Introduction of Product Safety Engineering Society(PSES)

- The IEEE Product Safety Engineering Society focuses on the theory, design, development and practical implementation of product safety engineering methodologies and techniques for equipment and devices.

- Study and application of **analysis, techniques, construction topologies, testing methodologies, conformity assessments and hazard evaluations**.

https://ewh.ieee.org/soc/pses/

Introduction of Product Safety Engineering Society(PSES)

■ PSES targets design professionals and design engineers interested in electrical product safety.

■ The society addresses safety engineering for equipment and devices used in the scientific, engineering, industrial, commercial and residential arenas.

■ **Key events of PSES:**

IEEE SPCE 2020: IEEE Symposium on Product Compliance Engineering

IEEE International Symposium on Product Compliance Engineering-Asia 2020

Standards:

IEEE 1451.5.X

IEEE P2668

Events of PSES

1. *IEEE ISPCE US*

2. *IEEE SPCE*

3. *IEEE ISPCE-Asia*

Collaboration with MIT

- **A noel Systems Approach to Product Safety using STPA, developed into STAMP**
- STPA was developed by Prof Nancy Leveson of MIT, Recipient of IEEE MEDAL FOR ENVIRONMENTAL AND SAFETY TECHNOLOGIES
- The latest generation goes beyond component malfunctions and component failures to capture often overlooked and systemic causes of accidents.
- A new class of losses, component interaction losses, has become increasingly prevalent in today's complex systems and can occur even without any individual component failures and when systems operate exactly as designed.
- Methods like STPA are used for both hazard analysis and early development efforts to identify necessary safety requirements and drive design decisions as they are being made thereby preventing mistakes and reducing costly rework.
- These methods have been adopted across aerospace, defense, automotive, nuclear, chemical, medical, and other industries.
- The talk concluded with a summary of worldwide adoption and international industry standards that implement this latest generation of system safety.

Prof Nancy Leveson

Dr. John Thomas

IEEE 2020 ISPCE-CN

6-8 November, 2020, Chongqing & Hong Kong, China
IEEE International Symposium
on Product Compliance Engineering-Asia

■ ISPCE-CN 2020 will fully dedicate to the theme "Product Safety for Smart City", the progresses and challenges in smart city development, covered smart IoT systems, IoT product safety evaluation system, and etc.…, were widely shared and discussed.

■ Several talks were provided, which is closely related to system:

➢ A Secure Data Request and Sharing Model Based on Consortium Blockchain in Vehicular Edge Computing Environment

➢ The IDex Case Study on the Safety Measures of AIoT-based Railway Infrastructures

➢ Critical Study on the Feasibility of Smart Laboratory Coats

IEEE ISPCE-CN 2020

**IEEE International Symposium
on Product Compliance Engineering-Asia 2020
University of Chongqing, 2-3 November, 2020**

Call for Paper

Theme: Product Safety for Smart City

The conference topics include but not limited to:

*5G, NB IoT, safety applications e.g. IoT Water, IoT Tree

*Drones, healthcare, automobiles, toll

*artificial intelligence, robotics, stems, V2X, NFC

*Mobile communication, transportation, energy efficiency

*Public safety, critical communication

*Internet of Things, Spectrum Policy

*Inherently safer products and equipment

*Product Safety services

*Training and continuing education

*Regulations and standards

*Risk management

*Workplace product safety

*System and Software safety

*Human factors

*Product Compliance, smart sensors compliance

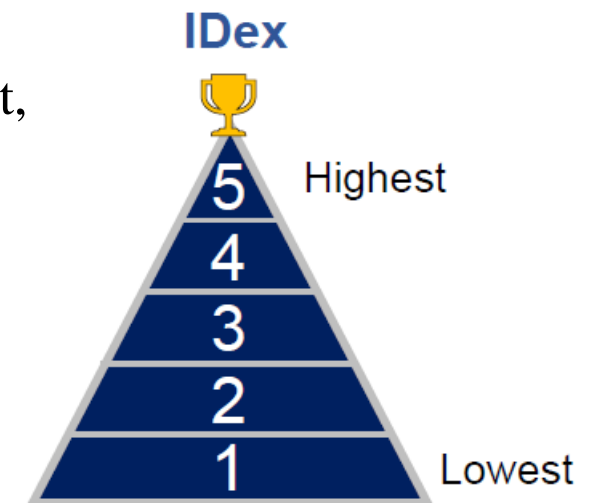# **Standards from PSES members**

1. *IEEE P2668*

2. *IEEE 1451.5.X*

Standards

- IoT index (IDex) is the only global standard for grading and ranking all IoT-related "things" and "systems".

- Standardized by the IEEE Standards Working Group P2668^{TM}.

- IDex will deliver:

  - ➤ **Evaluation and Comparison** in a fair, objective and consistent manner
  - ➤ **Prediction of various situations** (e.g, future trend, operating environment, potential failures and risks, …)
  - ➤ **Guidance and Advice for solution improvement**

IDex

🏆

5 Highest
4
3
2
1 Lowest

- **Thank you for your attention**