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Artificial intelligence - Agent interconnection - Part 4: Agent description

人工智能 智能体互联 第4部分：智能体描述

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Table of Contents

Foreword

This document is a standard or guiding technical document. This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting is scheduled. This document is Part 4 of GB /Z 185 "Artificial Intelligence - Interconnection of Intelligent Agents". GB /Z 185 has already published the following parts. --Part

4 Description of the Intelligent Agent

1.Scope This document provides a method for describing intelligent agents and offers a reference process for registering, modifying, and publishing intelligent agent descriptions. This document applies to the design, implementation, and testing of artificial intelligence agents and their interconnection and collaboration schemes.

4.Abbreviations The following abbreviations apply to this document. FQDN. Fully Qualified Domain Name IP. Internet Protocol URL. Uniform Resource Locator

5.Description of the agent An agent description consists of a set of attributes and their corresponding attribute values. The attribute definitions for an agent description are shown in Table 1.

6.Registration of agent descriptions The registration process for the intelligent agent description is shown in Figure 1.

Note. The processes shown in 2.a.1~2.a.3 and 2.b in the figure are optional processes; you can choose one of them. The registration process for an intelligent agent description is as follows:

a) The agent provider shall provide a description for the agent and send a registration request to the agent description manager (step 1 in Figure 1). Request information. 1) It should include registered objects, agent packages, or agent instances; 2) It should include

a description of the intelligent agent, in accordance with the requirements of Chapter 5; 3) It should include other information required by the manager regarding the agent description (such as the version of the agent package, the discoverability of the agent, etc.). (Availability conditions, etc.)

b) The intelligent agent description manager should verify the authenticity of the intelligent agent provider's identity, and should preferably verify the identity of the intelligent agent (step 2 in Figure 1). One of the following methods should be chosen. 1) Send an authentication request to the agent authentication party and obtain the authentication result (step 2.a in Figure 1); 2) The intelligent agent description manager verifies the intelligent agent's identity (e.g., based on verifiable credentials) (step 2.b in Figure 1).

c) Based on the verification results, the agent description manager should check the registration request information (step 3 in Figure 1) and assess the risks. 1) The review of registration request information should be based on the applicable laws in the location of the administrator or the target service area described by the agent. The standards or intelligent agents describe the requirements that are formulated and implemented by the management itself. 2) The agent description manager can test the functions, performance, and other specifications declared in the agent description independently or request them from the agent provider. Safety, operational dependencies, and other related test data or supporting documentation; 3) The categories, content, analysis and judgment processes of risks can be defined and implemented by the intelligent agent itself.

d) The agent description manager should return a result response to the agent provider (step 4 in Figure 1). 1) If the risk assessment is passed and a success response is returned, it is advisable to include registration information (such as an agent description generated by the manager for the agent). Information such as identification and classification is defined and implemented by the intelligent agent description management party. 2) If the agent description registration information fails the check or the risk assessment fails, a failure response should be returned, preferably accompanied by a note indicating the failure. information; 3) If an internal system error occurs during the process and the intelligent agent describes the management and returns a failure, it is advisable to include error information.

7.Publication of agent descriptions The agent provider publishes agent descriptions, either independently or through the agent description management entity, for agent discovery (definition of the discovery process). (According to GB /Z 185.5-2026). The publishing process for intelligent agent descriptions is shown in Figure 2.

Note. When an agent provider publishes its own agent description, it makes the agent description information accessible (e.g., via the.well-known address). The process for publishing an agent description is as follows:

a) Before an agent is released, the agent provider should apply for a release certificate

from the agent description manager (step 1 in Figure 2). 1) The certificate should prove the completeness of the agent's registration information and the authenticity of the agent's description management party (publisher); 2) Certificates should contain necessary information such as public keys or certificate digests.

b) The agent description manager verifies the authenticity of the applicant's identity and checks the completeness and real-time status of the agent's registered information (Figure 2). (Step 2) The inspection indicators can be defined by the agent description manager.

c) To publish an agent, the agent provider should send a publication request to the agent description manager (step 4 in Figure 2), which can then... Request additional information from the intelligent agent provider for review purposes, such as. 1) Countries and regions where it was released; 2) Is it an open beta version? 3) Payment requirements; 4) Permission requirements and explanations (permissions, devices, data requirements, and the reasons for them); 5) Electronic copyright certificate; 6) The intelligent agent describes other information required by the management or laws and regulations.

6 Agent Interaction; --Part

7.Agent tool calls. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Information Technology Standardization Technical Committee (SAC/TC 28). This document was drafted by: China Electronics Technology Standardization Institute, Huawei Technologies Co., Ltd., Beijing University of Posts and Telecommunications, and Ant Group. Joint-stock companies, Alibaba Cloud Computing Co., Ltd., China Mobile Internet Co., Ltd., Xiaomi Communications Technology Co., Ltd., ZTE Corporation Limited Company, Jiangsu Jinrong Digital Group Artificial Intelligence Technology Co., Ltd., China Mobile (Hangzhou) Information Technology Co., Ltd., Beijing Haohan Depth Information Technology Co., Ltd., China Mobile Jiutian Artificial Intelligence Technology (Beijing) Co., Ltd., Kunlun Digital Intelligence Technology Co., Ltd., China Electric Power Technology Co., Ltd. Xueyuan Research Institute Co., Ltd., China Unicom Data Intelligence Co., Ltd., Inspur Communication Information Systems Co., Ltd., BOE Technology Group Co., Ltd. Company, iFlytek Co., Ltd., Zhejiang Dahua Technology Co., Ltd., AsiaInfo Technologies (China) Co., Ltd., Lenovo (Beijing) Co., Ltd. The company, Migu Culture Technology Co., Ltd., Beijing Volcano Engine Technology Co., Ltd., Inspur Software Technology Co., Ltd., Nanjing University of Science and Technology China Mobile Communications Group Co., Ltd., Beijing Baolande Software Co., Ltd., Inspur General Software Co., Ltd., Chengdu University of Technology Chenxi Digital Intelligence (Beijing) Technology Co., Ltd., and Digital China Information Service Group Co., Ltd. The main drafters of this document are. Xu Yang, Cao Xiaoqi, Bao Wei, Tian Ye, Peng Shuping, Xu Hao, Huang Mian, Li Ke, Qiu Junyang, Gao Ge, and Zhang Hongwei. Guan Junming, Pang Shaomin, Yang Yuche, Shang Ziqin, Qin

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With the rapid development of artificial intelligence technology, intelligent agents, as the key carriers for transforming artificial intelligence from a concept into actual productivity, are playing a crucial role in various fields. With increasingly widespread applications, the intelligent agent domain has played a significant role in empowering new industrialization and shaping new types of productivity. However, the current development of the intelligent agent industry faces many challenges. The challenge lies in the interoperability and interconnectivity between different intelligent agents. In the field of protocol-based agent interconnection, internationally recognized technologies include MCP and... While intelligent agent communication protocols such as A2A and ANP exist, no universally agreed-upon solution has been developed, necessitating the formulation of a solution suitable for the development of China's intelligent agent industry. An industry-wide consensus solution. To systematically address the aforementioned issues, guide and regulate the development of intelligent agent interconnection technology, and enhance the interoperability and composability of intelligent agent systems. To improve overall industry efficiency, this guiding technical document is specifically formulated. GB /Z 185 "Artificial Intelligence - Interconnection of Intelligent Agents" aims to define the interconnection of intelligent agents. The technical requirements and processes for interconnection are formulated following the principles of systematicity, advancement, and operability, enabling cross-platform and cross-architecture communication between intelligent agents. It provides a unified technical framework and standard basis for interconnection, interoperability and interoperability, and is proposed to consist of seven parts. --Part

1.Overall Architecture. The purpose is to provide a conceptual model and a functional model for an interconnected intelligent agent environment. --Part

2.Identity Code. The purpose is to define and apply the identity code for intelligent agents, and to provide the code structure and allocation principles. The suggestion is as follows: --Part

3.Identity Management. The aim is to provide a framework and full lifecycle process for identity management in an interconnected agent environment. Describe the technical requirements for identity management. --Part

4.Agent Description. The purpose is to provide a method for describing agents, and to provide methods for registering, modifying, and publishing agent descriptions. The reference process. --Part

5.Agent Discovery. The purpose is to provide a discovery process for agent interconnection. --Part

6.Agent Interaction. The aim is to present the interaction patterns of agents in a massive