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.

![Concept of U-Kiosk](image)

<table>
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<th>U-Kiosk</th>
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<tr>
<td>Automatic private screen loading using a PANDA</td>
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<td>Automatic login and logout using a user’s proximity information</td>
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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
References