# NEWS

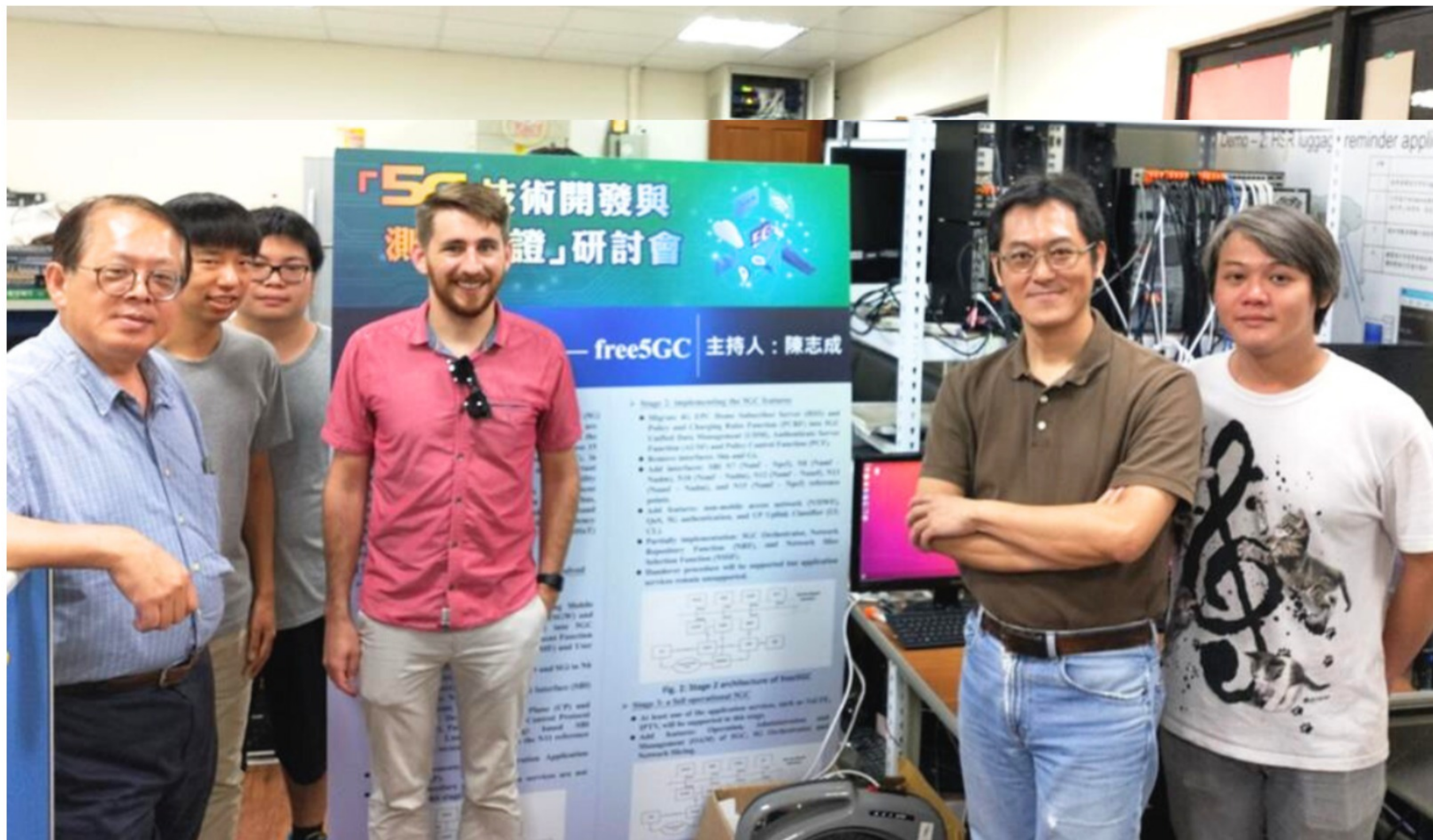**Science & Technology**    Publish Date：2024-09-20

## Advancing 6G Technology Development: NYCU's Pioneering 5G Core Network Software 'free5GC' Joins the International Open-Source Platform



*Dean of the College of Computer Science, Dr. Jyh-Cheng Chen (second from the right), and his research team released free5GC in 2019.*

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In a groundbreaking achievement, National Yang Ming Chiao Tung University (NYCU) has officially introduced its 5G core network open-source software, "**free5GC**," to the Linux Foundation's open-source platform. Developed by NYCU's College of Computer Science (CSS) Dean, Dr. Jyh-Cheng Chen, the software is expected to gain momentum through the Linux Foundation's powerful ecosystem and broad community support, positioning it as a critical driver of future global 5G and 6G innovations.

**Breaking Barriers in Core Networks: How 'free5GC' is Revolutionizing 5G and 6G Innovation**

First released in 2019, "free5GC" is the world's first 5G core network software, developed by Dr. Chen's research team, fully compliant with international standards.

Reflecting on Taiwan's past two decades in the communications industry, Dr. Chen noted that while Taiwan has made strides in mobile devices and small-cell technologies, it has lacked influence in the core network field. The core network, often regarded as the "brain" of mobile communications, involves high technical barriers and expensive costs, hindering innovation. To address this challenge, Dr. Chen launched free5GC as open-source software, fostering broader collaboration and development.

Dr. Chen emphasized that free5GC will contribute significantly to the world, especially in 5G and 6G technologies. When combined with AI applications, their ultra-high-speed, low-latency, and high-reliability features will accelerate the emergence of cutting-edge innovations. For instance, through 5G and 6G networks, smart healthcare applications such as remote surgery, intelligent diagnosis, and personalized health management can operate in real time, providing precise and secure medical services.

Beyond that, 6G technology will enhance tactile feedback and virtual reality (VR) experiences, allowing users to feel real sensations in virtual environments, such as shopping or gaming, where they can experience touch, smell, and taste.

**'free5GC' Joins Linux Foundation: Paving the Way for Global 5G and 6G Adoption**

The Linux Foundation announced the integration of free5GC into its open-source platform at the Open Source Summit Europe (OSSE), held in Vienna, Austria, on September 16. As the world's largest platform for open-source software, hardware, standards, and data collaboration, the Linux Foundation's open-source platform supports expert communities to collaborate and simplify the deployment and global adoption of 5G technologies across industries while also driving the development and application of 6G technologies.

During the summit, Arpit Joshipura, General Manager of Networking, Edge, and IoT at the Linux Foundation, highlighted Dr. Chen's contribution, stating, "We are excited to welcome free5GC to the Linux Foundation. free5GC provides a powerful, open-source 5G core network solution. This collaboration will empower organizations to leverage 5G's transformative potential, offering transparent, scalable, and cost-effective core network solutions."

Following its integration with the Linux Foundation, free5GC is poised to make an even greater impact, supported by the Foundation's robust ecosystem and extensive community. It is expected to become a pivotal player in driving the innovation and evolution of 5G and 6G technologies worldwide.



*Dr. Jyh-Cheng Chen, Dean of the CCS, led the team in developing the 5G core network software free5GC.*

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