



TRANSFORMATION

2018 ANNUAL REPORT

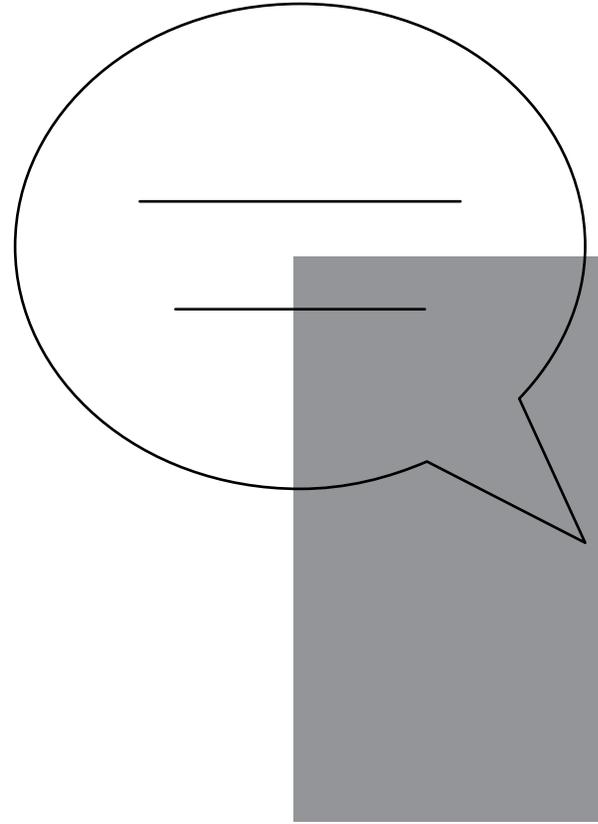
Empowering Trust™





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A message from Keith Williams



Change creates opportunities and challenges in equal measure. Since our founding 125 years ago, we have witnessed countless fundamental shifts in society with new technologies among the constant drivers of those transformations.

Today, digital innovations continually accelerate change in business and society. Always on and generating massive quantities of data, these innovations promise to satisfy many human needs and solve many global challenges. Likewise, they disrupt many established practices.

While we enjoy the benefits of a more connected world, we must also address the societal impacts and risks digital innovations introduce. For one, organizations now find themselves awash with data. Their systems are sometimes overwhelmed by a data deluge and struggle to meet the demand for data-driven insights that enable decision-making.

Fundamentally, we are optimists about the future. Ingenuity reconciles all challenges. Data science is an emerging foundational science every bit the peer of biology, chemistry and physics. With new machine learning technologies, data scientists can now detect patterns that drive insights.

We are tremendously excited about these new opportunities. As we look to our future as a digital knowledge organization, we plan to operate at the center of the world's digital ecosystems. Matching our stakeholders' internal digital data against external regulatory and consumer data to actively spot and help address issues is just one innovation we are bringing to life.

Our data science teams, using our own technology platform, can predict the unforeseen consequences of issues and detect hazardous scenarios that would otherwise be impossible to identify through human effort alone. In other words, we can help you find the signals in the noise before you feel the impacts.

In this age of digital transformation, we hold firm to our belief that trust remains an immutable requirement. Innovators need a trusted expert to help them find answers and resolve issues, so their innovations can find public acceptance. Meanwhile, consumers need a trusted source to look out for their concerns and provide them with peace of mind as they enjoy these new innovations. For many, we are the trusted resource upon which the world can rely.

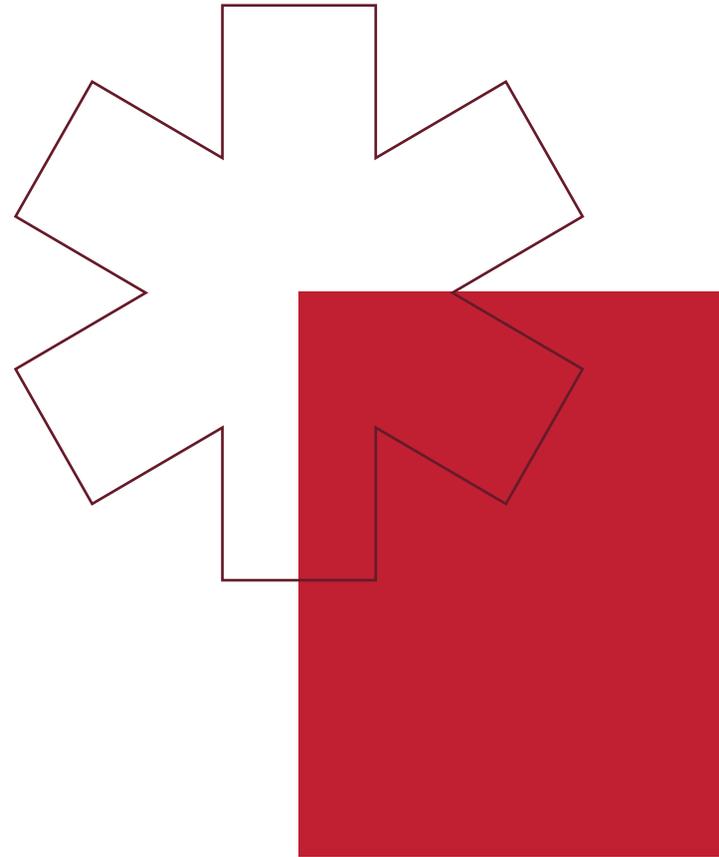
Through a blend of subject matter expertise and data science capabilities, we are ready to solve the toughest challenges of the next 125 years and open doors to new frontiers. While the means to achieve it might change, our mission remains the same: to make the world a safer place. That's what we have done since 1894. That's what we still do.

As we celebrate our 125th anniversary, I would like to express my gratitude and congratulate all our stakeholders and employees, past and present, for all that has been accomplished to advance society's well-being. I can't wait to see what we will do together next.



Keith Williams

President, Chief Executive Officer and Trustee



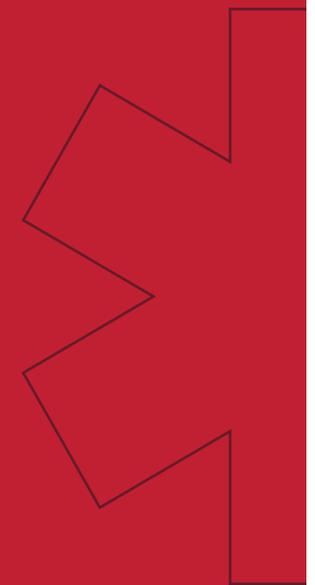
SAFETY

We advance
societal well-being
through new
safety capabilities



A high level of safety ranks at the top of any society's measure of well-being. And our stakeholders never rest in the pursuit of safer products, services and systems.

Innovation adds complexity to making the world a safer place. In the past year, we advanced our capabilities to help ensure that safety keeps pace with an evolving world.



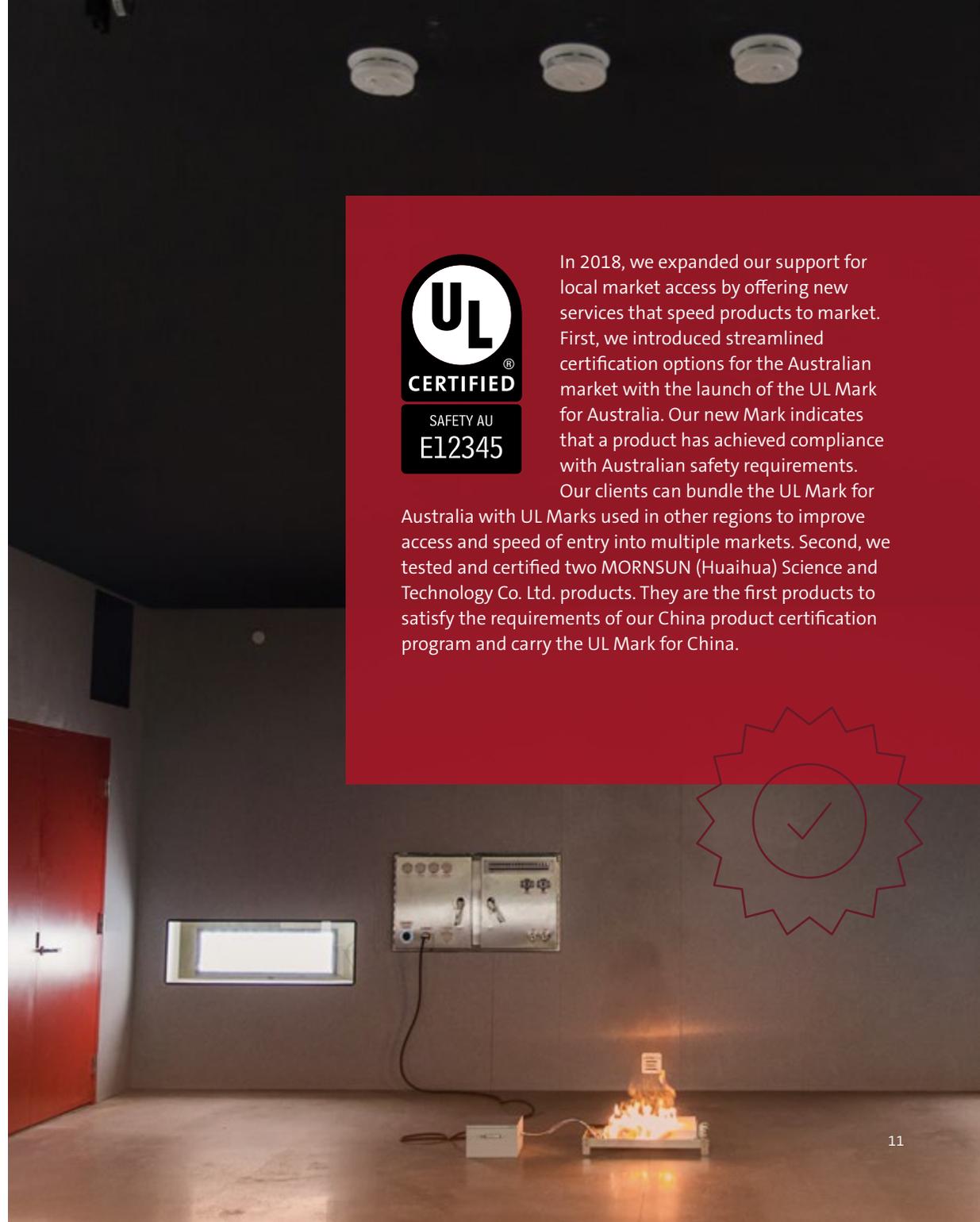


As with many consumer electronics products, low-quality or misused lithium-ion batteries within e-cigarettes can spark fires or explosions. In 2018, *UL 8139, the Standard for Safety of Electrical Systems of Electronic Cigarettes and Vaping Devices*, gained recognition as a national Standard in the United States and Canada. Joyetech's eGO AIO vapor pen became the first product we certified to UL 8139.



In 2018, we expanded our support for local market access by offering new services that speed products to market. First, we introduced streamlined certification options for the Australian market with the launch of the UL Mark for Australia. Our new Mark indicates that a product has achieved compliance with Australian safety requirements.

Our clients can bundle the UL Mark for Australia with UL Marks used in other regions to improve access and speed of entry into multiple markets. Second, we tested and certified two MORN SUN (Huaihua) Science and Technology Co. Ltd. products. They are the first products to satisfy the requirements of our China product certification program and carry the UL Mark for China.





To address recent concerns about building safety in the United Kingdom, we signed a cooperative agreement with the Fire Protection Association (FPA), the United Kingdom's national fire safety organization, to expand the capacity and the quality of larger-scale fire testing of the nation's cladding and building systems. The agreement includes our investment in the FPA's existing fire test and research facilities, enhancing their capabilities and broadening the scope of testing available to developers, landlords, specifiers and clients. We will offer larger-scale product and system testing and certification from the enhanced test laboratory.



Each year, the U.S. Consumer Product Safety Commission (CPSC) receives reports of incidents and deaths involving carbon monoxide (CO) poisoning from portable generators used indoors or in partially enclosed spaces. This past year, we published the second edition of *ANSI/UL 2201, the Standard for Carbon Monoxide (CO) Emission Rate of Portable Generators*, addressing performance requirements for portable generators to reduce CO emissions and to include technology that forces a product shutdown when it senses a buildup of CO. Additionally, we certified the first portable generators, marketed under the Ryobi brand model RY907022FI, to the requirements of ANSI/UL 2201.

780 **OUT OF** **965**
NONFIRE CO DEATHS

were caused by portable generators between 2005-2016



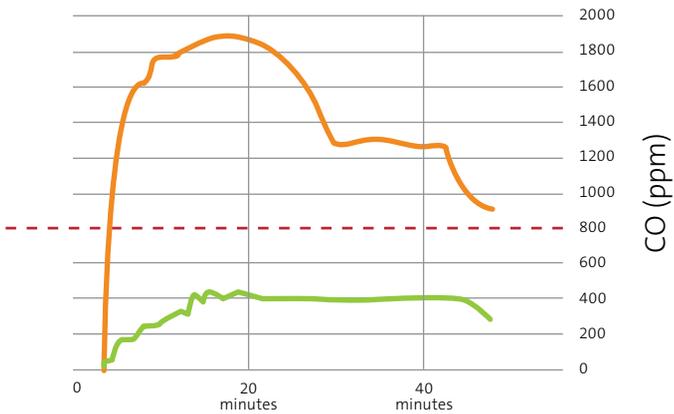
or an average of **71 deaths per year** from portable generators

Every year, people die in incidents related to portable generator use. Most of the incidents associated with portable generators reported to CPSC involve CO poisoning from generators

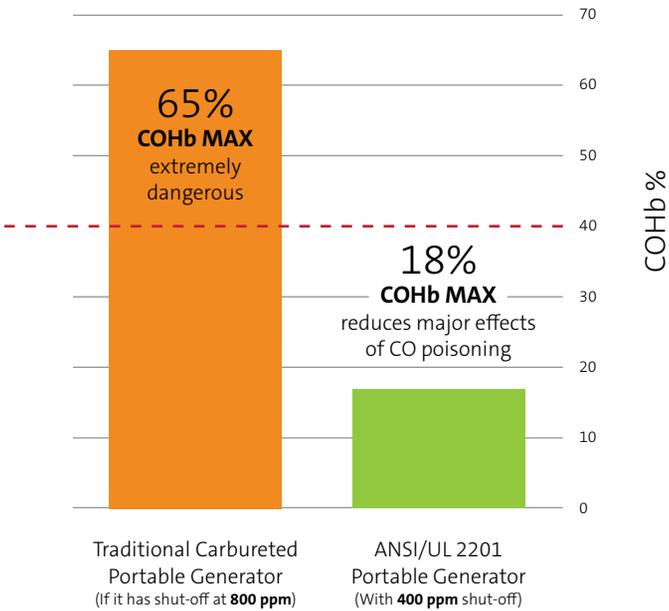


USED INDOORS or in **PARTIALLY ENCLOSED SPACES**

Significant reductions in CO emission



Shut-off technology for additional protection at 400 ppm



--- CPSC model threshold between expected survival and expected death – below this COHb % level models predict survival

Our research for the National Fire Protection Research Foundation shows smoke characteristics differ between fast-moving and smoldering polyurethane fires. Additional research finds fire dynamics in homes have changed over the last several decades due to more open layouts, newer synthetic materials and lighter construction materials, all of which contribute to fires burning hotter and faster. Considering our findings, we introduced enhanced requirements for *UL 217, the Standard of Smoke Alarms*, and *UL 268, the Standard for Safety of Smoke Detectors for Fire Alarm Systems*. To help clients test the quality and effectiveness of their smoke alarm and smoke detector products to the enhanced requirements outlined in UL 217 and 268, we also opened a new smoke detection test laboratory in Northbrook, Illinois. The new requirements have an effective date of 2020.

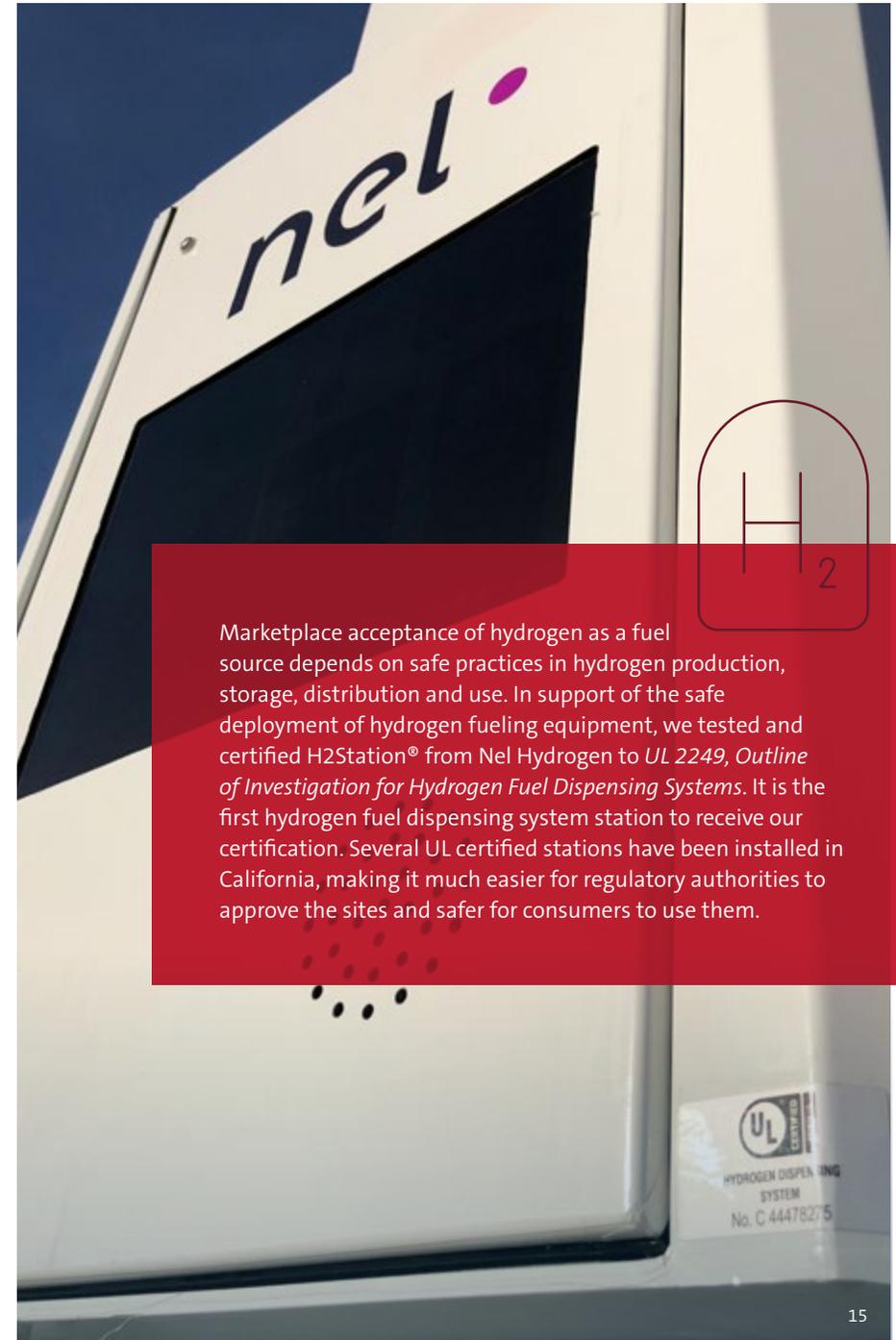




In 2018, we debuted the new UL Toy Safety Certification Mark for the European market. The Mark, based on EN 62115 and EN 71 standards, demonstrates product safety and quality through the testing of mechanical use and abuse, chemical safety and flammability. In addition, this offering includes supply chain risk management through detailed factory quality system audits, product inspections and testing at points along the supply chain.



Additive manufacturing has experienced substantial growth in recent years, particularly with metals and alloys that can be printed from powder. However, safety risks related to the material, equipment and operation of additive manufacturing facilities concern many industrial businesses. In 2018, we published *UL 3400, Outline of Investigation for Additive Manufacturing Facility Safety Management*, the industry's first set of guidelines focused on additive manufacturing facility safety. Lockheed Martin's Additive Design and Manufacturing Center in Sunnyvale, California, received our first certification to UL 3400.



Marketplace acceptance of hydrogen as a fuel source depends on safe practices in hydrogen production, storage, distribution and use. In support of the safe deployment of hydrogen fueling equipment, we tested and certified H2Station® from Nel Hydrogen to *UL 2249, Outline of Investigation for Hydrogen Fuel Dispensing Systems*. It is the first hydrogen fuel dispensing system station to receive our certification. Several UL certified stations have been installed in California, making it much easier for regulatory authorities to approve the sites and safer for consumers to use them.



Separator materials in lithium-ion battery cells play an important role in reducing battery cell-related safety risks. In 2018, we unveiled a battery separator recognition program to identify and characterize the properties of separator materials, enabling material manufacturers to accurately represent the critical safety qualities and limitations of their products. Materials evaluated under this program are published in our publicly available UL Product iQ™ database at [productiq.UL.com](https://productiq.ul.com).



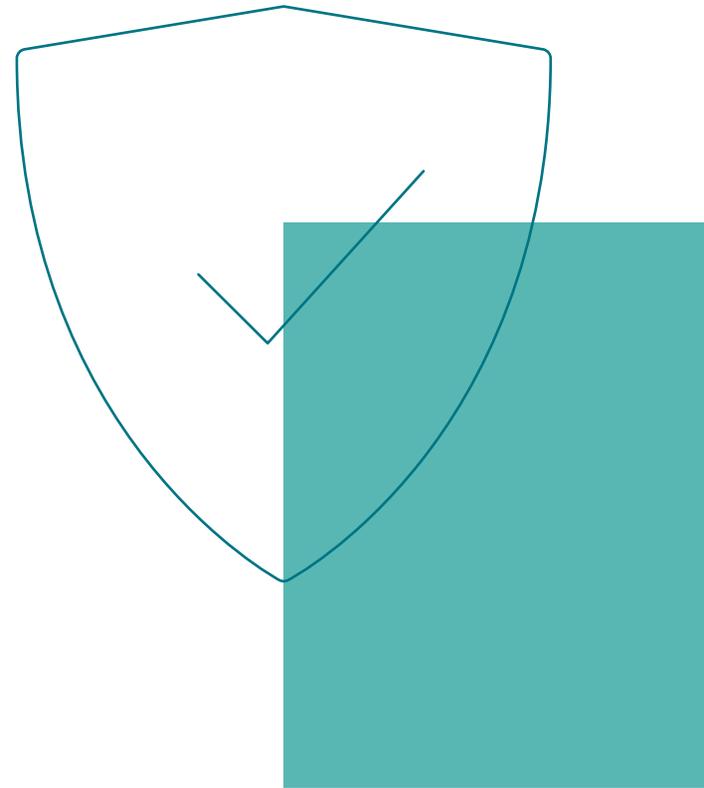
In 2018, we continued our investment in lithium-ion battery safety research. Our research team completed studies of thermal runaway propagation testing of lithium-ion cells for safe transportation, overdischarge of lithium-ion cells, and the aging and safety of lithium-ion cells and modules. We performed two of the studies in collaboration with Purdue University researchers.





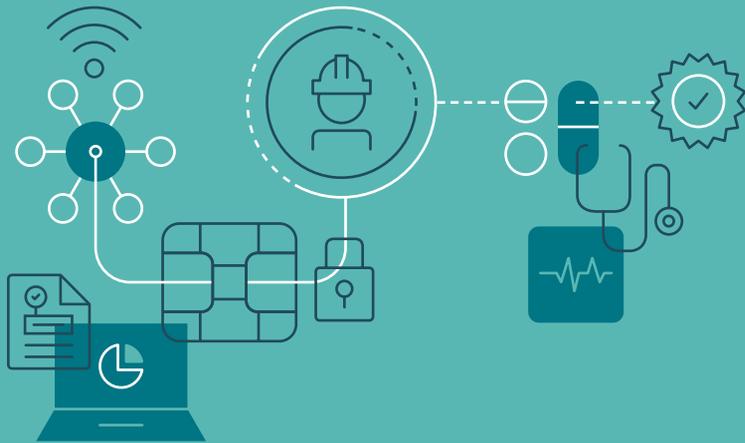
In 2018, we launched new training programs for firefighters. The UL Fire Safety Research Institute (FSRI) partnered with the Illinois Fire Service Institute (IFSI), the National Institute for Occupational Safety and Health (NIOSH) and Skidmore College to release online training to assess the cardiovascular and chemical risks faced by firefighters. Based on a large-scale comprehensive research study, this training helps firefighters understand the health issues associated with fire ground activities, increasing their effectiveness while decreasing their risk of hazardous exposures. In addition, FSRI delivered online training on new fire attack methodologies based on the results and analysis of full-scale residential fire experiments.

In the coming year, we will advance our capabilities to keep pace with rapid societal changes driven by digital transformation and globalization.



SECURITY

We help transform
workplace and
home security



The pioneering work of our clients in Internet of Things (IoT) device technologies has transformed our workplaces and homes, advancing the well-being of many. Connected devices deliver improvements in efficiency, productivity, speed, accuracy, communications and information sharing. They help shape the experiences of employees in the workplace and residents in their homes.

We help our stakeholders get these always-on connected devices into workplaces and homes around the world. To do so successfully, we assist them in resolving related security concerns. Our solutions and capabilities empower stakeholders to deliver on the promise of these technologies to advance society's well-being while protecting their constituents.

Amazon requires developers of Alexa-enabled devices to meet its quality assurance requirements through its Alexa Voice Service (AVS) program. To confirm that a baseline of security measures has been embedded into product development, developers must use approved AVS security labs. In 2018, Amazon designated our laboratories as authorized to perform security assessments on these devices, enabling us to help clients understand the requirements and formulate processes and procedures to help meet them.



In October 2018, we were recognized as a CTIA Authorized Testing Laboratory (CATL) for cybersecurity to help advance security within the IoT ecosystem. With this new designation, we now test connected devices for CTIA's IoT cybersecurity certification program, which sets foundational security standards for LTE- and Wi-Fi-enabled IoT devices. While the CTIA program offers tiered security testing to meet IoT device manufacturers' evolving security needs, we are one of only a few laboratories authorized by the CTIA as part of its cybersecurity certification pilot program.



As products become smarter and more interconnected, their vulnerability to cyberthreats increases and more sophisticated strategies are needed to manage these risks. Faced with challenging cybersecurity needs, power management company Eaton turned to us for help in bringing its Power Xpert Dashboard to market. The Power Xpert Dashboard earned our first Cybersecurity Assurance Program (CAP) certification to *UL 2900-2-2, Outline of Investigation for Software Cybersecurity for Network-Connectable Products, Part 2-2: Particular Requirements for Industrial Control Systems*.



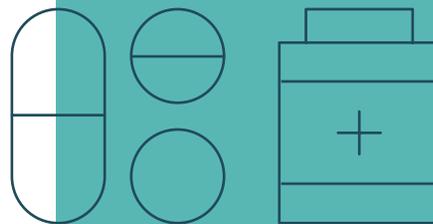
Patients and health care providers using life-saving medical devices need confidence from manufacturers that their products are cybersecurity. ICU Medical,

a San Clemente, California-based company specializing in intravenous (IV) therapy products and services, earned our CAP certification to *UL 2900-2-1, the Standard for Software Cybersecurity for Network-Connectable Products, Part 2-1: Particular Requirements for Network Connectable Components of Healthcare and Wellness Systems*, for its Plum 360™ drug infusion system. The completed certification of the Plum 360™ makes it the first UL CAP certified medical device to enter the U.S. market.

As IoT technologies increasingly move into health care, assessing interconnected systems and their software vulnerabilities and weaknesses before a problem occurs is critical. Health care regulators, such as the U.S. Food and Drug Administration (FDA), work to keep pace with these fast-evolving technologies. This past year, the FDA officially recognized *UL 2900-2-1, the Standard for Software Cybersecurity for Network-Connectable Products, Part 2-1: Particular Requirements for Network Connectable Components of Healthcare and Wellness Systems*, and published it in the U.S. Federal Register.



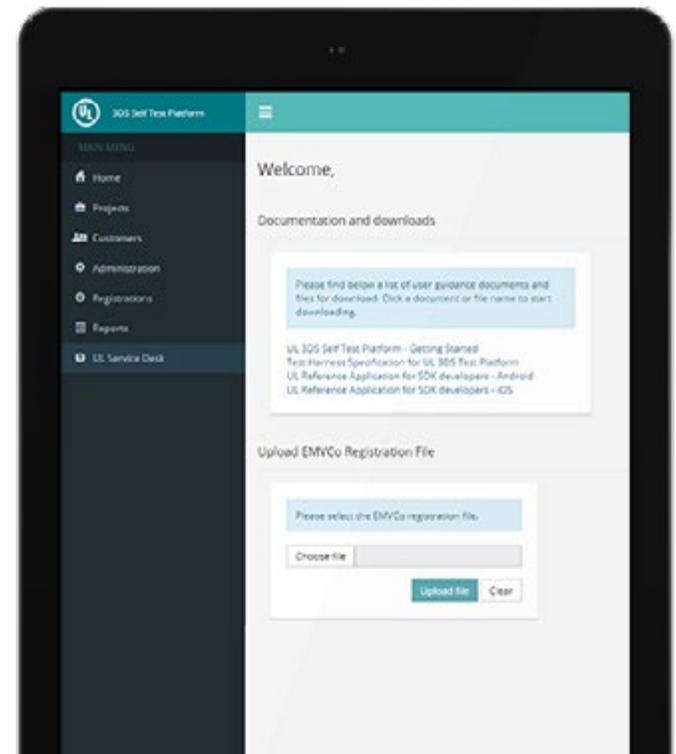
Health information technology (HIT) products play an essential role in effective health care delivery today. HIT software product testing and certification help to secure patient data and verify correct software functioning. We offer certification for multiple HIT schemes, including the Office of the National Coordinator for Health Information Technology Health IT Certification Program and the Drug Enforcement Administration's Electronic Prescriptions for Controlled Substances (EPCS) Certification Program. Notably, we are the first private IT security laboratory accredited by the U.S. National Institute of Standards and Technology.



In October 2018, our Basingstoke, U.K., facility became the first laboratory to be approved by the PCI Security Standards Council to perform security evaluations in accordance with the PCI 3-D Secure Software Development Kit (3DS SDK) Security Standard. This standard sets requirements for securing EMV® 3-D Secure infrastructure supporting 3-D Secure transactions.



In 2018, we launched the UL 3DS Self-Test Platform to accelerate EMV® 3-D Secure adoption. This web-based platform provides an environment where product providers, payment service providers, merchants and issuers can perform tests while they build and enhance their 3-D Secure components. The platform provides a single EMV® 3-D Secure implementation and certification solution for those who wish to implement EMV® 3-D Secure in a more automated, user-friendly and scalable way. Moreover, stakeholders can request approval services from our 3-D Secure testing laboratory through the platform, cutting down their time to market and reducing process complexity.





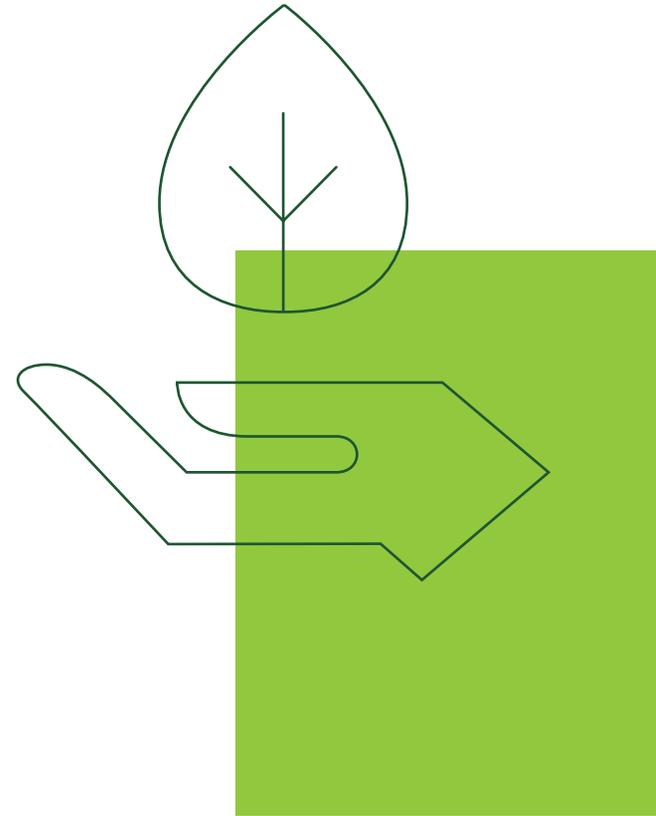
To protect the financial industry against cyberattacks, SWIFT, a global, member-owned cooperative and provider of secure financial messaging services, established the SWIFT Customer Security Programme along with a customer security control framework and related tools. All SWIFT customers must achieve compliance with the organization's mandatory security controls. In 2018, we achieved recognition as an approved SWIFT cybersecurity service provider to help financial institutions address their cybersecurity challenges and comply with the mandatory controls.



Finally, Emergo by UL expanded into digital health advisory services for medical device cybersecurity compliance in the United States and other markets worldwide. Emergo by UL can now provide cybersecurity advisory services at every stage of the compliance process, from device testing to regulatory documentation preparation.



We will accelerate our progress in the development of solutions and capabilities to help our stakeholders bring secure connected devices to global markets.



SUSTAINABILITY

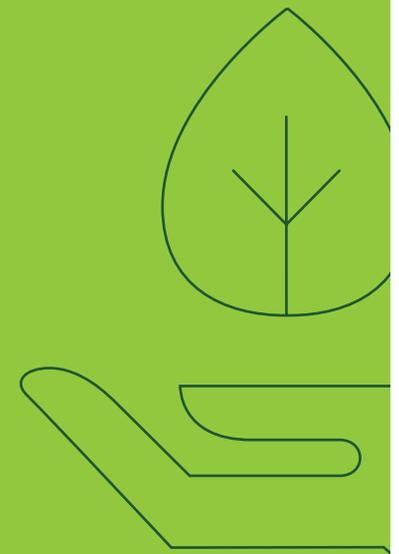
We help build
a sustainable
future

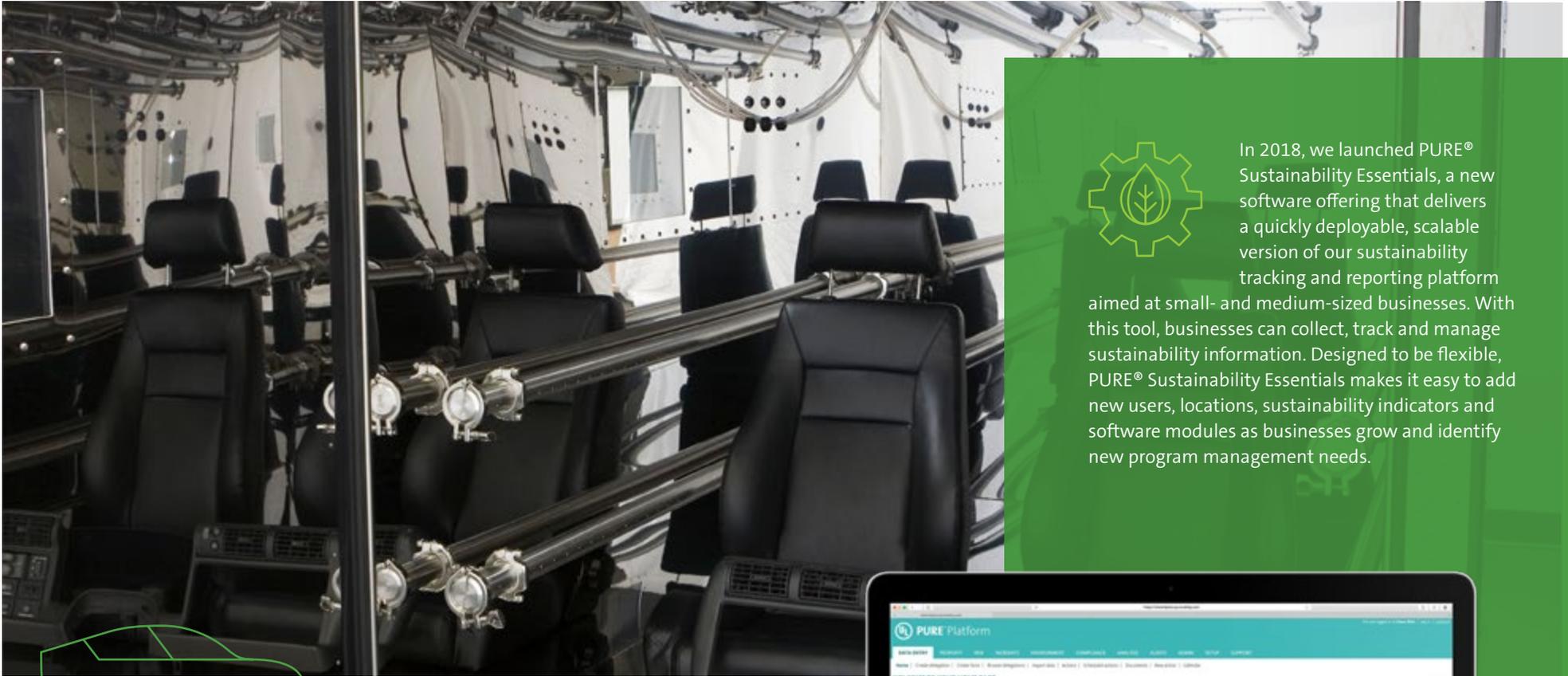




To satisfy consumer demands, businesses today must show they continue to advance societal well-being. As a result, many businesses have transformed their operations and offerings to be more sustainable.

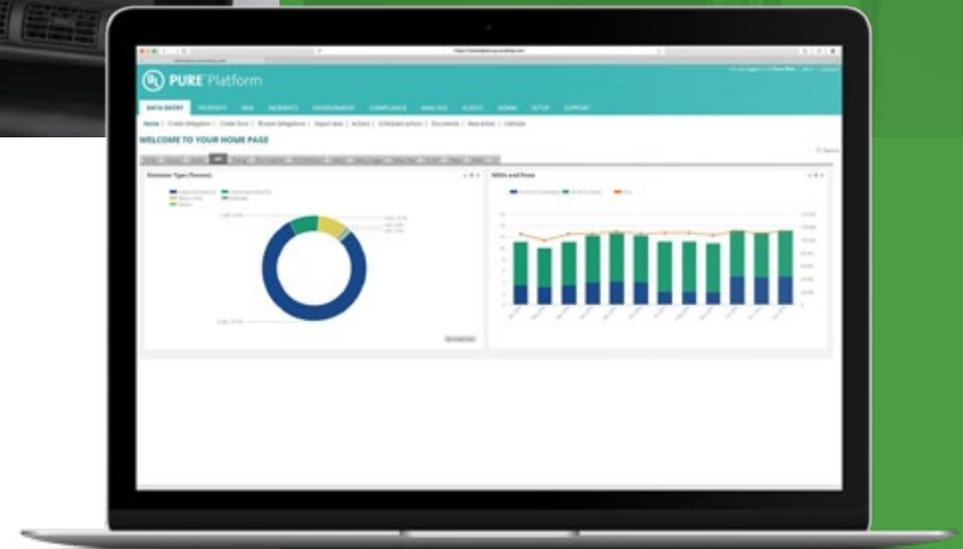
From the development of renewable energies such as solar and wind power to the reduction of waste and emissions during manufacturing processes, our stakeholders look to us to help them improve societal well-being through sustainable solutions.





In 2018, we launched PURE[®] Sustainability Essentials, a new software offering that delivers a quickly deployable, scalable version of our sustainability tracking and reporting platform aimed at small- and medium-sized businesses. With this tool, businesses can collect, track and manage sustainability information. Designed to be flexible, PURE[®] Sustainability Essentials makes it easy to add new users, locations, sustainability indicators and software modules as businesses grow and identify new program management needs.

In 2018, we expanded our automotive test portfolio in our performance materials labs in Krefeld, Germany, and Melville, New York. The new testing methods for the analysis of potentially harmful emissions from polymeric component parts include odor characteristics of trim materials, organic emissions from interior parts and nonmetallic materials, and fogging. With highly specialized testing laboratories and comprehensive material databases, we support automotive clients and suppliers from the product concept stage to early product development to the final parts production approval process.





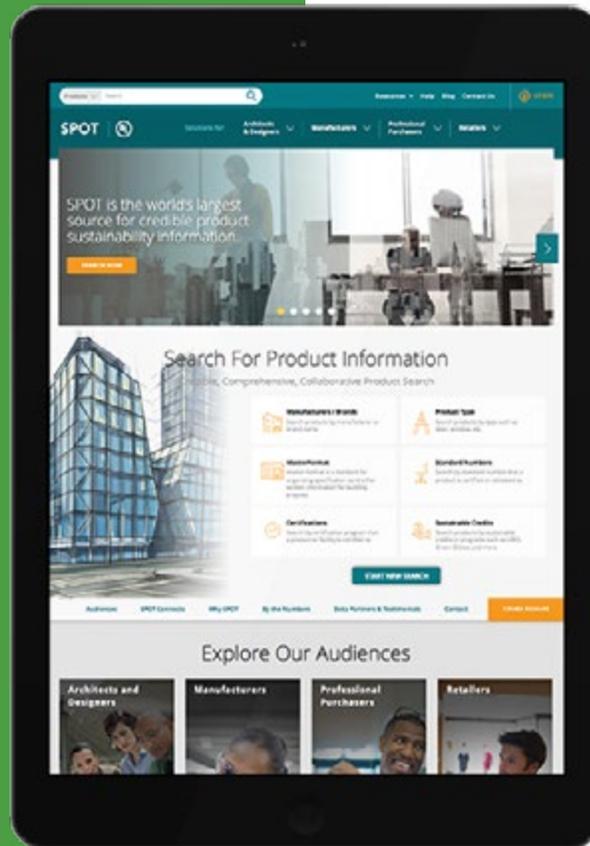
We also relaunched our **UL SPOT®** Product Database used by the architecture and design community to research sustainable product information. As part of the relaunch, we expanded our database by including:

- U.S. Environmental Protection Agency's ENERGY STAR® and Safer Choice certified products programs
- China Building Material Test & Certification Group Co. Ltd. certified products
- Taiwan Architecture and Building Center certified products
- Sustainable Forestry Initiative certifications

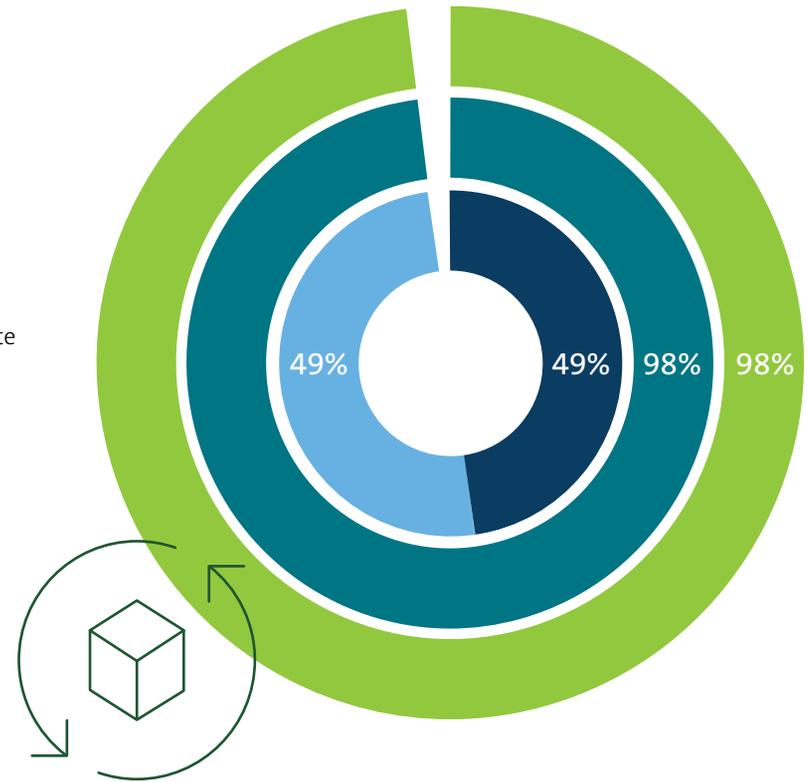
We have signed other agreements to include additional information on:

- Green Electronics Council EPEAT Registered Products
- Carpet and Rug Institute's Green Label Plus™ certified carpet, cushion and adhesive products
- Environmental Product Declarations (EPDs) certified by EPD Italy

SPOT® now includes more than
100,000
PRODUCT FAMILIES



- 49% Product**
 - Technical materials
 - Biological materials
- 98% Facility**
 - Technical materials
 - Biological materials
- 98% Company**
 - Product portfolio
 - Corporate diversion rate



Supply chain constraints, restrictions on recycling imports and resource scarcity encourage businesses to implement circular economy initiatives. We now offer a way to track and measure those initiatives through the launch of *UL 3600, Outline of Investigation for Measuring and Reporting Circular Economy Aspects of Products, Sites and Organization*, the first Standard to evaluate the circularity of a company's material flows. Companies that pursue our certification to UL 3600 will have their material flows evaluated across product, facility and enterprise dimensions, and the results will be shared in a UL Circularity Facts™ report. The report provides a visual representation of a company's circularity efforts.



As 3D printers proliferate, concerns grow about the possible impact of

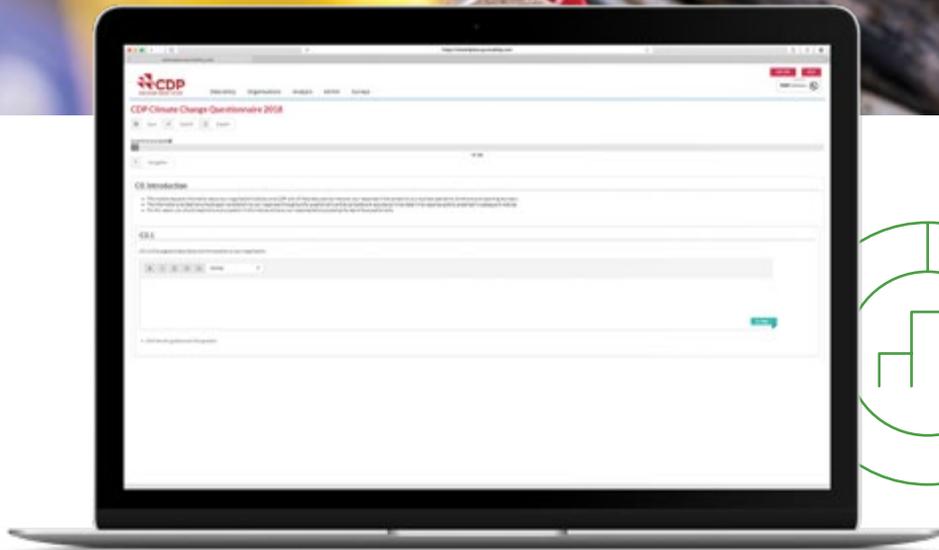
their emissions on human health. Teaming with the Georgia Institute of Technology, we completed a body of research that explored the impact of 3D printing on indoor air quality. Our researchers found many desktop 3D printers generate ultrafine particles (UFPs) while in operation, and those UFPs may be inhaled and pose a health concern. The research also revealed 3D printers in operation release more than 200 different volatile organic compounds (VOCs), many of which are known or suspected irritants and carcinogens.

Following this research, we developed the first-of-its-kind *ANSI/UL 2904, the Standard Method for Testing and Assessing Particle and Chemical Emissions from 3D Printers*, for evaluating 3D printer emission. We also created a UL GREENGUARD® Certification for the evaluation of 3D printers to ANSI/UL 2904. We evaluate chemical and particulate emissions using dynamic environmental chambers and laboratory analytical methods. Products that meet the test criteria receive the UL GREENGUARD® Certification Mark and appear in our UL SPOT® database used to source information on sustainable products.





We introduced a new certification service for restricted substances used in wire and cable products. The European Union, under the Restriction of Hazardous Substances Directive 2002/95/EC (RoHS), limits the use of six hazardous materials in electronic and electrical equipment manufacturing. Our new offerings include the evaluation of individual components in cable products against the RoHS Directive requirements and the use of “-RoHS” on the surface printing of the wire and cable when we determine that cable components comply with the directive.



CDP, a not-for-profit organization that manages a global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts, selected us to build an online response system to collect self-reported environmental data. Thousands of CDP clients around the world can use our system for easier reporting. Moreover, our clients using the PURE® Sustainability software platform can integrate the CDP questionnaire directly into their corporate reporting systems.



In 2016, our cooperation with the Vietnamese government began to assist in the development of Vietnamese fire code, expand understanding of high-rise building protection, and develop and present fire inspection regulations to Vietnamese fire service officers. In 2018, we signed a memorandum of understanding with GreenViet Co. Ltd. focusing on training on international codes and standards for GreenViet inspectors in conjunction with our building inspection program. This program provides a comprehensive assessment and gap analysis of fire prevention and protection, and life safety and security systems in commercial, institutional and industrial buildings.

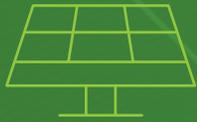
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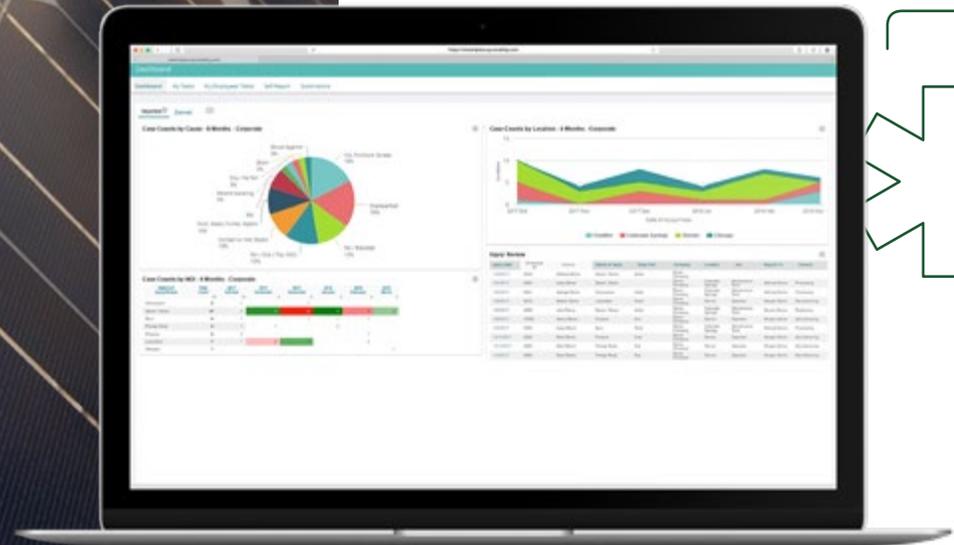
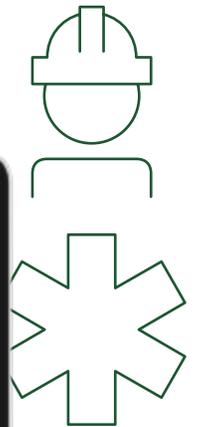
Because electric vehicle (EV) batteries retain storage capacity after the end of their useful life, a reclaimed second life as stationary power sources offers a promising way to support the need for additional power production from renewable sources and shrink landfill waste. While refurbishing products is not a new concept, each battery needs to be evaluated individually for safety before being successfully redeployed as a stationary power source. To help meet this challenge, we published the binational U.S. and Canada Standard *ANSI/CAN/UL 1974, the Standard for Evaluation for Repurposing Batteries*, to provide users with confidence that an EV battery will function effectively and safely as an energy-storage device in a residence, commercial facility or microgrid.





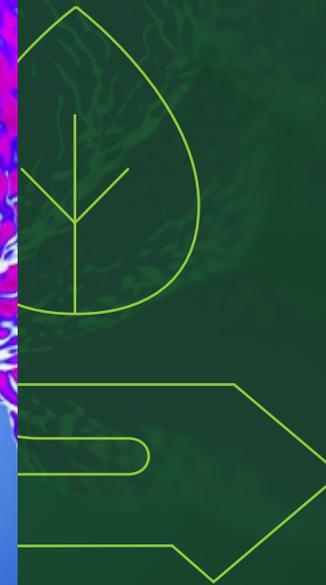
The harmonization of standards enables easier access to global markets for our clients. This past year, we published *ANSI/UL 61730-1, Photovoltaic (PV) Module Safety Qualification - Part 1: Requirements for Construction*, and *ANSI/UL 61730-2, Photovoltaic (PV) Module Safety Qualification - Part 2: Requirements for Testing*. This Standard reflects innovative approaches and field insights gained across a variety of technologies, materials, installation types and climates. By testing once and leveraging our “record of test” for access to other markets, clients can make the most of their compliance investment for global access.

We unveiled a new software module to support users of our PURE® Platform, a full suite of environmental, health, safety, sustainability and supply chain software solutions. Named PURE® Safety Incidents, this new software module lets users capture data that can help uncover the root causes of safety concerns before they become reportable incidents. This module uses a streamlined, quickly deployable and user-configurable version of our existing incidents software.

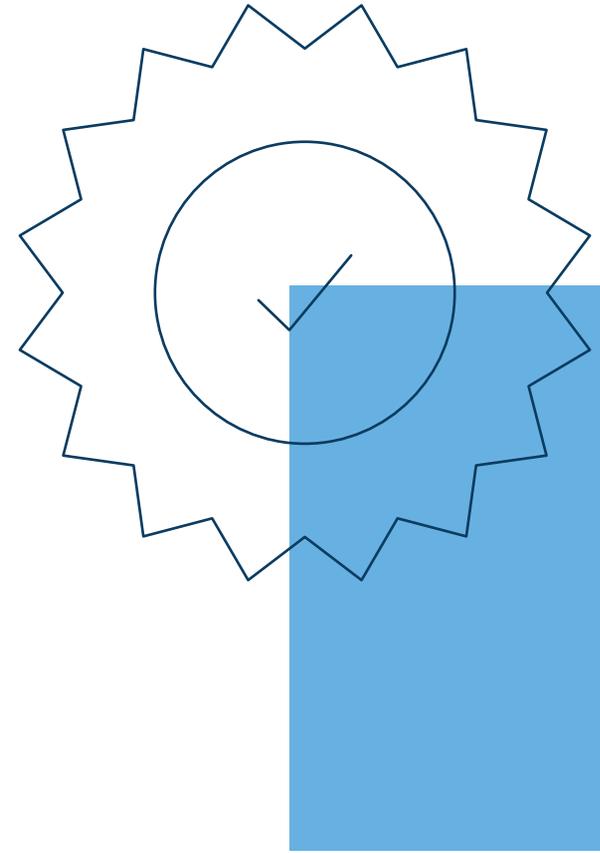




Since 2000, the number of U.S. cases of Legionnaires' disease has quadrupled due to inhaling bacteria found in microscopic water droplets. In 2018, we launched a comprehensive program to help building owners with cooling towers meet new requirements from the American Society of Heating, Refrigeration and Air Conditioning Engineers through its ANSI/ASHRAE Standard 188-2015, Legionellosis: Risk Management for Building Water Systems. We conduct one on-site and three off-site audits each year to confirm that a building has met the requirements, resulting in a compliance report with any recommendations for improvement.

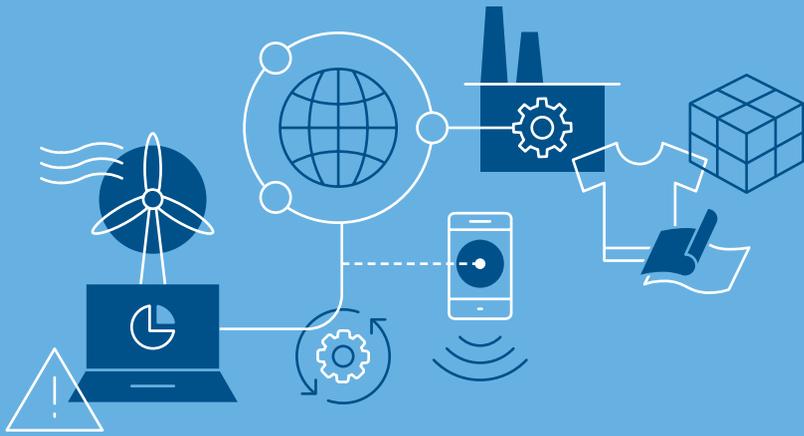


In the coming year, we will continue to drive toward a more sustainable future by building new capabilities that support our clients' determinations to advance society's well-being.



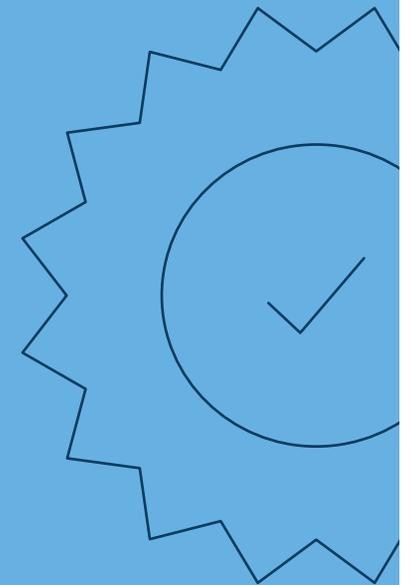
QUALITY

We transform
product
and process
quality



In a highly competitive, fast-changing global marketplace full of choices, buyers expect businesses to deliver products, services and systems that advance their well-being. Quality products and services allow our stakeholders to deliver on this growing expectation and differentiate in today's crowded marketplace.

To support our stakeholders as they continually innovate and transform their products, services and systems, we continued to build out our expertise in quality assessment solutions in 2018.



To help enable greater access to knowledge and best practices for medical device manufacturers and developers, Emergo by UL launched a new intuitive digital platform of self-service software and educational tools called the Regulatory Affairs Management Suite (RAMS). The first offering under this new platform is RAMS-TRACK, a self-service solution that helps clients track regulatory registrations and manage important medical device registration deadlines by providing notifications for upcoming expirations.



Companies that want to establish a U.S. presence often face complex challenges, including myriad regulatory, compliance and certification requirements. For example, the U.S. Occupational Safety and Health Administration (OSHA) mandates that all electrical equipment in factories be certified or subjected to a complete and thorough safety evaluation prior to usage. Many other federal, state and municipal safety regulations also require buildings, factory equipment, and gas-fired and electrical products to be certified or evaluated. In 2018, we launched our factory relocation service to help global manufacturers navigate complicated regulatory approval processes when establishing a U.S. manufacturing presence.



In 2018, we launched a comprehensive approach to enhancing risk mitigation and improving processes to help clients avoid product issues and fine-tune their management system performance. As part of the approach, our process and systems solutions provide an independent, holistic analysis of how a company's processes, practices and policies support its mission and vision. Less-frequent but more in-depth audits, risk assessments and monitoring reports enable our clients to gain market access, demonstrate compliance, and mitigate risk.

In 2017, we joined the Sustainable Apparel Coalition (SAC), a membership-based organization of global brands, retailers and manufacturers, governments, nonprofit environmental organizations and academic institutions committed to improving supply chain sustainability in the apparel, footwear and textile industries. SAC's Higg Index, a suite of tools that enables brands, retailers and facilities of all sizes to accurately measure and score a company or product's sustainability performance, helps drive progress toward more sustainable apparel. This past year, we launched new capabilities to assist SAC with verifications of both factories and manufactured products based on the Higg Index.



While today's existing standards cover traditional manufacturing techniques and materials, they do not address risks introduced by advanced technologies, such as additive manufacturing. Production variability can introduce an uncertainty in parts quality and, subsequently, an increased need for more process control and reliability. In 2018, we launched services to help clients control the manufacturability, quality and performance of materials used in additive manufacturing processes. Our new services provide capabilities to help clients characterize a specific material or process, verify materials and processes as part of a broader additive manufacturing part certification, and better understand and meet related global regulations and requirements.





Successful deployment of large-scale wind power is essential to reducing climate change impacts. Teaming with West Texas A&M University (WTAMU), we tested and commissioned Goldwind Americas' 3.4 megawatt smart wind turbine prototype, the tallest wind turbine in the United States and the first Goldwind turbine installed outside of China. The wind turbine is at the UL Advanced Wind Turbine Test Facility in Canyon, Texas, nestled in the middle of the Great Plains Wind Corridor, a premier environment for wind testing and research due to the area's year-round favorable wind conditions. The facility allows faculty and students to gain knowledge about the latest in wind energy technology and manufacturers to understand real-world performance of their turbines.

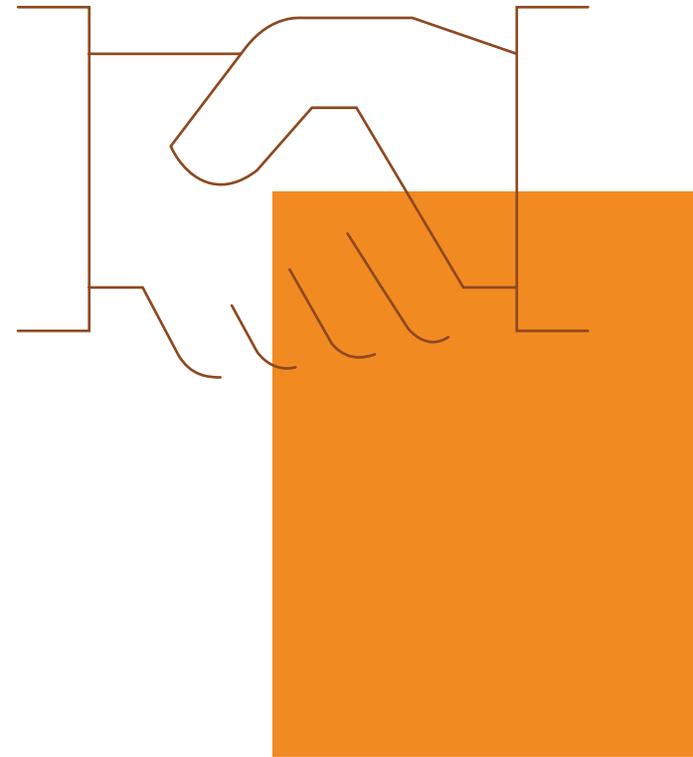


While the latest advances in wireless charging devices lead to new products that deliver a host of benefits to consumers, those products often come with additional testing requirements for the manufacturer. We invested in expanding certification services for wireless charging device manufacturers seeking use of the Qi logo, the international interoperability standard developed by the Wireless Power Consortium (WPC) for wireless power transmission using electromagnetic induction systems. To date, we are the only company in Japan accredited by WPC to offer full Qi certification for wireless charging devices.

In 2018, Qualcomm® selected us to be the sole source testing and certification laboratory of Qualcomm® Quick Charge™ technologies. Using this technology, a device can be charged from zero to 50 percent in 15 minutes using plug-and-play USB Type-C connectors. Our laboratories in Dongguan, China, and Chinese Taipei now test the Quick Charge 2.0, 3.0 and 4.0 models.

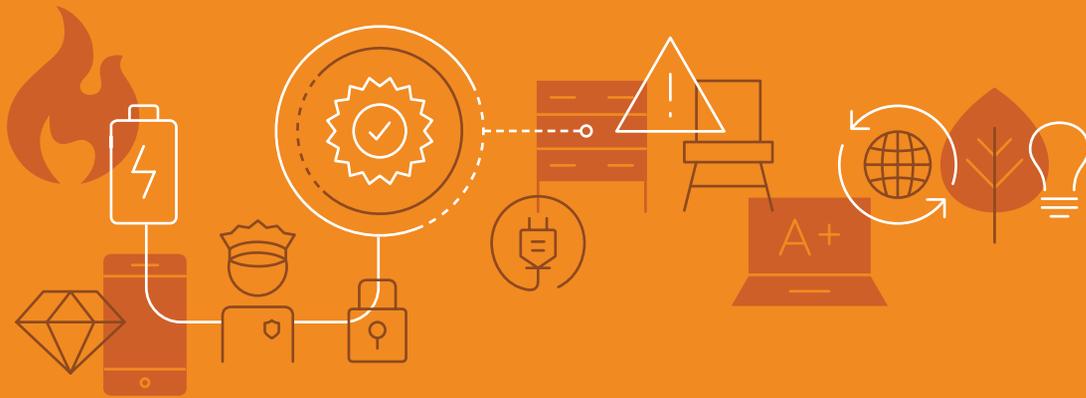


Quality will always be an integral driver of well-being and business success in the marketplace, and we will introduce additional tools in the future to help ensure our stakeholders deliver quality products and services to their customers around the globe.



TRUST

We empower
trust in a time of
transformation



Trust is a necessary ingredient for business success in today's world. Rapid transformation, driven by digital innovations, creates challenges to building and sustaining consumer trust.

We help our stakeholders build more confidence in their brands through new Marketing Claim Verification, performance certifications, supply chain traceability and investments in protecting the UL Mark.





In 2018, we contributed to the advancement of safety in global markets by collaborating with key stakeholders

We established a joint standards working group in Beijing, with the goal of harmonizing hoverboard safety requirements in the United States and China. This working group represents the first official standards cooperation between a UL Standards Technical Panel and a Chinese national committee.

Through a memorandum of understanding signed by UL President and CEO Keith Williams, we also partnered with the Thai Industrial Standards Institute (TISI) to share safety information and collaborate on the implementation of safety standards within Thailand. Our work with TISI focuses on advancing fire protection and safety in batteries, and wire and cable products. As part of our collaboration, we also teamed with TISI to deliver presentations during the 2018 UL Safety Index™ Summit in Bangkok to raise awareness of the importance of safety standards.



This past year, we published *UL 293, Outline of Investigation for Performance of Access Control System Units Intended for Use in the UK*, a first-of-its-kind security standard for strengthening building access control and improving the safety of residential premises in the United Kingdom. Developed in close collaboration with U.K. police crime prevention initiative Secured by Design (SBD), UL 293 is referenced in “SBD Homes Guide 2016,” a key reference source for new residential homebuilders.

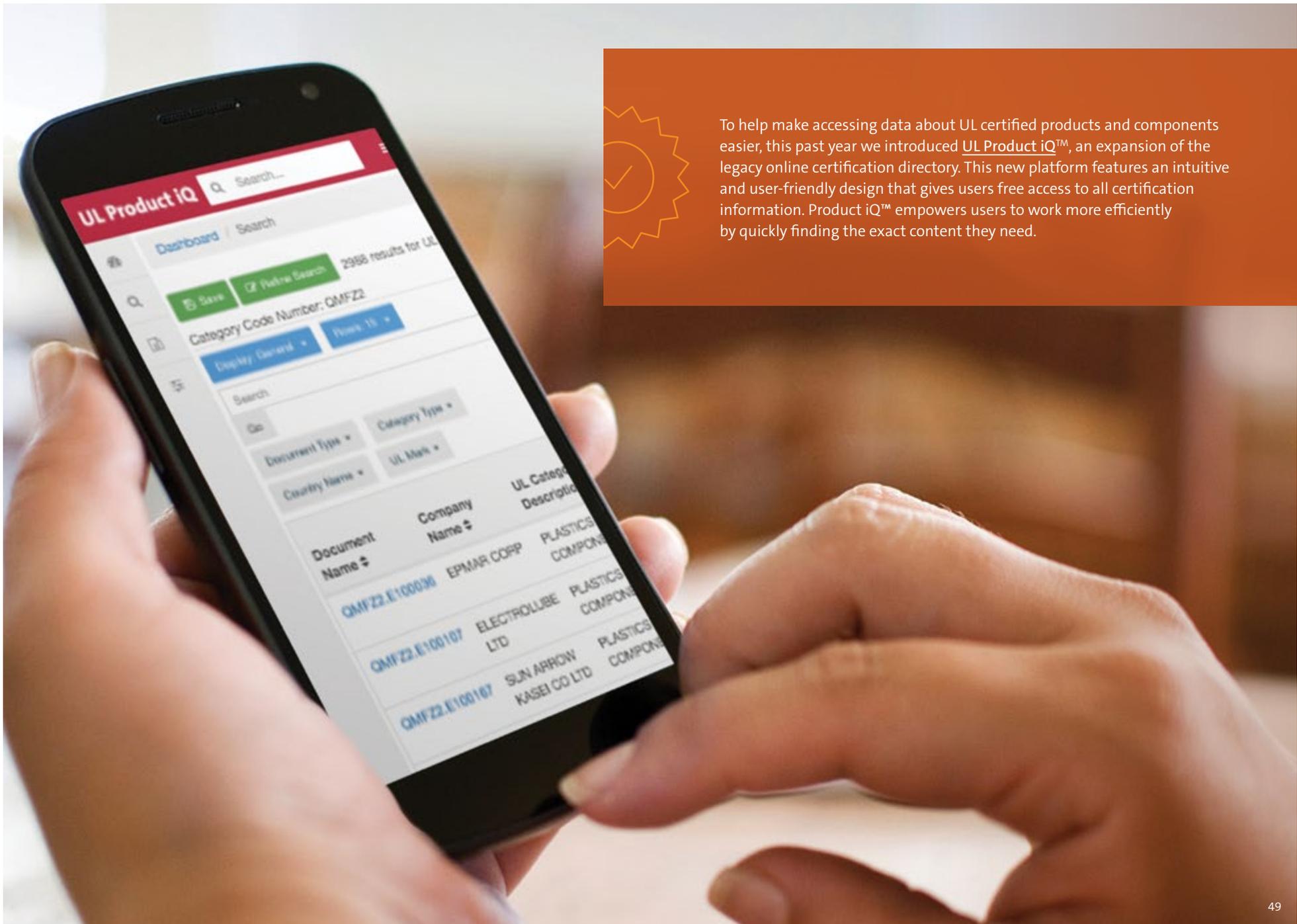


Between 2016 and 2018, the U.S. Consumer Product Safety Commission (CPSC) recalled nearly 3 million outdoor furniture products due to safety risks and other problems. These recalls highlight the need for more stringent quality standards and testing requirements. In response to this need, we introduced *UL 4041, Outline of Investigation for Outdoor Furniture*, to establish a benchmark for rigorous outdoor furniture safety testing and certification to promote product quality. The newly developed requirements help manufacturers and retailers evaluate product safety, mitigate injury of risk, and empower consumers to purchase safer patio furniture.



The IBM-led TrustChain™ Initiative uses blockchain technology to increase transparency in the diamond and precious metal supply chain. The collaboration brings together a community of organizations representing the multitiered jewelry supply chain to instill greater trust in the origin and ethical sourcing of jewelry. We lead third-party sourcing, verification and governance for the initiative.

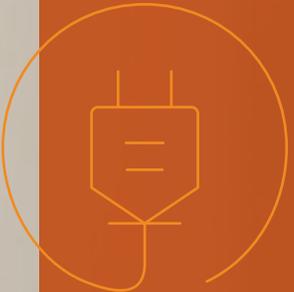




To help make accessing data about UL certified products and components easier, this past year we introduced UL Product IQ™, an expansion of the legacy online certification directory. This new platform features an intuitive and user-friendly design that gives users free access to all certification information. Product IQ™ empowers users to work more efficiently by quickly finding the exact content they need.

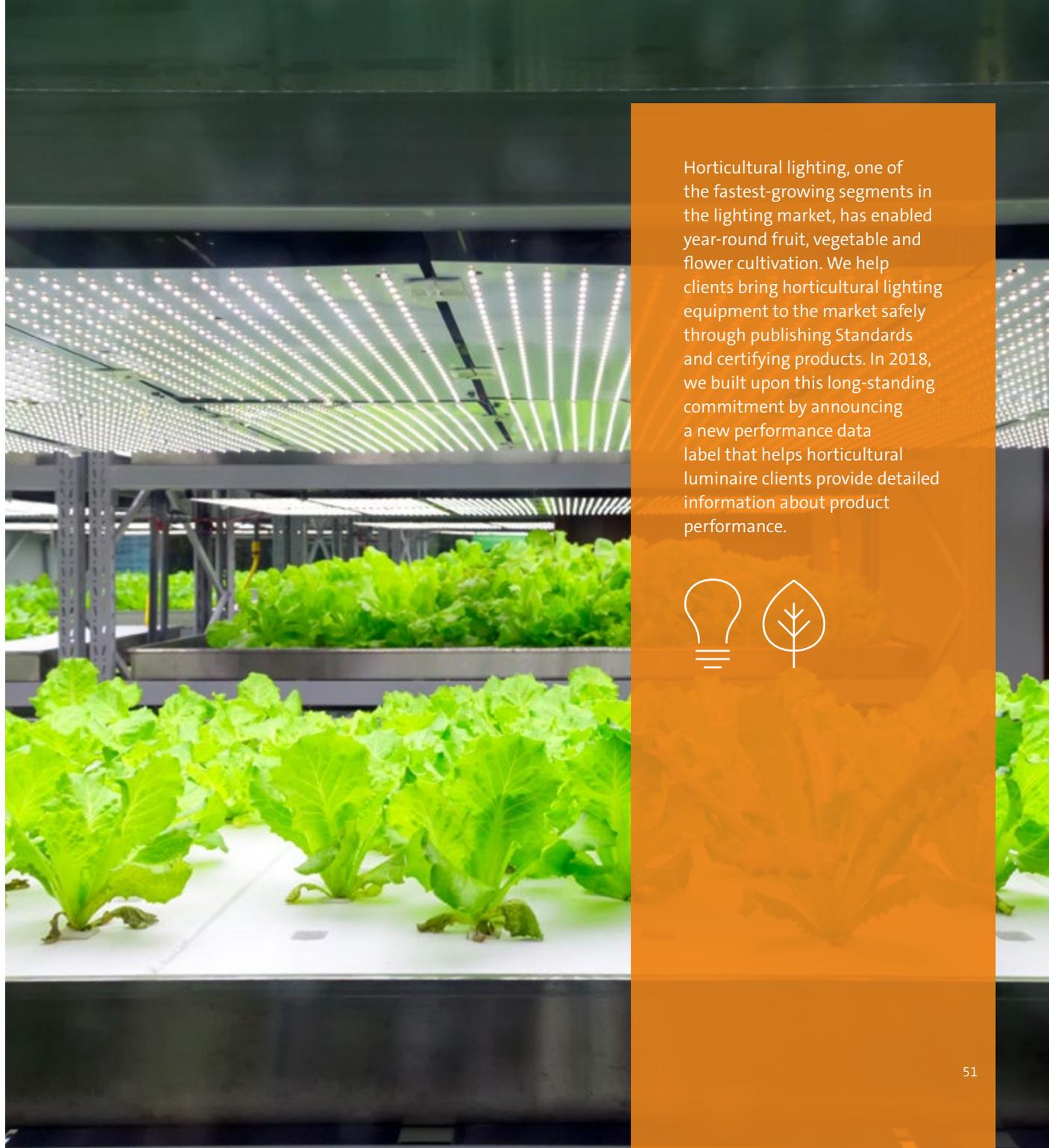


In partnership with the American Home Furnishings Alliance, we developed and introduced new Marketing Claim Verification programs for the furniture industry. As part of these services, we conduct a two-part assessment of both furniture products and the methods used to verify their stability. These new Marketing Claim Verification programs – and the supporting UL Verified Mark – will help consumers identify products with verified stability marketing claims to help prevent furniture tip-over accidents.





Today, specifiers, purchasers and various stakeholders along the wire and cable supply chain can access more product information than ever before. However, these increasing levels of knowledge can drive skepticism about unsubstantiated performance claims manufacturers make about their products. This past year, we launched Marketing Claim Verification programs for the wire and cable industry. Our programs independently confirm client marketing claims related to product performance, functionality and features as well as their facilities, processes and systems to promote confidence in those claims.



Horticultural lighting, one of the fastest-growing segments in the lighting market, has enabled year-round fruit, vegetable and flower cultivation. We help clients bring horticultural lighting equipment to the market safely through publishing Standards and certifying products. In 2018, we built upon this long-standing commitment by announcing a new performance data label that helps horticultural luminaire clients provide detailed information about product performance.



We worked with
24 GLOBAL LAW ENFORCEMENT
AGENCIES IN **11 COUNTRIES**
as they seized **more than**
\$30M USD in
counterfeit
products

The Los Angeles County Sheriff's Department **seized approximately**
\$4M USD IN PHONE
ACCESSORIES, INCLUDING
28,000 BATTERIES
headed for the marketplace with **counterfeit UL Marks**

To protect public safety and the UL Mark's integrity, we launched Project Centurion to investigate both physical and online retailers selling products carrying counterfeit UL Marks. Over the course of six weeks, we worked with 24 global law enforcement agencies in 11 countries as they seized more than \$30 million USD in counterfeit products, removing them from the marketplace and helping protect consumers from the potential risk of unsafe products.

Additionally, we worked in partnership with the Los Angeles County Sheriff's Department as the department executed a search warrant for iPhone batteries and mobile phone accessories bearing counterfeit UL Marks. This led to the seizure of approximately \$4 million USD in counterfeit products, including 28,000 batteries, headed for the marketplace and into the hands of unsuspecting consumers.



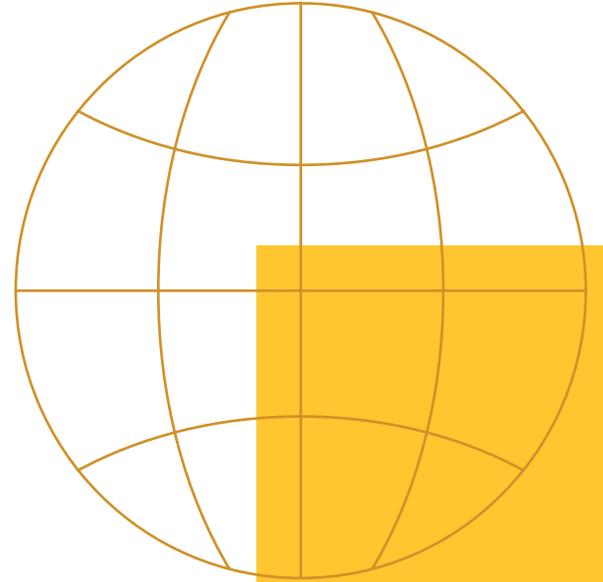


Our educational outreach programs aim to contribute to global safety by inspiring educational solutions that improve human health and well-being, advance environmental sustainability and, ultimately, help save lives. To further this priority, we rolled out a new online platform in 2018 to provide one hub for all educational resources. [Education.UL.org](https://www.education.ul.org) allows users to explore by area of interest, including fire and water safety, environmental health and sustainability, cybersecurity, human health and well-being, and more.

Recently, corporate social responsibility (CSR) has moved from optional to imperative for most businesses in today's global economy. Across all business types and industries, CSR delivers significant value to both businesses and society at large and contributes to building trust across ecosystems. In 2018, we aligned our CSR efforts with the United Nations' Sustainable Development Goals – affirming our global commitments and organizational mission with a plan of action for people, planet and prosperity.



As the global market continues to undergo a significant transformation in the coming year, we will help our clients instill even greater levels of trust with their customers.



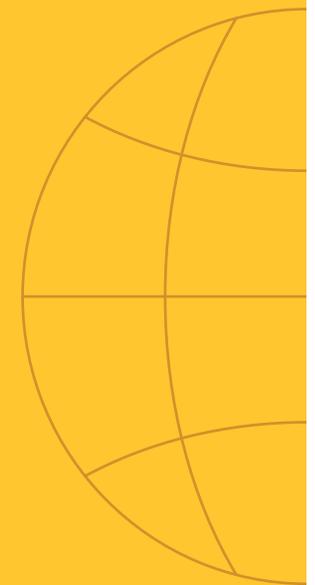
GROWTH AND EXPANSION

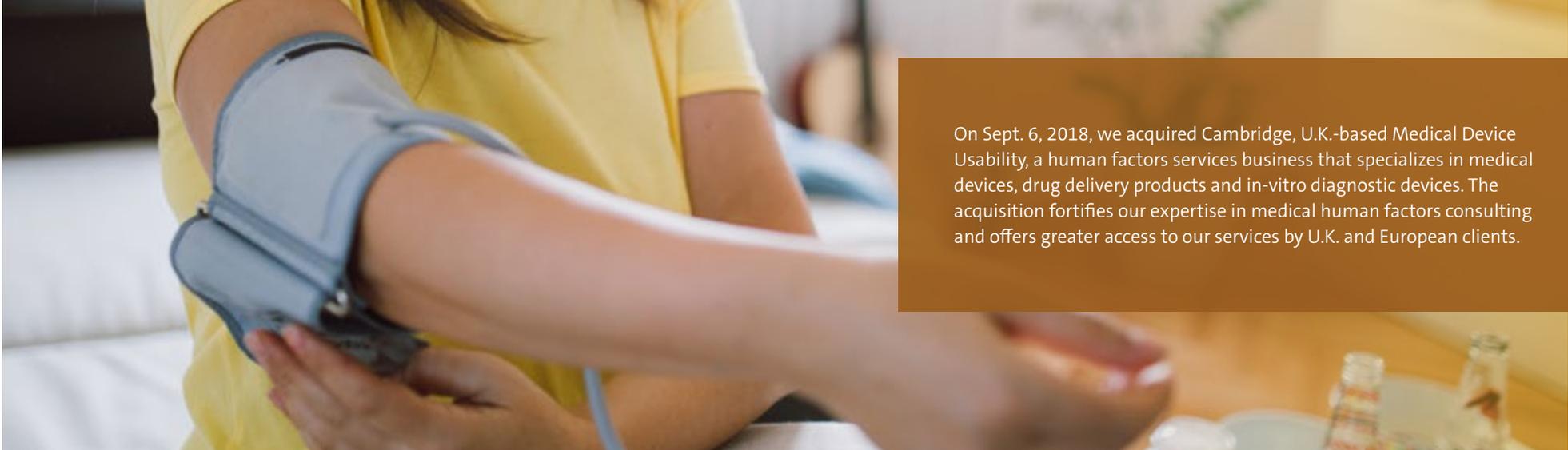
We bolster
capabilities with
new investments



As the digital era continues to transform the world and impact the way we do business, we've expanded our capabilities to help our stakeholders navigate this change and be successful in their quest to advance societal well-being.

In the past year, we acquired or invested in six companies and expanded or opened 17 laboratories and facilities around the world. Our investments focused on new digital innovations to transform the way we deliver services.





On Sept. 6, 2018, we acquired Cambridge, U.K.-based Medical Device Usability, a human factors services business that specializes in medical devices, drug delivery products and in-vitro diagnostic devices. The acquisition fortifies our expertise in medical human factors consulting and offers greater access to our services by U.K. and European clients.

We continued to make venture investments in new fields and technologies. By providing capital and expertise, we are working with entrepreneurs and innovators to develop solutions that address the future possibilities of safety, security and interoperability. Our venture portfolio now includes 10 start-ups in the fields of digital manufacturing, digital health, smart cities, autonomous systems and cybersecurity. Our 2018 investments included:



Identify3D, based in San Francisco, provides digital rights management solutions for distributed manufacturing by encrypting electronic design files with quality, licensing and compliance information.



OpenDataSoft, based in Paris, offers data-sharing solutions for smart cities and enterprises to access, visualize, analyze and share data.



Voltaiq, based in Berkley, California, enables battery manufacturing for the future with testing optimization and visualization software.



RiskSense, based in Albuquerque, New Mexico, is a cybersecurity technology company helping enterprises prioritize and manage vulnerabilities, and control cybersecurity risks.



MassiveBio, based in New York, develops a platform for cancer patients leveraging a virtual medical board, staffed with real experts, to expand patient treatment and clinical trial options in collaboration with their primary care teams.

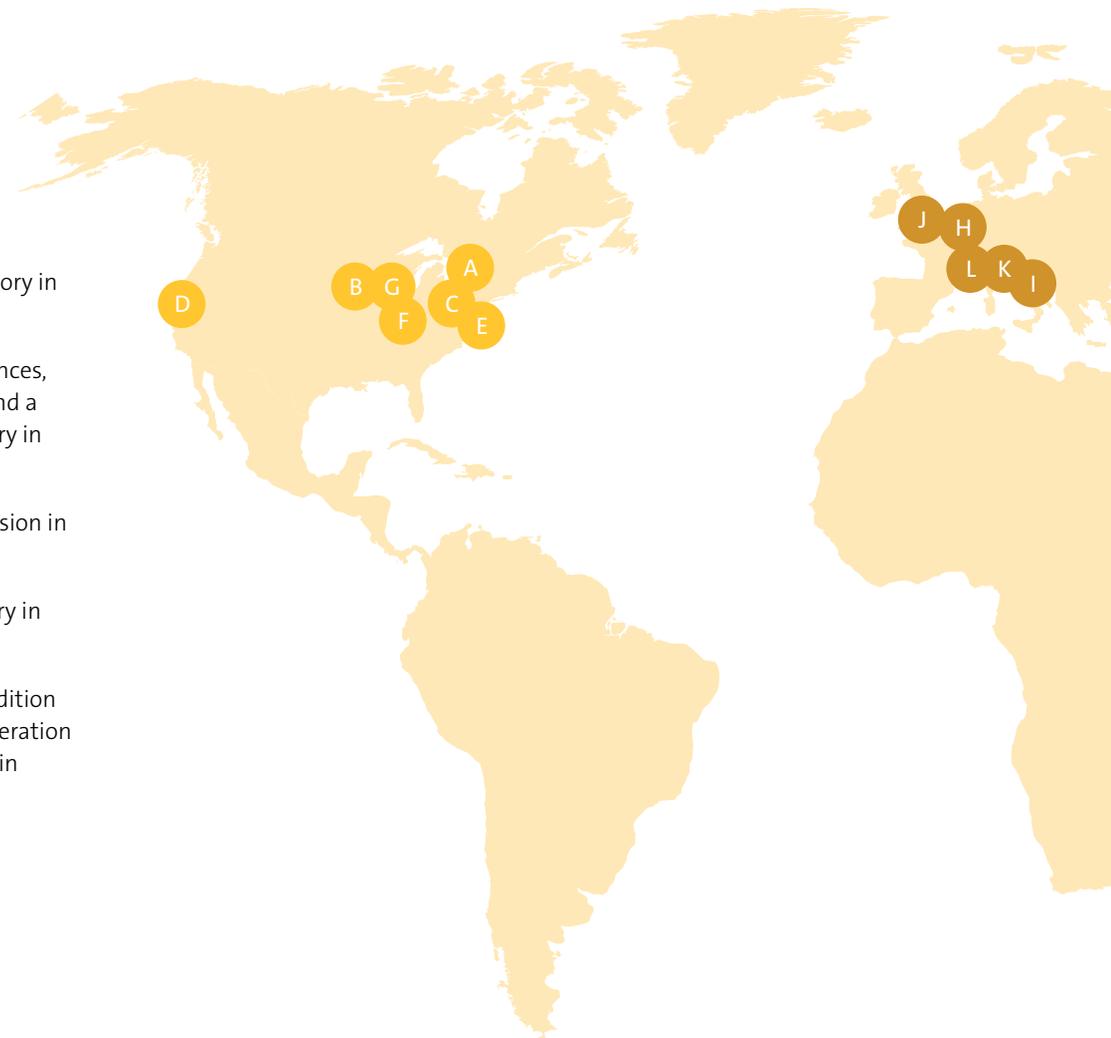
In 2018, we expanded or opened 17 laboratories around the globe. By region, our new capabilities include:

North America

- A** Building envelope test facility for the construction industry in **Toronto, Canada**
- B** Smoke detection laboratory in **Northbrook, Illinois**
- C** Retail performance testing laboratory in **Allentown, Pennsylvania**
- D** State-of-the-art EMC and wireless laboratory in **Fremont, California**
- E** UL Fire Safety Research Institute research facility in **Sharon Hills, Pennsylvania**
- F** Emergo by UL human factors research and design laboratory in **Chicago, Illinois**
- G** Updated and rebranded lobby and new conference center at our headquarters in **Northbrook, Illinois**

Europe

- H** Cybersecurity laboratory in **Frankfurt, Germany**
- I** Laboratory for appliances, lighting and HVAC, and a combustion laboratory in **Carugate, Italy**
- J** Major campus expansion in **Basingstoke, U.K.**
- K** VOC testing laboratory in **Cabiato, Italy**
- L** Climatic chamber addition for commercial refrigeration performance testing in **Gavirate, Italy**

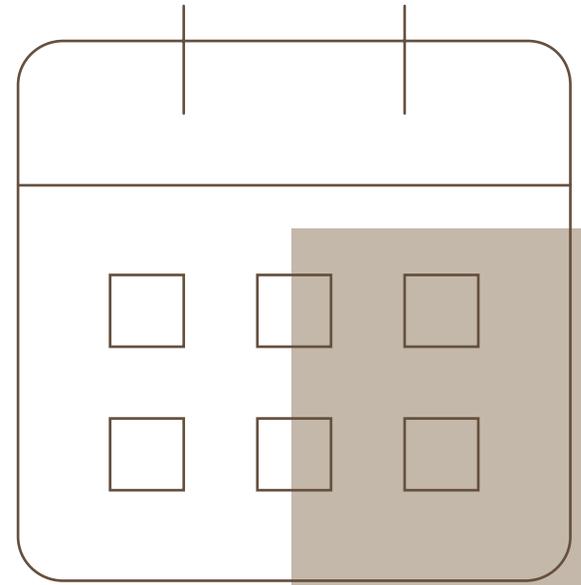


Asia

- M** Appliance and HVAC laboratory in **Samut Prakan, Thailand**
- O** Electric and hybrid vehicle EMC chamber in **Miyoshi-shi, Japan**
- N** Furniture testing laboratory in **Ho Chi Minh City, Vietnam**
- P** Nonclinical testing facility for packaging validation in **Chennai, India**



We look forward to exploring new opportunities and partnerships in the coming year that will enable us to build greater capabilities and help stakeholders thrive in the digital era.

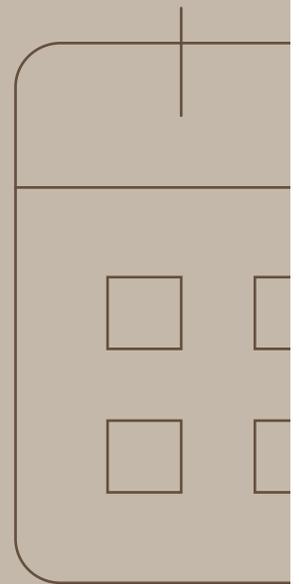


EVENTS

We share
knowledge to
advance societal
well-being



To advance society's well-being in a time of rapid digital innovation, we pursue opportunities to share our knowledge with global audiences. In 2018, we participated in or hosted prominent global events that addressed key societal challenges, including lithium-ion battery risks, counterfeiting and the advancement of women in science.



Bloomberg Sustainable Business Summit Seattle

UL Retail and Industry business unit President Gitte Schjøtz joined former U.S. Vice President Al Gore and a broad range of leaders driving sustainability efforts to speak at the Bloomberg Sustainable Business Summit on May 17, 2018, in Seattle. In her remarks, Schjøtz emphasized how sustainability goals for most businesses today extend beyond compliance requirements. Moreover, she covered the critical role digital data plays in the evolution of sustainability.



On June 6-8, 2018, we leveraged opportunities at the Chicago Forum on Global Cities to share our knowledge and expertise on topics such as smart cities, grid cybersecurity and the circular economy. Through moderated fireside chats, panels and keynotes, we demonstrated our commitment to supporting the safety, security and sustainability of new technologies being deployed across global cities. In his remarks, UL CEO and President Keith Williams underscored how, as cities continue to grow “smarter” through the adoption of new technologies, we must support their transformations in a safe, sustainable and secure way.

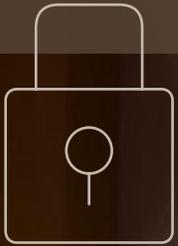


Aviation transportation carries hundreds of thousands of passengers and thousands of tons of cargo each day to a vast number of global destinations.

To address the safe use and transport of lithium-ion battery technology in aviation, we hosted an Aviation Battery Safety Summit in Haneda, Japan, from Sept. 11-13, 2018. The summit provided a forum for industry and stakeholder engagement, promoting awareness, and establishing a sense of urgency about air transportation safety challenges.

Sept. 25-26, 2018, marked the 12th annual International Law Enforcement Intellectual Property Crime Conference, an international event that brings together law enforcement, customs officials, regulators and private sector intellectual property crime investigators to share and develop best practices in combating counterfeiting and piracy crimes. Attendees discussed solutions tied to the theme of “Combatting the Global Wave Crime of Illicit Trade.” This year’s conference in Dubai, United Arab Emirates, was the largest to date with more than 900 participants from 93 countries. It was co-hosted by INTERPOL and the Dubai Police in partnership with the Ministry of Interior, the International AntiCounterfeiting Coalition, the Emirates Intellectual Property Association and UL.

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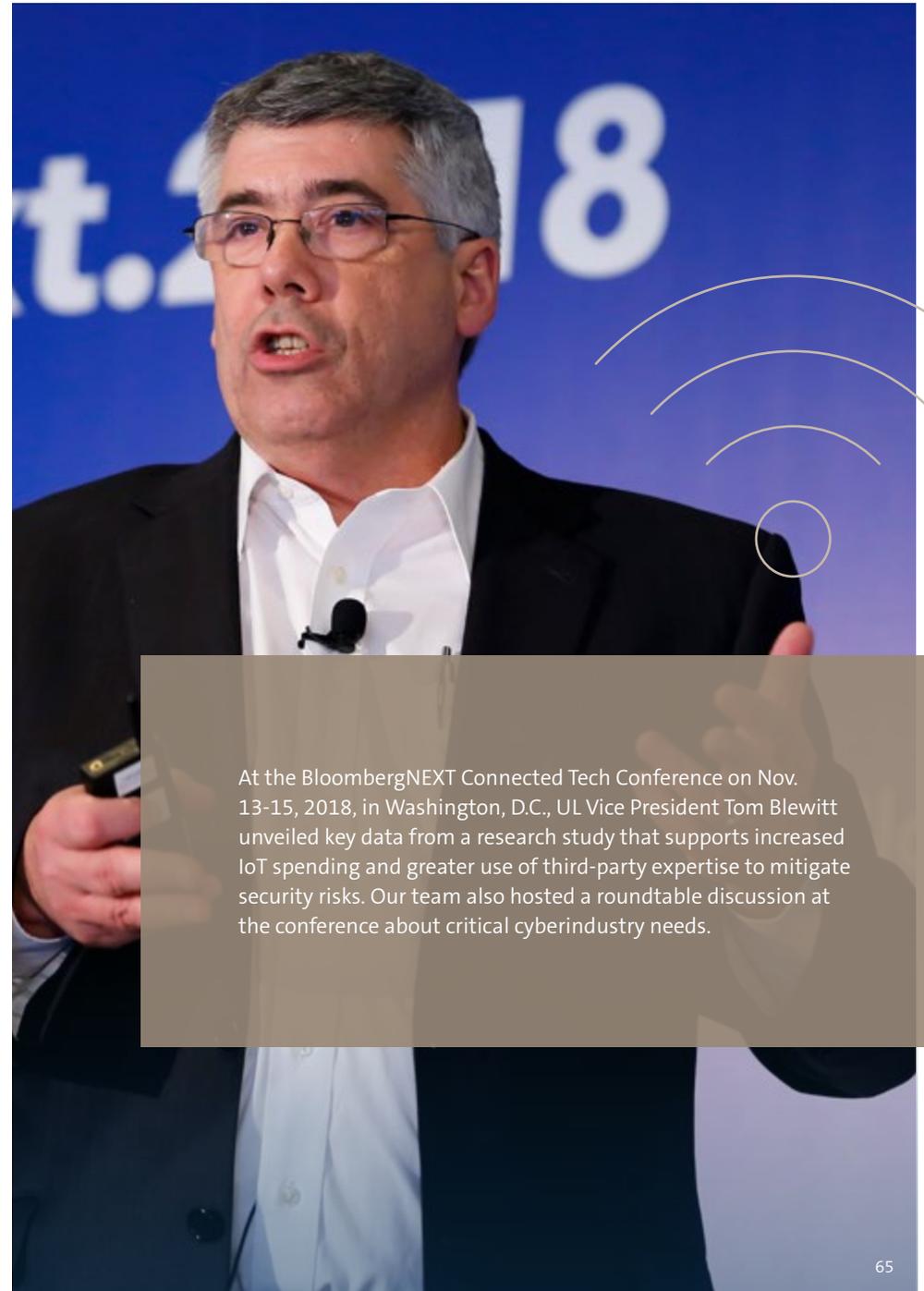
#IPCrimeConference



Fire safety education leaders from across Europe convened on Oct. 16-18, 2018, at the Fire Safety Education Summit held at Disneyland Paris to discuss the future of youth fire safety training, education and advocacy.

The summit represented a collaboration between UL, Disneyland Paris and Fédération Nationale des Sapeurs-Pompiers de France.





At the BloombergNEXT Connected Tech Conference on Nov. 13-15, 2018, in Washington, D.C., UL Vice President Tom Blewitt unveiled key data from a research study that supports increased IoT spending and greater use of third-party expertise to mitigate security risks. Our team also hosted a roundtable discussion at the conference about critical cyberindustry needs.



The UL Safety Index™ Summit, held Nov. 8, 2018, in Bangkok, brought together key stakeholders to explore how the UL Safety Index™ can be leveraged to address safety issues in cities, states or regions with lower index scores. The UL Safety Index™ is a numerical measure that quantifies the relative safety of living and working environments for people in a city, state, country or region. The UL Safety Index™ can be explored at ulsafetyindex.org.



In addition, we participated in the 2018 APEC CEO Summit, an annual gathering of more than 1,500 business and government leaders designed to foster public-private dialogue and cooperation. The event in Port Moresby, Papua New Guinea, on Nov. 15-17, 2018, convened world leaders

from 21 Pacific Rim member nations and top global business executives to discuss “Inclusion in the Age of Disruption: Charting a Common Future.” Underwriters Laboratories Inc. President Terry Brady joined three other global business leaders on a panel focused on digitization, innovation, disruption and inclusive growth.

Diversity and inclusion in science, technology, engineering and math (STEM) are essential to future progress. To advance this goal, we once again supported the ASEAN-U.S. Science Prize for Women. Cash prizes are awarded to female scientists who deliver significant safe, sustainable and relevant scientific contributions to their region and local communities and who also inspire other women to pursue careers in STEM. Together with the Association of Southeast Asian Nations (ASEAN), the U.S. Mission to ASEAN and the U.S. Agency for International Development, we awarded the top prize to Dr. Gay Jane Perez of the Philippines and the runner-up prize to Dr. Samsuzana Abd Aziz of Malaysia.





Finally, we championed the mission of safety through sports on the international playing field. We hosted the UL International Crown, a biennial women's professional team golf tournament on the LPGA Tour, Oct. 4-7, 2018, at the Jack Nicklaus Golf Club Korea in Incheon, South Korea. Additionally, we are a premier partner of USA Rugby and served as a global partner to the Rugby World Cup Sevens 2018 in San Francisco.

Events held on stages across the globe provide us with many opportunities to share our expertise, and we look forward to finding additional ways to do so in 2019.

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