Touch Interfaces for Mobile-ID and Latent Fingerprint

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Specific hardware and software products identified in this report were used in order to perform the evaluations described. In no case does such identification imply recommendation or endorsement by the National Institute of Standards and Technology, nor does it imply that the products and equipment identified are necessarily the best available for the purpose

Guiding principles for incorporating new technologies:

- Don’t introduce the technology just for the sake of the new technology
- Align the technology with user needs and user goals
- The technology should adapt to the user and the environment rather than the user adapting to the technology

Why mobile-id?

- Smart phones have become ubiquitous devices
- Convergence of technologies
- Natural extension
- Addresses a real need

Applications on smart-phones

- Use an existing device -- convenient
- Little or no learning curve – touch interface
- Battery life is critical
- Need to function in daylight and at night

Context of Use

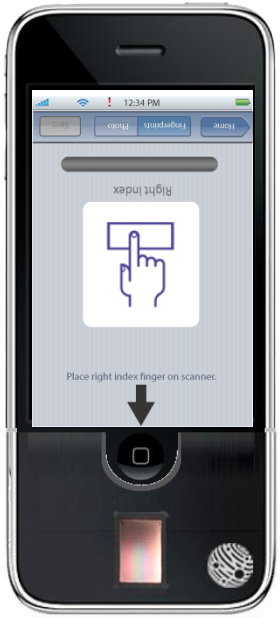
- Understand your users -- Ride along with your PD
- Observe them in action
- This is not their primary task

User Centered Design

- Design
  - Keep it simple
  - Focus on UI
- User Testing

Mobile-ID Goals

- Mobile iD user requirements and high fidelity user interface model that:
  - minimizes the amount of user interaction
  - streamlines and flattens the workflow
  - introduces simplified graphics
  - dual directional interface

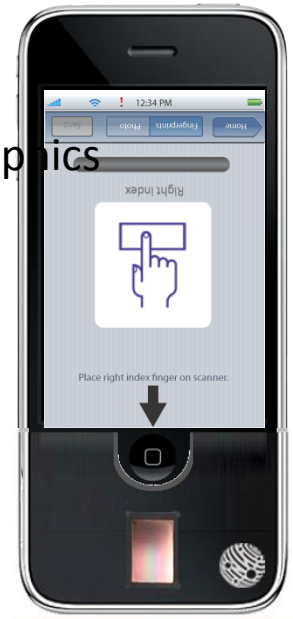


Solution

Attached Fingerprint Scanner

Standard Off the Shelf
Base platform

Simple graphics



Dual directional interface

Why touch paradigms for latent?

- Natural extension of current interactions
- Inherent in current behaviors
- Quickly becoming ubiquitous
- Want to develop guidelines and examples implemented with users in mind (in contrast to Web)

Context of Use

- Know your user:
  - Interviewed 16 latent print examiners from FBI, DoD, CIA, Secret Service, New York State Department of Criminal Justice Services.
  - Observed three latent examiner teams: Maryland State Forensic Laboratory, FBI, US-VISIT

Current Latent Fingerprint Environment

- Desks covered with stacks of paper, including photos and printouts.
- Printing and scanning are important activities, and many desks included printers and scanners.
- Organizations are “paper bound.”
- Analysis is still heavily a manual process

New interaction paradigm

- Touch User Interface
- Electronic loupe with minutia marking
- Status of each latent print from thumbnail images
- Search results screen allows for rapid comparison

Next steps

- Feedback from latent examiners
- Formal Usability testing