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Special Section on Unmanned Aerial Vehicle-based Antenna and Field Measurements

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Aims & Scope: Innovative strategies are required for the performance verification of large radiotelescope antennas, satellite ground stations, agglomerates of broadcast and cellular base stations, antennas on large platforms such as ships or aircrafts for both radar and telecommunication applications. Unmanned Aerial Vehicles (UAVs) are nowadays being exploited as flying source/probe antenna positioners in various innovative indoor, outdoor and in-situ measurements from HF to millimeter-waves. Both near- and far-field strategies are being developed and tested. These topics will be covered in this Special Section with particular reference to measurement approaches and data processing, onboard antenna design, RF/UAV hardware setup, positioning strategies and the corresponding accuracy.

Potential topics include but are not limited to the following:

- Innovative antenna and field measurement strategies enabled by UAVs
- Post-processing techniques for UAV-based antenna and field measurements
- Design of Unmanned Aerial Vehicles for antenna and field measurements
- Design of radio-frequency equipment for antenna and field measurement with UAVs
- Design of antennas for measurement applications with UAVs
- Design and verification of positioning systems for UAV-based antenna and field measurements
- Assessment of accuracy of UAV-based Antenna and Field Measurements
- New applications enabled by UAV-based Antenna and Field Measurements

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UAV equipped with a VHF synthetizer and dipole antenna operated as a test source for station prototypes of the Square Kilometer Array.

Keywords: Antenna Measurements, Antenna Radiation Pattern, Unmanned Aerial Vehicle, Near field radiation pattern, Near-field Measurements, Test Equipment

Submission deadline: 30 June 2022

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