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MD-A1b
Service Training

Draft started: 19 July 2011

Course Contents

No additional notes.

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1. Product Overview

No additional notes.

Appearance

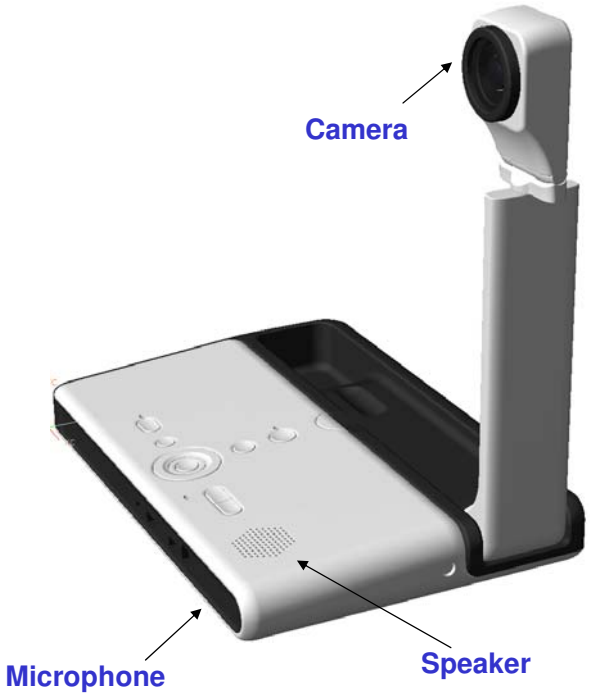
Camera folded into body
A4 size – Easy to transport

Camera deployed
for conferencing

- This is the product you will study in this training course.

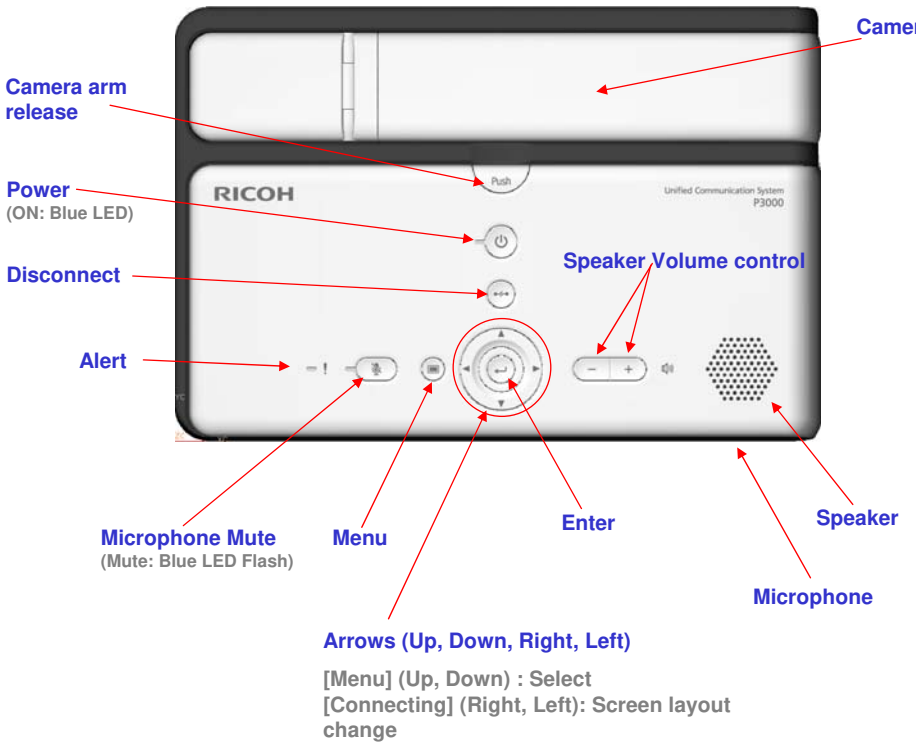
No additional notes.

External Components – 1



No additional notes.

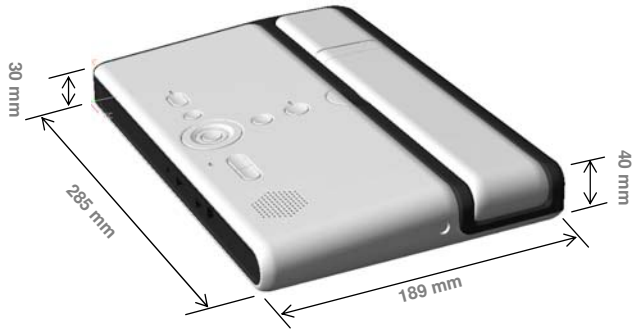
External Components – 2



- ❑ See the Quick Start Guide for a list of components in the shipping carton.
- ❑ See the User's Guide for detailed component descriptions.

Dimensions and Weight

- A4 Size
- 1.6 kg



No additional notes.

Product Concepts

- **Quick start with minimum investment**
  - Affordable initial cost.
- **Simple and Easy to Use**
  - All-in-one with camera, microphone, and speaker
  - Calling from address book like a cell-phone
- **Use Anywhere**
  - No dedicated facilities required*
  - No fixed IP address required
    - » M2M (Machine to Machine) communication control can identify the unit
    - » It is possible to connect through the Internet without global IP address.
  - Remote LAN, Wi-Fi Compatible
- **Portable**
  - Light weight and compact design. (See previous slide.)
- **Other features**
  - Share data on several PCs – Easy to connect via USB.
  - Up to 20 endpoints connectable
  - Clear image and voice with H.264/SVC.
- **High Quality Video****

*Internet access and display required.

** High grade video communication with reduced jitter and interruption. H.264/SVC (Scalable Video Coding) enables optimal video communication matching the network circuit status and receiving device capabilities.

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2. Specifications

No additional notes.

General Specifications

- **Video Standards**
  - H.264/SVC (H.264/AVC Annex G)
- **Video Output**
  - RGB (D-sub15Pin x 1 / DVI-D x 1)
  - XGA (1024 × 768), WXGA (1280 × 800)
  - Aspect ratio 16:9
- **Camera**
  - Pixels: 1,300,000 pixels
  - View Angle: Horizontal 94°, Vertical 69°
- **Audio Input**
  - Built-in microphone (omnidirectional)
  - Sound range radius 1.5m
  - Microphone Mute, Adaptive echo cancellation, Noise reduction, Auto gain control
- **Audio Output**
  - Built-in speaker (monaural)
- **Network**
  - LAN: 10BASE-T, 100BASE-TX, 1000BASE-T
  - Wireless LAN: IEEE802.11g, IEEE802.11b

- This slide shows the basic specifications.
- For more detailed specifications, see the field service manual.

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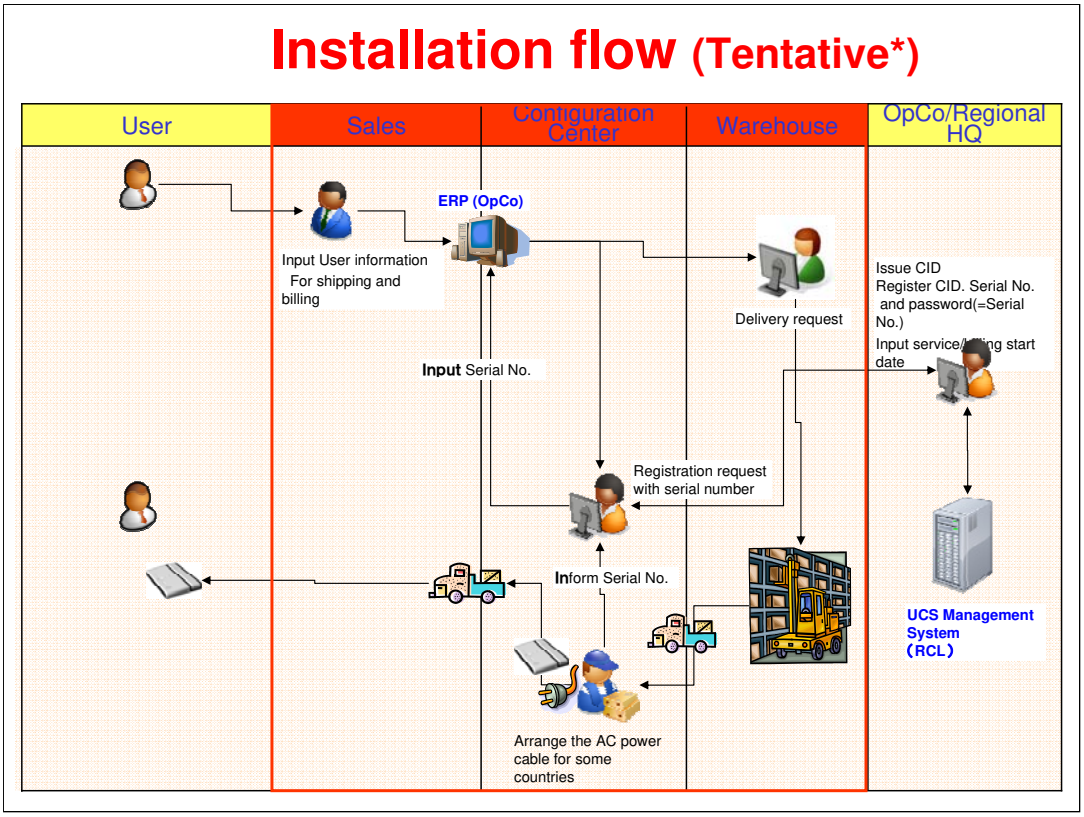
3. Installation

No additional notes.

Installation

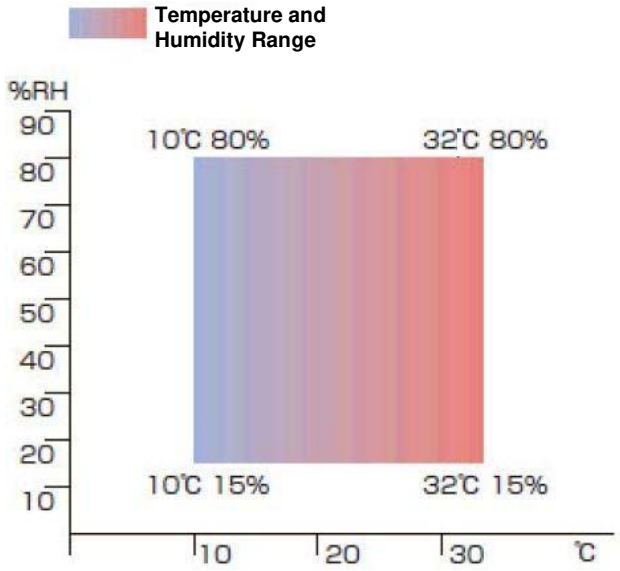
- Basically, the MD-A1 installation requirements are done before it is delivered to the user. (See the following slide)
- The user simply plugs the MD-A1 in, connects it to the internet, and uses the software to select those to contact for the meeting.
- The CE should be familiar with potential set-up problems. Refer to the troubleshooting sections of the FSM and the user's manual.



***The installation flow was not firm at the time this was written.**

Installation Requirements

- **Environment**
  - The illustration shows the temperature and humidity range for using the MD-A1.
- **Power source**
  - 220V-240V, 50/60Hz (Europe and ASIA)
  - 110V, 50/60Hz (North America)
- **Network**
  - 10BASE-T, 100BASE-TX, 1000BASE-T (wired)
  - IEEE802.11g, IEEE802.11b (wireless)



- Refer to the FSM for full network requirements. (FSM → Installation → Operating Environment for This Machine → Network)

Location Considerations

- **To ensure good sound quality, consider the following when choosing a location for using the MD-A1.**
  - Avoid blocking the microphone or speaker. (Might cause the sound quality to deteriorate.)
  - Do not place devices that generate noise (fans, computers, telephones, etc.) near the machine.
  - Make sure there is sufficient space between the machine and the wall or other hard surfaces. (to avoid echoes)

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4. Replacement of Parts

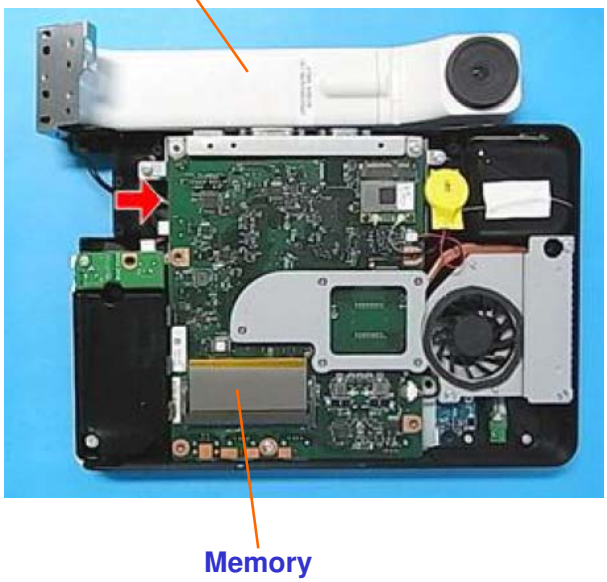
No additional notes.

Replacement and Adjustment

- **You may be wish to skip this section depending on local service policy.**
  - Service policy for this product varies by region. (onsite repair vs. offsite repair)
  - Please consult with your service manager concerning the level of field service required for this product.
- **In this section you will practice disassembling the machine and replacing parts.**

Disassembly Practice (1)

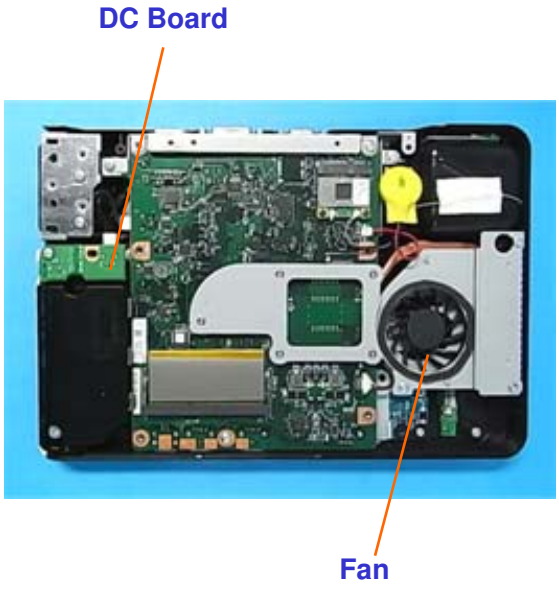
- **Remove the camera unit**
  FSM → Replacement and Adjustment → Parts Replacement → Camera Unit
  - As part of this procedure you will also go through the procedures for removal of:
    - » Rear cover
    - » Memory



- At this point you can disassemble the camera unit if you wish.

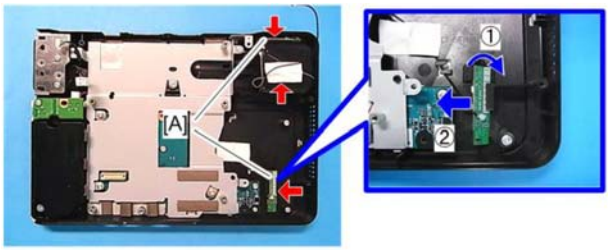
Disassembly Practice (2)

- **Remove the fan**
  - First follow the memory replacement procedure through step 3.
    FSM → Replacement and Adjustment → Parts Replacement → Memory
  - Then do the fan replacement procedure.
    FSM → Replacement and Adjustment → Parts Replacement → Fan
- **Remove the DC board**
  - After step 2 of the fan replacement procedure you can access the DC board.
    FSM → Replacement and Adjustment → Parts Replacement → DC Board

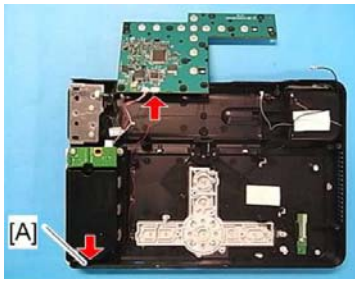


Disassembly Practice (3)

- **First follow the fan replacement procedure through step 6.**
  FSM → Replacement and Adjustment → Parts Replacement → Fan
- **Remove the two antenna modules**
  FSM → Replacement and Adjustment → Parts Replacement → Antenna Module
- **Remove the microphone**
  FSM → Replacement and Adjustment → Parts Replacement → Microphone



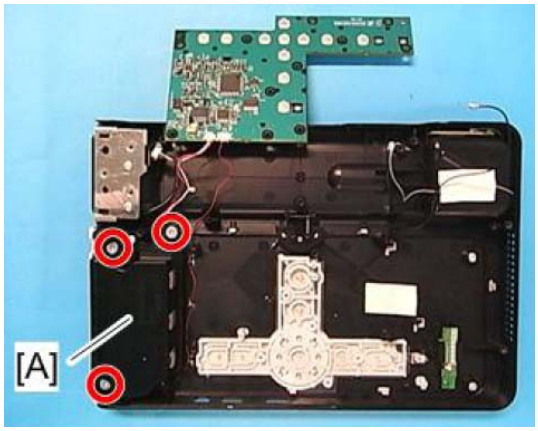
[A] Antenna modules



[A] Microphone

Disassembly Practice (4)

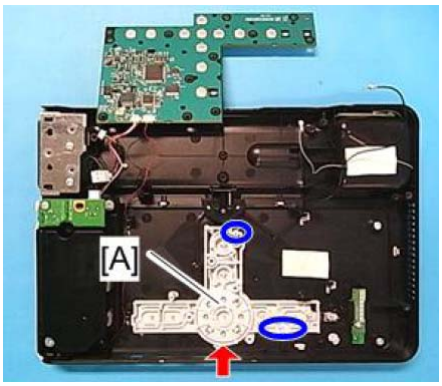
- **First follow the microphone replacement procedure through step 3.**
  FSM → Replacement and Adjustment → Parts Replacement → Microphone
- **Remove the speaker**
  FSM → Replacement and Adjustment → Parts Replacement → Speaker



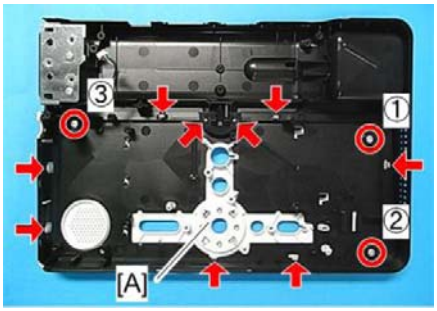
[A] Speaker

Disassembly Practice (5)

- **Remove the key top unit.**
  FSM → Replacement and Adjustment → Parts Replacement → Key Top Unit
- **Then remove the top cover**
  FSM → Replacement and Adjustment → Parts Replacement → Top Cover
  (Note the lock tabs that must be released to remove the top cover.)



[A] Key Top Unit



[A] Top cover

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5. Troubleshooting

No additional notes.

Understanding the LEDs

- **Power LED**
  - Power off → OFF
  - During start-up or shut-down → Blink (0.5s on 0.5s off)
  - Operation mode (start up complete) → ON
- **Microphone Mute LED**
  - Internal microphone mute ON → Blink (1.5s on 0.5s off)
  - Internal microphone mute ON → OFF
- **Alarm LED**
  - Normal operation → OFF
  - Hardware problems → Blink
  - Other problems → ON

Error Tables

- **The FSM has several Error Tables to help you troubleshoot field problems. You should familiarize yourself with the contents of these tables.**
  FSM → Troubleshooting → Error Table →
  - Error Message
    - » Table of error messages the iHub may display and the appropriate action.
  - Problems During Startup
    - » Table of startup problems and appropriate action. (Generally offsite maintenance is required.)
  - Problems During Meetings
    - » Table of problems that may occur during operation and appropriate action.
  - Audio Feedback (howling)
    - » Table of causes of audio feedback and appropriate action.
  - Network Problems
    - » Tables of possible networking problems and appropriate action.
  - Problems when using Device Management Settings
    - » Table of possible Device Management Software problems and appropriate action.

Audio Feedback

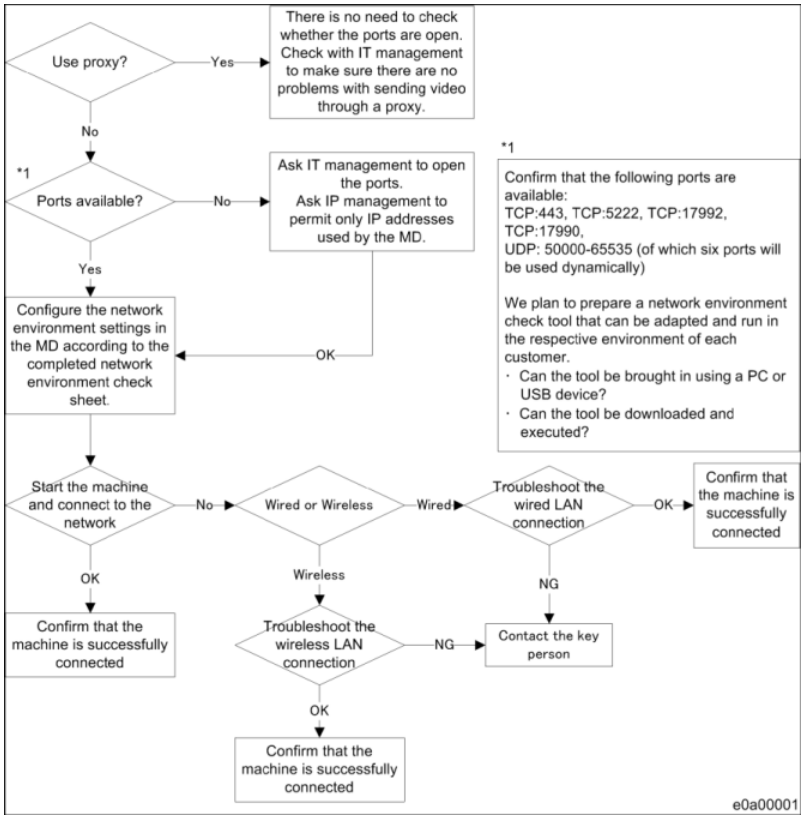
- Audio feedback is the ringing noise (often described as squealing, screeching, howling, etc.) which is sometimes present in sound systems. It is caused by the speaker output feeding back into the microphone, creating a continuous loop.
- The MD-A1 normally has a small amount of audio feedback when you first establish a meeting connection. This will normally go away in a few seconds as the echo canceller adjusts.
- If the audio feedback continues, you must interrupt the feedback loop. The next slide gives some techniques to stop audio feedback.

Eliminating Audio Feedback

- **Here are a few suggestions for controlling feedback:**
  - Relocate the MD-A1 so that it is not close to reflecting surfaces such as hard walls.
  - Move any noise producing devices away from the MD-A1.
  - Lower the volume of the speaker.
  - Adjust the orientation of the MD-A1.
  - Make sure there aren't any objects in front of the microphone.
  - If the MD-A1 must be moved during a meeting, set Mic Mute to OFF first and then return it to ON after the move.
  - If using an external microphone, move it away from the fan outlet or other noise sources.

Network Troubleshooting

- **The flowchart to the right is a basic guide for trouble-shooting network problems.**
- **Use the trouble-shooting tables in the FSM together with this chart as your tools for solving network trouble.**
  FSM → Troubleshooting → Error Table → Network Problems



- A good knowledge of networking basics is required to solve network problems.
- Make sure you understand network troubleshooting information in the FSM.

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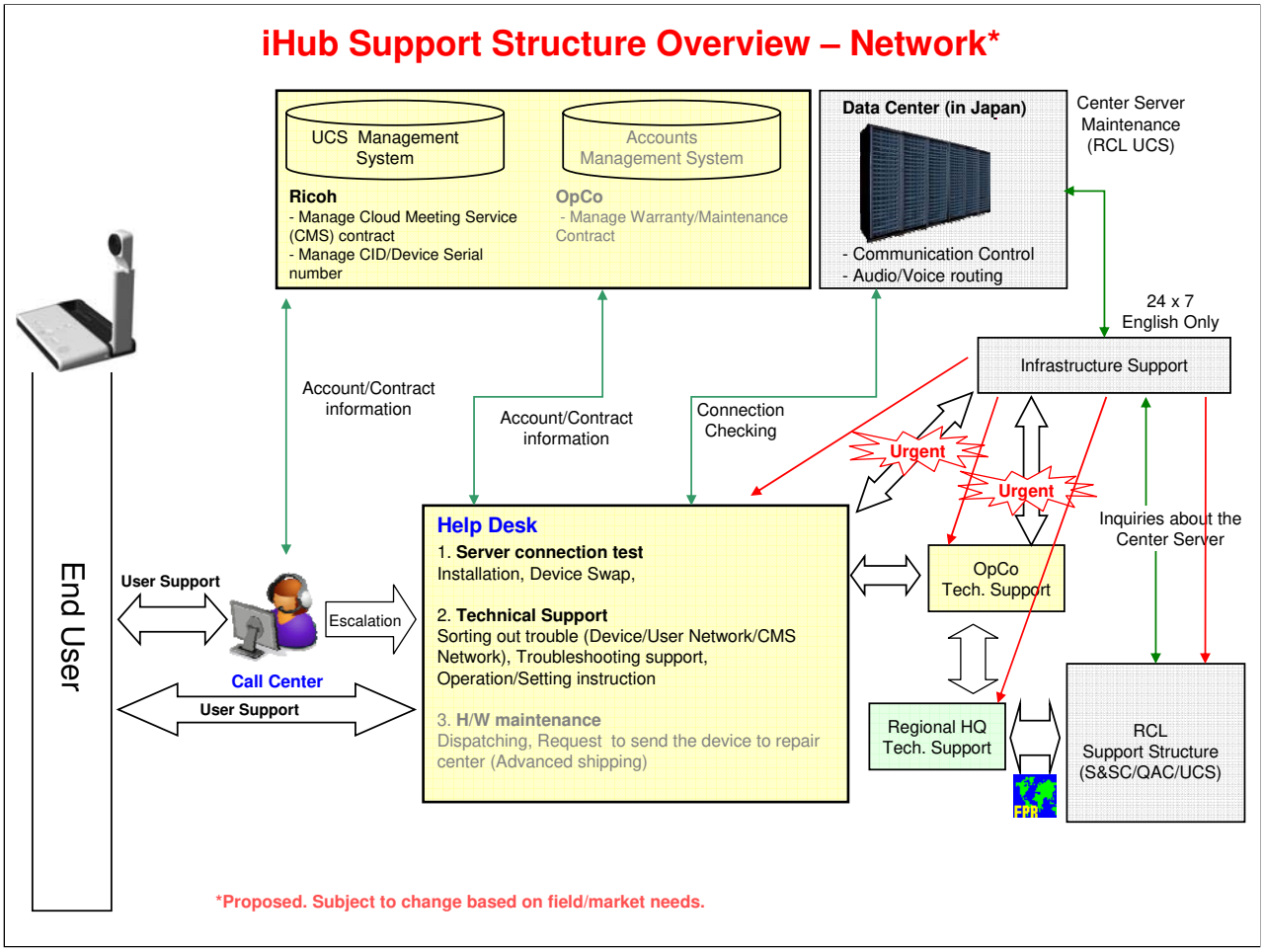
6. iHub Support Structure
(& Escalation Flow)

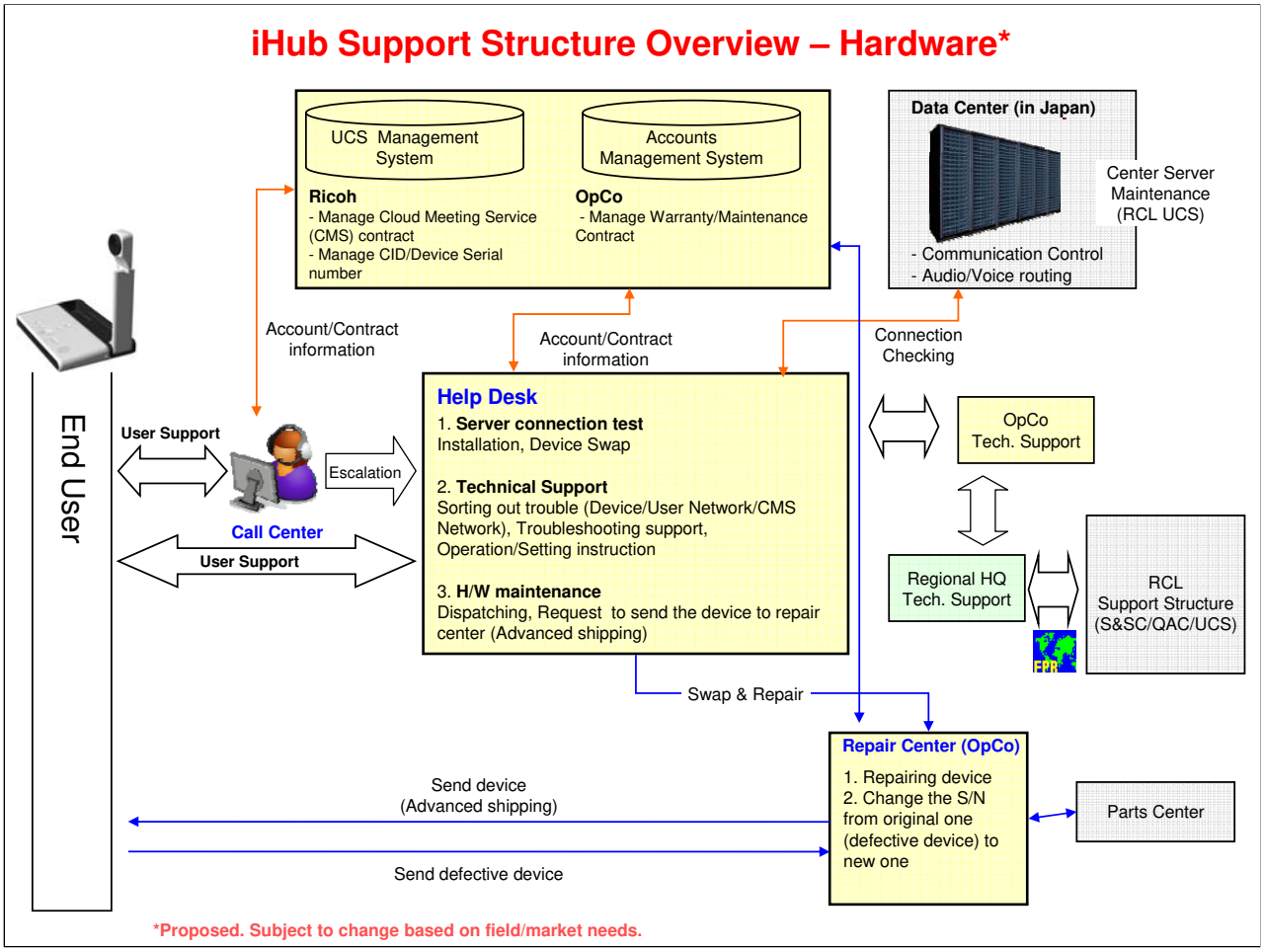
No additional notes.



Red arrows = Solution feedback and troubleshooting information

Green arrows = Secondary information support

White arrows = Primary direct user support



Orange arrows = Account information and connection checking

Blue arrows = Physical repair (Unit and parts movement and repair support information)

White arrows = Primary direct user support

End of Course

No additional notes.