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## Evaluation of BlueJeans Rooms with Dolby Conference Phone

Hands-on testing of the enhanced audio and workflow of a jointly created huddle room solution

This evaluation sponsored by ...



# 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 video technologies. The company employs approximately ~ 2,000 people and generates more than \$1B in annual revenue.

In March 2017, Dolby and Blue Jeans Network (BlueJeans) announced a partnership to add Dolby Voice technology to the BlueJeans Meeting Service and BlueJeans Rooms group meeting solution, creating a solution dubbed, “BlueJeans Rooms with Dolby Conference Phone.”

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*Authors Note – BlueJeans first announced the BlueJeans Rooms offering, called BlueJeans Huddle at the time, in December 2016. Soon after, but prior to the March 2017 Dolby / BlueJeans partnership announcement, WR performed an evaluation of BlueJeans Rooms. See the results of WR’s initial test of the standard, non-Dolby version of BlueJeans Rooms [here](#).*

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In September 2017, Dolby commissioned the Wainhouse Research (WR) test team to perform a third-party assessment of a late beta of the BlueJeans Rooms with Dolby Conference Phone offering.

This document contains the results of our hands-on testing.

## Understanding BlueJeans Rooms with Dolby Conference Phone

BlueJeans Rooms with Dolby Conference Phone (referred to as “the solution” or “the system” throughout this study) is a software-based group video conferencing solution from BlueJeans and Dolby.

Unlike traditional group video conferencing solutions from vendors like Cisco, Huawei, Polycom, and others, BlueJeans Rooms (with or without Dolby Voice) connects to BlueJeans meetings only.

A complete BlueJeans Rooms with Dolby Conference Phone installation includes the following:

- the BlueJeans Meetings Service enhanced with Dolby Voice audio technology <sup>1</sup>
- the BlueJeans Rooms software running on an Intel NUC PC
- a Dolby Conference Phone (DCP) – see below for more information
- a Logitech c930e or Brio webcam



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<sup>1</sup> Dolby Voice is now the default audio stack within the BlueJeans Meetings service and is available to BlueJeans customers at no additional cost.

BlueJeans now offers two versions of BlueJeans Rooms; the standard BlueJeans Rooms Huddle 1.0 edition leverages an iPad as the user interface for the system, while the BlueJeans Rooms with Dolby Conference Phone solution uses the DCP as the system UI, eliminating the need for (and concerns related to) using an iPad in a shared meeting space.

To deploy BlueJeans Rooms with Dolby Conference Phone, customers need the BlueJeans Rooms software license, available directly from BlueJeans or from a BlueJeans partner at a cost of US \$599 per room per year (list price). There is no additional license fee for Dolby Conference Phone enabled rooms.

Customers can then source the above hardware items (PC, Dolby Conference Phone, and webcam) themselves or purchase a “BlueJeans Rooms with Dolby Conference Phone Kit” including all of the above items from a BlueJeans partner.<sup>2</sup>

## Dolby Conference Phone (DCP)

Originally announced in March 2014, the Dolby Conference Phone (DCP) is a multi-microphone, multi-speaker conference phone designed for use with Dolby Voice-enabled conferencing services and/or SIP PBXs.



The DCP sports a wide range of features including:

- Single cable installation - standard network connection provides PoE power and audio in/out
- Wideband and spatial audio (HD – 160 Hz – 8 kHz) support
- 360-degree audio capture with a 20-foot (6.1 meter) pickup range
- Support for two (2) optional satellite microphones
- Integrated noise suppression and acoustic echo cancellation
- An integrated and customizable 4.3” (10 cm) color touch screen user interface<sup>3</sup>
- Physical buttons for volume up/down and mute
- LED halo / ring for status information (e.g. in Dolby Voice call, in SIP call, system muted)

The DCP supports simultaneous dual-registration, allowing it to be used as the audio device for a hosted conferencing service, as well as the in-room SIP conference phone, thus eliminating the need for a separate conference phone.

In addition, during Dolby Voice-enabled calls, the DCP uses its multiple microphones and speakers to provide a spatial audio experience – a highly differentiated Dolby Voice capability (more on this later).

From a look and feel perspective, the DCP is a well-designed, low-profile, and attractive all-in-one audio device with a nice silver-on-black color scheme that would be at home in any meeting room or office.

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<sup>2</sup> Complete kits including a PC, the Dolby Conference Phone, and a webcam, are available for purchase for ~ US \$2,700 (price varies based on options selected – e.g. type of PC or webcam, etc.).

<sup>3</sup> Dolby offers a CSAF (client services application framework) allowing integration partners (e.g. BlueJeans in this case) to create their own user interface on the Dolby Conference Phone. This allows the partner to update the DCP UI and add new features / functions without depending on Dolby.

# System Installation and Configuration

The installation of the BlueJeans Rooms with Dolby Conference Phone solution within our test environment was fast and easy, requiring only:

- the installation and power-up of the Intel NUC PC (power cable, network cable, USB camera, HDMI connection to the meeting room display)
- the connection of a single PoE network cable to the Dolby Conference Phone
- the entry of the 5-character pairing code displayed on the meeting room display into the DCP

All in all, we were “up and running” and ready to make calls in less than 10 minutes.

We were pleased to find that the system was able to join BlueJeans meetings without registering to a BlueJeans account. This capability allows a BlueJeans customer to provide a BlueJeans Rooms with Dolby Conference Phone setup to a partner (customer, prospect, vendor, etc.) without having to create a new BlueJeans account.

We then registered the system to our company’s BlueJeans account by entering the setup menu on the DCP and obtaining the required registration code, which we then entered into the BlueJeans portal.

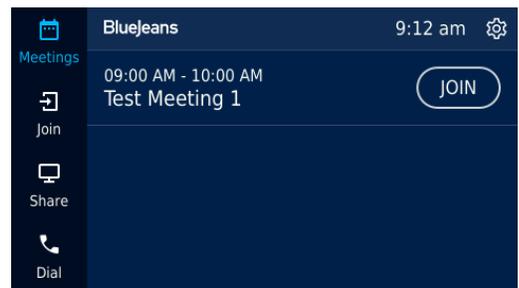
While not specifically required for this assessment, we then registered the DCP to our internal PBX using the BlueJeans admin portal. We appreciated the fact that although this process involved registering to a 3<sup>rd</sup> party SIP server, BlueJeans offered a user interface to simplify the process.

Overall, the system installation and registration process was fast and painless. That said, we noted that the system did not offer the option to enter the DCP’s IP address manually as a part of the initial installation. This capability is available via the admin settings only.

## Joining BlueJeans Meetings

There are several ways to join BlueJeans meetings from the BlueJeans Rooms with Dolby Voice solution.

- For Scheduled Meetings – press the “Join” button for the meeting within the Meeting menu on the DCP (see screenshot at right).
- For Other Meetings (e.g. ad-hoc meetings) - enter a 10-digit BlueJeans Meeting ID (and passcode if needed) within the Join menu on the DCP.
- Using Quick Join – users invited to a BlueJeans meeting can use the BlueJeans Mobile app (iOS and Android) to “launch” their scheduled call on the BlueJeans Rooms system. This workflow uses iBeacon and Bluetooth 4.0 (LE) to allow mobile users in proximity to a DCP to launch calls with a single click (see screenshot).



We tested all of these methods and were able to join scheduled and ad-hoc meetings quickly and easily. We especially liked the Quick Join method as it leveraged the strengths of both vendors' offerings.

## Video / Audio Experience

**Video Experience** - while not the focus of this testing or related to the Blue Jeans / Dolby partnership in any way, the system provided a solid video experience throughout our testing.

**Audio Experience** – this is where the partnership between BlueJeans and Dolby really shines. In a word, the BlueJeans Rooms with Dolby Conference Phone audio experience was exceptional.<sup>4</sup>

### Outgoing Audio Performance

The audio “pickup” of the Dolby Conference Phone was impressive. The “sitting at the table facing the device” test yielded outstanding results rivaling the audio performance of traditional meeting room gooseneck and button / table mics. In addition, the “walking around the room” test yielded a very strong audio experience – even when the talker was more than 15 feet from the DCP.

The “whisper” test produced surprisingly good results – even when the talker was a distance away, facing the opposite direction, and speaking at a volume so low that others in the same room had to strain to hear the talker. From our vantage point, with more than 25+ years of experience in the AV world, we view this as industry-leading performance. Note – depending on the use case or situation, such strong audio pickup may or may not be a good thing from a privacy perspective.

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***The Dolby Conference Phone's audio pickup was industry leading based on our 25+ years of AV experience.***

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Throughout our testing, the automatic gain control / audio leveling function worked well and provided a tempered outgoing volume level regardless of the in-room talker's location or distance from the DCP.

To test the Dolby Conference Phone's noise reduction capabilities, we injected various types of noise (e.g. HVAC noise, people speaking in the hallway) into the meeting room. In this area, the DCP's performance was on-par with other high-end, conference phone type devices.

Perhaps most importantly, throughout all of our aggressive audio testing, the clarity of the outgoing speech audio was strong.

### Spatial Audio Experience

The Dolby Voice Media Servers and Dolby Voice protocols integrated into the BlueJeans environment leverage the stereo audio capabilities of most computers, mobile devices, and the DCP, combined with advanced back-end processing, to “virtually position” each meeting participant in a different place in relation to the user.

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<sup>4</sup> This is actually the third time we've tested the Dolby Voice experience (see our [test report](#) on BT MeetMe with Dolby Voice and our [evaluation](#) of HighFive with Dolby Voice).

The result is that Dolby Voice-capable users (meaning those using a stereo headset or those using a Dolby Conference Phone) feel as if each meeting participant is in a different part of the room (see the graphic at right).



This spatial audio experience is something one needs to experience to truly appreciate, but suffice it to say it is both differentiated and natural-feeling. In fact, after conducting a Dolby Voice call, a standard conference call feels lacking.

#### Incoming Audio Performance

The incoming audio provided by the Dolby Conference Phone was clear and of high quality, and the volume level was more than adequate to cover a small or even medium-sized meeting room.

To test how well the service (meaning the BlueJeans Meeting Service with Dolby Voice) could reduce / eliminate constant background noise, we injected loud HVAC noise in the same room as a person participating in a call using the BlueJeans PC app. In this area, the service performed exceptionally well by completely eliminating the noise without stepping on the person's voice when he spoke.

But most importantly - throughout all of our aggressive testing, the BlueJeans Rooms / Dolby Conference Phone combination worked well and provided a high quality, spatial audio experience.

## Additional Findings

**Content Sharing** – like most PC-based conferencing solutions, BlueJeans Rooms supports wireless content sharing, but not wired content sharing. To share content – even locally, the user launches a BlueJeans content sharing meeting. We tested this capability successfully, but we believe the experience could be improved.

The Dolby Conference Phone supports BlueJeans Room's content sharing workflow by displaying the required content sharing URL (10 digits) on the DCP display. To share content, users simply enter that URL into a browser on their notebook PC.

**Separation of Far-End Video and Audio** – the practice of physically separating the displayed remote video (typically on the front wall) and the incoming audio (often at the center of the table or coming from the ceiling) has become relatively common. While functional, this creates an unnatural feeling for local participants. This is not a BlueJeans or Dolby issue, but this solution follows this approach.

## Summary

BlueJeans Rooms is a software-based, video conferencing application that makes it relatively easy to add video conferencing (and content sharing, etc.) to an enterprise meeting room. In March 2017, our team tested the BlueJeans Rooms solution, and found it to be a solid performer.

In September 2017, we tested the soon-to-be-released BlueJeans Rooms with Dolby Conference Phone solution resulting from a strategic partnership between these firms.

Our testing revealed that the addition of Dolby Voice (in the BlueJeans cloud) and the Dolby Conference Phone (in the meeting room) takes the BlueJeans Rooms solution to an entirely new level by:

- Ruggedizing the deployment by using the enterprise-ready DCP as the UI instead of an iPad
- Streamlining the workflow
- Providing an exceptionally strong audio experience

Savvy organizations recognize that while video may be sexy, audio is the most important part of a conferencing experience. Enterprises seeking to video-enable their meeting rooms, as well as their general user population, should carefully consider the Dolby-enhanced BlueJeans Meetings Service, as well as the BlueJeans Rooms with Dolby Conference Phone solution.

## Contributing Authors / Research Team



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## About Wainhouse Research



**Wainhouse Research**, [www.wainhouse.com](http://www.wainhouse.com), is an independent analyst firm that focuses on critical issues in the UC, conferencing, collaboration and professional AV markets. The company conducts multi-client and custom research studies, evaluates product and service offerings, consults with end users on key implementation issues, advises vendors on go-to-market strategies, publishes white papers and market statistics, and delivers public and private seminars and webinars.

## About Dolby Laboratories

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**Dolby Laboratories** (NYSE: DLB) creates audio, video, and voice technologies that transform entertainment and communications in mobile devices, at the cinema, at home, and at work. For more than 50 years, sight and sound experiences have become more vibrant, clear, and powerful in Dolby. For more information, please visit [www.dolby.com](http://www.dolby.com).