



MODERN COMMUNICATION TECHNOLOGY

# Smart command center Audiovisual overall solution

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Science and Technology Creat Future, Strength Creat Brand  
Guangdong Baolun Electronics Co., Ltd.



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# PART 01

# Industry Background

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## Command center construction background



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Command centre refers to a new type of infrastructure that is oriented to supporting economic and social digital transformation, intelligent upgrading, and integration and innovation, with **5G, industrial Internet, cloud computing, artificial intelligence** and other application needs as the traction, aggregating **diversified data resources**, applying green and **low-carbon technologies, having safe and reliable capabilities, providing efficient arithmetic services**, and empowering thousands of applications, and integrating with the network and cloud computing. Compared with the traditional command center, the smart city operation center has the characteristics of **high technology, high arithmetic, high energy efficiency and high security**, etc. In today's increasingly popular digitalisation, the smart city operation centre can better support the accelerated innovation of new-generation information technology and accelerate the construction of a strong manufacturing country and a strong network country.



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# PART 02

# Solution

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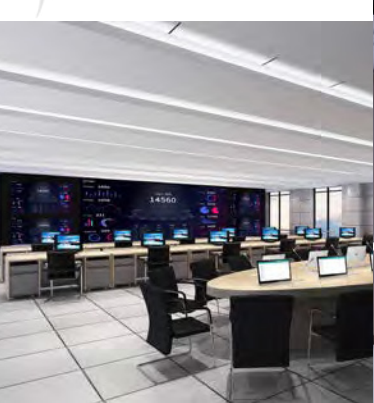
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## Command center construction plan

<https://www.720yun.com/t/2baknyibrfl>



**Emergency  
command center**

**Public Security  
Command  
Center**

**Traffic command  
center**

**Judicial  
Prosecution  
Command  
Center**

**Force Command  
Center**

- Command center solutions for various industries, including: LED large screen, Visual Management System, Quick Response Dispatch System, central control, digital conference, remote video, paperless, professional sound system and other systems, is currently our fast-growing industry, covering emergency command center, monitoring center, big data center, command center, airport, high-speed railway station, exhibition halls and other scenarios of the solution.



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# PART 03

# Scenario application

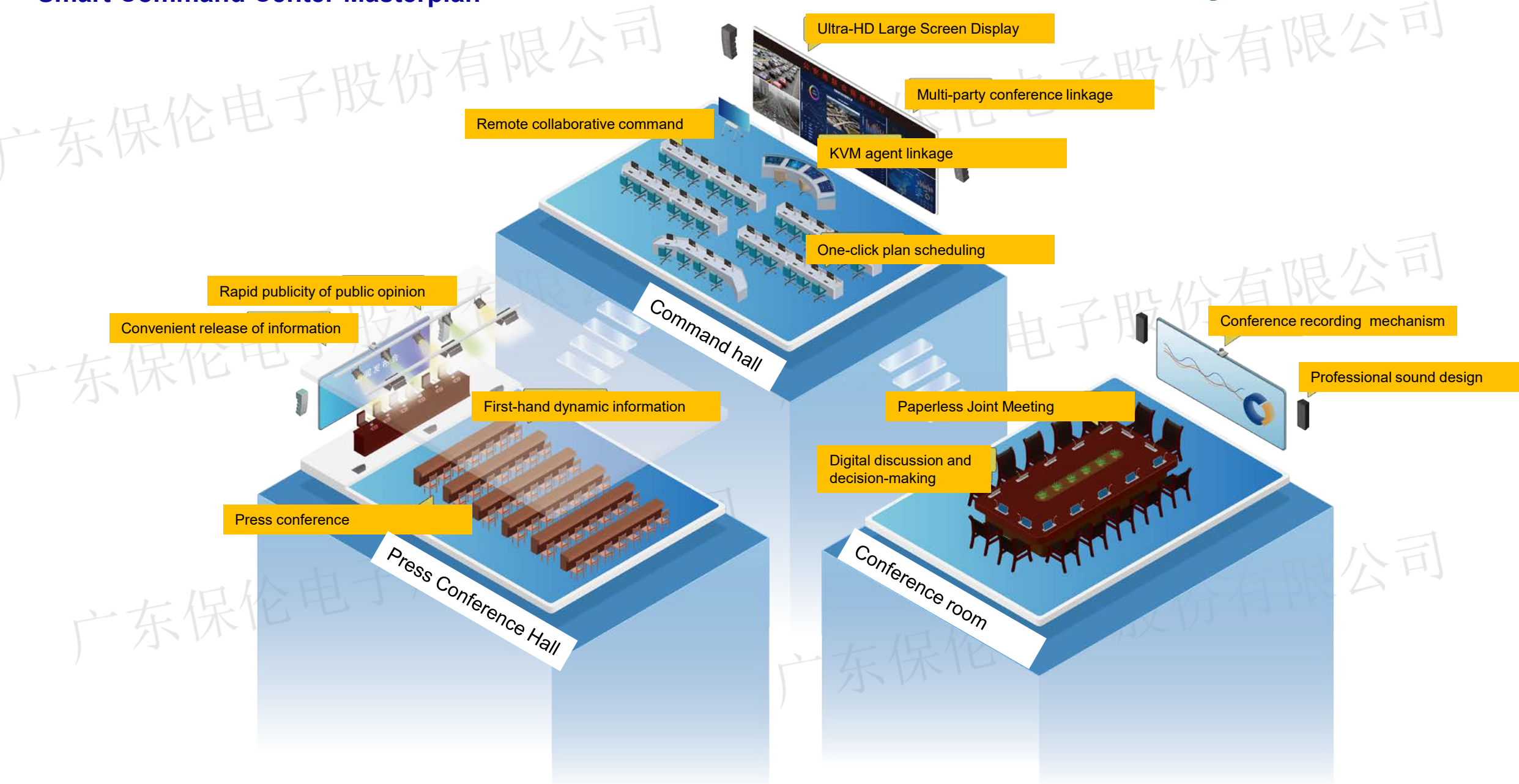
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# Smart Command Center Masterplan



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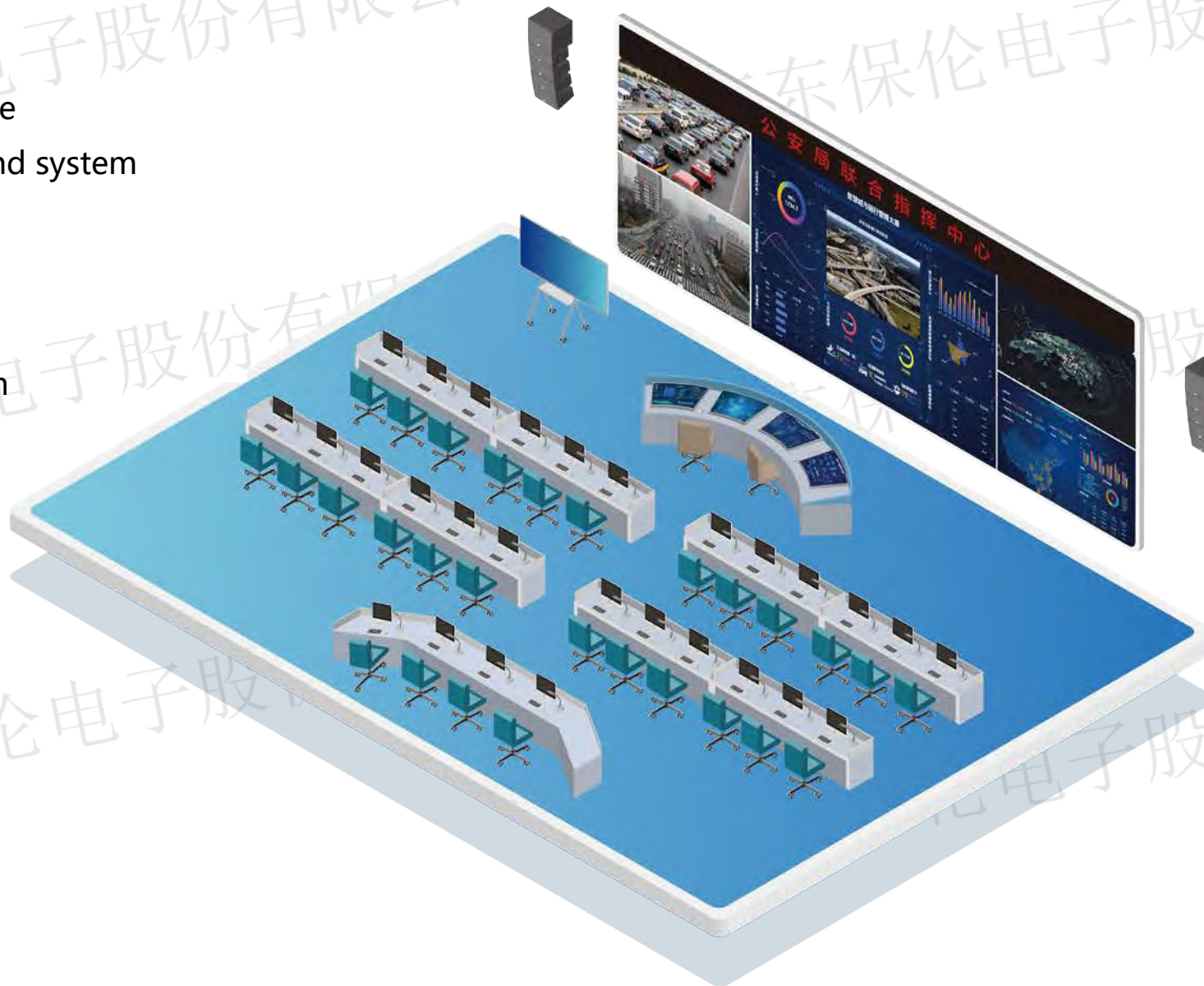
## Smart command center hall



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- Digital conference
- Professional sound system
- HD display
- Signal switching
- Visual control
- Recording system



# Smart command center-visual management platform



## Visual management platform

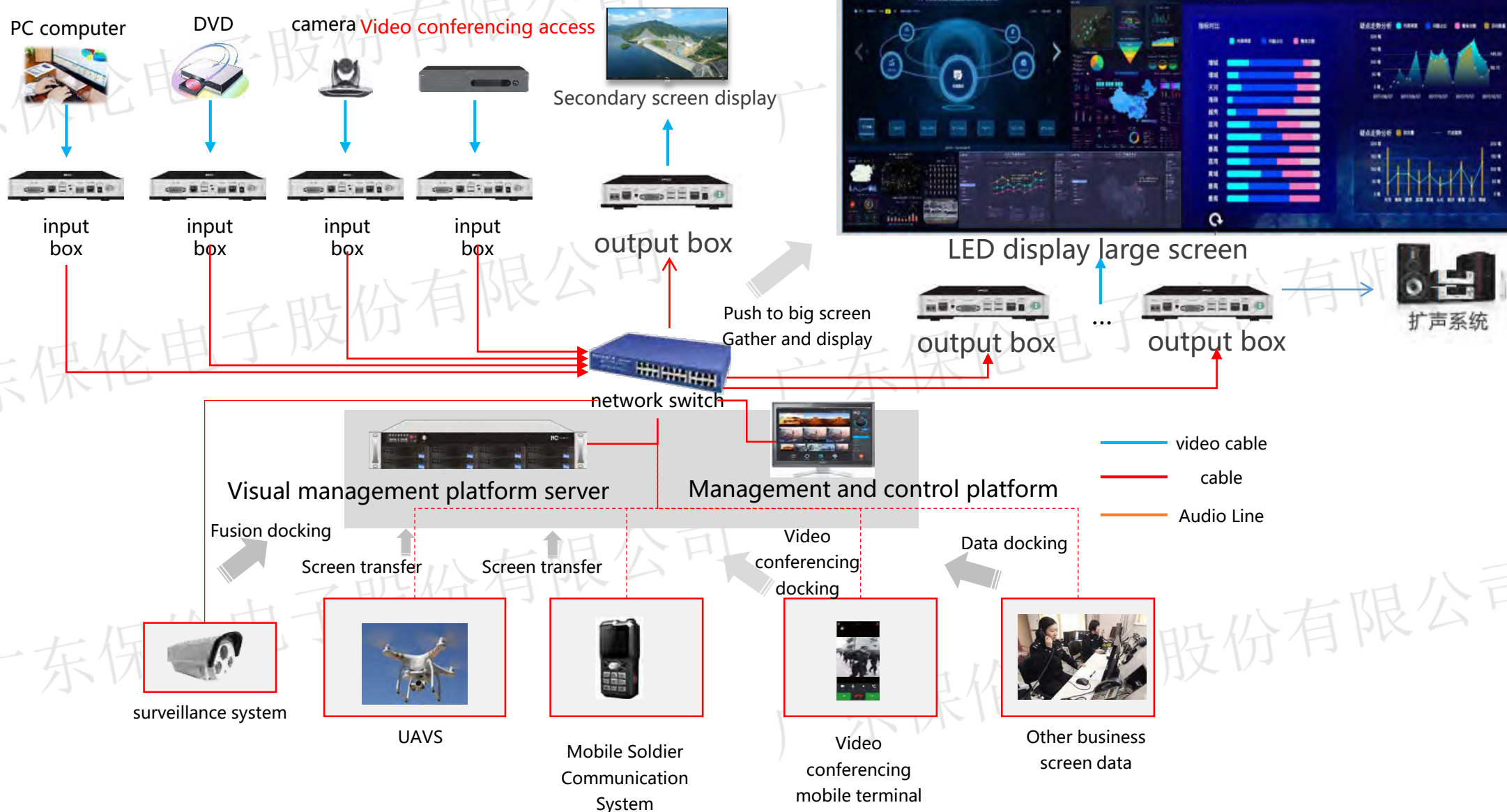
Centralized control · interconnection

Visual management platform, integrated KVM seating management, large screen display dispatching, IOT equipment control, audio integrated management, video recording management of five major system applications. Visual Management System, with rich video screen processing functions can achieve remote monitoring, office systems, mapping systems and other information fusion and push and LED display.

- Easy to deploy
- Screen stitching
- KVM agent
- Integration and interoperability
- Centralized control
- System hot standby
- Secure encryption
- Bidirectional mutual control
- 4K HD quality
- Screen recording and storage
- Status data statistics
- Monitoring retrieval



# Smart command center - visual management platform





# Smart command center - visual management platform



[ General scheduling scenario ]



[ Emergency dispatch scenario ]



Distributed access node (embedded)



Distributed access node (FPGA)

- Input and output integration
- 4K ultra-clear image processing
- Supports 4:4:4 image format
- KVM visual management
- Transmission delay  $\leq 16$  ms
- Role permission assignment
- Video splicing synchronization algorithm
- linux system architecture
- Optical network double backup
- 10% anti-packet loss recovery
- Support multi-stream transmission
- Support custom programming



**LED**  
no visual seams



**LCD /DLP**  
with physical seams

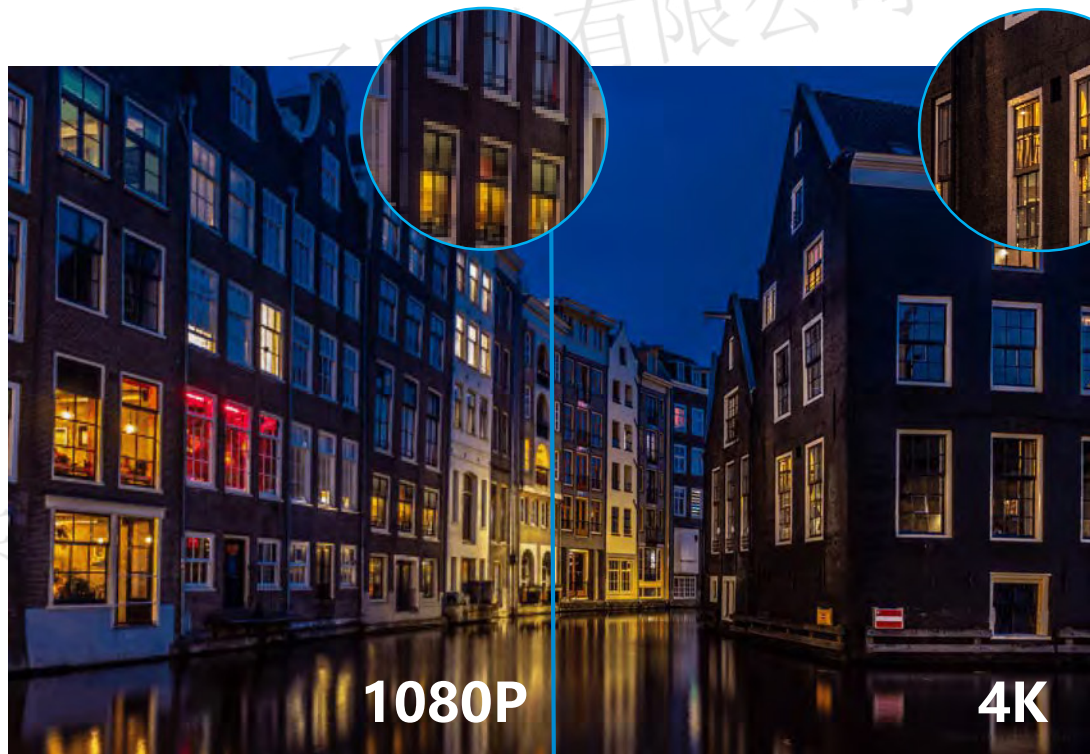
Type \ Comparison	advantage	disadvantage
<b>LCD screen</b> ( Single screen <100 inches )	<ul style="list-style-type: none"> <li>· High physical resolution</li> </ul>	<ul style="list-style-type: none"> <li>· High cost</li> <li>· Not enough brightness</li> </ul>
<b>Projector</b>	<ul style="list-style-type: none"> <li>· Low cost</li> <li>· Easy to install and flexible to use</li> </ul>	<ul style="list-style-type: none"> <li>· Low brightness, requiring a low-light environment</li> <li>· There should be no obstructions in front, which will affect the display effect.</li> <li>· Poor contrast and severe color deviation</li> </ul>
<b>DLP video wall</b>	<ul style="list-style-type: none"> <li>· High pixels at the same size</li> <li>· Mature products</li> <li>· Lower cost</li> </ul>	<ul style="list-style-type: none"> <li>· With visual seam</li> <li>· High maintenance costs</li> <li>· The display brightness is uneven after long-term use</li> <li>· Insufficient color reproduction</li> </ul>
<b>LCD video wall</b>	<ul style="list-style-type: none"> <li>· High pixels at the same size</li> <li>· Product maturity</li> <li>· Low cost</li> </ul>	<ul style="list-style-type: none"> <li>· With large splices</li> <li>· The display brightness is uneven after long-term use</li> <li>· The color reproduction is average</li> </ul>
<b>Fine spacing LED screen</b>	<ul style="list-style-type: none"> <li>· No visual seams, complete picture</li> <li>· Adjustable brightness, suitable for different scenes</li> <li>· Good color reproduction and perfect reproduction</li> <li>· Free combination of sizes</li> </ul>	<ul style="list-style-type: none"> <li>· High cost</li> <li>· Low resolution under the same area</li> </ul>



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## Smart command center -LED display system

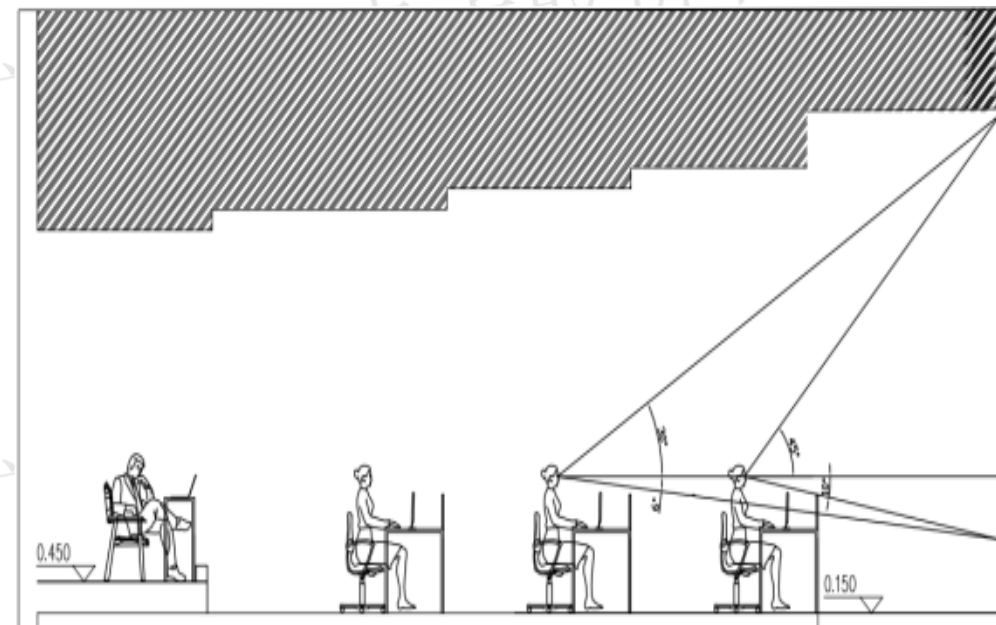
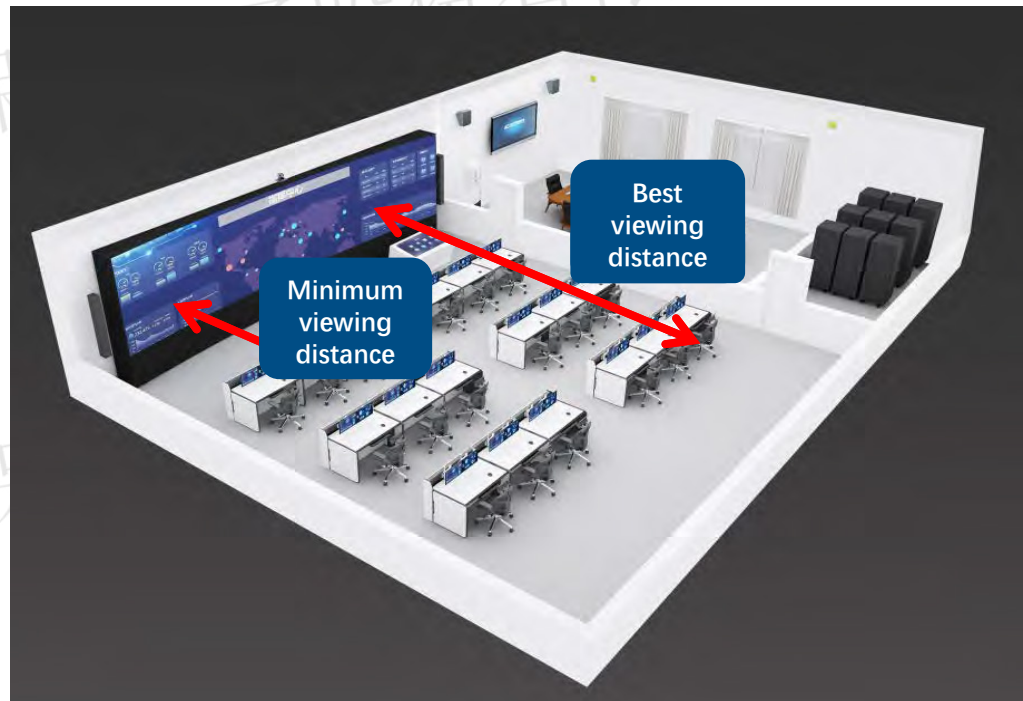


◆ **Unique box detection technology , no exposed wire connections between cabinets**

- Seamless splicing
- Ultra high refresh
- Ultra high grayscale
- Picture correction
- Extra large viewing angle
- 3D display
- Dimming
- Silent design
- light weight
- Fast heat dissipation
- Low power consumption
- Stable and reliable



## Smart command center -LED display system



Large screen side vertical perspective view

- **Minimum viewing distance:** the closest acceptable viewing distance, the estimation method is  $L_{min} = P \text{ value} \times 1000$ ;
- **Optimum viewing distance:** that is, the distance at which the human eye cannot see the graininess of the screen. The estimation method is  $L = P \text{ value} \times 3000$ ;
- **Farthest viewing distance:** the farthest distance at which the screen can be viewed normally. The estimation method is  $L_{max} = \text{screen height} \times 30$ ;

Considering the height of the command hall, it can be seen from the vertical perspective that the elevation angle from the nearest to the farthest viewing point during work is **within 30°**, and the **depression angle is within 15°**, that is, the height meets the optimal viewing requirements.

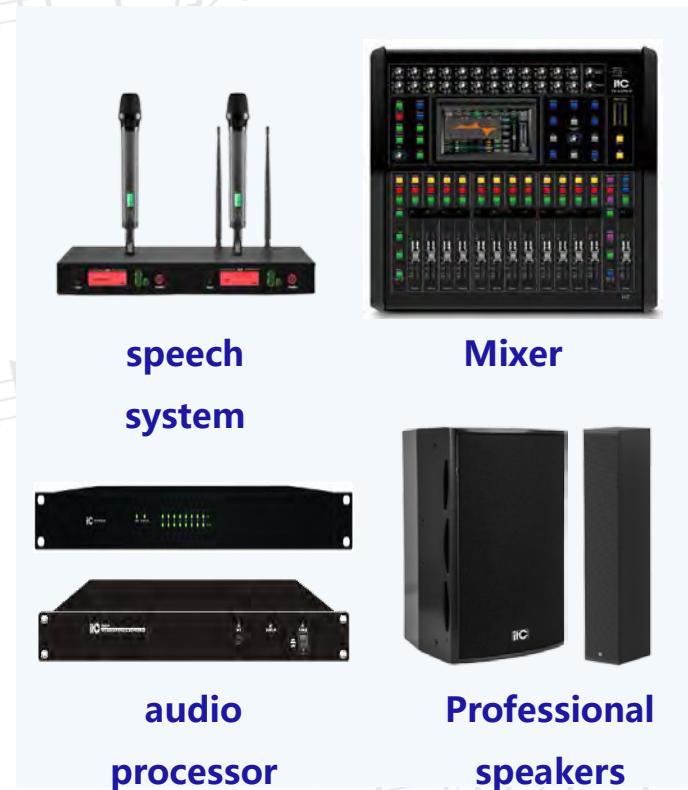
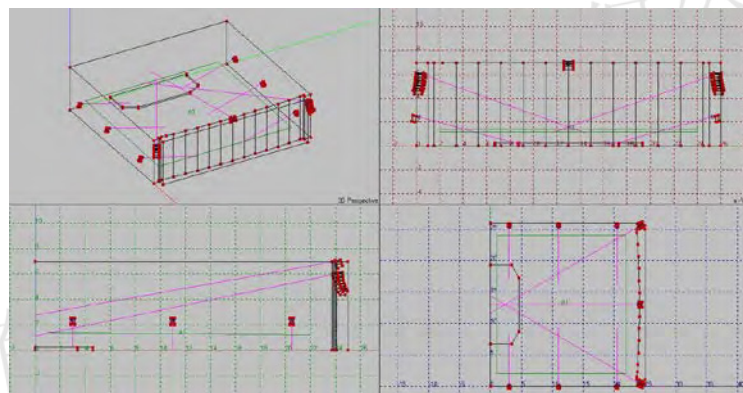
Display field - 4K • 4K : 3840\*2160 • UHD video source • Video transmission path • UHD displays



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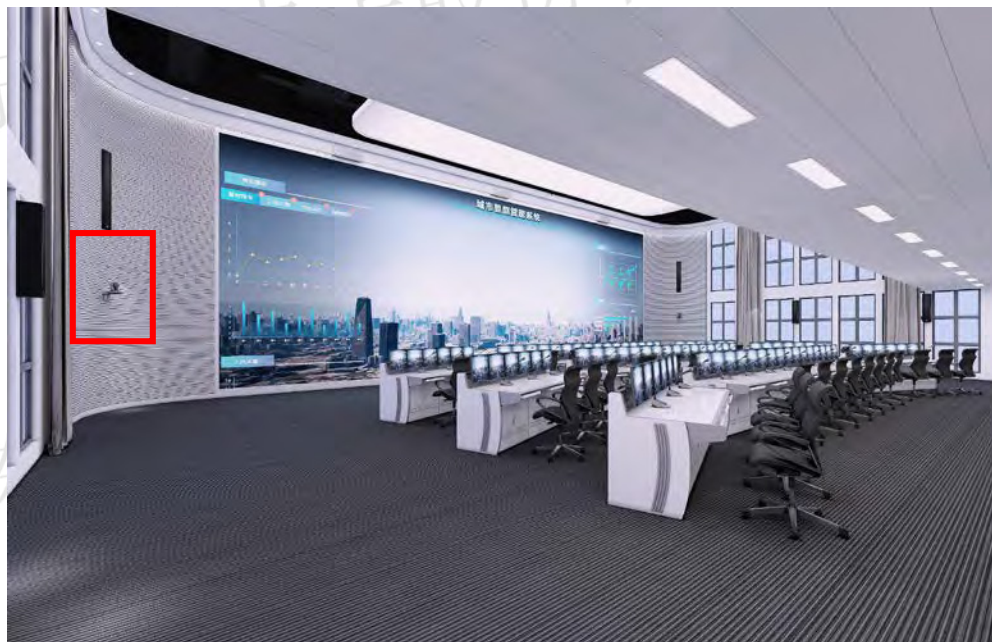
## Smart command center - Professional sound system



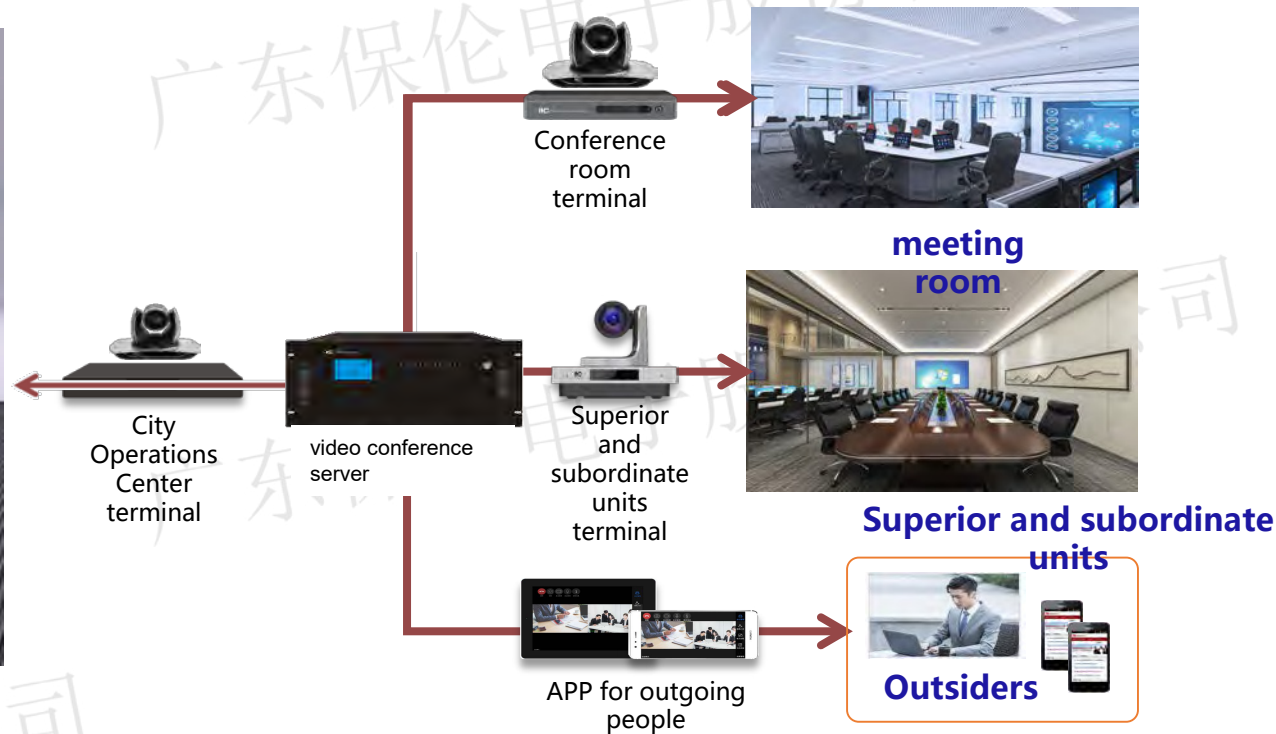
When designing a professional sound reinforcement system , **the smart city operation command center** must fully consider the sound field environment of the venue and the decoration environment. It uses **EASE4.4** system software and based on **the "Acoustic Characteristics Standard for Hall Sound Amplification System"** and **"Measurement Method for Hall Sound Amplification Characteristics"** » Standard design ; select appropriate speaker equipment to ensure the best sound amplification effect , without affecting the aesthetics and satisfying the command center sound amplification should be able to achieve clear speech, no distortion, sufficient sound pressure margin, uniform sound field distribution, and silence Feedback howl.



# Smart City Operation Command Center - HD Video Conference System



Smart City Operation Command Center



## HD video conference system

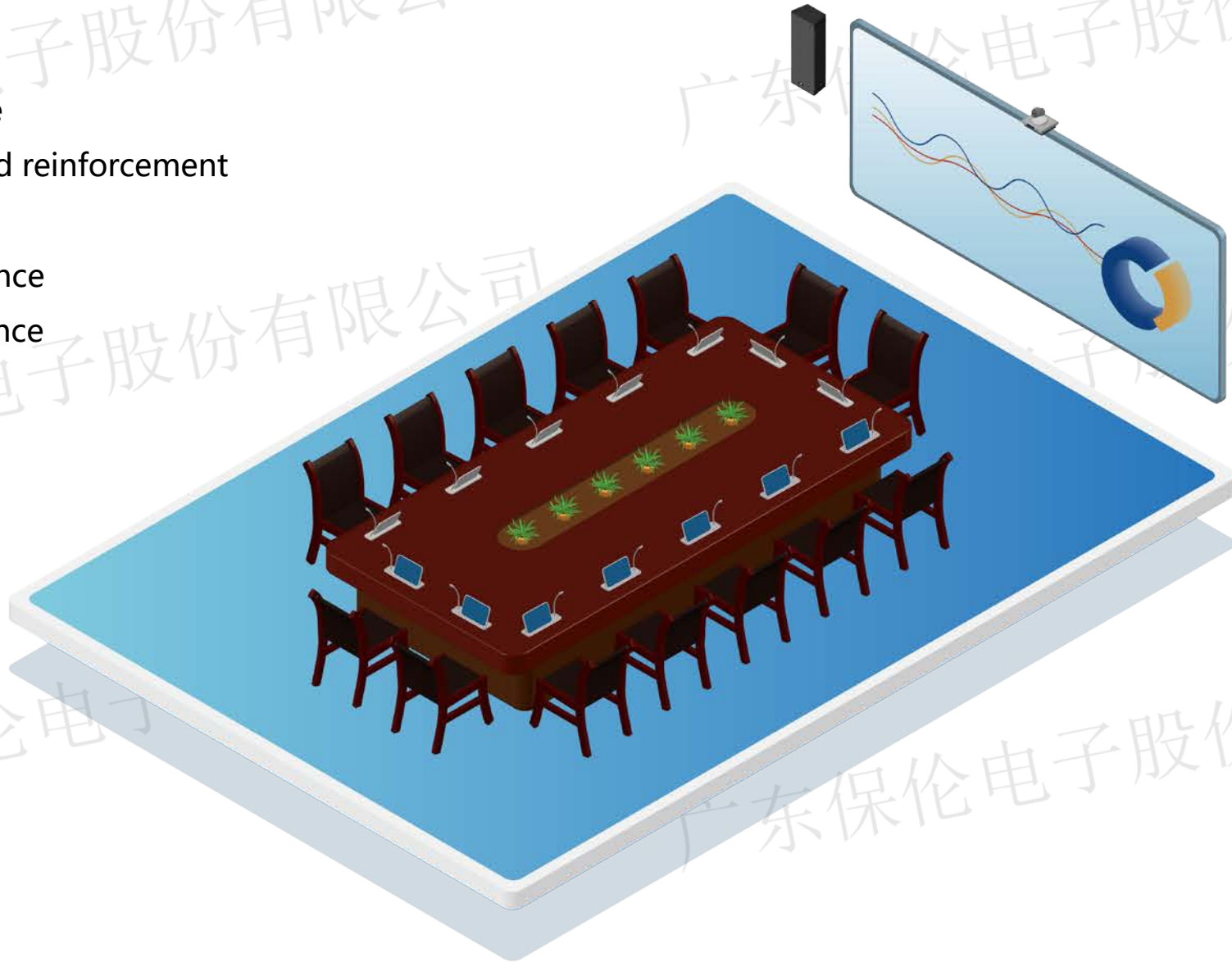
Multi-scenario linkage·Remote interconnection

The HD video conference system integrates high-definition and smooth audio and video technology, supports **seamless connection** and **data sharing between different platforms**, and realizes remote video interconnection meetings. Rich conference management functions, It can meet the needs of real-time information exchange between the city operation command center and superior and subordinate units, transfer of tasks and instructions, and realize remote command and other functions for subordinate grassroots units.

- Sound source localization
- MCU cascade
- 4K quality
- Six major services
- Fusion docking
- multi-level architecture
- virtual meeting room
- Easy to deploy
- Dual-machine hot standby
- High fidelity sound quality
- IP camera access
- Infrared transparent transmission control

## Decision-making conference room

- Digital conference
- Professional sound reinforcement
- HD display
- Paperless conference
- HD video conference
- Voice recording



## Create a small conference center



itcHUB smart conference tablet focuses on the conference field with the concept of **minimalist design and high integration**, and is built for **small and medium-sized conference scenarios**; high-performance core helps conferences proceed efficiently and smoothly; high-quality audio and display clearly present the details of each meeting ; Design different meeting modes according to different meeting characteristics, providing a more professional and safe intelligent meeting experience; rich and convenient meeting tools, covering the entire meeting process, helping enterprises **reduce costs** and increase efficiency, making every meeting **more effective**.



# Smart meeting—itcHUB

**90% screen-to-body ratio**

**x86 architecture**

Restore the real writing experience

**smart button**

Small size, big wisdom

**Removable module**

Physical privacy protection

**Accurate sound pick-up**

Strong directional pickup for accurate capture

**Master Tune-Up**

Ultimate Sound Experience

**IoT**

**First in the industry**

Built-in NB-IoT module

**Patented Hybrid Split Screen Technology**

Use one screen to double the efficiency

**OCR identification**

Convert writing to text

**Attendee tracking**

Not to miss the great speeches

**Multi-dimensional records**

Multi-Dimensional Intelligent Minutes

**Full process conference management**

**Reserve battery**

Abnormal power outage protection

**Look to wake up**



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## Smart Conference - Paperless Conference



### Paperless Conference Solutions

Eco-Friendly - Efficient Collaboration

Realize **electronic document files**, video screen interconnection scheduling; achieve the effect of **quick decision-making** and **efficient command of the leadership**. Paperless office, low-carbon environmental friendly; adopt high-end encryption technology, strong confidentiality of information.

### Domestic Kirin Paperless System - High Security and Confidentiality

- Responding to the national call for independent innovation and mastery of core technology, it meets the demand for high security of application systems in government, confidentiality and secrecy industries.

# Smart Conference - Paperless Conference



Single and Dual Screen Lifter



Fully Integrated Lifter



Mobile software terminal



Single screen  
interactive monitor flipper



Desktop monitor



Server control host  
management platform



Streaming media server



Terminal host



Conference information  
release terminal

# Smart Conference - Paperless Conference



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Efficiently convene meetings without tedious pre-meeting preparation and post-meeting summarization; Integration with digital meeting system, high degree of integration, easy to control

Daily conference - Confidential conference - Video conference - Command conference - Decision-making conference - Party building conference

## Paperless conference system • Covering smart office

- Integrating the automated office OA system, you can complete informationized campus office operations such as meeting schedule release, office approval, attendance and leave, collaborative data conference, etc. with one touch, and connect to video conferencing, video recording and other systems
- It helps to improve corporate management, reduce meeting paper costs and save costs, realize paperless energy-saving and environmentally friendly office meetings, and efficiently coordinate corporate work.

- Biometric sign-in
- Silky lift panel
- Intelligent same-screen broadcast
- Local and remote interconnection
- Domestic Kirin support
- System confidentiality agreement
- System integration and docking
- Comply with "double carbon"
- Web page query information
- Handwritten annotation files
- Save conference notes
- Scan and save notes



## Smart Conference - Audio Conference System



◆ For use in hoster speaking,  
wireless speech



◆ For use in report meetings  
and symposiums

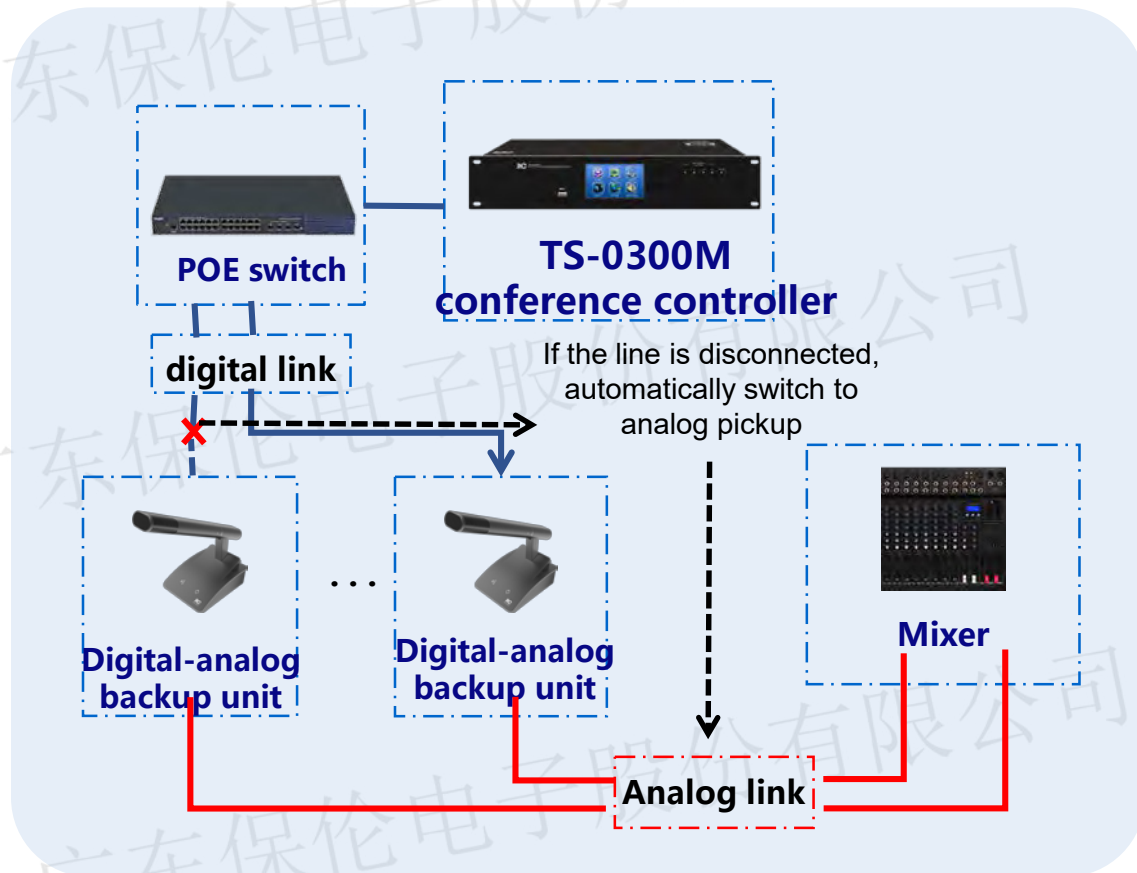


◆ Intelligent adjustment,  
one-click call

**Reliable transmission technology • Smooth frequency curve • Good sound transmission gain • Simple deployment method • Multi-scenario switching**



## Smart Conference - Audio Conference System



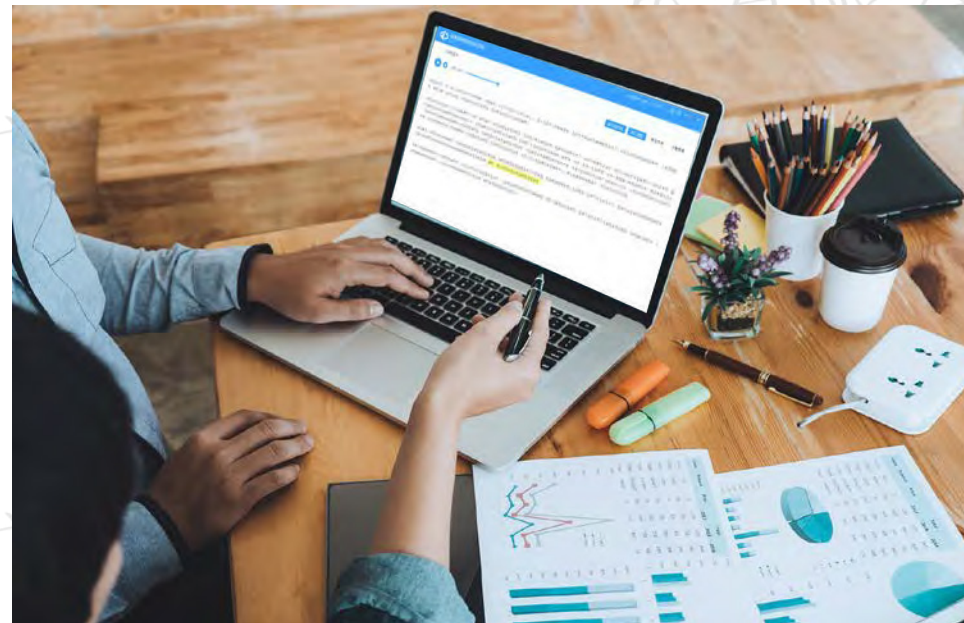
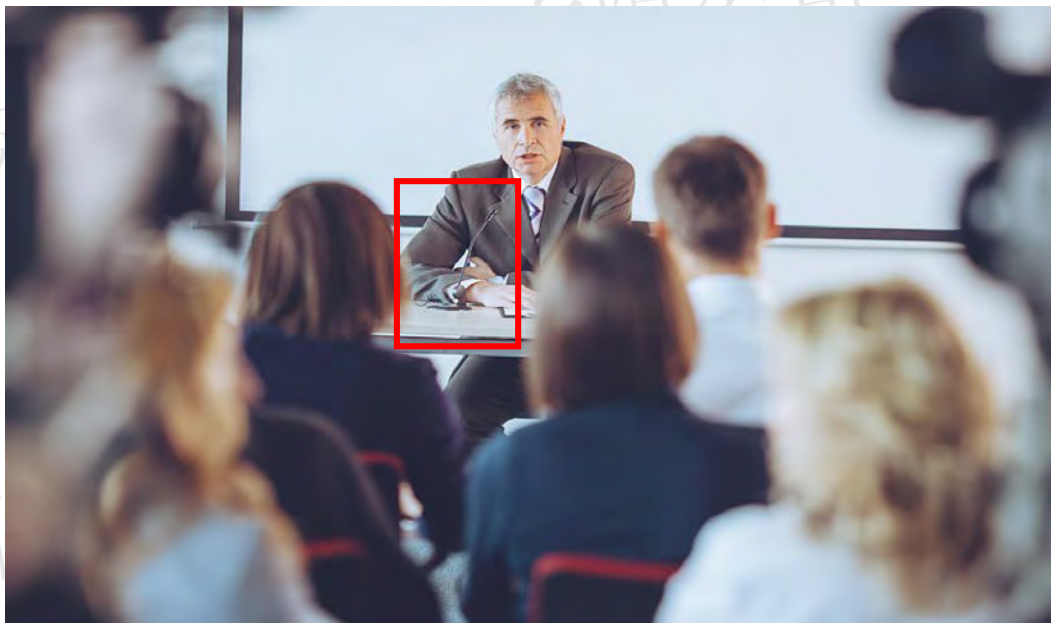
**Sound pickup backup:** The unit has digital-analog dual links to achieve automatic and seamless switching.



**Transmission backup:** ring network connection to achieve double-layer conference protection



## Smart Conference--Intelligent AI Minutes System



**Intelligent AI meeting minutes system** can **separate the roles** of the initiator, attendees, chairman, host and secretary of the conference in the process of the conference, and **automatically recognize** the contents of the speeches of all parties into text, and then put the text transcribed from speech into **real-time subtitle** form for displaying on the large screen.



Standard Mandarin  
speech transcription  
accuracy rate is as high  
as **98%**



Real-time speech  
transcription delay  
**≤200ms**



Supports single  
audio file duration  
up to **18 hours**

Real-time speech transcription - Audio-word playback - Automatic semantic segmentation -  
Highlighting - Modal particles filtering - Taboo blocking



紧急事件处理

监控运行状态

3028

335

# Speech Transcription System

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欢迎领导莅临

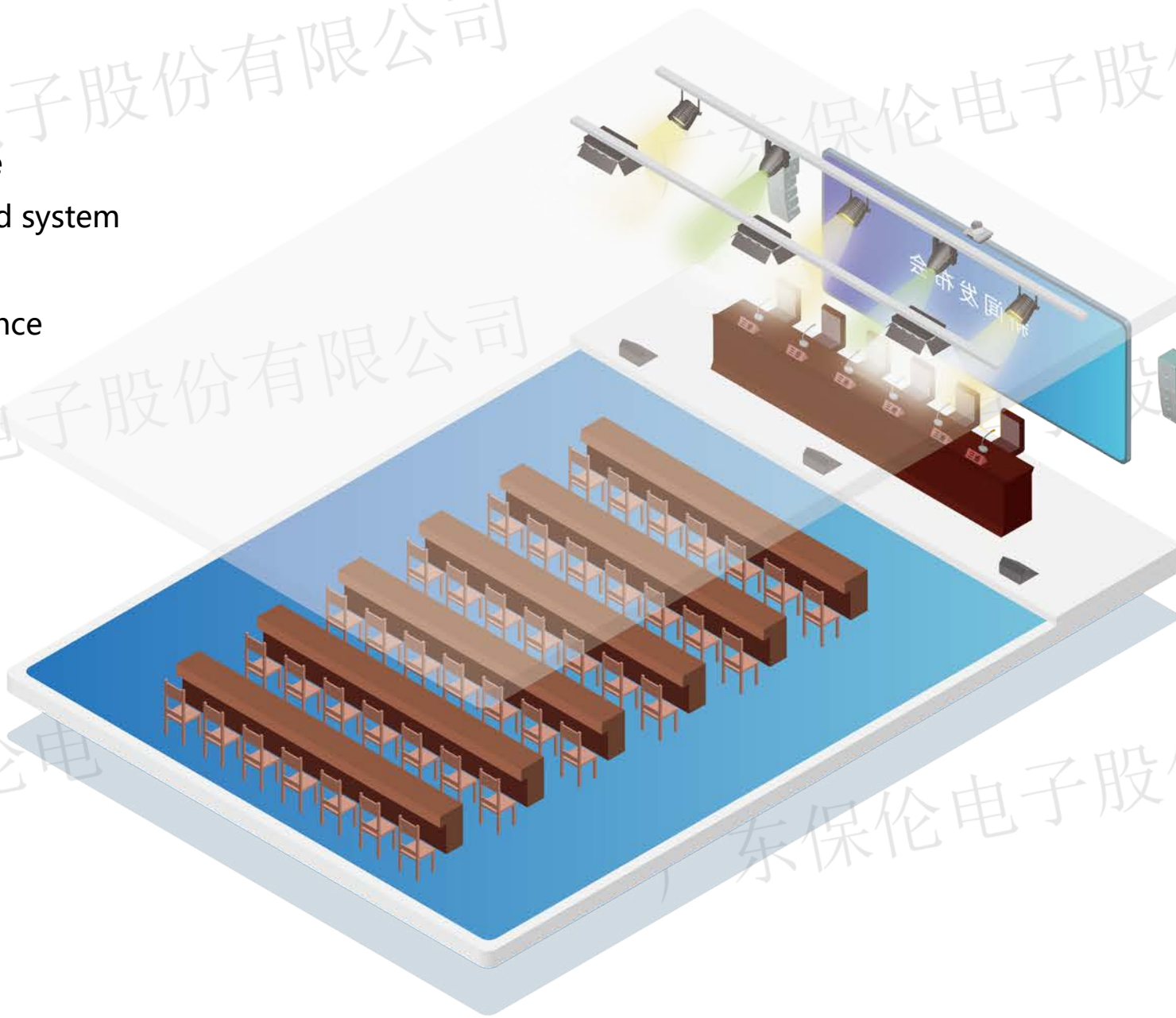
## Press Conference Hall



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- Digital conference
- Professional sound system
- HD display
- HD video conference
- Voice recording
- Stage lighting



# Press Conference Hall scenario configuration



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## Press Conference Hall Solutions

Integrated release · External publicity

The press conference hall of the smart city operation center is used to release the progress of major events, organize press conferences to release major news, and can also be used as a place for external publicity of the media center.

- **LED system**  
UHD display, multi-screen interaction
- **HD recording system**  
Conference recording and storage
- **Stage Lighting System**  
Conference mode, uniform illumination
- **Professional sound system**  
Professional sound reinforcement technology, high-fidelity sound quality
- **Digital Conference System**  
Ultra-long pickup distance and high sound reproduction
- **Simultaneous translation system**  
Translators provide real-time translation and barrier-free communication



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# Press Conference Hall-Interactive All-in-one LED Display



## Interactive All-in-one LED Display

HD Display - Multi-Screen Interactive

With standard resolution and display ratio, **low brightness and high gray**, 16:9 display ratio, static and **high dynamic picture fine and lossless**, no optical splicing, 1920\*1080 resolution.

Installation depends on the specific situation, can support wall-mounted, floor mounted.

Wireless  
Screen  
Projector



Multi-Screen Interaction  
- Wireless Sharing

• Suitable for a variety of scenarios · Multiple size options

- 110": suitable for 20~40 people, 50~80m<sup>2</sup>
- 138": Suitable for 30~60 people, 80~120m<sup>2</sup>
- 165": Suitable for 60~100 people, 120~150m<sup>2</sup>
- 220": Suitable for 100~200 people, 150~350m<sup>2</sup>

# Press Conference Hall-Professional sound system



## Professional sound system

High-quality and brilliant - clear and delicate

The professional sound reinforcement system mainly includes program signal sources, signal processing, power amplifiers, speakers, etc.. Through advanced design concepts and high-quality equipment configuration, to create the perfect acoustics to meet the party school auditorium speeches, reports, speeches, discussions etc., but also to achieve a clear feedback of the purpose of the human voice speech.



Professional speakers



Line array speakers



Monitor speaker



Linear column speaker



## Press Conference Hall - Audio Conference System



- ◆ For use in hoster speaking, wireless speech



- ◆ For use in report meetings and symposiums



- ◆ For interviews and leadership speeches



- ◆ Intelligent adjustment, one-click call

**Reliable transmission technology • Smooth frequency curve • Good sound transmission gain • Simple deployment method • Multi-scenario switching**



## Press Conference Hall - speech transcription system (speech to text)



**Intelligent AI meeting minutes system** can **separate the roles** of the initiator, attendees, chairman, host and secretary of the conference in the process of the conference, and **automatically recognize** the contents of the speeches of all parties into text, and then put the text transcribed from speech into **real-time subtitle** form for displaying on the large screen.



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transcription delay  
**≤200ms**



**Supports single**  
audio file duration  
up to **18 hours**

**Real-time speech transcription - Audio-word playback - Automatic semantic segmentation -  
Highlighting - Modal particles filtering - Taboo blocking**



## Press conference hall -- simultaneous interpretation system



The simultaneous interpretation system is a translation method in which the interpreter interprets the content to the audience without interrupting the speaker's speech. The simultaneous interpreter provides real-time translation through special equipment, saves meeting minutes, and provides translation error checking.

**Speech timing • Speech speed reminder • Message notification • Tea application • Cough application • Audio recording**



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PART 03

# Application case

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# Selected Cases of Command Center



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Department of  
Emergency  
Management of  
Guangdong Province

Tianhe District  
Emergency  
Management Center

Shilou Town Emergency  
Command Center

Shanghai City  
Operation Command  
Center

A command  
center in  
Shanghai

Jiading City Operation  
Command Center,  
Shanghai



Fengxian City Operation  
Management Center,  
Shanghai

Zhejiang Smart  
Management  
Command Center

Maek control center  
Kazakhstan

Transco command  
center in Abu Dhabi,  
UAE

Ministry of  
Defense, Uzbekis  
tan

SCO Uzbekistan 2022

# Government Meeting Rooms - Uzbekistan



# PPJ Government Command Center-Malaysian



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# Shanghai-Urban Transportation Center City Brain



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# Guangdong Province-Guangzhou City Brain





# THANKS

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