Highlights

Happy New Year and Cheers to a Healthy 2022.

On that note, in an abundance of caution, RSA is now rescheduled to summer. But, CES goes on, in-person and virtual, timed just weeks after the biggest holiday celebrations for much of the world.

Omnicron appears about as contagious as laughter – If you can hear it, you probably caught it. So, is it even reasonable to pack airplanes and collectively descend on the tradeshow floors to toast the latest and greatest Consumer Electronic innovations at “the most influential tech event in the world”?

Gary Shapiro, President and CEO, Consumer Technology Association explains the rationale for staying the course:

> CES will and must go on. It will have many more small companies than large ones. It may have big gaps on the show floor. Certainly, it will be different from previous years. It may be messy.

> But innovation is messy. It is risky and uncomfortable. I view CES as representing the best of our unique American history — a place where those who are different and have big ideas can gather. Where success is not based on class or religion or anything but the strength of an idea.
>
> As we look to CES 2022, we confront a tough choice. If we cancel the show, we will hurt thousands of smaller companies, entrepreneurs and innovators who have made investments in building their exhibits and are counting on CES for their business, inspiration and future. If we do not cancel, we face the drumbeat of press and other critics who tell the story only through their lens of drama and big name companies.

Would canceling be so economically catastrophic for small showcasing businesses that a vaccine, booster, mask, and a few weeks absence from work is not too bad a trade (as long you have accrued some vacation leave are are not a consultant or contractor). Do employers give employees an option? If you work for big players such as AT&T, AMD, BMW, IBM, Lenovo, Mercedes-Bens, Proctor & Gamble, Microsoft, Google, Intel, GM, Kioxia, Amazon, iHeartRadio, Meta (Facebook) or T-Mobile, you are off the hook. Samsung and Sony say they are still all in, in-person.

We are looking forward to seeing the latest innovations, from the comfort of our laptops.

CES- First High-Speed, Head-to-Head Autonomous Racecar Competition at Las Vegas Motor Speedway

The first high-speed, head-to-head autonomous racecar competition at the Las Vegas Motor Speedway is Friday, January 7, noon PST with live commentary for CES attendees on Twitch @IndyAChallenge and at http://www.indyautonomouschallenge.com. Nine teams, representing 19 universities from 8 countries will seek to compete in the first high-speed, head-to-head autonomous passing competition, using the most advanced autonomous racecar, the Dallara AV-21. All nine teams previously competed at the Indianapolis Motor Speedway(IMS), on Oct. 23, 2021, in the first high-speed autonomous racecar competition at the IMS.

Halo, a remote-piloted driverless car service operating on T-Mobile's 5G network in Las Vegas, will serve as the official pace car of the Autonomous Challenge. Halo will lead teams off of pit lane and complete a warmup lap at speeds of 65-80 mph before the start of each round.

Energy Systems Network (ESN) is the principal organizer and Luminar, the global leader in automotive lidar hardware and software technology and longtime IAC sponsor, will serve as a premier sponsor and prominent automotive technology partner of the Autonomous Challenge. The Dallara AV-21 is the most advanced race car ever built and features three Luminar Hydra LiDAR sensors to provide 360-degree long-range sensing, which enables safe autonomy at high speeds. The Technology Innovation Institute (TII) joins Luminar as a premier sponsor. Luminar has recently pulled its physical presence from the show, due to Covid-19 health and safety concerns.

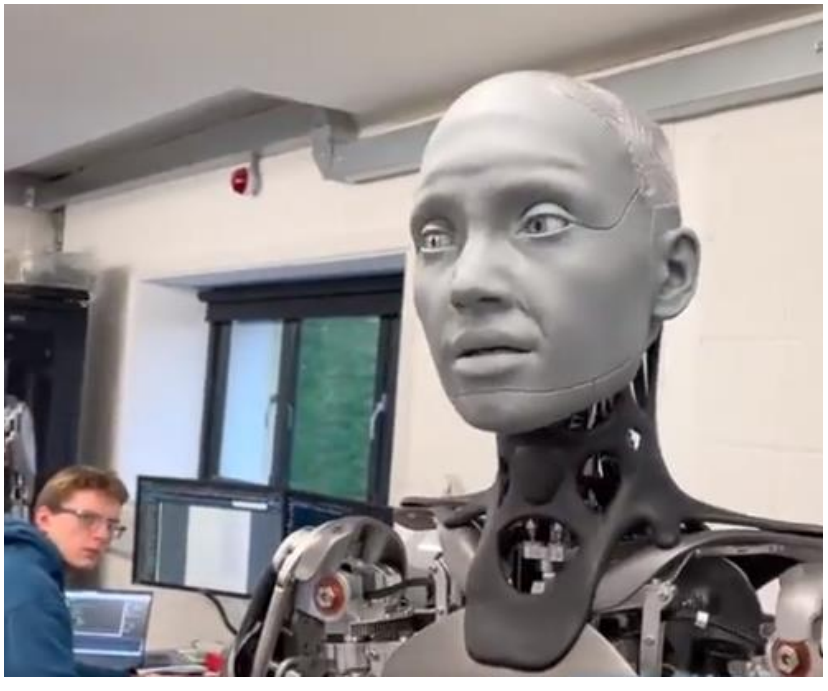
"Our university teams have proven that they can advance autonomous technology by setting world records with high-speed laps and now, on the biggest technology stage at CES 2022, they will take it to the next level with a head-to-head passing competition," said Paul Mitchell, president and CEO, Energy Systems Network. "The Consumer Technology Association and CES 2022 play a central role in showcasing and advancing autonomous technology worldwide, so we can't think of a better partner for this next step of the competition or for future implications of this technology."

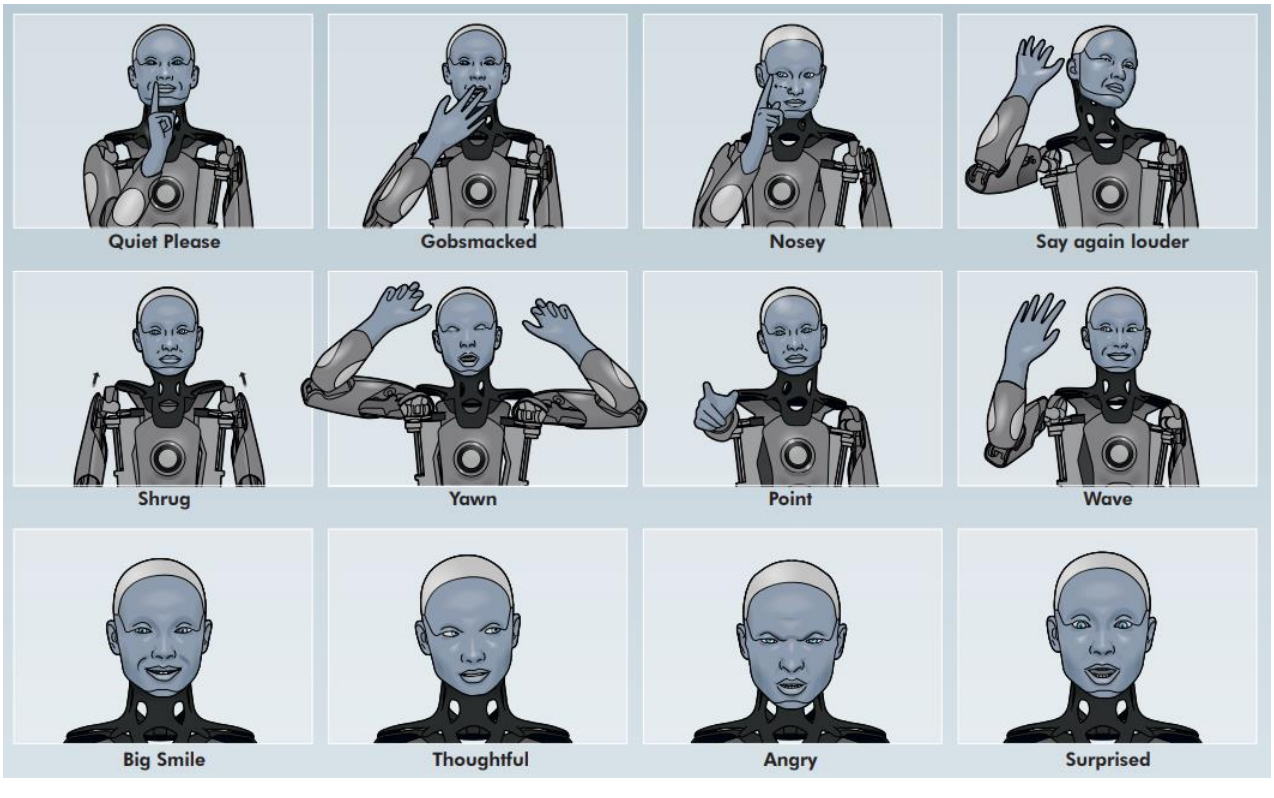
The teams involved in the autonomous racing at CES are: TUM Autonomous Motorsport — Technische Universität München (Germany) — Winner of Indy Challenge; PoliMOVE — Consisting of Politecnico di Milano (Italy), University of Alabama — Finalist at Indy; EuroRacing — Consisting of University of Pisa (Italy), Reggio Emilia and University of Modena (Italy), Polish Academy of Sciences (Poland), ETH Zürich (Switzerland) — Finalist at Indy; MIT-PITT-RW — Consisting of University of Pittsburgh, University of Waterloo (Canada), Rochester Institute of Technology, Massachusetts Institute of Technology; and KAIST — Korea Advanced Institute of Science and Technology (South Korea)

Ameca Takes "Humanoid Robot" to the Next Level

ENGINEERED ARTS

Ameca is said to be the world's most advanced humanoid robot. CES attendees have the unique opportunity to view and interact with Ameca up close. This robot looks like a person, with facial features that move and flex to indicate expressions and mimic emotion and eyes that accurately track movement. Engineered Arts designed Ameca with as realistic facial features as possible to help scientists and engineers study and improve human-robot interactions. People connect by reading facial cues, so having a robot with life-like expressions and responses is expected to be beneficial in hospital and hospitality uses where communication interactions are integral to success.

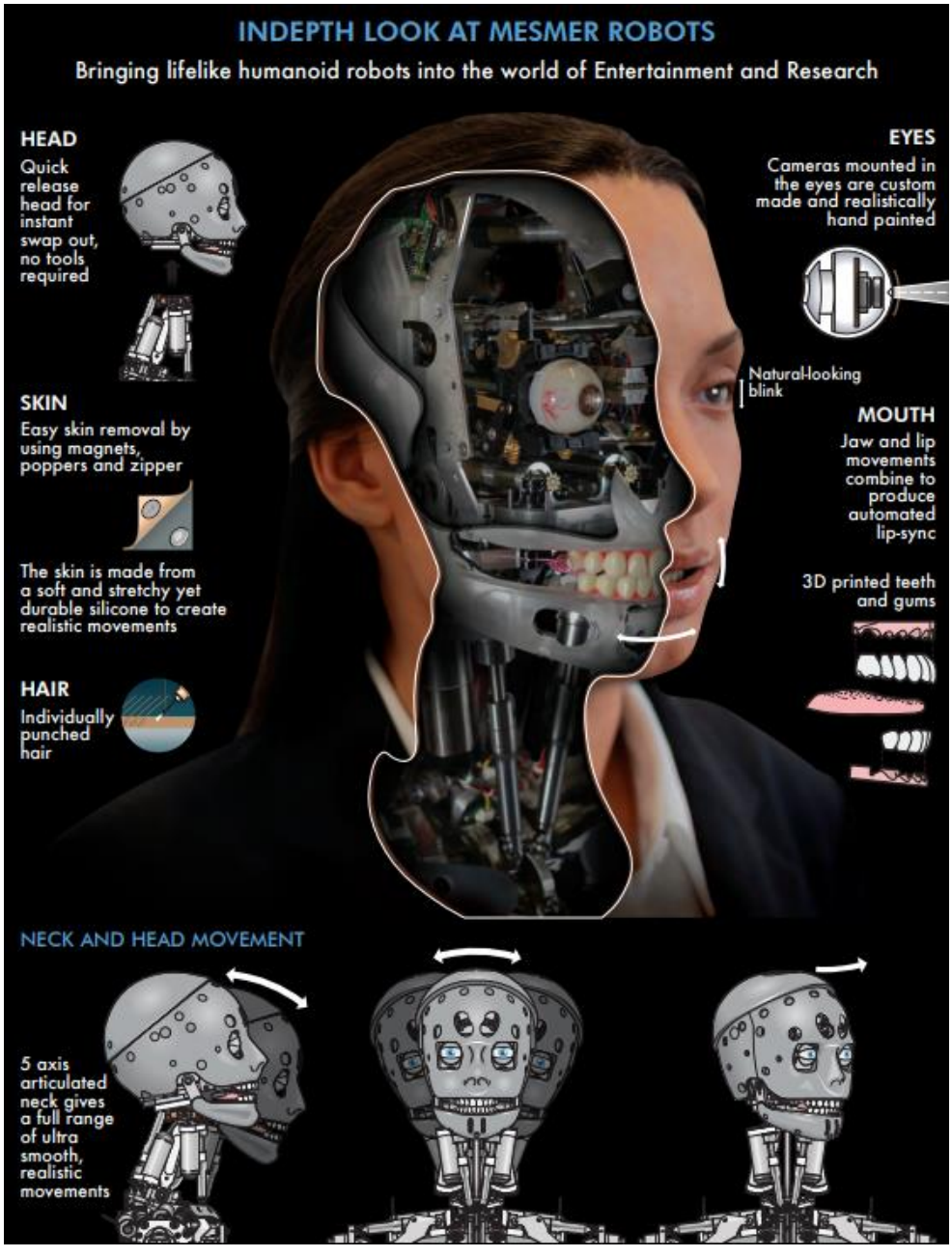




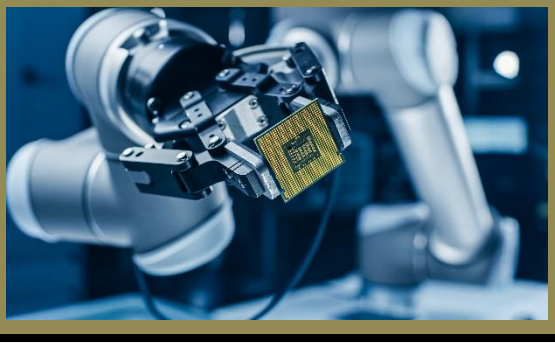
Hardware and software is modular so it is easy to upgrade. All modules run independently, allowing someone to purchase just an arm or head, instead of the full robot. Ameca hardware is built on Mesmer technology. All of their robots run on Tritium software framework which was developed to maximize the hardware performance. Images from the eye cameras are processed using TensorFlow.

Engineered Arts sees the main purpose of Ameca as a platform for developing AI, “We love designing and building robots, we’ll leave it to you and all the other amazing (naturally intelligent) brains out there to create the AI and machine leaning algorithms and see how far we can progress the technology together.”

At this point in development, Ameca can stand and move its arms but not walk. Ameca weighs 108lbs and is slightly over 6’ tall. Ameca is the culmination of 15 years of work, and one robot costs over $133,000. Engineered Arts designs and manufactures this and other entertainment robots for science centers, theme parks, and businesses.



Chips – Will Increased Demand & Financial Incentives Move Manufacturing Back to the US



The semiconductor chip shortage highlights a major infrastructure problem for the US – 75% of semiconductors are manufactured in Asia. Twenty-five years ago, the US produced 37% of the world's semiconductor manufacturing in the US but today only produces 12%. In our June 2021 enterprise storage newsletter, we highlighted the chip shortage and, in particular, the impact on the automotive industry. Even the most basic gas-powered car now has over 100 chips, while the latest electric vehicle may hold more than 1,000. The chip shortage has resulted in few available gaming consoles, cars with limited features, and a reduced production of iPhones.

The U.S. Senate passed the CHIPS Act, a $52B bill to address semiconductor shortages but today, over six months later, the House has yet to act on the legislation. Intel Corp, the biggest U.S. manufacturer of chips, has lobbied aggressively for funding. Other large players, like Qualcomm Inc, Advanced Micro Devices, and Nvidia Corp, focus their efforts on design and rely on partners for manufacturing. These design-focused companies have expressed concern that the legislation will only incentivize manufacturing, not the design side.

Deputy Secretary of Commerce Don Graves stressed there will be investment in both sides of the equation, "You can't divorce the design side, the innovation side, the research side, from the manufacturing side. Once the CHIPS Act gets passed, we'll be very focused on investing to make sure that part of the ecosystem is getting the investment and support that it needs."

Chip industry leaders say other countries are more aggressive in providing financial incentives for development. The Chinese government will spend $150B over the next decade to achieve chip manufacturing self-sufficiency. South Korea will invest $55B over the next three years to update and expand its manufacturing. The European Union has

committed $25-$35B and will introduce tax and other incentives in an effort to capture 20% of global chipmaking by 2030.

Our government has banned the sale of the most advanced computer chips to Chinese companies with close ties to the Chinese government. The Dutch firm, ASML, is the world's only maker of the $150-million extreme ultraviolet lithography machines needed to etch the most miniscule features into silicon chips. The US has blocked ASML from exporting to China as well.

As the complexity of chips has increased, the field of companies capable of manufacturing to meet these needs has narrowed to TSMC in Taiwan, Samsung in South Korea, and Intel in the US.

In turn, companies that make microcontrollers, less advanced technology, are making up for some of the demand. They are less expensive to make and meet the objectives of many products that do not need the advanced technologies. For example, Microchip Technology, GlobalFoundries, and Wolfspeed are increasing manufacturing. Texas Instruments is constructing a $3.1B chip plant and may invest in another. TSMC, the world's biggest chipmaker, is building a $12B manufacturing plant in Arizona. Intel will invest $20B in two chip manufacturing sites in Arizona but will also spend $95B to manufacture chips in Europe.

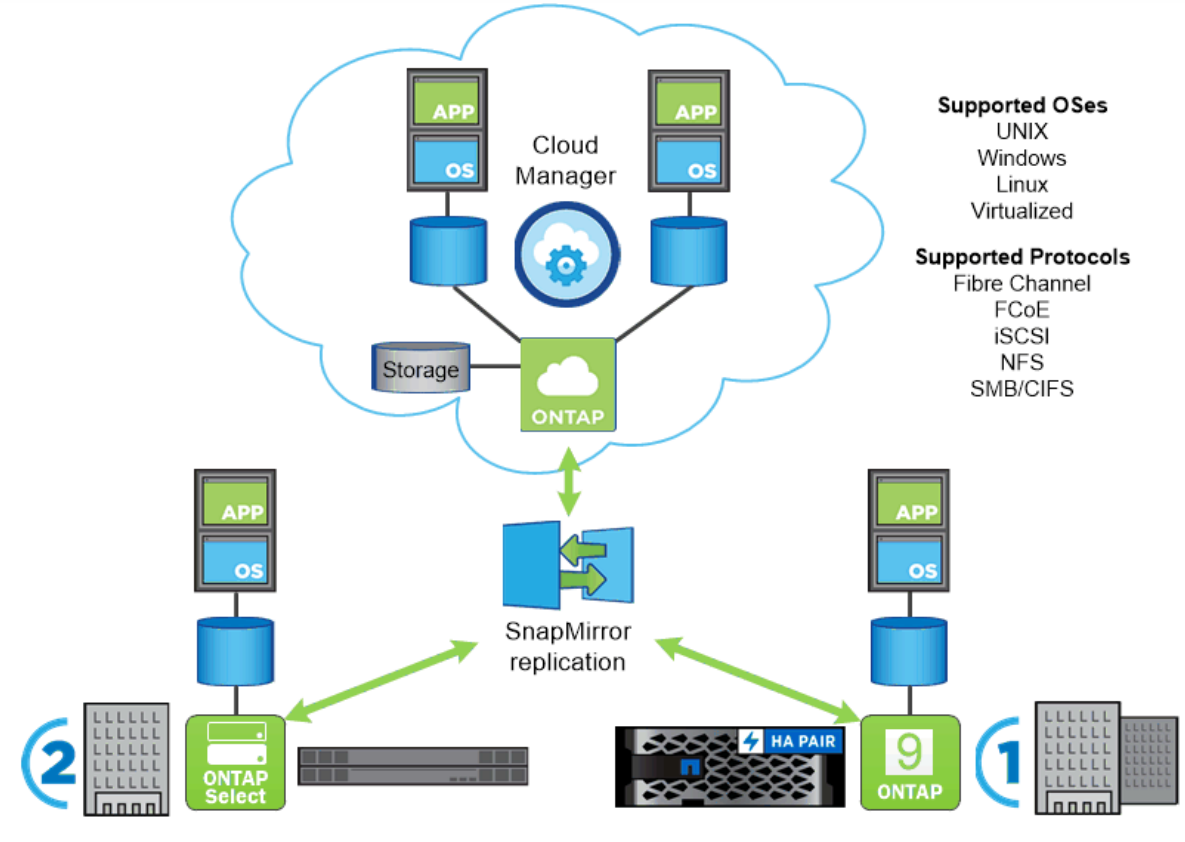
"We just want to make sure that more of the manufacturing facilities that are being built in the future, that more of them are built here," John Neuffer, President and CEO, Semiconductor Industry Association. "It's about making sure that, going forward, we have a better-balanced supply chain."

Neuffer says the U.S. is falling behind other countries in developing its semiconductor industry, in part because many other countries heavily subsidize their own operations. It can cost 30% to 40% more to build a semiconductor manufacturing facility in the U.S., he said. "We're not dealing with a level playing field here," Neuffer said. "Until that calculus is changed, our manufacturing capabilities will continue to erode."

Chipmakers say they are plan to manufacture where the numbers make the most sense and without direct financial incentives that is unlikely to be in the US. Micron plans to spend more than $150B on chip research and development but says that they will build new plants overseas unless there are financial incentives to build in the US. Sanjay Mehrotra, Micron CEO, says, "We will be engaging with the governments around the globe, including in the U.S., to address our needs for growing our supply in line with our demand expectations for the 2030 era."

CSfC Validates NetApp ONTAP Storage Platform for Security & Encryption

CSfC validates commercial IT products that have met the highest level of strict encryption standards and rigorous security requirements for both hardware and software solutions. Recently, the NSA has recommended that federal agencies hosting secret or top-secret data utilize storage solutions that have been CSfC validated. NetApp ONTAP, the world's leading storage operating system, is the first enterprise storage and data management platform to achieve Commercial Solutions for Classified (CSfC) validation for a data-at-rest (DAR) capability package. Organizations across the globe can benefit from NetApp ONTAP's robust security capabilities to protect customers' information on-premises and in remote locations from foreign actors, ransomware attacks, and other data loss threats. A cybersecurity program led by the U.S. National Security Agency (NSA), CSfC is a key component of the organization's commercial cybersecurity strategy.



Across the NetApp data fabric, you can count on a common set of features and fast, efficient replication across platforms. You can use the same interface and the same data management tools.

“This unique achievement is an example of innovation in commercial technology addressing critical national security issues,” said Admiral Michael S. Rogers USN (Ret.), former Director, National Security Agency (NSA) and Chief, Central Security Service (CSS).

With this CSfC validation, organizations can expect NetApp ONTAP to:

Allow agencies and enterprises to natively store top secret data, confidently and reliably

Save time by making it easier to buy pre-approved solutions, reducing audits and limiting the processes required to move or store data securely

Offer cost savings via reduced monitoring, lowering physical data transport and logistics costs, and providing the cost optimal solution for storing data

Protect data at both hardware and the software layer for enhanced cyber-resilient data-centric security - a key component to zero-trust security architectures

NetApp has been in the data protection business for nearly 30 years and is a leading data storage and management supplier to federal government, delivering storage innovation and data solutions, including data encryption, both in-flight and at rest, compliance, and protection. The latest release of ONTAP enables enterprises to use machine learning to protect against cyber-attacks with integrated preemptive detection and accelerated data recovery.

“Organizations today know that data security is paramount, whether they operate in the public or private sector,” said Michelle Rudnicki, Vice President, US Public Sector at NetApp. “With NetApp’s world-class data security capabilities and this CSfC validation, government organizations as well as companies in highly regulated industries like financial services, healthcare, energy or any organization with valuable intellectual property can be reassured that their most sensitive data is secure with NetApp ONTAP.”

Conferences

January 11-13	FloCon 2022, Virtual
January 23	Ransomware Resilience & Recovery, Virtual
January 26-28	SNIA 2021 Annual Members Symposium, Virtual
January 27- Feb 5	Cyber Threat Intelligence Summit & Training, Bethesda
February 2-4	IT DEFENSE 2022, Berlin
February 7-10	RSA Conference, San Francisco & Virtual
February 7-11	Cisco Live, Amsterdam
February 8-11	ITExpo, Fort Lauderdale
February 14-15	Gartner Security & Risk Management Summit, Dubai
February 17-18	Deep Learning Hybrid Summit, San Fran & Virtual
February 23	Attack Surface Management Summit, Virtual
Feb 28- March 3	MWC Barcelona
March 2-3	Big Data & AI World, London
March 2-3	Cloud Expo Europe, London
March 11-12	SXSW 2022, Austin
March 14-16	Gartner Identity & Access Management, Vegas
March 14-17	Gartner Data & Analytics Summit, Orlando
March 23	Supply Chain Security Summit, Virtual
March 23-24	Paubox SECURE 2022, Vegas
March 28-31	Data Center World, Austin
April 19-21	ODSC East, Boston
April 23-27	NAB, Vegas
April 26-28	Smart NICs Summit, San Jose
May 4-5	World Summit AI Americas, Montreal

May 9-11	Gartner Data & Analytics Summit, London
May 10-13	Black Hat Asia, Singapore
May 11-12	AI & Big Data Expo, Santa Clara
May 18	Threat Intelligence Summit, Virtual
May 18-19	Gartner Digital Workplace Summit, London
June 7-10	Women in Tech Global Conference 2022, TBA & Virtual
June 12-16	Cisco Live, Vegas
June 14-16	Digital Enterprise Show, Malaga
June 15	Cloud Security Summit, Virtual
June 21-22	Gartner Security & Risk Management Summit, Sydney
June 21-22	Gartner Digital Workplace Summit, San Diego
June 29- July1	Mobile World Congress, Shanghai
July 19-20	Cyber Solutions Summit & Expo, Virtual
August 6-11	Black Hat USA, Vegas
August 11-14	DEF CON 30, Vegas
September 13-14	CISO Forum, Virtual
September 19-20	Industry of Things World, Berlin
September 28-29	IoT World, Santa Clara
October 5-6	Evolve, Vegas
October 24-27	ICS Cybersecurity Conference, Hybrid/Virtual
November 16	Threat Hunting Summit, Virtual
November 18-19	Data Strategy & Insights (Forrester Research), Virtual
December 1-2	AI & Big Data Expo Global, London
December 6	Security Operations Summit, Virtual