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A Geographic Information System Applied to Coverage Maps of 3G Cellular Communications Networks

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ABSTRACT

This paper shows the procedure to obtain a continuous coverage map based on a collection of power measurements using a Geographic Information System, through satellite photographs of the Professional Unit Adolfo Lopez Mateos, and a group of punctual samples of the power of the Common Pilot Channel (CPICH); which is used to estimate the radio communications channel conditions, taken at different positions and distances. These samples were taken using specialized equipment to obtain georeferenced measurements, and by a technique of statistical prediction, as the Krige Method, generate continuous coverage maps, making it possible to know the distribution of power, and therefore understanding the behavior and configuration of a Base Station, which in third generation cellular systems is also called Node B.

KEYWORDS

GIS, 3G, Coverage Maps

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