

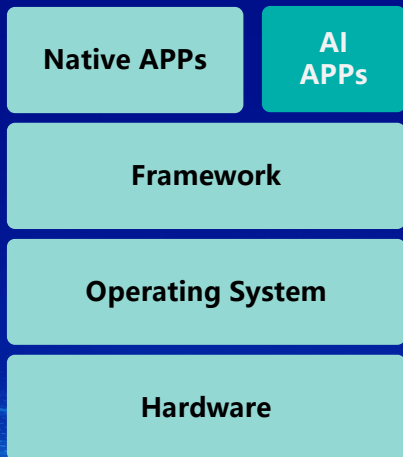
From Smart TV To Intelligent TV

Yedong Wang

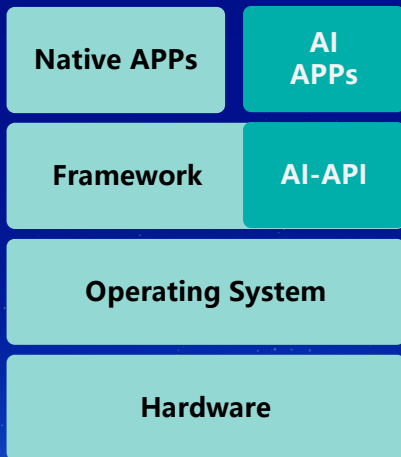
General Manager of Pre-research and Technology Management Center,
Hisense Visual Technology Co., Ltd.

AI will become a native capability of smart TVs

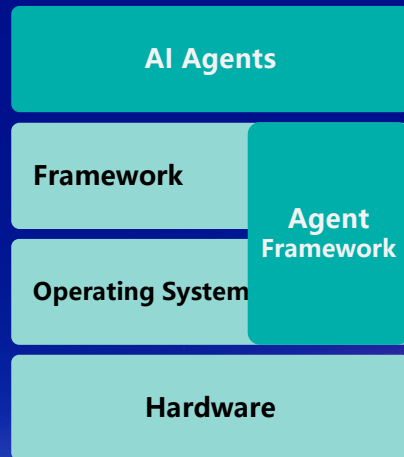
AI Application Integration Stage



Systematization of AI Capabilities Stage



AI-Powered Operating System Stage



The development history of Hisense smart TVs

Smart TV Beginnings

Smart TV OS

- ✓ Downloadable
- ✓ Upgradable

Initial Application of AI in TVs

2010~

Partial Empowerment

“海信小聚”

- ✓ Content Retrieval
- ✓ Information Query
- ✓ Appliance Control
- ✓ Life Service

Voice Interaction Becomes Practical

2012~

“小聚画廊”

- ✓ Object Detection
- ✓ Knowledge Query
- ✓ Recommendation
- ✓ Single-turn Conversation

Image Interaction Development Initiated

2017~

Content Delivery and Real-Time Services

- ✓ Double Frequency Recognition
- ✓ Scene Recognition
- ✓ Multi-turn Conversation

Content Intelligence Initiated

2019~

OS-Level Integration of AI

Large Models Applied

- ✓ Complex Intent Understanding
- ✓ Multimodal Conversation
- ✓ Omni-Scene Q&A

Application of Large Models

2024~

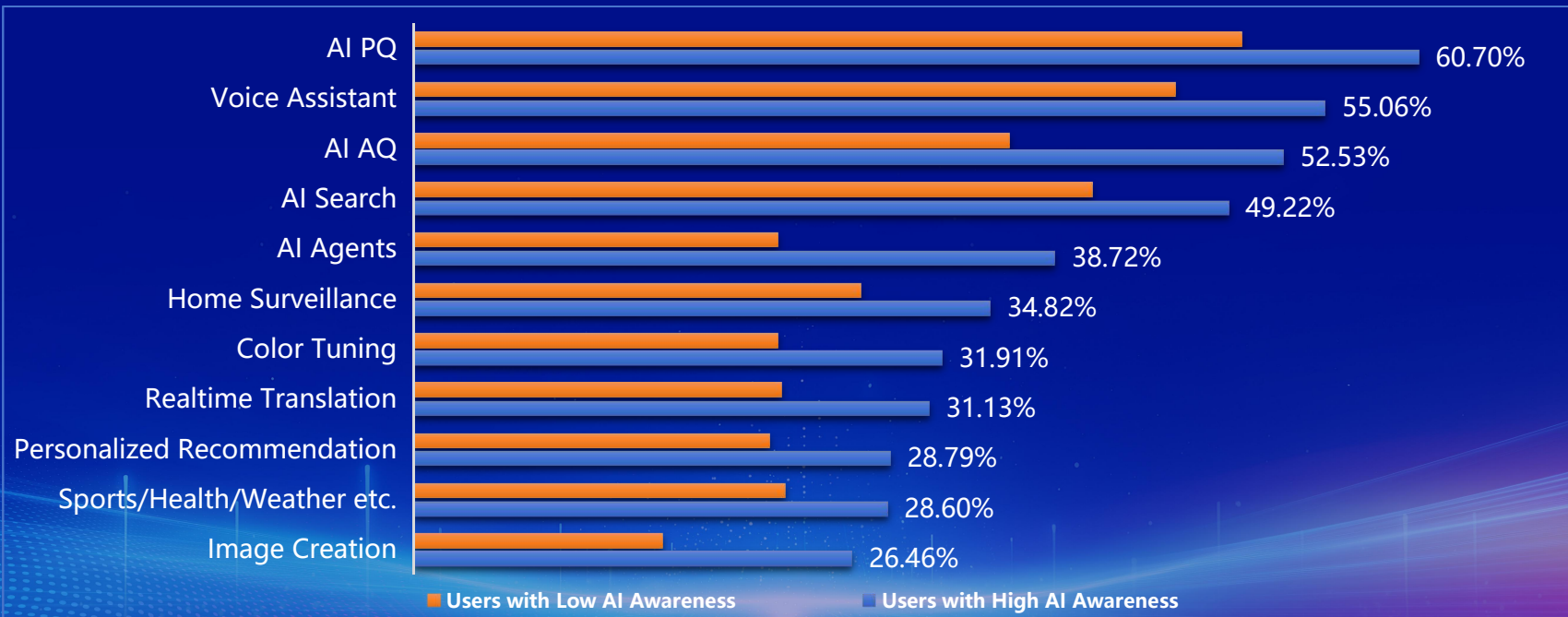
AI-Native OS

- ✓ System-Level Agent
- ✓ Cross-Device Collaboration
- ✓ E2E A/V Quality Enhancement

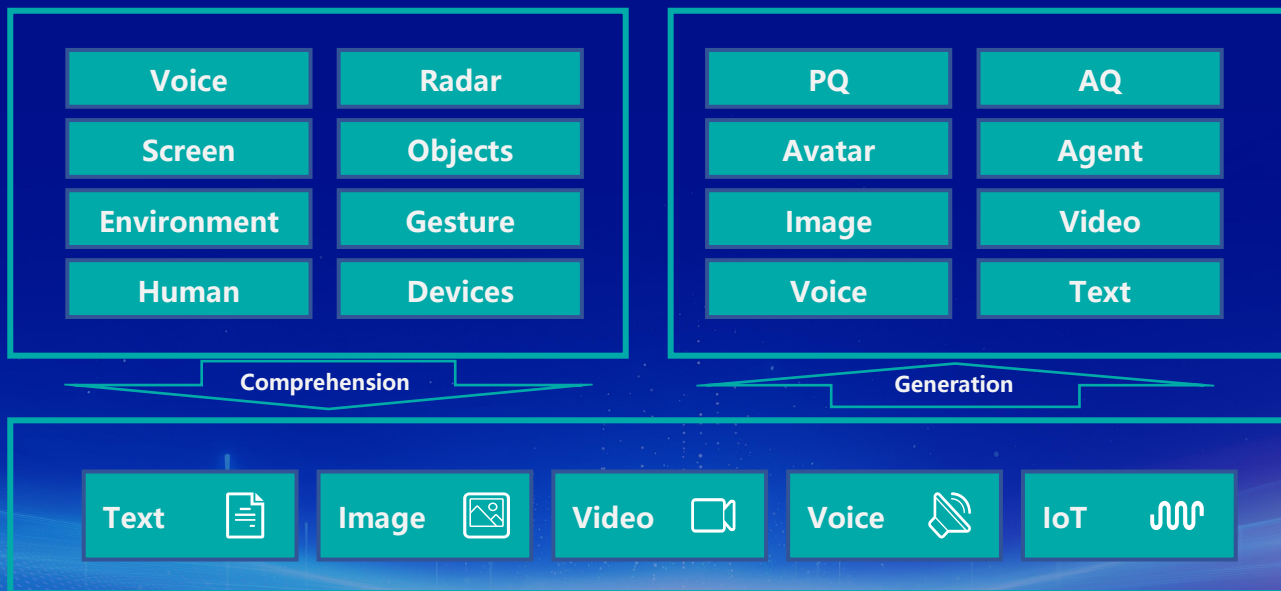
AIOS

2025~

From user's perspective: users have the highest demands regarding AI TV's audio-visual quality and interaction

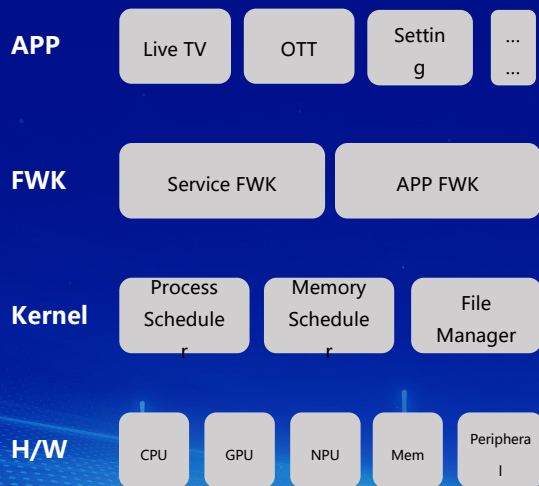


Industry Insight: Multimodality Will Become the Foundation of Human-Computer Interaction

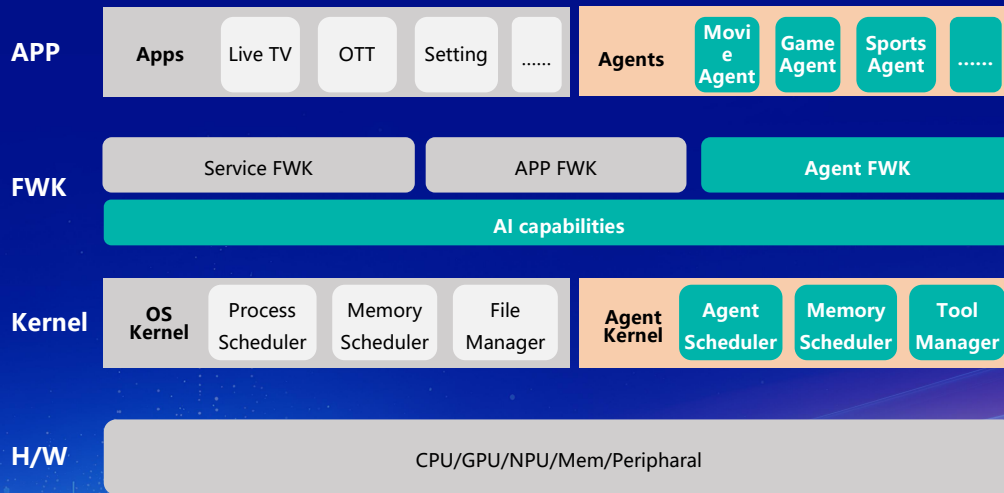


Industry Insight: Smart TV OS Will Deeply Integrate Large Models and Agents

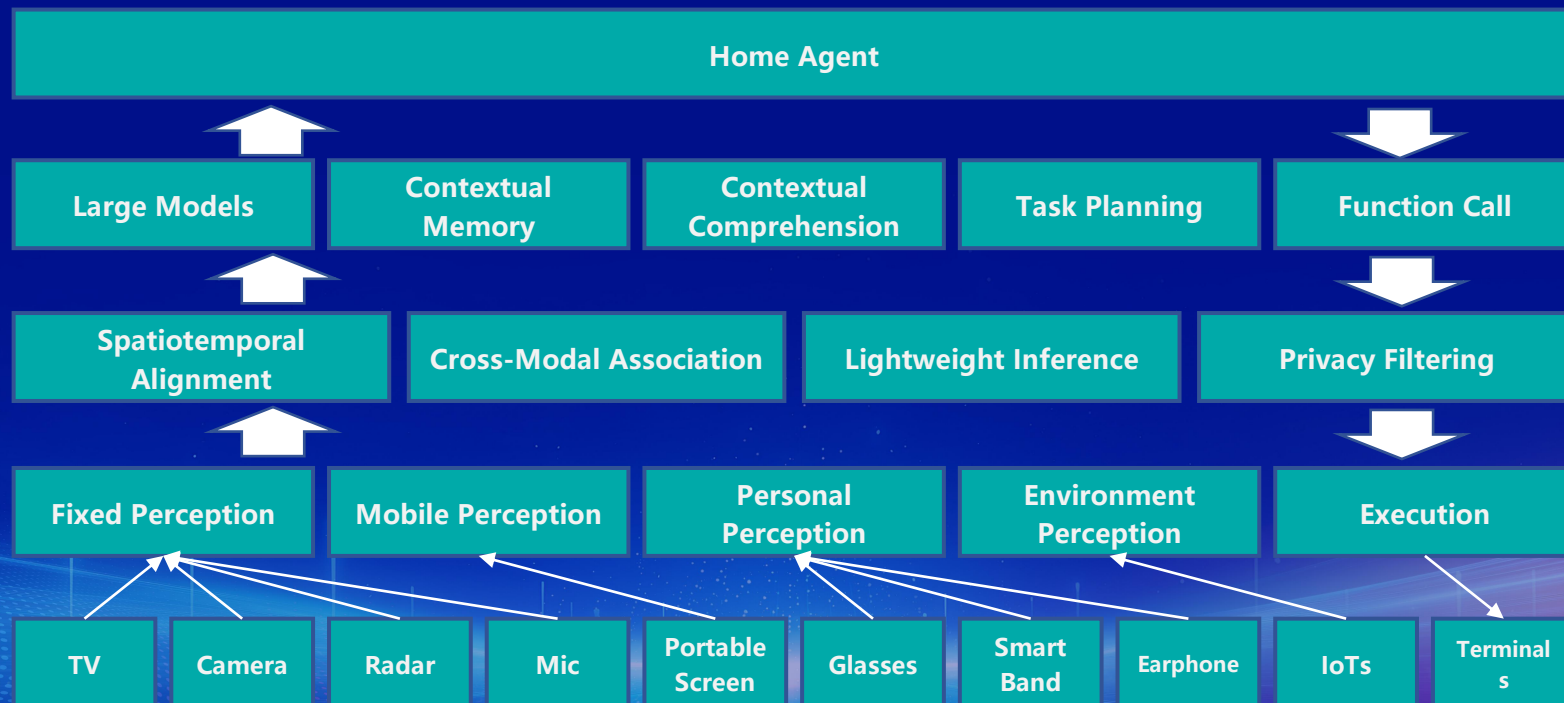
Smart TV OS



Intelligent TV OS



Industry Insight: Multidimensional Perception-Driven Contextual Services Will Lead a Paradigm Shift in TV Services



Technology Insight: DeepSeek, etc. Brought New Opportunities for TV Evolution

MOE Architecture

Large Model Distillation

RL + COT

On-Device Computing
Bottleneck

Accuracy vs. Costs

Pre-trained Brain + Real-time
Decision

Construct **"Fast and Smart"** agents to accelerate the evolution of autonomous service capabilities.

Hisense's Consideration on the Evolution of AI TV Intelligence Capabilities

Simple Command

TV has basic intelligence and can invoke preset functions based on simple user commands. However, in many cases, manual operation is still required.

Pattern Recognition

It has basic automation capabilities. The TV can recognize simple features and automatically execute tasks, but still requires clear descriptions from the user.

Intelligent Reasoning

It enables strategic task automation. The TV can understand complex user needs and automatically plan and execute complex tasks beyond preset scenarios.

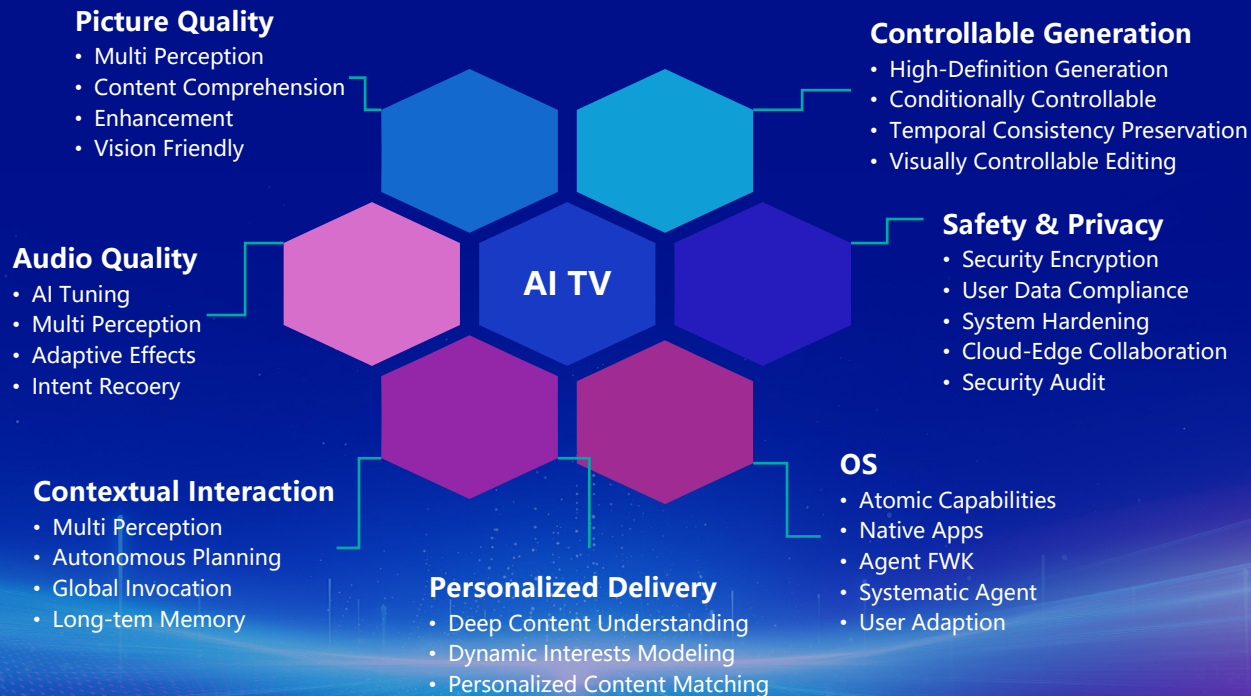
Personalized Adaptation

It is equipped with memory and context awareness capabilities. The TV can perceive the user's usage scenario and remember user preferences, enabling personalized service experiences.

Global Intelligence

It enables seamless service. The TV can anticipate needs based on user history and proactively deliver personalized services, becoming increasingly intelligent with use.

Key Technical Features of AI TVs



Feature 1: Vision-Friendly Picture Quality Presentation



Multi Perception

Information about the external environment and user-authorized data can be obtained through sensor data. In the future, beyond expanding in dimensionality, sensing devices will gradually move toward integration.

Computation

It can be integrated into the SoC, picture quality chip, computing chip, or a dedicated chip. It can also be provided by a combination of cloud and terminal.

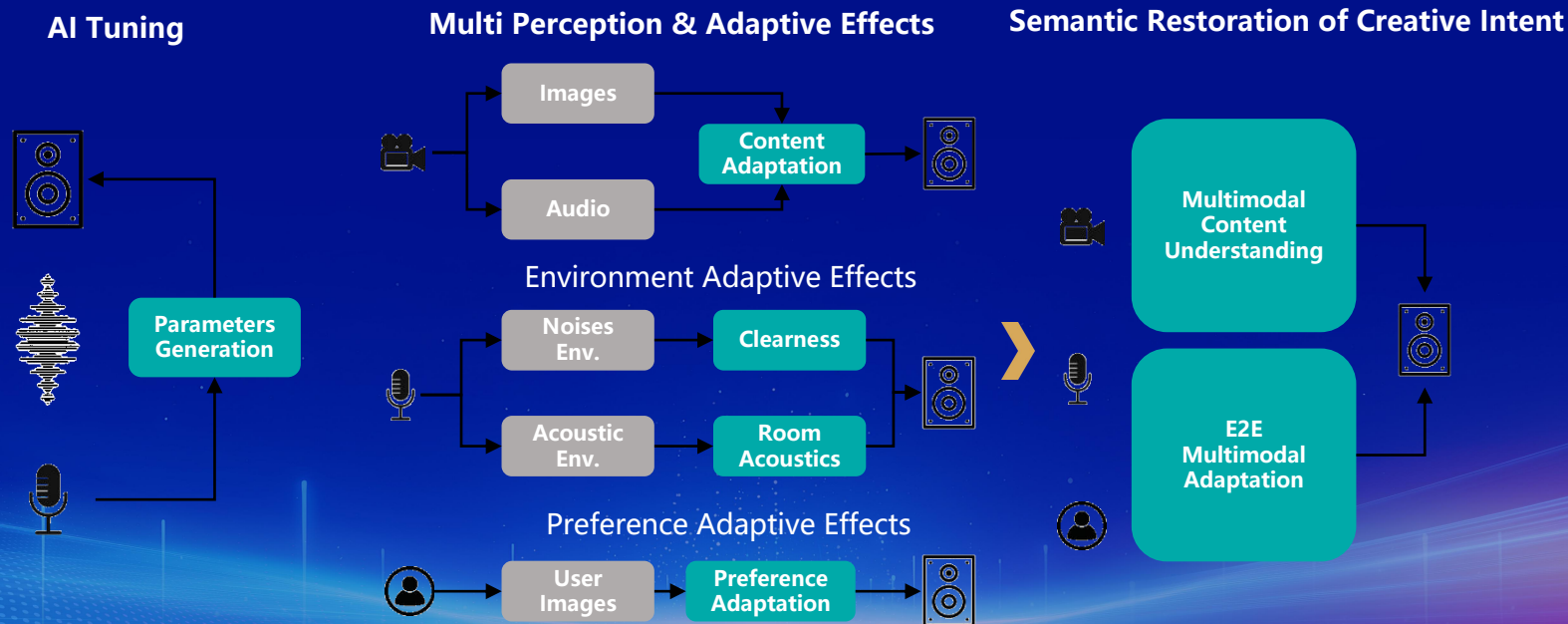
Algorithms

This includes underlying AI picture quality algorithms and AI application algorithms based on environment/content/user perception, which can be integrated into the SoC, picture quality chip, computing chip, or the cloud.

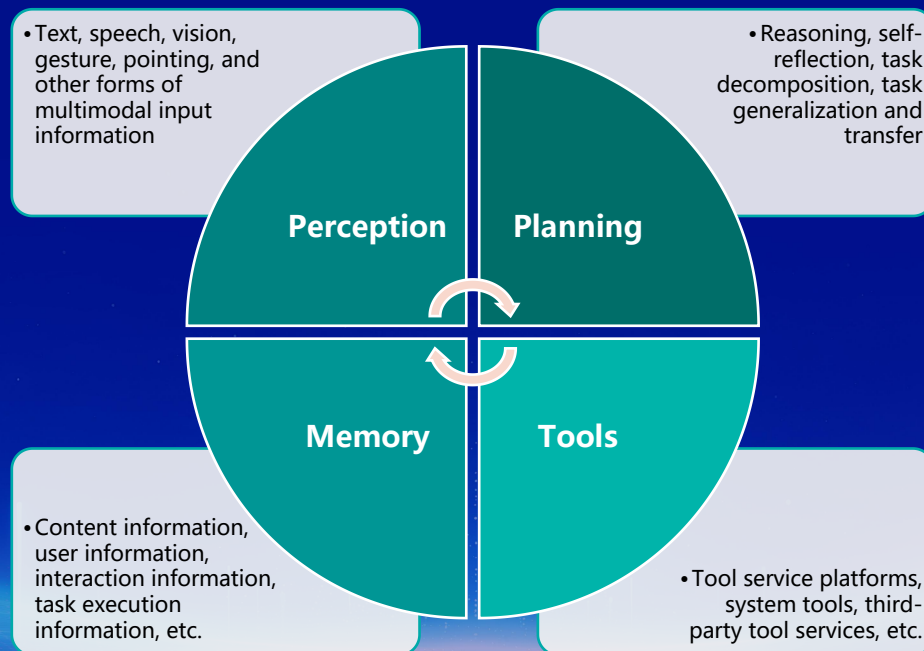
Vision Friendly

This is reflected on one hand in an excellent visual experience, and on the other hand in eye health considerations. It can provide users with customized picture quality presentation while adapting to the usage environment to deliver a viewing experience with low visual fatigue.

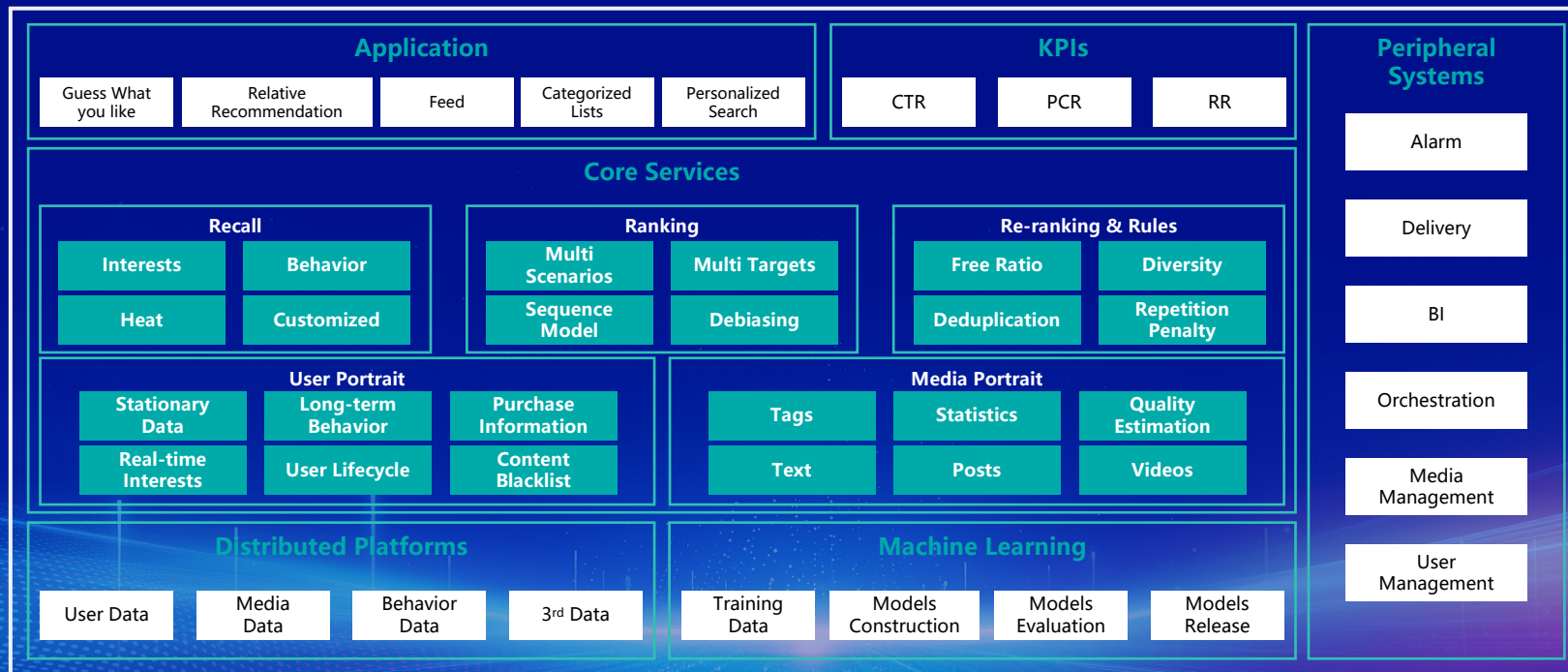
Feature 2: Audio-Friendly Sound Quality Presentation



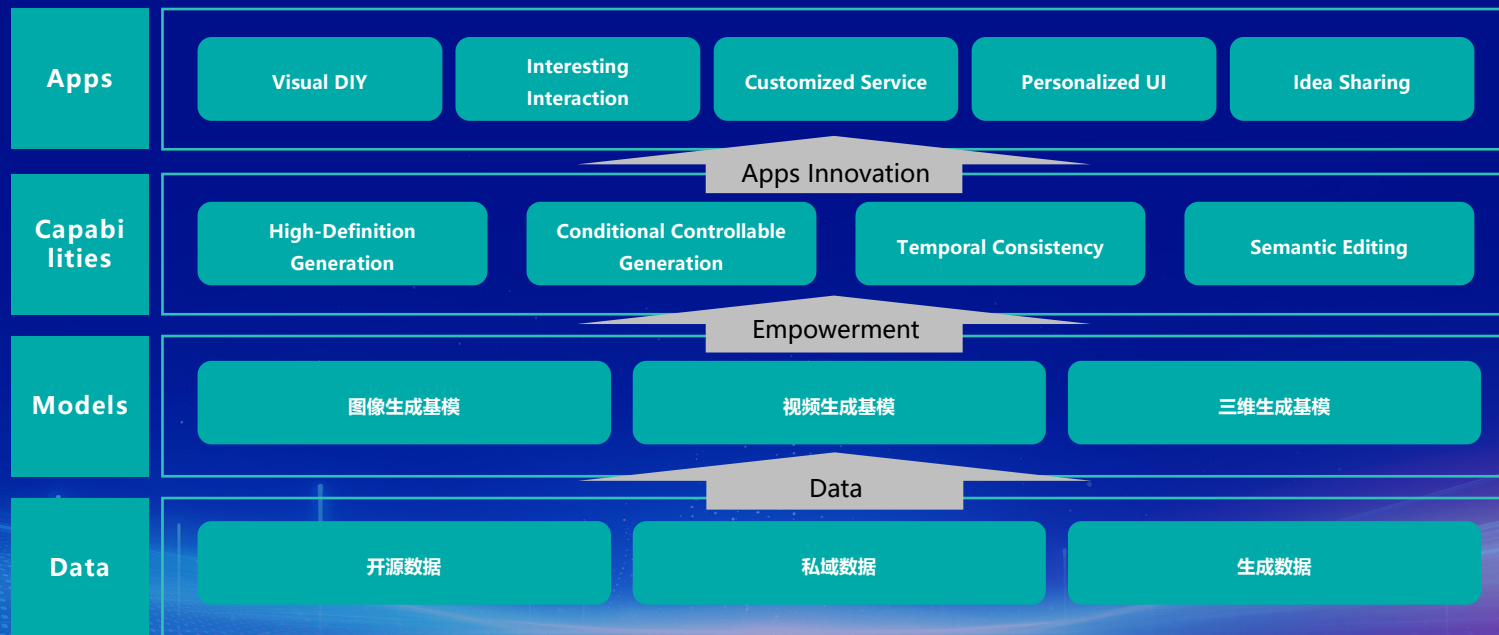
Feature 3: Agent-Based Contextual Interaction



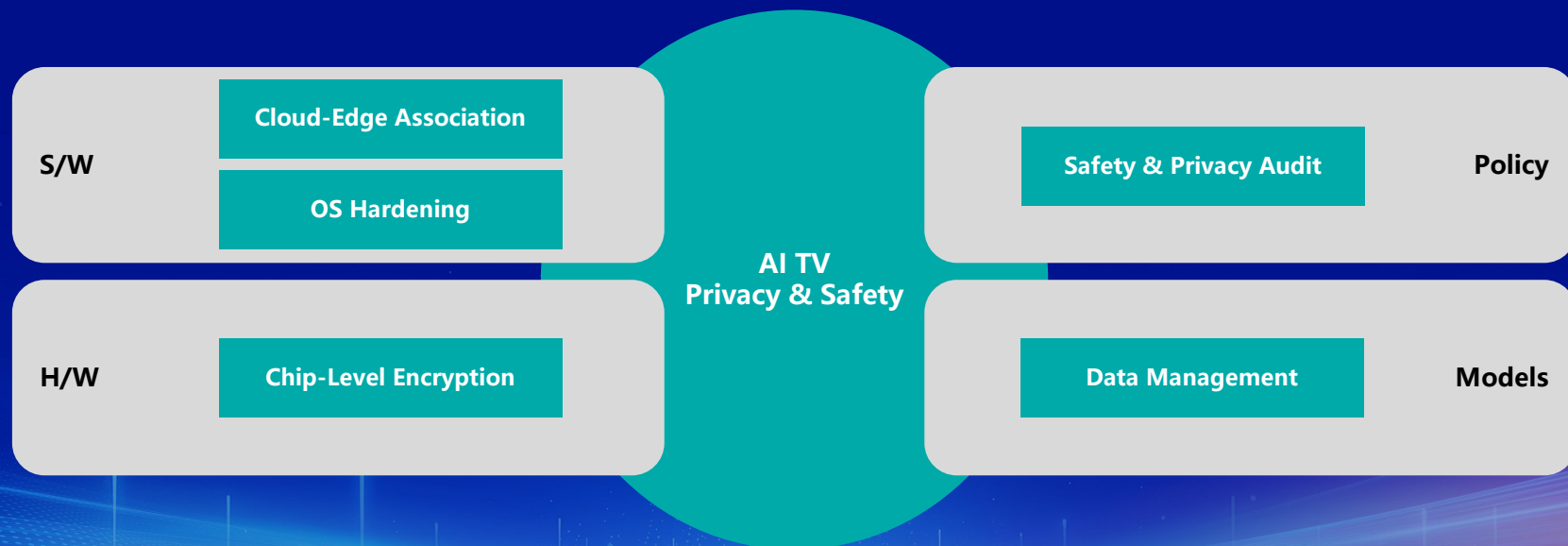
Feature 4: Personalized Content Delivery



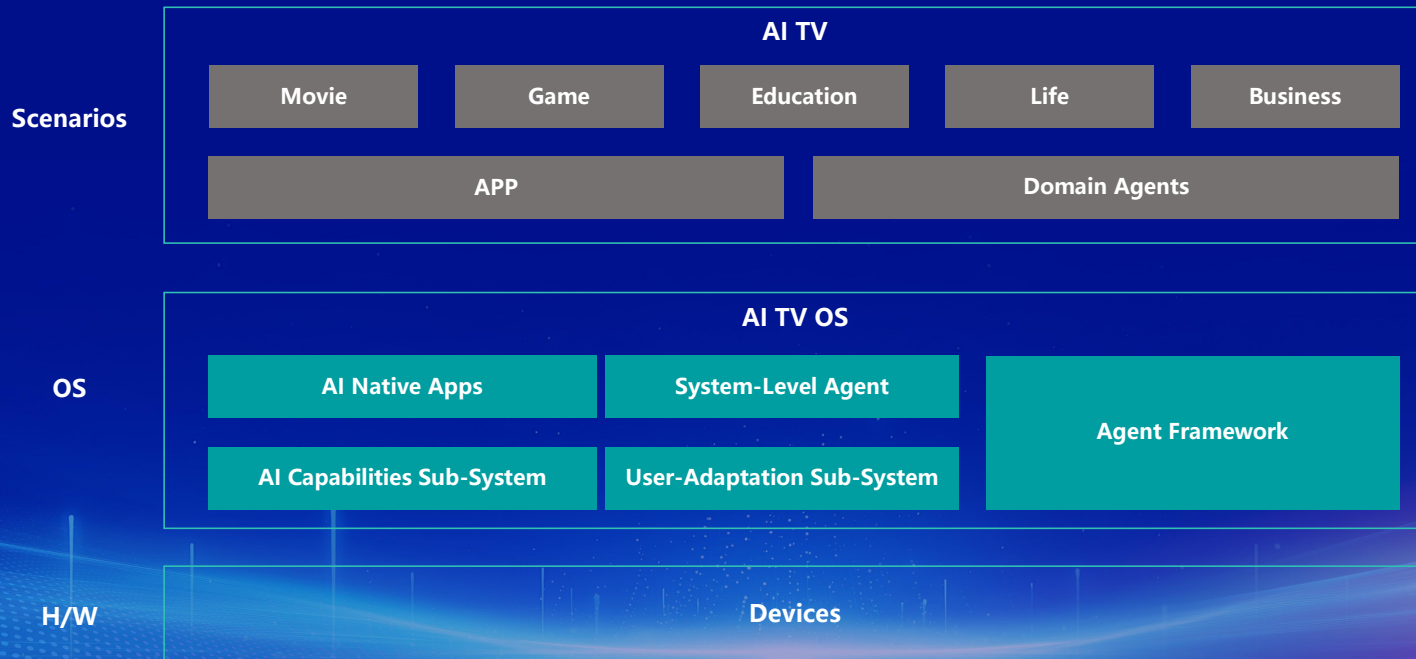
Feature 5: Controllable Content Generation



Feature 6: Security and Trustworthiness



Feature 7: AI TV Operation System



THANKS

Initiative

