

CW Radio Surveys for 5G Model Calibration

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RSI has recently completed major radio survey projects for EE and Ericsson to carry out Carrier Wave (CW) surveys at many locations across the UK. The purpose of the project was to make highly accurate measurements of signal levels across multiple bands including 700MHz, 900MHz, 1400MHz, 1800MHz, 2100MHz and 3500MHz in all types of rural and urban terrain and clutter types which could then be fed into the propagation prediction process to improve the accuracy of future 5G coverage predictions.

Great care was taken to use calibrated equipment for all parts of the measurement chain to ensure the data logged was accurate and repeatable. This required custom built transmitter and receiver systems to be used together with highly accurate antennas. Specialised antenna mounts were built for the project, both for the base transmitter and survey vehicle, designed to minimise the impact on antenna radiation patterns.

In total, 100 base site locations were surveyed using two teams, one for rooftop sites using a 6m mast and one for green-field sites using a 25m trailer mast. Each team surveyed 3 frequencies simultaneously for efficient use of time. The survey vehicle used calibrated receivers and antennas controlled by specially developed software ensuring that all measurements were statistically valid. Great care was taken throughout the planning and execution of the surveys to ensure that the process produced accurate and repeatable data.

The surveys were completed on-time despite delays caused by winter weather and storms.





RSI – Company Background

Radio Systems Information Ltd. (RSI) is a UK based independent telecommunications consultancy with particular expertise in radio network coverage planning, design, verification, testing and measurement and specialised product development. RSI started trading in 1992 with most clients being large radio communication users and operators such as government, public utilities, emergency services, transport and energy. RSI has developed the Aries TETRA and Aries LTE survey tools for network performance measurement in the critical communications market.

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