• Results were shared with experts in the field who were in a position to use them for their design. Experts who had seen the research work found it to be “good and the work carried out is appreciable”. On their request, the algorithms used, pseudo code and all MATLAB programs developed as part of this investigation were handed over “for future applications” of this concept in futuristic projects.

• In systems where direct implementation of thinning using TAGS is not feasible due to operational or other constraints, a concept based on a hard-wired ‘Dynamic Thinning programmer’ (DTP) has been proposed as part of the present investigations.

6.2. CONCLUSIONS OF THE RESEARCH

Based on the investigations carried out, following conclusions are drawn

• Nature based Search algorithms can be an effective tool in solving optimization problems related to Electromagnetic Antenna Arrays (EAA).

• Thinning in large antenna arrays is a typical optimization problem which can be solved by using a framework based on Simple Genetic algorithm.

• Techniques such as Bulk Array Computation, Zoning, and concept of acceptable solution are useful in reducing overall computational time, in particular when optimization is attempted for dynamic conditions for large EAA.

• When operational requirements demand a much faster response time than is possible by real-time optimization using the above concept, a Dynamic Thinning Programmer can be used as a system integrator.

6.3 FUTURE RESEARCH DIRECTIONS

• Concepts and results evolved out of the present investigations can be implemented on a large working/futuristic systems with large number of antenna elements (such as a Phased array Electronic scanning antenna radar system). This will help validating result of the present study, understand its implications and improve on the same.

• Scope exists for furthering research in which hybrid techniques can be employed for optimization.