**SB-425**
Submitted on: 1/29/2019 3:33:12 AM
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| Submitted By | Organization | Testifier Position | Present at Hearing |
|---|---|---|---|
| Randy Gonce | Individual | Support | No |

Comments:

To: Senator Jarrett Keohokalole, Chairman of the Senate Committee on Technology

From: Joe Hoellerer, Senior Manager – Government Relations, Security Industry Association (SIA)

Date: January 31, 2019

Re: SIA opposition to SB 425 (Rhoads), an act relating to Fair Digital Electronic Equipment Repair

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SIA is a non-profit, international trade association representing over 900 security and life safety solutions providers. Our member companies develop, manufacture, and integrate technologies that help keep people and property safe from fire, theft, and other hazards. Some of these security solutions include video cameras, carbon monoxide detectors, facial recognition software, and advanced locking mechanisms, to name a few. SIA represents industry leaders who constantly strive to introduce robust security solutions that keep families safe from nefarious individuals and ensure sensitive areas are secured from unauthorized entry. Due to the advent of interconnected sensors, networks, and ubiquitous smart technologies, use of these systems is growing in homes and businesses around the country.

On behalf of SIA, we must respectfully submit our opposition to SB 425, known as the Fair Digital Electronic Equipment Repair Act.

SIA's primary concerns include mandating original equipment manufacturers (OEM) to disclose proprietary source code, diagnostic, and repair information to independent repair providers; placing the security – and cybersecurity – condition of certain equipment into a precarious state; and jeopardizing warranty policies that have long-proven to benefit and protect consumers.

We understand the intention of this legislation is to provide consumers with the freedom and flexibility to fix everyday consumer devices, such as smartphones, tablets, televisions, and computers. However, due to the overly broad and vague definition of "equipment," which seemingly encompasses all digital electronic equipment, our member companies would be forced to comply with this burdensome legislation if enacted into law.

If an OEM of traditional security systems – e.g. video cameras, carbon monoxide detectors, fire alarms, alarm panels, and advanced locks – is forced to disclose proprietary diagnostic and reparation information, then residential and commercial users could be placing the security integrity of their equipment into the hands of individuals who do not have the requisite skills to fix any known defects. For example, what would happen if an independent repair provider "fixed" your home security system but then an individual broke into your house for criminal purposes? SB 425 does not sufficiently answer who would be liable in this instance, the OEM and their authorized partners, or

the independent repair provider. This example can be replicated in other cases should a house catch fire, pipes leak carbon monoxide, or a person exposes easily identifiable security vulnerabilities on locks. Simple malfunctions can cause real, physical harm. We must incentivize OEMs to ensure the efficacy and integrity of their products.

Secondly, SB 425 requires OEMs to release embedded software and security patches to independent repair providers which could compromise the cyber security of electronic equipment connected to an IP network. SB 425 does not explicitly forbid independent repair providers from overtly publishing sensitive intellectual property to the public. In the scope of cyber security, this includes software updates, source code, and encryption keys. Publishing this sensitive information not only impacts OEMs, but it increases consumer risks to future malicious cyber-attacks. Once threat actors have access to this sensitive information, they can unleash a multitude of damaging cyber-attacks that potentially place consumers into an irreparable position.

Our membership prides itself on manufacturing and deploying technologically-advanced security solutions while providing consumers and end-users with multiple repair options outside of the OEM. In order to remain competitive in the security industry, companies understand it is imperative to certify authorized repair providers so customers receive flexibility when repairs are needed. SIA companies have certified multiple authorized repair providers and as a common business practice, OEMs certify repair providers through rigorous training to ensure these authorized partners are well-trained, knowledgeable, and qualified to meet the standards set forth by the OEM. By placing intricate repair information into the possession of uncertified independent repair providers, SB 425 is in fact, exposing consumers to more potential risk.

While “Right to Repair” appears well-intentioned, there are several unintended consequences that will adversely impact the security industry and its loyal customers if SB 425 becomes public law. Rather than stifling growth in an industry that thrives on innovation, we hope the Committee will work with private sector stakeholders to ascertain how we can address these issues in a collaborative manner.

Thank you for your time and attention to this issue. Please let us know if SIA or its members can provide information or any other further assistance to you and your colleagues in the legislature.

cc: Members of the Senate Committee on Technology

State Privacy and Security Coalition, Inc.

January 30, 2019

The Honorable Jarrett Keohokalole
Chair, Senate Technology Committee
Hawaii State Capitol, Room 203
415 South Beretania St.
Honolulu, HI 96813

**Re: Electronics Manufacturers Opposition to SB 425 (Electronic Equipment Repair)**

Dear Chair Keohokalole,

On behalf of the hundreds of manufacturers and businesses our organizations represent, we respectfully oppose SB 425, legislation which would mandate original equipment manufacturers (OEMs) of digital electronic equipment or a part for the equipment sold in Hawaii to provide independent repair providers with diagnostic and repair information, software, tools, and parts.

Our organizations represent a broad spectrum of manufacturers of consumer electronics, home appliances, HVACR, security equipment, medical devices, toys, lithium ion batteries, and other connected electronic products as well as companies that rely on the secure operation of these devices such as entertainment software publishers. All of these companies stand behind the quality of their products. Our members develop products and services for a wide range of commercial, government, and consumer users that are often highly regulated. Their customers depend on these products to operate safely, securely, and accurately, whether they are being used to support banking and commercial transactions, transmit and store sensitive personal data, support industrial operations, medical applications, or securely deliver entertainment and other services. As businesses, government agencies, and consumers continue to increase their reliance on connected devices to help deliver efficiency, convenience, and services, it is important to remain vigilant and focused on mitigating the risks associated with the safe and secure operation of those products.

SB 425 mandates that OEMs provision any independent repair provider in much the same way as authorized network providers, but without any protections, requirements, or restrictions, and in doing so, places consumers and their data at risk, undermines the business of Hawaii companies that are part of OEM-authorized networks, and stifles innovation by putting hard earned intellectual property in the hands of hundreds if not thousands of new entities. Further, the bills fail to account for the wide range of repair and refurbishment options currently available to Hawaii consumers from both OEM-authorized and independent repair sources as well as advancements in sustainability by electronic product manufacturers. For these reasons, we urge the Legislature against moving forward with this legislation.

**SB 425 threatens consumer security and safety**

One of our chief concerns with this legislation is its potential to weaken the privacy and security features of various electronic products. The security of user information on these products is of the utmost importance to consumers that rely on them. Industrial equipment, home appliances, smartphones, computers, servers, consumer electronics, medical devices, and other connected devices are at risk of hacking, and weakening of the privacy and security protections of those products will increase risks to consumers. With access to technical information, criminals can more easily circumvent security protections, harming not only the product owner but also everyone who shares their network. In an era of sophisticated cyber attacks, we should not make it easier for criminals to hack security provisions.

Consumers, businesses of all sizes, public schools, hospitals, banks, and industrial manufacturers all need reasonable assurance that those they trust to repair their connected products will do so safely, securely, and correctly. State law should not mandate that all manufacturers must provide a "how to" manual for any product and provide it to anyone who asks.

Manufacturers offer authorized repair networks to provide consumers with assurance that their products are serviced by properly trained and vetted repair professionals that have the necessary skills to safely and reliably repair electronic products. Some types of repairs can be extremely detailed, complicated, performed in someone's home, and, in some cases, dangerous to perform for those without proper training. It is particularly important that products containing high-energy lithium ion batteries are repaired only by trained professionals who understand the hazards associated with these batteries.

Manufacturers want to ensure that their products are serviced by professionals who understand the intricacies of their products and have spent time procuring the knowledge necessary to safely repair the product and return it to the consumer without compromising those standards or undermining the safety and security of their products. Authorized repair networks not only include training requirements, but also ensure that only the correct parts and procedures will be used. Consumers can be protected by warranties or other means of recourse. The legislation provides no such protections for consumers, repair shops or manufacturers.

When an electronic product breaks, consumers have a variety of repair options, including using an OEM's authorized repair network, which often include local repair service providers as well as mail-in, and even in-house repair options for some categories of products. Consumers may also choose to use one of many independent repair service providers; although they do so without the quality assurance provided by using a manufacturer's authorized network provider. The point is that the free market economy already provides a wide range of consumer choice for repair with varying levels of quality, price and convenience without the mandates imposed by this legislation.

Manufacturer authorized networks of repair facilities guarantee that repairs meet OEM standards. If an OEM's brand and warranty are to stand behind repair work and assume product liability, it is only reasonable that the repair facility demonstrates competency and reliability. Without the training and other quality assurance requirements of authorized service providers – implemented through enforceable legal contracts that ensure compliance and accountability that protect consumers – manufacturers would not be able to stand behind their work, warranties, technical support, ongoing training, and business support.

**SB 425 mandates the disclosure of protected proprietary information**

Manufacturers make significant investments in the development of products and services, and the protection of intellectual property is a legitimate and important aspect of sustaining the health of the vibrant and innovative technology industry. However, SB 425 puts at risk the intellectual property that manufacturers have developed.

Consumer electronics use on-board software (i.e., firmware) to help control the product. That firmware is subject to copyright under federal law, and Section 1201 of the Digital Millennium Copyright Act, a related federal law, ensures that bad actors cannot tamper with the digital rights management that copyright owners use to protect this software. The problem is that making repairs to hardware components may necessitate modifying the firmware so that the product will work again.

Importantly, however, firmware controls many other product functions, and opening it up for repair purposes exposes to potential tampering other, more sensitive functions, such as security features. Given the scope of products covered and what must be provided under the legislation – including diagnostics, tools, parts, and updates to software – it is highly likely some of that information would be proprietary. Providing unauthorized repair facilities and individuals with access to proprietary information without the contractual safeguards currently in place between OEMs and authorized service providers places OEMs, suppliers, distributor and repair networks at risk.

**SB 425 fails to account for advancements in sustainability by electronic products manufacturers**

These bills are partly based on an inaccurate assumption that the bill will aid in the reduction of electronic waste in the state. Hawaii already has a robust e-waste law in place and continues to engage stakeholders in potential revisions. However, according to the Rochester Institute of Technology Golisano Institute of Sustainability, in the U.S. e-waste generation peaked in 2013-2014 and is in a period of extended decline[1]. This trend is corroborated by the most recent data from U.S. EPA[2].

Electronic products manufacturers have developed robust policies and programs to ensure that they are continuously improving the sustainability of their products for their whole lifecycle, from design, to material sourcing, product performance, reuse, and responsible end of life management. This has led to continued innovation and the use of new technologies which provide consumers improved devices while simultaneously reducing the overall amount of e-waste generated – all under the existing product repair environment. And with new technologies like OLED and additional light-weighting across the electronics industry, additional declines in e-waste generation are expected to continue during the coming decades.

Repair and reuse are important elements of electronics manufacturers sustainability efforts. Not only is repair and reuse in the OEM's best interest so that consumers can continue to use and enjoy their products, but many OEMs are returning still-useful electronic products to active service to get the maximum benefits out of the resources used to make them. Additionally, under revised "green" procurement standards, federal agencies and other purchasers will be required to purchase computers

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[1] Rochester Institute of Technology Golisano Institute of Sustainability (July 2017). *Sustainable Materials Management for the Evolving Consumer Technology Ecosystem*. Accessed at: https://www.rit.edu/gis/ssil/docs/Sustainable%20Materials%20Management%20for%20the%20Evolving%20Consumer%20Technology%20Ecosystem.pdf

[2] Office of Resource Conservation Recovery, U.S. Environmental Protection Agency (December 2016). *Electronic Products Generation and Recycling in the United States, 2013 and 2014*. Accessed at https://www.epa.gov/sites/production/files/2016-12/documents/electronic_products_generation_and_recycling_2013_2014_11282016_508.pdf

that meet certain environmental performance criteria under the Electronic Product Environmental Assessment Tool (EPEAT) rating system. These existing policies and programs promote repair and reuse without the consumer safety, security, or business concerns raised by the bills.

**Conclusion**

Thank you for your consideration of our perspective on this complicated issue. Our members bear a significant responsibility to the businesses, governments, and individual consumers that depend on us to protect the safety and security of their electronic products, as well as the sensitive data they contain. We are committed to working with you to promote digital privacy and security, while resisting unwarranted state intervention in the marketplace with one-size-fits-all mandates that compromise consumer safety and protection. For these reasons, we oppose SB 425.

Sincerely,

Air Conditioning, Heating and Refrigeration Institute (AHRI)
Association of Home Appliance Manufacturers (AHAM)
Computing Technology Industry Association (CompTIA)
Consumer Technology Association (CTA)
CTIA – The Wireless Association
Entertainment Software Association (ESA)
Information Technology Industry Council (ITI)
Internet Coalition
National Electrical Manufacturers Association (NEMA)
NetChoice
PRBA – The Rechargeable Battery Association
Security Industry Association (SIA)
State Privacy and Security Coalition, Inc.
TechNet
Telecommunications Industry Association (TIA)
The Toy Association

cc: Members of the Senate Technology Committee

**Testimony of Lisa Volpe McCabe**

**In Opposition to Hawaii Senate Bill 425**

**Before the Senate Committee on Technology**

**January 31, 2019**

Chair Keohokalole, Vice Chair English and Members of the Committee, thank you for the opportunity to provide this testimony on behalf of CTIA, the trade association for the wireless communications industry, in opposition to Senate Bill 425. This legislation seeks government regulation of the relationship between original equipment manufacturers and equipment repair facilities.

This legislation would negatively impact agreements between Original Equipment Manufacturers, (or OEMs) and authorized repair networks, which include businesses of all sizes. These agreements and repair networks would be undermined and provide no protection or quality assurance for consumers.

As we move to a more connected world, there is concern regarding cybersecurity and the Internet of Things. In fact, this summer, CTIA announced the creation of the CTIA Cybersecurity Certification Program for cellular-connected Internet of Things (IoT) devices. This program has been developed in collaboration with the nationwide wireless providers to ensure that devices coming into the marketplace and connected to wireless networks will have cybersecurity features built into them.

By offering certification for IoT devices built from the ground up with cybersecurity in mind, the program will protect consumers and wireless infrastructure, while creating a more secure foundation for smart cities, connected cars, mHealth and other IoT applications. Leading wireless operators, technology companies, security experts and test labs collaborated to develop the program's test requirements and plans. The program builds upon IoT security recommendations from the National Telecommunications and Information Administration (NTIA) and the National Institute of Standards and Technology (NIST).

Having legislation that mandates the sharing to all of important information regarding how equipment operates, specific schematic diagrams and service code descriptions would weaken cybersecurity on devices and potentially harm the security of information on devices and the networks themselves. One must

bear in mind that bad actors, cybercriminals and nation-states are adept at exploiting information and are not bound by rules and laws.

Manufacturers have invested heavily in their brands and have gone to extraordinary lengths to maintain the quality of the device carrying that brand for the first owner and all others for the life of the device. Authorized repair facilities work under contract with many manufacturers and providers to ensure repairs are made properly and safely and meet OEM standards. Their authorization to perform repairs ensures that the changes made to the devices are compatible with current technology and the networks on which they operate. Legislation as contemplated in Hawaii would harm the marketplace by weakening the relationship that manufacturers have with authorized repair facilities.

When an electronic product breaks, consumers have a variety of repair options, including using an OEM's authorized repair network, which often include local repair service providers as well as mail-in, and even in-house repair options for some products. Consumers may also choose to use one of many independent repair service providers; although they do so without the quality assurance provided by using a manufacturer's authorized network provider.

Additionally, it is important to note that devices have value even when a consumer no longer wants to use a particular device. Many manufacturers and wireless service providers offer programs in which a consumer can trade in or donate an old device. This provides a way to recycle old, unused devices, eliminating household clutter and protecting the environment. [1]

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[1] Information on Trade-In programs can be found on company websites: Verizon: https://www.verizonwireless.com/support/trade-in-program-faqs/; AT&T https://tradein.att.com/#/how-it-works; T- Mobile: https://www.t-mobile.com/cell-phone-trade-in.html; Sprint: https://secure.sprintbuyback.com/bbt/; USCellular: https://www.uscellular.com/trade-in-cell-phones/index.html; Apple: https://www.apple.com/iphone/trade-up/ and Samsung: https://www.samsung.com/us/trade-in/frequently-asked-questions/
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The marketplace already provides a wide range of consumer choice for repair with varying levels of quality, price and convenience without the mandates imposed by state legislation.

SB 425 would mandate manufacturers of digital electronic products sold or used in Hawaii to make available for purchase that equipment's diagnostic and repair information, software, tools and other parts to independent repair facilities and device owners.

We have strong concerns about the safety of the servicer who may cause himself or herself or others harm by doing certain repairs without proper training. There is also concern about the consumer whose personal property and safety may be endangered by repairs that are performed improperly. SB 425 could result in unintentional adverse impacts to the consumer. Improper repairs may also endanger networks and peripheral equipment that may be connected to a repaired device, causing additional harm and safety issues.

Currently and historically, many electronics are produced as highly-integrated devices and therefore not made to be dismantled unless done so by properly trained personnel. Customer safety, security and privacy are fundamental goals in the design of electronic devices. Smartphones, computers, servers and other devices are constantly at risk from hackers and any weakening of those standards such as sharing sensitive diagnostic tools will increase risks to consumers.

Proper repair is extremely detailed and complicated. Manufacturers and providers want to ensure that their products are serviced by professionals who understand the intricacies of their products and have spent time obtaining the specific knowledge necessary to safely repair the device and return it to the consumer without compromising those standards. Manufacturers have invested heavily in their brands and have gone to extraordinary lengths to maintain the quality of the device carrying that brand for the first owner and all others for the life of the device.

Furthermore, SB 425 is not necessary as consumers already have options for repairing phones and tablets in Hawaii and throughout the country. Many manufacturers have programs that establish criteria and capabilities in which independent repair facilities can become authorized repair facilities. These

authorized repair facilities work under contract with many manufacturers and providers to ensure repairs are made properly and safely. Their authorization to perform repairs ensures that the changes made to the devices are compatible with current technology and the networks on which they operate. This bill will harm the marketplace by weakening the relationship that manufacturers have with authorized repair facilities. Without the training and vetting of authorized service providers – implemented through enforceable legal contracts that ensure compliance and accountability that protect consumers – manufacturers would not be able to stand behind their work, warranties, technical support, ongoing training and business support.

SB 425 seeks to establish inappropriate intervention in the marketplace. By mandating the distribution of electronic diagnostic and repair information to anyone who asks, in contravention to any established contractual relations, the marketplace is distorted unnecessarily. Because a vibrant repair marketplace already exists; one in which consumers already have choices regarding who repairs their electronic devices, government interference in the marketplace is not necessary. Therefore, we respectfully urge you not to advance SB 425.

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January 30, 2019

The Honorable Jarrett Keohokalole
Hawaii State Capitol, Room 203
415 South Beretania Street
Honolulu, HI 96813

Re: Opposition to S.B. 425

Dear Chairman Keohokalole and Senate Committee on Technology Members:

As the leading trade association representing the manufacturers of medical imaging equipment and radiopharmaceuticals, the Medical Imaging & Technology Alliance (MITA) opposes S.B. 425 in its current form and requests a clear exemption for medical devices.

Original equipment manufacturers (OEMs) and their authorized repair providers are regulated by the Food and Drug Administration (FDA) and must adhere to set quality, safety, and regulatory standards, including 21 CFR 820, when performing maintenance and repair. Independent repair providers are not held to the same standards as OEM and authorized repair providers to perform the same maintenance and repair activities. If enacted in its current form, S.B. 425 would require OEMs of medical devices to provide unregulated repair providers and owners of digital electronic products with diagnostic and repair information. This legislation would affect a wide range of sophisticated, medically essential equipment under the classification and oversight of the FDA, including but not limited to magnetic resonance imaging, ultrasound, computed tomography, x-ray, and PET systems.

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**Medical Device Servicing**

Servicing a medical device is a complex and often difficult activity that poses a range of serious risks to patients and operators if performed improperly. For this reason, satisfactory quality and regulatory performance of servicing activities is dependent on more than possession of proper materials. Suitable training, adherence to a quality system, and compliance with regulatory requirements set by the FDA are essential to proper device servicing.

Not only do manufacturers invest significant resources into the manufacture and design of medical devices, they also invest heavily in development of servicing tools, training and protocols. These proprietary resources are not necessary for the successful servicing of devices. In many cases, one manufacturer may service another manufacturer's device, doing so based on their own know-how and reverse engineering efforts. Many non-OEM servicers also already make this kind of investment in their own proprietary servicing tools, training and protocols. All

independent servicing organizations need to accept the responsibility to ensure the return of the device to safe and effective operation and can do so by adopting appropriate quality systems and developing their own servicing protocols, tools, and training.

Medical imaging device servicing requires the highest level of technical and procedural training. This training needs to be regularly updated to reflect knowledge of the latest products, including software and hardware, and a deep understanding of and adherence to current best practices. Operating within a quality system ensures that devices consistently meet applicable requirements and specifications.

**FDA Regulation**

Currently, only OEMs are held to high regulatory requirements by the FDA, including 21 CFR 820. Non-OEM entities are not held to the same consistent quality, safety, and regulatory requirements as are OEMs. In the last year, the FDA has engaged with a variety of stakeholders on medical device servicing. In December 2018, the FDA published a white paper on medical device servicing and remanufacturing and collected input from medical device servicing stakeholders via a comment period and a public workshop. Based on this input, we expect that the FDA will take action to ensure all servicing activities result in the safe and effective operation of medical devices.

Congress and the FDA has also recently reviewed and shown concern on medical device servicing and the lack of equivalent regulation among OEM and non-OEM repair providers. Given the ongoing consideration at the federal level, MITA believes that a patchwork of state laws would directly conflict with the critical need for consistency in medical device servicing

**Exemption Language**

MITA recognizes that Section 8 (4) limits a manufacturer of a medical device to comply with the bill language, only if it conflicts with future amendments of the Federal Food, Drug, and Cosmetic Act. MITA recommends the language in Section 8 (4) be removed and the following language that is being considered in a similar bill in Washington State be included in an amended version of S.B. 425 in Section 2:

- Nothing in this chapter applies to manufacturers or distributors of a medical device as defined in the federal Food, Drug, and Cosmetic act (21 U.S.C. Sec. 301 et seq.) or a digital electronic product or embedded software manufactured for use in a medical setting including diagnostic, monitoring, or control equipment or any product or service that they offer.

**Conclusion**

The MITA position is that all entities engaged in servicing medical devices should be held to consistent minimum quality, safety, and regulatory requirements. Independent service organizations requesting access to repair materials are no exception. It is unfortunate that these discrepancies currently exist and that operators and patients are not guaranteed an equivalent level of quality, safety, and regulation regardless of who services a medical device. For these reasons, we believe that medical devices should be exempted from S.B. 425.

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If you have any questions, please contact Holly Grosholz at 703-841-3228 or by email at holly.grosholz@medicalimaging.org.

Sincerely,

Patrick Hope
Executive Director, MITA

cc: Members of the Senate Committee on Technology

Senator Jarrett Keohokalole
Senator J. Kalani English
Senator Sharon Y. Moriwaki
Senator Glenn Wakai
Senator Kurt Fevella

State Privacy and Security Coalition, Inc.

January 30, 2019

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Chair, Senate Technology Committee
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SB 425 mandates that OEMs provision any independent repair provider in much the same way as authorized network providers, but without any protections, requirements, or restrictions, and in doing so, places consumers and their data at risk, undermines the business of Hawaii companies that are part of OEM-authorized networks, and stifles innovation by putting hard earned intellectual property in the hands of hundreds if not thousands of new entities. Further, the bills fail to account for the wide range of repair and refurbishment options currently available to Hawaii consumers from both OEM-authorized and independent repair sources as well as advancements in sustainability by electronic product manufacturers. For these reasons, we urge the Legislature against moving forward with this legislation.

**SB 425 threatens consumer security and safety**

One of our chief concerns with this legislation is its potential to weaken the privacy and security features of various electronic products. The security of user information on these products is of the utmost importance to consumers that rely on them. Industrial equipment, home appliances, smartphones, computers, servers, consumer electronics, medical devices, and other connected devices are at risk of hacking, and weakening of the privacy and security protections of those products will increase risks to consumers. With access to technical information, criminals can more easily circumvent security protections, harming not only the product owner but also everyone who shares their network. In an era of sophisticated cyber attacks, we should not make it easier for criminals to hack security provisions.

Consumers, businesses of all sizes, public schools, hospitals, banks, and industrial manufacturers all need reasonable assurance that those they trust to repair their connected products will do so safely, securely, and correctly. State law should not mandate that all manufacturers must provide a "how to" manual for any product and provide it to anyone who asks.

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Manufacturers want to ensure that their products are serviced by professionals who understand the intricacies of their products and have spent time procuring the knowledge necessary to safely repair the product and return it to the consumer without compromising those standards or undermining the safety and security of their products. Authorized repair networks not only include training requirements, but also ensure that only the correct parts and procedures will be used. Consumers can be protected by warranties or other means of recourse. The legislation provides no such protections for consumers, repair shops or manufacturers.

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Consumer electronics use on-board software (i.e., firmware) to help control the product. That firmware is subject to copyright under federal law, and Section 1201 of the Digital Millennium Copyright Act, a related federal law, ensures that bad actors cannot tamper with the digital rights management that copyright owners use to protect this software. The problem is that making repairs to hardware components may necessitate modifying the firmware so that the product will work again.

Importantly, however, firmware controls many other product functions, and opening it up for repair purposes exposes to potential tampering other, more sensitive functions, such as security features. Given the scope of products covered and what must be provided under the legislation – including diagnostics, tools, parts, and updates to software – it is highly likely some of that information would be proprietary. Providing unauthorized repair facilities and individuals with access to proprietary information without the contractual safeguards currently in place between OEMs and authorized service providers places OEMs, suppliers, distributor and repair networks at risk.

**SB 425 fails to account for advancements in sustainability by electronic products manufacturers**

These bills are partly based on an inaccurate assumption that the bill will aid in the reduction of electronic waste in the state. Hawaii already has a robust e-waste law in place and continues to engage stakeholders in potential revisions. However, according to the Rochester Institute of Technology Golisano Institute of Sustainability, in the U.S. e-waste generation peaked in 2013-2014 and is in a period of extended decline[1]. This trend is corroborated by the most recent data from U.S. EPA[2].

Electronic products manufacturers have developed robust policies and programs to ensure that they are continuously improving the sustainability of their products for their whole lifecycle, from design, to material sourcing, product performance, reuse, and responsible end of life management. This has led to continued innovation and the use of new technologies which provide consumers improved devices while simultaneously reducing the overall amount of e-waste generated – all under the existing product repair environment. And with new technologies like OLED and additional light-weighting across the electronics industry, additional declines in e-waste generation are expected to continue during the coming decades.

Repair and reuse are important elements of electronics manufacturers sustainability efforts. Not only is repair and reuse in the OEM's best interest so that consumers can continue to use and enjoy their products, but many OEMs are returning still-useful electronic products to active service to get the maximum benefits out of the resources used to make them. Additionally, under revised "green" procurement standards, federal agencies and other purchasers will be required to purchase computers

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[2] Office of Resource Conservation Recovery, U.S. Environmental Protection Agency (December 2016). *Electronic Products Generation and Recycling in the United States, 2013 and 2014*. Accessed at https://www.epa.gov/sites/production/files/2016-12/documents/electronic_products_generation_and_recycling_2013_2014_11282016_508.pdf

that meet certain environmental performance criteria under the Electronic Product Environmental Assessment Tool (EPEAT) rating system. These existing policies and programs promote repair and reuse without the consumer safety, security, or business concerns raised by the bills.

**Conclusion**

Thank you for your consideration of our perspective on this complicated issue. Our members bear a significant responsibility to the businesses, governments, and individual consumers that depend on us to protect the safety and security of their electronic products, as well as the sensitive data they contain. We are committed to working with you to promote digital privacy and security, while resisting unwarranted state intervention in the marketplace with one-size-fits-all mandates that compromise consumer safety and protection. For these reasons, we oppose SB 425.

Sincerely,

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Security Industry Association (SIA)
State Privacy and Security Coalition, Inc.
TechNet
Telecommunications Industry Association (TIA)
The Toy Association

cc: Members of the Senate Technology Committee

AMERICAN MACHINERY

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Jan 30, 2019
The Honorable Jarrett Keohokalole

RE: Oppose SB 425 - "Fair Digital Electronic Equipment Repair Act"
Dear Senator Keohokalole,
I am writing to voice significant concern with SB 425, which requires original equipment manufacturers of digital electronic devices to make diagnostic and repair information available to device owners and independent repair providers. Such "Right to Repair" initiatives often address two similar but very distinct issues: access to diagnostic tools and repair information, and access to software code embedded in machinery or in a device.

My company, Island Equipment Inc. D.B.A American Machinery is a construction equipment dealership with five locations in Hawaii. We employ more than 63 people. Our dealership strives to bring our customers value in all we do. To do so, we spend significant capital each and every year to ensure our technicians have the latest safety and technology training.

While John Deere equipment has become more sophisticated, Deere supports the customer's right to repair and has built advanced diagnostic capabilities into equipment that are available to the owner, dealers, or others. And for those customers who require even greater diagnostic capabilities, John Deere provides subscription access to "Customer Service Advisor" – a specialized diagnostic tool similar to the tools we use to support our customers.
Customers should be able to expect the same level of information for their tractors and combines across manufacturing brands. It is an appropriate solution that makes so-called "Right to Repair" legislation unnecessary.

That is why manufacturers and dealers have made an industry commitment to make available by model year 2021, the tools farmers need to navigate onboard technology. In the near future, end users will have access to on-board diagnostics tools via in-cab display or wireless interface, electronic diagnostic service tools and training on how to use both. Manufacturers and dealers will also make available manuals, product guides, and product service information. You can learn more at: http://www.r2rsolutions.org/

However, to the extent the owner has the right to lawfully repair his or her equipment, John Deere recommends against unauthorized modification of the embedded software code. Modifying or reverse engineering the embedded software can create a situation where the vehicle does not meet customer expectations, may exceed acceptable emission levels, or might create an unsafe environment for those operating the vehicle, those near the vehicle, or those repairing the vehicle.
Customers are able to farm better today because of better, smarter machines. The advanced software that powers these machines enables more uptime and better diagnostics, in addition to all the very important efficiencies they bring to the job of farming—like speed and precision—than farmers have ever had before.

Right to Repair is a complicated, yet important, issue. We believe the best solutions can be achieved when all parties talk together and allow the marketplace to shape the most appropriate solutions. The best solutions are not likely to come via legislative mandates. For these reasons, I urge you to oppose SB 425.

Sincerely,
Andrew Lindstrom
IT/Integrated Solutions Manager

January 30, 2019

The Honorable Jarrett Keohokalole
Chair, Senate Committee on Technology
Hawaii State Capitol, Room 203
415 South Beretania St.
Honolulu, HI 96813

The Honorable J. Kalani English
Vice Chair, Senate Committee on Technology
Hawaii State Capitol, Room 203
415 South Beretania St.
Honolulu, HI 96813

Dear Senator Keohokalole and Senator English:

On behalf of the Entertainment Software Association (ESA) and its members[1], thank you for the opportunity to submit written testimony in opposition to the creation of a "right to repair" mandate. The ESA is the U.S. trade association representing the publishers of computer and video games for play on consoles, personal computers, mobile devices, and the Internet.

The video game industry is a key economic sector that creates jobs, develops innovative technology, and keeps the United States competitive in the global marketplace. Last year, consumers in the United States spent more than $43 billion on games, hardware, and game-related services, and video game consoles are at the heart of this ecosystem. Moreover, the video game industry employed more than 220,000 people across all fifty states.

We recognize that "right to repair" is an important public policy issue and appreciate the opportunity to provide the video game industry's perspective. We share the desire for our customers to get their broken game consoles repaired quickly and at a modest cost. Software sales are what drives our industry, but no one buys games for a broken console, thus giving our member companies a financial incentive to help their consumers get their consoles

[1] ESA's members: 505 Games; Activision Blizzard, Inc.; Bandai Namco Entertainment Inc.; Bethesda Softworks, Capcom USA, Inc.; Deep Silver; Disney Interactive Studios, Inc.; Electronic Arts; Epic Games, Inc.; Focus Home Interactive; Gearbox Publishing; GungHo Online Entertainment American, Inc.; Intellivision Entertainment; Kalypso; Konami Digital Entertainment; Legends of Learning; Magic Leap; Marvelous USA, Inc; Microsoft Corporation; Natsume Inc.; NCSoft; Nexon America, Inc.; Nintendo of America Inc.; NVIDIA; Outright Games; Phosphor Studios; Rebellion; Riot Games; Sega of America; SixFoot; Sony Computer Entertainment of America; Square Enix, Inc.; Take-Two Interactive Software, Inc.; Tencent, Inc.; THQ Nordic; Triseum; Ubisoft Entertainment, Inc.; Warner Bros. Interactive Entertainment Inc.; and Wizards of the Coast.

repaired as quickly and affordably as possible. It is for that reason that all three major console makers—Microsoft, Sony, and Nintendo—offer affordable, post-warranty repair options.

Large-scale, high-profile video games—what we in the industry call "Triple A" titles—take hundreds of artists, programmers, engineers, and other creative talent to bring to market. A new, original title can take two or more years to produce and cost as much as a Hollywood blockbuster.

Popular video games are prime targets for illegal copying and distribution. To preserve the incentive to create, the industry uses digital locks ("technological protection measures") to protect those games. These locks involve a two-part system of protected software and an authentication mechanism on the game console. The game console checks the game to ensure that it is a legitimate copy. If it is not, then the console will not play that game, unless the console has been unlawfully modified with its security features disabled. Central to this system is the console "firmware", the "nerve center" of the machine, and once third parties have access to an unencrypted version of the firmware, and can modify it, they can disable the security features. All-in-all, a video game console's digital rights management systems are an effective deterrent against the use of illegally copied games.

ESA's concern with "right to repair" is not with displacing industry revenue from repair services, as repairs are not a profit center for the game industry. Instead, ESA's concern rests with permitting third parties, over which we have no control, from modifying the hardware and firmware in a way that could compromise the security features that are vital to preventing consumers from using consoles to play illegal copies of games.

We recognize that the vast majority of repair shops would not use the provided tools and documentation for any illegal purposes (e.g., removal of security features). However, at the rate in which knowledge is spread via social media and other online communication channels, it would only take a few bad actors to have a rapid and severely detrimental impact on the industry.

In October 2018, the Librarian of Congress, upon the recommendation of the Register of the U.S. Copyright Office, published a rule permitting consumers to repair motor vehicles and home appliances under a new, expanded, exemption to the Digital Millennium Copyright Act (DMCA), a law related to copyright that protects the digital locks from circumvention. However, the Librarian and the Register specifically excluded video game consoles from the newest repair exemption. In so doing, they recognized the industry's long-standing concerns about the circumvention of the digital locks on consoles and highlighted the reasonable repair and warranty programs offered by console manufacturers. We recognize Hawaii's right to go in a different direction, should lawmakers so choose, but we thought you should be aware of this related legal development.

The viability and success of the game console business is dependent upon a trustworthy and secure delivery platform. We believe that "right to repair" legislation would compromise the integrity of said platforms by forcing console makers to open up their firmware.

The ESA would gladly provide the Committee with any additional information they believe would be helpful in making an informed decision on this important matter.

Sincerely,

Kathryn P. Gunter
Director, State Government Affairs
Entertainment Software Association

State Privacy and Security Coalition, Inc.

January 30, 2019

LATE

The Honorable Jarrett Keohokalole
Chair, Senate Technology Committee
Hawaii State Capitol, Room 203
415 South Beretania St.
Honolulu, HI 96813

**Re: Electronics Manufacturers Opposition to SB 425 (Electronic Equipment Repair)**

Dear Chair Keohokalole,

On behalf of the hundreds of manufacturers and businesses our organizations represent, we respectfully oppose SB 425, legislation which would mandate original equipment manufacturers (OEMs) of digital electronic equipment or a part for the equipment sold in Hawaii to provide independent repair providers with diagnostic and repair information, software, tools, and parts.

Our organizations represent a broad spectrum of manufacturers of consumer electronics, home appliances, HVACR, security equipment, medical devices, toys, lithium ion batteries, and other connected electronic products as well as companies that rely on the secure operation of these devices such as entertainment software publishers. All of these companies stand behind the quality of their products. Our members develop products and services for a wide range of commercial, government, and consumer users that are often highly regulated. Their customers depend on these products to operate safely, securely, and accurately, whether they are being used to support banking and commercial transactions, transmit and store sensitive personal data, support industrial operations, medical applications, or securely deliver entertainment and other services. As businesses, government agencies, and consumers continue to increase their reliance on connected devices to help deliver efficiency, convenience, and services, it is important to remain vigilant and focused on mitigating the risks associated with the safe and secure operation of those products.

SB 425 mandates that OEMs provision any independent repair provider in much the same way as authorized network providers, but without any protections, requirements, or restrictions, and in doing so, places consumers and their data at risk, undermines the business of Hawaii companies that are part of OEM-authorized networks, and stifles innovation by putting hard earned intellectual property in the hands of hundreds if not thousands of new entities. Further, the bills fail to account for the wide range of repair and refurbishment options currently available to Hawaii consumers from both OEM-authorized and independent repair sources as well as advancements in sustainability by electronic product manufacturers. For these reasons, we urge the Legislature against moving forward with this legislation.

**SB 425 threatens consumer security and safety**

One of our chief concerns with this legislation is its potential to weaken the privacy and security features of various electronic products. The security of user information on these products is of the utmost importance to consumers that rely on them. Industrial equipment, home appliances, smartphones, computers, servers, consumer electronics, medical devices, and other connected devices are at risk of hacking, and weakening of the privacy and security protections of those products will increase risks to consumers. With access to technical information, criminals can more easily circumvent security protections, harming not only the product owner but also everyone who shares their network. In an era of sophisticated cyber attacks, we should not make it easier for criminals to hack security provisions.

Consumers, businesses of all sizes, public schools, hospitals, banks, and industrial manufacturers all need reasonable assurance that those they trust to repair their connected products will do so safely, securely, and correctly. State law should not mandate that all manufacturers must provide a "how to" manual for any product and provide it to anyone who asks.

Manufacturers offer authorized repair networks to provide consumers with assurance that their products are serviced by properly trained and vetted repair professionals that have the necessary skills to safely and reliably repair electronic products. Some types of repairs can be extremely detailed, complicated, performed in someone's home, and, in some cases, dangerous to perform for those without proper training. It is particularly important that products containing high-energy lithium ion batteries are repaired only by trained professionals who understand the hazards associated with these batteries.

Manufacturers want to ensure that their products are serviced by professionals who understand the intricacies of their products and have spent time procuring the knowledge necessary to safely repair the product and return it to the consumer without compromising those standards or undermining the safety and security of their products. Authorized repair networks not only include training requirements, but also ensure that only the correct parts and procedures will be used. Consumers can be protected by warranties or other means of recourse. The legislation provides no such protections for consumers, repair shops or manufacturers.

When an electronic product breaks, consumers have a variety of repair options, including using an OEM's authorized repair network, which often include local repair service providers as well as mail-in, and even in-house repair options for some categories of products. Consumers may also choose to use one of many independent repair service providers; although they do so without the quality assurance provided by using a manufacturer's authorized network provider. The point is that the free market economy already provides a wide range of consumer choice for repair with varying levels of quality, price and convenience without the mandates imposed by this legislation.

Manufacturer authorized networks of repair facilities guarantee that repairs meet OEM standards. If an OEM's brand and warranty are to stand behind repair work and assume product liability, it is only reasonable that the repair facility demonstrates competency and reliability. Without the training and other quality assurance requirements of authorized service providers – implemented through enforceable legal contracts that ensure compliance and accountability that protect consumers – manufacturers would not be able to stand behind their work, warranties, technical support, ongoing training, and business support.

**SB 425 mandates the disclosure of protected proprietary information**

Manufacturers make significant investments in the development of products and services, and the protection of intellectual property is a legitimate and important aspect of sustaining the health of the vibrant and innovative technology industry. However, SB 425 puts at risk the intellectual property that manufacturers have developed.

Consumer electronics use on-board software (i.e., firmware) to help control the product. That firmware is subject to copyright under federal law, and Section 1201 of the Digital Millennium Copyright Act, a related federal law, ensures that bad actors cannot tamper with the digital rights management that copyright owners use to protect this software. The problem is that making repairs to hardware components may necessitate modifying the firmware so that the product will work again.

Importantly, however, firmware controls many other product functions, and opening it up for repair purposes exposes to potential tampering other, more sensitive functions, such as security features. Given the scope of products covered and what must be provided under the legislation – including diagnostics, tools, parts, and updates to software – it is highly likely some of that information would be proprietary. Providing unauthorized repair facilities and individuals with access to proprietary information without the contractual safeguards currently in place between OEMs and authorized service providers places OEMs, suppliers, distributor and repair networks at risk.

**SB 425 fails to account for advancements in sustainability by electronic products manufacturers**

These bills are partly based on an inaccurate assumption that the bill will aid in the reduction of electronic waste in the state. Hawaii already has a robust e-waste law in place and continues to engage stakeholders in potential revisions. However, according to the Rochester Institute of Technology Golisano Institute of Sustainability, in the U.S. e-waste generation peaked in 2013-2014 and is in a period of extended decline[1]. This trend is corroborated by the most recent data from U.S. EPA[2].

Electronic products manufacturers have developed robust policies and programs to ensure that they are continuously improving the sustainability of their products for their whole lifecycle, from design, to material sourcing, product performance, reuse, and responsible end of life management. This has led to continued innovation and the use of new technologies which provide consumers improved devices while simultaneously reducing the overall amount of e-waste generated – all under the existing product repair environment. And with new technologies like OLED and additional light-weighting across the electronics industry, additional declines in e-waste generation are expected to continue during the coming decades.

Repair and reuse are important elements of electronics manufacturers sustainability efforts. Not only is repair and reuse in the OEM's best interest so that consumers can continue to use and enjoy their products, but many OEMs are returning still-useful electronic products to active service to get the maximum benefits out of the resources used to make them. Additionally, under revised "green" procurement standards, federal agencies and other purchasers will be required to purchase computers

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[1] Rochester Institute of Technology Golisano Institute of Sustainability (July 2017). *Sustainable Materials Management for the Evolving Consumer Technology Ecosystem*. Accessed at: https://www.rit.edu/gis/ssil/docs/Sustainable%20Materials%20Management%20for%20the%20Evolving%20Consumer%20Technology%20Ecosystem.pdf

[2] Office of Resource Conservation Recovery, U.S. Environmental Protection Agency (December 2016). *Electronic Products Generation and Recycling in the United States, 2013 and 2014*. Accessed at https://www.epa.gov/sites/production/files/2016-12/documents/electronic_products_generation_and_recycling_2013_2014_11282016_508.pdf

that meet certain environmental performance criteria under the Electronic Product Environmental Assessment Tool (EPEAT) rating system. These existing policies and programs promote repair and reuse without the consumer safety, security, or business concerns raised by the bills.

**Conclusion**

Thank you for your consideration of our perspective on this complicated issue. Our members bear a significant responsibility to the businesses, governments, and individual consumers that depend on us to protect the safety and security of their electronic products, as well as the sensitive data they contain. We are committed to working with you to promote digital privacy and security, while resisting unwarranted state intervention in the marketplace with one-size-fits-all mandates that compromise consumer safety and protection. For these reasons, we oppose SB 425.

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