

ISG ZSM PoC Proposal:

1 PoC Project Details

1.1 PoC Project

PoC Number:	20
PoC Project Name:	Agent-based Customer Experience Assurance
PoC Project Host:	China telecom;
Short Description:	This PoC demonstrates the use case of an agent-based customer experience assurance for intelligent IT service operations. The scope of this PoC is to validate how agent-based mechanisms can improve customer experience assurance through knowledge-driven, data-driven, and closed-loop service operations. It focuses on addressing key pain points such as inefficient issue propagation, insufficient pre-processing, fragmented operational tools, weak proactive handling, and heavy reliance on manual operations. The PoC will verify how the customer experience assurance agent performs issue perception, knowledge-driven analysis, work order and tool coordination, and feedback by interacting with the knowledge base/knowledge graph, IT service management, customer relationship management, and network monitoring system. The implementation of the solution in this PoC aims to demonstrate intelligent, integrated, proactive, and cost-efficient customer experience assurance. The implementation of the solution in this PoC uses the relevant ZSM specifications as a reference. The design architecture of the use case follows the ZSM framework (ZSM 002).

1.2 PoC Team Members

	Organisation name	ISG ZSM participant (yes/no)	Contact (Email)	PoC Point of Contact (*)	Role (**)	PoC Components
1	China Telecom	yes	Pang Yue<pangy18@chinatelecom.cn>	X	Service Provider	In charge of the study and implement to integrate all these products with the PoC scenarios and standard specification.
2	Huawei	yes	Xie Yuan<zhangzk10@asiainfo.com>		Supplier	Use case definition
3	AsiaInfo Inc.	yes	Zhang Zhongke<zhangzk10@asiainfo.com>		Supplier	Architectural design
4	CAICT (China Academy of Information and Communications Technology)	yes	Liu Zhiruo<liuzhiruo@caict.ac.cn>		Research Center	Use case definition

All the PoC Team members listed above declare that the information in this proposal is conformant to their plans at this date and commit to inform ETSI timely in case of changes in the PoC Team, scope or timeline.

1.3 PoC Project Scope

1.3.1 PoC Topics

PoC Topics identified in this clause need to be taken for the PoC Topic List identified by ISG ZSM and publicly available in the ZSM WIKI. PoC Teams addressing these topics commit to submit the expected contributions in a timely manner.

PoC Topic Code	PoC Topic Description	Related WI	Expected Contribution	Target Date
	Agent-based customer experience assurance	ZSM 002	Demo	Dec 2026

1.3.2 Other topics in scope

List here any additional topic for which the PoC plans to provide input/feedback to the ISG ZSM.

PoC Topic Code	PoC Topic Description	Related WG/WI	Expected Contribution	Target Date
A				
B				
<...>				

1.4 PoC Project Milestones

PoC Milestone	Milestone description	Target Date	Additional Info
P.S	PoC Proposal submission	Apr 2026	Official PoC proposal submission.
P.D	PoC Expected Contribution (Demo)	Jun 2026	Demonstrates the use case of agent-based autonomous network fault diagnosis and root cause analysis
P.R	PoC Report	Aug 2026	PoC Project Feedback.
P.E	PoC Project End	Oct 2026	

NOTE: Milestones need to be entered in chronological order.

1.5 Additional Details

We prefer to present the demonstrations at ZSM's meetings (Demo in ZSM#35) and submit the contributions and report which include demo scenarios. The PoC demo will be presented in the form of PPT.

2 PoC Technical Details

2.1 PoC Overview

2.1.1 Use case description

Traditional customer issue handling and IT service operations rely heavily on manual processes and isolated systems, which often lead to slow issue propagation, weak pre-processing, inefficient troubleshooting, and high operational cost. These limitations make it difficult for operators to provide integrated, proactive, and intelligent customer experience assurance.

To address these challenges, this PoC introduces a customer experience assurance agent as the intelligent core for service assurance. The agent receives customer-related inputs from the complaint system and service request entry points, and then performs issue perception, knowledge-driven analysis, work order / tool coordination, and feedback. Through interaction with the knowledge base / knowledge graph, the agent can use operational knowledge and historical cases to support analysis and recommendations. Through interaction with IT service management, it can support work order generation and work order

circulation. Through interaction with customer relationship management, it can obtain customer information, support service request entry, and use the related service order information. Through interaction with the network monitoring system, it can use network status and monitoring data to support analysis and service handling.

As a first step, this PoC project will verify the key capabilities of the customer experience assurance Agent in representative service assurance scenarios. The scope of this PoC includes:

- 1、 Validating customer issue perception from complaint and service request entry systems;
- 2、 Demonstrating knowledge-driven analysis using knowledge base and historical operational experience;
- 3、 Verifying work order handling and tool coordination through IT service management systems;
- 4、 Demonstrating the use of customer information, service order information, and network monitoring data in service assurance;
- 5、 Verifying closed-loop feedback for customer experience assurance.

Based on the results of this PoC, further feedback can be provided to ZSM regarding agent-based service assurance, knowledge-driven operations, and future standardization directions for intelligent IT service agents.

2.1.2 PoC scope

In this PoC project, the scope is the end-to-end service assurance process for customer-experience-related issues across customer entry systems and operational support systems. The PoC covers the following aspects: customer complaint and service request input; customer issue perception and analysis by the customer experience assurance agent; knowledge-driven analysis based on the knowledge base / knowledge graph; work order handling and work order circulation through IT service management; customer information management, service request entry, and service order generation through customer relationship management; use of network status and monitoring data from the network monitoring system; closed-loop feedback for customer experience assurance.

It is assumed that the PoC environment includes representative customer entry systems, customer relationship management, IT service management, knowledge systems, and network monitoring systems. The purpose of this PoC is to validate the functional feasibility and architectural value of the customer experience assurance agent, rather than to define detailed protocol specifications or full-scale production deployment.

2.2 PoC Architecture

Figure 1 shows the PoC architecture.

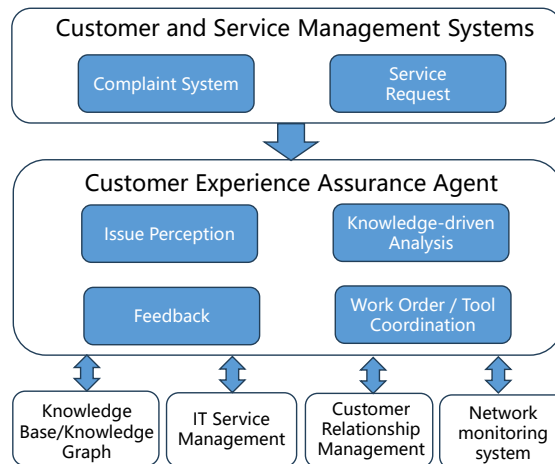


Figure 1 Architecture of this PoC

The architecture includes Customer Service Management Systems, the customer experience assurance agent, and the supporting systems of knowledge base / knowledge graph, IT service management, customer relationship management, and network monitoring system.

Customer complaints and service requests are used as inputs to the customer experience assurance agent. The agent performs issue perception, knowledge-driven analysis, work order and tool coordination, and feedback. The IT service management system supports work order handling and circulation. The customer relationship management system manages customer information, supports service request entry, and generates service orders. The Network Monitoring System provides monitoring data, and the knowledge base / knowledge graph provides knowledge support.

The architecture demonstrates a closed-loop mechanism for intelligent customer experience assurance.

2.3 Additional information

The references used throughout this document are listed below.