

# IEEE Transactions on Consumer Electronics

## Call for Papers

### Special Section on “Metaverse and Digital Twins for Consumer Electronics”

#### Theme:

At present, with the rapid popularization of mobile phones, tablets, wearables, and other emerging consumer electronic products, the 3C industry is experiencing rapid development. 3C electronic manufacturers strive to improve product quality and innovate production modes. Agile, lean, and flexible manufacturing has gradually become the development direction of production enterprises. These product manufacturing requirements pose a higher challenge to manufacturers of various automatic equipment parts and complete machines, such as production, transmission, assembly, and testing. The products must meet the requirements of high speed, high precision, and reliability and have the ability to meet the production requirements of various non-standard products. **VR/AR equipment is an important physical entrance to the metaverse, which provides the connection between reality and virtual, and is the hardware foundation of the corresponding software ecology.** The metaverse has spawned the innovation of VR/AR consumer electronic products. As a key component of current and signal connection, connector is undoubtedly an important part of electronic products, and the rapid development of new industries such as VR/AR and intelligent robots has put forward higher requirements for the function, appearance, performance and use environment of connectors. In addition, consumer electronic devices put forward higher requirements for connectors in high frequency, high current, anti-signal interference and shielding. Based on the digital twins platform, combined with big data, big computing power, and strong algorithms, new industrial solutions and intelligent drive products can achieve highly personalized and high-performance motion control solutions.

Consumer electronic products must meet the strict requirements of high speed, precision, and reliability and can meet the production needs of various non-standard products. New industrial solutions and intelligent drive products are developed based on the digital twin platform. Combining big data, great computing power, and strong algorithms, highly personalized motion control schemes with excellent performance can be implemented efficiently. The industrial Metaverse can accelerate the formation of a new mode of intelligent manufacturing with virtual reality interaction, enhance industrial value, reconstruct a new ecology of digital industry development, and promote the development of the Internet to a future advanced form. The core of constructing the Metaverse is the digital twins technology, which is the cornerstone of the Metaverse. Actives are committed to using digital twins and artificial intelligence algorithms to change the industry technology paradigm from the bottom and reconstruct the demand, design, development, testing, and application process.

With technical advantages, a new "algorithm factory" has been gradually built. Based on "digital twins" and other technologies, it is used to build new thinking of motion control products. Software is used to define hardware, continuously iteratively optimize the model, greatly reduce the R&D cost, and improve the efficiency and performance of products. The update in technology can make machines more intelligent and energy-saving and help the development of enterprises. This special issue mainly solicits contributions from digital twins and consumer electronics manufacturing scholars, aiming to enable deep integration of software and hardware at the application end.

#### Topics of interest in this Special Section include (but are not limited to):

- Digital Twins and Metaverse-enabled Intelligent Upgrading of Consumer Electronics Industry
- Deep Integration of Software and Hardware in Application Based on Digital twins Platform
- Upgrading of Consumer Electronic Products Based on Metaverse Intelligent Drive
- The 'Manufacturing Upgrade' of Metaverse Consumer Electronic Products Created by Digital Twins'
- Digital Transformation of Consumer Electronics Product Design and Production Process under Digital twins Architecture
- Digital twins Universe Visualization of Consumer Electronics Zero Code Digital Factory
- Digital Transformation of Auto Parts Enterprises in the Metaverse Era
- Full Life Cycle Digital Twins Optimize Consumer Electronics Products and Processes

- The Whole Process of Digital Operation of a Consumer Electronics Factory in the Metaverse Environment
- Communication of Consumer Electronics Demand and Supply Based on the Digital Twins System Platform

#### Important dates:

- Submissions Deadline: **July 30**, 2023
- Expected publication date (tentative): March 2024

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#### Instructions for authors:

Manuscripts should be prepared following guidelines at: <https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html> and must be submitted online following the IEEE Transactions on Consumer Electronics instructions: <https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html>. During submission, the Special Section on “**Metaverse and Digital Twins for Consumer Electronics**” should be selected.