



EXPERIENCE SIMPLER, STRONGER AUTHENTICATION

AGENDA

The Problem

The Solution

The Alliance

Updates

Data Breaches...

780 data breaches in 2014

>1 billion records since 2012

\$3.5 million cost/breach



**"76% of 2012 network
intrusions exploited
weak or stolen
credentials"**

2013 Data Breach Investigations Report



The world has a **PASSWORD PROBLEM**

ONE-TIME PASSCODES

Improve security but aren't easy enough to use



SMS
Reliability



Token
Necklace



User
Confusion



Still
Phishable



WE NEED A
NEW MODEL



WE CALL OUR
NEW MODEL

Fast **ID**entity **O**nline

online authentication using
public key cryptography

AGENDA

The Problem

The Solution

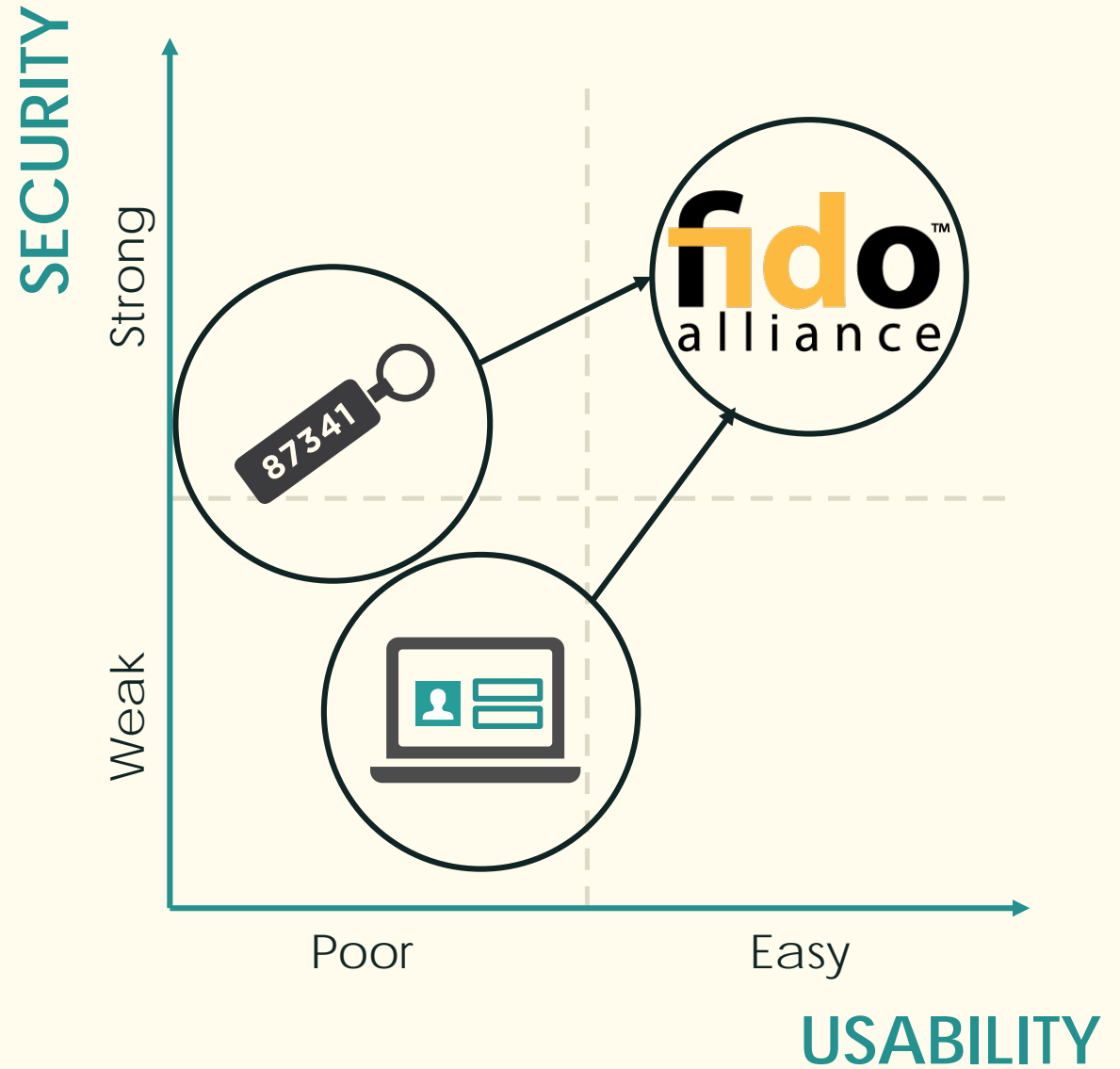
The Alliance

Updates

THE OLD PARADIGM

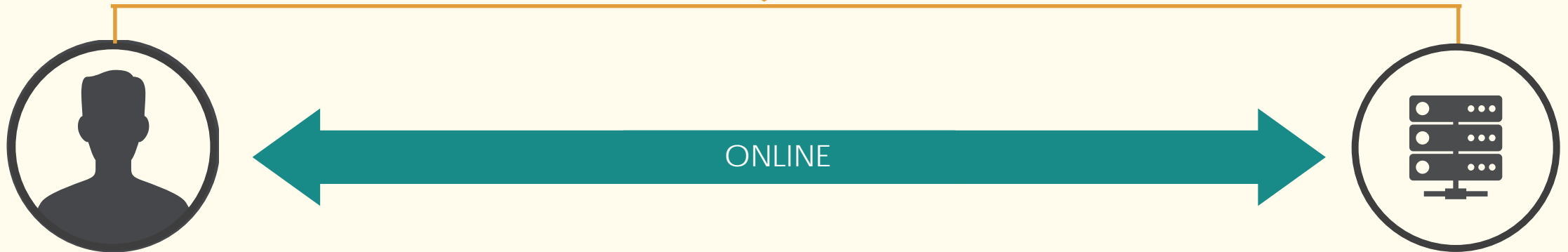


THE FIDO PARADIGM

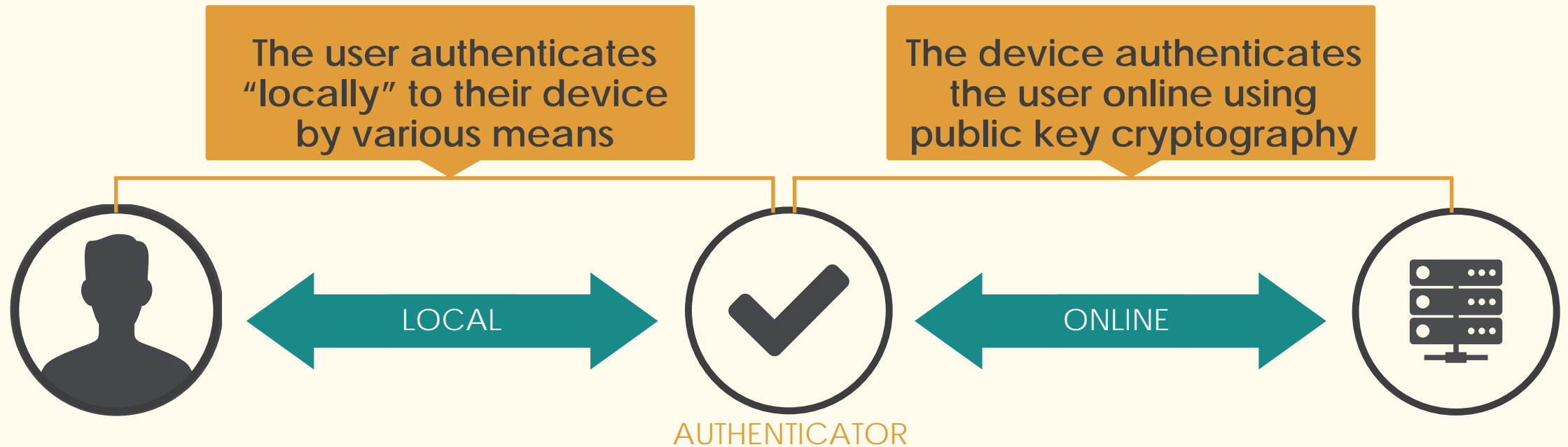


HOW OLD AUTHN WORKS

The user authenticates themselves online by presenting a human-readable secret



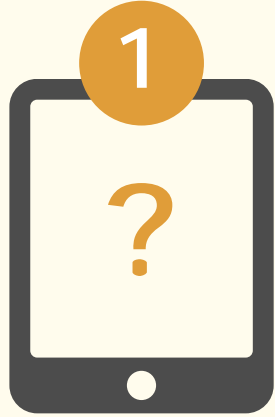
HOW FIDO AUTHN WORKS





online authentication using public key cryptography

Passwordless Experience (UAF Standards)



Authentication Challenge



Biometric Verification*



Authenticated
Online

Second Factor Experience (U2F Standards)



Second Factor Challenge



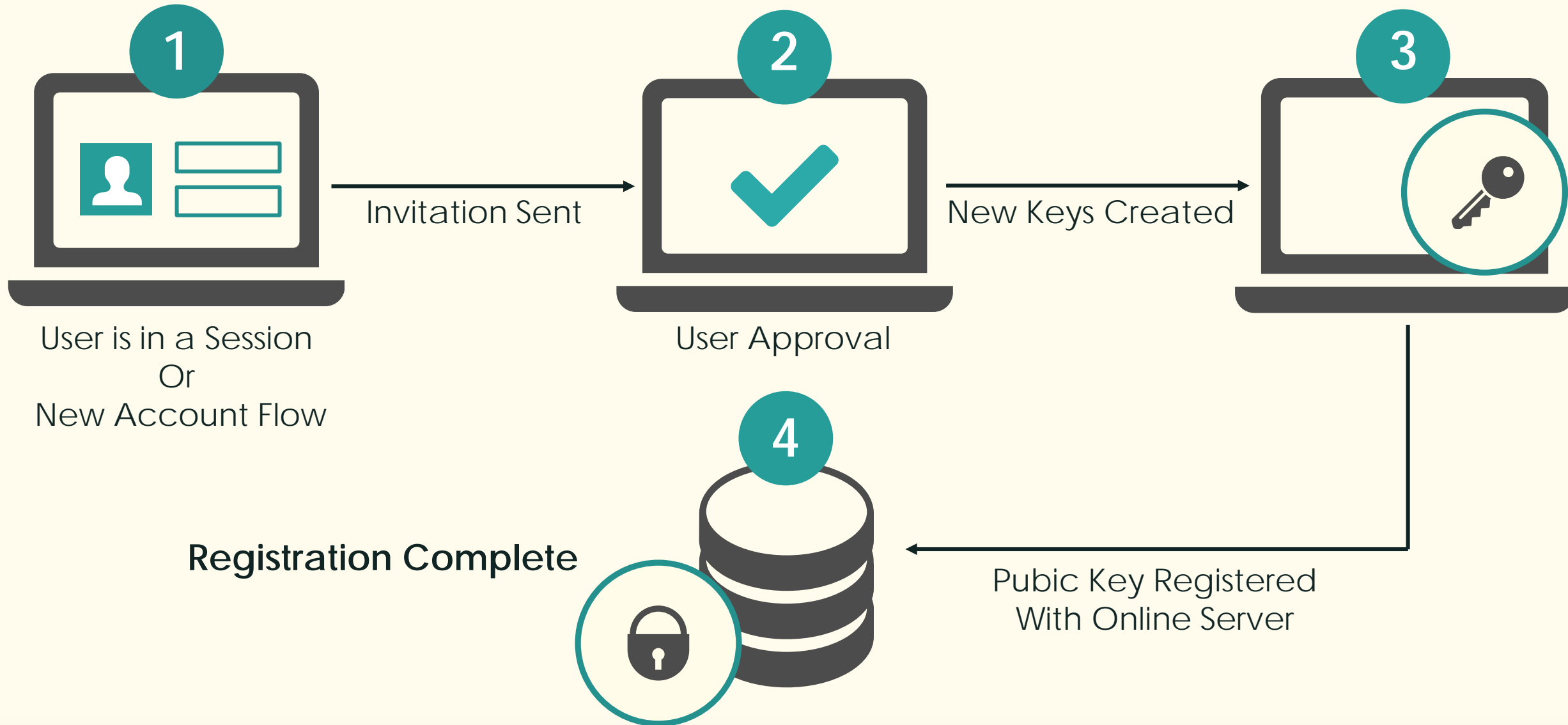
Insert Dongle* / Press Button



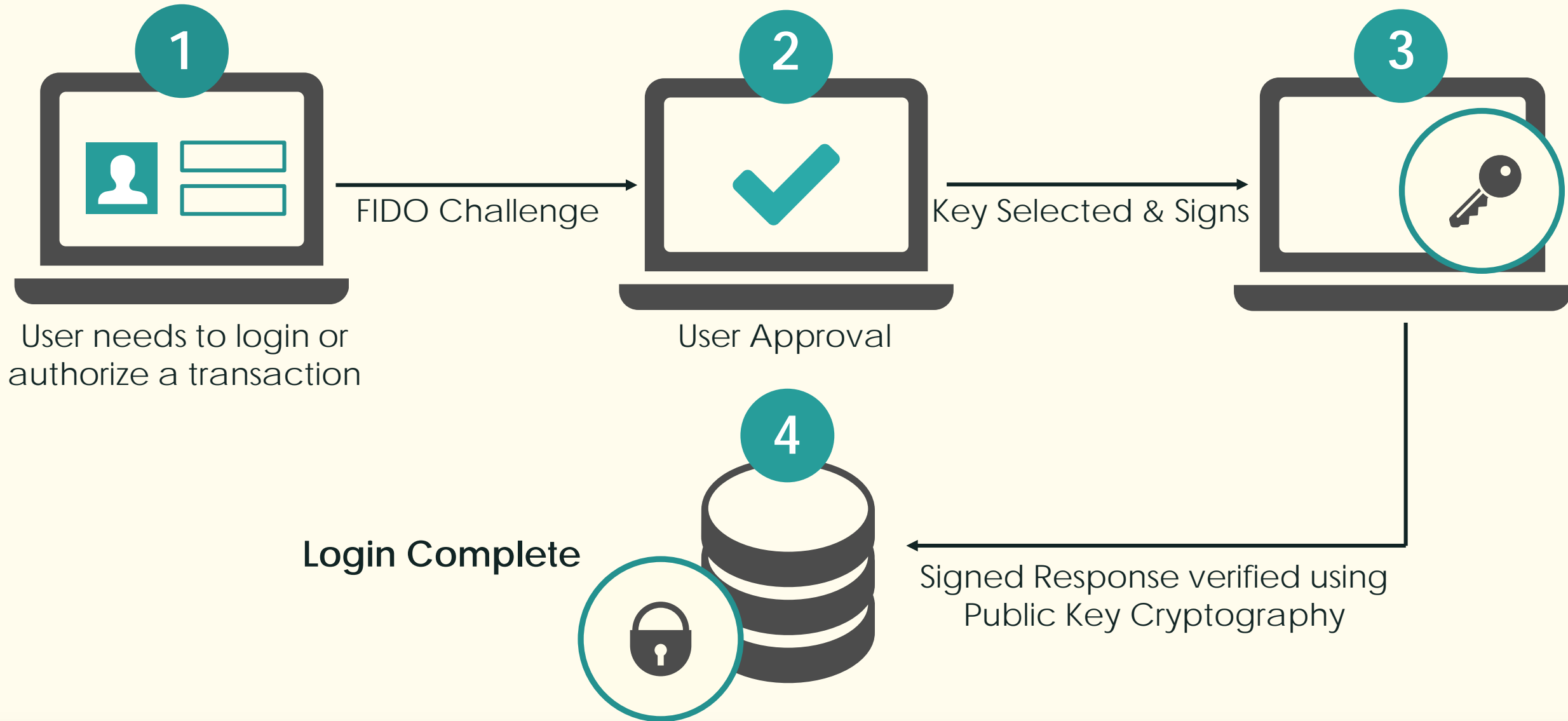
Authenticated
Online

*There are other types of authenticators

FIDO Registration

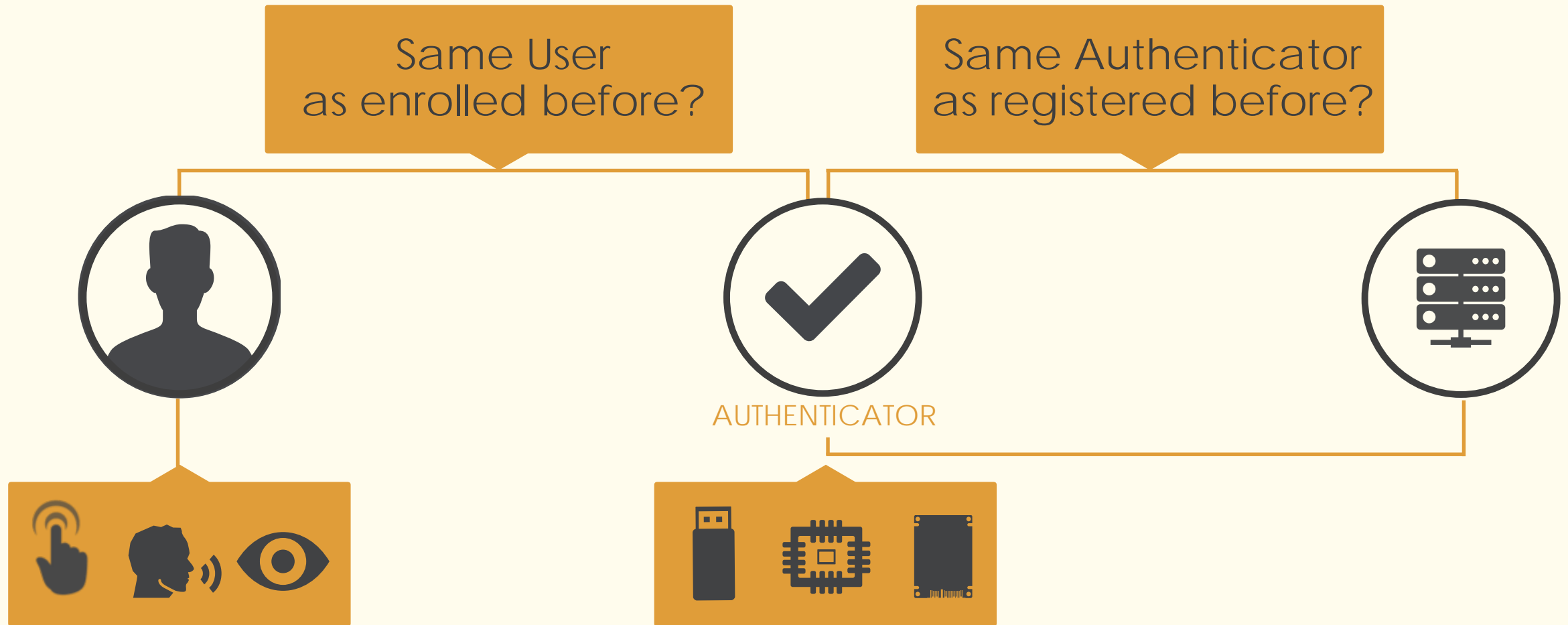


FIDO Authentication



FIDO UAF

UNIVERSAL AUTHENTICATION FRAMEWORK



THE BUILDING BLOCKS

FIDO USER DEVICE

BROWSER/APP

FIDO CLIENT

ASM

FIDO AUTHENTICATOR



Authentication
Private Keys



Attestation
Private Keys



RELYING PARTY

WEB SERVER



TLS Server Key

FIDO SERVER

FIDO



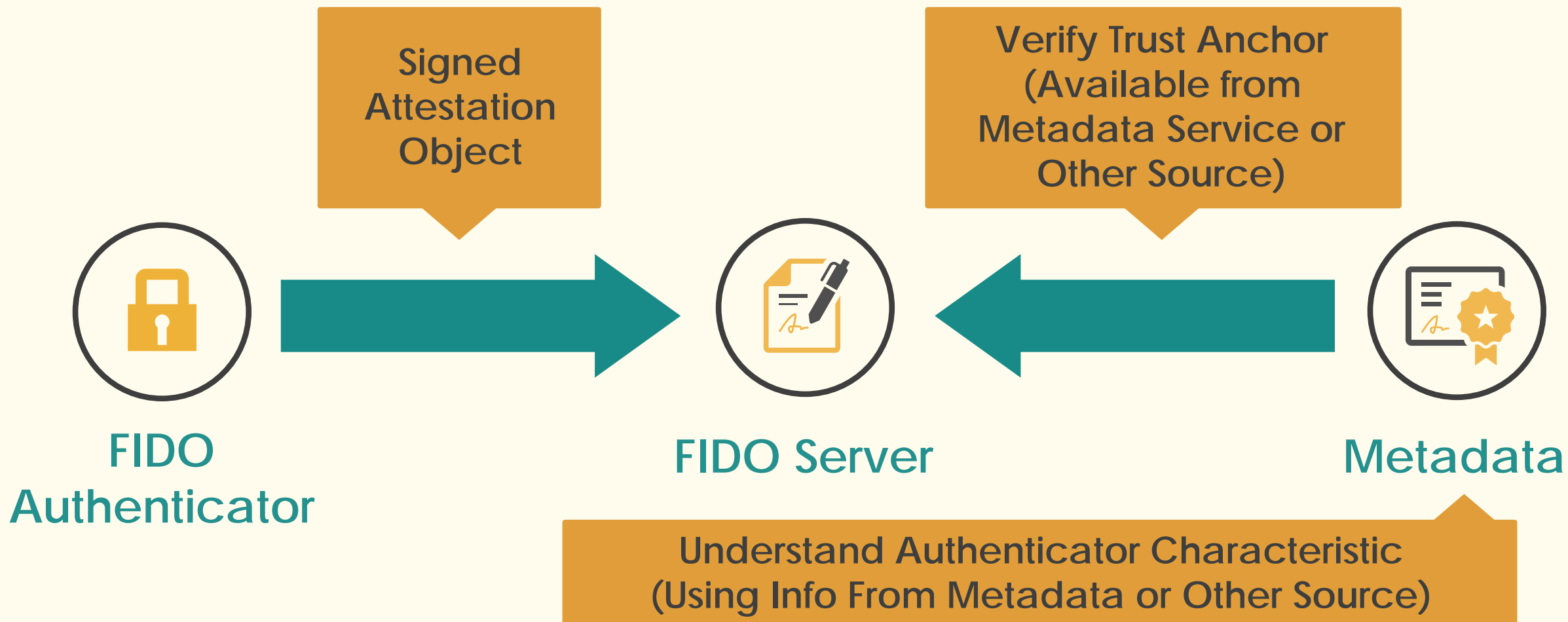
Cryptographic
Authentication
Public
Keys DB

UPDATE



Authenticator
Metadata
& Attestation
Trust Store

ATTESTATION & METADATA





USABILITY, SECURITY
and
PRIVACY



No 3rd Party in the Protocol



No Secrets on the Server side




Biometric Data (if used) Never Leaves Device



No Link-ability Between Services



No Link-ability Between Accounts

- 
- Better security for **online services**
 - Reduced cost for the **enterprise**
 - Simpler and safer for **consumers**

AGENDA

The Problem

The Solution

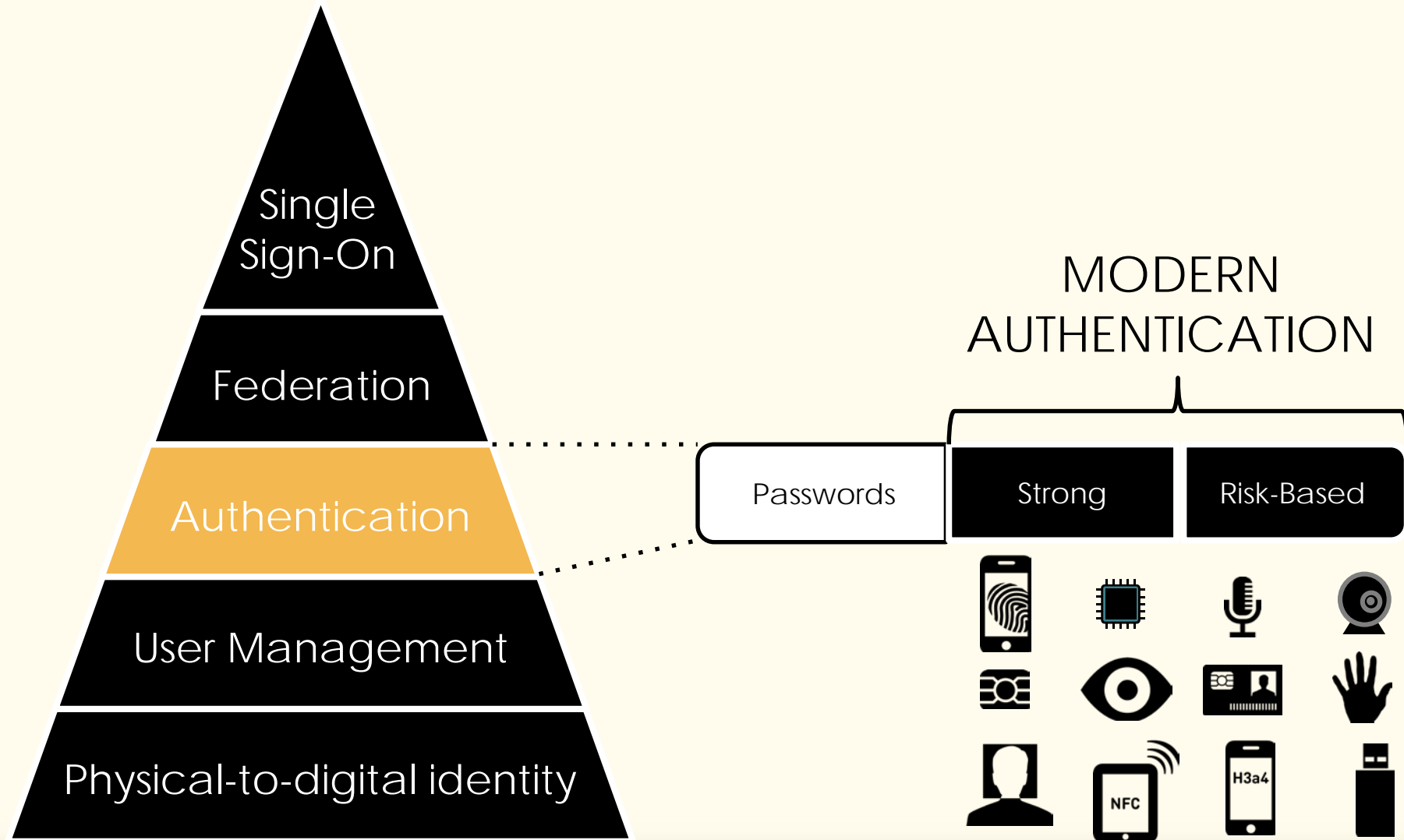
The Alliance

Updates

The FIDO Alliance is an open industry
association of over 250
global member organizations



FIDO SCOPE





FIDO Alliance Mission

1

Develop
Specifications

2

Operate
Adoption Programs

3

Pursue Formal
Standardization

- ✓ Services/Apps
- ✓ Devices/Platforms
- ✓ Vendors/Enablers



Board Members





Sponsor Members





Associate Members

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✓ Public Sector



Government Members

“The fact that FIDO has now welcomed government participation is a logical and exciting step toward further advancement of the Identity Ecosystem; we look forward to continued progress.” -- Mike Garcia, NSTIC NPO



✓ Industry Partners

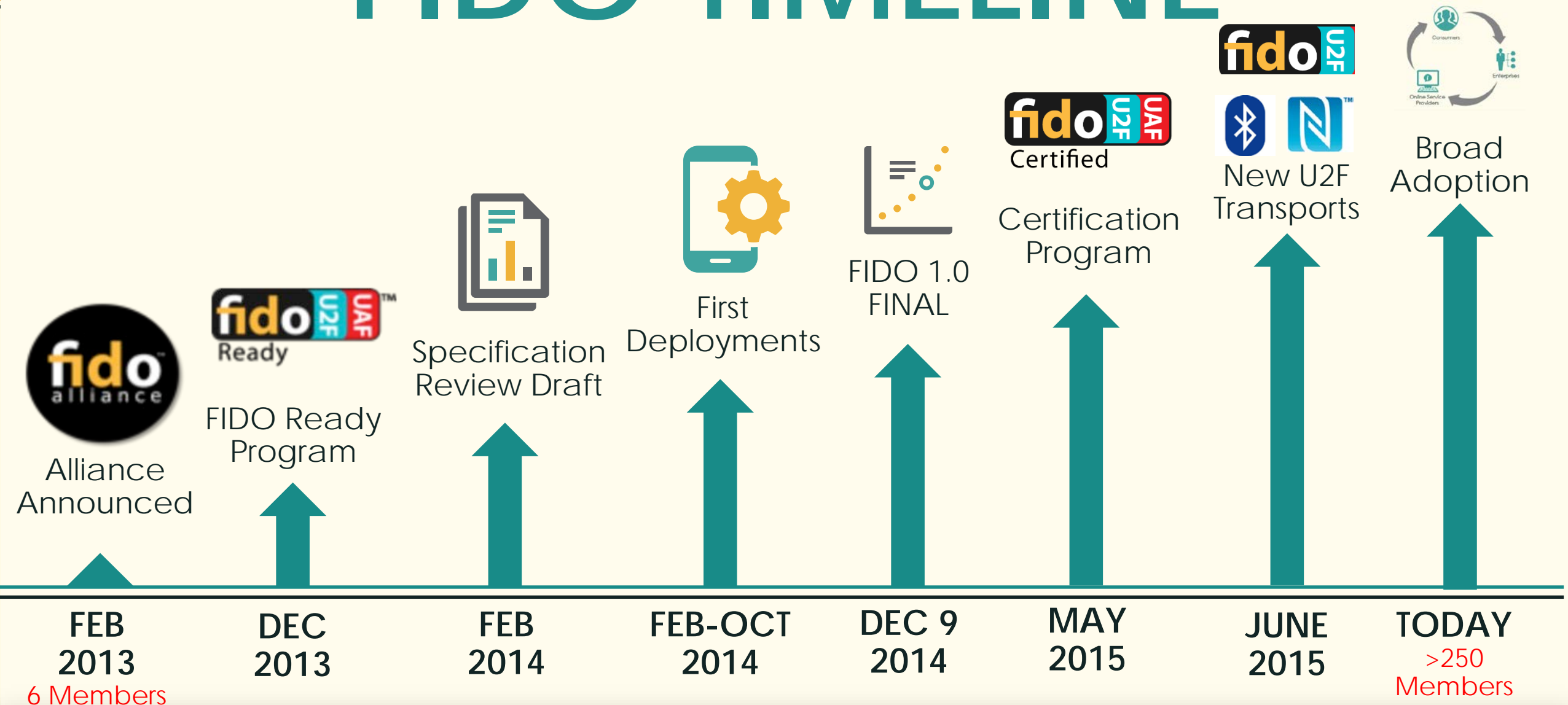
Our mission is highly complementary to many other associations around the world. We welcome the opportunity to collaborate with this growing list of industry partner organizations.



Liaison Program



FIDO TIMELINE



2014 FIDO ADOPTION

*"Secure Consumer Payments Enabled for Alipay Customers with Easy-to-Use Fingerprint Sensors on Recently-Launched Samsung Galaxy S5",
September 17, 2014*



*"Google Launches Security Key, World's First Deployment of Fast Identity Online Universal Second Factor (FIDO U2F) Authentication",
October 21, 2014*



*"PayPal and Samsung Enable Consumer Payments with Fingerprint Authentication on New Samsung Galaxy S5",
Feb 24, 2014*

2015 FIDO ADOPTION

"Today, we're adding Universal 2nd Factor (U2F) security keys as an additional method for two-step verification, giving you stronger authentication protection."
August 12, 2015

"Google for Work announced Enterprise admin support for FIDO® U2F "Security Key",
April 21, 2015

"Qualcomm launches Snapdragon fingerprint scanning technology",
March 2, 2015



"Microsoft Announces FIDO Support Coming to Windows 10"
Feb 23, 2015

QUALCOMM

Google

NTT
docomo

"Largest mobile network in Japan becomes first wireless carrier to enhance customer experience with natural, simple and strong ways to authenticate to DOCOMO's services using FIDO standards"
May 26, 2015



Bank of America



"the technology supporting fingerprint sign-in was built according to FIDO (Fast IDentity Online) standards."
September 15, 2015

GitHub



"GitHub says it will now handle what is called the FIDO Universal 2nd Factor, or U2F, specification"
October 1, 2015

20-NOV-2015

FIDO Authentication Poised for Continued Growth as Alliance Submits FIDO 2.0 Web API to W3C

- W3C has accepted our submission
- Specifications required to define a FIDO-compliant Web API
- Designed to extend FIDO's existing reach to all platforms
- OEM community should begin to plan their support now
- RP community should deploy FIDO 1.x now knowing FIDO standards are "future proof" --strategically positioned as the de facto authentication scheme for the Web & OS Platforms



EXPERIENCE SIMPLER, STRONGER AUTHENTICATION
