

# Secure Remote Desktop with Necklace-Type Security Device

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**Abstract.** In this video paper, we present the design of U-Kiosk as a new service in a ubiquitous environment. U-Kiosk allows a user to access applications and data on a remote computer over a network. User can take the service with PANDA authentication device.

**Keywords:** Wearable Computer Design, User Interface

## 1 U-KIOSK

As one of the ubiquitous services [3] we developed, U-Kiosk is the service allowing a user to access applications and data on a remote computer over a network. In the ubiquitous environment, people can interact with ubiquitous devices located in the place which can range from a ubiquitous campus to a ubiquitous city, and they are connected by network. These ubiquitous devices can provide useful information to people and people can also use these devices through a private mobile device. However, people can only use their own computing environment through their own devices. Under this situation, we designed the method of using a public ubiquitous device as a private one as shown in Figure 1. The requirements of this service are installing a private environment for a user and automatic authentication without user's intervention.

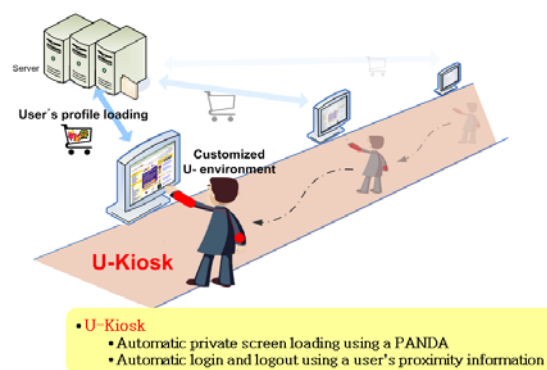


Figure 1. Concept of U-Kiosk

## 2 Service Realization with Authentication Device, PANDA

As a prototype for U-Kiosk, we use the Virtual Network Computing [4] for installing the user's own computing environment on the public device and we use PANDA device [1] and ZigBee module for automatic authentication. We used a PC for emulating U-Kiosk in which VNC Viewer, U-Kiosk daemon, and ZigBee device are used as show in Figure 2. When a user approaches the U-Kiosk, U-Kiosk Daemon can detect the proximity of a user and start authentication through ZigBee communication channel. By the user's information provided by PANDA, U-Kiosk can connect to the user's private PC as shown in Figure 2.

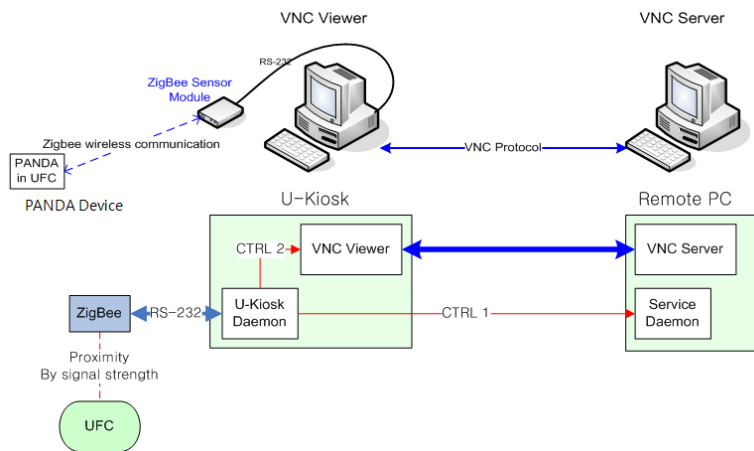
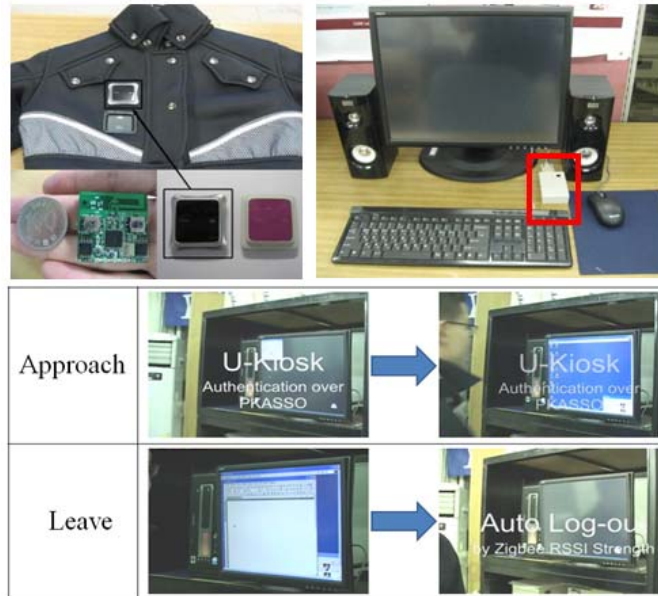


Figure 2. Implementation of U-Kiosk



**Figure 3. Realized PANDA and U-Kiosk**

## References

1. K.-W Park, S.S. Lim, H.S. Song, and K.H. Park, "A New PKI-based Single Sign-On Protocol for a Diminutive Security Device, PANDA, in a Ubiquitous Security Environment," 8th IEEE Symposium on Systems & Information Security, November 2006.
2. K.-W Park, S.S. Lim, and K.H. Park, "Computationally Efficient PKI-Based Single Sign-On Protocol, PKASSO, for Mobile Devices," IEEE Transactions on Computers, Vol. 57, No. 6, June 2008.
3. K.H. Park, K.-W Park, J.P. Lee, J.W. Yoo, S.H. Lim, "A Ubiquitous Environment with a Wearable Platform, UFC and its Security Infrastructure, pKASSO," 2nd European Conference on Ambient Intelligence, Nov 2007.