology framework of Service-Oriented Architecture (SOA), Service realization technical requirements and service interaction technical requirements.

This standard applies to SOA-based application system development and information integration construction, SOA project consulting and SOA project supervision of power

companies Rationale.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GB/T 29262-2012 Information Technology Service-Oriented Architecture (SOA) Terminology GB/T 29263-2012 Information Technology Service Oriented Architecture (SOA) Application General Technical Requirements GB/T 32427-2015 Information Technology SOA Maturity Model and Evaluation Method GB/T 32428-2015 Information Technology SOA Service Quality Model and Evaluation Specification GB/T 32429-2015 Information technology SOA application life cycle process GB/T 32430-2015 Information Technology SOA Application Service Analysis and Design GB/T 32419.1-2016 Information Technology SOA Technical Implementation Specification Part 1: Service Description GB/T 32419.2-2016 Information Technology SOA Technical Implementation Specification Part 2: Service Registration and Discovery GB/T 32419.3-2016 Information Technology SOA Technical Implementation Specification Part 3: Service Management GB/T 32419.4-2016 Information Technology SOA Technical Implementation Specification Part 4: Publish and Subscribe-based Data Service Interface GB/T 33846.1-2017 Information Technology SOA Support Function Unit Interoperability Part 1: Overall Framework GB/T 33846.2-2017 Information Technology SOA Support Function Unit Interoperability Part 2: Technical Requirements

3 Terms and definitions

GB/T 29262-2012, GB/T 32427-2015, GB/T 32419.2-2016 and the following terms and definitions apply in this document.

Service integration development the behavior of combining multiple services according to a certain pattern to form new services that meet specific business needs.

Service primitive

The actions of service logic processing are described from the perspective of service users.

Enterprise architecture it is commonly used by various large-scale organizations in the world to promote the integration of business and information, control the overall situation in rapid change, and optimize the investment structure.

A set of effective methods to reduce the cost of change and control the risk of change. It includes corporate strategy, organization, functions, business processes, IT the complete and integrated description of system, data, network deployment, etc. reflects the status of

enterprise business and reflects the mapping relationship between business and IT, be able to clarify the supporting relationship of various IT facilities to the business.

Domain-driven design A software development method that realizes complex requirements by closely linking software implementation with the evolution of core business concepts.

Service instance

An assembly that can provide external services.

Service interactive communication Provide functional units of access, load balancing, transmission, routing and conversion between the service requester and the service consumer, in actual interaction in the process, the implementation of service interaction communication includes enterprise service bus, service gateway, etc.

Identity synchronization keeps the identity data of the same entity in different information systems in a consistent relative relationship.

Integration

The process of bringing together some isolated information or elements in a certain way, establishing connections, and forming an organic whole.

API gateway

Provide API hosting services, covering the full life cycle management of API publishing, management, operation and maintenance, and sales. Assisting users is simple, fast, Low-cost, low-risk realization of micro-service aggregation, front-end separation, system integration, open functions and data to partners and developers.

Note: For the description of API abbreviations, see 4 abbreviations of this standard.

5.1 Conceptual Model of SOA Application

See GB/T 29263-2012 Chapter 4 SOA Application Conceptual Model.

5.2.1 Overview

The SOA application technology reference model is suitable for the construction, operation and management process of SOA applications. See 4 in GB/T 29263-2012 in this section the SOA application technology reference model, based on the original reference model, refines the technical requirements of each solid line in the SOA application technology reference model begging. The SOA application technology reference model mainly includes 9 parts.

- a) IT infrastructure is an existing operating environment that carries SOA applications and a basic environment that can be configured and expanded in the future;
- b) SOA resources are IT resources such as application systems, data and existing services

required to realize SOA applications. These resources exist in enterprises, government departments and other organizations, as the initial source of services in the construction of SOA applications; based on SOA resources, Services can be formed through processes such as encapsulation and extraction. For specific requirements, see 6 Technical Requirements for Service Implementation in this standard;

c) SOA supporting technologies and services are the general term for basic technical capabilities and basic technical services supporting SOA applications;

d) Business public services are a series of industry/domain-oriented applications, reusable, and certain business functions.

Can interact with each other based on the functions and capabilities provided by SOA supporting technologies and services, and thereby achieve richer business logic for technical requirements related to service interaction, see 7 Service Interaction Technical Requirements of this standard;

e) The power industry application is user-oriented, based on the power industry's "generation, transmission, transformation, distribution, and use" and other links and specific business fields.

IT systems required by the domain;

f) User is the general term for people, systems, equipment and other services that use SOA applications;

g) Quality refers to the degree to which SOA applications meet user needs or expectations;

h) Security is the general term for mechanisms and strategies to ensure the safe operation of SOA applications;

i) Governance is the management and control strategy and mechanism formulated for SOA applications, covering the entire life cycle of SOA applications.

5.2.2.1 Service description capability requirements

The service description capability should meet the following requirements.

a) Provide standard information models and access interfaces to describe the relevant attributes of services and resources;

b) Meet the specific technical standards of the relevant service descriptions. For specific requirements, see 6.1 Service Descriptions of this standard.

5.2.2.2 Service registration and discovery capability requirements

Service registration and discovery capabilities should meet the following requirements.

a) Provide service registration functions and access interfaces to register, retrieve and