

Why the airport of the future will include a chat with a celebrity hologram

[Noah Eckstein](#)



If you happened to be waiting for a flight at JFK Terminal 4 on May 23, chances are you bumped into the comedian Howie Mandel. Not in-person, of course. Mandel is averse to germs and doesn't like to fly. But rather *in-Proto*, a life-sized hologram machine with the ability to "beam" anyone or anything inside of it.

At noon, Mandel appeared. He was beaming in live from Van Nuys, California, from a showroom of the holographic

communication company Proto. "This is how a germaphobe comes to New York," he told me through The Proto Epic—a towering white box that costs \$65,000. "This is how I'd like to live the rest of my life."

People started to gather. Mandel worked the crowd, poking fun at passersby while also promoting Proto. Mandel reached out to Proto in 2022, and has since become an investor, though he wouldn't share how much he's spent.

A few travelers looked over, confused at what they assumed was a pre-recorded message. "Hey lady, come here," Mandel said. Jennifer Hale, a seamstress from Savannah, Georgia, traveling to her son's wedding, looked at the screen. "Is this real?" she asked herself before inching forward. Sandy Velasquez, a safety manager at JFK, paused and muttered, "could it be possible?" She shook her head. "But, look at his feet, it looks *real*, like he's right there."

Nick Lilley, a student studying Economics and Russian at Williams College hesitantly approached. "It's got to be AI," he said to Mandel, who was able to see and hear through cameras embedded at the top of the Proto Epic. It wasn't until Mandel started dancing in-step with a traveler and member of the Irish dance troupe Riverdance that Lilley's doubts were quelled. "It's got to be real," he said.



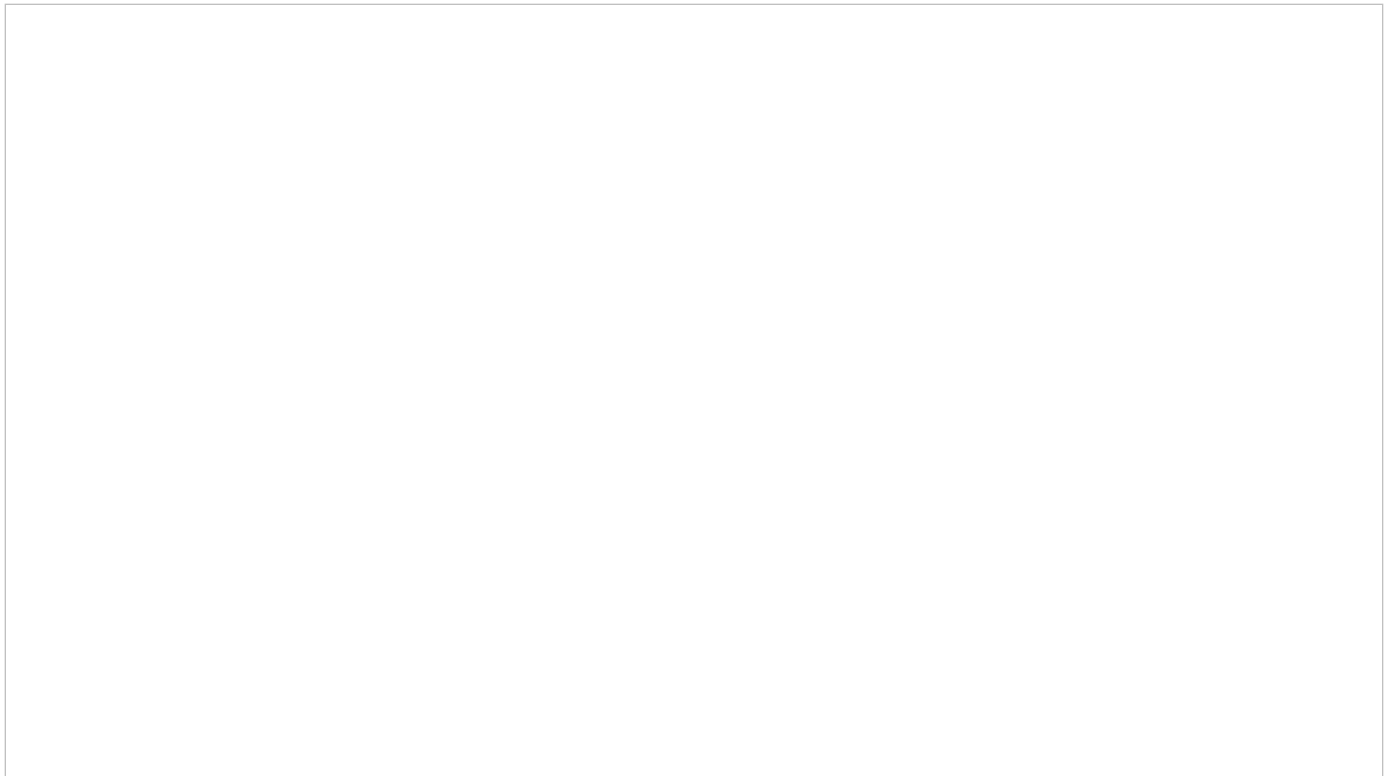
[Photo: courtesy Proto]

What holograms can do

Before founding Proto in 2018, David Nussbaum helped run [Musion](#), a holographic entertainment company known for helping resurrect legends like Tupac posthumously to

[perform as a hologram](#). As a child, he dreamed of being an announcer or owning a radio station. He views Proto as “the evolution of broadcasting”—a way to connect people that feels more personal, complete, and authentic than video conferencing apps like Zoom.

“Grandma and granddaughter can beam into each other’s homes, or therapists can beam into a senior living facility, or a teacher can beam into a super remote school,” he said. “I think it’s a way for people to be better, to do better business, to have deeper relationships, and to be more creative with how they communicate with others. It makes the world a smaller place.”



Proto inventor and CEO **David Nussbaum** beams simultaneously into a dozen Protos at the factory in Michigan. [Photo: courtesy Proto]

Proto’s life sized and table-top “box-type” displays use high-

quality transparent LCD panels and various lighting effects to give a realistic impression of a 3D person or object. "It's a 4-K volumetric digital representation, not a hologram," said Nussbaum. He describes Proto as more of "a window than a screen," though technically speaking, Proto uses screen technology to produce its "perspective projection" technique.

He explained that the current models use an open cell, customized LCD with all the guts ripped out. "There is about two feet of depth between the front of the screen and the rear wall, creating actual depth in the display," Nussbaum said. "The content is projected within the screen itself, with shadows, reflections, and additional studio effects creating a very realistic projection." Nussbaum says Proto's technology is not an illusion like Pepper's Ghost, which uses projectors and mirrors to create an effect. "This is a true projection within the device itself," he said.

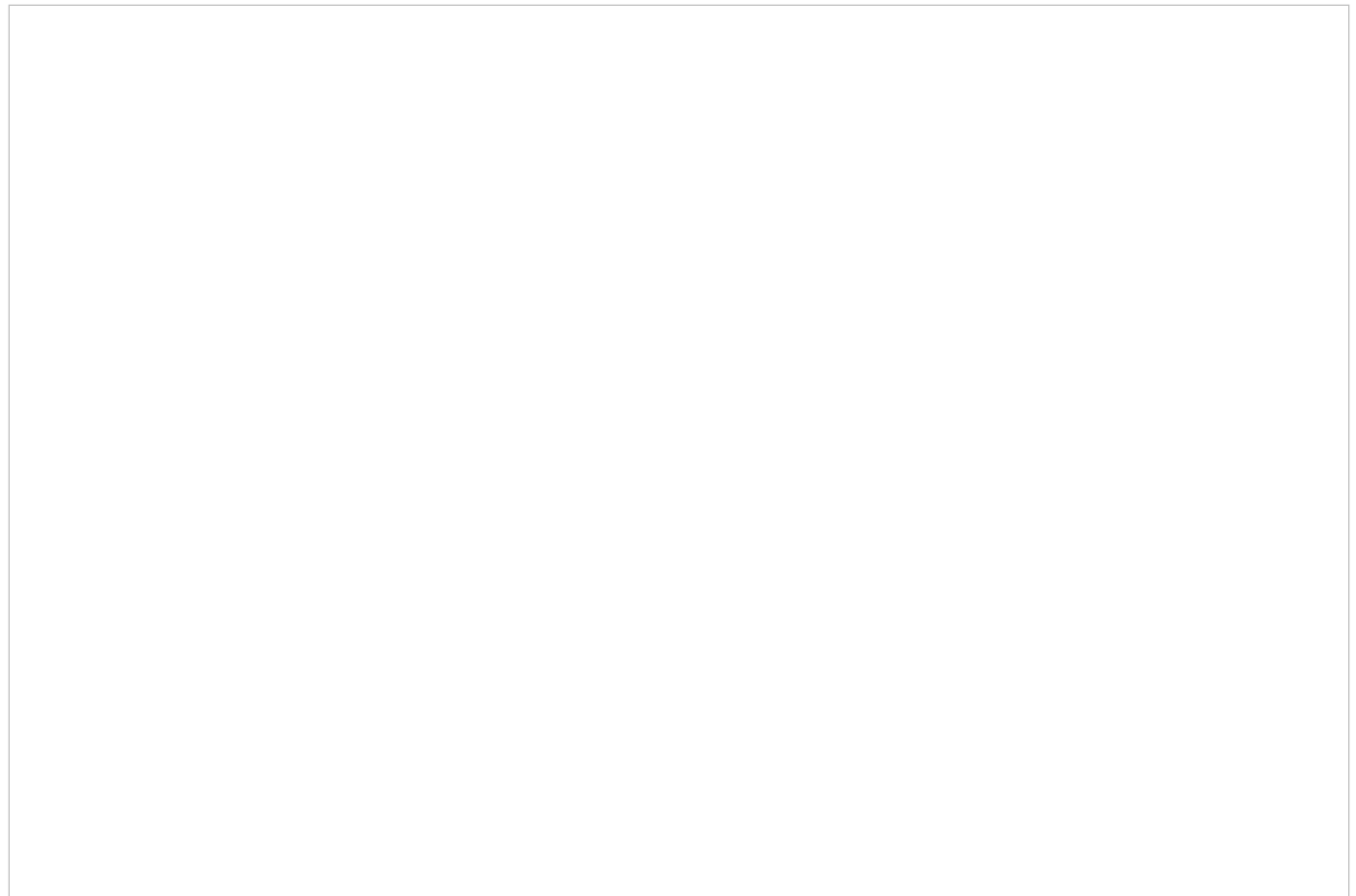


The University of Loughborough. [Photo: courtesy of Loughborough University]

Proto is a contiguous evolution of the technology first pioneered by physicist Dennis Gabor, who won the 1971 Nobel Prize in Physics for inventing holography. Gabor's technique allows for the reconstruction of a full 3D image from any angle, as it recreates all the light reflected off an object.

"It's a bit like looking at the waves of the ocean," explained Mary Lou Jepsen, former executive director of engineering at Facebook and Google, who founded the company [Openwater](#) in 2016 to use holography, AI, and semiconductor device physics to treat, monitor, and detect diseases. In 1989 as a grad student at MIT, she co-created

the first fully computer generated holographic video system. "The result was a bit like R2D2 projecting out Princess Leia in the first Star Wars movie," she said.



William Shatner live from Los Angeles to give a key note at Advertising Week APAC in Sydney, Australia with Google's **Cat Bowe** (now at SalesForce) [Photo: Advertising Week APAC/courtesy Proto]

Proto leverages this principle with its 3D display booth, projecting a 2D image of a person to create a realistic holographic representation. Its device is part of a bigger movement to bring lifelike displays into the real world. While companies like Magic Leap and [Microsoft's HoloLens](#) have brought holographic AR displays to wearable headsets, Proto's more direct competition comes from something like [The Looking Glass](#) by Looking Glass Factory, a desktop

holographic display, popular for 3D modeling, medical imaging, and interactive art.



MetroBoomin live at a Spotify event, simultaneously cast from Atlanta to Miami and Los Angeles to demonstrate how he makes beats. [Photo: Steven Hong/courtesy Proto]

The future of holograms

So far, Proto has gotten a lot of attention. The Kardashians [used it](#) during an episode of *Keeping Up With The Kardashians*. The Beverly Wilshire, a Four Seasons hotel, is integrating the Proto M (the smaller table-top holoportation device that costs just under \$7,000) into its presidential suites where people can use it for concierge services. Christie's auction house has partnered with Proto to [showcase art and sculpture](#), like Edgar Degas's \$20 million

“Petite danseuse de quatorze ans,” without the need for costly and often logistically challenging shipping.

Additionally, Loughborough University in England is testing how Proto will impact student-facing teaching.

“I see a future where holotech opens up new, exploratory ‘ways of seeing’ and opportunities to interact with ideas, items and people that we would not have previously been able to experience,” said Vikki Locke, a professor of teaching practice at Loughborough University’s business school. Over the next year, the university will conduct research to understand the technology and its impact on student learning, while also developing training materials for academics. One clear benefit to universities is the ability to cut costs associated with travel expenses for visiting lecturers.

“For me, the more interesting benefits come from the ‘control of the pixels’ which facilitates many new innovative ways in which we might engage with our students, for example with situated AI avatars, mixed-reality seminars, ‘show and tell’ content, etc.,” said Gary Burnett, a professor of digital creativity at Loughborough University.

A new kind of screen in your life

JFK installed Proto’s tech as part of its arts and culture program, a series of installations and exhibits that are meant

to represent the full NYC experience. "While holograms hold promise for the future of public design, it's likely that they will complement rather than replace traditional forms of display and communication," said Roel Huinink, Chief Executive Officer of JFK International Air Terminal.

I asked Huinink if JFK has future plans to incorporate this tech with security, TSA, or anything else unrelated to arts and culture. "The sky's the limit," he said. "There are endless possibilities for innovation and improvement in enhancing the customer experience and delivering incredible journeys."

At the end of our interview, Nussbaum wanted to show me how integrating AI into the Proto machine worked. "Howie say hello to Fast Company, and tell them about your favorite moment from *AGT [America's Got Talent]*...in Spanish," Nussbaum instructed the machine. Howie took a few seconds to process the question, and then proceeded to answer in Spanish.

The whole scene conjured memories of *The Jetsons*, a cartoon about a family in a futuristic Space Age. On one hand, these advancements are exciting, thrusting society into a new era where holography creates innovative solutions to old problems. On the other hand, concerns exist about the general deterioration of in-person connection. For Nussbaum, holographic communication isn't a deterioration of human contact—it's a way to improve it.

"You shouldn't have to be Howie Mandel to be a hologram. You shouldn't have to be a millionaire or a celebrity to be somewhere," Nussbaum says. "I think this is going to enhance all forms of interaction."

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