Practice and Planning of Open Innovation Test Platform for Intelligent Network

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Intelligent Network

Deeply integrate AI technology with the hardware, software, and systems of communication networks, use AI technology to realize intelligent operation and maintenance of communication networks, intelligent network services, build intelligent native networks, help improve the quality and efficiency of communication networks, and empower the industry digital intelligence upgrade.

business development

Personal and industrial users have a surge in demand for mobile, government and enterprise, family, and emerging markets (CHBN) business intelligence

Operation and maintenance

Business quality needs to be improved
Operation and maintenance efficiency needs to increase
Operation and maintenance costs need to be reduced

network evolution

5G Networks: The Complexity of Networks
Next-generation network: AI needs to be introduced to deal with multi-layer, elastic and flexible networks

The Main Challenges for Network Intelligence

The integration of the two disciplines of communication and artificial intelligence requires research and breakthroughs from basic theory to engineering technology

The communication network is highly systematic, requiring intelligent technology to evolve from single-point intelligence to system intelligence, and urgently need breakthroughs in core technologies

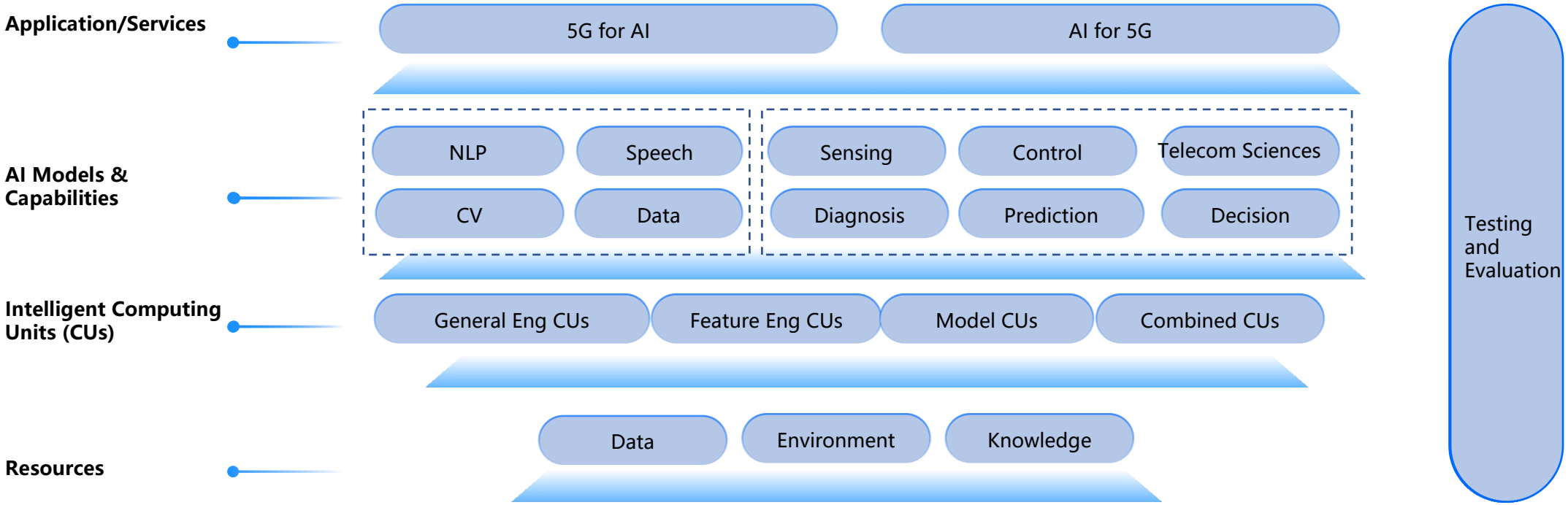
The communication network is not flexible, and the conditions for rapid verification and iteration of network intelligence technology in the production network are not sufficient, which restricts the efficiency of large-scale value realization.

The communication industry chain is long, and it is necessary to cooperate with all parties in the industry chain to Establish a new organizational reform to adapt to the innovative and efficient R&D model of intelligent technology

Open Innovation Platform for Intelligent Network

In order to solve the bottleneck problems of network intelligence and stimulate innovation vitality to build the open innovation platform for intelligent network

- Provide the basic platform and innovation environment required for 5G+AI technology and application R&D
- Form a tightly coupled industrial collaboration ecosystem with experimental environment and computing environment as the core



Open Experimental Environment

Basic network env

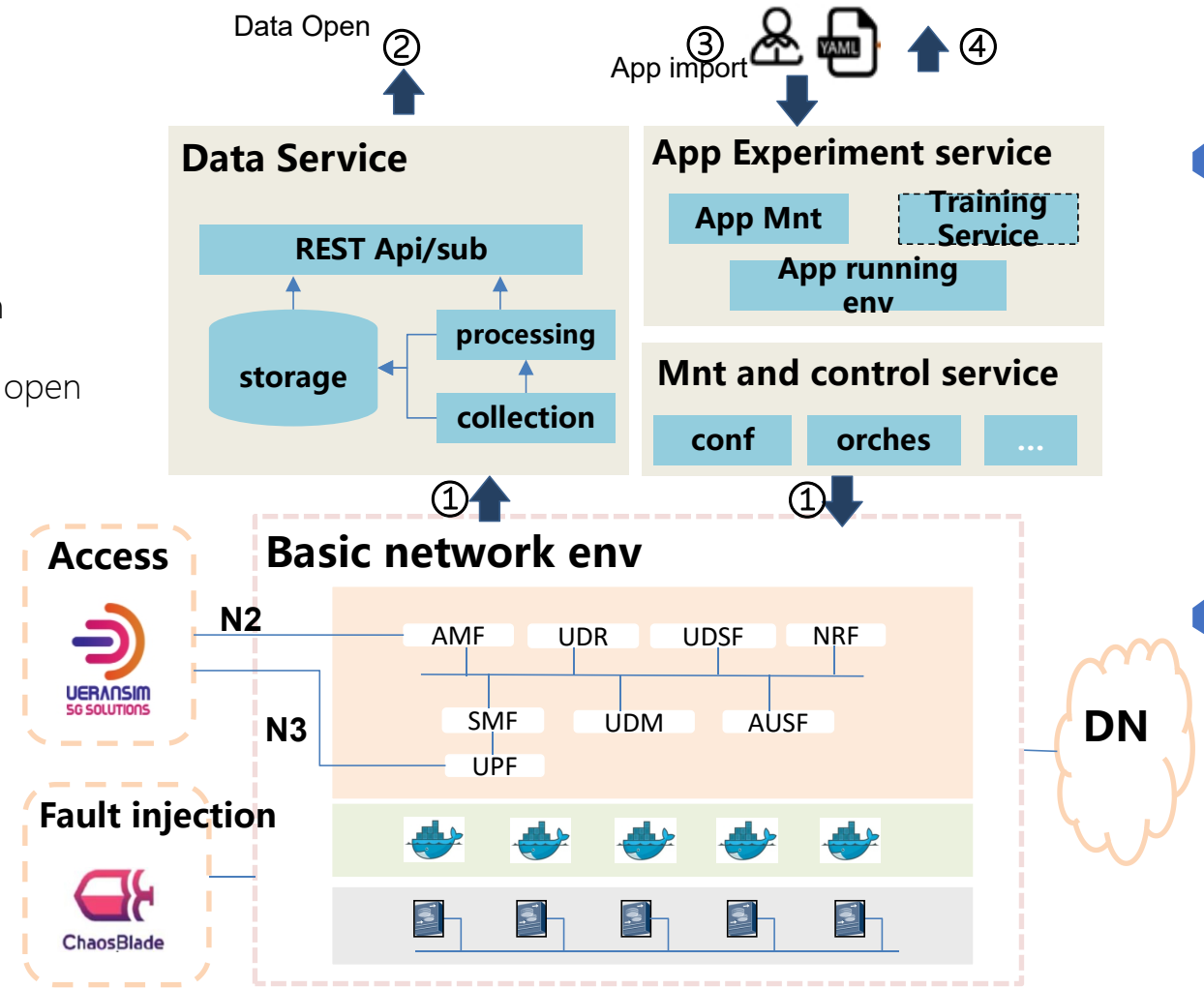
- Baisic mobile network env
- Business and fault injection

① Data and control interface open

Data Service

- Data collection
- Data processing
- Data storage

② Data service open



Management and control service

- Network configuration
- Network orchestration

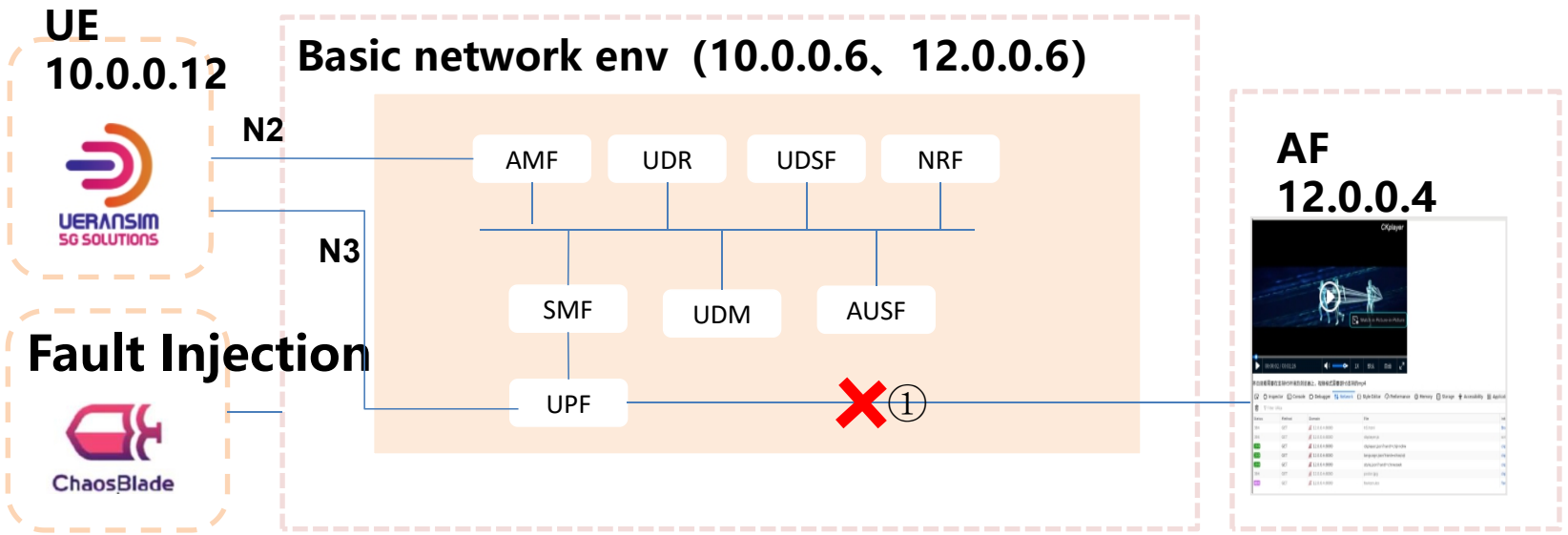
Application Experiment Service

- Application running environment

③ Application management open

④ Model training service is open

Basic Network Environment Demo



Demo process：

Network deployment：

- Deploy 5GC、RAN、UE

Bussiness process：

1. Start simulated gNB and UE
2. Client access to watch video service

Fault injection：

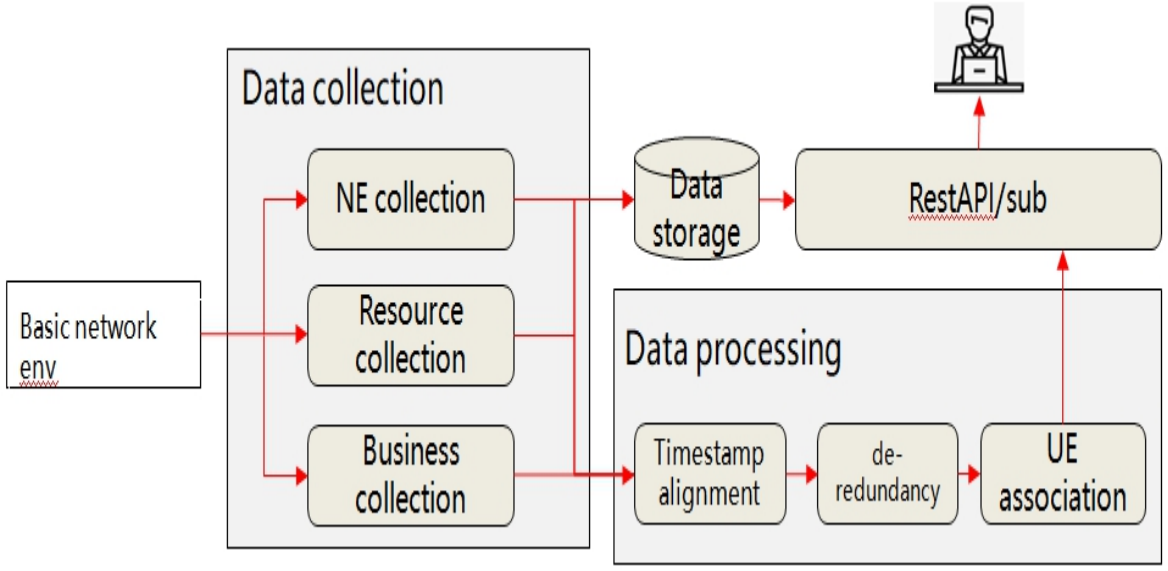
① Link failure, resulting in service interruption

基础网络环境

Universal Open Platform

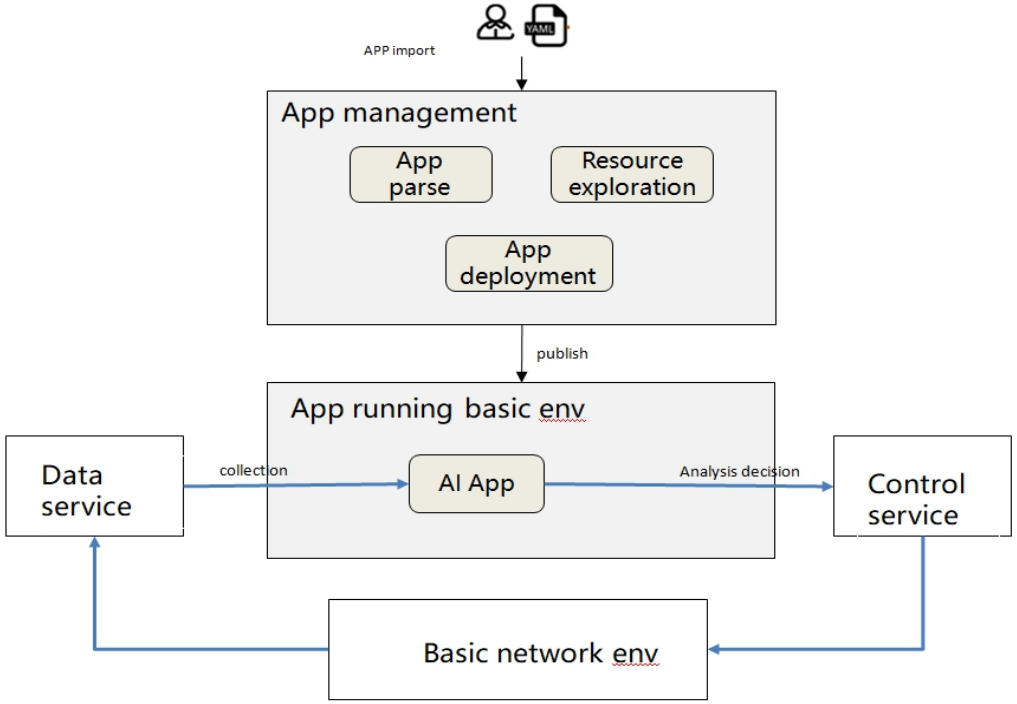
Data Service

Support multi-dimensional data collection, data association, data storage, and open data interface to provide users with on-demand request or subscription



Application Experiment Service

Support third-party application import, integrating data services and management and control services, and realize application closed-loop



Open Testing and Certification Service

For network intelligence models, capabilities and applications, it provides AI capability accuracy and performance evaluation, end-to-end verification evaluation, and open evaluation of intelligent software and hardware based on the commercial dynamic environment, promoting R&D innovation, accelerating product application, and promoting intelligent networks evolution.

Enterprise standard | Industry Standard | International standard

Models	Capabilities	Applications
AI Capability Accuracy and Performance Evaluation	Product end-to-end verification evaluation	Intelligent software and hardware Certification Evaluation
Offline/Online data	Toolset (CI/CD,monitor)	Simulation/experimental network env

- dynamic
- have feedback
- flexible env
- End to end

Testing and Certification Demo

Step1 Prepare testing object

Testing object provider

- According to the requirements of the evaluation system, encapsulate the object to be evaluated
- Provide category tags, register to the evaluation system

Step2 Preparation testing env

Testing Env Provider

- Provide evaluation dataset or evaluation environment
- Provide category tags, register to the evaluation system

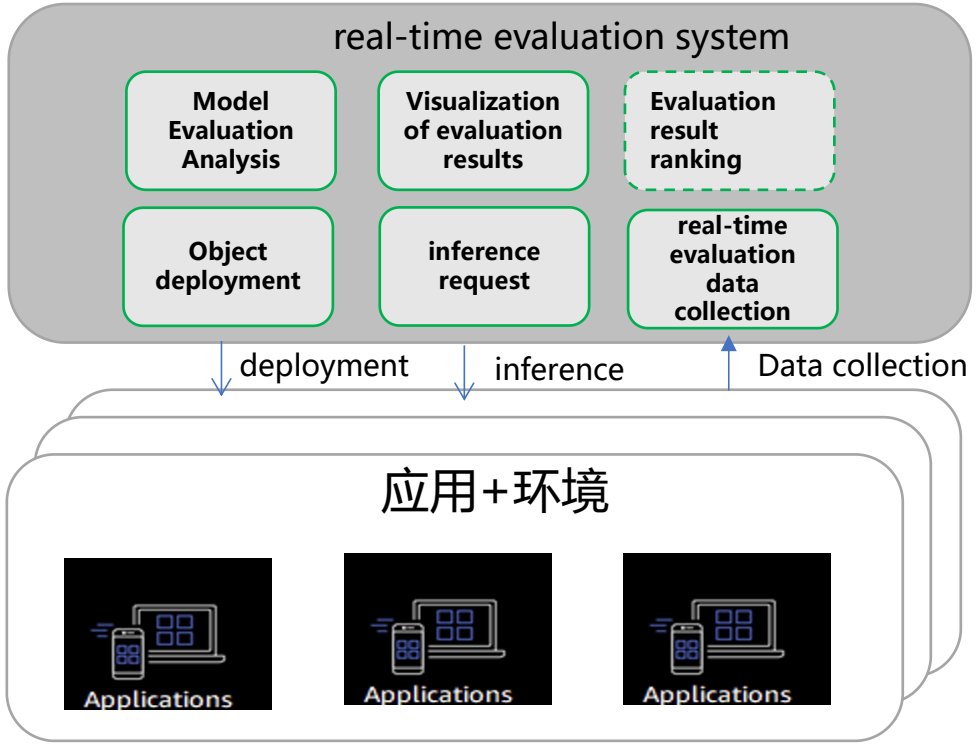
Model file or image

Test env information or datasets

Test Executor

Step3 Test task execution

- Manually associate the test object and the test env according to the category label, and define the test task
- Perform test tasks and collect test results



Thanks!

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