

BY KARL G. RULING

## Salve, Saturnus!

HAIL, SATURN! I'm writing this as we are approaching the days when Saturnalia, the ancient Roman festival honoring the god Saturn, was held—and still is by Latin clubs. It was (or is) a festival of celebration, feasting, gift-giving, and jests. Saturn has been described as the god of plenty, wealth, agriculture, renewal, and liberation—and so, Saturnalia, besides being a chance to party and behave outrageously, is a harvest celebration, a celebration of bounty.

As I write this, we have a bounty of 15 standards—draft documents or existing standards up for reaffirmation—in public review. It's probably a record number, but it shouldn't be surprising. We have nine subject-matter working groups. They all met at the Marriott Solana in Westlake, TX in late October. All but one moved one or more documents forward to public



*Saturnalia* by Antoine-François Callet, 1783

review or as a new project. ESTA's Technical Standards Program has been producing American National Standards and non-ANS informational documents for more than 20 years. We've now published 62 American National Standards and five informational documents. Each of these

requires maintenance (regular review and reaffirmation or revision) and each suggests new work that can be done and provides a foundation for it.

As I write this, the following documents are available for public review on the ESTA TSP website at <http://estalink.us/pr>, but all

## Plug & Play Wireless DMX



Multiverse® SHoW Baby Is Fully Compatible With All Previous SHoW Baby Models And Other Multiverse® Products

FOLLOW US ON



[www.citytheatrical.com](http://www.citytheatrical.com)

**CITY  
THEATRICAL**  
NEW YORK • LONDON

the public reviews time-out just before the end of this year, 2019. Still, they can give you an idea of what we have been working on, and, if you visit the public review page whenever you read this, you might find something else of interest to you. Rarely is the public review list empty.

“As I write this, we have a bounty of 15 standards . . . It’s probably a record number, but it shouldn’t be surprising.”

## In review now

**ANSI E1.17 – 2015, Entertainment Technology – Architecture for Control Networks (ACN)**, is being considered for reaffirmation—no substantive changes. It’s a suite of documents that specifies an architecture, including protocols and language, which may be configured and combined with other standard protocols to form flexible, networked audio, lighting, or other control systems. The suite of documents is offered in a ZIP file for download.

**ANSI E1.19 – 2015, Recommended Practice for the Use of Class A Ground-Fault Circuit Interrupters (GFCIs) Intended for Personnel Protection in the Entertainment Industry**, is being considered for reaffirmation with no substantive changes. It offers guidance, in accordance with existing applicable standards, on how to select, install, use, and maintain ground fault protection devices with nominal 5 mA trip settings in the entertainment industry. The purpose of their use would be to protect persons from shock as well as persons and property from fire.

Documents in public review normally are prefixed with BSR, not ANSI. The BSR prefix means that the document is a draft, not an approved American National Standard. I am identifying *E1.17* and *E1.19* with the ANSI prefix because, although we are offering them for public review, they are standards,

not draft documents. Of course, if someone comments that an existing standard needs changes, and the working group agrees, we will create a revised version. That revision will be a BSR document.

**BSR E1.2, Entertainment Technology – Design, Manufacture, and Use of Aluminum Trusses and Towers**, describes the design, manufacture, and use of aluminum trusses, towers, and associated aluminum structural components such as head blocks, sleeve blocks, bases, and corner blocks in the entertainment industry. *ANSI E1.2 – 2012* is being revised to bring its requirements up-to-date with current technologies; this document is that revision.

**BSR E1.4-3, Entertainment Technology – Manually-Operated Hoist Rigging Systems**, is a new standard applying to permanently installed, manually-operated hoists used as part of rigging systems for raising, lowering, and suspension of scenery, properties, lighting, and similar loads. This standard establishes requirements for the design,

manufacture, installation, inspection, and maintenance of manually-operated hoist systems for lifting and suspension of loads for performance, presentation, and theatrical production.

**BSR E1.6-2, Entertainment Technology – Design, Inspection, and Maintenance of Electric Chain Hoists for the Entertainment Industry**, is a revision of the 2018 edition. It covers the design, inspection, and maintenance of serially-manufactured electric link chain hoists used in the entertainment industry. The standard is being revised to provide more clarity or requirements.

**BSR E1.20, Entertainment Technology – Remote Device Management Over USITT DMX512 Networks**, is a revision of *ANSI E1.20 – 2010*. The standard is being revised to clarify ambiguities, fix bugs, and incorporate some additional features. *E1.20* is an extension to *USITT DMX512* and *ANSI E1.11* that allows for bi-directional communication on the primary data link.



**UltraLITE<sup>®</sup>**  
Wireless Systems

**Affordable Full Duplex  
Wireless Intercom**

- Communicate Simultaneously & Hands-Free
- Self Contained - No Beltpacks or Base Station
- Portable for “On-Location” Crews

[www.eartec.com](http://www.eartec.com)  
800.399.5994

**EARTEC**

Order online & get a free case: Code PRODUCTION

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.

**BSR E1.21, Entertainment Technology – Temporary Structures Used for Technical Production of Outdoor Entertainment Events**, is a revision of the 2013 edition. It

establishes a minimum level of design and performance parameters for the design, manufacturing, use, and maintenance of temporary ground-supported structures used in the production of outdoor entertainment events.

**BSR E1.23, Entertainment Technology – Design, Execution, and Maintenance**

**of Atmospheric Effects**, is a revision of the 2015 edition with a change of scope. It offers advice on the planning, execution, and maintenance of theatrical effects using glycol, glycerin, or white mineral oil fogs or mists, in theatres, arenas, motion picture studios, and other places of public assembly or motion picture production. The major

## A call for members

ESTA's TSP works to maintain a balance of the interests represented by the volunteers on the working groups to help ensure that the standards developed are for the benefit of everyone: the people who make equipment, the people who sell or rent it, the people who specify it, and the people who use it. To do this, periodically the TSP issues a call for new members in particular interest categories. At this time, the following working groups are looking for voting members in the noted interest categories to help balance the interests in the working group.

- **Control Protocols:** General interest, dealer/rental companies
- **Electrical Power:** Designers, and anybody but users. We have too many users!
- **Event Safety:** Performing artists, insurance companies—anybody but general interest
- **Floors:** Designers, dealer/rental companies
- **Fog and Smoke:** All categories except users. We have too many users!
- **Followspot Position:** Producers of any type, dealer/rental companies
- **Photometrics:** Dealer/rental companies, designers, general interest
- **Rigging:** General interest
- **Stage Machinery:** Dealer/rental companies

“Interest” means how the work of the group affects your livelihood or your health, and not that you find it interesting. The interest categories are relative to this material affect; for the working groups except the Event Safety Working Group, the categories are as follows:

**Custom-Market Producer:** A working group interest category, a member of which is a producer of goods in which more than 50% of the monetary value of its product lines are designed and manufactured for specific customers to meet specifications provided by those customers and in which the products provided to different customers are substantially different.

**Mass-Market Producer:** A working group interest category, a member of which is a producer of goods in which more than 50% of the monetary of its product line is uniform products, designed, and manufactured for non-specific customers without modification for any particular customer.

**Dealer or Rental Business:** A working group interest category, a member of which is a company whose major business (more than 50%) is in the reselling or renting of products from several manufacturers to the company's customers.

**User:** A working group interest category, a member of which is a person or company that uses the products that are the subject of a working group, and for whom this use results in a net income that is greater than any income derived from making, selling, or renting the subject products to others. Users, for the purposes of this clause, shall include educators and product end-users.

**Designer:** A working group interest category, a member of which incorporates the products and services regulated by ESTA standards in

their work but is not involved in the production, sale, or distribution of the actual products, nor is regularly employed by those who are involved in the production, sale, or distribution of the actual products. Examples are theatre consultants, architects, and engineers who derive more than 50% of their income as a design professional.

The Event Safety Working Group has a slightly different set of interest categories.

**Event producer:** Person or company involved in the overall management of a live event.

**Equipment producer:** A person or company that makes equipment for events. These could be considered Mass-Market or Custom-Market Producers in the other working groups.

**Equipment Dealer or Rental Business:** A person or company that sells or rents equipment for events.  
**Designer of Events:** Person or company that designs elements of an event, but who is not a producer. The elements can be artistic (e.g., scenery) or technical (crowd control plans).

**Event Worker:** Person who works at an event, such as a stagehand, technician, or stage manager.

**Performing Artist:** Persons and companies that perform at live events (e.g., singers, dancers, acrobats).

**Event Insurance Company:** A company that provides insurance coverage for live events. An insurance broker would be considered to represent the interests of a company and not be independent if that company represents more than 50% of the broker's business.

For all the working groups, the General Interest category is for any person or company with a material interest but that cannot be reasonably assigned to one of the other categories. It is the “none of the above” category, not the “I'm just kinda generally interested” category.

Voters in the Technical Standards Program are required to attend meetings and to vote on letter ballots. Membership in ESTA or any other organization is not a requirement for participation in ESTA's Technical Standards Program, but there is a \$100 a year per person participation fee—a flat rate, regardless of voting status or the number of working groups a person joins. The fee is levied to help defray the costs of running the TSP, which has always run a deficit. There is a scholarship fund, with an initial endowment from Chris Kaiser, to help those who would like to participate for whom the participation fee would be a hardship. More information about becoming involved in the Technical Standards Program and links to application forms are available at <http://tsp.esta.org/>.

changes are the addition of guidance on developing strategies to maintain an effect over the months or years of a long-running show or an extended motion picture shoot. There is also advice about adjusting TWA limits for long workdays and workweeks.

**BSR E1.37-5, General Purpose Messages for ANSI E1.20, RDM**, is a new standard providing additional Get/Set parameter messages (PIDs) for use with the *ANSI E1.20 Remote Device Management* protocol.

**BSR E1.47, Entertainment Technology – Recommended Guidelines for Entertainment Rigging System Inspections**, is a revision of the 2017 edition. It covers the inspection of entertainment rigging systems. Rigging systems may be statically suspended (stationary, dead hung) equipment, manually-operated counterweight sets, manually-operated hoist sets, rope and sandbag (hemp) sets, electric hoist sets (including winding drum hoists, packaged hoists, powered counterweight sets), and the

rigging parts of fire safety curtain systems.

**BSR E1.62, Minimum Specifications for Mass-Produced Portable Platforms, Ramps, Stairs, and Choral Risers for Live Performance Events**, is a new standard, a product specification covering serially manufactured portable platforms, stair units and ramps used with those platforms, and choral risers. It also would cover railings provided as fall protection accessories for these units. It would give minimum payload and sideways force handling specifications.

**BSR E1.66, Safety Standard for Followspot Positions Erected for Short-term Use in Entertainment Venues**, is a new standard covering the safety requirements for followspot positions in, or on, structures erected for short-term use, and positions not covered by *ANSI E1.28*. It is applicable to positions located indoors or outdoors. It addresses structural, electrical, and personnel safety requirements associated with them.

**BSR ES1.9, Event Safety – Crowd**

**Management**, is a new standard. It defines “crowd management,” as distinguished from “crowd control,” provides an overview of crowd management theory and vocabulary, and applies these terms to certain reasonably foreseeable risks that arise during live events. The standard is intended both to identify minimum requirements and to provide questions and suggestions that help event organizers make reasonable choices under the circumstances of their event.

“We’ve now published 62 American National Standards and five informational documents. Each of these requires maintenance . . .”

**BSR ES1.7, Event Safety Requirements – Weather Preparedness**, is a new standard addressing the development and use of weather planning strategies to mitigate weather-related risks associated with live events and their associated temporary

engineering  
architecture  
technical production  
management  
costume design  
digital media  
sound design  
lighting design  
education  
safety and health  
scenic design

**There's Something for Every Stage**  
Find your focus at **USITT 2020**

Education, training, **hands-on discovery**,  
new products, **jobs**, and networking  
with more than **6000** designers,  
**technicians** and industry  
**leaders.**

**Join us.**

60th Anniversary Conference & Stage Expo  
**HOUSTON**  
April 1 - 4, 2020

[www.usitt.org](http://www.usitt.org)

**usitt**

Register Today!

special event structures. Its scope includes both indoor and outdoor events.

**BSR ES1.19, Safety Requirements for Special Event Structures**, is a revision of the 2018 edition. It addresses structural safety for any temporary structure used for special events. The 2018 edition is being revised to correct errata, and to add further clarity to its scope and requirements.

## A new project

One of the traditions of Saturnalia was the giving of candles, *ceri*. These were useful items for the short days and long nights around Saturnalia, and a reminder that the days will get brighter after the solstice. The Photometrics Working Group has approved a new project to try to describe, not light getting brighter, but getting dimmer: **BSR E1.69, Reporting the Low-End Dimming**

## Performance of Entertainment Luminaires Using LED Sources.

The project is a small step in tackling the larger problem of anomalous dimming with LED luminaires. It will do so by working to define ways to describe dimming performance so this can be communicated from one person to another without having to actually provide a demonstration of the luminaire. There is no intention of mandating any particular performance (blinking to black at 50% might be fine for some applications, particularly if the price is low), but the project should give people a way of describing how a luminaire dims without using vague terms, such as “theatrical quality dimming” or “dims smoothly to black.” There are a whole host of issues that could be considered with dimming LED luminaires, such as what “dim to warm” might mean, or how the color shifts with dimming, but the first step is describing the luminaire output level when the control signal is varied over the low-end range from 10% to 0%, the range that seems to have the most flickers and bumps. (See Mike Wood’s “When White Light Isn’t White— Part 2” in the Summer 2008 issue of *Protocol* for a discussion of how LED color shifts with dimming.)

If this E1.69 project interests you, you can help by either joining the Photometrics Working Group or commenting in future public reviews. Information about joining working groups is available at <http://estalink.us/wg>. We are looking for voting members in particular interest categories for all the working groups. See the “A Call for Members” sidebar for more information. The public review site is <http://estalink.us/pr>. It will be some time before there is a draft of E1.69 for public review there, but perhaps we can have one ready in time for Saturnalia 2020! ■



**Karl G. Ruling** is ESTA’s Technical Standards Manager. He also serves as *Protocol*’s Technical Editor. Karl can be reached at [karl.ruling@esta.org](mailto:karl.ruling@esta.org).

# TAKUMI & SAI

## Followspots



**TAKUMI-2000A**  
2kW Xenon Followspot

- 2kW Xenon Medium Throw
- Smallest Size & Weight in its Class
- Seamless Iris Control Down to 0%
- Solid-State Power Supply



**SAI-500**  
440W LED Followspot

- 440W Medium-Throw LED Followspot
- High CRI (Ra ≥ 92), 5800K
- Step-less Electronic Dimming with Douser Lever (Patent Pending)
- DMX Dimming Control
- Seamless Iris Control Down to 0%



**SAI-300**  
230W LED Followspot

- 230W Single-Chip LED
- Short to Medium-Throw LED Followspot
- 90+ CRI, 5800K
- Seamless Iris Control Down to 0%



800-838-7446 | [www.ushio.com/followspot](http://www.ushio.com/followspot)