

WEB GIS TO IDENTIFY THE PROBLEMATIC MOBILE SIGNAL CLUSTERS

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Mobile communication has become one of the fastest growing sectors in the world today. With the technological advancement, mobile communication has subjected to many upgrades such as 2G, 3G and 4G. However the question of “Does a customer get the expected capabilities from it?” is not answered yet. Even though, the subscribers of all operators pay almost equal charges per minute, most of the time, they do not get the real benefit from the service. So far, there is no method established to monitor the quality of service of a particular mobile network.

During this study, a sample dataset of serving cell receive levels with locations was collected by mobile drive test which monitors the receiving level of the incident signals using TEMS investigation 9.0 and a GPS enabled, Mobile device. Geostatistical analysis was carried out by the method of Inverse distance weighting and the interpolated maps were generated using ArcMap 10. Maps were uploaded to the map server, with standard color ramp. Thereby, the network users can get a better idea about the variation of level of mobile signal receiving in a particular location.

The developed web based GIS (Geographic Information Systems) provides the capability of accessing the mobile signal levels remotely in an online manner prior to dealing with a particular customer. Analysis of receiving signal level variation helps to find clusters which have low signal levels than expected. Also, further investigation can be carried out to determine the frequently changing network clusters against a relevant time domain. Overlaying interpolated data on top of Google maps make easy to find the exact location of the problematic area with neighboring locations. Also the developed GIS system is enriched with functionalities like ‘tower distance calculation’, ‘areal calculations’ helping the users to take their decisions more accurately and reliably.