

EOS/ESD Manufacturing Symposium in China

Hilton Garden Inn, Shanghai, China
May 21-24, 2019

May 21-22, 2019 EOS/ESD Manufacturing Symposium and Exhibition

May 23-24, 2019 EOS/ESD Association, Inc. Tutorials

May 25, 2019 Professional Program Manager Exam (optional)



- **The ANSI/ESD S20.20 Standard and official ANSI/ESD S20.20 Facility Certification Program** was developed and is maintained by EOS/ESD Association, Inc.

- **The ESD Program Manager Professional Certification was developed and is maintained** by EOS/ESD Association, Inc.

- EOS/ESD Association, Inc. instructors who developed the ANSI/ESDA and IEC ESD Standards bring you today's current information and developments.

The EOS/ESD Association is organizing the EOS/ESD Manufacturing Symposium China. The EOS /ESD Manufacturing Symposium in China is focused on discussing issues and providing answers to electrostatic discharge in electronic production and assembly.



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Beijing Orient Institute of Measurement & Test

If you are interested in sponsoring this event please contact: EOS/ESD Association Inc., Phone +1-315-339-6937, info@esda.org

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EOS/ESD Manufacturing Symposium in China

Schedule

TUESDAY MAY 21, 2019

- 9:00 AM - 9:15 AM *Welcome*
- 9:15 AM - 10:00 AM **1.1 INVITED: ESD Control Issues in Production Lines and Impacts to ESD Standard**
Huizheng Fang, Huawei
- 10:00 AM - 10:45 AM **1.2 INVITED: Complex Chip ESD Damage Diagnosis Technology**
Ping Lai, CEPREI
- 10:45 AM - 11:30 AM **Coffee Break - exhibits open**
- 11:30 AM - 12:00 AM **1.3 EOS/ESD in IC Manufacturing Process of GQFN 64L Device**
Bernard Chin, Firefly Solutions; Marcus Koh, Everfeed Technology Pte. Ltd.
- 12:00 AM - 12:30 PM **1.4 A Study of Duplication Mobile Phone Manufacturing ESD Issue Using CBE Test Method**
Hiroyasu Ishizuka, Synaptics Japan GK; Masanori Sawada, Hanwa Electronic Ind. Co., Ltd.
- 12:30 PM - 2:00 PM **Lunch Break**
- 2:00 PM - 2:30 PM **1.5 FPD Manufacturing ESD Technical Fundamentals and Practices**
Copper Hou, Lean ESD Technology (Guangzhou) Co., Ltd.
- 2:30 PM - 3:00 PM **1.6 ESD Risk Analysis Using Pulsed AC Ionization Technology**
Joshua Yoo, Ethan Choi, Elly Koo, Core Insight
- 3:00 PM - 3:45 PM **Coffee Break - exhibits open**
- 3:45 PM - 4:15 PM **Charges and Events at FDP Labs**
Cook Yeh, Winifred Cleanroom & ESD Products, Ltd.
- 4:15 PM - 4:45 PM **1.8 Static Charges and ESD Events On-line Monitoring System for Semiconductor & FPD Applications**
Kim Lau, Winifred Cleanroom & ESD Products
- 4:45 PM - 5:30 PM **Coffee Break - exhibits open**
- 5:30 PM - 6:00 PM **Panel Discussion: Challenges Facing the ESD Coordinator**
John Kinnear, IBM

WEDNESDAY MAY 22, 2019

- 9:00 AM - 9:45 AM **2.1 INVITED: Achievement of ESD Control System in China Aerospace Industry**
Zhiliang Gao, Beijing Orient Institute of Measurement and Test (BOIMT)
- 9:45 AM - 10:15 AM **2.2 How Do I Get my Manufacturing Site ANSI/S20.20 Certified?**
Bernard Chin, Firefly Solutions; Marcus Koh, Everfeed Technology Pte. Ltd.
- 10:15 AM - 11:00 AM **Coffee Break - exhibits open**
- 11:00 AM - 11:30 AM **2.3 ESD Risk Assessment Considerations for Automated Handling Equipment**
Marcus Koh, Everfeed Technology Pte. Ltd.
- 11:30 AM - 12:00 PM **2.4 Other Industry Practice - Garment Fabric Evaluation**
Tay Chin Siang, Suzhou TA&A Ultra Clean Technology Co., Ltd.
- 12:00 PM - 1:15 PM **Lunch Break**
- 1:15 PM - 1:45 PM **2.5 Low Static Cleaning**
Sheila Hamilton, Teknek
- 1:45 PM - 2:15 PM **2.6 The Innovative Use of Humid Air in Large Film Separation Process in FPD Manufacturing Industry and Static Charge Reduction On Insulative Film**
Albert Kow Kek Hing, Steven Chia Swee Kiat, Alson Kow Chung Hooi, ESD Technology Consulting & Licensing Co., Ltd.
- 2:15 PM - 3:00 PM **Coffee Break - exhibits open**
- 3:00 PM - 3:30 PM **2.7 Application of Windless Ionizer in Semiconductor Wafer Saw Processes**
Seth Xu, Winifred Cleanroom & ESD Products, Ltd.
- 3:30 PM - 4:00 PM **2.8 Product Qualification & Degradation of Steel Toe ESD Footwear**
Steve Lim, Royal Muar City; Marcus Koh, Everfeed Technology Pte. Ltd.
- 4:00 PM - 4:45 PM **Coffee Break - exhibits open**
- 4:45 PM - 5:15 PM **2.9 New Advanced Materials for ESD Mats**
Zhiyi Bao, Zeon Chemicals L.P.
- 5:15 PM - 5:45 PM **Panel Discussion: Real World Measurement Issues**
John Kinnear, IBM

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EOS/ESD Manufacturing Symposium in China

Technical Sessions

TUESDAY MAY 21, 2019

1.1 INVITED: ESD Control Issues in Production Lines and Impacts to ESD Standard

Huizheng Fang, Huawei

Some problems were found in the daily production line ESD control activities. In the process of solving the problem, the ESD standard was found to have no clear guidance. These issues are not explicitly mentioned in the standard and hope to become the new research direction of the ESDA Association.

1.2 INVITED: Complex Chip ESD Damage Diagnosis Technology

Ping Lai, CEPREI

ESD damage location and diagnosis is a technical difficulty for complex integrated circuit chips. The presentation covers several analysis techniques for ESD damage location in complex chips, including conventional techniques such as optical microscopy and scanning electron microscopy, as well as, advanced techniques like emission microscopy detection, hot spot analysis, and magnetic induction imaging technique. In addition, a brief introduction to the procedure of integrated chip damage diagnosis is also given.

1.3 EOS/ESD in IC Manufacturing Process of GQFN 64L Device

Bernard Chin, Firefly Solutions; Marcus Koh, Everfeed Technology Pte. Ltd.

This paper presents a case study of ESD/EOS events causing low yield in trial lots prior to the release of volume production. The use of line ESD audits to check for static charge, grounding and CDM events, voltage spike check and split-lot testing were used to determine the root cause.

1.4 A Study of Duplication Mobile Phone Manufacturing ESD Issue Using CBE Test Method

Hiroyasu Ishizuka, Synaptics Japan GK; Masanori Sawada, Hanwa Electronic Ind. Co., Ltd.

Charge Board Events (CBE) are often hard to find and fix. This presentation will demonstrate an innovative way to simulate CBE to find the root cause for a failure caused by ESD.

1.5 FPD Manufacturing ESD Technical Fundamentals and Practices

Copper Hou, Lean ESD Technology (Guangzhou) Co., Ltd.

Devices are classified by Human Body Model and Charge Device Model standards. In Flat Panel Displays there needs to be additional consideration to fields. Identification and control of these fields will be presented.

1.6 ESD Risk Analysis Using Pulsed AC Ionization Technology

Joshua Yoo, Ethan Choi, Elly Koo, Core Insight

Ionization has a major role in Flat Panel Display (FPD) assembly. While ANSI/ESD STM 3.1 is the test method for evaluation of ionization, there are some limitations that could affect yields. This presentation will discuss the limitations and risks associated with ionization

1.7 Proper Methods to Evaluate Static Charges and Events at FDP Labs

Cook Yeh, Winifred Cleanroom & ESD Products, Ltd.

There are methods to evaluate ESD failures that will lead to yield improvements. This presentation will demonstrate a case study that used a systematic method to find root cause.

1.8 Static Charges and ESD Events On-line Monitoring System for Semiconductor & FPD Applications

Kim Lau, Winifred Cleanroom & ESD Products

Evaluation of processes is critical to control ESD. This study will show how to conduct on going monitoring of ESD events and controls in various environments.

Panel Discussion: Challenges Facing the ESD Coordinator

John Kinnear, IBM

With technology becoming more sensitive, now is the time to evaluate and prepare. Join this discussion to learn and share, discovering the best methodologies to combat issues.



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EOS/ESD Manufacturing Symposium in China

Technical Sessions

WEDNESDAY MAY 22, 2019

2.1 INVITED: Achievement of ESD Control System in China Aerospace Industry

Zhiliang Gao, Beijing Orient Institute of Measurement and Test (BOIMT)

The Development of ESD Control Requirements of Aerospace Electronics and ESD Control System Standards of China Aerospace Industry are provided. By way of presenting the inspiring practice, this presentation calls for mutual recognition for ESD protection system.

2.2 How Do I Get my Manufacturing Site ANSI/S20.20 Certified?

Bernard Chin, Firefly Solutions; Marcus Koh, Everfeed Technology Pte. Ltd.

Electric fields are not the only criteria for control of ESD in the manufacturing environment. The energy that can result from an electric field should be evaluated so that the proper control can be implemented. This presentation will show the link between electric fields and energy.

2.3 ESD Risk Assessment Considerations for Automated Handling Equipment

Marcus Koh, Everfeed Technology Pte. Ltd

ESD risk assessment considerations for two units of die attached and wire bonder machines were evaluated with reference to ANSI/ESD SP10.1. Modelling and simulation was proposed and discussed to evaluate the sensitivity of the automated handling equipment ESD performance.

2.4 Other Industry Practice - Garment Fabric Evaluation

Tay Chin Siang, Suzhou TA&A Ultra Clean Technology Co., Ltd.

The evaluation of garments for control of ESD uses resistance measurements. This may limit which fabrics that can be used. This presentation explores other ways to evaluate fabric and garments for ESD control.

2.5 Low Static Cleaning

Sheila Hamilton, Teknek

This paper highlights the difficulties of combining two vital functional requirements, cleaning and static control, for the SMT and display industries and will outline the novel approaches taken to overcome these difficulties. The resultant machine meets the requirements of ANSI/ESD S20.20.

2.6 The Innovative Use of Humid Air in Large Film Separation Process in FPD Manufacturing Industry and Static Charge Reduction On Insulative Film

Albert Kow Kek Hing, Steven Chia Swee Kiat, Alson Kow Chung Hooi, ESD Technology Consulting & Licensing Co., Ltd.

Ionization is often used as a solution to control insulative materials. This presentation will describe an alternate solution with humid air. Several case studies will demonstrate the effectiveness of this method.

2.7 Application of Windless Ionizer in Semiconductor Wafer Saw Processes

Seth Xu, Winifred Cleanroom & ESD Products, Ltd.

It is often thought that a fan or blower is required for ionization to function. This presentation will demonstrate that solutions may be available without fans.

2.8 Product Qualification & Degradation of Steel Toe ESD Footwear

Steve Lim, Royal Muar City; Marcus Koh, Everfeed Technology Pte. Ltd

Evaluation of processes is critical to control ESD. This study will show how to conduct on going monitoring of ESD events and controls in various environments.

2.9 New Advanced Materials for ESD Mats

Zhiyi Bao, Zeon Chemicals L.P.

A mat technology using an inherently ion-conductive synthetic elastomer can quickly and safely dissipate charge while at the same time providing low turbocharged generation. This innovative elastomer is extremely durable, resistant to solvents, UV light, heat and ozone, and can be used in electrostatic mat without adding any conductive additive.

Panel Discussion: Real World Measurement Issues

John Kinnear, IBM

A sound Electrostatic Discharge (ESD) Control program is a major foundational block in an effective Quality Management System. Those responsible for the development, implementation, and sustainment of the ESD Control Program need to understand real world measurement techniques.



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Tutorials

FC100: ESD Basics for the Program Manager

MAY 23, 2019 9:00 AM - 5:00 PM

Terry Welsher; Dangelmayer Associates, LLC.

Certification: PrM

This tutorial provides the foundation material for understanding electrostatics and ESD and their role in the manufacturing and handling of ESD sensitive devices. The fundamental properties of charge, electric fields, voltage, capacitance, and current are discussed with a view towards understanding key electrostatic phenomena and electrical processes. These include charge generation and decay, material properties, and induction. An overview of device failure mechanisms is presented, including how these models impact ESD control programs. Finally, the course provides an overview of ESD control procedures during handling and manufacturing and an overview of ANSI/ESD S20.20 program requirements. This full day course is required for those in-plant auditors and program managers who are working toward professional ESD certification. The presentation includes many in-class demonstrations, videos, and animated slides. Some sample topics covered in this course are:

- Definitions and relationships among important electrical and mechanical properties
- Causes of charge generation and decay
- Field effects and voltages
- Role of capacitance in ESD ($Q=CV$)
- Overview of key measurements including common pitfalls of some measurements
- Review of ESD failure models
- Understanding and demonstrating electrostatic induction
- Utility and limitations of air ionization
- Basic goals of ESD controls
- Properties of effective ESD control products and materials
- Overview of ANSI/ESD S20.20 ESD program development requirements

FC101: How To's of In-Plant ESD Auditing and Evaluation Measurements

MAY 24, 2019 9:00 AM - 5:00 PM

Instructor: Terry Welsher, Dangelmayer Associates, LLC

Certification: PrM

This program reviews the evaluation and periodic verification (audit) measurement procedures for the technical requirements specified in the ANSI/ESD S20.20 ESD program development standard. Detailed explanation of instruments, fixtures, and accessories function and usage are provided. Then, the details of "How to" measure are explained and demonstrated. Measurements include those listed in Table 1: Grounding/Equipotential Bonding Requirements; Table 2: Personnel Grounding Requirements; and Table 3: EPA/ESD Control Items. These recommended measurement procedures confirm the proper operation and use of ESD control products and materials selected as part of a facility's S20.20 ESD control program.

Some sample topics covered in this course are:

- ANSI/ESD S20.20 Technical Control Requirements
- Program Manager's Approach to Instrumentation and Applications
- Testing Ground Circuits and Assessing Connections
- Essential Resistance Measurement Procedures and Concerns
- Electrostatic Field and Voltage Measurements
- Personnel Grounding Considerations vs. ESD Control Points
- Product Installation Baseline Measurements

Evaluation, Acceptance, and Audit Procedures for: Ground Systems, Floors, Worksurfaces, Equipment, Personnel Grounding, Garments, Materials, Production Aids, Packaging, and Ionization Devices
Electrostatic Analysis Measurements including Worksurface Suppression, Footwear/Flooring, and Ionization Decay

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Tutorials

FC340: ESD Program Development and Assessment (ANSI/ESD S20.20)

MAY 23-24, 2019 9:00 AM - 5:00 PM

John T. Kinnear, IBM Corporation

Certification: PrM

This seminar provides instruction on designing and implementing an ESD control program based on ANSI/ESD S20.20. The course provides participants with the tools and techniques to prepare for an ESD facility audit. This two-day course is an ESDA certification requirement for in-plant auditors and program managers who are working toward professional ESD certification.

The following topics are covered in this course:

- Overview of ANSI/ESD S20.20
- How to approach an assessment
- Administrative elements
- ESD program assessment
- ESD program techniques for different applications
- Technical elements
- Overview of the assessment process
- The audit checklist and follow-up questions

It is recommended that the ESD Program Development and Assessment (ANSI S20.20) be taken after the certification candidate has taken most of the other program manager related tutorials.

MAY 25

Optional Program Manager Exam



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Registration

First Name: _____ Last Name: _____

Company Name: _____

Street: _____ City: _____

State/Province: _____ Country: _____ Zip/Postal Code: _____

Address is (please circle the one that applies) Home or Company

Phone: _____ E-mail: _____

Symposium

May 21,22 Technical Presentation, Talk, and Exhibits \$800

Tutorial Selection

May 23 ESD Basics for the Program Manager \$510/ non-member \$610

May 24 How To's of In-Plant ESD Auditing and Evaluation Measurements \$510/ non-member \$610

May 23,24 ESD Program Development & Assessment (ANSI/ESD S20.20) \$1,510

Exam

Professional Program Manager Certification Exam (Optional May 25, 2019) \$80

NOTE: You must initiate an official file in your name at EOS/ESD Association, Inc. headquarters, and complete all pre-requisite courses to be eligible to take the exam.

Register Online at: <http://www.cvent.com/d/kbqgfs>

Other forms of payment Contact:

Chinese : 金鑫 +86 (512) 6285 2096

jinxin@canmax.com.cn

English: Joanna Huang

+86 (512) 6285 2258

joanna@canmax.com.cn

Accommodation: [Click here](#)

Hotel booking link valid until April 20th 2019

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Exhibitor Registration Only

EXHIBITS OPEN 9:00 – 5:00 MAY, 21-22, 2019

APPLICATION FOR EXHIBIT SPACE

Name of Company: _____

Street Address: _____

City, State, Postal Code: _____

Country: _____

Telephone: _____

Contact: _____ Email: _____

Please provide web address to be used for your link on ESDA website: _____

We will exhibit and demonstrate the following products or services: _____

We are _____ Manufacturers _____ Other (please specify) _____

**Exhibit Space Rental: \$1,000.00 USD
FULL PAYMENT DUE WITH REGISTRATION**

Requested Booth Space _____ Second choice _____ Third Choice _____

Amount enclosed \$ _____ Check Visa® MasterCard® American Express® Discover®

Credit card number: _____ Expiration date: _____

Name on card: _____ Security code: _____

Cardholder's signature: _____

Billing Address _____

City: _____ State: _____ Zip/Postal Code: _____

THE UNDERSIGNED HAS READ AND AGREES TO ABIDE BY THE TERMS ON BOTH SIDES OF THIS APPLICATION.

Application By: _____ Date: _____

(Signature)

NOTES:

1. Each exhibitor receives one (1) symposium registration package for each booth rented.
2. SPACE WILL BE ASSIGNED IN THE ORDER OF RECEIPT OF REGISTRATION
3. Management reserves the right to relocate exhibit space, as necessary, to conform to show regulations.

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EXHIBIT RULES – EOS/ESD Manufacturing Symposium

CONTRACT

This application, properly executed by the applicant, shall, upon written acceptance and notification of exhibit space assigned by the EOS/ESD Association, Inc., constitute a valid and binding contract.

QUALIFICATIONS FOR EXHIBITING

Exhibitors must be manufacturers or representatives of manufacturers that produce products or perform services which conform to the subject matter covered by the symposium technical program. Management reserves the right to accept or reject any exhibitor.

PRODUCT PRESENTATION

Audio-Visual presentations and operational equipment demonstrations will be permitted only at intensity levels that will not interfere with neighboring exhibitors. Product and service demonstrations may be given by professional presenters or models, who must dress and conduct themselves in an appropriate manner. Exposition management shall determine the suitability of all presentations and/or demonstrations.

EXHIBIT SPACE CHARGES AND CANCELLATIONS

All exhibit space will be rented at the rate described on the front of this Application for Exhibit Space. Full payment of \$1,000.00 per booth must accompany the application for space. Checks should be made payable to EOS/ESD Association, Inc., and sent to EOS/ESD Association, Inc., 7900 Turin Rd., Bldg. 3, Rome, NY 13440-2069. No refunds will be given for cancellation.

ANCILLARY EVENTS

Exhibitors ARE NOT allowed to schedule events, for Association/Symposium attendees that are in direct conflict with the Association/Symposium event schedule.

SUBLETTING OF SPACE

The exhibitor shall not assign, sublet, or apportion the whole or any part of the space assigned or have representatives, equipment, or materials from other firms than his own in the exhibit space without written consent of the Management. Only one company shall be considered as the exhibitor; any other company or unit in the space shall be considered a subsidiary or affiliate.

ADVERTISING

All literature, sales brochures, or other advertising or promotional media shall be displayed ONLY within the space rented by the exhibitor.

Exhibit Space MATERIALS PROVIDED BY THE SYMPOSIUM

1 Table & 2 Chairs

CONSTRUCTION OF EXHIBITS

Exhibits shall be constructed and arranged so that they do not obstruct the general view, nor hide the exhibits or others. All booth equipment must fit within the space rented, and must not extend into aisles or corridors.

SUITABILITY OF EXHIBITS

All exhibits are expected to be educational in nature and should describe products and/or services available from the exhibiting company.

COMPLIANCE WITH LOCAL RULES

Exhibitors assume responsibility for compliance with pertinent ordinances, regulations, and codes of duly authorized local, state and federal governing bodies concerning fire safety and health, and the rules and regulations of operators and owners of the property in which the exhibit is held.

UNION JURISDICTION

The exhibitors will abide by and comply with rules and regulations concerning local unions having jurisdiction over the facility in which the exhibit is held, and specifically in the exhibit area and loading docks.

LOSS OR DAMAGE

In the event that the premises in which the Symposium is conducted shall become unfit for occupancy or substantially interfered with by reason of any cause or causes not reasonably within the control of the EOS/ESD Association, Inc., this agreement may be terminated by the EOS/ESD Association, Inc. For this purpose, the term "cause or causes" shall include, but not by way of limitations, fire, flood, epidemic, earthquake, explosion, acts of terrorism, accident, blockage, embargo, inclement weather, government restrictions, strikes, lockouts, boycotts, lack of adequate transportation services, or acts of God other than those named. Should the Committee terminate this agreement pursuant to the provisions of this paragraph, the exhibitor waives any and all claims of damage and agrees that the EOS/ESD Association, Inc., after computing the total amount refundable to all exhibitors, shall make appropriate refunds. The amount refundable to exhibitors shall be the amount by which the total amount of fees paid by all exhibitors exceeds the total amount of the EOS/ESD Association's costs and expenses in connection with its preparation for conducting the Symposium and exhibits including a reasonable reserve for claims and other contingencies.

LIABILITY WAIVER

The ESD Association, its committees, agents or sponsors, shall not be liable for any damage to property or for any injury to persons during the terms of this agreement from any cause whatsoever, by reasons of use, occupancy and enjoyment of exhibit space by exhibitors or any person thereon with the consent of the exhibitor. The exhibitor will indemnify and save harmless the EOS/ESD Association, Inc., its committees, agents or sponsors from all liability on account of any such damage or injury. Please see enclosed insurance form.

ADDITIONAL INFORMATION

Contact:

EOS/ESD Association, Inc.

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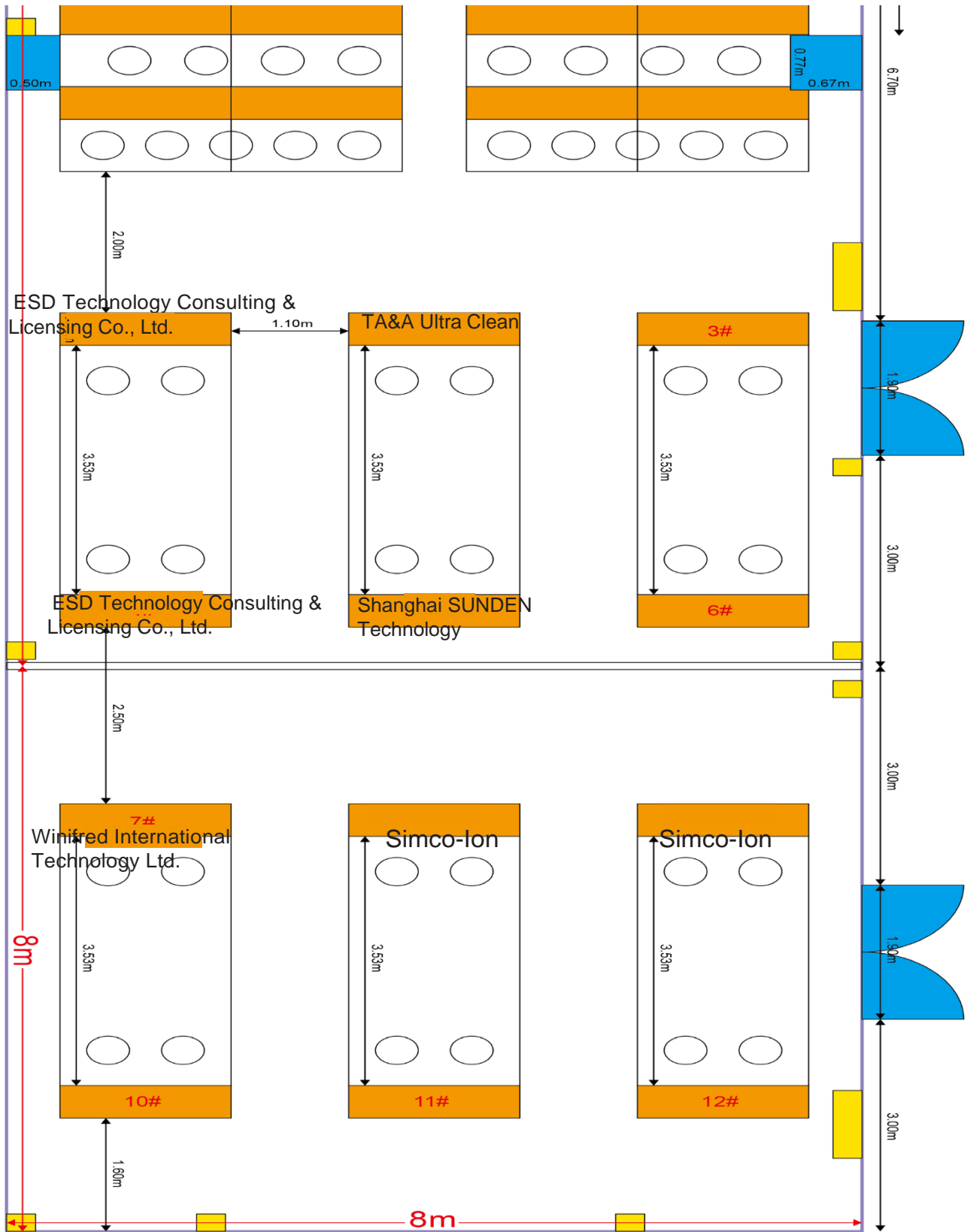
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