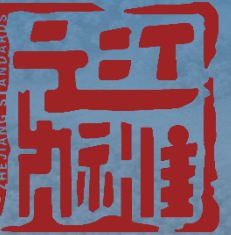


The Mutual Integration of Technological Innovation and Standardization

Ye Chen
Zhejiang Lab
March 31st, 2022



之江实验室



ZHEJIANG LAB



Contents

- I. Importance of Technological Innovation & Standardization
- II. What We Need and Why We Need Them
- III. Our Experience on Technological Innovation & Standardization
- IV. Challenges We are Confronted with
- V. What We Can Do in the Future



Standardization

Formulation, publication, and implementation of guidelines, rules, and specifications for common and repeated use.

Common Language

- To realize the rapid development and the effective enhancement of the robot industry.
- To provide useful reference and guidance for the development strategy and planning of the robot standardization.
- To provide effective support for the healthy development of the robot industry.



International standards have become **an important technical basis** for the development of global governance and trade cooperation.



Ancient China: Qin Dynasty

- Unified currency
- Unified weights and measures
- Unified characters
- Unified vehicle tracks

Modern China: Industrialization

- Scale up the manufacturing process
- Standards lead technological innovation

International Standardization Groups

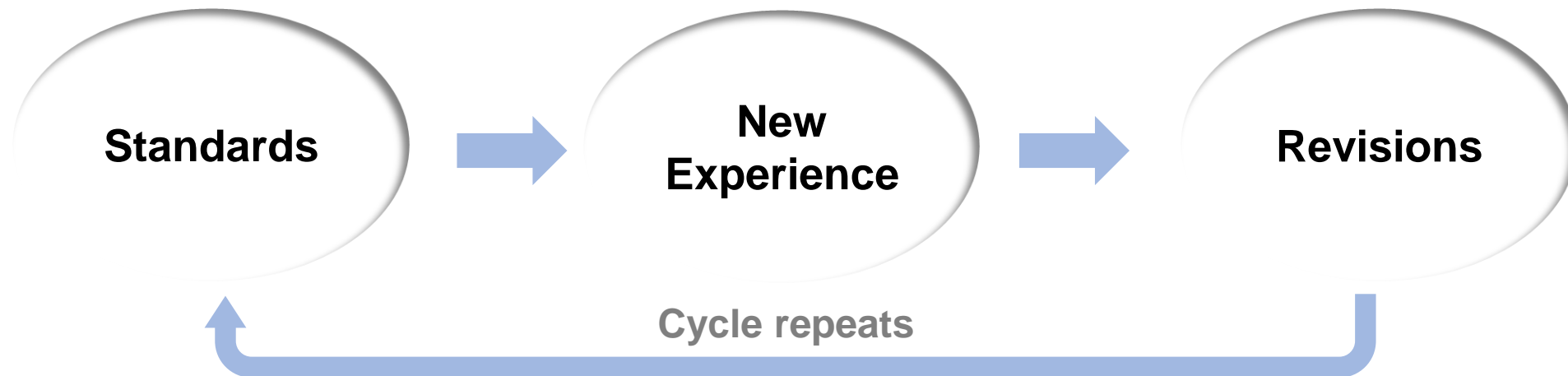
- Dedicate to develop and publish standards
- To promote the technological and social development



Advanced technology itself needs standards to break the bottlenecks in regional connectivity.

ISO/IEC JTC1 -- Information Technology

- More than 3300 published ISO standards
- Advanced technology including artificial intelligence, biometrics, cloud computing and distributed platforms, etc.



Technology and innovation management also needs standards to guide them.

ISO 9000 Family -- Quality Management

- Providing a model to follow when setting up and operating a management system
- Addressing various aspects of quality management

We are seeking...

- Management system standards on **how to improve the technology and innovation of the organizations**
- To drive standardization from different aspects

Positive effects

- **Improving the effectiveness and quality of scientific and technological innovation**
 - ‘Technology specialization - patent standardization - standard internationalization’
 - Market competitiveness of technology or products
- **Promoting the commercialization and application of scientific and technological achievements**
 - A bridge for scientific research and industry
 - To improve the transformation of technological achievements
- **Driving the mutual integration of technological innovation and standardization**
 - Can be regarded as the references for the comparison
 - Reduce the risk, save the cost, and accelerate the speed of technological innovation

Zhejiang Lab

- A new **R&D institution**
- Founded in September 2017
- Located in Hangzhou, China
- To create an ecosystem for the research and development of science and technology
- Developing and promoting innovations with a global vision
- Two-wheeled advancement of **scientific research and standardization**
- An international standardization and innovation platform



Research Center for Standardization

- Founded in December 2019
- An international standardization and innovation platform
- More than **400 high-level papers**, including 6 in *Nature* and 2 in *Science*
- Nearly **40 standards**, including 6 international standards

- *Technical framework for shared machine learning*, published
- *Technical specification for artificial intelligence cloud platform-model development*, under development
- *Technical specification for artificial intelligence cloud platform – performance*, under development
- *Framework and QoS requirements to support of deterministic communication services in local area network for IMT-2020*, under development
- *Requirements and Capability Framework for Internet of things for Vision*, under development
- *Requirements of multimedia composite data preprocessing*, under development

National Technology Standard
Innovation Base (Intelligent Computing)



ITU-T Member



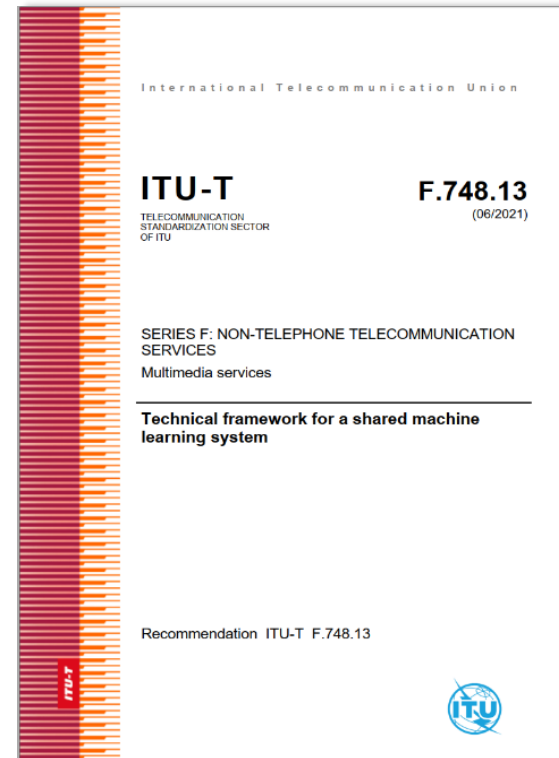
IEEE Senior Member



3GPP Member

Research Center for Standardization

- Founded in Dec. 2019
- An international standardization and innovation platform
- More than **400 high-level papers**, including 6 in *Nature* and 2 in *Science*
- Nearly **40 standards**, including 6 international standards
- **Technical framework for shared machine learning, published**
- *Technical specification for artificial intelligence cloud platform-model development*, under development
- *Technical specification for artificial intelligence cloud platform – performance*, under development
- *Framework and QoS requirements to support of deterministic communication services in local area network for IMT-2020*, under development
- *Requirements and Capability Framework for Internet of things for Vision*, under development
- *Requirements of multimedia composite data preprocessing*, under development



Cultural atmosphere of deep integration of technological innovation and standardization

- **Standardization-awareness**
- **Comprehensive curricula for all the researchers**
- **Magazines about standards under development and cutting-edge technology**

Management mechanism of deep integration of technological innovation and standardization

- **A systematic mechanism on institutional arrangement**
- **Guidelines and standardization management measures**
- **A logical and rigorous standardization management mechanism**

Support on deep integration of technological innovation and standardization in research projects

- To integrate standardization into the scientific research process
- Standards -- the important parts of deliverables of the projects
- The synchronization between scientific research and standardization

Appropriate encouragement on deep integration of technological innovation and standardization

- Favorable conditions for researchers
- Scientific research awards, professional title evaluation and promotion, and more research funding
- The research group will be awarded at different stages during the process of the standards under development

- Under the traditional scientific research evaluation system in China, researchers **did not pay sufficient attention to the standards.**
- Although we had explorations on the development of both technology and standardization, it has not become **a guiding document** leading all the new research institutions and innovation enterprises.

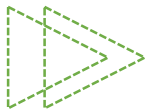
Proposal

- **White Paper on the Standards for the Mutual Integration of Technological Innovation and Standardization**
- **Standardization for 'Technology and Innovation Management System'**

**International
Organization Cluster**

Zhejiang Lab





Thank you!

Ye Chen

chenye@zhejianglab.com