

# Biometric Jewelry To Rule Digital Life

Mr.S.Jayasurya<sup>1</sup>, Ms.D.Christina Mercy<sup>2</sup>, Mrs.C.Sunitha<sup>3</sup>

<sup>1,2</sup> V M.Sc (SOFTWARE SYSTEMS),

<sup>3</sup>Head Of The Department, Assistant Professor, Dept Of BCA and Software System

<sup>1,2,3</sup> Sri Krishna Arts and Science College, Kuniamuthur, Coimbatore-08

**Abstract-** Modernized world has landed each and every creature of the world in a very securable environment which has paved a long way for the significance of keeping every individual in a secured place. One such modernization in providing the security is done by bio metrics. Trying to use bio metrics, a company called Token; is specialized for providing bio metric security. As an initiative to the bio metric security the company has launched a bio metric ring called Token ring which is forth coming bio metric jewelry to rule the digital life. This Token ring provides access to everything starting from the credit cards, used as door lockers and manages the passwords. It is a two – factor jewelry that has fingerprint sensor which is the foremost feature that makes the ring a smart ring.

**Keywords-** Token, Token ring, credit card, door lockers, manage passwords, fingerprint sensor and smart ring.

## I. INTRODUCTION

Token is a specialized company providing security through bio metrics. As an initiative the company developed a wearable device which is smart enough so that it can be used to store personal data like credit card details and other passwords. The ring is secured by a fingerprint scanner and uses Bluetooth and NFC technology. The ring rules the access to everything starting from making payments to unlock things. The ring is made up of thick metal and plastic. Inside it has an optical sensor and a chip with a secure element inside. It acts as a wallet to make payments and keychain to unlock things. They are available in six different sizes. Their battery lasts for six weeks and they can be charged through inductive charging. Token has made their partnerships with Microsoft, MasterCard and Visa, so that the ring can unlock a PC working on Windows 10 and allows making of payments through iOS/ Android app that is supporting visa and MasterCard.

## II. DIGITAL SECURITY OFFERED BY TOKEN RING

Token rings are bio metric rings. They are available in a variety of metal finishes. They can store details like credit card, passwords and used to unlock the doors. They can also

be used to unlock the cars. This device offers security using fingerprint which allows the wearer to access the information stored in it. An optical sensor in the ring senses when it is taken off from the finger and thus the ring gets locked; however it can be unlocked again using the fingerprint. The signal in the ring broadcasts whenever they are worn and active. The signals that are used by the ring is NFC and Bluetooth. When the ID is recognized, it is shown by a rainbow-colored LED pulse. On the contrary it gives a red flash indicating the rejection. Along with the ring , the token company offers door locks and a security pad required for access control. The information stored in the ring is not sent to Token's servers. An EAL5+ certified secure element is used to store credentials to keep them safe.

## III. FEATURES OF TOKEN RING

### DOORLOCK CONGRUITY

Tokens digital lock creates reliable and effortless system of locking the door. All that is required is a tap to lock and a tap to unlock the door. Tokens digital lock also allows the access to a metallic key which can be installed with a Philips screwdriver. It is simple to pair it with token using a mobile app.



Fig (a) Tokens Digital Lock

### VEHICLE CONGRUITY

Token is used to activate the start button of the car by unlocking the car. To make use of token to unlock, the token is plugged to the OBD2 port of the car. The door is knocked twice to unlock and twice more to lock the door.



Fig (b) Car alarm



Fig(c) Tokens Car Locker

**TRANSIT CONGRUITY**

The ring is paired with the bio metric information of the tokenizes including the information about the credit cards, personal details and other passwords.

**ACCESS CARD CONGRUITY**

HID readers are working to imply the tokens for reading the HID I class SE and multiclass SE readers. Integrating the tokens with the SE readers will help in the authentication of the employee.



Fig (d) HID Reader

**WORKING OF TOKEN**

The working ways of the token is simple. The user is authorized by confirmation provided by using a finger print sensor placed inside. The IR optical sensor ensures that the ring is on our finger. The transactions can be authorized until the ring is not taken off from the hand. Every time after being removed, the device gets locked. Thus, the user has to place their finger on the sensor again before using the token for

further access. It allows the user to add their credit cards, login passwords and to set other profiles through an additional app. Once added the user doesn't need to choose for each transaction to authorize. A variety of readers can be used to interpret the signals that are continuously broadcasted on wearing the ring. As prevention from multiple users sharing such a personal product, it allows only one fingerprint to be assigned to the tokens.

**KEY SPECIFICATIONS**

- Life of Battery: 2 weeks.
- Water resistance:50 meter
- Fingerprint sensor
- Element used to secure in ring: EAL5+
- Bluetooth, NFC technology
- Detection is made by Optical sensor registers if the ring is worn or not.
- iOS, Android, Windows, and MacOS are combined to work with it.
- 9 mm wide, 2.5 mm thick.

**POSSIBLE RISKS- BUT THEY WON'T OCCUR**

**RINGS LOST OR STOLEN**

The rings are normal rings when they are stolen. This is because every time the ring slides into the finger it require the authentication of the tokenize. Once the fingerprint doesn't match the sensor splashes red light and goes off, which can be activated only after certain hours. Thus, the possibility of rings being stolen or lost and misused is completely nil.

**HACKING OF THE RING**

The hacking is never possible because the credentials of the tokenize is stored in a element which is highly secure and the element is EAL5+. It is certified as higher level of security in international security scale.

**VI. CONCLUSION**

Bio metrics being on great verge of its development, plays a vital role in paving ways for newer technologies that is implemented for the higher level of securities. The technology discussed above is sooner to be launched into the market with all the specified features which will be a great gesture of fortune to the future environment.

**REFERENCES**

- [1] <https://tokenize.com/>
- [2] <https://techcrunch.com/2017/06/27/token-has-made-one-ring-to-rule-all-your-passwords-payments-and-physical-access/>
- [3] <https://www.pocket-lint.com/gadgets/news/141487-token-ring-is-a-smart-ring-that-works-as-a-wallet-and-keychain>
- [4] <https://www.cnet.com/products/token-ring/preview/>
- [5] <https://www.engadget.com/2017/06/27/token-biometric-ring-hands-on/>
- [6] <https://www.komando.com/happening-now/407146/new-smart-ring-can-replace-your-credit-card-house-keys-and-more>