IEEE AWPL Special Cluster 2025 on
"Recent Progress on Channel Measurement and Modeling for 6G"

Research in sixth-generation mobile communications (6G) systems has attracted worldwide attention in recent years. Compared with existing mobile communication systems, 6G is expected to include new requirements, applications and scenarios. In June 2023, the International Telecommunication Union Radiocommunication Sector (ITU-R) Working Party 5D (WP 5D) has agreed the draft new Recommendation ITU-R M.2160 "Framework and overall objectives of the future development of IMT for 2030 and beyond". This marks the official launch of 6G standardization. As channel model studies are fundamental to this standardization, the urgency for suitable models to foster 6G research and standardization is palpable. Moreover, in December 2023, the 3rd Generation Partnership Project (3GPP) has agreed study items on channel modeling, marking the beginning of the standardization process for 6G channel research. With the future demand for comprehensive frequency utilization, diverse scenarios, and innovative technologies, 6G channel research is expanding across the frequency domain, spatial domain, and various scenarios. This expansion introduces new challenges for channel measurements and modeling, such as multidimensional non-stationarity, sharp increase in modeling complexity, and changes in theoretical premises and assumptions.

This Special Cluster is aimed to provide a comprehensive understanding of the channel measurement and modeling for 6G, to provide novel methods to meet the challenges of 6G channel research and support the development of global 6G technology. The topics of this special cluster include but are not limited to:

- Advanced channel sounding technologies and platforms,
- Channel measurements and models of candidate bands for 6G,
- Channel measurements and models for new technologies, e.g., Integrated Sensing and Communication (ISAC), novel MIMO antenna array and so on,
- Channel measurements and models in new scenarios, e.g., suburban macro, industrial internet of things scenarios, space-air-ground-sea integrated scenarios, low-altitude satellites scenarios and so on,
- Channel modeling based on the electromagnetic and information theory,
- Intelligent channel prediction, and the application of artificial intelligence to channel research,
- The standardization of channel models,
- The impact analysis of channel characteristics and models on system design, evaluation, and deployment

and not limited, but related to 6G channel research.

The guest editors of this focused cluster are:

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Prospective authors are encouraged to contact the Guest Editors for any questions or to determine the suitability of their contribution for this special cluster. Papers should be prepared following the same submission instructions as for regular IEEE AWPL manuscripts (four-pages technical content maximum and one reference page, double-column, IEEE format), available via the Information for Authors website (http://awpl.eleceng.adelaide.edu.au/authors.htm). The authors should indicate in the cover letter to the Editor-in-Chief that the manuscript is being submitted in response to the Call for Papers for the focused cluster. Prospective authors should refer to the timeline below for key dates. The publication charges will be at the standard rates for AWPL.

Key dates:

- Submission deadline: **March 31, 2025**
- First decision: May 15, 2025
- Revised manuscripts deadline: June 15, 2025
- Final decision: July 30, 2025
- Final manuscripts due by: September 1, 2025
- Online publication: Shortly after final manuscript submission
- Cluster publication: November/December 2025 issue of AWPL