ANL Assessment and evidences of China Mobile Anhui on GB1059K_Individual Service Assurance

November 2025

Individual Service Assurance Questionnaire

Process	Cognitive Activity	Service Capability	Weight	Questions	Option A	Option B	Option C	Option D
Service assurance_Individual service	Intent	Intent Translation & Fulfilment	10%	How does the System translate mobile Service intents (e.g., throughput, latency, availability) into network actions and evaluate their fulfillment?	The System automatically generates Service Assurance objectives (e.g., throughput targets, latency bounds) and policy actions based on mobile Service intents. The System evaluates intent fulfillment based on implementation effect.	The System processes Intent using predefined rules and policies. Intent fulfillment evaluation is manually validated.	Intent configuration and evaluation are entirely manual and rely on static KPIs and human expertise.	
	Awareness	Service Performance Monitoring & degradation Detection	10%	How does the System monitor mobile Service KPIs (e.g.: throughput, latency…) and detect performance degradation or anomalies?	The System continuously monitors mobile Service KPIs and detects anomalies or performance degradation, without human intervention.	The System monitors Service KPIs and detects anomalies or performance degradation based on predefined rules	Performance monitoring, Service degradation and anomaly detection are determined based on human expertise	
		Service Performance degradation Prediction	15%	How does the System predict Service performance degradation (e.g. Throughput, latency ...) and SLA violation before they affect Service performance?	The System uses AI Models to analyze mobile Service performance and predicts SLA violations before they impact the user.	The System uses dynamically programable policies to analyze performance patterns and predicts potential SLA violations	The System predicts SLA violations based on pre-defined rules.	SLA violation is manually detected and addressed based on performance reports.
	Analysis	Service Performance degradation Impact Analysis	10%	How does the System identify and analyze the impact of performance degradation (e.g., throughput, latency ...) on user experience or SLA compliance in the mobile network?	The System identifies and analyzes the impact of performance degradation, using AI models without human intervention.	The System identifies and analyzes the impact of mobile Service degradation using dynamically programable policies, but requires human confirmation to proceed.	The System identifies & analyzes impact of performance degradation, based on predefined rules	Impact of degradation is determined based on human expertise.
		Service Performance degradation Demarcation & Root Cause Analysis	10%	How does the System isolate the root cause of Service degradation across the network domains (i.e.: RAN, transport, and core)?	The System isolates and analyzes the root cause of mobile Service degradation across network domains using AI models, without human intervention.	The System isolates and analyzes the root cause of mobile Service degradation using dynamically programable policies, but requires human confirmation.	The System isolates & analyzes performance degradation Root Cause, based on predefined rules	Performance data and alarms are manually analyzed to determine the root cause.
		Solution Generation	15%	How does the System generate solutions to address Service degradation in mobile Services based on root cause analysis	The System generates corrective actions to address mobile Service degradation and continuously learns from past resolutions using AI models, without human intervention.	The System generates corrective actions using dynamically programable policies based on prior resolutions but requires human confirmation before execution.	The System suggests corrective actions based on predefined rules.	Solutions are manually created based on human expertise
	Decision	Solution Evaluation & Decision making	20%	How does the System evaluate solution and decide on the best solution to implement ?	The System evaluates multiple remediation options, analyzes risk and trade-offs, and selects the best solution using AI models, without requiring human decision-making.	The System assesses remediation options using dynamically programable policies and recommends the optimal choice, but requires human approval.	Remediation options, risk assessment and selection of appropriate solutions are manually done	
	Execution	Solution Implementation	10%	How does the System implement solution and apply fallback mechanisms in case of solution failure?	The System implements the selected corrective action and triggers fallback mechanisms in case of failure, without human intervention	The System applies corrective action and fallback mechanisms using pre-defined rules, based on human approval.	Implementation and fallback handling are manually executed	

Self-assessment score

China Mobile Anhui achieved 8A in self-assessment.

Service Capability	Weight	Answer	Score
Intent Translation & Fulfilment	10%	A	4
Service Performance Monitoring & degradation Detection	10%	A	4
Service Performance degradation Prediction	15%	A	4
Service Performance degradation Impact Analysis	10%	A	4
Service Performance degradation Demarcation & Root Cause Analysis	10%	A	4
Solution Generation	15%	A	4
Solution Evaluation & Decision making	20%	A	4
Solution Implementation	10%	A	4
			4

Intent translation and fulfillment(Question 1 A)

Question

- How does the System translate mobile Service intents (e.g., throughput, latency, availability) into network actions and evaluate their fulfillment?

Options

√Option A	Option B	Option C	Option D
The System automatically generates Service Assurance objectives (e.g., throughput targets, latency bounds) and policy actions based on mobile Service intents. The System evaluates intent fulfillment based on implementation effect.	The System processes Intent using predefined rules and policies. Intent fulfillment evaluation is manually validated.	Intent configuration and evaluation are entirely manual and rely on static KPIs and human expertise.	

Evidence

After a user submits a service assurance intent in natural language, the system intelligently parses the intent, transforms it into quantified assurance objectives (e.g., mobile video service rate must be higher than 5 Mbps), and corresponding policy actions. Finally, the system objectively evaluates the degree to which the initial service intent has been achieved based on post-implementation performance data.

Based on the scenario to ensure the intended service, list the objectives of the service assurance.

Automatically generate parameter adjustment plans based on service assurance objectives and tasks, and issue execution commands to the network management system

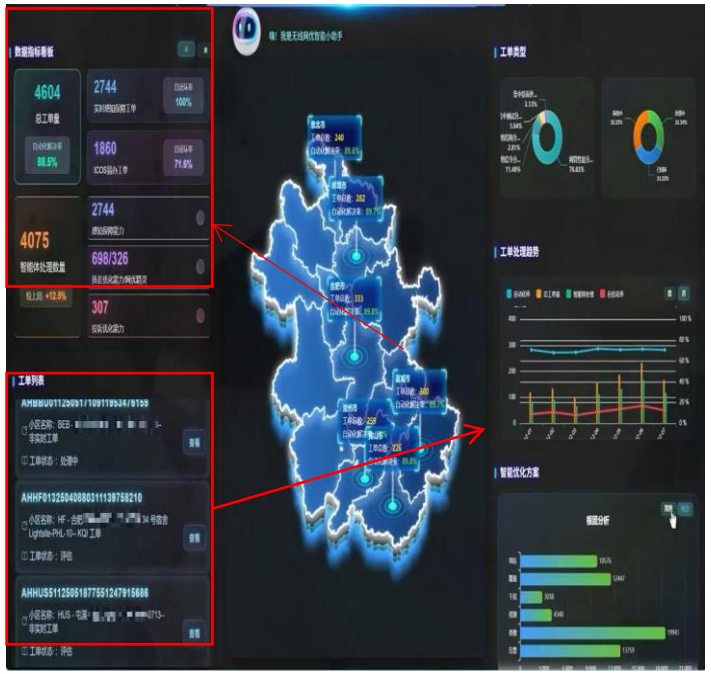
After assurance completion, the achievement of service intent is output.

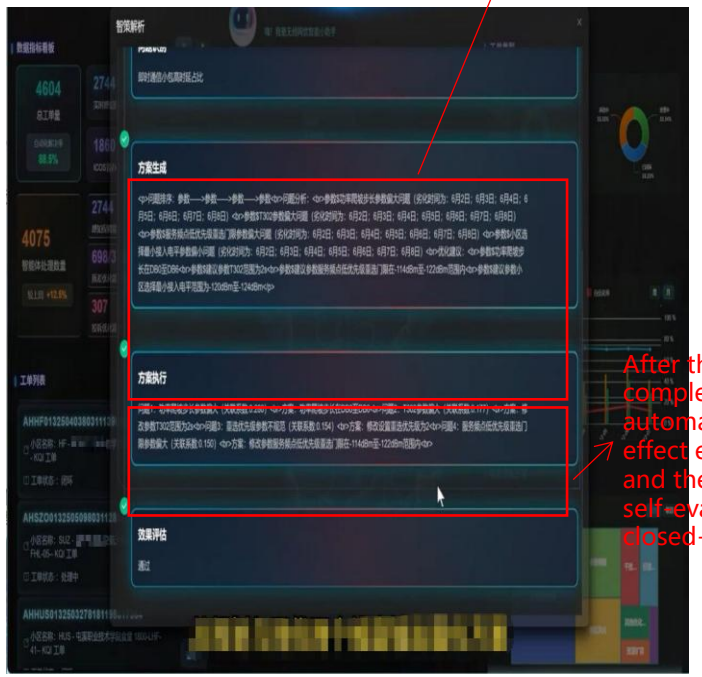
Intent translation and fulfillment(Question 1 A)

The Wireless Network Optimization Agent has been deployed across Anhui Province, and it has processed 4,075 trouble tickets.

After the Agent automatically monitored the deterioration of the high latency proportion of instant messaging small packets in a certain cell, it generated a trouble tickets, invoked the root cause analysis capability, and automatically identified issues such as unreasonable minimum access level, power climbing step size, and T302 timer parameters.

Based on the root cause analysis results, the Agent automatically outputs and executes the solution, issues parameter modification instructions, adjusts the T302 timer parameter to 2 seconds, and sets the reselection priority level2





After the Agent completes its execution, it automatically enters the effect evaluation phase, and the trouble tickets self-evaluation has been closed-loop.

Service Performance Monitoring and Degradation Detection (Question 2-1 A)

Question

- How does the System translate mobile Service intents (e.g., throughput, latency, availability) into network actions and evaluate their fulfillment?

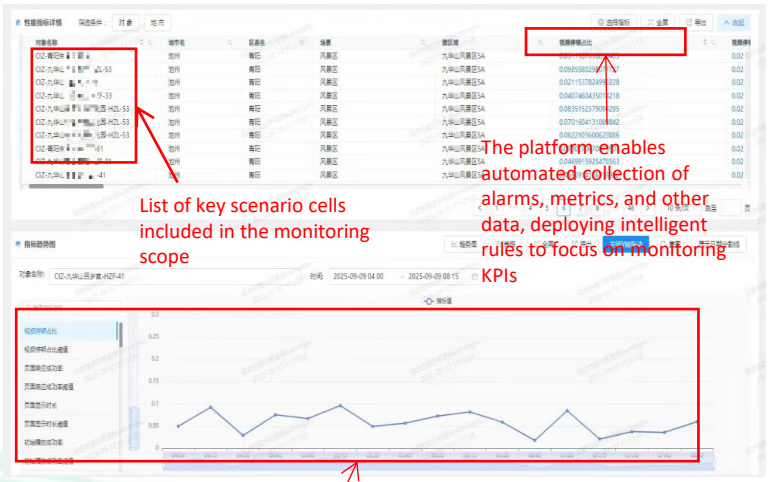
Options

√Option A	Option B	Option C	Option D
The System continuously monitors mobile Service KPIs and detects anomalies or performance degradation, without human intervention.	The System monitors Service KPIs and detects anomalies or performance degradation based on predefined rules	Performance monitoring, Service degradation and anomaly detection are determined based on human expertise	

Evidence

Monitor service KPIs: Automates the collection of performance and perception data through an integrated performance analysis system, deploys the "Service Indicator Anomaly Detection Operation Monitoring" capability of the network intelligence platform, and focuses on monitoring key KPIs such as throughput and latency using intelligent rules to track critical indicators in key areas.
Detect performance degradation: Dynamically monitors cell-level video stall ratio metrics at 15-minute granularity and automatically outputs a list of problematic cells.

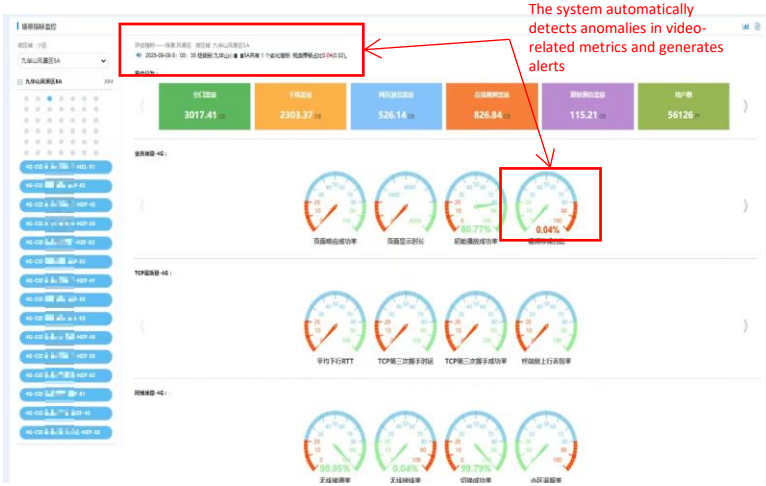
The system continuously monitors key performance indicators of various mobile services across the province



List of key scenario cells included in the monitoring scope

The platform enables automated collection of alarms, metrics, and other data, deploying intelligent rules to focus on monitoring KPIs

The system continuously monitors KPIs at a 15-minute granularity and refreshes the data in real-time.



The system automatically detects anomalies in video-related metrics and generates alerts

Service performance degradation prediction(Question 2-2 A)

Question

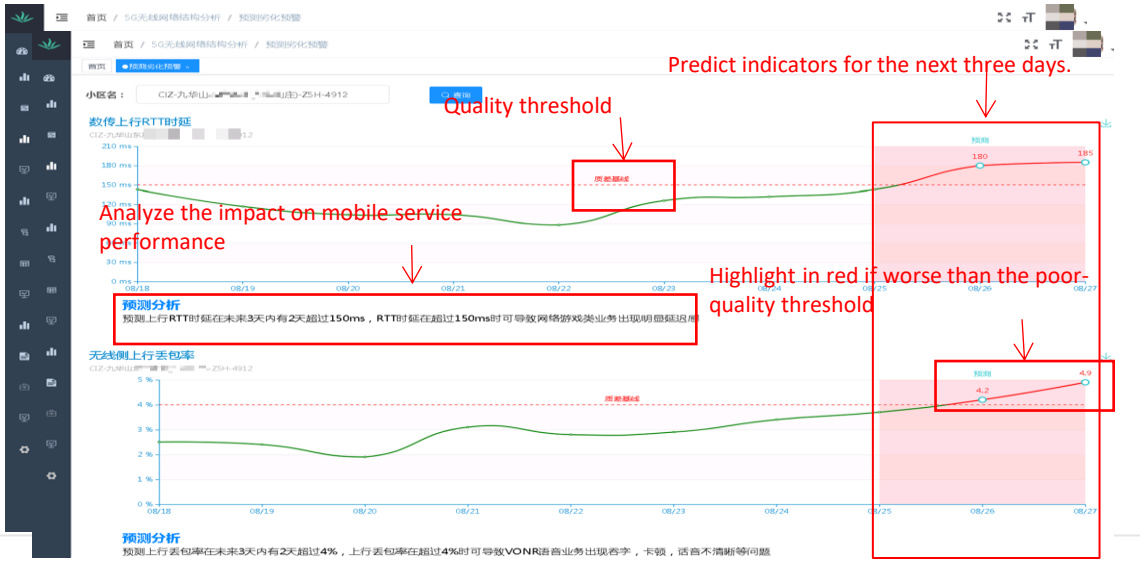
- How does the System predict Service performance degradation (e.g. Throughput, latency ...) and SLA violation before they affect Service performance?

Options

√Option A	Option B	Option C	Option D
The System uses AI Models to analyze mobile Service performance and predicts SLA violations before they impact the user.	The System uses dynamically programable policies to analyze performance patterns and predicts potential SLA violations	The System predicts SLA violations based on pre-defined rules.	SLA violation is manually detected and addressed based on performance reports.

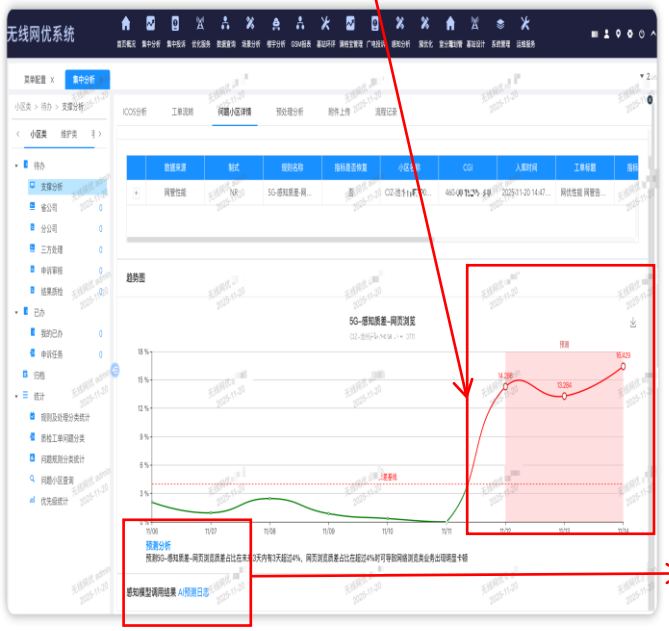
Evidence

By invoking the network intelligence platform's 'Performance Indicator Abnormal Threshold Prediction Maintenance Monitoring' capability, predict the future three-day performance indicators at the cell level (highlighted in red background in the figure) and analyze their potential impact on mobile service performance based on this.



Service performance degradation prediction(Question 2-2 A)

Invoke the time series algorithm to predict that the 5G web browsing poor quality proportion of the CIZ-Chizhou Shipo 700M-Z5H-0711 cell will continue to be worse than 4% in the next three days, which will cause significant lag in web browsing services and affect user perception.



感知模型调用结果 AI预测日志

Click on the perception model call results to display the print logs of AI predictions, including the predicted cell name and completion time.

```
/user/wyapp/miniconda3/Lib/site-packages/sklearn/utils/validation.py:2749: UserWarning: X does not have valid feature names, but LGBMRegressor was
fitted with feature names
  warnings.warn(
2025-11-12 08:23:07,842 - 36716 - __mp_main__ - INFO 443 - 小区 CIZ-[illegible] 预测完成
/user/wyapp/miniconda3/Lib/site-packages/sklearn/utils/validation.py:2749: UserWarning: X does not have valid feature names, but LGBMRegressor was
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/user/wyapp/miniconda3/Lib/site-packages/sklearn/utils/validation.py:2749: UserWarning: X does not have valid feature names, but LGBMRegressor was
```

Service performance degradation impact analysis(Question 3-1 A)

Question

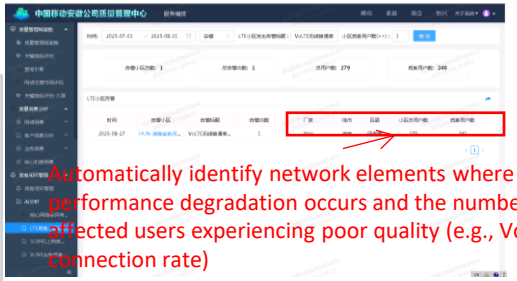
- How does the System identify and analyze the impact of performance degradation (e.g., throughput, latency ...) on user experience or SLA compliance in the mobile network?

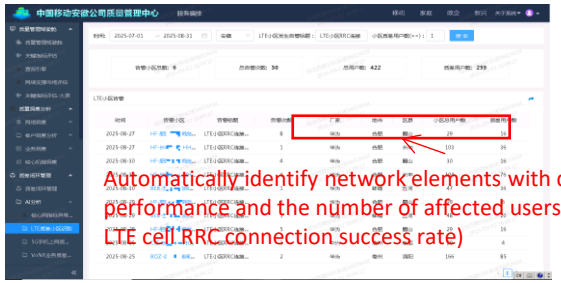
Options

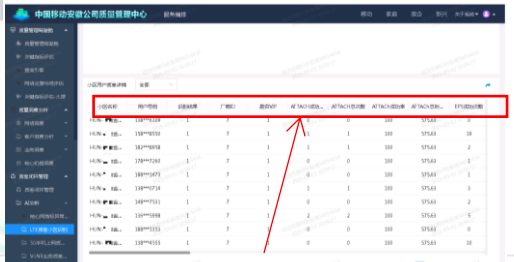
√Option A	Option B	Option C	Option D
The System identifies and analyzes the impact of performance degradation, using AI models without human intervention.	The System identifies and analyzes the impact of mobile Service degradation using dynamically programable policies, but requires human confirmation to proceed.	The System identifies & analyzes impact of performance degradation, based on predefined rules	Impact of degradation is determined based on human expertise.

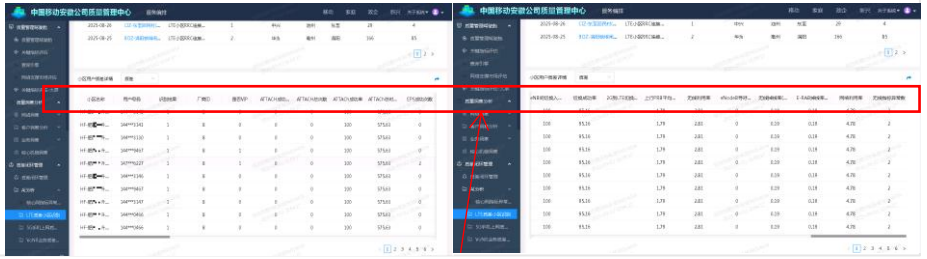
Evidence

By invoking the 'Service Indicator Anomaly Detection and Operations Monitoring' capability of the network intelligence platform, the system uses AI to automatically identify whether voice and data service indicators have deteriorated or experienced performance degradation, generating corresponding lists of affected cells and impacted user counts.

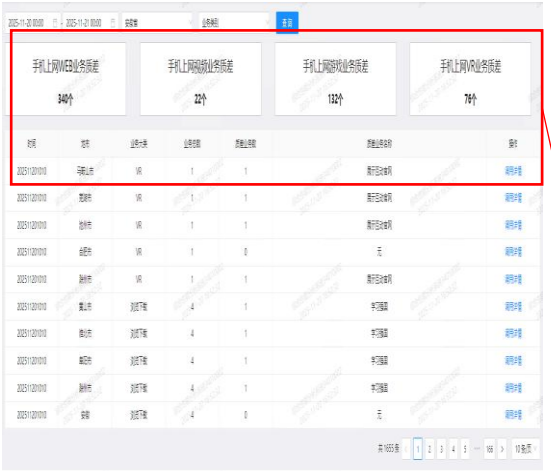








Service performance degradation impact analysis(Question 3-1 A)



Automatically identify the specific number of services with eMbb indicator performance deterioration (e.g., 132 poor-quality mobile online gaming services).

CP下行重传包数	TCP下行重传率	TCP上行重传包数	TCP上行重传率	游戏登陆成功率	游戏登陆时长	接口以上平均时延	接口以下时延	游戏对战时长	对战时延	响应结果码	运行状态	业务是否告警
132	0.25	132	0.68	99.98	1737	10.03	11.02	32.23	13.23	200	Succeed!	正常
4	0.26	0	0	100	7276.41	10.03	11.02	32.23	13.23	200	Succeed!	正常
0	0	0	0	0	0	10.03	11.02	32.23	13.23	200	Succeed!	告警
310	0.18	38	0.03	97.74	49446.03	10.03	11.02	32.23	13.23	200	Succeed!	告警

Among the four service documents of mobile online gaming services analyzed, one has a login success rate of 0, and another has a login duration of 49446.03ms; both have triggered service alarms, indicating that the performance deterioration affects user perception.

Service performance degradation problem demarcation and root cause analysis(Question 3-2 A)

Question

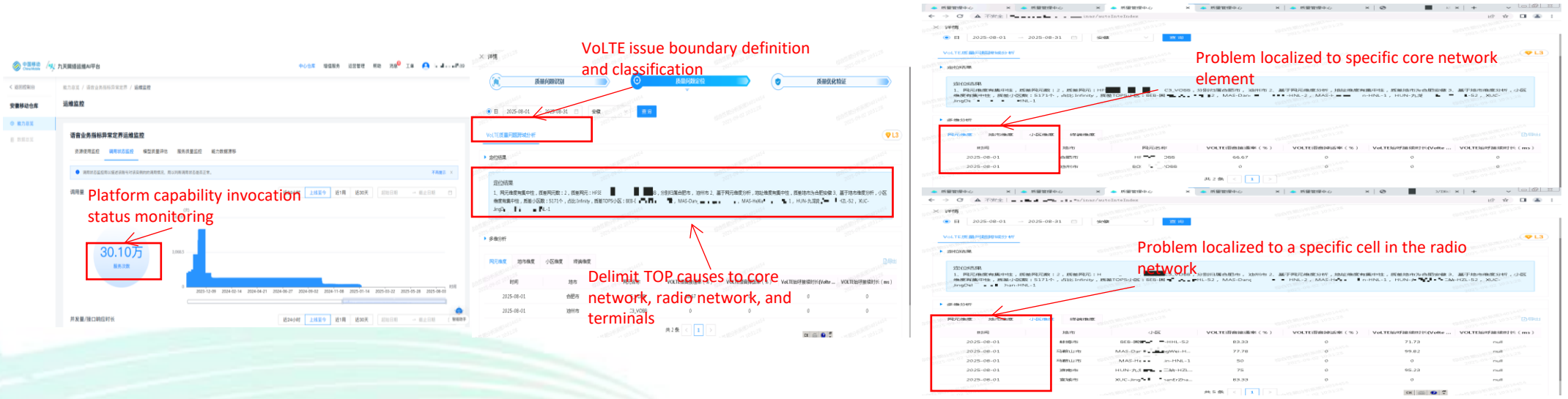
■ How does the System isolate the root cause of Service degradation across the network domains (i.e.: RAN, transport, and core)?

Options

√Option A	Option B	Option C	Option D
The System isolates and analyzes the root cause of mobile Service degradation across network domains using AI models, without human intervention.	The System isolates and analyzes the root cause of mobile Service degradation using dynamically programable policies, but requires human confirmation.	The System isolates & analyzes performance degradation Root Cause, based on predefined rules	Performance data and alarms are manually analyzed to determine the root cause.

Example evidence for option A:

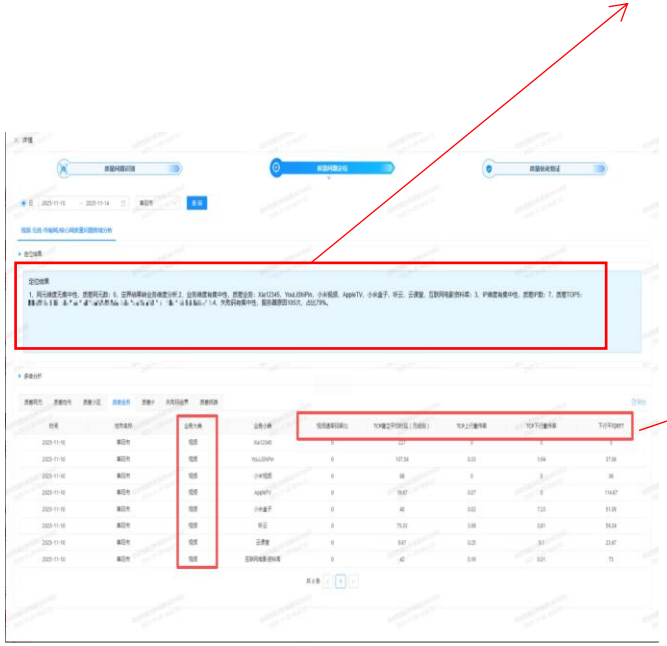
By invoking the network intelligence platform's 'Voice Service Indicator Abnormal Localization' capability, end-to-end localization and positioning are performed for VoLTE quality issues. It can localize issues to user terminals, wireless, core network, and also provide specific failure details.

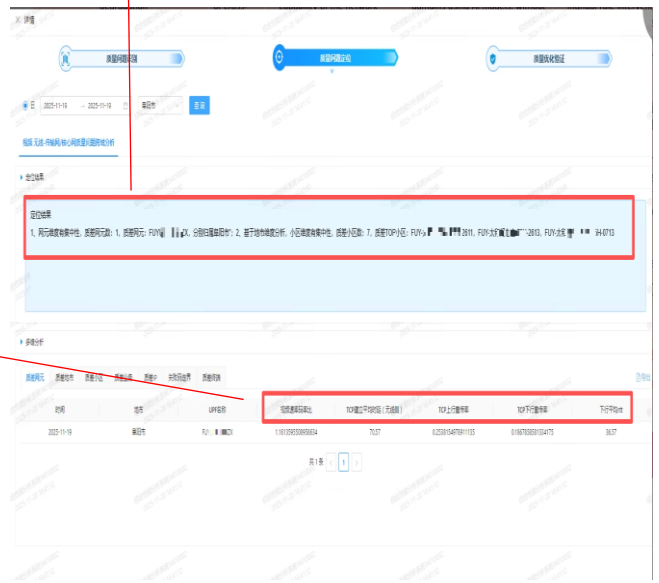


Service performance degradation problem demarcation and root cause analysis(Question 3-2 A)

Automatically perform demarcation and location for issues related to eMbb indicator performance deterioration (e.g., video rate bitrate ratio, video TCP establishment delay). Demarcate the issues to poor-quality services, poor-quality IPs, and poor-quality servers.

Automatically locate the issue of eMbb indicator performance deterioration (e.g., video rate bitrate ratio, video TCP establishment delay) to specific core network elements such as FUYUPF003BZX and specific wireless network cells such as FUY-Taihe Stadium-Z5M-2611.





Solution generation(Question 3-3 A)

Question

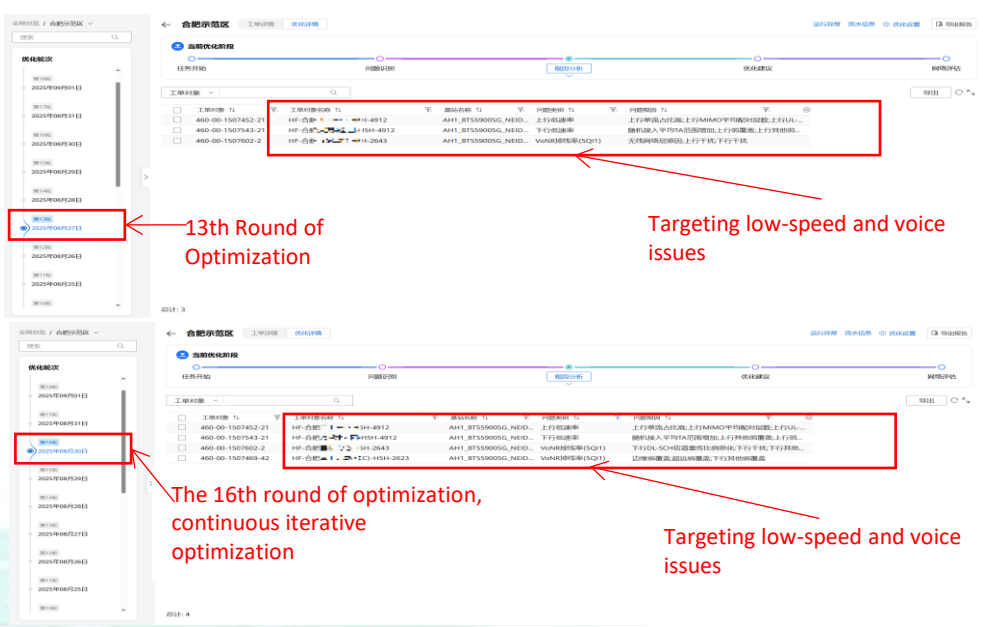
■ How does the System generate solutions to address Service degradation in mobile Services based on root cause analysis?

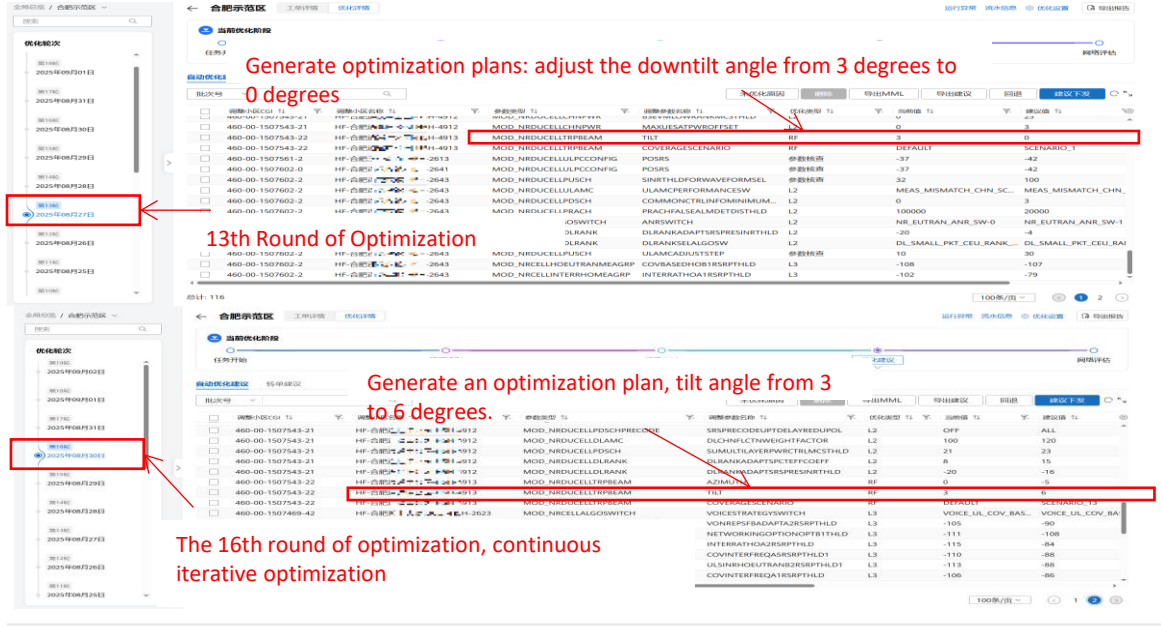
Options

√Option A	Option B	Option C	Option D
The System generates corrective actions to address mobile Service degradation and continuously learns from past resolutions using AI models, without human intervention.	The System generates corrective actions using dynamically programable policies based on prior resolutions but requires human confirmation before execution.	The System suggests corrective actions based on predefined rules.	Solutions are manually created based on human expertise

Evidence

The system, based on issues such as low 5G uplink and downlink rates, VONR dropped call rate at the cell level, uses user-level data from the current network for root cause identification. It continuously iterates and learns from historical optimization effects to autonomously generate optimization plans.





Solution evaluation and decision-making(Question 4 A)

Question

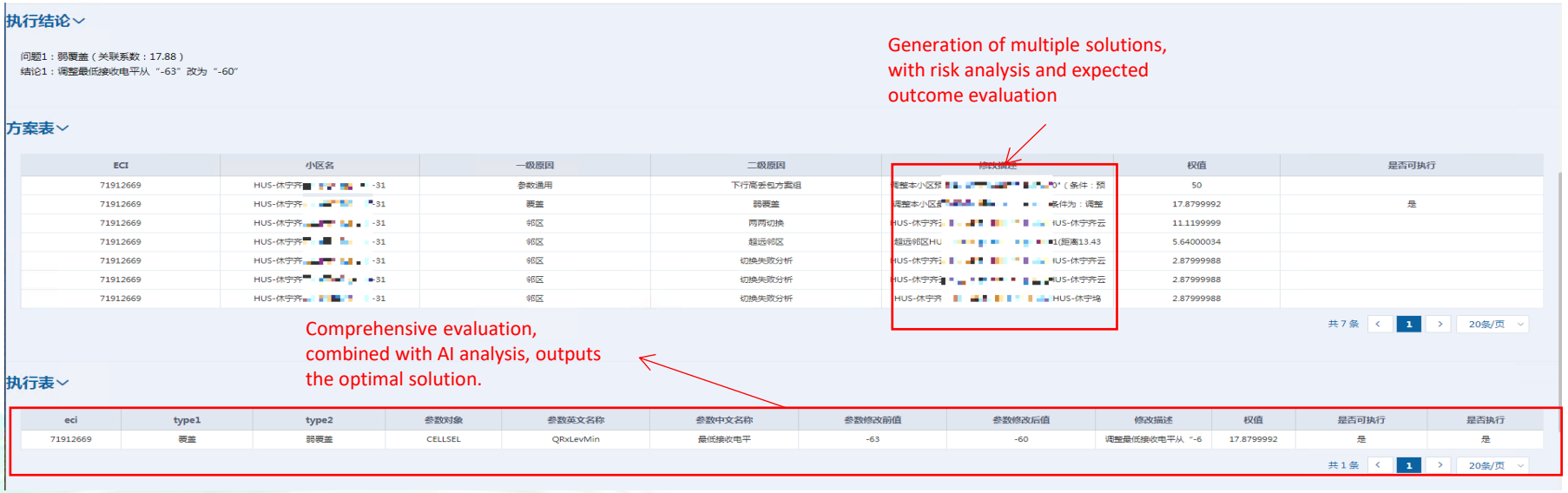
■ How does the System evaluate solution and decide on the best solution to implement ?

Options

√Option A	Option B	Option C	Option D
The System evaluates multiple remediation options, analyzes risk and trade-offs, and selects the best solution using AI models, without requiring human decision-making.	The System assesses remediation options using dynamically programable policies and recommends the optimal choice, but requires human approval.	Remediation options, risk assessment and selection of appropriate solutions are manually done	

Evidence

The system uses AI models to compare and analyze multiple solutions and generate the best parameter optimization plan without human decision-making.



Solution implementation(Question 5 A)

Question

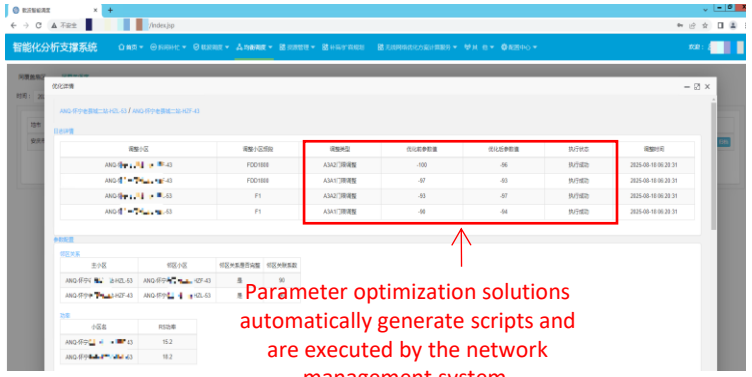
■ How does the System implement solution and apply fallback mechanisms in case of solution failure?

Options

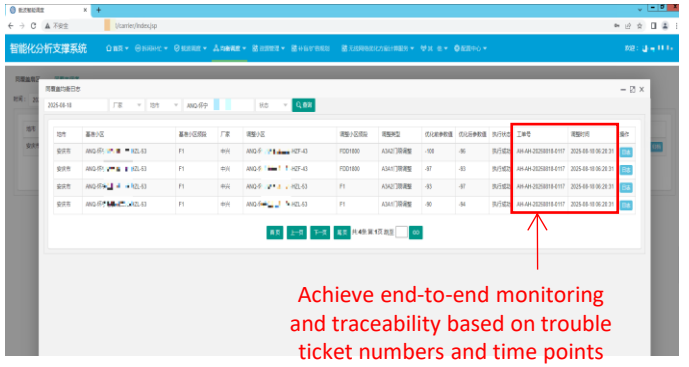
√Option A	Option B	Option C	Option D
The System implements the selected corrective action and triggers fallback mechanisms in case of failure, without human intervention	The System applies corrective action and fallback mechanisms using pre-defined rules, based on human approval.	Implementation and fallback handling are manually executed	

Evidence

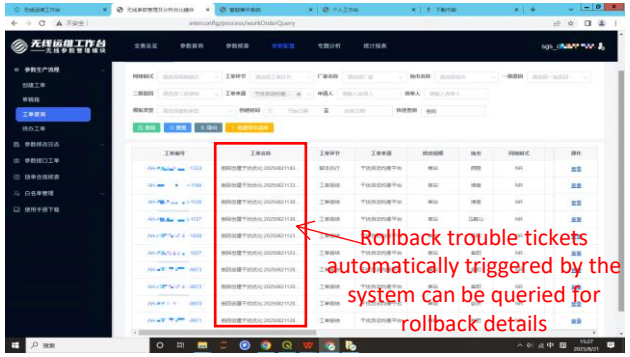
The system can automatically generate neighbor cell addition and adjustment plans, automatically create parameter scripts for NMS execution, and trigger a rollback mechanism to intercept failed plans.



The system has automatic plan output and parameter capabilities, such as generating neighbor cell addition and power adjustment plans, and automatically creating parameter modification scripts for NMS execution.



The platform displays parameter modification trouble ticket numbers, issuance time, adjusted values, with full traceability throughout the process.



For adjustment failures (interference optimization adjustments), the system automatically triggers a rollback mechanism and generates a solution rollback ticket.

Thank you!