

ESTA Standards Watch

November 2018

Volume 22, Number 21

Table of Contents Japan Notification JPN/610......3 China Notification CHN/1294......4 ANSI Public Review Announcements......5 Due 17 December 2018......5 Due 8 January 2019......6 Final Actions on American National Standards......8 TSP Donors Who Have Made Long-Term, Multi-Year Pledges......12

Half a Dozen ESTA Standards in Public Review

Six ESTA standards and draft standards are available for public review at http://estalink.us/pr. In alphanumeric designation order they are:

BSR E1.20, Entertainment Technology -- Remote Device Management over USITT DMX512 Networks, is a revised version of ANSI E1.20 – 2010, usually referred to as simply "RDM." This revision is to clarify ambiguities, fix bugs, and incorporate some additional features. ANSI E1.20 is an extension to USITT DMX512 and ANSI E1.11 that allows for bi-directional communication on the primary data link. This allows a controller to discover RDM-enabled devices on the link, to set starting addresses and other configuration settings, and to request status messages. Comments are due before the end of day on December 17.

ANSI E1.34 - 2009, Entertainment Technology - Measuring and Specifying the Slipperiness of Floors Used in Live Performance Venues, is being considered for reaffirmation again (i.e., no changes in requirements, only updating copyright, etc.) The document describes a simple means of measuring and specifying the slipperiness of floor surfaces used by performers in live entertainment venues. The standard is not for normal walking and working surfaces, but only for those floor surfaces used by actors, dancers, and other similar artists when performing before an audience. Comments are due before the end of the day on December 17; the review is over when December 18 starts.

BSR E1.37-5, General Purpose Messages for ANSI E1.20, RDM, is a new standard that creates new Get/Set parameter messages (PIDs) for use with the ANSI E1.20 Remote Device Management protocol. Comments are due no later than December 24; the review is over when December 25 starts.

ANSI E1.48 - 2014, A Recommended Luminous Efficiency Function for Stage and Studio Luminaire Photometry, is being considered for reaffirmation. The standard specifies a V (λ) function that more accurately reflects the response of the human eye at the extreme blue and red ends of the spectrum than the 80+ year-old function used with many light meters. The differences between the functions are significant when measuring the output of RGB LED luminaires. Comments are due before the end of day on December 17.

BSR E1.53, Overhead mounting of luminaires, lighting accessories, and other portable devices: specification and practice, describes the strength characteristics and use of the primary and secondary mounting devices (e.g., C-clamps and safety cables) for portable stage and studio luminaires and accessories. It also covers these mounting devices for special effects equipment often mounted along with lighting equipment on trusses and rigging system battens. The standard is being revised to clarify marking requirements and environmental considerations. Comments are due no later than November 19.

BSR E1.62, **Minimum specifications for mass-produced portable platforms, ramps, stairs, and choral risers for live performance events**, is a new standard for mass-produced portable platforms, stair units and ramps used with those platforms, and choral risers, designed to be used for the presentation of music concerts, dramatic plays, fashion shows, and other entertainment and special events. The units covered by this standard are of a size and weight that allows them to be moved and erected by one or two people. Larger, heavier units are outside the scope of this standard. The scope also covers the railings provided as fall protection accessories, and to the legging systems. The draft standard was offered for public review in early Autumn. Comments received then were addressed by making a few changes to the draft. The changes were substantive, so another public review is necessary. This is it. Comments are due no later than December 17.

Four ESTA Standards Approved

On November 6, ANSI's Board of Standards Review approved four ESTA standards. Three are new or revised standards and one is the reaffirmation without changes of an existing standard. All four will be published soon, and then will be available for free download from the TSP website at tsp.esta.org/freestandards, thanks to the sponsorship of Prosight Specialty Insurance. They also will be available for sale from ANSI and IHS for the retail price of \$40. The four standards are:

ANSI ES1.19-2018, Safety Requirements for Special Event Structures, is a new standard written as part of comprehensive event safety suite, with this section helping to identify design, fabrication, operation and use, inspection and maintenance requirements for the portable structures included in its scope.

ANSI E1.29-2009 (R2018), Product Safety Standard for Theatrical Fog Generators that Create Aerosols of Water, Aqueous Solutions of Glycol or Glycerin, or Aerosols of Highly Refined Alkane Mineral Oil, is a reaffirmation of ANSI E1.29-2009. The standard exists to help product testing laboratories evaluate the safety of fog machines.

ANSI E1.42-2018, Entertainment Technology -- Design, Installation, and Use of Orchestra Pit Lifts, is a revision of ANSI E1.42-2016. The revisions are improvements to incorporate what has been learned since the 2016 edition was published.

ANSI E1.56-2018, Entertainment Technology -- Rigging Support Points, is a new standard offering guidance for the design, fabrication, installation, and testing of permanent and temporary rigging points and rigging lugs and their connection to existing building and venue structures. The goal is to eliminate questionable or unrated rigging points from the field.

New TSP Website with Improved Navigation

ESTA's Technical Standards Program now has a new website with improved navigation at http://tsp.esta.org/. The new site offers the visitor a simple array of large icons to click on to go to the relevant pages. Simplified menus on the right-hand side offer quick-links to popular pages and allow visitors to hop from page to page without having to go back to the main menu. The hover-over, drop-down submenus are gone, making the new site easier to navigate on a mobile device. It's thumb-friendly!

The new site has been slightly reorganized; if you knew where to find things before, you'll be able to find them now, but a few areas have been simplified and moved to a higher level, closer to the TSP home-page. The fog testing protocols are now accessible from the top level, as are the product stewardship documents. If you want to join a working group or find out when the next meeting is, all that is one click from the start page.

Plus, every page now asks you to become an Investor in Innovation. ESTA's Technical Standards Program is volunteer-driven and donation-funded. Click on "making a donation" and become an Investor in Innovation!

WTO Technical Barrier to Trade Notifications

The U.S. Department of Commerce's service, Notify U.S., recently has announced WTO Technical Barrier to Trade notices that may be of interest to *Standards Watch* readers. If you have a problem with a TBTs, you can protest through your representative to the World Trade Organization. (So far the USA is still a member of the WTO.) See "Guidance for Comment Submissions by U.S. Industry on TBT Notifications" at http://tsapps.nist.gov/notifyus/data/guidance.cfm or http://ec.europa.eu/growth/tools-databases/tbt/en/tbt-and-you/being-heard/ for advice on filing objections.

Burundi Notification BDI/8

Date issued: 31 October 2018

Agency responsible: Ministry of Commerce, Industry and Tourism, Burundi Bureau of Standards and Quality

Control (BBN)

National inquiry point: Ministry of Commerce, Industry and Tourism, Burundi Bureau of Standards and

Quality Control (BBN)

Products covered: Sacks and bags, of a kind used for the packing of goods (HS 6305), Sacks and bags (including cones) (HS 39232), Other sacks and bags, including cones (HS 481940)

Title: Decret N° 100/099 du 08/08/2018 portant interdiction de l'importation, de la fabrication, de la commercialisation et de l'utilisation des sachets et d'autres emballages en plastique (Decree No. 100/099 of 8 August 2018 banning the importation, manufacture, marketing and use of plastic bags and other plastic packaging) (6 pages, in French)

Description of content: The notified Decree seeks to: - establish controls on the use of bags and other packaging; - promote the use of materials that do not harm the environment; - prevent all forms of pollution caused by plastic bags and other plastics.

Objective and rationale: Consumer information, labelling; Prevention of deceptive practices and consumer protection; Protection of human health or safety; Protection of animal or plant life or health; Protection of the environment

Relevant documents: - Constitution of the Republic of Burundi; - La Loi N°1/010 du 30 Juin 2000 portant Code de l'environnement de la République du Burundi; - La Loi N°1/06 du 3 Février 2005 portant Ratification de la Convention de Stockholm sur les polluants organiques persistants par la République du Burundi; - La Loi N° 1/02 du 26 Mars 2012 portant Code de l'Eau au Burundi.

Proposed date of adoption: Not given by country
Proposed date of entry into force: Not given by country

Final date for comments: 30 December 2018

Full text: https://tsapps.nist.gov/notifyus/docs/wto_country/BDI/full_text/pdf/BDI8(french).pdf

Japan Notification JPN/610

Date issued: 31 October 2018

Agency responsible: Ministry of Internal Affairs and Communications

National inquiry point: Standards Information Service, International Trade Division, Economic Affairs

Bureau, Ministry of Foreign Affairs (MOFA)

Products covered: Terminal equipment that uses the Internet Protocol and is connected to digital data transmission equipment

Title: Ministerial Ordinance for Partial Revision of Ordinance Concerning Terminal Facilities Etc. (1 page(s), in English)

Description of content: Functions equal to or higher than those specified in following conditions (1) to (4) shall apply as security measures to terminal equipment that uses the Internet Protocol and is connected to digital data transmission equipment, provided that settings for telecommunications functions (limited to those related to transmission and reception) incorporated by the terminal equipment can be changed through telecommunications line equipment to be connected.

- (1) Terminal equipment shall incorporate an access control function to allow setting changes in the telecommunications functions of the terminal equipment.
- (2) An identification code shall be provided for the access control function specified in (1). The identification code shall incorporate a function or a feature to prompt the user to make a change to the code if it has been present in the terminal equipment. Otherwise, terminal equipment shall be provided with a unique identification code or a similar effective means shall be taken to terminal equipment.
- (3) Terminal equipment shall accept the updating of software related to the telecommunications function of the terminal device.
- (4) Terminal equipment shall maintain settings for the access control function specified in (1) and the software updated by the function specified in (3) even if power supply to the terminal equipment fails.

However, the above security measures shall not apply to particular types of terminal equipment (e.g., PCs or smartphones) if they incorporate functions equal to or higher than those of (1) to (4) and can use any kinds of software to be made changes in the functions by users at any time and with ease.

Terminal equipment that has acquired security certification (CC certification) based on international standard ISO/IEC 15408 shall be deemed to have functions equal to or higher than those of (1) to (4).

The above conditions may not apply to terminal equipment if it has obtained technical standards conformity approval in accordance with Paragraph 1, Article 53 of the Telecommunications Business Act or certification of type in accordance with Paragraph 1, Article 56 of the same Act or it has passed an inspection of connection in accordance with Paragraph 1, Article 69 and Paragraph 2, Article 70 of the same Act, or otherwise the self-confirmation of technical standards conformity has been made in accordance with Paragraph 3, Article 63 of the same Act before the revision of the Ordinance.

Objective and rationale: Other; In recent years, there has been an increasing number of cases where IoT devices were hijacked and abused for DDoS attacks and other cyberattacks to cause problems on the Internet. Accordingly, minimum security measures shall be added to the technical standards of terminal equipment including IoT devices in order to ensure the safety and reliability of networks.

Relevant documents: The Ordinance Concerning Terminal Facilities, etc. (Ministerial Ordinance), and related announcements. The amendment will appear in Japanese in "KAMPO, Official Government Gazette.

Proposed date of adoption: 1 April 2019 Proposed date of entry into force: 1 April 2020 Final date for comments: 30 December 2018

Full text: https://tsapps.nist.gov/notifyus/docs/wto_country/JPN/full_text/pdf/JPN610(english).pdf

China Notification CHN/1294

Date issued: 7 November 2018

Agency responsible: Standardization Administration of China (SAC)

National inquiry point: WTO/TBT National Notification and Enquiry Center of the People's Republic of China **Products covered**: LED products for indoor lighting; - Other electric lamps and lighting fittings (HS 940540) **Title**: National Standards of the P.R.C., Minimum Allowable Values of Energy Efficiency and Energy Efficiency Grades of LED Products for Indoor Lighting (5 pages, in Chinese)

Description of content: The standard specifies the limit values of energy efficiency, energy efficiency grades, and test methods of LED downlights, directional integrated LED lamps and non-directional self-ballasted LED lamps for indoor lighting. The standard applies to LED downlights, with LED light source, rated power supply voltage of below AC 250V, frequency of 50Hz,rated power of 2W and above, beam angle >60°, excluding LED downlights using integrated LED lights. The standard applies to directional integrated LED lamps from PAR16, PAR20, PAR30, PAR38 series with rated power supply voltage of AC 220V, frequency of 50Hz and lamp caps fitting the requirements of GU10, B22, E14 or E27. The standard applies to non-directional self-ballasted LED lamps with rated power supply voltage of AC 220V, frequency of 50Hz, and

rated power of 2W to 60W, excluding non-directional self-ballasted LED lamps with additional optical lens design. The standard does not apply to LED products for indoor lighting with energy-consuming non-lighting additional functions or dimming/toning functions.

Objective and rationale: Protection of the environment

Proposed date of adoption: 5 February 2019 **Proposed date of entry into force**: 4 August 2019

Final date for comments: 6 January 2019

Full text: https://tsapps.nist.gov/notifyus/docs/wto_country/CHN/full_text/pdf/

CHN1294(simplified chinese).pdf

ANSI Public Review Announcements

The following documents have been announced for public review by ANSI. Please send your comments before the deadline to the person indicated and to ANSI's Board of Standards Review at psa@ansi.org.

Due 17 December 2018

BSR/ATIS 0600313-201x, Electrical Protection for Telecommunications Central Offices and Similar Type Facilities (revision of ANSI ATIS 0600313-2013)

Telecommunications central offices, data centers, electronic equipment enclosures (EEE), and similar-type facilities are often subjected to disturbances from lightning and AC power line faults, either directly or indirectly, through the communications cables and AC power facilities that serve them. This standard provides the minimum electrical protection, grounding, and bonding criteria necessary to mitigate the disruptive and damaging effects of lightning and AC power faults. It is intended to serve as a guide for designers of such facilities in the application of electrical protection, grounding, and bonding as a function of the electrical environment. Single copy price: \$145.00

Order from and send comments to: ehoefer@atis.org

BSR/ATIS 0600316-201x, Electrical Protection of Telecommunications Outside Plant (revision of ANSI ATIS 0600316-2013)

Telecommunications outside plant, by nature of its outdoor location, and frequent joint-use or joint right-of-way installations with power utility facilities, is often subject to disturbances from lightning and ac power line faults. This standard provides the minimum electrical protection, grounding, and bonding criteria necessary to mitigate the disruptive and damaging effects of lightning and ac power faults. It is intended to serve as a guide for designers of such facilities in the application of electrical protection, grounding, and bonding.

Single copy price: \$145.00

Order from and send comments to: ehoefer@atis.org

BSR/ISEA 138-201x, Performance and Classification for Impact-Resistant Gloves (new standard)

This standard establishes minimum performance, testing, classification, and labeling requirements for gloves designed to protect the knuckles and back of hand from impact forces while performing occupational tasks. Single copy price: \$20.00

Obtain an electronic copy from: https://safetyequipment.org/resources/shop

Send comments to: cfargo@safetyequipment.org

BSR/TIA 569-E-201x, Telecommunications Pathways and Spaces (revision and redesignation of ANSI/TIA 569-D-2015)

This standard specifies requirements for telecommunications pathways and spaces. New revision needed to:

- Incorporate content of addendum ANSI/TIA 569-D-1;
- Incorporate content of addendum ANSI/TIA-569-D-2; and
- Update references.

Single copy price: \$200.00

Obtain an electronic copy from: standards@tiaonline.org

Order from and send comments to: TIA; standards@tiaonline.org

BSR/UL 142-201x, Standard for Safety for Steel Aboveground Tanks for Flammable and Combustible Liquids (revision of ANSI/UL 142-2013)

The following is being proposed: (1) Requirements for optional coverage for tanks storing liquids with a specific gravity greater than 1.0; (2) Requirements for tank bottoms other than flat; (3) Revised Hydrostatic Strength test. Single copy price: Free

Obtain an electronic copy from: http://www.shopulstandards.com

Send comments to: Jeff Prusko, jeffrey.prusko@ul.com

Due 24 December 2018

BSR/ASME A17.1/CSA B44-201x, Safety Code for Elevators and Escalators (revision of ANSI/ASME A17.1/CSA B44-2016)

This standard covers safety requirements for elevators, escalators, dumbwaiters, moving walks and material lifts. Single copy price: Free

Obtain an electronic copy from: http://cstools.asme.org/publicreview Send comments to: Geraldine Burdeshaw, burdeshawg@asme.org

Due 8 January 2019

BSR CSA B44.1/ASME A17.5-201x, Elevator and Escalator Electrical Equipment (revision of ANSI CSA B44.1/ASME A17.5-2014)

This standard applies to the following electrical equipment for elevators, escalators, moving walks, dumbwaiters, material lifts, and elevating devices for persons with physical disabilities (platform lifts and stairway chairlifts): motor controllers; motion controllers; operation controllers; operating devices; and all other electrical equipment not listed/certified and labeled/marked according to another product safety standard or code.

Single copy price: Free

Obtain an electronic copy from: http://cstools.asme.org/publicreview Send comments to: Geraldine Burdeshaw, burdeshawg@asme.org

New ANS Projects

ANSI has announced the following new projects that might materially affect *Standards Watch* readers—or at least be interesting to them. Contact the developer if you (a) want to be involved in the project, (b) object to the project and wish it to be abandoned, or (c) if you would like to point out that its scope is covered by an existing standard, thereby possibly making the project redundant or conflicting.

BSR/APCO 1.112.2-201x, Best Practices for the Use of Social Media in Public Safety Communications (revision of ANSI/APCO 1.112.1-2014)

Public Safety Answering Points (PSAPs) are covering new ground when dealing with social media usage by their employees and their department. Many have yet to grasp the full potential of this tool when it comes to public education and emergency alerting, and the potential for breeches of confidentiality caused by personal posts on the Internet. Because of the criticality of these issues, and current lack of available codified best practices, and standard addressing these concerns is needed. The proposed standard will address social media:

- Use in reporting crimes or emergencies;
- Use in making non-emergency requests;
- Use in public education;
- Use in emergency alerting;
- Use by employees on the job;
- Use by employees off the job;

and provide a standardized set of guidelines and methodologies by which a PSAP can deal with each instance. Contact: Stacy Banker, apcostandards@apcointl.org

BSR/APCO 3.107.2-201x, Core Competencies and Minimum Training Requirements for Public Safety Communications Technician (revision and redesignation of ANSI/APCO 3.107.1-2015)

This standard identifies the core competencies and minimum training requirements for Public Safety Communications Technicians, referred to in this standard as Technician or Specialist. This position is typically tasked with planning, monitoring, maintaining, managing, and/or installing technology systems, including radio systems, computer-aided dispatch (CAD) systems, geographic information systems (GIS), and associated

equipment, to ensure continuity of mission critical operations.

Contact: Stacy Banker, apcostandards@apcointl.org

BSR/E1.66-201x, Safety Standard for Followspot Positions Erected for Short-Term Use in Entertainment Venues (new standard)

Followspot positions are often erected for short-term use as entertainment show lighting during performance and special events. There is currently no published guidance specific to them that covers construction, power supply, personnel access, fall protection, and the protection of people (e.g., members of the audience) from falling objects below the followspot position. The standard will provide minimum performance and safety requirements for followspot positions erected for short-term use in entertainment venues. These followspot positions provide support for followspot luminaires and their operators. The standard will specify provisions for safe worker access, fall protection, protection from weather, and protection from falling objects for workers and members of the public. It also will suggest the power supply requirements.

Contact: Richard Nix, standards@esta.org

BSR/TIA 568.0-E-201x, Generic Telecommunications Cabling for Customer Premises (revision and redesignation of ANSI/TIA 568.0-D-2015)

This standard is nearing the 5-year mark and should be reviewed for content; updating to incorporate current standards and best practice. This standard specifies requirements for generic telecommunications cabling. It specifies requirements for cabling system structure, topologies and distances, installation, performance and testing. Adding content from Addendum 1, and incorporating additional updates, including content regarding 28AWG patch cords.

Contact: Teesha Jenkins, standards@tiaonline.org

BSR/TIA 568.1-E-201x, Commercial Building Telecommunications Cabling Standard (revision and redesignation of ANSI/TIA 568.1- D-2015)

This standard is nearing the 5-year mark and should be reviewed for content; updating to incorporate current standards and best practice. This standard specifies requirements for telecommunications cabling within a commercial building and between commercial buildings in a campus environment. It defines terms, specifies cabling topology, lists cabling requirements, establishes cabling distances, sets telecommunications outlet/connector configurations and provides additional useful information, adding content from Addendum 1, and incorporating additional updates, including content regarding 28AWG patch cords.

Contact: Teesha Jenkins, standards@tiaonline.org

BSR/TIA 4966-A-201x, Telecommunications Infrastructure Standard for Educational Facilities (revision and redesignation of ANSI/TIA 4966-2014)

This standard is nearing the 5-year mark and should be reviewed for content; updating to incorporate content of the Addendum, current standards, and best practice.

Contact: Teesha Jenkins, standards@tiaonline.org

BSR/CSA T200-201x, Software development and cybersecurity evaluation program (new standard)

Project is to support innovation in the field of verification of software, product, and system development with a focus on cybersecurity, providing requirements for the use of cybersecurity verification in the North American context. Supporting organizations consider the maturity of both the organization and the product/system development process as key to providing overall security maturity to all products/systems being developed. This secure-by-design approach allows for the design, development, installation, support, and maintenance and upgrade of their products through their lifetime, and that evaluating the developer, their development processes, and the product itself is essential to a thorough evaluation of any product/system.

Contact: David Zimmerman, david.zimmerman@csagroup.org

BSR/CTA 2084-201x, Test Methods for Determining A/V Products Energy Efficiency (new standard) CTA 2084 defines methods for measuring Audio Video (A/V) products' energy efficiency and related items.

Contact: Veronica Lancaster, vlancaster@cta.tech

Final Actions on American National Standards

The documents listed below have been approved by the ANSI Board of Standards Review or by an ANSI-Audited Designator on the date noted.

ANSI/CTA 709.7-2018, LON over IP - Open Communication in Building Automation, Controls and Building Management – Control Network Protocol - Part 7: Communication via Internet Protocols (new standard): 25 October 2018

ANSI/IEEE C57.12.40-2017, Standard for Network, Three-Phase Transformers, 2500 kVA and Smaller; High Voltage, 34 500 V and Below; Low Voltage, 600 V and Below; Subway and Vault Types (Liquid Immersed) (new standard): 29 October 2018

ANSI/NSF 426-2018 (i3r1), Environmental Leadership and Corporate Social Responsibility Assessment of Servers (revision of ANSI/NSF 426-2017): 22 October 2018

ANSI/NSF 426-2018 (i4r1), Environmental Leadership and Corporate Social Responsibility Assessment of Servers (revision of ANSI/NSF 426-2017): 19 October 2018

ANSI/NSF 426-2018 (i6r1), Environmental Leadership and Corporate Social Responsibility Assessment of Servers (revision of ANSI/NSF 426-2017): 19 October 2018

ANSI/NSF 426-2018 (i7r1), Environmental Leadership and Corporate Social Responsibility Assessment of Servers (revision of ANSI/NSF 426-2017): 19 October 2018

ANSI/UL 2368-2014 (R2018), Standard for Safety for Fire Exposure Testing of Rigid Nonmetallic and Composite Nonmetallic Intermediate Bulk Containers for Combustible Liquids (reaffirmation of ANSI/UL 2368-2014): 10 October 2018

ANSI/UL 845-2018, Standard for Safety for Motor Control Centers (revision of ANSI/UL 845-2011): 31 October 2018

ANSI/UL 845-2018a, Standard for Safety for Motor Control Centers (revision of ANSI/UL 845-2011): 31 October 2018

Draft IEC & ISO Documents

This section lists proposed documents that the International Electromechanical Commission (IEC) or the International Organization for Standardization (ISO) are considering for approval. *Standards Watch* readers interested in reviewing and commenting on a document should order a copy from their national representative and submit their comments through them. Comments from US citizens on IEC and ISO documents should be sent to Charles T. Zegers at czegers@ansi.org and Karen Hughes at isot@ansi.org respectively. Any prices, if shown, are for purchases through ANSI. The sort order is by due date then alphanumeric.

ISO/DIS 21455, Mobile elevating work platforms - Operators controls - Actuation, displacement, location and method of operation, 18 November 2018, \$88.00

ISO/DIS 22688, Brazing - Quality requirements for brazing of metallic materials, 18 November 2018, \$93.00

ISO/IEC/IEEE DIS 21841, Systems and software engineering - Taxonomy of systems of systems, 23 November 2018, \$58.00

JTC1-SC25/2841/DTR, TR 11801-9907: Information Technology - Generic cabling for customer premises - Part 9907: Specifications for direct attach cabling, 2 December 2018

81/607/FDIS, IEC 62305-2 ED3: Protection against lightning - Part 2: Risk management, 7 December 2018

ISO/DIS 14063, Environmental management – Environmental communication - Guidelines and examples, 14 January 2019, \$98.00

ISO/IEC DIS 15444-15, Information technology - JPEG 2000 image coding system - Part 15: High-Throughput JPEG 2000, 17 January 2019, \$134.00

ISO/IEC DIS 15444-16, Information technology - JPEG 2000 image coding system - Part 16: Encapsulation of JPEG 2000 Images into ISO/IEC 23008-12, 17 January 2019, \$46.00

ISO/IEC DIS 21122-3, Information technology - JPEG XS low-latency lightweight image coding system - Part 3: Transport and container formats, 17 January 2019, \$134.00

ISO/IEC DIS 23008-6, Information technology - High efficiency coding and media delivery in heterogeneous environments - Part 6: 3D audio reference software, 17 January 2019, \$33.00

22H/241/CD, **IEC 62040-3 ED3:** Uninterruptible power systems (UPS) - Part 3: Method of specifying the performance and test requirements, 18 January 2019

64/2349/CD, **IEC 60364-1 ED6:** Low-voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definitions, 18 January 2019

JTC1-SC25/2840/NP, PNW JTC1-SC25-2840: ISO/IEC 10192-4-1: Information technology - Home Electronic System (HES) interfaces = Part 4-1: Common user interface and interoperability among home systems - Architecture, 18 January 2019

JTC1-SC25/2827/CDV, **ISO/IEC 14763-2 ED2**: Information technology - Implementation and operation of customer premises cabling – Part 2: Planning and installation, 25 January 2019

Recently Published IEC & ISO Documents

Listed here are documents recently approved by the IEC or ISO. Prices are if bought from ANSI.

IEC 60364-5-56 Ed. 3.0 en:2018, Low-voltage electrical installations Part 5-56: Selection and erection of electrical equipment – Safety services, \$199.00

S+ IEC 60364-5-56 Ed. 3.0 en:2018 (Redline version), Low-voltage electrical installations - Part 5-56: Selection and erection of electrical equipment - Safety services, \$259.00

IEC 61937-11 Amd.1 Ed. 1.0 en:2018, Amendment 1 - Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 11: MPEG-4 AAC and its extensions in LATM/LOAS, \$12.00

IEC 61937-11 Ed. 1.1 en:2018, Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 11: MPEG-4 AAC and its extensions in LATM/LOAS, \$123.00

IEC/TS 62312-1-1 Ed. 2.0 en:2018, Guideline for synchronization of audio and video - Part 1-1: Measurement methods for synchronization of audio and video equipment and systems - General, \$82.00

S+ IEC/TS 62312-1-1 Ed. 2.0 en:2018 (Redline version), Guideline for synchronization of audio and video - Part 1-1: Measurement methods for synchronization of audio and video equipment and systems - General, \$107.00

IEC/TS 62312-2 Ed. 2.0 en:2018, Guideline for synchronization of audio and video - Part 2: Methods for synchronization of audio and video systems, \$117.00

S+ IEC/TS 62312-2 Ed. 2.0 en:2018 (Redline version), Guideline for synchronization of audio and video - Part 2: Methods for synchronization of audio and video systems, \$152.00

ISO 22327:2018, Security and resilience - Emergency management - Guidelines for implementation of a community-based landslide early warning system, \$103.00

ISO 30401:2018, Knowledge management systems – Requirements, \$138.00

ISO 38200:2018, Chain of custody of wood and wood-based products, \$162.00

ISO 9709:2018, Structural timber - Visual strength grading - Basic principles, \$185.00

TSP Meeting Schedule

The following set of meetings will be held in January 2019 at the Sheraton Park Hotel in conjunction with the NAMM conference and trade show in Anaheim, CA. The most up to date version of the meeting schedule sorted by day rather than meeting group is available at http://tsp.esta.org/tsp/meetings/index.php.

Control Protocols E1.37-4 Firmware Uploads TG 09:00 – 13:00 Thursday, 24 January 2019 Control Protocols NAEP TG 19:00 – 23:00 Friday, 25 January 2019 Control Protocols Working Group 08:00 – 11:00 Friday, 25 January 2019 CP/Rig E1.59 Automation Feedback TG 20:00 – 23:00 Thursday, 24 January 2019 Electrical Power Electrical Inspection TG 10:00 – 13:00 Wednesday, 23 January 2019 Event Safety Fire Safety TG 09:00 – 13:00 Saturday, 26 January 2019 Event Safety Rigging Task Group 14:00 – 18:00 Wednesday, 23 January 2019 Event Safety Venue & Site Design Task Group 14:00 – 18:00 Friday, 25 January 2019 Event Safety Working Group 14:00 – 18:00 Saturday, 26 January 2019 Floors Working Group 09:00 – 13:00 Saturday, 26 January 2019 Followspot Position Working Group 11:30 – 14:30 Friday, 25 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 – 18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Friday, 25 January 2019 Stage Machinery Working Group 15:00 – 18:00 Friday, 25 January 2019 <th></th> <th></th> <th></th>			
13:00 - 17:00 Sunday, 27 January 2019	Control Protocols Compliance Study Group	19:00 – 23:00	Saturday, 26 January 2019
Control Protocols E1.20 Task Group 19:00 – 23:00 Wednesday, 23 January 2019 Control Protocols E1.33 TG 14:00 – 18:00 Thursday, 24 January 2019 Control Protocols E1.37-4 Firmware Uploads TG 09:00 – 13:00 Thursday, 24 January 2019 Control Protocols NAEP TG 19:00 – 23:00 Friday, 25 January 2019 Control Protocols Working Group 08:00 – 11:00 Friday, 25 January 2019 CP/Rig E1.59 Automation Feedback TG 20:00 – 23:00 Thursday, 24 January 2019 Electrical Power Electrical Inspection TG 10:00 – 13:00 Wednesday, 23 January 2019 Event Safety Fire Safety TG 09:00 – 13:00 Saturday, 26 January 2019 Event Safety Rigging Task Group 14:00 – 18:00 Wednesday, 23 January 2019 Event Safety Venue & Site Design Task Group 14:00 – 18:00 Friday, 25 January 2019 Event Safety Working Group 14:00 – 18:00 Saturday, 26 January 2019 Floors Working Group 11:30 – 14:30 Friday, 25 January 2019 Fog & Smoke Working Group 11:30 – 14:30 Friday, 25 January 2019 Followspot Position Working Group 11:30 – 14:30 Friday, 25 January 2019 Rigging E1.6-2 Chain Hoist DIM TG <td>13:00 – 17:00</td> <td>Sunday, 27 January 2019</td>		13:00 – 17:00	Sunday, 27 January 2019
Control Protocols E1.33 TG 14:00 – 18:00 Thursday, 24 January 2019 Control Protocols E1.37-4 Firmware Uploads TG 09:00 – 13:00 Thursday, 24 January 2019 Control Protocols NAEP TG 19:00 – 23:00 Friday, 25 January 2019 Control Protocols Working Group 08:00 – 11:00 Friday, 25 January 2019 CP/Rig E1.59 Automation Feedback TG 20:00 – 23:00 Thursday, 24 January 2019 Electrical Power Electrical Inspection TG 10:00 – 13:00 Wednesday, 23 January 2019 Event Safety Fire Safety TG 09:00 – 13:00 Saturday, 26 January 2019 Event Safety Rigging Task Group 14:00 – 18:00 Wednesday, 23 January 2019 Event Safety Venue & Site Design Task Group 14:00 – 18:00 Friday, 25 January 2019 Event Safety Working Group 14:00 – 18:00 Saturday, 26 January 2019 Floors Working Group 09:00 – 13:00 Saturday, 26 January 2019 Followspot Position Working Group 11:30 – 14:30 Friday, 25 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 – 18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG <t< td=""><td>Control Protocols E1.20 / E1.37-5 TG</td><td>14:00 –18:00</td><td>Wednesday, 23 January 2019</td></t<>	Control Protocols E1.20 / E1.37-5 TG	14:00 –18:00	Wednesday, 23 January 2019
Control Protocols E1.33 TG 14:00 – 18:00 Friday, 25 January 2019 Control Protocols E1.37-4 Firmware Uploads TG 09:00 – 13:00 Thursday, 24 January 2019 Control Protocols NAEP TG 19:00 – 23:00 Friday, 25 January 2019 Control Protocols Working Group 08:00 – 11:00 Friday, 25 January 2019 CP/Rig E1.59 Automation Feedback TG 20:00 – 23:00 Thursday, 24 January 2019 Electrical Power Electrical Inspection TG 10:00 – 13:00 Event Safety Fire Safety TG 09:00 – 13:00 Event Safety Rigging Task Group Event Safety Venue & Site Design Task Group Event Safety Venue & Site Design Task Group Event Safety Working Group Friday, 25 January 2019 Event Safety Working Group 14:00 – 18:00 Friday, 25 January 2019 Event Safety Working Group 14:00 – 18:00 Saturday, 26 January 2019 Fog & Smoke Working Group 11:30 – 14:30 Friday, 25 January 2019 Followspot Position Working Group 11:30 – 14:30 Friday, 25 January 2019 Followspot Position Working Group Rigging E1.6-2 Chain Hoist DIM TG 14:00 – 18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG Saturday, 26 January 2019 Friday, 25 January 2019 Friday, 25 January 2019	Control Protocols E1.20 Task Group	19:00 – 23:00	Wednesday, 23 January 2019
Control Protocols E1.37-4 Firmware Uploads TG 09:00 – 13:00 Thursday, 24 January 2019 Control Protocols NAEP TG 19:00 – 23:00 Friday, 25 January 2019 Control Protocols Working Group 08:00 – 11:00 Friday, 25 January 2019 CP/Rig E1.59 Automation Feedback TG 20:00 – 23:00 Thursday, 24 January 2019 Electrical Power Electrical Inspection TG 10:00 – 13:00 Wednesday, 23 January 2019 Event Safety Fire Safety TG 09:00 – 13:00 Saturday, 26 January 2019 Event Safety Rigging Task Group 14:00 – 18:00 Wednesday, 23 January 2019 Event Safety Venue & Site Design Task Group 14:00 – 18:00 Friday, 25 January 2019 Event Safety Working Group 14:00 – 18:00 Saturday, 26 January 2019 Floors Working Group 09:00 – 13:00 Saturday, 26 January 2019 Followspot Position Working Group 11:30 – 14:30 Friday, 25 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 – 18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Friday, 25 January 2019 Stage Machinery Working Group 15:00 – 18:00 Friday, 25 January 2019 <td rowspan="2">Control Protocols E1.33 TG</td> <td>14:00 –18:00</td> <td>Thursday, 24 January 2019</td>	Control Protocols E1.33 TG	14:00 –18:00	Thursday, 24 January 2019
Control Protocols NAEP TG 19:00 – 23:00 Friday, 25 January 2019 Control Protocols Working Group 08:00 – 11:00 Friday, 25 January 2019 CP/Rig E1.59 Automation Feedback TG 20:00 – 23:00 Thursday, 24 January 2019 Electrical Power Electrical Inspection TG 10:00 – 13:00 Wednesday, 23 January 2019 Event Safety Fire Safety TG 09:00 – 13:00 Saturday, 26 January 2019 Event Safety Rigging Task Group 14:00 – 18:00 Wednesday, 23 January 2019 Event Safety Venue & Site Design Task Group 14:00 – 18:00 Friday, 25 January 2019 Event Safety Working Group 14:00 – 18:00 Saturday, 26 January 2019 Floors Working Group 09:00 – 13:00 Saturday, 26 January 2019 Fog & Smoke Working Group 11:30 – 14:30 Friday, 25 January 2019 Followspot Position Working Group 09:00 – 13:00 Saturday, 26 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 – 18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Friday, 25 January 2019 Stage Machinery Working Group 15:00 – 18:00 <td>14:00 –18:00</td> <td>Friday, 25 January 2019</td>		14:00 –18:00	Friday, 25 January 2019
Control Protocols Working Group CP/Rig E1.59 Automation Feedback TG Electrical Power Electrical Inspection TG Event Safety Fire Safety TG Event Safety Rigging Task Group Event Safety Venue & Site Design Task Group Event Safety Working Group Event Safety Working Group Event Safety Working Group Friday, 25 January 2019 Event Safety Working Group Friday, 25 January 2019 Event Safety Venue & Site Design Task Group Event Safety Working Group Event Safety Working Group Friday, 25 January 2019 Event Safety Working Group Friday, 25 January 2019 Event Safety Working Group Friday, 26 January 2019 Followspot Position Working Group Friday, 25 January 2019 Followspot Position Working Group Friday, 25 January 2019 Rigging E1.6-2 Chain Hoist DIM TG Rigging Working Group Friday, 25 January 2019 Stage Machinery E1.64 TG O9:00 – 13:00 Friday, 25 January 2019 Stage Machinery Working Group Friday, 25 January 2019 Friday, 25 January 2019 Friday, 25 January 2019	Control Protocols E1.37-4 Firmware Uploads TG	09:00 - 13:00	Thursday, 24 January 2019
CP/Rig E1.59 Automation Feedback TG 20:00 – 23:00 Thursday, 24 January 2019 Electrical Power Electrical Inspection TG 10:00 – 13:00 Wednesday, 23 January 2019 Event Safety Fire Safety TG 09:00 – 13:00 Saturday, 26 January 2019 Event Safety Rigging Task Group 14:00 –18:00 Wednesday, 23 January 2019 Event Safety Venue & Site Design Task Group 14:00 –18:00 Friday, 25 January 2019 Event Safety Working Group 14:00 –18:00 Saturday, 26 January 2019 Floors Working Group 09:00 – 13:00 Saturday, 26 January 2019 Followspot Position Working Group 09:00 – 13:00 Thursday, 24 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 –18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Saturday, 26 January 2019 Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Control Protocols NAEP TG	19:00 – 23:00	Friday, 25 January 2019
Electrical Power Electrical Inspection TG 10:00 – 13:00 Wednesday, 23 January 2019 Event Safety Fire Safety TG 09:00 – 13:00 Saturday, 26 January 2019 Event Safety Rigging Task Group Event Safety Venue & Site Design Task Group Event Safety Working Group Event Safety Working Group Friday, 25 January 2019 Event Safety Working Group Floors Working Group Fog & Smoke Working Group Friday, 26 January 2019 Fog & Smoke Working Group Friday, 25 January 2019 Followspot Position Working Group Rigging E1.6-2 Chain Hoist DIM TG Rigging Working Group Saturday, 26 January 2019 Friday, 25 January 2019 Rigging Working Group Friday, 25 January 2019 Saturday, 26 January 2019 Saturday, 26 January 2019 Saturday, 26 January 2019 Friday, 25 January 2019 Stage Machinery E1.64 TG O9:00 – 13:00 Friday, 25 January 2019 Stage Machinery Working Group Friday, 25 January 2019	Control Protocols Working Group	08:00 - 11:00	Friday, 25 January 2019
Event Safety Fire Safety TG Event Safety Rigging Task Group Event Safety Venue & Site Design Task Group Event Safety Working Group Event Safety Working Group Floors Working Group Fog & Smoke Working Group Followspot Position Working Group Rigging E1.6-2 Chain Hoist DIM TG Stage Machinery E1.64 TG Pevent Safety TG O9:00 – 13:00 Saturday, 26 January 2019 Saturday, 26 January 2019 Fog & Smoke Working Group 11:30 – 14:30 Friday, 25 January 2019 Followspot Position Working Group Friday, 26 January 2019 Saturday, 26 January 2019 Friday, 25 January 2019	CP/Rig E1.59 Automation Feedback TG	20:00 – 23:00	Thursday, 24 January 2019
Event Safety Rigging Task Group Event Safety Venue & Site Design Task Group Event Safety Venue & Site Design Task Group Event Safety Working Group Event Safety Working Group Floors Working Group Floors Working Group Fog & Smoke Working Group Followspot Position Working Group Rigging E1.6-2 Chain Hoist DIM TG Rigging Working Group Stage Machinery E1.64 TG Site Design Task Group 14:00 –18:00 Friday, 25 January 2019 Stage Machinery Working Group Friday, 25 January 2019 Friday, 25 January 2019 Friday, 25 January 2019	Electrical Power Electrical Inspection TG	10:00 – 13:00	Wednesday, 23 January 2019
Event Safety Venue & Site Design Task Group Event Safety Working Group Friday, 25 January 2019 Event Safety Working Group Floors Working Group Fog & Smoke Working Group Fog & Smoke Working Group Followspot Position Working Group Rigging E1.6-2 Chain Hoist DIM TG Rigging Working Group Saturday, 26 January 2019 Friday, 25 January 2019 Friday, 25 January 2019 Friday, 26 January 2019 Friday, 26 January 2019 Saturday, 26 January 2019 Saturday, 26 January 2019 Stage Machinery E1.64 TG O9:00 – 13:00 Friday, 25 January 2019 Stage Machinery Working Group Thursday, 26 January 2019 Friday, 25 January 2019 Stage Machinery Working Group Triday, 25 January 2019	Event Safety Fire Safety TG	09:00 – 13:00	Saturday, 26 January 2019
Event Safety Working Group 14:00 –18:00 Saturday, 26 January 2019 Floors Working Group 09:00 – 13:00 Saturday, 26 January 2019 Fog & Smoke Working Group 11:30 – 14:30 Friday, 25 January 2019 Followspot Position Working Group 09:00 – 13:00 Thursday, 24 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 –18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Saturday, 26 January 2019 Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Event Safety Rigging Task Group	14:00 –18:00	Wednesday, 23 January 2019
Floors Working Group 09:00 – 13:00 Saturday, 26 January 2019 Fog & Smoke Working Group 11:30 – 14:30 Friday, 25 January 2019 Followspot Position Working Group 09:00 – 13:00 Thursday, 24 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 –18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Saturday, 26 January 2019 Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Event Safety Venue & Site Design Task Group	14:00 –18:00	Friday, 25 January 2019
Fog & Smoke Working Group 11:30 – 14:30 Friday, 25 January 2019 Followspot Position Working Group 09:00 – 13:00 Thursday, 24 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 –18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Saturday, 26 January 2019 Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Event Safety Working Group	14:00 –18:00	Saturday, 26 January 2019
Followspot Position Working Group 09:00 – 13:00 Thursday, 24 January 2019 Rigging E1.6-2 Chain Hoist DIM TG 14:00 –18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Saturday, 26 January 2019 Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Floors Working Group	09:00 - 13:00	Saturday, 26 January 2019
Rigging E1.6-2 Chain Hoist DIM TG 14:00 –18:00 Saturday, 26 January 2019 Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Saturday, 26 January 2019 Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Fog & Smoke Working Group	11:30 – 14:30	Friday, 25 January 2019
Rigging Working Group 19:00 – 23:00 Friday, 25 January 2019 Stage Machinery E1.64 TG 09:00 – 13:00 Saturday, 26 January 2019 Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Followspot Position Working Group	09:00 - 13:00	Thursday, 24 January 2019
Stage Machinery E1.64 TG 09:00 – 13:00 Saturday, 26 January 2019 Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Rigging E1.6-2 Chain Hoist DIM TG	14:00 –18:00	Saturday, 26 January 2019
Stage Machinery Working Group 15:00 –18:00 Friday, 25 January 2019	Rigging Working Group	19:00 – 23:00	Friday, 25 January 2019
	Stage Machinery E1.64 TG	09:00 - 13:00	Saturday, 26 January 2019
Technical Standards Council 09:00 – noon Sunday 27 January 2010	Stage Machinery Working Group	15:00 –18:00	Friday, 25 January 2019
Outloary 2019	Technical Standards Council	09:00 – noon	Sunday, 27 January 2019

The following meetings will be at the Hyatt Regency Louisville, in conjunction with the USITT Conference and Stage Expo:

Floors Working Group	14:00 – 17:00	Wednesday 20 March 2019
Control Protocols Working Group	09:00 – noon	Thursday 21 March 2019
Stage Machinery Working Group	14:00 – 17:00	Thursday 21 March 2019
Rigging Working Group	19:00 – 22:00	Thursday 21 March 2019
Electrical Power Working Group	11:00 – 14:00	Friday 22 March 2019
Technical Standards Council	15:00 – 18:00	Friday 22 March 2019
Followspot Position Working Group	19:00 – 22:00	Friday 22 March 2019
Fog & Smoke Working Group	09:00 – 11:00	Saturday 23 March 2019
Event Safety Working Group	11:00 – 15:00	Saturday 23 March 2019

ESTA Standards Watch

is distributed as a benefit to ESTA members and as a communication medium for participants in ESTA's Technical Standards Program. Original material is copyright the Entertainment Services and Technology Association.

Editors:

Karl G. Ruling, Technical Standards Manager Entertainment Services and Technology Association 630 Ninth Avenue, Suite 609 New York, NY 10036 USA karl.ruling@esta.org 1 212 244 1505 ext. 703 Fax 1 212 244 1502 Richard Nix, Asst. Technical Standards Manager Entertainment Services and Technology Association 630 Ninth Avenue, Suite 609
New York, NY 10036
USA
richard.nix@esta.org
1 212 244 1505 ext. 649
Fax 1 212 244 1502

TSP Donors Who Have Made Long-Term, Multi-Year Pledges

About the Stage Altman Lighting

Barbizon Lighting Company

B-Hive Industries Scott Blair BMI Supply

Boston Illumination Group

Candela Controls

Chauvet
City Theatrical

Clark-Reder Engineering

Columbus McKinnon Corporation
Tracey Cosgrove and Mark McKinney

Bruce Darden
Doug Fleenor Design
Earl Girls Inc. EGI Pro
Electronic Theatre Controls
Entertainment Project Services

Geiger Engineers, PC Tony Giovannetti

GLP German Light Products

Golden Sea Professional Equipment Limited

H & H Specialties Harlequin Floors High Output Neil Huff

Hughston Engineering IATSE Local 891

InCord

Beverly and Tom Inglesby Interactive Technologies InterAmerica Stage

iWeiss Inc. J.R. Clancy Jules Lauve Brian Lawlor Lex Products Lycian Stage Lighting John T. McGraw

McLaren Engineering Group Mike Garl Consulting Mike Wood Consulting Morpheus Lights

NAMM Niscon

Oasis Stage Werks Reed Rigging

Reliable Design Services

Robe

Rosco Laboratories Rose Brand Alan M. Rowe David Saltiel Sapsis Rigging

Stage Equipment & Lighting

Stage Rigging Stagemaker Stageworks

Syracuse Scenery and Stage Lighting, Co.

Dana Taylor Steve Terry

Texas Scenic Company Theatre Projects Consultants Theatre Safety Programs

TMB

Tyler Truss Systems

Vertigo

Vincent Lighting Systems Steve Walker & Associates Walt Disney Parks and Resorts

Westview Productions WNP Services, Inc.

XSF Xtreme Structures and Fabrication

Investors in Innovation, supporters of ESTA's Technical Standards Program

VISIONARY LEADERS (\$50,000 & up)

ETC ProSight Specialty Insurance

VISIONARY (\$10,000 & up; >100 employees/members)

Chauvet Professional Martin by Harman

Cisco Robe

Columbus McKinnon Entertainment Technology Walt Disney Parks and Resorts

VISIONARY (\$5,000 & up; 20-100 employees/members)

Altman Lighting, Inc. Rose Brand German Light Products Stage Rigging

JR Clancv **TMB**

Tyler Truss Systems, Inc. McLaren Engineering Group

VISIONARY (\$500 & up; <20 employees/members)

About the Stage John T. McGraw B-Hive Industries, Inc. Mike Garl Consulting Scott Blair Mike Wood Consulting

Boston Illumination Group Power Gems Louis Bradfield Reed Rigging

Reliable Design Services Candela Controls Inc.

Clark Reder Engineering Alan Rowe Tracey Cosgrove & Mark McKinney **David Saltiel**

Doug Fleenor Design Sapsis Rigging Inc.

EGI Event Production Services Stageworks **Entertainment Project Services** Dana Taylor Steve Terry Neil Huff Hughston Engineering Inc. Theatre Projects

Interactive Technologies Theatre Safety Programs

Lankey & Limey Ltd. Vertigo

Steve A. Walker & Associates Jules Lauve **Brian Lawlor** Westview Productions

Limelight Productions, Inc. **WNP Services**

INVESTOR (\$3,000–\$9,999; >100 employees/members)

Actors' Equity Association Lex Barbizon Lighting Company **NAMM**

Golden Sea Professional Equipment Limited Rosco Laboratories IATSE Local 728 Texas Scenic Company

IATSE Local 891

INVESTOR (\$1,500–\$4,999; 20–100 employees/members)

American Society of Theatre Consultants Morpheus Lights

Area Four Industries Niscon Inc.

BMI Supply Syracuse Scenery and Stage Lighting City Theatrical Inc. Tomcat XSF Xtreme Structures and Fabrication

InterAmerica Stage, Inc. Lycian Stage Lighting

INVESTOR (\$200-\$499; <20 employees/members)

Benjamin Cohen Robert Scales Bright Ideas Custom Electronics Inc. Stephen Vanciel

Bruce Darden Suga Koubou Co., Ltd.

Guangzhou Ming Jing lighting Equipment Co. VU-Industry Vision Technology

K5600, Inc. Xpro Light

Indianapolis Stage Sales & Rentals, Inc.

SUPPORTER (<\$3,000; >100 employees/members)

Ian Foulds, IATSE Local 873

Harlequin Floors

SUPPORTER (<\$1,500; 20–100 employees/members)

Blizzard Lighting, LLC Geiger Engineers H&H Specialties High Output InCord iWeiss

SUPPORTER (<\$200; <20 employees/members)

Roy Bickel Tony Giovannetti Pat Grenfell Mitch Hefter John Huntington Beverly and Tom Inglesby

Eddie Kramer Jason Kyle Thern Stage Equipment USAI Lighting

Oasis Stage Werks

Stage Equipment & Lighting

Stagemaker

Thermotex Industries, Inc. Vincent Lighting Systems

Zhuhai Shengchang Electronics Co.

Michael Lay Lizz Pittsley Michael Skinner Skjonberg Controls Inc. Stage Labor of the Ozarks Tracy Underhill

Charlie Weiner

Planned Giving donor: Ken Vannice