Innovation-13

1. **Brief Name of the Innovation:**

   An energy-efficient cell layout designer.

2. **Contact Information:**

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3. **What is the technology?**

   A software module based on MATLAB is in preparation for energy efficient deployment of BTS based on Voronoi Diagram.

4. **What does the technology do?**

   The number of base station to be placed is to be decided by multiple factors e.g. the capacity requirement, QoS, energy consumption and cost of installation etc. Now conventional approach takes care of the spectral efficiency aspect of deployment as well as coverage. Bringing energy efficiency in this process is a challenge.

   i)   The input configurable parameters for this application are:

   ii) Traffic density points

   iii) Old base station position.

   iv) Traffic load per cell

   v)   Inter site distance

   vi) Path loss parameter and transmit power of BTS

   vii) Prohibited location list(due to legal or physical obstruction)

   Outputs:

   i)   Create cellular layout such that the position of BTS are energy optimal and the layout will reuse old BTS.

   ii) Partition of space into zones such that different zone have different cell radius.

5. **Explain the specific problem this technology has created to address or solve**

   The objective to develop this tool is to have a cellular layout that give us the location of BTS and the deployment will be energy efficient.

6. **Why is it better? How much better?**

   Energy efficiency is not considered in probably all available cell-planning tools.

7. **Have you filed for Intellectual Property (IP)? Have Patent Cooperation Treaty (PCT) applications filed?**

   A copyright will be filed.

8. **What is the development stage of this innovation?**

   Early stage and evolving

9. **Have any prospective users or buyers shown interest in this technology?**

   --Not yet approached--

10. **Who do you consider competitors or competing technology?**

    Commercial cell planning tool

11. **List the milestones remaining to be accomplished to bring your technology to full development and ready for the intended end-user?**
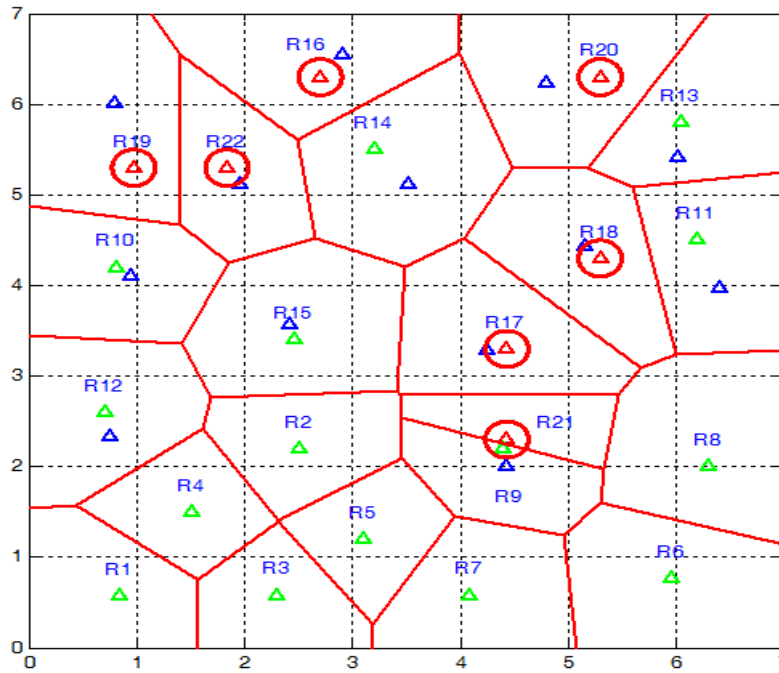
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12. **Broad Technical Specifications:**

    Needed software to install:

    Windows XP operating System

    MATLAB

13. Diagram or Pictures if any

Cell layout: Red marker for old base station, Green marker for traffic density centroid points and blue marker centroid of the polygons.