

STATEMENT

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Before the
Committee on Energy and Commerce
Subcommittee on Communications and Technology

Hearing “From Core to Edge: Perspective on Prioritization. ”

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Summary

Aira provides people who are blind or low vision with instant access to visual and environmental information, whenever and wherever users request it. Aira leverages the power of mobile communications – together with innovative technologies (such as smart glasses, Augmented Reality, machine learning, geolocation, and sensors) and professionally-trained human agents.

Founded in San Diego in 2015, Aira has secured venture funding of over \$15 million. The service was launched for consumer subscription in April 2017. Further information, including videos demonstrating Aira, can be found at our website <https://www.aira.io>.

As a cloud-based service, Aira relies on mobile communications networks as well as the Internet. Video and other sensor data is transmitted directly from the Aira user's smart glasses through a mobile network to an Aira agent's dashboard. As a cell-based service, Aira is widely available, but it requires a robust network with dependable connectivity. AT&T's Dynamic Traffic Management (DTM) ensures that our users have low latency and robust connectivity for the transmission of streaming video on which our agents rely to provide guidance and support.

Aira has invested in artificial intelligence to support automated services. We recently launched our new Horizon product with an AI-agent, "Hey Chloe™," and we will expand her capabilities. Aira looks forward to leveraging the capabilities of emerging 5G networks to support our vision of creating smart communities that enable a level playing field for people of all abilities.

We encourage policymakers and regulators to support policies and programs which promote and expand reliable access to visual information as a right for individuals who are blind or visually impaired.

Introduction

My name is Paul W. Schroeder and I serve as Director of Public Policy and Strategic Alliances for Aira Tech Corp. I am pleased to provide testimony which describes our groundbreaking service that provides unprecedented access to visual information for people with blindness or visual impairment. I lead our public-sector engagement as well as providing guidance regarding partnerships with agencies and organizations serving people with disabilities. Our service is relevant for this Subcommittee hearing because our service relies on the transmission of streaming video, without interruption, at sufficient upload speeds to ensure a low-latency connection between a blind individual and the remotely located sighted assistant who is providing information.

Aira develops transformative technology that provides greater information and independence to those with vision loss by connecting them immediately via streaming video to a network of professional Agents. The start-up is on a mission to provide people who are blind or low vision with instant access to visual and environmental information, whenever and wherever users request it. Aira provides this service by leveraging the power of mobile communications – together with innovative technologies (such as smart glasses, Augmented Reality, machine learning, geolocation, and sensors) and professionally trained human agents. Aira users, just by tapping a button on the Aira app, connect within seconds to a network of distributed, trained agents who help blind people gain immediate and unprecedented access to information and assistance in real time. Our agents are carefully screened, trained, and compensated for their work. They are also held to a strict confidentiality requirement and they undergo detailed background checks.

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Our customers (whom we call Explorers) use the service to pursue a variety of activities ranging from navigating busy city streets and airports, to reviewing printed material, catching public transportation, recognizing and interacting with colleagues in the workplace and classroom, obtaining real-time assistance at work and home, successfully completing job applications, shopping, pursuing recreation endeavors, and literally traveling the globe. Further information, including videos demonstrating Aira, can be found at our website <https://www.aira.io>.

Since launch, we have achieved significant milestones. Below are some service accomplishment metrics.

- 1 million minutes used
- 100,000 sessions initiated
- 25,000 work-related tasks completed
- 100 agents located across 30 states
- 1500 users ranging in age from 18 to 93 (51% men and 49% women)
- 100 college campuses offering scholarships covering a full school year of Aira service
- Free Aira assistance for all tasks and activities related to job-seeking and employment

Company Values

Suman Kanuganti, CEO and co-founder of Aira, articulated three core values that guide the company. They are based on the understanding that the real challenge with blindness isn't the loss of sight. It is the loss of immediate access to visual and environmental information.

1. Aira is not a cure for blindness or low vision. It is designed to address the lack of immediate access to visual and environmental information.
2. Aira's culture and creative drive is centered on thinking like a set of eyes rather than thinking like a brain. It is a simple yet powerful concept. The person receiving the information decides what to do with it. We are the eyes. Not the brain.
3. Aira's services are enabled by technology but delivered through human-to-human interactions, a partnership of equals.

At its heart, Aira is about information. It is about eliminating that gap in information that a person with blindness has and that inhibits the ability to make informed choices. And it is about shrinking the time it takes for a person to get that information.

Targeting Employment

Recognizing the need for additional efforts to enable people who are blind to pursue employment, Aira recently announced that all activities related to preparing for and finding a job would be free to our users. Aira is also working with the public and private vocational rehabilitation system, as well as employers, to support access to visual information in the workplace. One quarter of the service minutes we provide are tied to employment-related activities. More information about this initiative can be found at <https://go.aira.io/employment>.

Partnership with AT&T and the Blindness Community

Aira is proud to have the support and partnership of AT&T as our primary source for wireless connectivity, including AT&T's Dynamic Traffic Management (DTM) solution. AT&T's Foundry for Connected Health is working with Aira on several projects including development and testing of a solution designed to help people who are blind or have low vision reliably access medication labels and information. This is one of the most requested features

among Aira's customers. The solution will utilize "Hey Chloe™," Aira's new artificial intelligence (AI) platform, to correctly identify prescriptions and over-the-counter medications. To support educational opportunities, AT&T, Aira and the National Federation of the Blind (NFB) joined forces to make the transition to college easier for 100 blind students by giving them Aira smart glasses. AT&T funded the innovative back-to-school program.

Aira also enjoys a close partnership with leading organizations in the vision loss community. The American Council of the Blind, The American Foundation for the Blind, the National Federation of the Blind and Blinded Veterans Association are Aira partners and advisors.

Communications Networks

As a cloud-based service, Aira relies on both mobile communications networks and the Internet. Live video, along with GPS and other sensor data, is transmitted directly from the Aira user's smart glasses through a mobile network to an Aira agent's dashboard. The sophisticated dashboard is built to support an augmented reality context combining live data streams and interaction capabilities. Working from their dashboard, Aira's agents can access myriad sources of information – the video streaming from the explorer's glasses or smartphone, along with GPS and other sensor data, and of course audio. The agent can also leverage web-based maps, transportation routes/schedules, and other online information to assist our explorers in virtually any activity).

As a mobile and Internet-based service, Aira is designed to be widely available, supporting our Explorers' need for access to visual information anywhere, at any time. A robust network with dependable connectivity is an absolute requirement. Aira requires a minimum variable bit rate (VBR) transmission of 720 Kbps to 1 Mbps to deliver 640x480 video

resolution at 15fps. However, a more effective result requires an optimal (VBR) of 2-4 Mbps to deliver 1280x720 resolution at 30fps. For the most reliable data feed, we need constant bit rate. AT&T's DTM has been key in ensuring that our users have ultra-low latency and robust mobile connectivity for the transmission of streaming video on which our agents rely to provide guidance and support with visual tasks. Securing efficient and reliable access to information instantly, anywhere and anytime is essential. Delays of more than a few milliseconds would severely limit the value of the service. Using priority network services provided by AT&T, we record only 80 milliseconds of latency, which is near real time, ensuring better reliability and consistent bandwidth availability for transmission of high-quality video streaming.

Service Models

Aira launched as a direct-to-consumer subscription service. Our Explorers pay for access to a fixed number of minutes of service per month. We have expended considerable effort to work with agencies such as the Department of Veterans Affairs to ensure that our nation's veterans who lost their sight in service to our country can continue to access visual information and remain independent and productive. We are also reaching out to veteran's service organizations to recruit veterans with disabilities to serve as agents, creating opportunities for veterans to assist their fellow veterans. Aira is also working with vocational rehabilitation providers and encouraging other third-party payers to include coverage so that consumers with limited incomes can make use of the service.

More recently, Aira launched a site-access program to allow public facilities (such as airports or transit stations), retail centers, government facilities, and other service-providing agencies to cover the cost of Aira service within their locations. This "public Aira" provides

access to the visual information needed to support independent navigation by individuals with vision loss.

Through these and other models, Aira is working to sustain and expand our support for individuals with vision loss. We are also investigating services to other disability groups as well.

Innovation

From our inception, Aira has invested in engineering and other technical expertise to build our innovative service. Reliability and ease-of-use are critical as are the efficiency and quality of the video and audio connection. Because we understand that “hands-free” access is essential, we deploy video camera-equipped smart glasses to facilitate the connection from Explorer to agent. Initially, we used existing technology. However, Aira recently launched our Horizon hardware, which features smart glasses designed by Aira and built in the United States, largely by companies based near San Diego. These glasses provide a superior field of vision for the video camera and battery life that supports up to seven hours of continuous use.

We have also continually updated the platform to provide new services, such as integration with ride-sharing entities Lyft and Uber. The work we are undertaking with AT&T to enhance access to prescription and medication information is another example.

The “AI” in Aira’s name signifies the importance of artificial intelligence to our platform. We have hired AI expertise and we are working with the most capable technology companies to deploy support for automated services in the Aira platform. We launched Horizon with AI-agent, “Hey Chloe™” functionality, and we will expand her capabilities.

To maximize AI functionality, the local device and cloud-based capacity must work in conjunction. While AI solutions can be developed to run on a smartphone device, AI scales better in a cloud-based environment because of the theoretically unlimited computing resources

in the cloud. However, limited network capacity has meant that the performance of running AI locally is better than on the cloud. The weak medium here is the network. Fortunately, the emergence of the 5G network exponentially increases data transfers that will enable local devices to be powered by cloud-based support. Aira looks forward to the development of 5G networks which will fill a gap in today's technology to support our vision of creating smart communities that enable a level playing field for people of all abilities.

Thank you for the opportunity to testify before the Subcommittee. I look forward to discussing Aira, our technology and access to visual information. We encourage policymakers and regulators to support policies and programs which promote and expand reliable access to visual information as a right for individuals who are blind or visually impaired.

Aira Awards/Honors (Since 2015)

--**2018:** Aira receives bronze medal as a finalist in the prestigious **2018 Edison Awards** which recognizes the nation's top technology industry leaders, innovators and entrepreneurs who are driving innovation and new product development.

--**2018:** Aira Co-founder and CEO, Suman Kanuganti named semi-finalist for **Ernst & Young's Entrepreneur of the Year 2018 Award**. Winner to be announced in May 2018.

--**2018:** Aira shortlisted for **Global Mobile Award** of the Mobile World Congress in Barcelona, Spain which recognizes the world's top innovators in mobile technology.

2018: The publication, MedTech Boston names Aira as among the **top 4 digital health startup companies using the Internet of Things (IoT) to improve healthcare**.

--**2017:** The New York Times cites Aira as among the emerging tech startups that are using its powers for good in society, earning these companies the **NY Times' 'Actually Good Tech Awards' for 2017**.

--**2017:** As further testament to Aira's groundbreaking technology, Smithsonian Magazine features Aira Co-founder and CEO, **Suman Kanuganti as among the 9 Innovators to Watch in 2018**.

--**2017:** Aira's partnership with Memphis International Airport -- in which this facility became the first airport to offer Aira's blind and low-vision users free access to Aira services while they travel through the complex -- **is cited by USA Today as among the best new airport amenities of 2017**.

--**2017:** Selected as **Startup of the Year by the Consumer Technology Association (CTA)**. The CTA is the consumer technology industry's leading proponent of innovation, technology and entrepreneurship.

--**2017:** Named **Finalist for Innovations in Healthcare™ ABBY Awards**.

--**2017:** The Medical Futurist, a leading healthcare tech publication, **rated Aira as among the top nine augmented reality (AR) technology companies** in the

health/medical industry. It cited Aira's augmented reality-powered solutions that offer the blind and visually impaired the opportunity to live more independently.

2017: Selected as **Speaker/Presenter at the prestigious GSMA Mobile World Congress Conference (Barcelona, Spain) taking place in 2018.**

--2017: Aira named "**Best in Show**" and **nominated as "Best Tech"** at the Mobile World Congress exhibition in Barcelona, Spain where Aira's new smart glasses, and the newly announced partnership with AT&T, were showcased.

--2017: Aira named by PC Magazine as "**Best New Technology**" at the international CES (Consumer Electronics Show) in Las Vegas. At CES, Engadget magazine also nominated Aira as finalist for the publication's "**Best of CES 2017**" Awards.

2017: Aira named winner in the Consumer Technology Association **Eureka Park 2016 Accessibility Competition** (Awarded at CES 2017). The Award recognizes innovations that have the potential for a positive impact on older adults and people with disabilities.

2017: Named Winner of California State Fair's **Champions of Technology Award** (in the Project/Organization Category), recognizing Aira as a key innovator whose technology has direct benefit to Californians.

2017: Aira Named Finalist in the 2017 **Mobile World Congress International d-LAB Pilot Challenge** in Barcelona, Spain. The competition recognizes outstanding mobile technologies who have particular potential in being integrated into Spanish and other foreign markets.

2017: Suman receives San Diego Business Journal's **'Most Admired CEO Award'**. The award recognizes local entrepreneurs for their outstanding leadership in driving their business while also making a significant impact on their companies and the San Diego community.

2017: Aira Awarded Honorable Mention in **FCC Chairman's AAA** competition for Advancing Innovation in Accessibility Technology. In accepting the award, Aira was among key innovators in communications technology for the disabled who were honored by Ajit Pai, Chairman of the Federal Communications Commission (FCC). Pai honored the innovators for being selected among the nation's best in the FCC Chairman's Awards for Advancement in Accessibility (or Chairman's AAA).

--2016: Aira named a winner of San Diego CONNECT's prestigious '**Most Innovative New Products Awards**' competition (in the Information Communications Technologies category). CONNECT is a premier accelerator in San Diego for highly innovative area companies in the technology and life sciences sectors.

--2016: Aira is selected finalist in the **Wall Street Journal's prestigious WSJDLive competition** that showcases innovative startups globally. Aira was selected from among 400 applicants worldwide.

--2016: Aira is selected a winner in the 2016 **Red Herring Top 100** North American technology competition which honors some of the world's best high technology innovators, venture investors and business decision makers who are driving the economy.

--2015: Aira selected "Best New Startup" at AWS (Amazon Web Services) Loft Startup Pitch Event, San Francisco.