

# White Paper for AISWare Usights • AI Agent Platform V1.0

AISWare Usights • AI Agent Platform serves as a one-stop innovative agent development platform for key industries, providing secure and trustworthy agent applications and solutions with customization and scalability.

## Disclaimer Statement

AsialInfo Technologies (China), Ltd., hereinafter as "AsialInfo Technologies" or "AsialInfo", exclusively owns all intellectual property rights, including but not limited to copyrights, trademarks, and patents, as well as technical secrets related to the Product and its derivatives, along with all related documentation, including all information within this document and any attachments.

The information within this document is confidential and intended solely for use by the recipient(s) designated by the user. Without prior written permission from AsialInfo Technologies, any user of this document shall not take any actions with respect to this Product or the information contained herein to any third party, including but not limited to managers, employees, and affiliates other than the designated recipients. The aforementioned actions encompass but are not limited to developing, updating, compiling and decompiling, assembling, lending, transferring, selling, disclosing, authorizing, distributing, or any other actions. Nor shall any such third party be permitted to use the Product and the information in this document for any purpose whatsoever.

Without prior written permission from AsialInfo Technologies, users shall not copy, modify, or distribute this document for any purpose. Altering, removing, or damaging any trademarks used in this document is strictly prohibited.

This document is provided as original, and AsialInfo Technologies makes no warranties regarding the correctness, accuracy, reliability, or any other aspect of this document or its consequences after use. All information in this document is subject to further modification without prior notice, and AsialInfo Technologies disclaims any responsibility for errors or inaccuracies that may be present in this document.

AsialInfo Technologies shall not be held responsible for any and all types of liabilities, infringements, or damages resulting from the use of the Product or the information within this document. This exclusion of liability encompasses all forms of damages, including but not limited to direct, indirect, incidental, special, or punitive damages, regardless of whether AsialInfo Technologies was notified of the possibility of such damages beforehand. The exclusion of liability applies to all forms of legal claims, including those arising from negligence or other torts.

AsialInfo Technologies' products may include third-party software. Please refer to the copyright statements in the third-party software documentation for details.

## AsiaInfo Technologies Limited (Stock Code: 01675.HK)

AsiaInfo Technologies Limited (“AsiaInfo Tech”) started in 1993 and was successfully listed on the Main Board of the Hong Kong Exchanges and Clearing Limited on December 19, 2018. As the largest provider of telecom software products and related services in China, AsiaInfo Tech has developed industry-leading R&D capabilities with a loyal customer base.

AsiaInfo Technologies (China) Ltd., as an indirect wholly-owned subsidiary of AsiaInfo Tech, is a leading software product and service provider in China, boasting extensive experience in software product development and large-scale software engineering implementation. With 30 years of deep market presence, AsiaInfo has advanced technological capabilities and numerous successful cases in 5G, cloud computing, big data, artificial intelligence, the Internet of Things (IoT), smart operations, and business and network support systems. AsiaInfo’s clientele spans across industries including telecommunications, broadcasting, energy, government, transportation, finance, and postal services.

In 2022, AsiaInfo acquired iResearch Consulting Group Co., Ltd. (iResearch Consulting) and integrated it into the new brand iDigital, expanding AsiaInfo’s capabilities from product development, delivery services, data operations, and system integration to consulting planning and intelligent decision-making, establishing itself as a leading provider of end-to-end capabilities in digital intelligence.

AsiaInfo is committed to empowering various industries with technologies such as 5G, AI and big data, collaboratively creating digital value with customers. AsiaInfo aims to lead in both products and services, focusing on continuous product development in the areas of data and intelligence, cloud and network, IT, and middle office products. The cloud and network products maintain international leadership, while data and intelligence products achieve domestic leadership and some international advancements. In the IT domain, AsiaInfo’s products stand at the forefront within the domestic landscape.

In the future, AsiaInfo strives to become the most trusted leader in digital intelligence, leveraging its comprehensive capabilities in the field to innovate customer value and contribute to the digital transformation.

## Certificates (Part)

Capability Maturity Model Integration (CMMI) Certificate Level 5 (L5)

Cloud Managed Services Capability Assessment Certificate: Excellent Level

Digital Trusted Services - R&D Digital Governance Capability Certificate

Enterprise Credit Grade (AAA) Certificate

Information System Construction and Service Capability Assessment CS L4

ISO9001 Quality Management System Certificate

ISO20000 IT Service Management System Certificate

ISO27001 Information Security Management System Certificate

Service Certificate of Information System Security Development L2

Service Certificate of Information System Security Integration L2

## Awards (Part)

Awards from International Telecommunication Union (ITU)

Award for Science and Technology Progress of Wu Wenjun Awards

Best Network Slicing Trail at 5G World Summit

French Design Awards

Global Telecoms Awards

IDC Future Operation Leadership

iF Design Golden Award of Hannover Industrial Design Forum

Leading Artificial Intelligence Enterprise in China

Leading Enterprise of Advanced Smart City

Outstanding Catalyst Contribution to TM Forum Assets

The Best Innovation and Future Techco of TM Forum

The Best Standard Contributor of TM Forum

The Most Innovative Application of AI & Automation of FutureNet Asia

The Most Influential Enterprise in China Software Industry

Top 100 China Software Business Revenue List for consecutive years



# Contents

<b>1 Executive Summary</b>	<b>9</b>
<b>2 Abbreviations and Terms</b>	<b>11</b>
<b>3 Product Overview</b>	<b>15</b>
3.1 Trends and Challenges	15
3.2 Product Definition	16
3.3 Product Positioning	16
<b>4 Product Portfolio</b>	<b>17</b>
<b>5 Basic Functions</b>	<b>19</b>
5.1 Agent	19
5.2 Workflow	22
5.3 Tools	24
5.4 Knowledge Base	25
5.5 Safeguard	26
5.6 Model Service	27
5.7 System	27
<b>6 Featured Functions</b>	<b>30</b>
6.1 Industry Expert Capability Collections	30
6.2 Autonomous Planning for Complex Tasks	31
6.3 Advanced Memory Retrieval with Business Experiences	32
6.4 Multi-Agent Collaboration and Communication Mechanisms	33
6.5 Intelligent Business Collaboration and Automation Engine	34
6.6 Five Steps to Build an Expert Agent for Verticals	35
<b>7 Unique Advantages</b>	<b>36</b>
7.1 One-Stop Agent Development Platform	36
7.2 LLM+SLM Collaboration	36
7.3 Quick Access to Legacy Services	37
7.4 Cognition Augmented by Industry-Specific LLMs	37
7.5 Content Compliance Test	38
7.6 1+1+N Platform Solution for Enterprise	39
<b>8 Scenario Solutions</b>	<b>40</b>
8.1 Service Processing Agents for Government and Enterprise	40
8.1.1 Service Requirements for Service Processing Agents	40
8.1.2 Solution for Service Processing Agents	40

8.2 Precise Marketing Agent.....	41
8.2.1 Service Requirements for Precise Marketing Agent .....	41
8.2.2 Solution for Precise Marketing Agent .....	42
8.3 Ticket Handling Agent for Customer Service .....	43
8.3.1 Service Requirements for Ticket Handling Agent .....	43
8.3.2 Solution for Ticket Handling Agent .....	43
<b>9 Use Cases .....</b>	<b>45</b>
9.1 Intelligent Network O&M Agent for a Telecom Operator.....	45
9.1.1 Customer Requirements.....	45
9.1.2 Solutions and Effects.....	46
9.2 Production Agent for a Telecom Operator.....	47
9.2.1 Customer Requirements.....	47
9.2.2 Solutions and Effects.....	47
<b>10 Certificates and Awards .....</b>	<b>49</b>
10.1 Certificates .....	49
10.2 Awards .....	50
<b>11 Contact Us.....</b>	<b>51</b>

# 1 Executive Summary

The concept of the Agent was first proposed by Marvin Minsky, considering an agent to be an entity with the ability to act and “subjectivity” as an expression of it. The evolution progress of the agent can be summarized from the simple rule-based automation system in the early stage, to the complex, intelligent system integrating ML and deep learning, and then to the advanced agent utilizing LLM and multimodal interaction. This evolution not only leaps from static to dynamic in technology but also extends the application sphere from laboratory research to real-world scenarios such as business, healthcare, and education.

IDC Research estimates that all organizations have recognized the AI Agent (“agent”) as the direction for AIGC development, and 84% are already piloting or planning for it. According to MarketsandMarkets, the global market share of Autonomous agents was \$345 million in 2019 and is expected to reach \$2,992 million in 2024, with a CAGR of 54%. It also forecasts the global market for autonomous AI plus autonomous agents to reach \$28.5 billion in 2028, with a CAGR of 43% compared to 2023. With the growing demand for agents and expectations to leverage advanced AI to boost financial revenue, there is a high potential for the future development of agent software companies.

At present, agents are mainly implemented in China's vertical industries, such as telecommunications, finance, government affairs, manufacturing, and retail. The legacy systems with massive data in such large/ medium-sized enterprises have to support routine business operations, so any adjustment to the system requires a lot of time and financial input. The application of agents has effectively revolutionized the work patterns of service personnel. For example, in the financial sector, agents can analyze market trends and manage investment portfolios, and in the retail sector, they can personalize the customer experience and manage inventory. As technology continues to advance, agents are becoming a vital enabler of digital transformation across all industries.

AISWare Usights • AI Agent Platform serves as a one-stop agent development and application platform designed for advancing AI-Native transformation across industries. It can act autonomously and respond intelligently in complex environments by simulating human recognition and decision-making with

pioneering ML algorithms and data analysis. With a wide range of applications in various domains, it elevates the automation and intelligence of business processes with its high efficiency and precision, bringing unprecedented insights and competitive advantages to users.

This Whitepaper will elaborate on AISWare Usights • AI Agent Platform from several aspects, including product portfolio, functions, unique advantages, scenario solutions, and use cases.



## 2 Abbreviations and Terms

Abbreviations and terms for AISWare Usights • AI Agent Platform are shown in Table 2-1.

**Table 2-1 Abbreviations and Terms**

Abbreviation or Term	Full Name	Explanation
AAP	AISWare Usights • AI Agent Platform	A tool of AISWare Usights Toolkit as an one-stop innovative agent development platform for verticals developed by AsialInfo, providing secure and trustworthy agent applications and solutions with customization and scalability.
Agent	AI Agent	A system able to act autonomously to adaptably achieve complex goals
AGI	Artificial General Intelligence	Intelligence of a machine that can accomplish any intellectual task that a human can perform
AI	Artificial Intelligence	Advanced analysis and logic-based techniques, including machine learning, to interpret events, support and automate decisions, and take actions.
API	Application Programming Interface	An interface that provides programmatic access to service functionality and data within an application or a database.
AutoAgent	AISWare Usights • AutoAgent	A tool of AISWare Usights Toolkit as an one-stop suite developed by AsialInfo for process management from design, execution, control to

Abbreviation or Term	Full Name	Explanation
		exploration, with AI assistants and value-driven operations.
ChatCRM	AISWare Usights • ChatCRM	A tool of AISWare Usights Toolkit as a copilot for business intelligence developed by AsialInfo for customer recognition, understanding, contact, and retention capabilities, redefining CRM customer relationship management.
CoT	Chain-of-Thought	Break down more complex logical problems and develop a complete process of thinking through a series of reflections with logical relationships.
CRM	Customer Relationship Management	A business strategy that optimizes revenue and profitability while promoting customer satisfaction and loyalty.
ERP	Enterprise Resource Planning	The ability to deliver an integrated suite of business applications.
GenAI	Generative Artificial Intelligence	Applies advanced analysis and logic-based techniques, including machine learning, to interpret events, support and automate decisions, and take action.
LLM	Large Language Model	A specialized type of AI that has been trained on vast amounts of text to understand existing content and generate original content.
MaaS	Model as a Service	Service of deploying machine learning models to the

Abbreviation or Term	Full Name	Explanation
		enterprise side to be available to users
ML	Machine Learning	Techniques that enable computer systems to learn and improve automatically from data through algorithms and statistical models.
NLP	Natural Language Processing	The ability to turn text or audio speech into encoded, structured information based on an appropriate ontology.
OCR	Optical Character Recognition	The process by which an electronic device examines characters printed on paper, determines the shape by patterns of darkness/lightness, and then translates it into computer text in character recognition methods.
ReACT	Reasoning and Acting	LLM can construct a complete series of actions (Act) based on logical reasoning (Reason) to reach a desired goal.
ReWOO	Reasoning without Observation	A novel approach to augmented language model prompting
RPA	Robotic Process Automation	A productivity tool that allows a user to configure one or more scripts (which some vendors refer to as “bots”) to activate specific keystrokes in an automated fashion.
SLM	Small Language Model	Models that are smaller in size and have fewer parameters compared to LLM. These models are usually able to perform relatively well at a low

Abbreviation or Term	Full Name	Explanation
		computational cost when dealing with specific tasks or domains.
SOP	Standard Operating Procedure	Describe the standard operating procedures and requirements for an event in a uniform format for guidance and standardization of daily work.



## 3 Product Overview

AISWare Usights • AI Agent Platform (hereinafter as “AAP” or the “Platform”) empowers service systems flexibly through diversified approaches by quickly and efficiently developing LLM applications based on scenario demands. It solves real-world challenges, such as the difficulty of LLM implementation and slow launching of agents, and enables enterprises to sustain their leadership in the competitive market.

### 3.1 Trends and Challenges

Researchers have long been pursuing AGI that is comparable to, or even surpasses, human intelligence. In the 1950s, Alan Turing extended the concept of "intelligence" to artificial entities and proposed the famous Turing Test. The rapid development of LLM has provided a breakthrough solution for the agent's underlayers, namely, through its new paradigm of deep learning, CoT, and powerful natural language comprehension, agents will have strong learning and migration skills to make the development of general and practical AI applications possible. As a result, agents have also become the most perfect carrier for GenAI, and are expected to revolutionize from its conceptualization to real-world applications.

Under the current business context, companies are facing the dual pressures of cost control and efficiency improvement. Instead, with constant technological evolution, digital intelligence transformation is a common topic for all economic partners. Agents can bridge the collaboration between human employees and digital productivity to boost enterprise value, with each human employee equipped with his or her own digital assistant to maximize their capabilities. Gartner addressed agents' potential in improving process efficiency and innovating service patterns in *Innovation Insight: AI Agent*. For enterprise customers, as long as agents can enhance capacity greater than the input cost ( $ROI > 1$ ) in the long term, they will stand for the payment.

However, there are challenges to agents. At the moment, the market is still at an early stage; the product and service models require more exploration, and

the market needs to give more room to agent products; while the agent relies heavily on LLM, the validity of its decisions remains to be highly interpretable, and the data privacy needs to be protected for the user trust. Only if agents and developers solve such pain points will the companies gain more competitive advantages in the age of AI.

To sum up, the core demand for agents lies in system-based methodology and mature products that can fully utilize and integrate the existing AI capabilities in the enterprises, comprehensively support the upgrading and refactoring of products and businesses, and advance the enterprise's AI-Native revolution.

## 3.2 Product Definition

AAP serves as a low-code agent development and application platform designed for advancing AI-Native transformation across industries. It integrates innovative AI technologies to help enterprises develop, deploy, and manage agent applications, and accelerates business efficiency at a low cost.

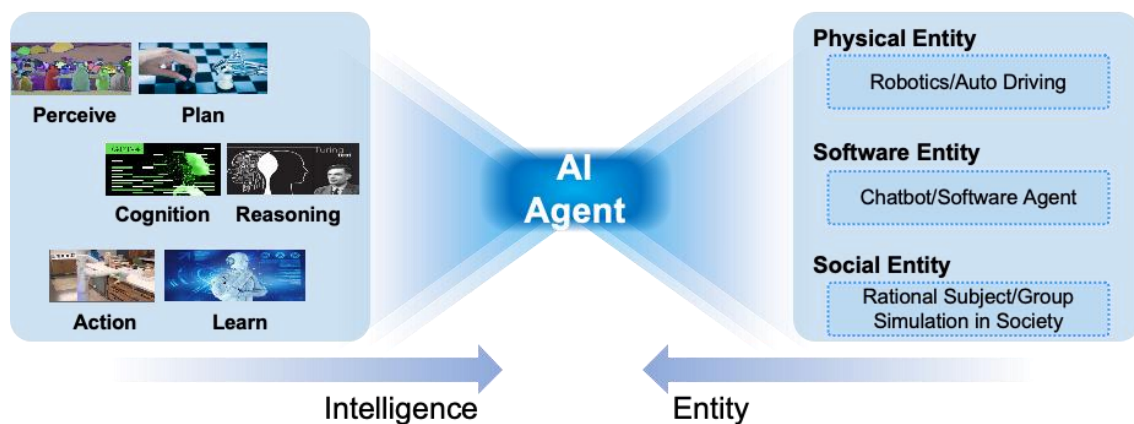


Figure 3-1 Product overview

## 3.3 Product Positioning

AAP assists enterprise customers in quickly and efficiently building agents or services for different industries/fields/scenarios.

- Professional Industry Knowledge
- Professional Product and Service Support
- Closed-loop Intelligent Solutions

## 4 Product Portfolio

AAP provides six functional modules to frame an end-to-end agent development platform and solutions for enterprises to accelerate internal productivity and digital intelligence upgrades.

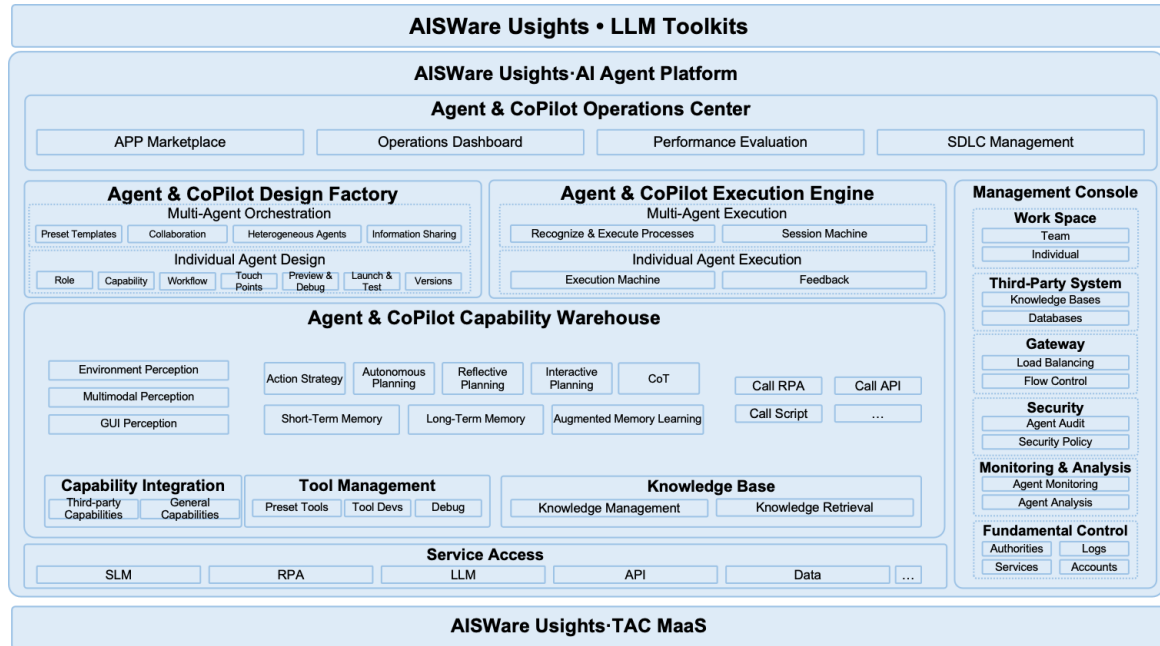


Figure 4-1 Functional architecture of AAP

Six functional modules include:

- **Service Access** provides standard APIs and supports the leading LLMs;
- **Agent & CoPilot Capability Warehouse** provides critical agent skills, such as workflow, tools, knowledge, and memory, to understand task objectives, plan and disassemble issues, configure required resources, and achieve objectives;
- **Agent & CoPilot Design Factory** supports the role/skill configuration of an individual agent and collaboration/orchestration of multiple agents to maximize different agents' advantages for verticals;
- **Agent & CoPilot Execution Engine** can run agents, launch spaces, call tools, nest workloads, and recall knowledge;

- **Agent & CoPilot Operations Center** provides APP Marketplace, Operations Dashboard, Performance Evaluation and SDLC Management;
- **Management Console** can observe and analyze agent operations with basic control capabilities such as authority control, log management, and security guards.



## 5 Basic Functions

The basic functions of AAP feature agent, workflow, tool, knowledge base, safeguard, service, and system.

### 5.1 Agent

By configuring prompt words, skills, and other related information to build an agent, the user can talk with the agent to query or execute tasks. The functions are shown below.

**Table 5-1 Functions of agent**

Function		Description
Agent Orchestration	Configure basic info	Users can configure basic information such as agent name, profile, etc.
	Configure prompts	Users can configure the LLM prompts.
	Configure AI models	Users can configure AI models, select the model to be called, and adjust the parameters.
	Configure start guidance	Users can configure start guidance for agents, including introductory remarks and guidance questions.
	Query a workflow	Users can query the workflow list by conditions such as name.
	Add a workflow	Users can select the workflow from the list to add to the configuration zone.
	Create a workflow	If the workflow in the list does not meet the needs, the user can create by him/her own.

Function		Description
	Remove workflow	Users can remove workflows from the configuration zone.
	Set workflow execution	Users can set the execution mode such as whether or not to manually confirm the parameters before executing the workflow.
	Select tools	Users can select the type of tool, including form-based API, code-based API, and SQL tools.
	Query tools	Users can query the tool list by conditions such as name.
	Add tools	Users can select the tools from the list to add to the configuration zone.
	DIY a tool	If the tools in the list do not meet the needs, the user can create one by his/her own.
	Remove tools	Users can remove tools from the configuration zone.
	Set tool execution	Users can set the execution mode, such as whether or not to manually confirm the parameters before executing the tool.
	Add tool descriptions	Users can add names and descriptions to the tools in the agent to help LLM better understand.
	Set dialog rounds	Users can set the round counts of dialogs used for short-term memory to help agents generate more personalized responses.

Function		Description
	Query knowledge base	Users can query the knowledge base list by conditions such as name.
	Add knowledge base	Users can select a knowledge base from the list to add to the configuration zone.
	Add knowledge base	If the knowledge base in the list does not meet the needs, the user can create one on his/her own.
	Remove knowledge base	Users can remove the knowledge base from the configuration zone.
	Query safeguard	Users can query the safeguard list by conditions such as name.
	Add safeguard	Users can select safeguard from the list to add to the configuration zone.
	Create safeguard	If the safeguard in the list does not meet the needs, the user can create one on his/her own.
	Remove safeguard	Users can remove safeguards from the configuration zone.
	Debug and preview the agent	Users can debug and preview the set-up agents.
Agent Management	Modify	Users can modify the name, profile, and all configurations of the agent.
	View details	Users can check the details of the agent, including basic information, call logs, debugging interface, and analysis dashboard.

Function		Description
	Delete	Users can delete the agent.
	Query	Users can query the list of agents by conditions such as the name.
	Launch	Users can launch setup agents to multiple channels, including the AAP and Rest APIs.
	Copy	Users can copy the launched agent in a different name only.

## 5.2 Workflow

Users can drag and drop to orchestrate the workflow for the agent to call. The functions are shown below.

**Table 5-2 Functions of workflow**

Function		Description
Business development workflow orchestration	Orchestrate	Users can configure workflows by node drag-and-drop.
	Import	Users can import existing local workflow files, supporting .json.
	Export	Users can export the scripted workflow to a .json file and save it to the local.
	Test run	The user can enter parameters to try out the workflow.



Function		Description
	Save	Users can save the workflow under orchestrating.
	Modify canvas	Users can modify the canvas view of the workflow, including zooming out/in, display scale, collapsing/expanding all nodes, optimizing the layout, and adaptive view.
Business development workflow management	Modify	Users can modify the name of the workflow and all configuration items.
	View details	Users can view workflow details, including basic information and process configuration.
	Delete	Users can delete the workflow.
	Query	Users can query the workflow list by conditions such as name.
	Publish	Users can publish set-up workflows for agents to call. Only published workflows can be called.
	Sunset	Users can sunset live workflows.
	Copy	Users can copy the published workflows in a different name only.

## 5.3 Tools

Users can create tools for agents to call by configuring or interfacing with existing services, including form-based API, code-based API, and SQL tools. The functions are shown below.

**Table 5-3 Functions of tools**

Functions		Description
API tools (form-based /code-based)	Create	Users can create API tools, supporting both code-based creation and form-based creation.
	Modify	Users can modify the basic information and configuration of the API tool.
	Delete	Users can delete the current API tool.
	Query	Users can query the tool list by conditions such as name.
	Test	Users can enter parameter values and then test the connectivity.
SQL tools	Create	Users can create an SQL tool by selecting the docking database and entering information such as SQL statements and parameters.
	Modify	Users can modify the configured SQL tool, including the docking database, SQL statements, parameters, and other information.
	Delete	Users can delete the current SQL tool.
	Query	Users can query the tool list by conditions such as name.

## 5.4 Knowledge Base

By accumulating a knowledge base, agents can automatically pull in relevant knowledge to answer questions when the session content relates to the content in the base. The functions are shown below.

**Table 5-4 Functions of knowledge base**

Functions		Description
Knowledge base import	Import	Users can select an interfaced knowledge to import.
Knowledge base construction	Add	Users can add a knowledge base.
	View details	Users can view the details of the current knowledge base, including existing files and file parsing status.
	Delete	Users can delete existing knowledge bases.
	Query	Users can query the knowledge base list by conditions such as name.
	Upload files	Users can upload files in a particular knowledge base to supplement.
	Select file slicing mode	When parsing the file after uploading, users can choose the segmentation method, supporting both intelligent segmentation and customized segmentation. Customized segmentation strategy can be set by segment identifier, length, and overlap length.
	Preview and adjust by section	Once the document is segmented, users can preview the content and adjust it manually.

Functions		Description
	Parse file	After the file is uploaded, LLM will automatically parse the content and support users to view the parsing status.
	Delete file	Users can delete files from a knowledge base.
	Query file	Users can query the file list by conditions such as name.
Knowledge base API	Configure API	Users can configure the knowledge list API, the knowledge query API, and the knowledge recall API.

## 5.5 Safeguard

Users can build a safeguard for agents to call. When the session content reaches the safeguard topic, agents will give a specific response. The functions are shown below.

**Table 5-5 Functions of safeguard**

Function		Description
Safeguard Management	Create	Users can fill in the safeguard name and configure the topics to be filtered, define blocking messages, and so on.
	Modify	Users can modify the name and related configurations.
	View details	Users can view the details of the current safeguard, including topics to be filtered, definitions of blocking messages, and so on.
	Delete	Users can delete safeguards.

Function		Description
	Query	Users can query the safeguard list by conditions such as name.

## 5.6 Model Service

Users can add models for agents to call. The functions are shown below.

**Table 5-6 Functions of model service**

Function		Description
Model Management	Add	Users can add a model by selecting the category and provider and entering the name, API address, and other relevant information.
	Modify configurations	Users can modify configurations, including model category, provider, entering model name, API address, and other related information.
	View details	Users can view model details, including the model category provider, entering a model name, API address, and other related information.
	Delete	Users can delete models.
	Test connectivity	Users can test the connectivity of existing models to update the service status in the model list.

## 5.7 System

The AAP system includes user management, role administration, third-party database configuration, and knowledge base configuration. The functions are shown below.

**Table 5-7 Functions of the system**

Functions		Description
User management	Modify user info	Administrators can modify basic user information, such as roles.
	Block account	Administrators can block user accounts, and blocked accounts will not be able to log in.
	Activate account	Administrators can activate blocked user accounts, and activated accounts are able to log in.
	Query account	Administrators can query the user account list by conditions such as account name.
Role administration	Create	Administrators can create user roles and authorize agents, knowledge base and other resources for them.
	Modify and Authorize	Administrators can modify the current user roles and authority.
	Delete	Administrators can delete user roles.
	Query	Administrators can query the user role list by conditions such as name.
Third-party database configuration	Add	Administrators can create a database by entering the name, address, database type, etc.
	Modify	Administrators can modify database information, including name, address, type, etc.
	Delete	Administrators can delete databases.

Functions		Description
	Query	Administrators can query the database list by conditions such as name.



## 6 Featured Functions

### 6.1 Industry Expert Capability Collections

AAP provides a multi-level capability framework to develop expert-level capability collection for agents, oriented to improving command compliance and controllability for complex tasks.

- Built-in industry knowledge (O&M, processes, standards, specifications, policies, regulations, etc.) to provide industry expert-level cognition and collaboration through multimodal interaction;
- Based on the industry-specific LLM, it builds long-/short-term memory and self-reflection mechanisms to provide industry expert-level reasoning and analytics;
- Equipped with professional skills of digital employees, workflow, APIs, etc., compatible with CRM, ERP, and other business systems, providing industry expert-level decision-making and execution;
- Accumulate best practices across industries through technical means such as process mining and task mining, form an industry experience library and an industry knowledge graph, summarize historical behaviors/reflections, and provide industry expert-level experience accumulation and application;
- Multiple agents work together, allocate resources, control agent performance ROIs accurately, and provide industry expert-level organization and coordination.



Figure 6-1 Industry Expert Capability Collections

## 6.2 Autonomous Planning for Complex Tasks

AAP is capable of establishing autonomous planning and execution strategies to augment the execution of complex business process applications.

- Agent can autonomously plan and execute towards complex questions, such as planning based on ReACT of CoT, Plan&Execute, and ReWOO;
- Provide two auto-planning modes, reflection mode and plan/execution mode, to augment the solution generalization capabilities of agents;
- Users can apply domain knowledge to accumulate workflows and effectively enhance the accuracy and efficiency of task planning in specific vertical domains.

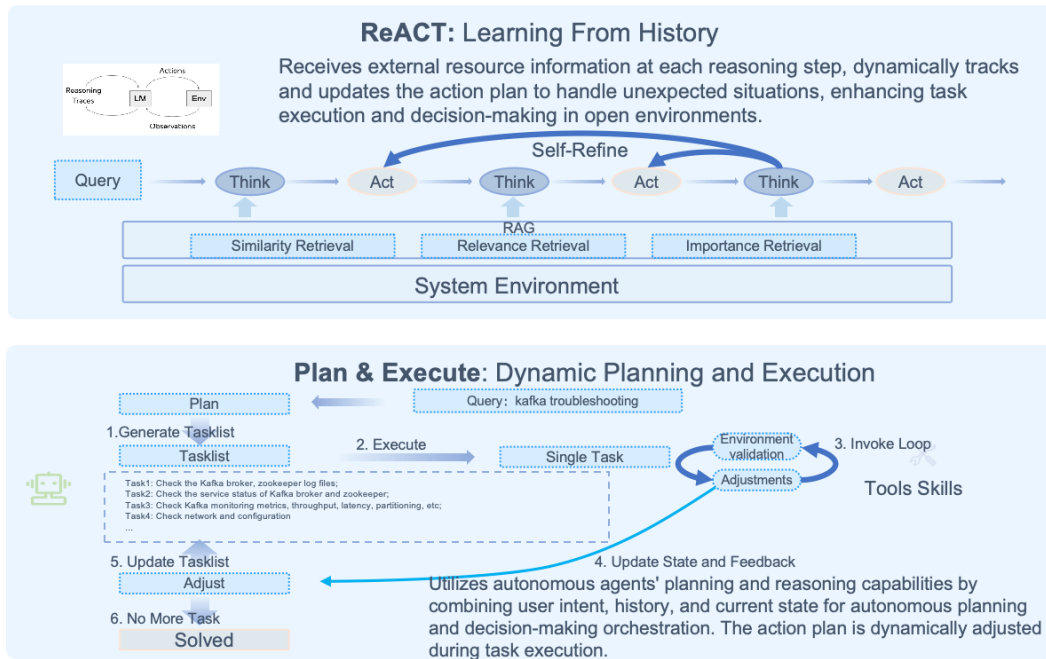


Figure 6-2 Autonomous planning for complex tasks

## 6.3 Advanced Memory Retrieval with Business Experiences

AAP provides advanced memory retrieval with business experiences, innovative memory stream framework and long-term memory augmentation technologies to enable agents to quickly retrieve and apply historical experiences in processing complex tasks

- **Advanced memory retrieval:** Flexible long-term + short-term memory configuration strategy combined with business workflow;
- **Memory module:** Establish a global memory for the business database and generate leads for simple retrieval;

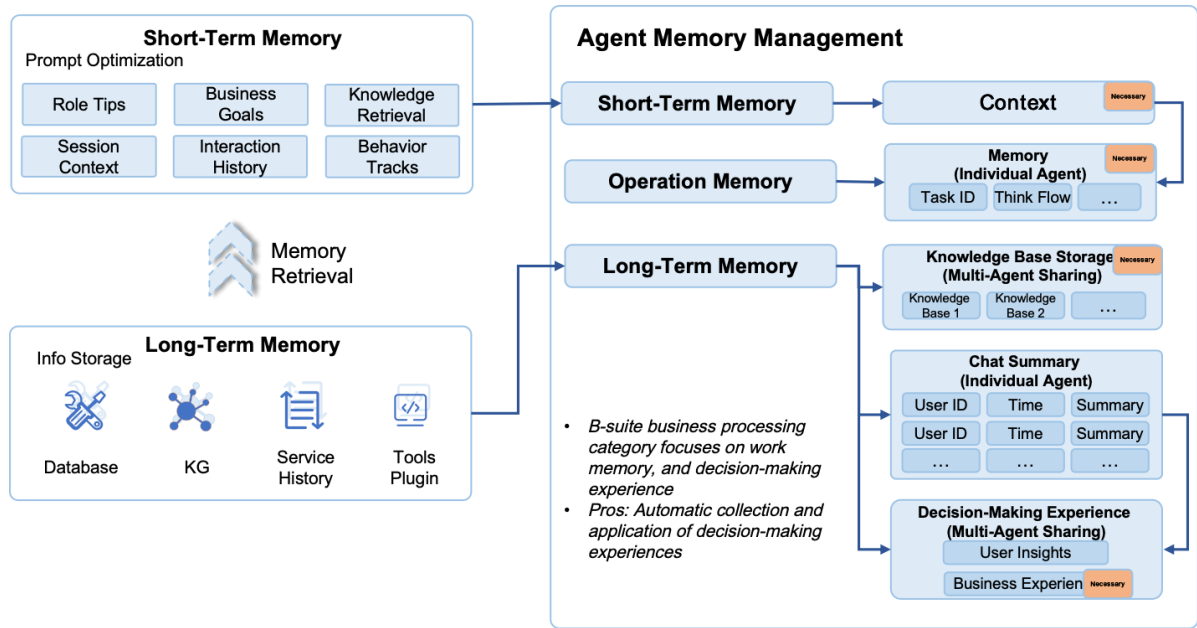


Figure 6-3 Advanced memory retrieval with business experiences

## 6.4 Multi-Agent Collaboration and Communication Mechanisms

AAP provides multi-agent collaboration and communication mechanisms. Through an advanced technology framework, it enables multiple agents to collaborate with each other, exchange information, and share resources, in order to simulate real-world interactions and decision-making processes to solve complex tasks.

- **Two flexible multi-agent orchestration methods:** finely controlled SOP and automatic planning. Users can choose the appropriate orchestration method based on their needs;
- **Drag-and-drop developer canvas:** Easy to select an individual agent in Agent Market and rich components to quickly build a multi-agent collaboration system.

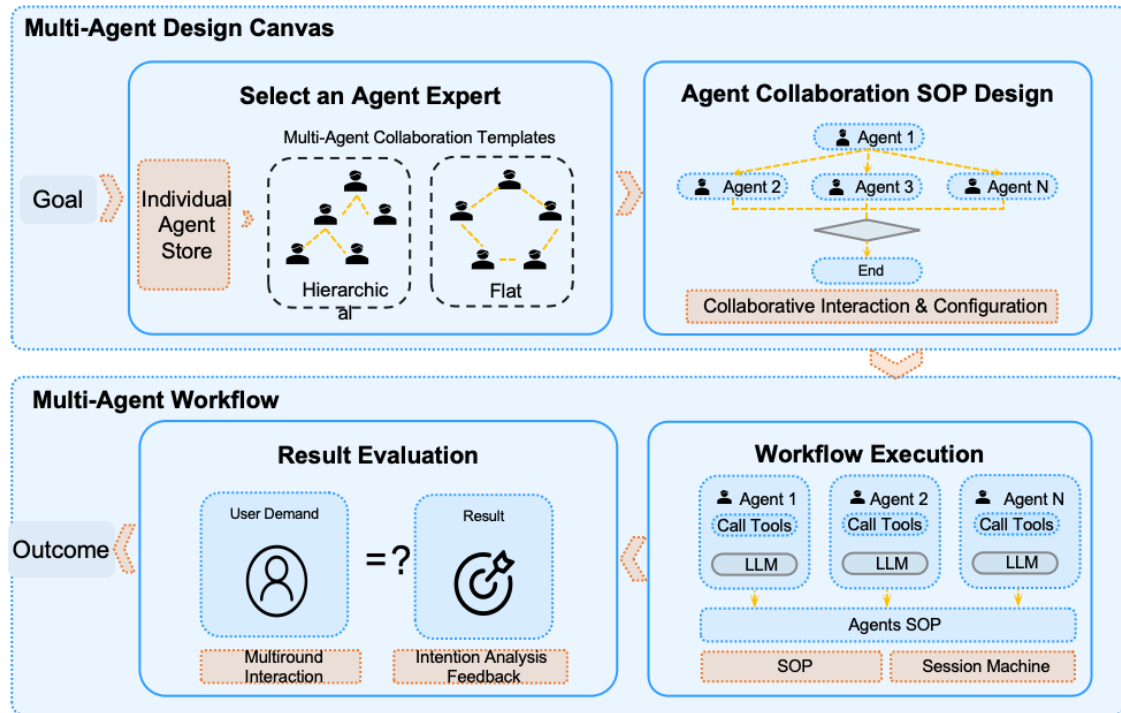


Figure 6-4 Multi-agent collaboration and communication mechanisms

## 6.5 Intelligent Business Collaboration and Automation Engine

As the core engine for intelligent business collaboration and automation transformation, AAP provides a series of comprehensive solutions to enhance operation efficiency and decision-making quality and empowers users to differentiate themselves in the competitive marketplace. It provides several capabilities:

- **Comprehensive design and implementation capabilities from business process analysis to solution planning**, including business consulting, process reengineering, and technology adoption, to ensure enterprises quickly adapt to market changes;
- **Advanced business handling intelligence** with ML and AI technologies to automate processes for higher speed and accuracy, as well as to reduce manual errors;
- **A flexible low-code development environment** in a user-friendly low-code platform enables service staff without technical backgrounds to

simply organize and customize automatic processes to accelerate innovation;

- **Automatic monitoring intelligence** allows for predicting and identifying potential errors of business processes in real time and automatically adjusts strategies to optimize business execution.

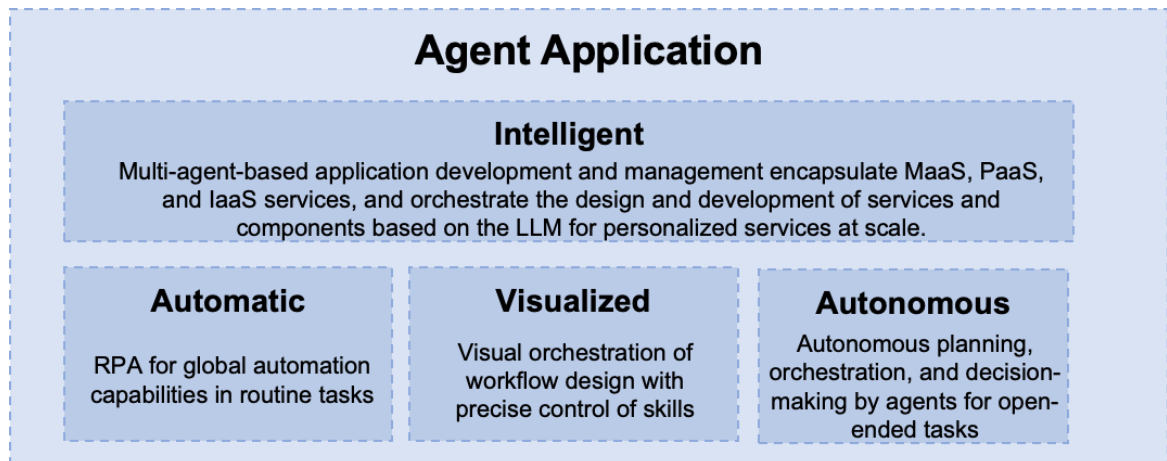


Figure 6-5 Intelligent application developed through business collaboration and an automation transformation engine

## 6.6 Five Steps to Build an Expert Agent for Verticals

AAP serves as a one-stop AI Native agent application and development platform, enabling users to quickly build an expert agent.

- **Set a role:** Shape a clear and distinct identity for the agent through its name and description;
- **Configure models:** Set up the agent's brain, behavior, language, and output via prompts;
- **Augment Capabilities:** Equip agent with tools, knowledge bases, and workflows to achieve goals;
- **Safeguard:** Filter and desensitize inputs and outputs to ensure that the agent adheres to security and privacy regulations while processing information;
- **Debug and Preview:** Test the agent's operations and outputs and ensure an agile user experience.

## 7 Unique Advantages

### 7.1 One-Stop Agent Development Platform

As a one-stop agent development platform, AAP supports three development approaches, wizard guidance, drag-and-drop, and code-based, allowing various players in the company to use it, including business experts, operations staff, engineers, and so on.

- **Rich applications:** Supports the development of various applications such as personal assistants, IT solutions, intelligent customer service, staff training, HR management applications, and legal advisors, covering a wide range of business scenarios;
- **Dialog-driven:** Supports the development of dialog-driven applications, as well as text generation applications that automatically generate high-quality text based on provided information;
- **Workflow orchestration:** Combines text LLM, knowledge base, and other functions through visualization to achieve complex and stable business process orchestration;
- **Zero-code development paradigm:** Provides developers with a new development paradigm that simplifies the process of building agents;
- **Co-development of plugin tools:** Developers can co-build plugin tools, allowing DIY and substituting their own business, while the platform provides native plugins as well as partners' plugins for developers to call;
- **API and SDK support:** Provides various APIs and SDKs for developers to flexibly develop as needed and integrates agents with legacy IT systems or third-party services.

### 7.2 LLM+SLM Collaboration

AAP takes full advantage of the accumulated industry SLM with quick response at low reasoning cost, serving as ModelTools for unified invocation and scheduling by the agents.



- **Quick response:** Lightweight SML enables faster response for instant feedback application scenarios;
- **Low reasoning cost:** Reduce reasoning costs through SML while maintaining efficient performance;
- **Tailored to different industries:** The Platform can customize solutions based on domain-specific SMLs to meet complex demands;
- **Flexibility and scalability:** The Platform unifies the calling and orchestration of LLMs and SLMs through ModelTools and enables agents to adapt to changing business needs.

## 7.3 Quick Access to Legacy Services

AAP can be quickly connected with the legacy processes and systems of the enterprise for batch introduction and automatic conversion/calling.

- **Automatic conversion/calling:** Automatically convert traditional business processes into automatic flows and can call and execute them according to preset rules and logic with high speed and accuracy;
- **Automatic workflow tool integration:** Integrates with various workflow automation tools to enhance efficiency, such as RPA, APIs, etc., and forms a comprehensive solution covering workflow, rules engines, integration, and reporting;
- **Continuous workflow monitoring:** Continuously monitor the execution of workflows through RPA tools, identify and deal with exceptions timely to ensure process stability and reliability.

## 7.4 Cognition Augmented by Industry-Specific LLMs

AAP develops agents with powerful industry cognition capability based on domain-specific LLMs from O&M, telecom, and energy.

- **Domain-specific LLM support:** Supported by AISWare Usights' domain-specific LLMs, agents show more accurate cognition and comprehension of knowledge in industry-specific applications;

- **Full-stack AI support:** Cooperates with MaaS to effectively bridge the gap between general LLMs and industry applications to better utilize resources and enhance development efficiency;
- **Augmented service handling:** Agent has superior capabilities to the general-purpose LLMs in terms of intent recognition, task planning, and decision-making;
- **Integrated capability covering decision-making and execution:** AAP builds a closed-loop system of augmented cognition and leverages RPA and API to seamlessly interface with decision-making, execution, and workflow systems.

## 7.5 Content Compliance Test

AAP fully safeguards contents with protection mechanisms for security risk detection and sensitive word detection of input/output from agents.

- **Intelligent identification and real-time updates:** Adopt deep learning and NLP to intelligently identify sensitive words in the text, update the vocabulary, and optimize the detection algorithm in real-time to adapt to the rapid development of Internet language;
- **Compliance content generation tool:** Assure users to avoid the risk of breaches and to improve the efficiency and quality of their creations;
- **All-round content protection:** Includes various functions such as data encryption, access control, and behavior audit to ensure data security and compliance;
- **Multi-dimensional risk content identification:** Provide all-round risk content identification and early warning, including leadership information, political content, anti-civilized language, and other types of sensitive words;
- **Flexible policy settings:** Users can develop corresponding security policies according to needs and scenarios, including sensitive word detection rules, access control rules, behavior audit rules, etc.

## 7.6 1+1+N Platform Solution for Enterprise

Facing all kinds of enterprise needs, AAP can be composable with several core optional tools with various deployment solutions.

- **Flexible scalability:** Enterprises can choose from various core tools based on specific needs, including data integration tools, API tools, business process control tools, etc.;
- **Diversified deployment solutions:** Include public cloud, private cloud, and hybrid cloud deployments to suit different IT environments and security requirements of enterprises;
- **Cloud-edge-end collaboration solutions:** Realize multi-level interconnection and all-in-one management to bridge data silos above and below the cloud.

## 8 Scenario Solutions

AAP provides scenario-based solutions, including service processing, network troubleshooting, and customer service.

### 8.1 Service Processing Agents for Government and Enterprise

Driven by 5G and demands, as well as under the pressure of the traditional businesses gradually peaking, telecom operators are pushing forward strategic transformation with digitalization as an important focus.

Currently, the traditional telecom industry is still suffering from the problems of a large volume of basic services with high service quality requirements and service complexity.

#### 8.1.1 Service Requirements for Service Processing Agents

With the rapid development of Internet technology, telecom operators have equipped their marketing staff with a specific service processing APP as a unified production and operation tool, which needs to be constantly upgraded and refined to improve the user experience and service quality.

The traditional process requires marketing staff to manually enter customer information into the APP word by word and item by item, resulting in inefficiency and higher time consumption.

The customer is urgently seeking to optimize and upgrade the existing processing workflow with AI technology and upgrade user experience by intelligent audio-recording of tickets in intensive service modification, cancellation of accounts, and comprehensive ticket services.

#### 8.1.2 Solution for Service Processing Agents

AsialInfo develops a government and enterprise service processing agent through AAP.

Users can command the agent with query instructions by voice and provide the ticket or order number to quickly drive service operations, such as order status query, automatic order creation, order progress feedback, and so on.

After launching, the average daily processing volume of production orders has increased by 100%, the manual participation in the ordering market has been shortened by about 80%, and the length of order inquiries has been shortened by 90%.



Figure 8-1 Internet-only orders

## 8.2 Precise Marketing Agent

While there has always been a huge demand for talent in digital marketing, advertising staff are often stuck in tedious data analysis and content creation.

In recent years, AI-based, especially LLM, agents are driving marketing innovation to make the work more efficient and convenient, bringing new momentum to the marketing field.

### 8.2.1 Service Requirements for Precise Marketing Agent

In product marketing, the core pain point for service providers is how to reach target customers efficiently and accurately, while the pain point for users often lies in the high expectation of a more personalized experience and high-quality

services at all times. So, marketing companies are required to quickly adapt to market changes and ensure the accuracy and effectiveness of strategies.

The customer is looking forward to benefiting from AI to realize precise marketing and effectively solve complex and cumbersome problems to improve efficiency and provide personalized and all-day-round services with real-time optimization.

## 8.2.2 Solution for Precise Marketing Agent

AsialInfo develops precise marketing agents through AAP.

In the marketing scenarios of sales managers, an agent supports the first line to grasp business customer opportunities from the vulnerable indicators, with guidance for customer demand mining, dynamic generation of marketing speech for telecom operators' products, and mapping of business opportunity tasks to assist.

After launching, the number of front-line users of the telecom operator reaches up to thousands of personnel, and the penetration rate of direct marketing of sales managers and customers can reach 80%, with a marketing conversion rate of about 15%.



Figure 8-2 AI Marketing Assistant

## 8.3 Ticket Handling Agent for Customer Service

In a fast-paced commercial environment, customer service departments are under increasing pressure to deliver fast, efficient, and personalized service.

Customers are suffering from long ticket processing duration, slow response speed, data silos, and human errors in complex or unstructured requests. These challenges not only undermine customer satisfaction but also add extra costs to the company.

### 8.3.1 Service Requirements for Ticket Handling Agent

Customer service ticket processing is a key node involving stages such as accepting, categorizing, distributing, and resolving.

After due diligence, the statistics show that the average daily number of tickets handled by customer service personnel of the telecom operator is between 1,300 and 1,500, with close to 2,000 at the beginning/end of the month; each staff handles 30 tickets per capita per day, and the accumulated experience is insufficient, which makes it time-consuming and labor-intensive.

The customer requires a professional solution to optimize the ticket-handling process.

### 8.3.2 Solution for Ticket Handling Agent

AsialInfo develops a ticket-handling agent for customer service through AAP.

The agent can help complaint resolution staff automatically analyze the content of the complaint ticket through LLM, call API, or RPA to retrieve the necessary information and give tips and answer techniques for different scenarios.

After launching, the precision rate of the complaint tickets reaches 75%, the matching accuracy rate of the program reaches 75%, and the efficiency is improved by about 30%, which fully meets the customer's expectations.

工单基础信息

工单工号：75262718318988576

状态

工单类型：办证类-普通受理

服务归属地：深圳市

客户名称：18588050253

客户名称：18588050253

原办证渠道名称：1

办结日期：

问题描述：问题发生时间 2023-10-31，是否业务限制：是，投诉原因：下绿单app及营业厅「客户问题及诉求」补充用户来电需要帮其受理办证需求，用户表示问题一直没有解决好，在线未解决，要求办证人员，不属实。营业厅：惠德；事发发生原因【投诉内容】升级原因：是否升级原因【投诉内容】是

工单基础信息

原单名称：

用户状态：开通

开单时间：2023/04/23 15:16:55

编号名称（含编号三要素）：

实际结束：

在网时长（月）：7

是否融合（关联编号与号码）：是

实际开始：

归属渠道（名称）：宝安-通外-中移广东深圳-后付费代维点

名称：

当前状态：

高质渠道业务加强与业务受理：

合同号码：20230501000006-2025043023659

可退金额：

按退费模式（非退费费用）：

处理意见

确认该用户为存量型二代客户（含绿单上的一代客户（不含绿单下的一代客户）：本手机号码未办理过本办证业务，可归属在绿单二代名下登记，身份证号码、证件地址办证业务，本手机号码未办，可联系本手机号码的归属地，如该手机号码已欠费停机，请关闭卡号在身边，如该手机号码未激活上户资料，身份证正反面照，手持身份证大照片，代办人照片等，办证需下二代的用户，需按正常流程提交上户资料；身份证正反面照，手持身份证大照片，代办人照片等。

意见是否有用：有用 无用

处理结果

第一步（必填）：真的话，您确认该用户为存量型二代客户（不含绿单上的一代客户（不含绿单下的一代客户）：本手机号码未办理过本办证业务，可归属在绿单二代名下登记，身份证号码、证件地址办证业务，本手机号码未办，可联系本手机号码的归属地，如该手机号码已欠费停机，请关闭卡号在身边，如该手机号码未激活上户资料，身份证正反面照，手持身份证大照片，代办人照片等，办证需下二代的用户，需按正常流程提交上户资料；身份证正反面照，手持身份证大照片，代办人照片等。）

**Figure 8-3 Illustration of the flyer for complaint-handling suggestions**



## 9 Use Cases

### 9.1 Intelligent Network O&M Agent for a Telecom Operator

#### 9.1.1 Customer Requirements

Traditional manual O&M is facing challenges due to more complex service processes and booming data volume, which makes it difficult to meet the demands of high efficiency and accuracy. The telecom operator attaches great importance to AI technologies to drive strategic transformation from “+AI” to “AI+”, thus boosting productivity and solving the pain points in O&M with an intelligent network assistant. The customer requirements are listed below:

- **Boost AI values:** Currently, AI in the network O&M mainly serves as an analysis assistant in various modes at scattered points instead of collaborating with each mode to form an all-around assistant.;
- **Improve network O&M efficiency:** There are plenty of indicators, and communication network O&M involves many specialties, such as radio/core network, transmission, and dynamic ring, so network managers spend a lot of time analyzing such indicators every day, and sometimes the errors are hidden, which lowers the O&M efficiency;
- **Integrate network knowledge:** Network knowledge for troubleshooting is dispersed among different experts or offline documents, making it inconvenient to access; network information is also fragmented in different network control systems without a unified access portal, making it costly and inefficient for O&M personnel to learn and acquire.

The client expects to develop and transform its network O&M monitoring work into a technology-intensive specialty. Although the pilot project of LLM was led before, it failed to meet the standard because general-purpose LLM could not well understand the complex spatial and temporal relationships embedded in operation data, coupled with a lack of guidance from a professional team and efficient tools. AsialInfo responded to such pain points by bringing structured

network LLM and AI Agents with the skill to analyze network status and the mechanism of network operation.

### 9.1.2 Solutions and Effects

In order to improve the efficiency and accuracy of network O&M at low operation costs, AsialInfo develops a Network O&M Agent (“Agent”) based on AAP. The agent integrates network knowledge documents and network control information queries based on LLM and vector database and combines the flexible and efficient data mining and analyzing capabilities of SLM to interpret the status of network indicators.

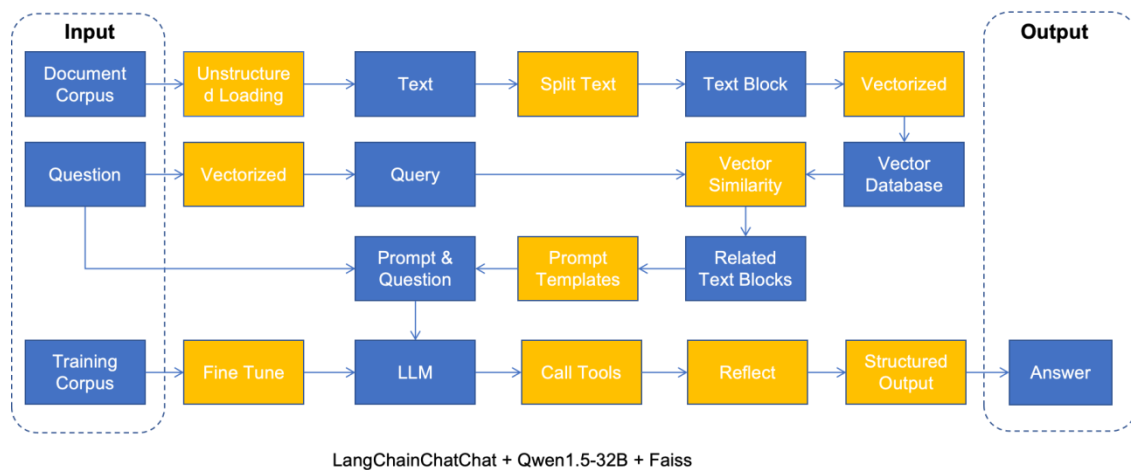


Figure 9-1 Diagram of the technical logic of the Agent

Network O&M Agent is capable of:

#### ➤ Interpreting the exceptional status of network metrics

Through LLM, the Agent can intelligently analyze metrics, quickly identify exceptions, and provide network managers with a basis for decision-making.

#### ➤ Query network alarms

The Agent can centrally visualize the alarm information of network equipment and IDC, facilitating O&M personnel to quickly understand the network status and speed up the response.

#### ➤ Recommend troubleshooting solutions

Recommend the best solution to help O&M personnel quickly locate errors, shorten troubleshooting duration, and reduce the risk of service interruptions.

The Effects are listed below:

- After launching, it is expected to save 15 minutes of network metrics analysis and decision-making per person per day for about 1,000 network managers across the province, increasing management efficiency by more than 80% and saving costs by RMB 6.2 million yuan.
- Fault analysis and positioning time per ticket for each network O&M personnel is shortened from 15 minutes to 5 minutes, reducing time by 67%, and saving costs of RMB 4 million yuan.

## 9.2 Production Agent for a Telecom Operator

### 9.2.1 Customer Requirements

The telecom operator's services have engaged more functions with complex logic, making it more difficult for service personnel to understand, and multiple portals lead users to apply for the services through different channels, resulting in a cumbersome and inefficient process. The pain points are listed below:

- **Difficulty in accumulating service knowledge:** Due to the wide variety of services and the scattered knowledge involved, it is difficult for service personnel to fully understand and master all service knowledge. Simultaneously, due to the significant differences between services, it is time-consuming for service personnel to familiarize themselves with different service processes;
- **Difficulty in boosting the efficiency of service acceptance:** The low efficiency is caused by the complex operation and the fragmented system. Service personnel need to spend a lot of time dealing with various complex processes and system operations.

### 9.2.2 Solutions and Effects

By combining CRM scenarios with LLM, intent recognition, strategy parsing, RPA and other capabilities, an AI Agent for production ("Agent") is developed to drive

digital intelligence transformation. It empowers service knowledge sorting and service operation/acceptance guidance, bringing more convenience to the production for the telecom operator.

AsialInfo integrates the front-end page of Avatar Xiaoyi and adopts AISWare Usights • ChatCRM (“ChatCRM”) as the unified portal for intelligent Q&A. Through this portal, users can engage in service consulting and Q&A at any time and anywhere, while the Agent can quickly and accurately answer questions and provide personalized services.

At the back-end, AsialInfo combines GPT to build six critical capabilities: intent recognition, strategy parsing, FAQ, media information query, operation guidance, and service acceptance guidance. These capabilities will help the Agent better understand and handle user requests to provide more accurate and efficient services.

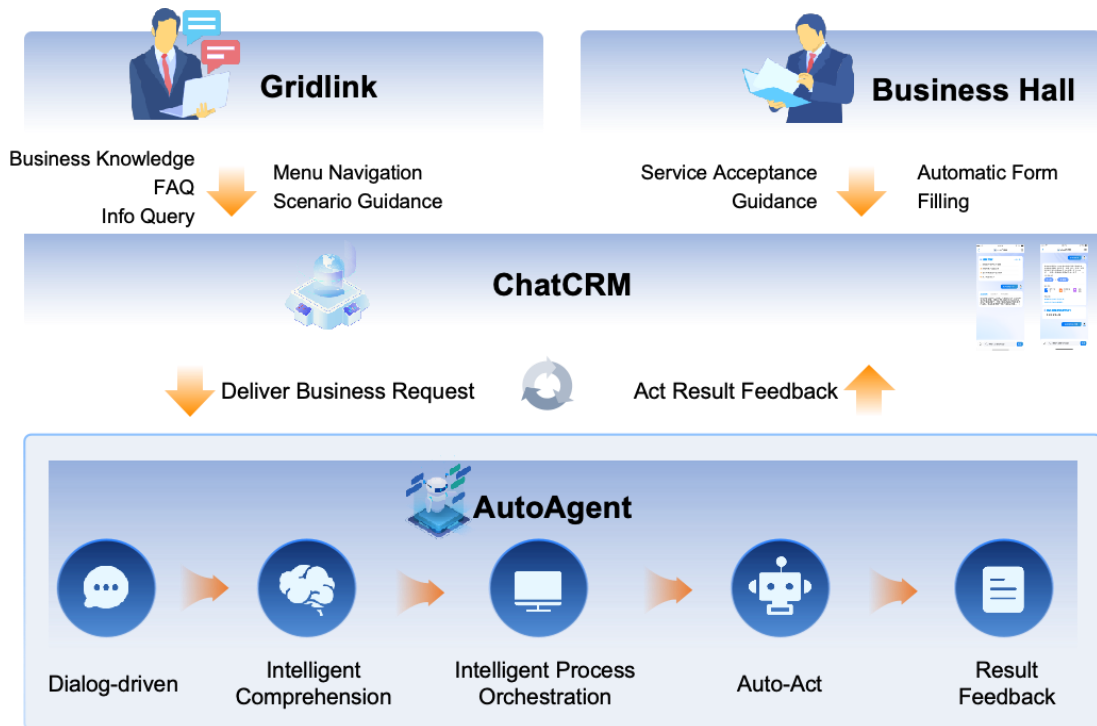


Figure 9-2 Architecture of ChatCRM

## 10 Certificates and Awards

### 10.1 Certificates

AsialInfo participated deeply in the following CAICT standards formulation work:

- *Series of Large-scale Pre-training Modeling Techniques and Application Evaluation*
- *General Capability Requirements for AI Development Platforms Part 4: LLM Technical Requirements*
- *Technical Requirements and Assessment Methodology of AI Agent*
- *Technical Assessment and Evaluation Standard of Retrieval-Augmented Generation*



**Figure 10-1 Core Participant Institute of General Capability Requirements for AI Development Platforms Part 4: LLM Technical Requirements**



**Figure 10-2 Core Participant Institute of Large-scale Pre-training Modeling Techniques and Application Evaluation**

## 10.2 Awards

AsialInfo has been recognized as Leader in Gartner *Magic Quadrant for AI in CSP Customer and Business Operations*.



Figure 10-3 *Magic Quadrant for AI in CSP Customer and Business Operations, Gartner*

AsialInfo has been recognized as a **Representative Vendor of AI Platforms for Industry Development in China** and **Representative Vendors of Industry Foundation Models in China** by Forrester in *Navigate The Industry Foundation Model Ecosystem In China*.



Figure 10-4 *Navigate The Industry Foundation Model Ecosystem In China, Forrester*

## 11 Contact Us

### AsiaInfo Technologies (China) Limited

**Address:** AsiaInfo Plaza, Coutyard#10 East, Zhongguancun Software Park  
Phase II, Xibeiwang East Road, Haidian District, Beijing, P.R.China

**Postcode:** 100193

**Fax:** (+86) 010-82166699

**Tel:** (+86) 010-82166688

**Email:** 5G@asiainfo.com

**Web:** www.asiainfo.com





# Thank you



Customer Value Innovator & Digital Transformation Promoter with Full-Stack Data Intelligence Capabilities

---

All rights reserved by AsiaInfo Technologies (China) Ltd.