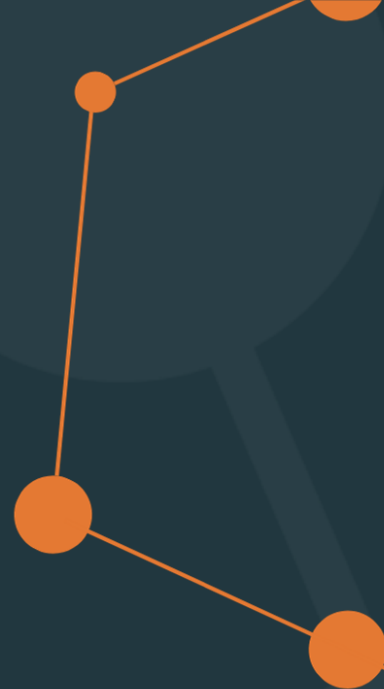




YANLINK IIoT Solutions

Oniro + Nearlink + AI



Agenda

- Company Introduction
- YanLink Platform
- YanLink Products
- YanLink Solutions

Introduction :

Who We Are

HopeRun – Company Profile

- Founded in **2006**
- Listed **on Shenzhen Stock Exchange (300339)** in 2012
- Mission: Pillar of **China's Software**, Driver of **Global Progress**
- Headquarters: **Nanjing**, Jiangsu, China
- Focus Areas: **Software & OS** Development, **Finance** & Industrial **IoT** Solutions



Dedicated supplier
Hardware & OS
Manufacturing
Engineering



20+

Domestic
branches Nanjing,
Beijing, Shanghai,
etc.



4

Overseas branches
Japan, Singapore
the United States,
France



17000+

Global Employees

YanLink – Core Mission & Direction

CORE BUSINESS DIRECTION

AI +
Connectivity
Powered by Oniro



An integrated solution provider focused on efficient, intelligent short-range device interconnection – driven by Oniro, accelerated by NearLink, and augmented by AI.

Short-range
Communication

WAN/LPWAN

Wired
Communication

CORE BUSINESS DIRECTION



Global Market

CORE BUSINESS DIRECTION



Industrial Manufacturing



Smart Education



Smart Retail

5

ELITE TEAM SIZE

/

FR

HQ ADDRESS

HQ ADDRESS

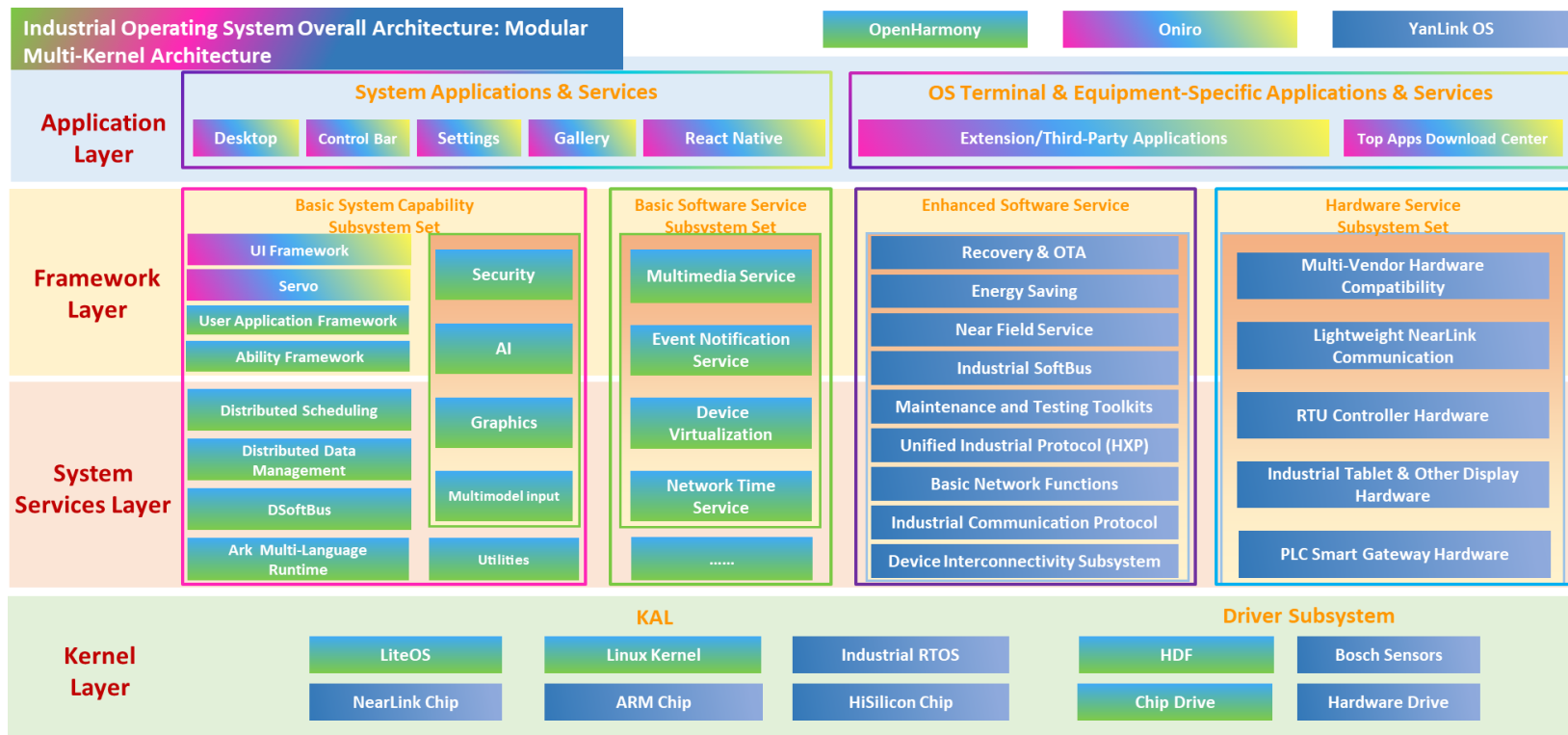
STATION F, 5 PARV. ALAN TURING,
75013 PARIS, FRANCE

STATION F

Our Platform :

Technical Architecture & Development Framework

YanLink - Technical Architecture



YanLink - BSP and Driver

Adapt Oniro to the industry's mainstream chip platforms so that it can support more IP cores, CPU architectures, chip manufacturers and chip series.

Small system adaptation

Linux kernel: The manufacturer has provided an SDK package, which is used to boot into the Linux kernel on the chip platform. On this basis, OpenHarmony needs to be booted. The process requires adaptation of LCD/I2C/TP HDF drivers, graphics framework adaptation, HDC configuration, etc.

RTOS kernel: First of all, the RTOS system needs to be ported to the processor, which involves boot code adaptation, interrupt configuration, memory configuration, Link file configuration, Console adaptation, etc.

Driver Adaptation

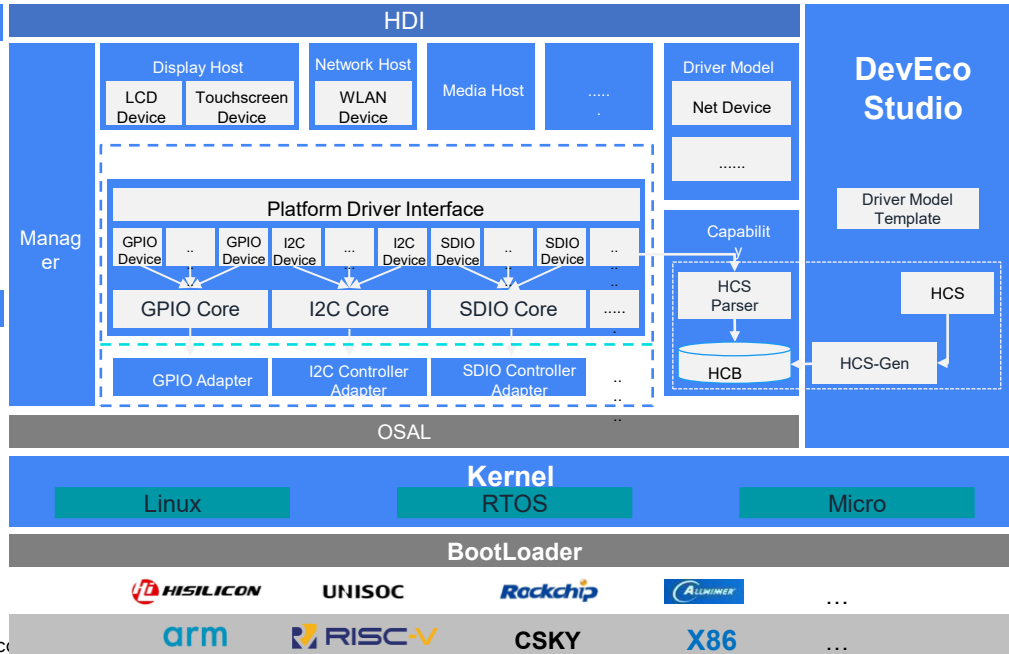
Platform driver: Adaptation based on HDF framework interface, including GPIO, I2C, SPI, PWM, RTC, WATCHDOG, SDIO, etc.

Peripheral driver: Adaptation of peripherals based on HDF framework, including KEY, LCM, TP, Sensor, etc.

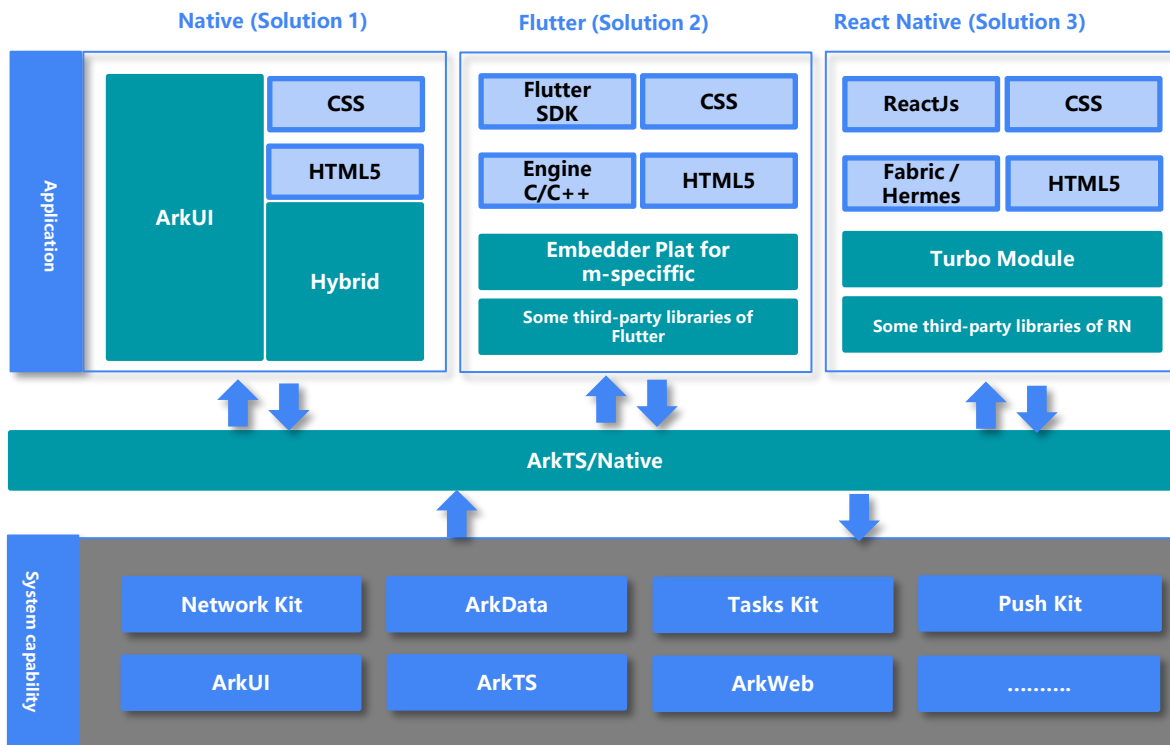
Media capability: Need to adapt HDI interface, including display, Camera, Video, Audio, etc.

Short-range capability: Based on OpenHarmony HDF framework, Wi-Fi, BT, GPS, NFC capabilities are realized.

Communication capability: Based on OpenHarmony RIL adaptation layer, SMS, Call, Data, IMS capabilities are realized.



Application Development - Strategy Evaluation



Native solution

Need to use ArkTS/ArkUI for redevelopment, H5 bridge layer needs to be redeveloped, Html5 part can be reused

Flutter solution

- Native module interaction part and unsupported third-party components need to be reimplemented
- Business logic (Dart), UI, and third-party libraries that support HarmonyOS can directly reuse code

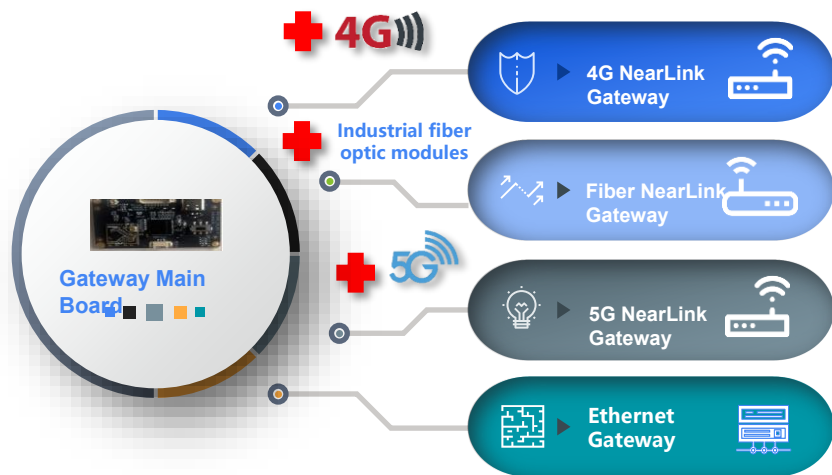
RN solution

- Native modules and bridge code, system services need to be redeveloped using ArkTS
- UI adaptation
- JavaScript business logic, React components, some third-party libraries, network requests, data processing, etc. that do not depend on the platform can be directly reused

Our Products :

Technology & Hardware Foundation

Yanlink - Core Products



Gateway Main Board

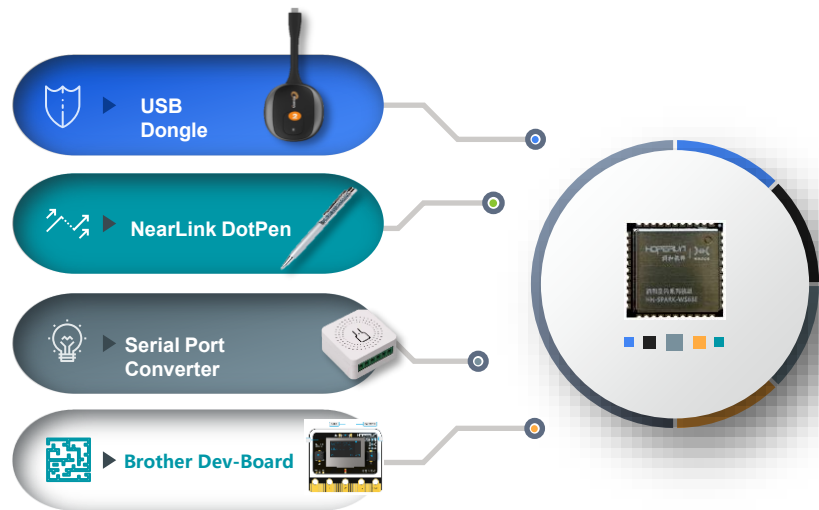
- Arm® Cortex-A7 main frequency 1.2G
- TCP/UDP/MQTT protocol support
- 64M/128M RAM 128M Flash
- WS73E chip, a single module supports 20 connections

SoM



Fully compliant with
OpenHarmony NearLink SIG

- Support transparent transmission
- Integrated MCU, supports NearLink/Bluetooth/WIFI
- Integrated NearLink module, supports different scenarios
- Support AT commands for scanning, network configuration, data transmission
- OpenHarmony/Oniro based, supports customization

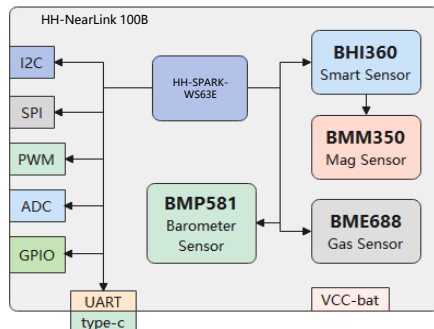
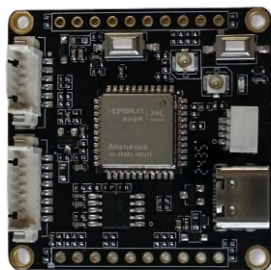


Yanlink - Development Kit

NearLink + Oniro Kits

NearLink Dev-Boards

HH-D05



- RISC-V 32bit, **240MHz**
- SRAM **606KB**, ROM **300KB**, Flash **4MB**
- 2xI2C, 1xI2S, 2xSPI, 3xUART, 8xPWM, 6xADC, 19xGPIO
- AES, SM2, SM3, SM4, TRNG
- Radar-based **Human Activity Detection**
- Programmable 6-axis IMU, supports gas sensors with artificial intelligence (AI)
- BST accelerometer/gyroscope, Geomagnetism, air pressure temperature and humidity/gas sensors integrated.
- Supports **NearLink + Oniro** for developers

IoT

WS63E

Kanto

BHI360

BMM350

BMP581

BME688

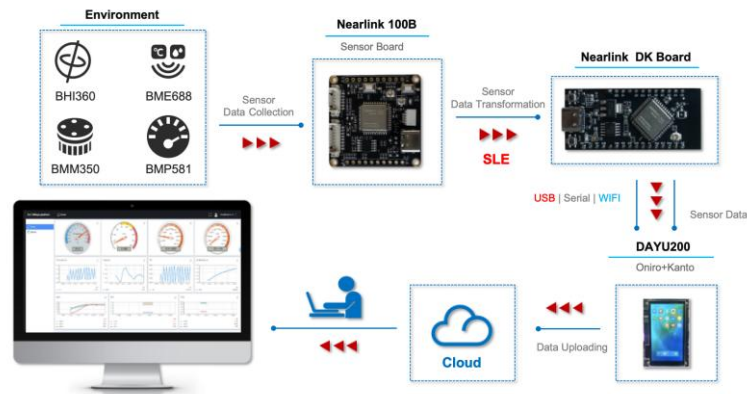
Oniro

NearLink

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NearLink Dev-Kits

HH-K03



- Development kit based on **HH-D05**
- Data uploaded to the cloud, easy to storage and management
- Developers can monitor and manage the devices remotely
- Stable data transmission: Collect gyroscope, geomagnetic, air pressure, temperature and humidity gas sensor data.

HH-D05

WS63E

DAYU200

Data on the cloud

NearLink

Kanto

Oniro

Remote monitoring

Smoother, Faster – Powered by Oniro

Test Case Name	Trigger Method	Metric Type	Android User A16 (ms)	Wukong100 (ms)	Improvement vs Android (%)
Camera Launch (Cold Start)	Tap (Launch)	Completion Latency	1016.67	900.00	11.48%
Camera Launch (Hot Start)	Tap (Launch)	Completion Latency	783.33	537.00	31.45%
Gallery Thumbnail List Scrolling	Swipe	Frame Rate	55-57	55.00	0.00%
Gallery Thumbnail List Scrolling	Swipe	Response Latency	216.67	216.67	0.00%
Gallery Single Image Zoom	Pinch	Response Latency	500.00	316.67	36.67%
View Image	Tap	Completion Latency	716.67	516.50	27.93%
Delete Multiple Images (2 x 5MB images)	Tap	Completion Latency	933.33	611.00	34.54%
Gallery Switch from Photos to Albums (Tab Switch)	Tap	Completion Latency	483.33	110.00	77.24%
Gallery Launch (Non-First Time)	Tap (Launch)	Completion Latency	750.00	583.33	22.22%
Gallery Launch (First Time)	Tap (Launch)	Completion Latency	1150.00	933.00	18.87%
Key Input Speed	Tap	Response Latency	216.67	100.00	53.85%
Keyboard Pop-up	Tap	Completion Latency	600.00	850.00	30.00%
Exit Settings	Tap	Completion Latency	666.67	550.00	17.50%
Launch Settings (Cold Start)	Tap (Launch)	Completion Latency	900.00	850.00	5.56%
Contacts List Scrolling	Swipe	Response Latency	366.67	126.00	65.64%
View Contact	Tap	Completion Latency	866.67	649.50	25.06%
Save Contact	Tap	Completion Latency	1066.67	482.50	54.77%
Create New Contact	Tap	Completion Latency	483.33	449.50	7.00%
Launch Contacts (First Time)	Tap (Launch)	Completion Latency	1200.00	901.50	24.88%
Bring Up Task Manager	Tap	Completion Latency	750.00	251.00	66.53%
System UI (Clear All Background Processes)	Tap	Completion Latency	866.67	216.50	75.02%
Background Task Switching Speed	Tap	Completion Latency	750.00	400.00	46.67%
Reboot	Restart	Completion Latency	57950.00	23914.00	58.73%
Wake Screen	Wake	Completion Latency	200.00	200.00	0.00%
Power On	Power On	Completion Latency	42500.00	22951.50	46.00%
Dialpad Key Press	Tap	Response Latency	150.00	133.50	11.00%
First Launch (App)	Tap	Completion Latency	716.67	616.50	13.98%

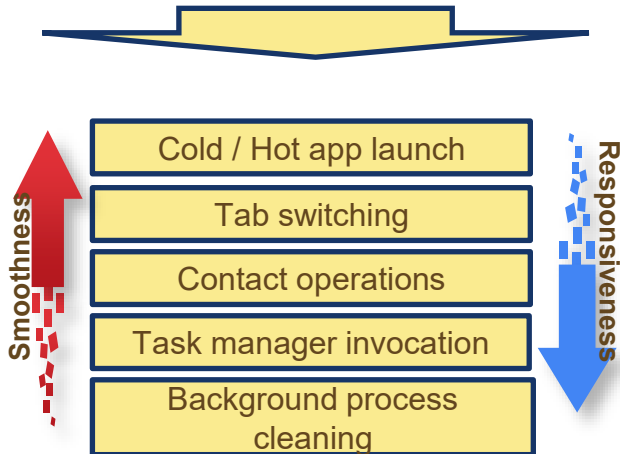
Application lifecycle management

Rendering scheduling



Simplified IPC (Inter-Process Communication)

Background process control



Oniro Performance vs. Android



Page / Tab Switching

Latency reduced to ~100ms – nearly imperceptible to users

ArkUI declarative UI & state management – Tab switching does not require rebuilding the entire view tree, only incremental updates



Heavy File / Database Operations

Background cleanup 75% faster, save contact 54% faster – directly improves completion smoothness

DistributedData local optimization: SQLite fusion engine + batch commit = lower write latency

Strict background process control: MissionManager has no "sticky" invisible processes – one-tap cleanup releases immediately

EROFS + HMDFS file systems: Faster small file deletion and status updates



App Launch Scenarios

30% fewer IPC round trips – cold start latency reduced to ~900ms

AppSpawn lightweight process pool: Faster app process creation vs. Android Zygote full fork

Streamlined Ability lifecycle: FA (Feature Ability) model has shorter startup path, no complex ActivityThread initialization



Scrolling Responsiveness & Latency

Contacts list scrolling latency reduced by 65% – feels more "sticky" and responsive

ArkUI native animations + high-priority input thread: Scroll events go directly to RenderService queue, no main thread blocking

Real-time thread scheduling: Response latency as low as 126ms

Simplified graphics stack: No multiple cross-service forwarding (SurfaceFlinger → InputFlinger)

Category	Key Metric	OH vs. Android	Improvement
Tab Switching	Gallery → Albums	110ms vs. 483ms	↓77%
Camera Cold Start	Launch latency	900ms vs. 1016ms	↓11%
Save Contact	Write operation	482ms vs. 1066ms	↓54%
Clear Background	Cleanup latency	216ms vs. 866ms	↓75%
Contacts Scroll	Response latency	126ms vs. 366ms	↓65%

AI box

Product Introduction

Supports real-time recognition for
2\4\6\8\16\32\96\192-channels video streams

Product Features

The AI Box supports

- Real-time **16 channels of 1080p HD video** processing and analysis of up to.
- More than **100** algorithms
- Parallel execution of multiple algorithms

Product Applications

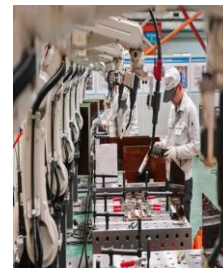
The products are widely applied in critical fields such as energy mining, industrial manufacturing, and hazardous chemical industries.



Energy Mine



Hazardous Chemicals

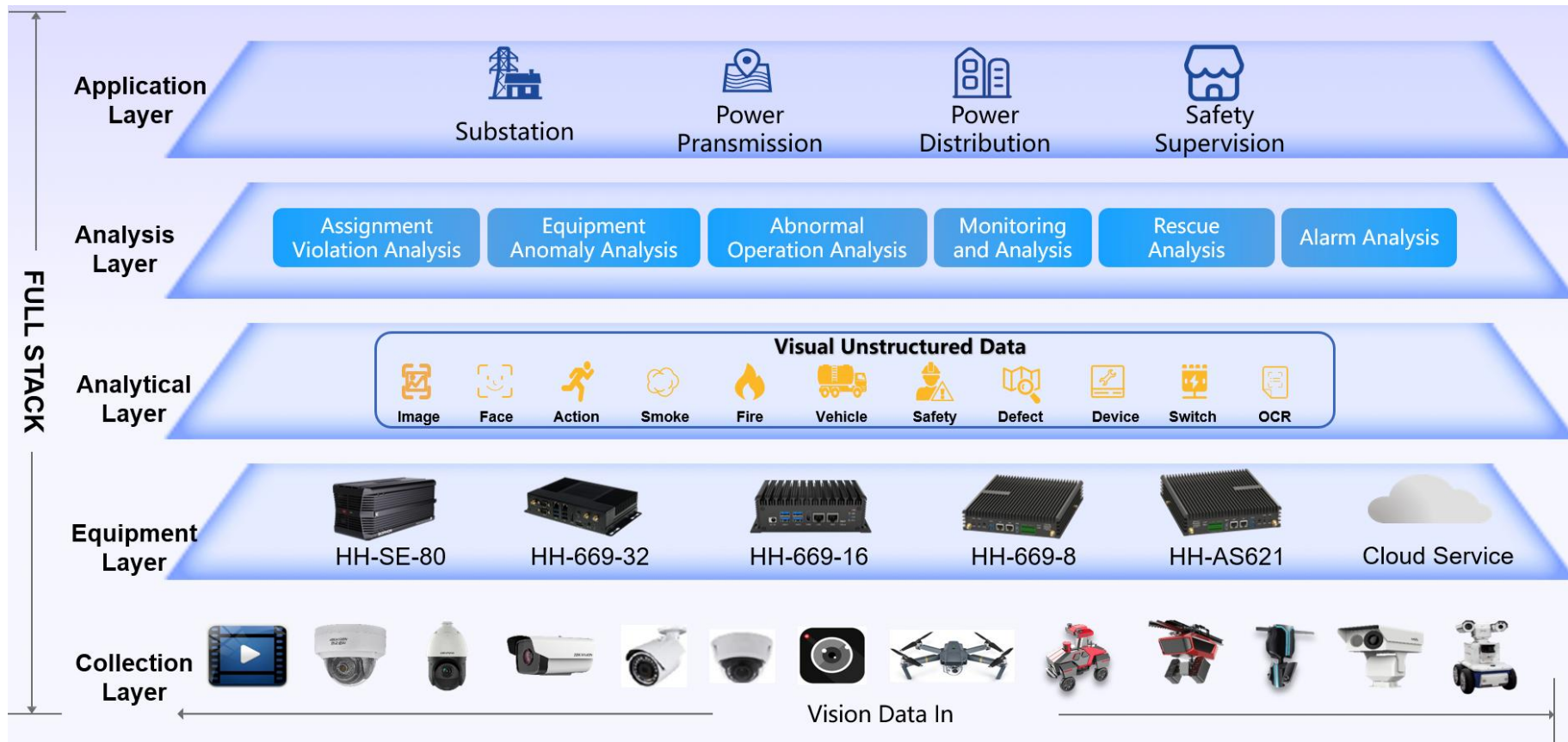


Industrial Manufacturing



Smart Power

AI box – All Scenario



AI box powered by Oniro



Heterogeneous parallel + dynamic workload offloading across devices.



Edge anchor – auto-balances workloads for 7x24 low-latency operation.



70+ builders, 8,600+ contributors, 1,100+ certified products.



Lower risk, shorter validation, native compatibility with hundreds of devices.



Native security: encryption, TEE, secure boot, local-first data. Meets compliance. All data processed on-device – no cloud risk.



Built-in AI models & native APIs for speech, vision, and NLU.



Reduces dev effort. Delivers out-of-the-box intelligence for industrial scenarios.



ArkUI declarative UI + cross-platform SDK + rich peripheral drivers.



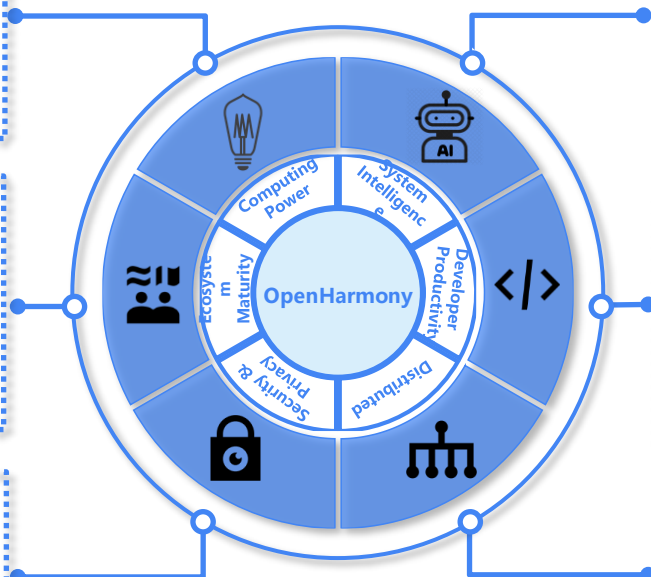
Faster prototyping. One codebase for AI Box, gateway, and handheld devices.



Soft bus enables seamless discovery, connection, and data sharing.



Becomes central hub – orchestrates nearby sensors, cameras, and actuators.



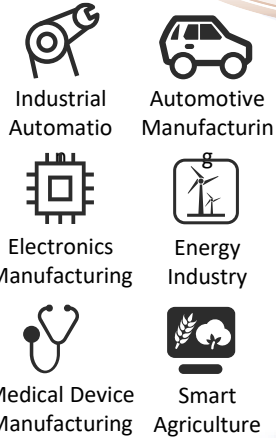
Our Solutions :

Industry & Consumer Scenarios

YanLink IIoT Solution



Six Major Industries



Plat & APP



Edge & Fog

Smart Edge Terminals

Five Key Innovation Strategies

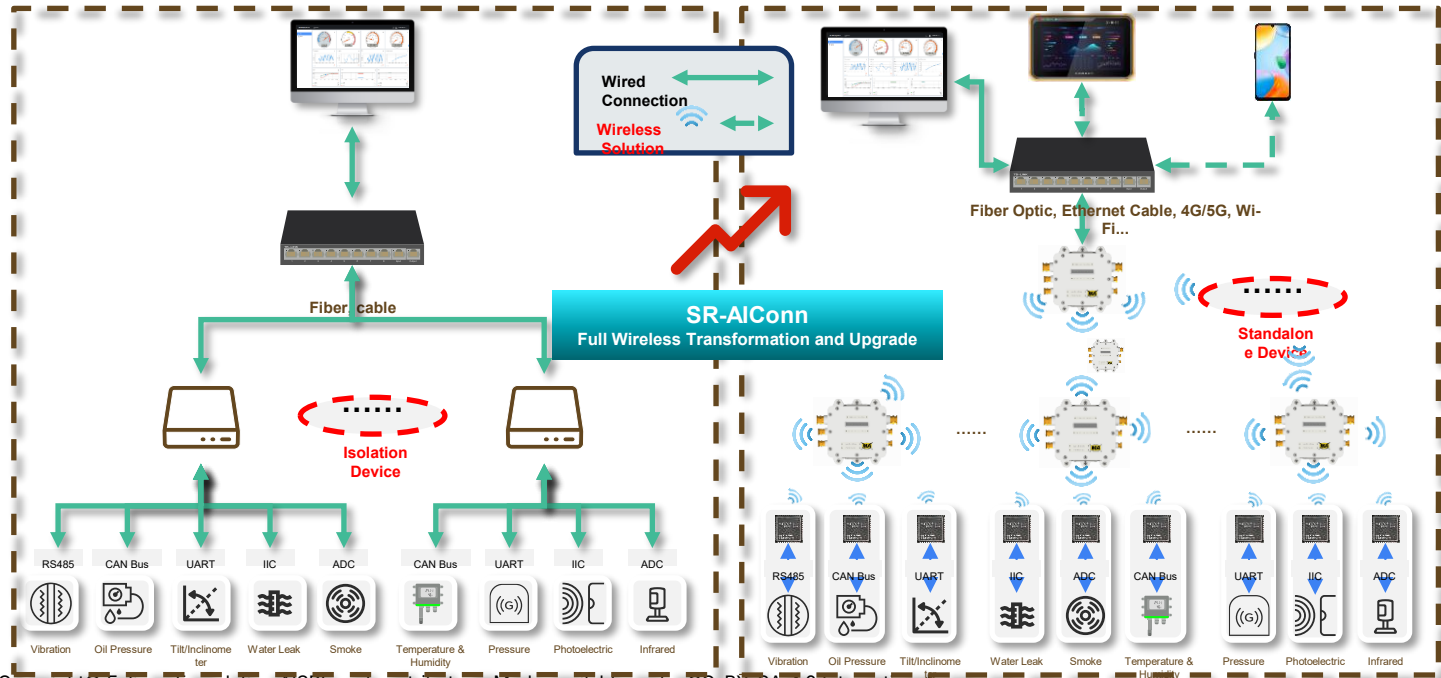
- ✓ France Localization Strategy
- ✓ Oniro Connected Ecosystem
- ✓ Strengthening the Digital Foundation
- ✓ Eco-Partnership Co-creation
- ✓ Industrial Innovation Empowerment



Industry - Short Range AI Connection

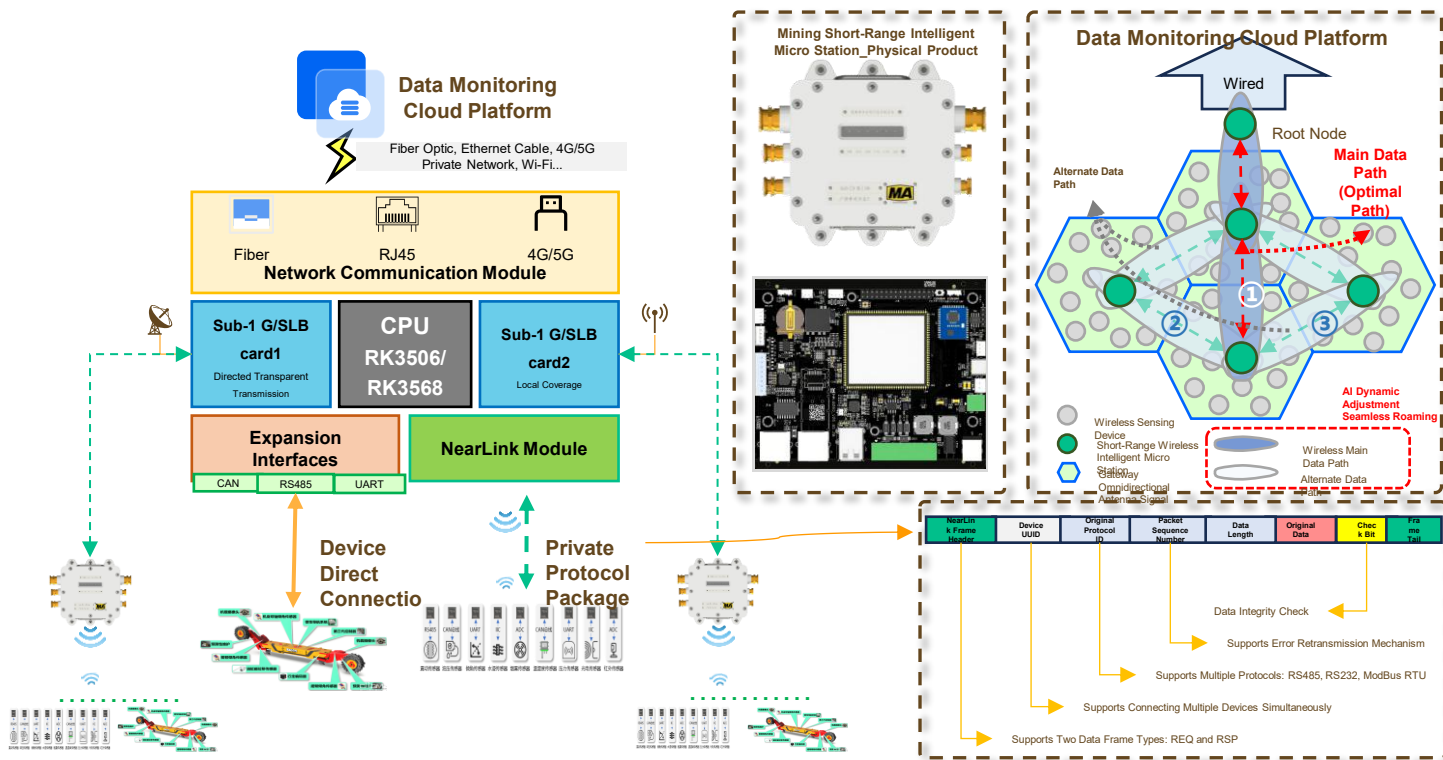
SR-AIConn, Short Range AI Connection:

Integrates next-generation **short-range wireless** technologies (e.g., NearLink, Sub-1G, etc.) with next-generation **AI technologies** to provide an integrated solution for **efficient and intelligent** short-range interconnection between devices



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SR-AIConn Gateway - Hardware Architecture



SR-AIConn Gateway - Function Comparison

Dynamic Gateway

Traditional Gateway

Cloud

Device Management Center
Data Analysis

Edge

Cloud Connection Layer - Upload to Cloud for Analysis

Data Forwarding Layer - No Intelligence, Transparent Transmission Only

Protocol Access Layer - RS485/Modbus/TCP

End

Modbus/485/Zigbee

Sensors

Actuators

Short-Range Wireless Intelligent Micro Station

Cloud

Working Historical Model
Knowledge Base Management
Device Management Center
Policy and Model Distribution

Edge

Supports Encrypted Transparent Transmission
OTA Remote Upgrade
OpenHarmony
On-Device Lightweight Large Model
Dynamic Networking Parameter Configuration
Dynamic Routing Path Weight Adjustment
On-Demand Transmission Power Configuration
Short-Range Wireless and Wired Coexistence

End

Short-Range Wireless (NearLink/Wi-Fi) + Wired (Modbus/RS485)

Sensors

Actuators

Core Advantages

AI+Communication

Quantifiable Improvement



OpenHarmony Soft Bus + Short-Range Wireless Hard Bus

Enables resource sharing and unified scheduling between devices and gateways, maintaining low-latency and high-reliability communication in complex environments.



AI Dynamic Parameter Tuning

Dynamically adjusts networking configuration, modulation mode, and RF power based on the on-site environment.



Gets Smarter with Use

The AI engine continuously learns from on-site experience and automatically optimizes parameter tuning strategies, achieving long-term performance self-improvement.



Autonomous System

Can still complete self-networking, link reconstruction, and local intelligent upgrades even when disconnected, truly achieving autonomy and self-healing.

Direct Benefits Brought by the Technology

Reliability ↑

Multi-path and anti-interference mechanisms improve link availability.

Latency ↓

Short-range communication and local decision-making reduce transmission latency.

Coverage & Capacity ↑

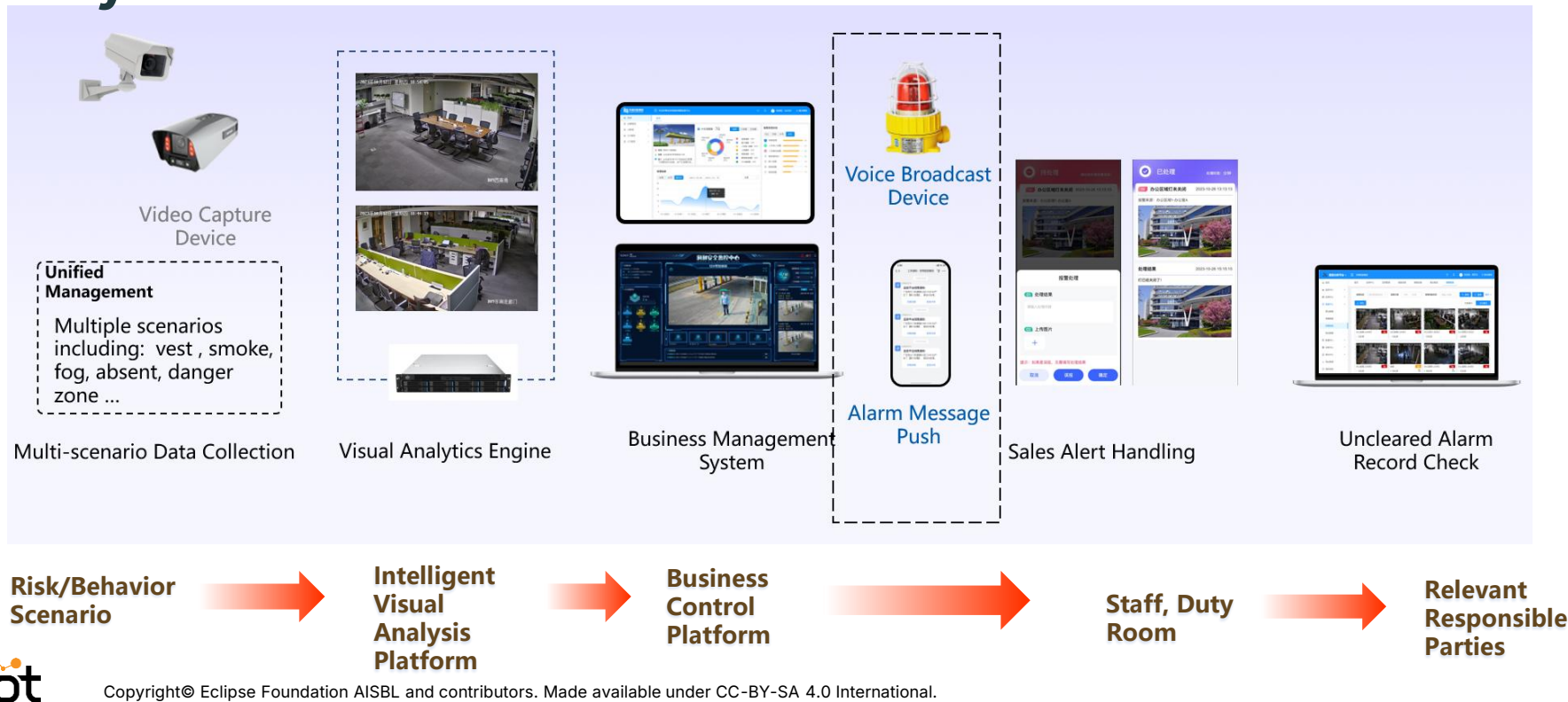
Power and routing optimization improve spatial reuse efficiency.

O&M Cost ↓

Automatic parameter tuning and remote upgrades reduce manual intervention.

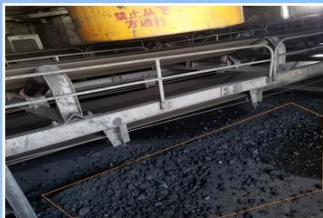
Industry - AI box - Intelligent Video Surveillance Analytics Solution

INDUSTRY



Industry - AI box - Algorithm Applications

Energy Mine



Spill Detection

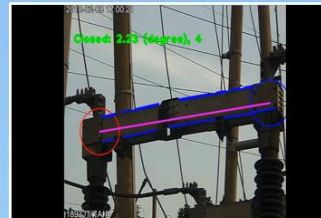


Belt Misalignment Detection

Smart Power



Box Opening/Closing Detection



Knife Switch Identification

Smart Construction Site



Region Intrusion Detection



Reflective Vest Detection

Hazardous Chemicals

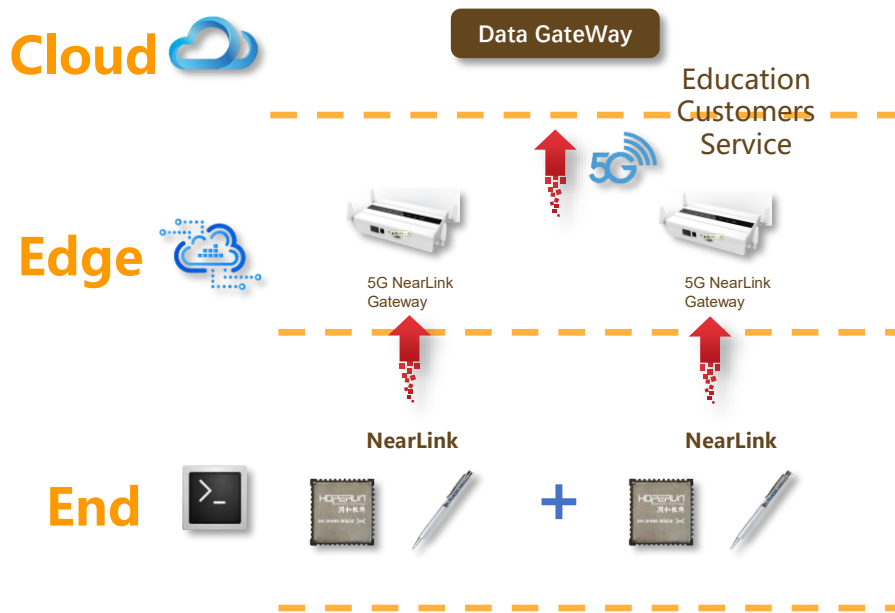


Hot Work Monitoring



Acetylene Cylinder Fall Detection

Industry - NearLink Dot Matrix Technology Paper and Pen Solution



Our Solutions



NearLink

NearLink Hardware

Dot Matrix Pen Solution

Meets the needs of **95%** of domestic schools

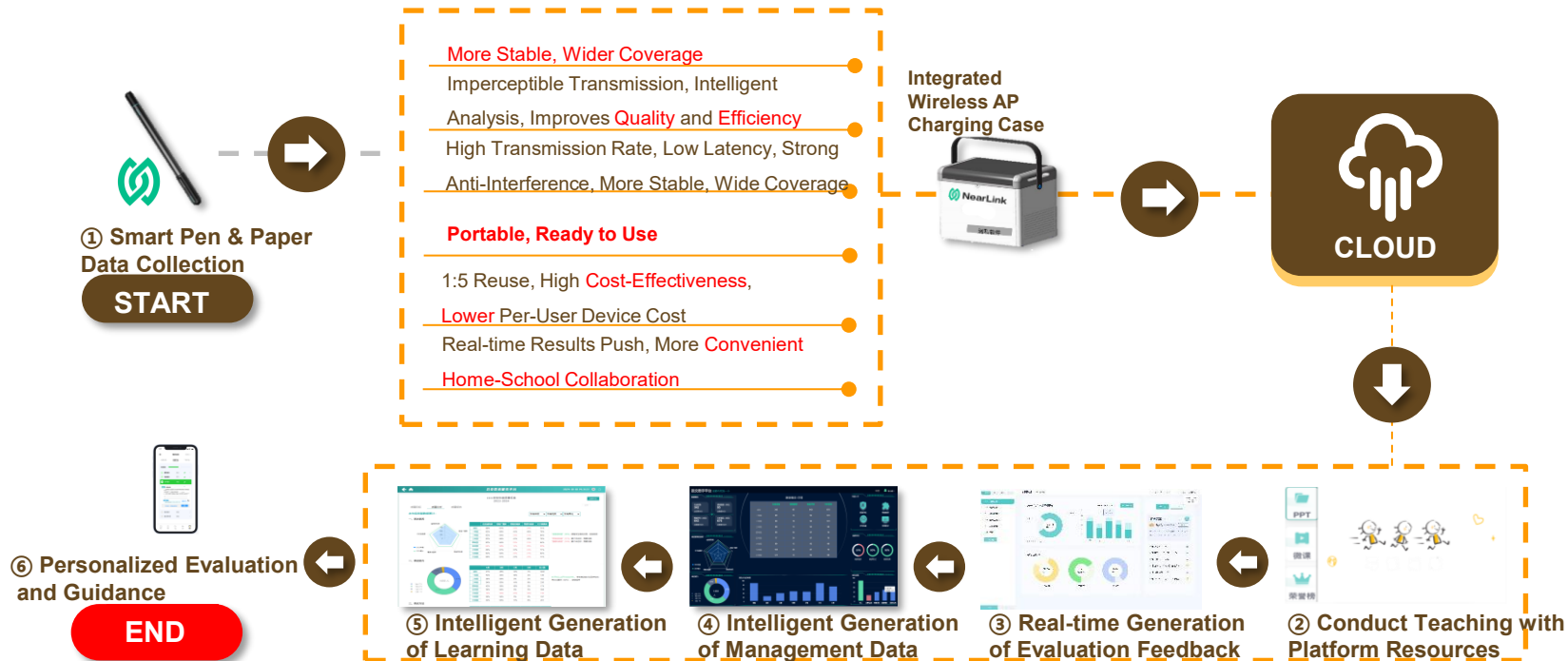
Connects up to **60** pens,
a **50%** increase

Mobile Deployment |
Increases Usage Rate

Reduces comprehensive school
procurement costs by **50%**
Improved Recording Quality

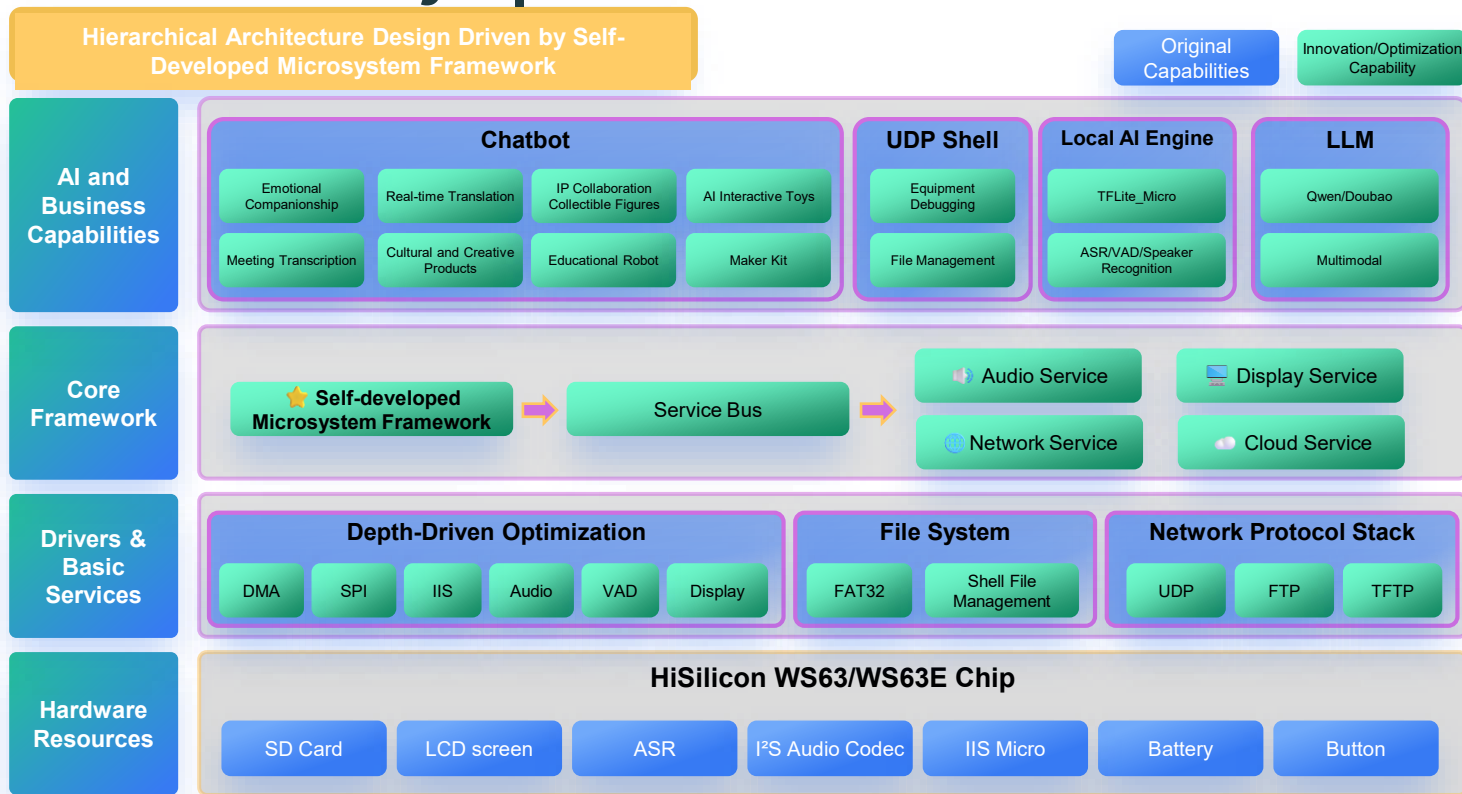


Industry - NearLink Dot Matrix Technology Paper and Pen Solution



Consumer - AI-Toys | Architecture

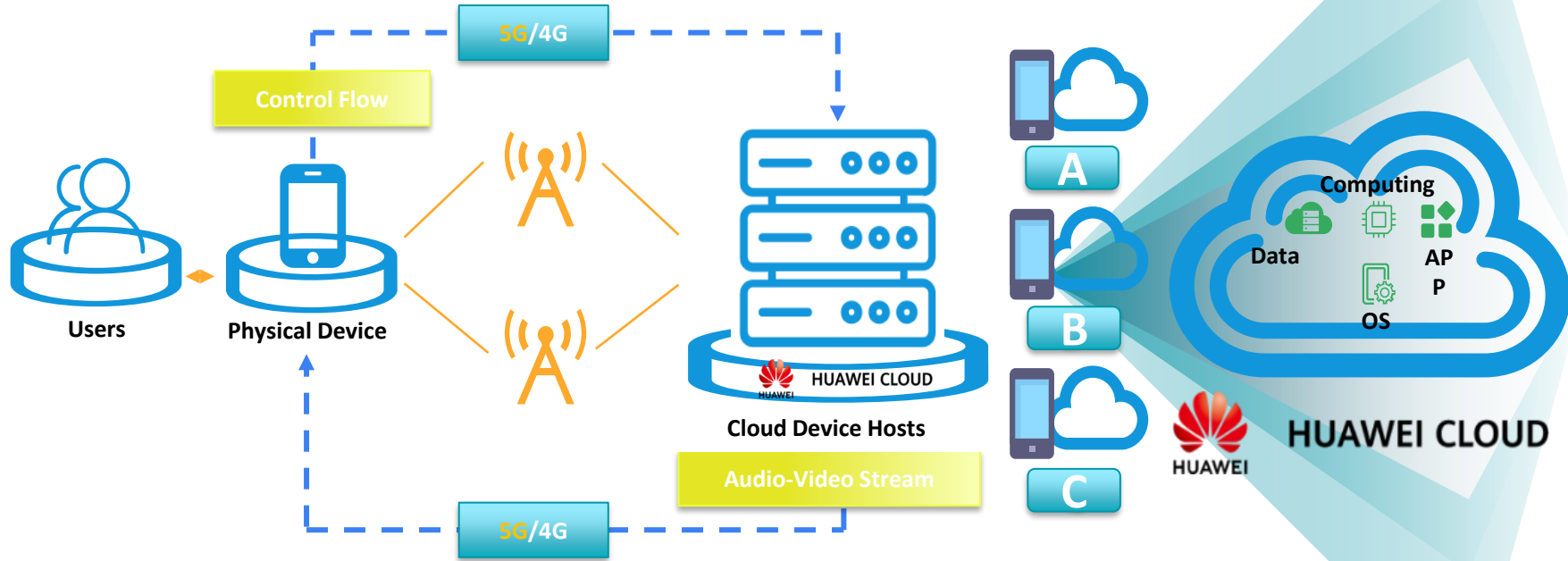
CONSUMER



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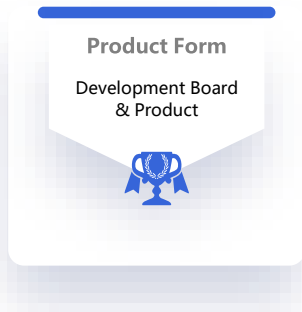
Consumer - HUAWEI Cloud Service

CONSUMER

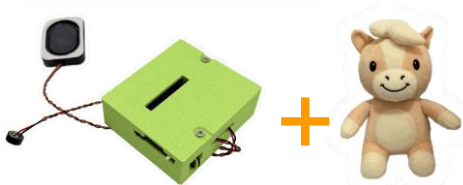


AI-Toys | From Thousands to Hundreds

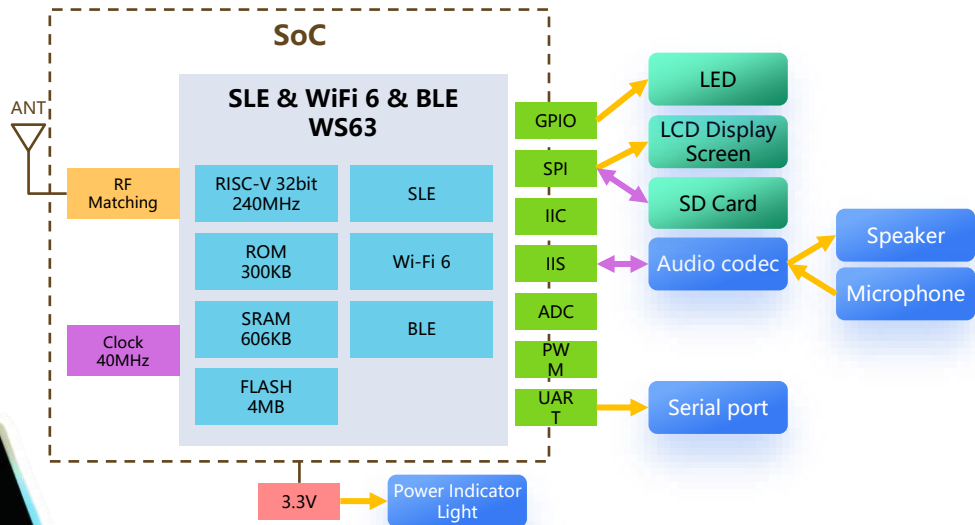
CONSUMER



AI Voice Dev-Kit



AI Voice Toys



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AI Voice Dev-Kit(With screen)

Consumer - NearLink & OpenHarmony(5.0.3) Mobile and Tablet

CONSUMER



P361

Education
Industry Unisoc
Custom 4G
Tablet



P362

Education
Industry Unisoc
Custom 4G
Tablet



P380

Education Industry
Unisoc Custom
5G Tablet



P271

Education Industry
Rockchip E-Ink Screen
4G Tablet



P381

Education
Industry Unisoc
Custom 5G
Tablet



P382

Light Three-Proof
Industry Unisoc Custom
5G Tablet



P363

Retail & Supermarket
Industry Unisoc Custom 4G
Tablet



P190

Educational
Commercial Display
Industry
Hisilicon Custom 85"
Smart Whiteboard



P191

Geek Domain
Hisilicon Custom
NAS Device



P206

Transportation Industry
Rockchip Custom Bus
Card Swipe Terminal





Thank you

Yan SUN

Co-founder, Head of Europe at YANLINK

E-mail : sun.yan@yanlink.fr