PUTTING YOUR PASSWORDS ON SELF DESTRUCT MODE

BEATING PASSWORD FATIGUE

Huascar Sanchez
huascar.sanchez@sri.com
SRI International

John Murray
john.murray@sri.com
SRI International

Daniel Sanchez
martin.shaef@sri.com
SRI International

SOUPS'16

SRI International®

Beating Password Fatigue

Problem: We are simply storing more passwords than we really need or are capable of dealing with.

(**Proposed) Solution:** A method that enables users to get passwords that are worthy of temporary using, but not quite worthy of preserving.

SRI International®

Shifting Towards Ephemerality

Good Luck, Mr. Hunt

*This **message** will self destruct in 5 seconds*

Self destruction sequence initiated

SRI International®

Shifting Towards *Password* Ephemerality

Good Luck, Mr. Hunt

*This **password** will self destruct in 5 seconds*

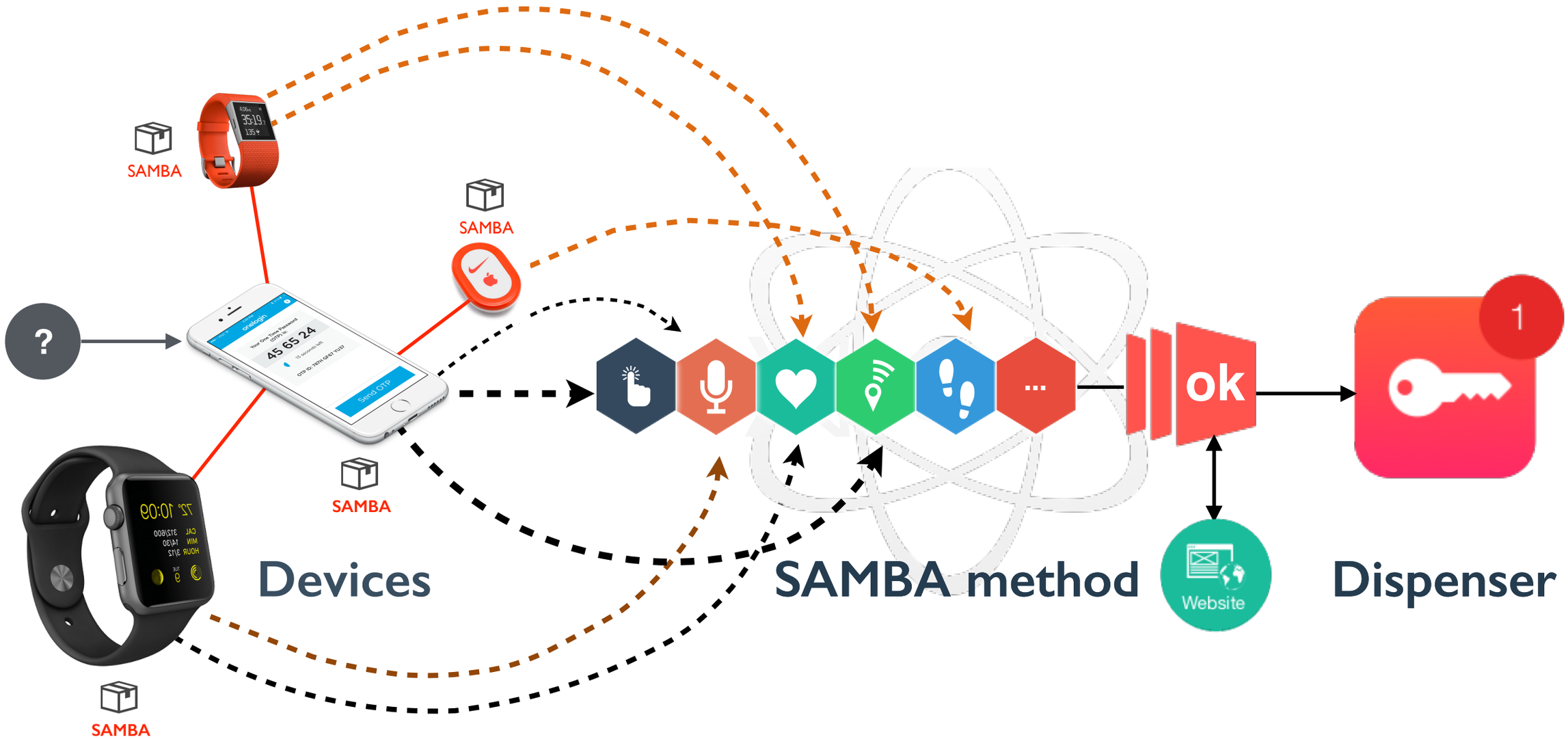
Self destruction sequence initiated

SRI International®

Achieving Password Ephemerality

SRI International®

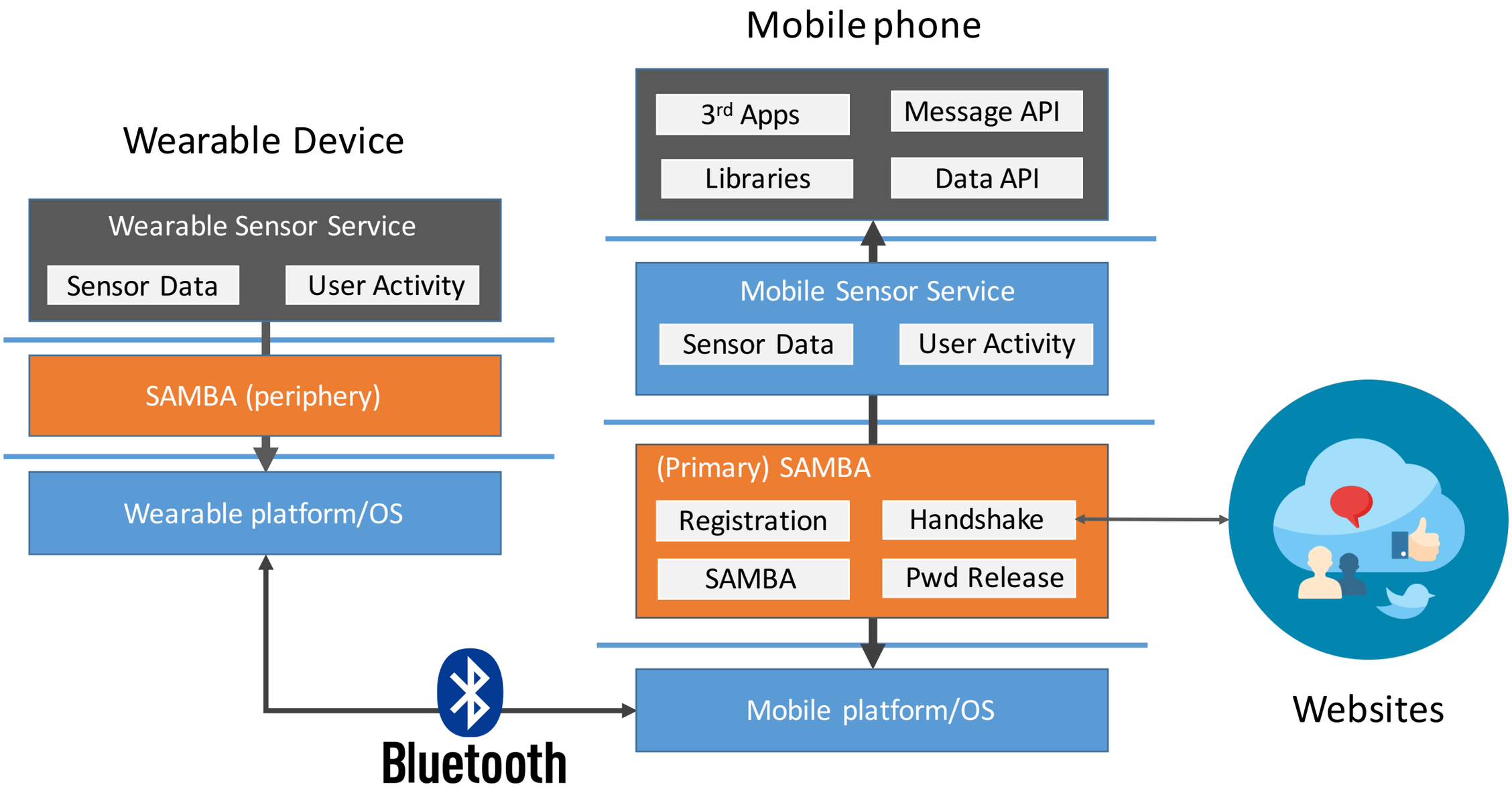
A Lightweight Scheme



Ephemeral Password *Release* and *Consumption*

SRI International®

A Lightweight Architecture



The SAMBA Method

Or **S**ynthetic **A**perture **M**ultimodal **B**iometrics **A**uthentication method

Borrows, by analogy, the "synthetic aperture" technique used in radio/optical astronomy.

Fuses small and overlapping biometric samples to efficiently verify a user's identity

This method is as accurate as the union of its inputs

Converts fused matching scores into confidence scores (probability)

SRI International®

Ephemeral Password Dispenser

Releasing ephemeral passwords is difficult:

The *biggest issue is adoption*

Consequently, we provide a **wrapper** mechanism that works with existing authentication infrastructures

- Based on self-service password reset
- Naive approach (additional work is needed)

Rationale: It avoids a complete overhaul of Websites' cryptography systems to support our solution.

Design principles behind Our Solution

SRI International®

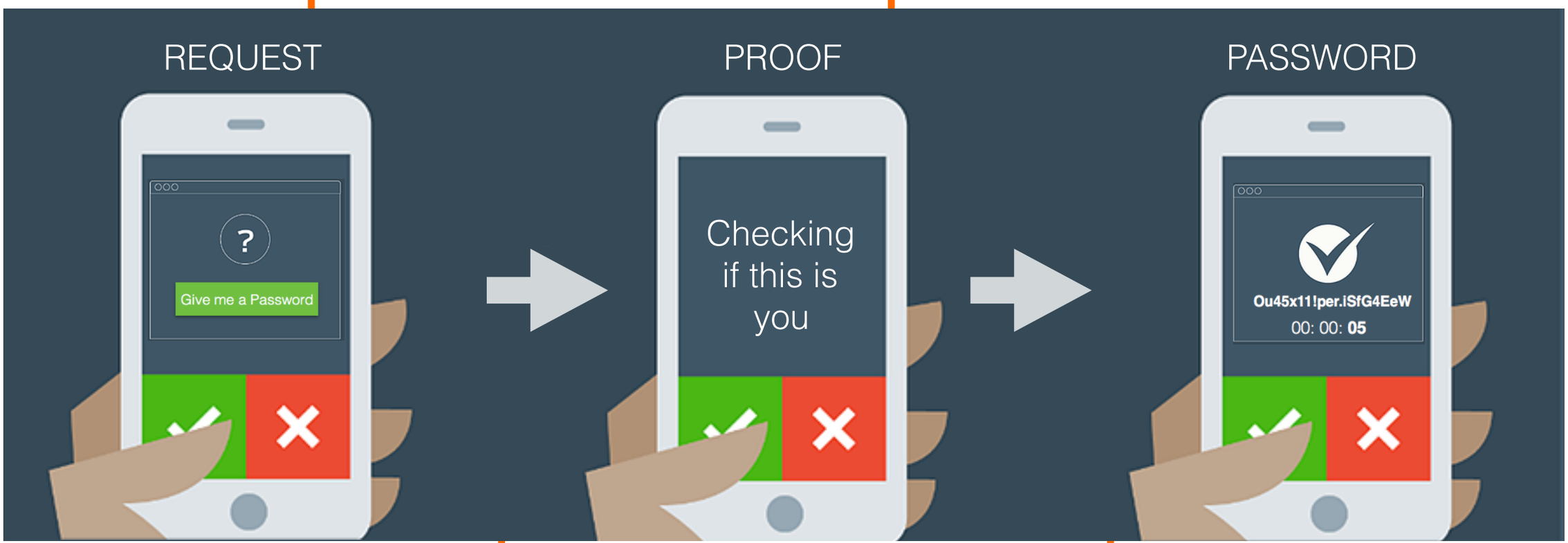
Design Principles

- Fusion of multiple modalities of Biometrics.
  - "Synthetic aperture" needs many biometric samples with overlapping properties in order to be successful.
- Efficient match & non-match identity determination.
  - Small & overlapping biometric samples can be fused quickly
- Support future innovation of biometrics.
  - Smooth inclusion of new types of biometric data.

What this means for Users

Right to control their passwords lifetime

Safeguard in place to protect information



Simpler User Experience (3 steps)

Less password fatigue (no password management)

SRI International®

Looking ahead

Build proof of concept of SAMBA System.

Design a better handshake between SAMBA and target Websites

Perform control experiments to evaluate SAMBA's new user experience

Performance evaluation of SAMBA method

SRI International®

Summarizing

Examined the concept of ephemeral content and discuss how it relates to password management and password fatigue.

Presented SAMBA, our proposal to ephemeral passwords to combat password fatigue.

Combines our SAMBA method with a lightweight scheme and architecture for ephemeral password release & consumption.

Questions:

huascar.sanchez@sri.com

SRI International®