UNIQUE IDENTIFICATION THROUGH MAGNETIC FIELDS GENERATED BY BRAIN

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Abstract- **Each and every individual is blessed with certain gifts of nature and one among all is uniqueness, uniqueness in physique, uniqueness in thinking etc. Certain technological advancements are made to identify a person through these unique traits of human system such as Retina Scan and Finger Prints. Our hypothesis is to develop a new identification technology using magnetic fields generated by the neurons. Every living brain works in a unique pattern generating unique set of electric fields and further a unique set of magnetic fields which can be used for identification purpose. Sensitive magnetometers in form of Array of Superconducting Quantum Interference Devices (SQUIDs) are used for functional neuroimaging (Encephalography). Further Database would be generated by accounting magnetic fields generated. Further Experimental approach to test the hypothesis will be validation of proposed model. When validated it would be a foolproof and improved technology of identification.**
Keywords – Uniqueness of thought, Magnetometers, Encephalography, SQUIDs

1. INTRODUCTION

Uniqueness is a characteristic of the human beings. No two individual can be same in any way. When a person thinks about a certain object/person/situation his brain generates a set of electric fields due to combinational effect of neurons and their interactions which on another due to voltage gated channels of Ions[1]. Even on thinking about the same object/person/situation brain of two individuals have unique electric field generation. Electric field produces a magnetic field around it[2]. Therefore whenever a set of electric field is generated by the brain a set of magnetic field is generated too. This further leads to conclusion that on thinking about same thing two individual generate a unique set of magnetic fields. These magnetic fields can be detected through technique of Encephalography under which certain sensitive magnetometers such as array of SQUIDs (Superconducting Quantum Interference Devices)[3]. Contemporary technology of Digital identification deals with physical aspect of an individual which is perishable due to accidents but our hypothesis deals with mental aspects which perish with the individual himself. Under this technique a person has to think about an object/set of numbers/color/any other thing and magnetometer will detect the signals and match with the database already recorded and hence give him/her the permission.[4]

2. PROPOSED FRONT END FEATURES–

On this end a person would be made to think about a certain thing , which would be same for all individual, this can be to speak up or just think numbers 1 to 10, Concentrate on color blue, Speak a name for 10 times etc.
In other Words user name will be same for all but password will differ each time.
When a person does this a certain set of magnetic field is generated. This generated magnetic field is detected through array of SQUIDs. This field is converted to Electrical Fields and then into Digital Signals. These Digital Signals Will be matched from database already recorded and if database matches the signal with signals detected from the individual a person will be granted the access.

3. PROPOSED BACK END FEATURES–

At this end a database will be created by recording each magnetic field generated by individual upon thinking about same OBJECT. This will be done by converting Magnetic fields into Electric Fields, which is already performed by modern magnetometers. Further converted electric fields have to be converted into Digital Signals , this process can be done by attaching a Flash ADC (Analog to Digital Converter) to it[5]. And a database would be created.
A computer programmer will program the device to perform in certain way on matching of magnetic signals with the database, such as Grant Access/Gate open etc.

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4. CONCLUSION

As an outcome of our initial hypothesis we come to the conclusion that a technique can be developed for unique identification of an individual using magnetic field generated by brain upon thinking about a certain thing. Further an experimental approach would be followed for validation of the proposed model

5. REFERENCES

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