3D PASSWORD FOR MORE SECURE AUTHENTICATION

INTRODUCTION

Normally the authentication scheme the user undegoes is paticularly very lenient or very strict.Throughout the yeras authentication has been a very interesting approach.With all the means of technology developing ,it can be very easy for 'others' to fabricate or to steal identity or to hack someones password.Therefore many algorithms have come up each with an interesting approach toward calculation of a secret key.The algorithms are such based to pick a random number in the range of 10^6 and therefore the possbilities of the sane number coming is rare.

Users nowadays are provided with major password stereotypes such as textual passwords,biometric scanning,tokens or cards(such as an ATM) etc.Mostly textual passwords follow an encryption algorithm as mentioned above.Biometric scanning is your "natural" signature and Cards or Tokens prove your validity.But some people hate the fact to carry around their cards,some refuse to undergo strong IR exposure to their retinas(Biometric scanning).Mostly textual passwords, nowadays, are kept very simple say a word from the dictionary or their pet names,grilfriends etc.Ten years back Klein performed such tests and he could crack 10-15 passwords per day.Now with the technology change,fast processors and many tools on the Internet this has become a Child's Play.

Therefore we preset our idea, the 3D passwords which are more customisable, and very interesting way of authentication.

WORKING

Now the passwords are based on the fact of Human memory.Generally simple passwords are set so as to quickly recall them.The human memory,in our scheme has to undergo the facts of Recognition,Recalling,Biometrics or Token based authentication.

Once implemented and you log in to a secure site,the 3D password GUI opens up.This is an additional textual passwords which the user can simply put.Once he goes through the first authentication, a 3D virtual room will open on the screen.In our case, lets say a virtual garage.

Now in a day to day garage one will find all sorts of tools, equipments ,etc.each of them having a unique properties.The user will then interact with these properties accordingly.Each object in the 3D space, can be moved around in an (x,y,z) plane.Thats the moving attribute of each object.This property is common to all the objects in the space.Suppose a user logs in and enters the garage.He sees and picks a screw-driver(initial position in xyz coordinates (5,5,5)) and moves it 5 palces to his right (in XY plane ie (10,5,5).That can be identified as an authentication.

Only the true user understands and recognizes the object which he has to choose among many.This is the Recall and Recognition part of human memeory coming into play.Interestingly,a password can be set as approaching a radio and setting its frequency to number only the user knows.

Security can be enhanced by the fact of including Cards and Biometric scanner as input.There can be levels of authentication a user can undergo.More the confidentiality more the complexity.In that scenario a virtual environment can be developed as a globe,a city or simply a garage.

EXPECTED FUNCTIONALITIES

1.The user can decide his own authentication schemes.If he's comfortable with Recall and Recognition methods then he can choose the 3d authentication just used above.

2.The authentication can be improved since the unauthorised persons will not interact with the same object as a legitimate user would.We can also include a timer.Higher the security higher the timer.Say after 20 seconds a weak password will be thrown out.

3.The 3D environment can change according to users request.

4.It would be difficult to crack using regular techniques.Since all the algorithms follow steps to authenticate,our project has no fixed number of steps.Hence to calculate all those possibilites and decipher them is not easy.

5.Can be used in critical areas such as Nuclear Reactors,Missile Guiding Systems etc.

6.Added with biometrics and card verification,the scheme becomes almost unbreakable.

References

IEEE paper:3D passwords for more secure authentication-Fawaz A.Alsulaiman and Abdulmotaleb El Saddik