

September 2019



## Evaluation of BlueJeans Rooms-as-a-Service featuring Dolby Voice Room

*Hands-on testing of a turnkey video conferencing service offering.*

**RECON**  
RESEARCH

This evaluation sponsored by:

**BlueJeans** **DOLBY**

# Background

Founded in 1965 and headquartered in San Francisco, California, Dolby Laboratories (Dolby) is a publicly-held (NYSE: DLB) company that specializes in audio noise reduction, audio encoding / compression and imaging technologies. The company employs ~ 2,000 people and generates more than \$1B in revenue.

Founded in 2009 and headquartered in Mountain View, California, BlueJeans is a privately-held company that provides an interoperable cloud-based video conferencing / collaboration service that connects participants across a range of devices and platforms. The company employs ~ 600 people and supports billions of meeting minutes per year.

In March 2019, BlueJeans and Dolby announced the “BlueJeans Rooms-as-a-Service featuring Dolby Voice Room” offering – an all-inclusive subscription service including a Dolby Voice Room bundled with a BlueJeans Rooms license, software and hardware maintenance, and support.

In June 2019, Dolby and BlueJeans commissioned the Recon Research (RR) team to perform a third-party assessment of this new service. This document contains the results of our hands-on testing.

*Authors Note – for brevity’s sake, throughout this study we will refer to the BlueJeans Rooms-as-a-Service featuring Dolby Voice Room as “the RaaS offering” or “the offering.”*

## Understanding the Rooms-as-a-Service Offering

The “BlueJeans Rooms-as-a-Service featuring Dolby Voice Room” is a subscription bundle including a Dolby Voice Room system, a BlueJeans Rooms license, and support.

Essentially, the Rooms-as-a-Service (RaaS) model provides the hardware, software, and back-end service for a video meeting room (minus the display and IP network) under a single SKU for easy procurement. The bundle also includes premium warranty coverage, and forward equipment replacement and refreshes, under an all OpEx model.

### **Dolby Voice Room**

Dolby Voice Room (a.k.a. “the system” within this study) is a meeting room video conferencing system / platform designed and manufactured by consumer and professional audio/video heavyweight Dolby.

Traditionally, hardware-based video conferencing systems are dedicated appliances that run software designed by the vendor to drive that particular device. So a Cisco group video conferencing system runs a Cisco-provided and pre-loaded code base only, and thus can act like a Cisco video system only.

Dolby Voice Room, on the other hand, is a hardware-based group video conferencing platform designed to run third-party software. This allows Dolby partners (e.g. BlueJeans, HighFive, and LogMeIn) to create software applications that run on Dolby Voice Room and provide a customized user experience.

---

***Dolby’s approach combines the reliability and simplicity of a dedicated, hardware-based video conferencing system, with the flexibility of a software-based solution.***

---

The takeaway is that Dolby Voice Room is not just a video conferencing system – it is a customizable video conferencing platform.

A complete Dolby Voice Room system includes the following:

- **Dolby Voice Hub (“the Hub”)** – a small footprint appliance that runs the partner’s conferencing application and sends the audio and video signals to the conferencing service or remote systems / users.
- **Dolby Conference Phone (“the DCP”)** – a multi-microphone, multi-speaker conference phone with a customizable touch UI designed for use with Dolby Voice-enabled conferencing services.
- **Dolby Voice Camera** – a 13 megapixel, 4K USB 3.0 camera offering a 95 degree field of view.



The system also ships with the power supply for the hub, assorted cables, and other accessories.

Dolby offers SDKs and APIs to enable partners to create versions of their software designed for use with Dolby Voice Room. Currently, Dolby Voice Room is available for the following services: BlueJeans (released in October 2018), Highfive (released in March 2018), and LogMeIn (announced in June 2019).

The Dolby Voice Room system is available via a network of channel partners for a list price of US \$4,695, or as a part of the BlueJeans Rooms-as-a-Service featuring Dolby Voice Room bundle with monthly subscription fees starting at US \$159 (three year contract).

## BlueJeans Rooms

BlueJeans Rooms is a software application that turns off-the-shelf hardware (e.g. an Intel NUC) or a Dolby Voice Room solution into a BlueJeans-powered group video conferencing system.

Key benefits of BlueJeans Rooms include:

- Flexible deployment options
- Quick and easy system set-up and configuration
- Dual-display support
- Ability to join both ad-hoc and scheduled BlueJeans meetings
- Integration with Microsoft and Google Calendars
- One-touch meeting initiation and meeting join
- Interoperability with standards-based (SIP / H.323) systems via the BlueJeans Meetings service
- Wireless content sharing
- Monitoring and management via BlueJeans Command Center

The BlueJeans Rooms-as-a-Service featuring Dolby Voice Room bundle includes a BlueJeans Rooms license, software and hardware (video system) maintenance, and technical support.

# System Installation and Configuration

The installation of Dolby Voice Room within our test environment was fast and easy, requiring only:

- Installing, connecting and powering-up the Dolby Voice Hub (power cable, network cable, and HDMI connections to our two room displays)
- Connecting the provided CATx cable between the Hub and the Dolby Conference Phone (DCP)
- Connecting the provided USB cable between the Hub and the Dolby Voice Camera

While connecting the system, we were pleased by Dolby's strong attention to detail. For example:

- the Hub's power cable uses a screw-on connection to avoid accidental dislodging
- the camera's mounting bracket is strong enough to keep the camera in place, and flexible enough to support thin and thick flat screens.
- every connection was well labeled, and the included cables were long enough to support various installation options (e.g. Hub located behind the display or on the table).

While hardly rocket science, we are sticklers for good mechanicals and cable management as these things save time and ensure a reliable installation.

---

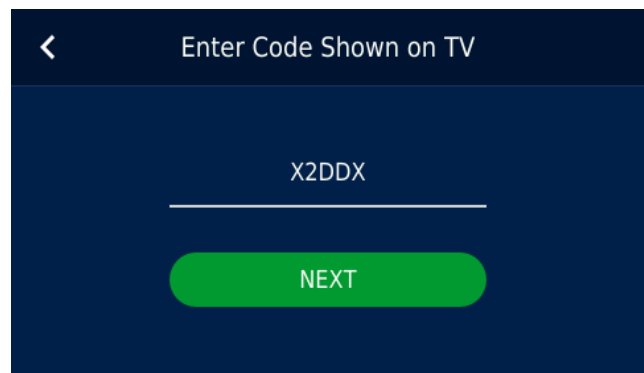
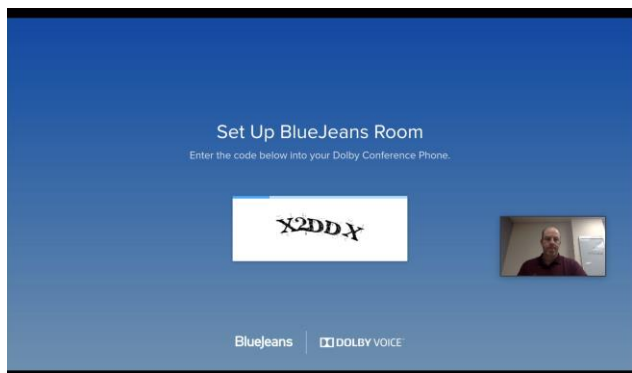
***While unpacking and installing Dolby Voice Room, we were impressed by Dolby's exceptional attention to detail.***

---

A few seconds after we powered up the Hub, both the Dolby Conference Phone and our main room display showed a "Getting Ready" message.

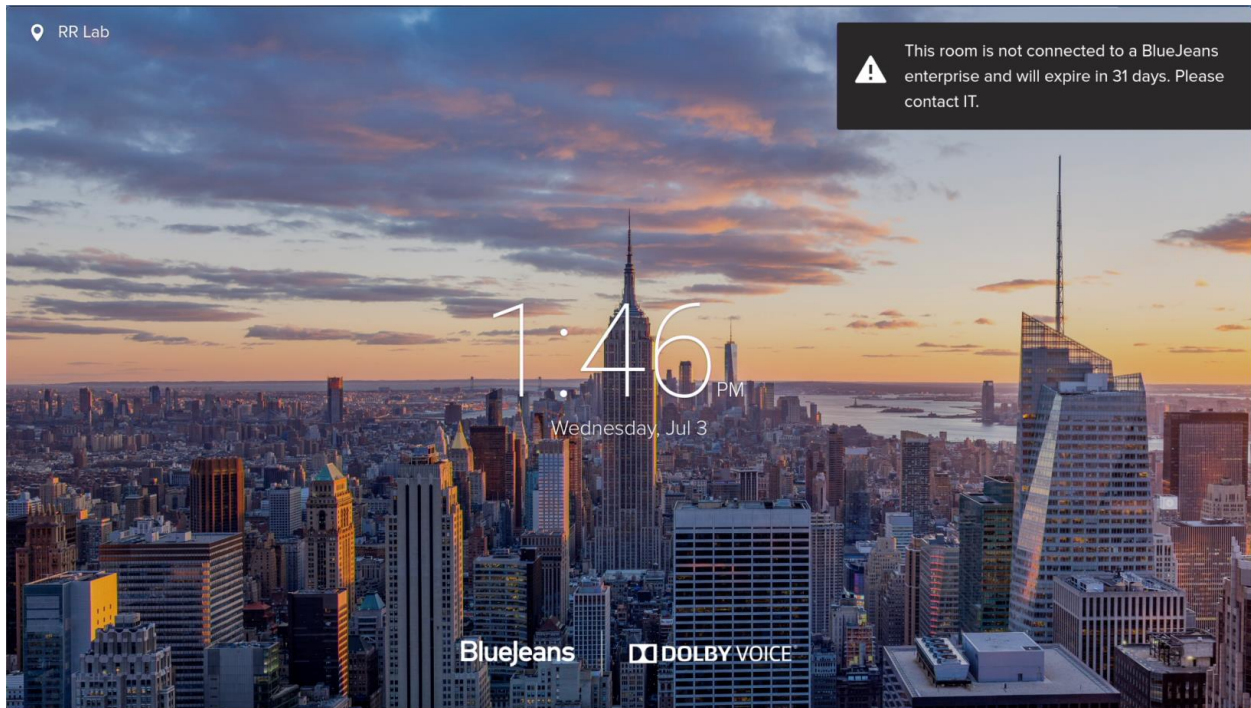
For the next few minutes, the system automatically updated the software on the Dolby Voice Hub and Dolby Conference Phone.

Once the system finished updating, the main room display (see image below at left) showed a code to be entered in to the DCP. We then entered the code (see image at right) and a room name ("RR Lab") using the DCP's keyboard.



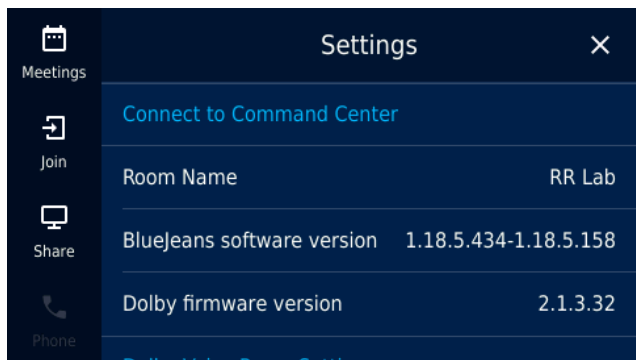
A few seconds later, the display showed the welcome page below and our system was ready for use.

*Author's Note - The Recon Research team tested a pre-release version of the Dolby Voice Room / BlueJeans Rooms combination in June 2018. At that time, a newly installed system could join BlueJeans meetings for a few weeks without having to register to a BlueJeans account or pay for a BlueJeans Rooms license. As shown below, the same holds true today. Once again – well done!*



## System Registration

We then registered our newly installed system to our corporate BlueJeans account – a quick and easy process requiring that we press, “Connect to Command Center” on the Dolby Conference Phone (see screenshot at left below), visit a BlueJeans URL with a browser, and enter a code shown on our main display (see image at right below).



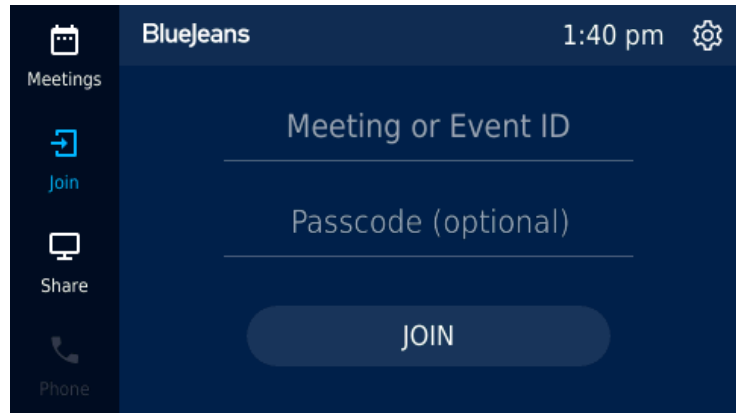
The entire setup, including the physical connections, configuring the Dolby Voice Room, and connecting the system to our BlueJeans account, took us less than 15 minutes to complete.

# Joining BlueJeans Meetings

There are several different ways to join a BlueJeans meeting from a Dolby Voice Room.

## Option 1 – Enter Meeting ID

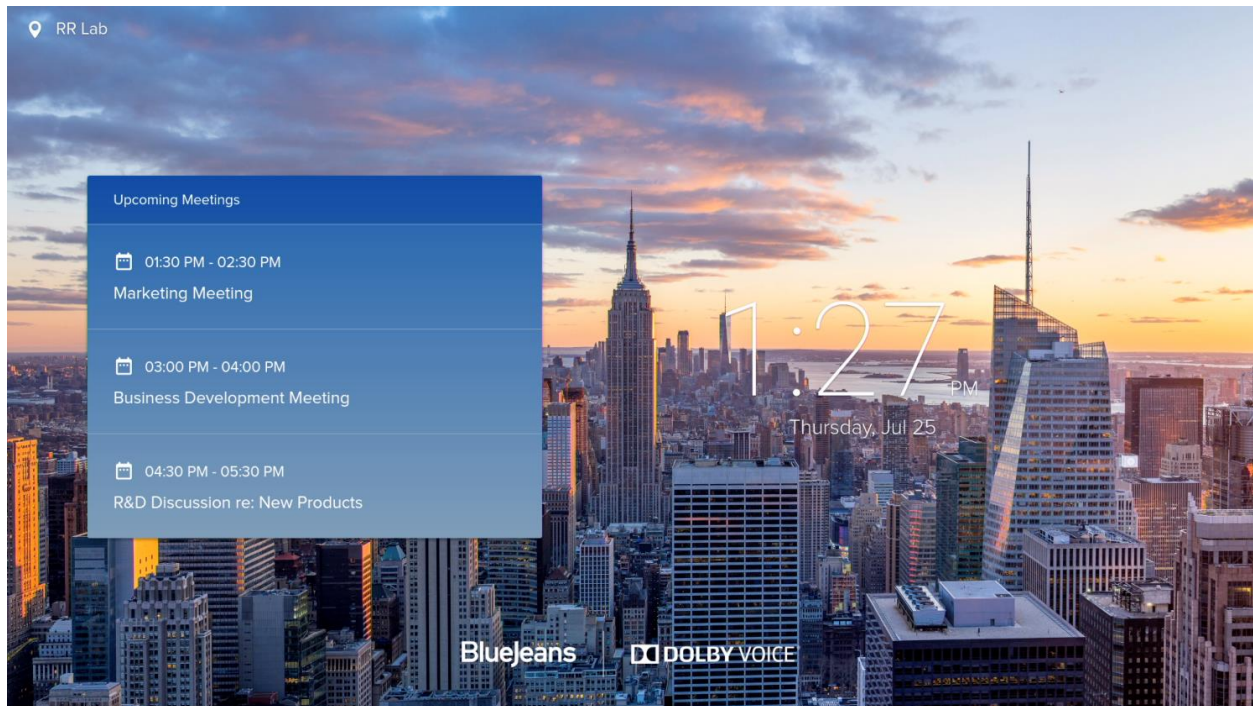
The first method is to press the Join button on the Dolby Conference Phone, enter a BlueJeans meeting ID, and click Join (see screenshot at right).



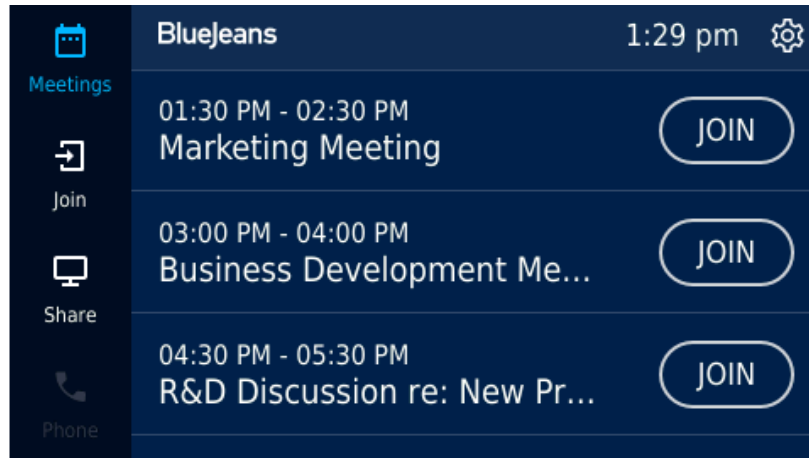
## Option 2 – Join a Scheduled Meeting

The second method is to connect a Google or Office 365 calendar to the meeting room, and then invite the room to meetings within Google and Outlook calendar invites.

For this assessment, we connected our Dolby Voice Room to a demo Office 365 account provided by BlueJeans. Once connected, we were able to invite our Dolby Voice Room to BlueJeans meetings scheduled in Outlook. The system then displays upcoming meetings on the system display (see below).



Joining a scheduled meeting requires only a click on the Join button on the DCP (see below).



Note that connecting a BlueJeans Rooms with Dolby Voice Room system to an Office 365 or Google calendar will require the support of an IT person with admin rights on the company's corporate account.

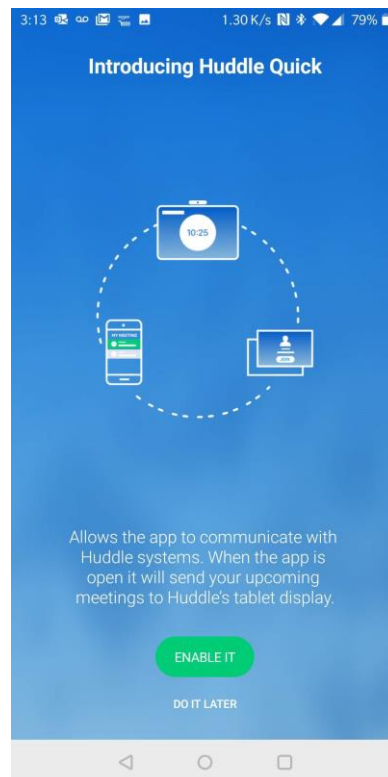
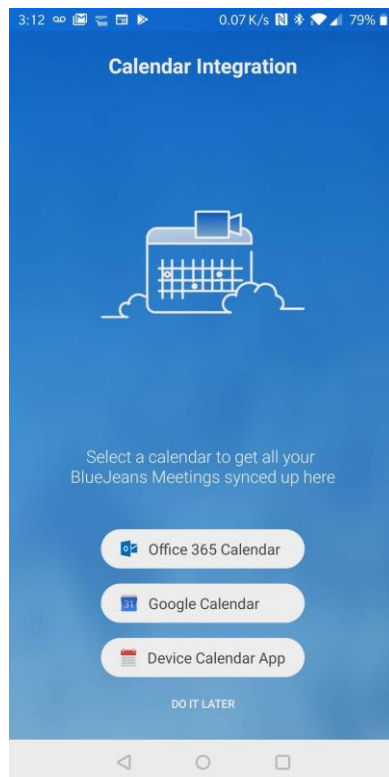
### Option 3 – Quick Join (via Mobile Device Pairing)

The third method requires some initial setup, but offers an exceptionally strong way to join meetings.

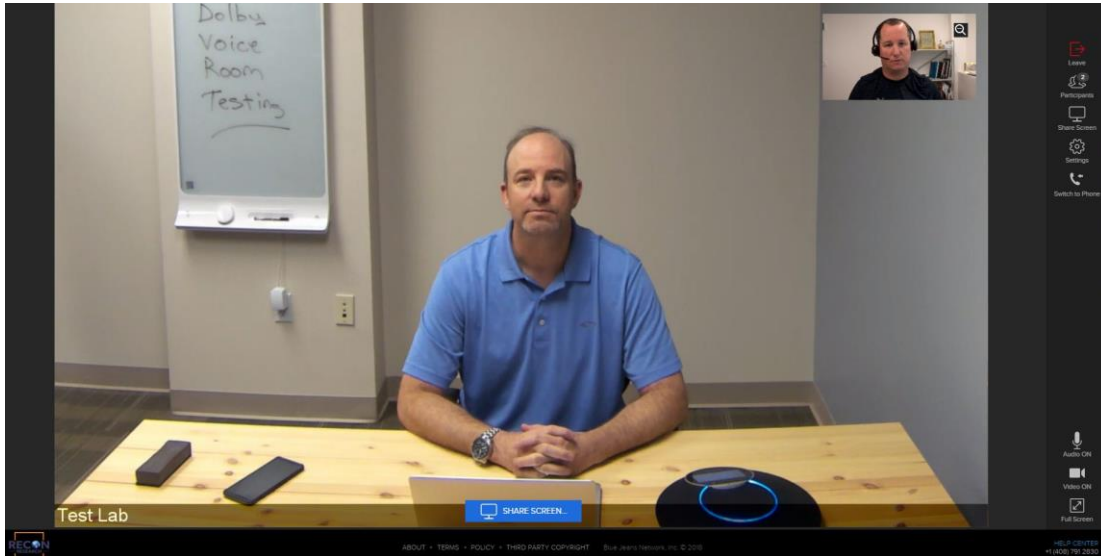
First, the user installs the BlueJeans app on his mobile phone and allows the BlueJeans app to access his Office 365 or Google Calendar (see image at left below).

Next, the user pairs his phone to the Dolby Voice Room over Bluetooth (see image at right below).

Moving forward, whenever the user enters the meeting room and pairs his mobile phone to the Dolby Voice Room, the system will automatically display a list of his pending meetings, and allow him to join his scheduled meetings on the Dolby Voice Room with a single click.



We successfully tested all three of the above meeting join options repeatedly during this assessment.



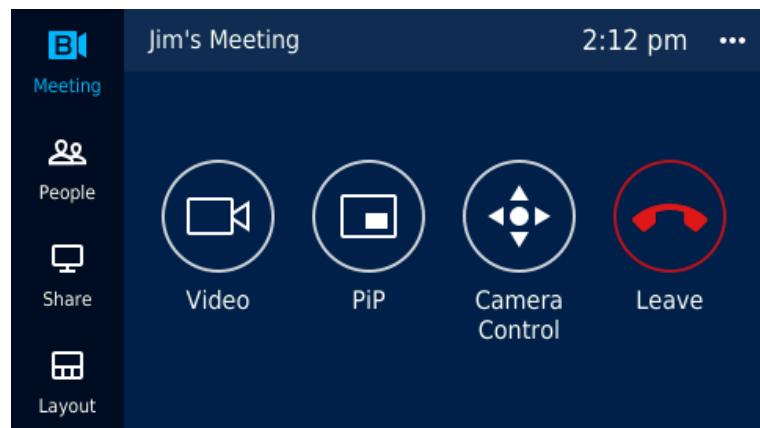
As for which meeting join method is the best, that depends on the situation at hand.

- For times when all you have is the meeting ID (e.g. you're joining someone else's VMR directly), option #1 hits the mark.
- For scheduled meetings hosted in a particular meeting room, option #2 is quick and easy.
- For scheduled meetings where the room hasn't been reserved, option #3 offers a combination of one-click join convenience and the flexibility to join from any meeting room.

## In-Meeting Controls / Features

While in a BlueJeans meeting, Dolby Voice Room users have access to the following functions from the Dolby Conference Phone UI:

- Enable / disable camera
- Show / hide PiP
- Control the camera
- Leave the meeting
- View meeting roster
- Share Content
- Change video layout





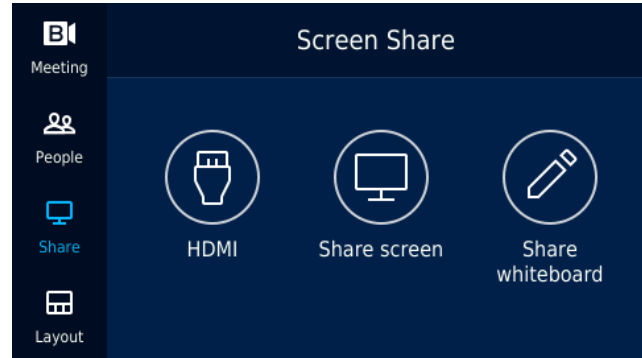
## Content Sharing

While registered to the BlueJeans service, Dolby Voice Room supports:

- Wired and wireless content sharing while in a BlueJeans call
- Wired and wireless content sharing while not in a call
- The sharing of an in-room dry-erase board (available while in a call only)

The ability to share content while not in a call makes the Dolby Voice Room valuable during local-only and multi-location meetings.

To share content, the meeting participant presses the Share button on the DCP to reveal the Screen Share page at right.



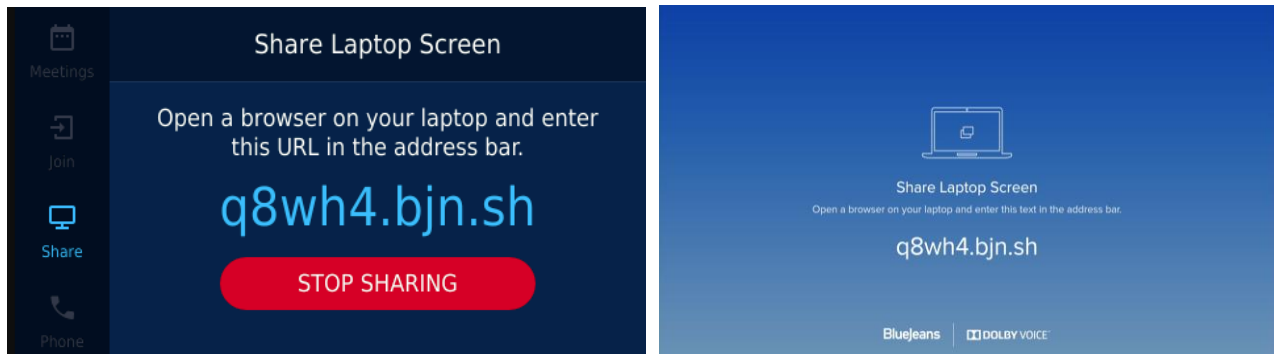
### 1) Wired Content Sharing (over HDMI)

To share a wired content source (e.g. a user's laptop), the meeting participant simply connects his laptop to the HDMI input on the Dolby Voice Room. Once a source is connected, the system automatically presents the content locally and to the remote participants (while in a call).

Wired content sharing worked perfectly during our testing.

### 2) Wireless Content Sharing

To share content wirelessly, the meeting participant simply visits the BlueJeans URL provided both on the DCP (see image below at left) and on the main room display (see image below at right), and selects the content to be shared.



We tested wireless content sharing with both Windows and Mac notebooks, and it worked exactly as expected.

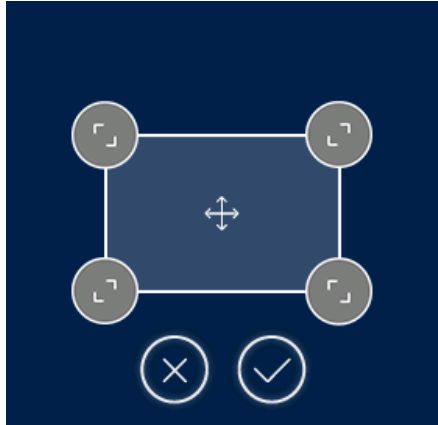
The inclusion of wireless content sharing eliminates the need for, and cost of a stand-alone wireless presentation system in the meeting room.

### 3) Sharing a Dry Erase Board (During a BlueJeans Call)

This function allows meeting participants to share an in-room dry erase board instead of the system camera with the remote participants. To use this capability, the system installer / admin defines a portion of the camera image as containing a physical whiteboard (dry erase board).

To define the whiteboard area within the physical room, the user simply drags whiteboard corner points on the DCP touch user interface (see image below at left), while simultaneously viewing a live preview of the defined whiteboard in the main display.

The combination of the DCP UI and the live preview made it quick and easy for our team to define the physical whiteboard in our meeting room.



The image above at right shows the live preview displayed on the main screen as our tester defined the whiteboard location within one of the meeting rooms in our South Florida office.

Once the whiteboard portion of the image has been defined, the system automatically flattens and enhances that part of the image to create a whiteboard video stream.

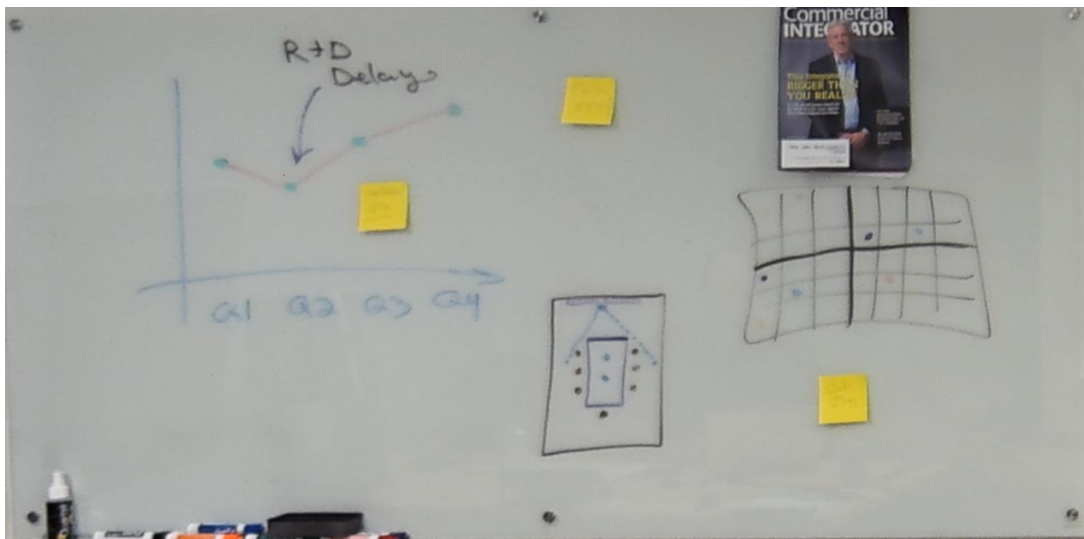
---

*The whiteboard capture feature worked extremely well during our testing.  
Given the high penetration of dry-erase whiteboards in meeting rooms,  
we expect this capability to be very well received.*

---

The image below shows our meeting room whiteboard as captured and “flattened” by Dolby Voice Room. Overall, we were very pleased by the whiteboard function within this system.

One minor nit – the highly reflective surface of our glass whiteboard caused some image quality loss.

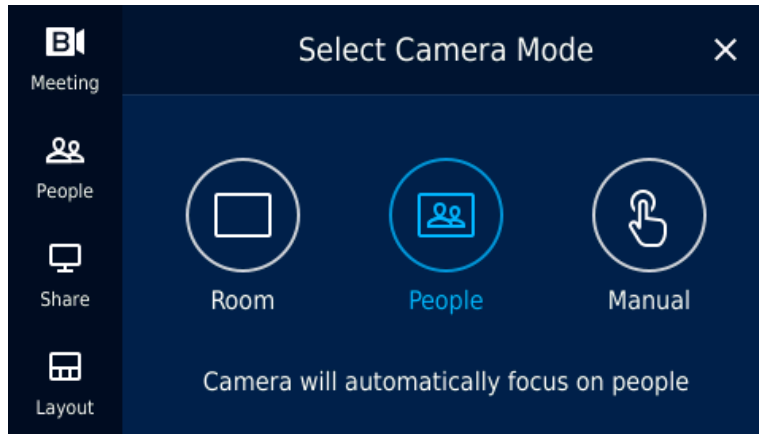


## Layout Control

Pressing the Layout button on the DCP allows the users to choose between Speaker View (a full-screen view of actively speaking remote location), People View (a 1 + 3 view), and Gallery View (quad-screen). We tested each of these layout options, and they worked properly.

## Camera Control

Pressing the Camera Control button provides three additional options as shown below:



**Room Mode** – in this mode, the system automatically zooms the camera out to capture as much of the meeting room as possible.

**People Mode** - in this mode, the system uses face detection to determine where people are sitting, and then uses digital pan, tilt, and zoom (newly enabled) to select a portion of the image that best captures the participants. Within the video conferencing industry, this capability is called room or scene framing.



In the image above, the remote participants are using Dolby Voice Room in People Mode. Note how the system automatically framed the room to capture all meeting participants.

With face tracking / room framing systems, the devil is in the details. While many systems can determine where people are sitting, adjusting the image to optimize the experience without distracting the participants is more art than science.

**Manual Mode** – in this mode, the user is able to select a portion of the camera image to be sent to the remote participants.

As a part of this effort, we tested all three Camera Modes. The Room and Manual modes worked as expected, and the system’s performance in People Mode exceeded our expectations.

Throughout our People Mode testing, the system did a fine job of locating our meeting participants and adjusting the camera scene quickly enough to be responsive, yet slowly enough to avoid stepping on the experience. We also appreciated that the system didn’t constantly try to re-adjust the image as we’ve seen in some tracking / framing systems.

Although Room mode is apparently the default, we expect that users who try People mode will likely use People mode for most, if not all of their meetings.

## The Overall Meeting Experience

Throughout our testing, the meeting experience provided by the BlueJeans Rooms-as-a-Service featuring Dolby Voice Room was very strong.

- 1) The outgoing and incoming video quality was exceptional throughout all calls.
- 2) The audio quality was excellent during our testing, which was not surprising given the support for Dolby Voice audio within Dolby Voice Room and the BlueJeans cloud.
- 3) The various camera modes, including and especially People Mode with newly added digital zoom support, provided the remote sites with an optimized view of the local participants.
- 4) Wireless content sharing (using the BlueJeans screen share URL) worked very well, offering a fast “time-to screen” and strong image quality.

---

*Throughout our testing, the BlueJeans / Dolby video conferencing room-as-a-service offering provided an exceptionally strong meeting experience.*

---

## Additional Features / Functions

### Camera Settings

The Dolby Voice Camera was designed to automatically compensate for room lighting conditions without requiring the user to make any manual adjustments. This was absolutely the case during our testing. Those who wish to make manual adjustments can access the settings menu on the Dolby Conference Phone and adjust the camera’s brightness, color intensity, and contrast settings.

Within this same menu, users can also enable / disable HDR – a function that optimizes image quality in high contrast lighting conditions (e.g. when the camera is capturing direct sunlight).

While we appreciate the ability to manually adjust the camera settings, in most cases users should not have to adjust the camera at all.

## Dual Display Support

As a part of this effort, we also successfully tested a newly added feature – dual display support. While using two displays ...

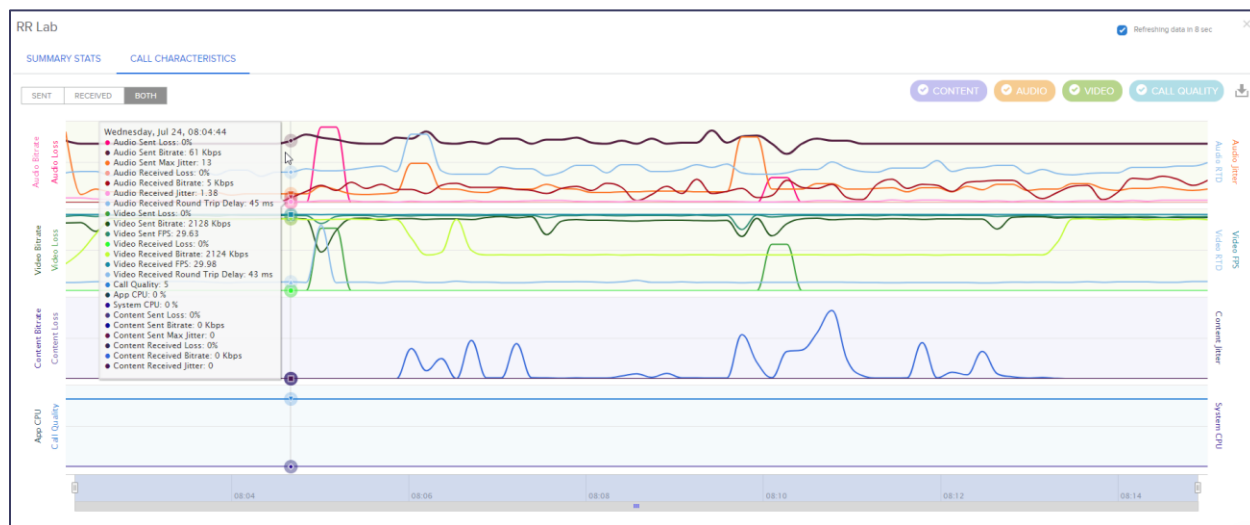
- Display #1 shows the far-end (incoming) video stream
- Display #2 shows the near-end (local) camera image or the locally or remotely shared content

We liked that the system automatically detected that we connected two displays, and automatically adjusted the screen layouts.

## BlueJeans Command Center

Command Center is a web-based service intelligence tool that provides usage data, advanced real-time call statistics, live meeting controls and more.

From within Command Center, system admins can view system information, free / busy status, and real-time call statistics (see screen shot below), as well as configure the SIP audio (IP PBX registration) settings for any Dolby Voice Room registered to their account.



The above screenshot shows the bitrate, loss, jitter, and round-trip delay (RTD) for the audio (top row), video (second row), and content (third row) streams sent to and from our BlueJeans Room system during one of our test calls.

As shown, although we experienced a range of network-related issues during this call that caused bit rate reductions, packet loss, and jitter within the audio, video, and content streams, the overall call quality (the bottom row) remained strong throughout this call.

# Analysis and Opinion

Dolby Voice Room is a hardware-based video conferencing solution that includes a hub, a 4K camera, and a combination conference phone and controller. Sounds like offerings from other video vendors – right? Well ... not exactly.

The most notable difference is that unlike traditional dedicated video conferencing solutions, Dolby Voice Room is a platform that runs conferencing applications provided by Dolby partners (e.g. service providers like BlueJeans, Highfive, and LogMeIn).

Also, unlike competing solutions, Dolby Voice Room allows the partner to define not only the on-screen user interface and overall workflow, but also the touch user interface on the Dolby Conference Phone. This enables a truly customized experience.

The net is that Dolby Voice Room brings many of the benefits of a dedicated hardware video system, and the flexibility of a software-based solution.

This assessment focused on the BlueJeans Rooms-as-a-Service featuring Dolby Voice Room offering, a turnkey subscription service including a Dolby Voice Room running BlueJeans-provided software bundled with the BlueJeans cloud service, maintenance, and support.

The BlueJeans / Dolby product and service offering performed extremely well during our testing. Specifically:

- The physical design of Dolby Voice Room was well thought out.
- The system setup, including registration to the BlueJeans service, was quick and painless.
- The system's ease of use and workflow was on par or better than other solutions we've tested.
- The video experience (outgoing and incoming) was exceptional.
- The audio experience (outgoing and incoming) was exceptional.

Even the power features we tested, such as People Mode (intelligent face detection and room framing) and Whiteboard Mode (ability to capture an in-room dry erase board), performed admirably.

We also tested a handful of recently added features including dual-display support, wireless content sharing while not in a call, and Quick Join by pairing a user's phone to the Dolby Voice Room. In all cases, these new features worked as expected.

Overall, we give the combined Dolby / BlueJeans offering a rousing thumbs-up.

Organizations seeking to equip their small to medium rooms with a turnkey video conferencing product and service offering should consider the BlueJeans Rooms featuring Dolby Voice Room bundle. Based on our test results, we think you'll like what you see (and hear).

# About Dolby Laboratories



(Information below provided by Dolby)

[Dolby Laboratories](#) (NYSE:DLB) is based in San Francisco with offices in over 20 countries around the globe. Dolby transforms the science of sight and sound into spectacular experiences. Through innovative research and engineering, we create breakthrough experiences for billions of people worldwide through a collaborative ecosystem spanning artists, businesses, and consumers. The experiences people have – in Dolby [Vision](#), Dolby [Atmos](#), Dolby [Cinema](#), Dolby [Voice](#), and Dolby [Audio](#) – revolutionize entertainment and communications at the cinema, on the go, in the home, and at work. For more information, please visit [www.dolby.com](http://www.dolby.com).

# About BlueJeans



(Information below provided by BlueJeans)

[BlueJeans](#) is the world's leading provider of interoperable video communication, bringing video to you wherever you are. Thousands of global companies use BlueJeans every day for meetings, events, and on social networks across any location or device including mobile, desktop, and room systems. BlueJeans replaces traditional web conferencing technologies for a modern workforce, delivering face-to-face video communication for any organization who wants to bring their employees, leaders, and partners closer together. For more information, visit [www.bluejeans.com](http://www.bluejeans.com).

# About Recon Research



Recon Research (RR) is an analyst / market research firm focused on the enterprise communications space. Our areas of coverage include unified communications, video conferencing, collaboration and ideation, audio visual solutions, wireless presentation, and more. RR provides enterprise customers, vendors, channel partners, and investment professionals with the information and insight needed to make fact-based decisions.

For more information, visit [www.reconres.com](http://www.reconres.com).

## Contact Information

Recon Research, Inc.  
3111 N. University Drive  
Suite 602  
Coral Springs, FL 33065 USA

## Copyright Notice

The information within this document is owned by Recon Research, Inc. (RR) and protected by U.S. and International copyright laws.

## Trademark Notice

All company, product, or service names that may be mentioned in this publication are tradenames, trademarks or registered trademarks of their respective owners.

## Images and Graphics

All images or graphics used in this publication are created by, owned, or licensed by RR or provided courtesy of their respective owners.