

ICTA 2026 Convention Training Curriculum: The Future of Cinema Technology. Straw Man

Total Duration: 10 Hours (Monday and Tuesday Morning Sessions)

Executive Summary

The International Cinema Technology Association (ICTA) is dedicated to advancing the motion picture industry through the promotion of cutting-edge theatre equipment and services [1]. As the landscape of cinema exhibition evolves, it is crucial for ICTA members—comprising dealers, manufacturers, and exhibitors—to stay ahead of technological trends that enhance the moviegoing experience, streamline operations, and ensure accessibility [2].

This comprehensive 10-hour training curriculum is designed for the upcoming ICTA convention, scheduled across Monday and Tuesday morning sessions. The program focuses on the most critical emerging technologies in the cinema space, including Auracast™ Bluetooth assistive listening, Direct-View DCI LED displays, Dante audio networking, and the integration of Artificial Intelligence (AI) in cinema operations. By addressing these key areas, the curriculum aims to equip industry professionals with the knowledge required to implement next-generation solutions, optimize theatre performance, and deliver unparalleled experiences to audiences.

Curriculum Schedule Overview

Day	Time	Session Title	Duration	Target Audience
Monday	08:00 AM - 10:00 AM	Session 1: Revolutionizing Accessibility with Auracast™ Bluetooth LE Audio	2 Hours	Exhibitors, Dealers, Manufacturers
Monday	10:15 AM - 12:15 PM	Session 2: The Visual Frontier: DCI-Compliant Direct-View LED vs. Laser Projection	2 Hours	Exhibitors, Dealers

Monday	01:30 PM - 03:30 PM	Session 3: Immersive Soundscapes: Designing with Dante Audio Networking	2 Hours	Dealers, Audio Engineers, Manufacturers
Monday	03:45 PM - 04:45 PM	Session 4: Premium Large Format (PLF) and High Dynamic Range (HDR) Strategies	1 Hour	Exhibitors, Dealers
Tuesday	08:00 AM - 10:00 AM	Session 5: AI and Automation in Cinema Operations and Predictive Maintenance	2 Hours	Exhibitors, IT Management
Tuesday	10:15 AM - 11:15 AM	Session 6: Securing the Future: Digital Cinema Cybersecurity and Network Infrastructure	1 Hour	Exhibitors, IT Management, Dealers

Detailed Session Breakdown

Monday Sessions (7 Hours)

Session 1: Revolutionizing Accessibility with Auracast™ Bluetooth LE Audio (2 Hours)

Time: 08:00 AM - 10:00 AM**Focus:** Assistive Listening Systems (ALS) and ADA Compliance

Overview:Accessibility is a critical component of modern cinema operations. Traditional inductive loop systems and infrared headsets are being rapidly superseded by Auracast™ broadcast audio, built on Bluetooth LE Audio technology [3]. This session will explore how Auracast enables direct, high-quality audio streaming to hearing aids, cochlear implants,

and standard consumer earbuds, significantly improving the experience for hearing-impaired patrons and the general public alike [4].

Key Topics:

- **The Technology Behind Auracast:** Understanding Bluetooth LE Audio and broadcast capabilities.
- **Implementation in Theatres:** Hardware requirements, transmitter placement, and integration with existing cinema audio processors.
- **ADA Compliance and Legal Standards:** Meeting and exceeding the Department of Justice's requirements for closed captioning and audio description in movie theatres [5].
- **Exhibitor Benefits:** Reducing hardware maintenance costs, eliminating the need to distribute and sanitize physical headsets, and enhancing patron satisfaction.

Session 2: The Visual Frontier: DCI-Compliant Direct-View LED vs. Laser Projection (2 Hours)

Time: 10:15 AM - 12:15 PM **Focus:** Display Technology and Auditorium Design

Overview: The transition from traditional projection to Direct-View LED screens marks a paradigm shift in cinema visual presentation. With manufacturers like Samsung (Onyx) leading the charge with DCI-compliant LED displays, exhibitors must evaluate the benefits of this technology against the latest RGB laser projectors [6]. This session provides a deep dive into the technical and economic factors influencing this choice.

Key Topics:

- **Technical Comparison:** Analyzing contrast ratios (infinite contrast with LED), brightness levels (300 nits vs. standard 48 nits), and High Dynamic Range (HDR) capabilities [7].
- **Auditorium Architecture:** Rethinking theatre design without a projection booth, and the implications for seating capacity and sightlines.
- **Total Cost of Ownership (TCO):** Evaluating initial investment, power consumption (e.g., 3.74KW for LED vs. 4.2KW for RGB laser), cooling requirements, and lifespan [7].
- **Acoustic Challenges:** Addressing sound design when the screen is not acoustically transparent, including front surround sound integration and specialized speaker placement.

Session 3: Immersive Soundscapes: Designing with Dante Audio Networking (2 Hours)

Time: 01:30 PM - 03:30 PM **Focus:** Audio Infrastructure and AV-over-IP

Overview:As cinema audio moves towards highly immersive, object-based formats (like Dolby Atmos and DTS:X), the complexity of audio routing increases exponentially. Dante (Digital Audio Network Through Ethernet) offers a robust, low-latency AV-over-IP solution that simplifies cabling and enhances flexibility [8]. This session is tailored for dealers and integrators designing next-generation sound systems.

Key Topics:

- **Dante Fundamentals:** How uncompressed, multi-channel digital audio is transmitted over standard IP networks.
- **Cinema Applications:** Replacing bulky analog snakes with Cat5e/Cat6 infrastructure, and interfacing with digital signal processors (DSPs) and amplifiers.
- **Case Studies in Spatial Audio:** Examining real-world applications, such as City Springs Theatre's use of Dante for precise spatial audio tracking and immersive sound design [9].
- **Scalability and Future-Proofing:** Expanding audio channel counts for Premium Large Format (PLF) auditoriums without major infrastructure overhauls.

Session 4: Premium Large Format (PLF) and High Dynamic Range (HDR) Strategies (1 Hour)

Time: 03:45 PM - 04:45 PM **Focus:** Revenue Generation and Premium Experiences

Overview:Premium Large Format (PLF) screens are driving significant box office revenue, offering audiences compelling reasons to choose the theatrical experience over home entertainment [10]. This session discusses how to leverage HDR and advanced formats to create highly profitable, differentiated auditoriums.

Key Topics:

- **Defining the Modern PLF:** Beyond screen size—incorporating HDR, Variable Dynamic Range (VDR), and immersive audio to define the premium tier.
- **Content Mastering:** Understanding how studios master motion pictures for HDR and the specific hardware required to display them accurately.
- **Marketing the Experience:** Strategies for exhibitors to effectively communicate the value of PLF to consumers.

Tuesday Morning Sessions (3 Hours)

Session 5: AI and Automation in Cinema Operations and Predictive Maintenance (2 Hours)

Time: 08:00 AM - 10:00 AM **Focus:** Operational Efficiency and Smart Theatres

Overview: Artificial Intelligence is no longer just a buzzword; it is actively reshaping cinema operations. From smart ticketing algorithms to predictive maintenance of critical hardware, AI offers exhibitors tools to reduce downtime and optimize staffing [11]. This session explores the practical applications of AI and automation in the modern multiplex.

Key Topics:

- **Predictive Maintenance:** Utilizing AI to monitor the health of projectors, servers, and HVAC systems, predicting failures before they impact showtimes [12].
- **Theatre Management Systems (TMS) Evolution:** How modern, cloud-based TMS platforms automate scheduling, content ingestion, and KDM management.
- **Smart Ticketing and Personalization:** Leveraging data analytics to optimize pricing, forecast demand, and deliver personalized recommendations to moviegoers.
- **Energy Management:** Integrating cinema hardware with smart building systems to reduce energy consumption during off-peak hours.

Session 6: Securing the Future: Digital Cinema Cybersecurity and Network Infrastructure (1 Hour)

Time: 10:15 AM - 11:15 AM **Focus:** IT Security and Content Protection

Overview: With cinemas becoming increasingly networked and reliant on cloud services, cybersecurity is paramount. Protecting high-value motion picture assets and securing patron data are top priorities for the industry. This session addresses the unique security challenges faced by digital cinemas.

Key Topics:

- **The DCI Security Model:** Understanding the principles of digital cinema trust, encryption, and Key Delivery Messages (KDMs) [13].
 - **Vulnerability Management:** Identifying and mitigating risks in Theatre Management Systems (TMS) and Point of Sale (POS) networks.
 - **Network Segmentation:** Best practices for isolating critical projection networks from public Wi-Fi and corporate IT infrastructure.
 - **Incident Response:** Developing protocols for handling potential cyber threats or data breaches in a theatrical environment.
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