

# Improvement of Special Drive Test Route (SDTR) Reliability for Indoor Radio Frequency Coverage Assessment in 3G/4G Mobile Networks

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**Abstract**—There is no standard method on how to carry out Indoor Radio Frequency (RF) coverage assessments in 3G and 4G mobile networks. Random methods are preferred by RF engineers when performing measurement campaigns. Unfortunately, in indoor environments, these random methods are usually limited to assessing RF coverage around the internal contours of buildings. The above methods are exposed to several shortcomings such as the geographical occupancy of the space and the size of samples collected. The Special Drive Test Route (SDTR) method was introduced and works better than these random methods. Even though the SDTR is better as compared to random methods, it is not perfect. For instance, this method has limitations in choosing the direction of the route and the spacing between routes. This paper focuses on Square SDTR and provides strategy to overcome the limitations of the SDTR method, in order to give RF engineers a more reliable way to assess indoor RF coverage in 3G and 4G mobile networks. As a result, spacing between axes should not exceed 1.5m to get more reliable results and in 67% of studied cases, more samples could be collected by carefully choosing itinerary path direction.

**Keyword**— Coverage; Indoor; Itinerary, LTE, Walk Test, 3G



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