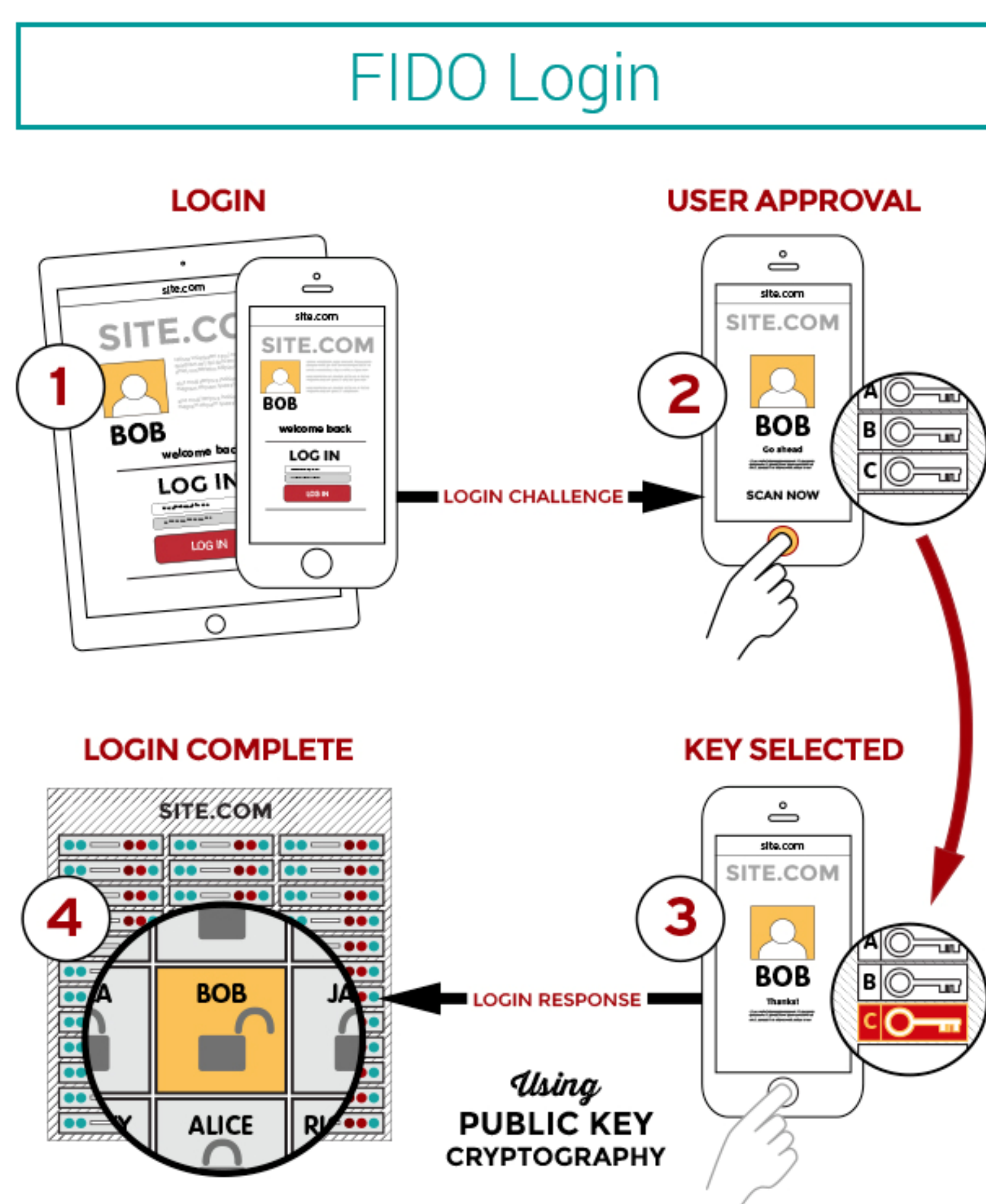# FIDO Password Replacement: Spoofing a Samsung Galaxy S5 and PayPal Account Using a Latent Fake Fingerprint

Rylan Chong, Chris Flory, Jim Lerums, David Long, Prof. Melissa Dark, and Prof. Chris Foreman
rchong, cflory, jlerums, long15, dark, jchrisf [@purdue.edu]

Problem

Fingerprints are the most common biometric means of authentication. This project was to determine if FIDO was vulnerable to latent fake fingerprint spoofing.
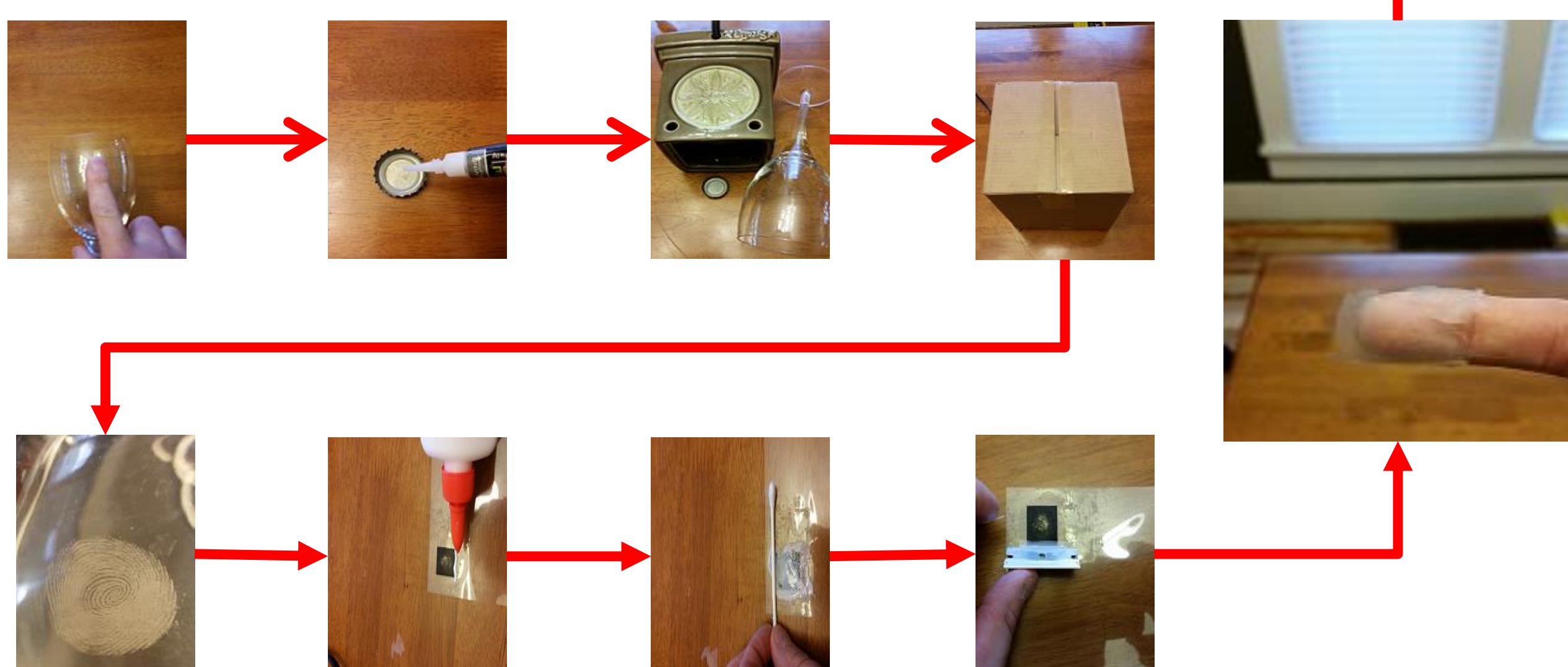

Reference: *FIDO Image - https://fidoalliance.org/*

Scope

The team scoped the FIDO project to consider the sub metric of authenticity in the area of latent fake fingerprint spoofing using inexpensive household materials.

Information provided in the security framework is credited to *International Organization for Standardization (2000) ISO/IEC FDIS 9126-1; International Organization for Standardization (2005) ISO/IEC 27002; Kainda, Fléchais, and Roscoe (2010); Nielsen (1993)*
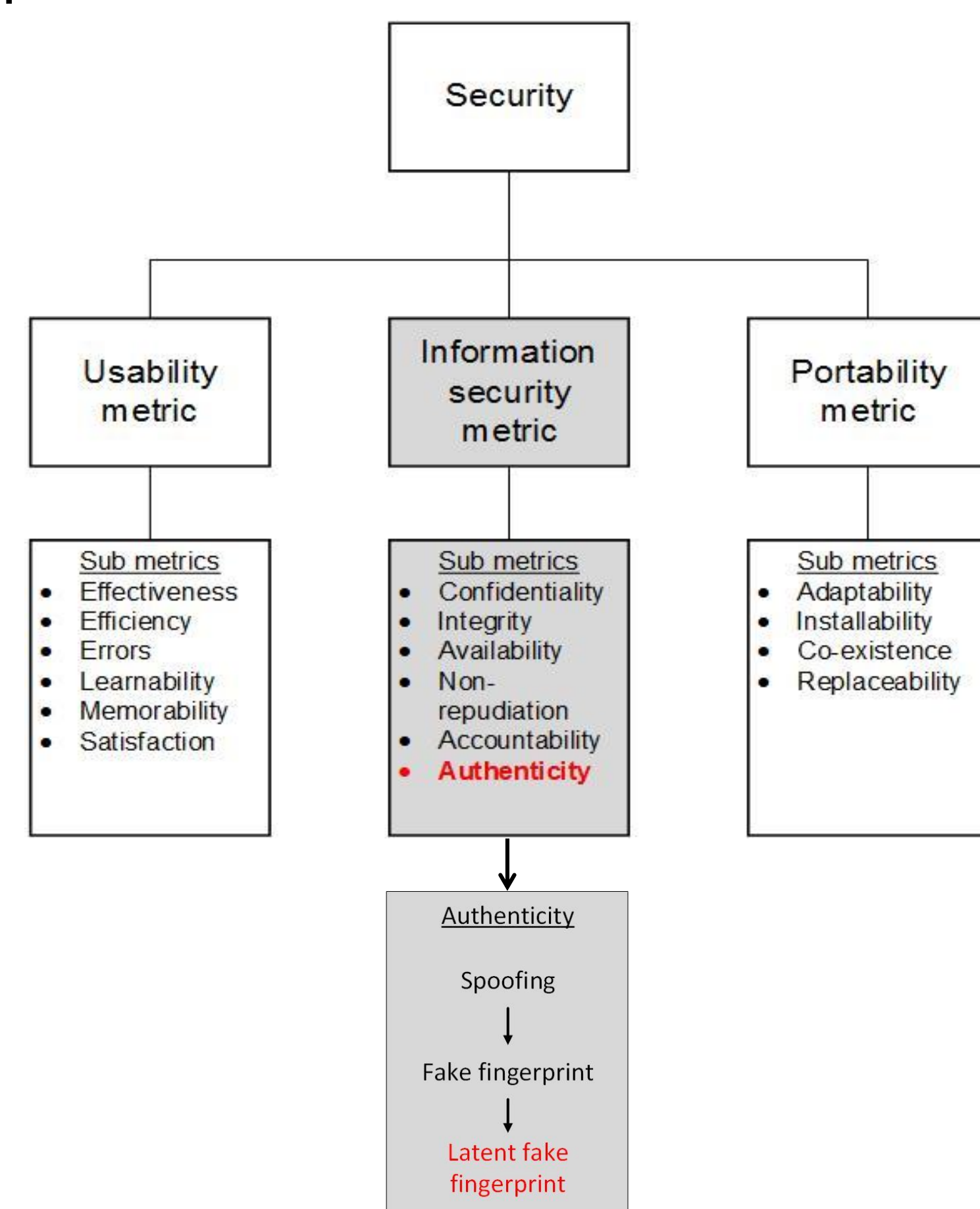
Pilot Study

The team utilized Brown's (1990) instructional approach and Smith's (2014) superglue approach to develop a latent fake fingerprint.

• 1 participant

• Samsung Galaxy S5 Phone

• Utilized inexpensive household materials

• Developed 1 latent fake fingerprint

• 10 swiping attempts

Results/Conclusion

• Team was successful in developing a latent fake fingerprint

• Team was unsuccessful in gaining access to the Samsung Galaxy S5 phone after 10 attempts

• Authenticity – Based on our pilot study, the Samsung Galaxy S5 phone was not vulnerable to a spoof attack using a latent fake fingerprint of inexpensive household materials.

Future Works

• Direction 1: Continue investigating Brown's (1990) and Smith's (2014) latent fake fingerprint approach.

• Direction 2: Verify Security Research Labs approach as they were able to spoof a FIDO Samsung Galaxy S5 phone fingerprint reader.

	Q4 2014	Q1 2015
FIDO UAF and U2F Specifications	DRAFT Undergoing Final Review	Ver. 1.0 Forecasted for Release
FIDO Solutions Testing	Compatibility Testing Between Partners	Certification Testing Process built on Ver. 1.0
Cost of FIDO Testing Access	Sponsors $25K, Associates $1K-$15K	TBD
FIDO Solutions	Samsung Galaxy S5 & PayPal	MS Windows 10?, Google Chrome, Plus
CERIAS InfoSec Testing Capability	Personal Phone and PayPal Account	TBD
Relationship With FIDO Alliance	Started with None	Support for Points of Contacts and Testing

PURDUE UNIVERSITY