**Abstract**

The Blue Brain Project is the first made comprehensive attempt to reverse-engineer the brain of mammalian, so that through detailed simulations the function of brain can be understood. BLUEBRAIN is the name of the world's first virtual brain which means, a machine that can function as human brain. Today, scientists are in research to create an artificial brain that can think, respond, take decision, and store anything in memory. The main aim of this research is to upload human brain into machine. So that man can think and take decision without any effort. After the death of the body, the virtual brain will act as the man. So, even after the death of a person we will not lose the knowledge, intelligence, personalities, feelings and memories of that man that can be used for the development of the human society. In this paper, we present the complete research work whichexplains the concept and functioning model of blue brain and the recent research and developments in the

process.

**Introduction**

The Blue Brain System is an attempt to reverse engineer the human brain and recreate it at the cellular level inside a computer simulation. The project was founded in May 2005 by Henry Markram at the EPFL in Lausanne, Switzerland. Goals of the project are to gain a complete understanding of the brain and to enable better and faster development of brain disease treatments. The research involves studying slices of living brain tissue using microscopes and patch clamp electrodes. Data is collected about all the many different neuron types . This data is used to build biologically realistic models of neurons and networks of neurons in the cerebral cortex. The simulations are carried out on a Blue Gene supercomputer built by IBM, hence the name "Blue Brain". The simulation software is based on Michael Hines's NEURON, together with other custom-built components. As of August 2012 the largest simulations are of micro circuits containing around 100 cortical columns such simulations involve approximately 1 million neurons and 1 billion synapses. This is about the same scale as thatof a honey bee brain. It is hoped that a rat brain neocortical simulation (~21 million neurons) will be achieved by the end of 2014. A full human brain simulation (86 billion neurons) should be possible by2023 provided

sufficient funding is received.

**WHAT is blue brain?**

The IBM is now developing a virtual brain known as the Blue brain. It would be the world’s first

virtual brain. Within 30 years, we will be able to scan ourselves into the computers. We can say it as Virtual Brain i.e. an artificial brain, which is not actually a natural brain, but can act as a brain. It can think like brain, take decisions based on the past experience ,and respond as a natural brain. It is possible by using a super computer, with a huge amount of storage capacity, processing power and an interface between the human brain and artificial one. Through this interface the data stored in the natural brain can be uploaded into the computer. So the brain and the knowledge, intelligence of anyone can be kept and used for ever, even after the death of the

person.

***Applications***

* Gathering and Testing 100 Years of Data.
* Cracking the Neural Code
* Understanding Neocortical Information Processing
* A Novel Tool for Drug Discovery for Brain Disorders

***Advantages:***

* The blue brain is an easy way to store and use human intelligence and data or information present in

the mind even after the death of the body.

* It will be a vital step towards self-decision making of a device containing the blue brain.
* It can do all important functions like an intelligent machine.
* It can avail as interference between human beings and animals. The blue brain program was

implemented on rat and it was a success, provides a sign of success in future too.

***Disadvantages:***

* The human kind becomes dependent on machines.
* Another fear is about human clothing and regaining the memory back is an expensive procedure. Content of the Seminar and pdf report for Blue Brain

***Conclusion***

The whole idea is that mental illness, memory and perception triggered by neurons and electric signalscould be soon treated with a supercomputer that models all the 1,000,000 million synapses of brain.The key finding is that irrespective of gender andrace, human brains are basically identical. We will beable to map the differentiations by anuancing the patterns later. The exciting part is not how differentwe are but how similar we all are. There are goodreasons to believe that, regardless of implementationstrategy, the

predictions of realizing artificial brainsin the near future are optimistic.