Beyond password:
Time for a change

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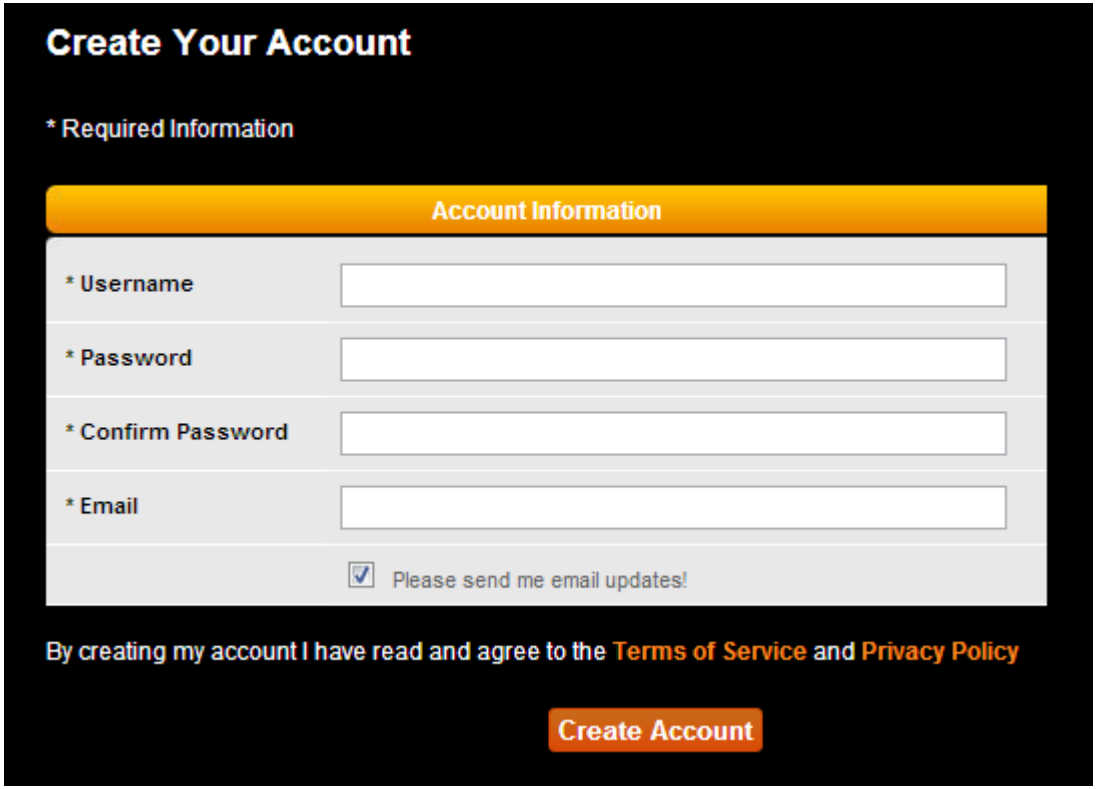
Octobre 2013

How can web applications authenticate their online users?

Often…



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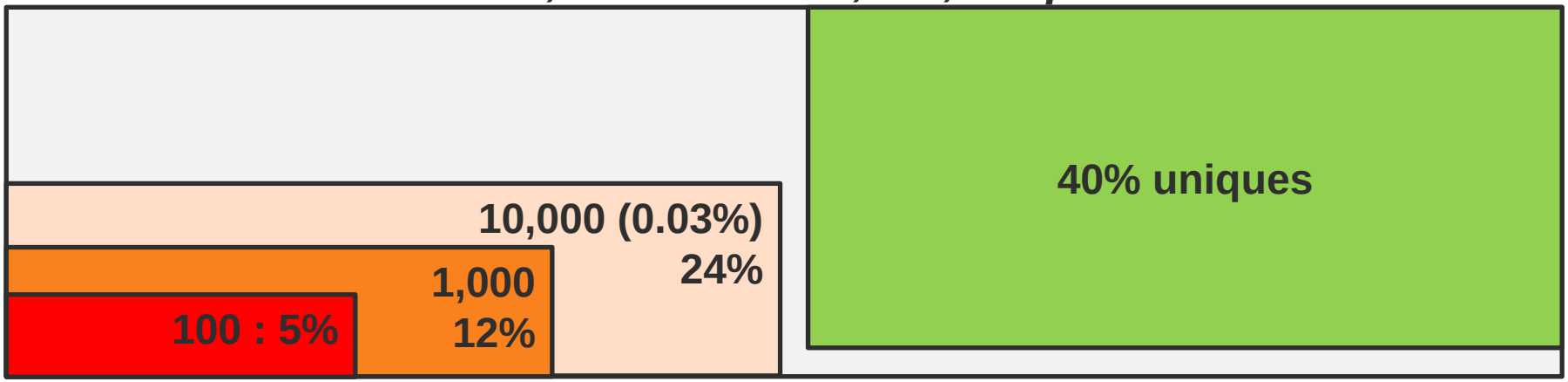
Passwords?

RockYou social network, Dec 2009: 30,000,000 passwords



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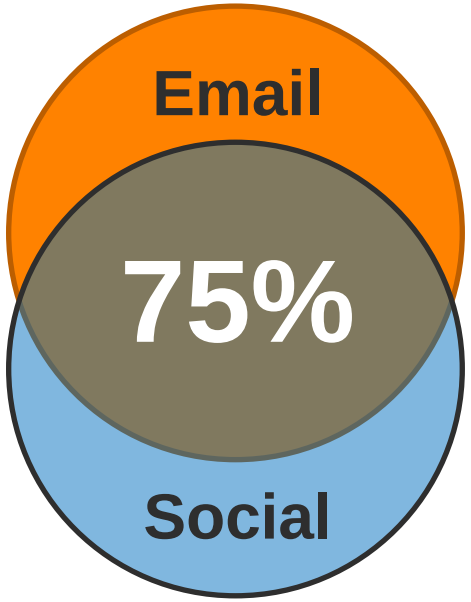
Attacks

- Compromised passwords in 2013:
  - Living Social: 50 millions
  - EverNote: 50 millions
  - Drupal: 1 million
  - Twitter: 250,000
  - …



(BitDefender)

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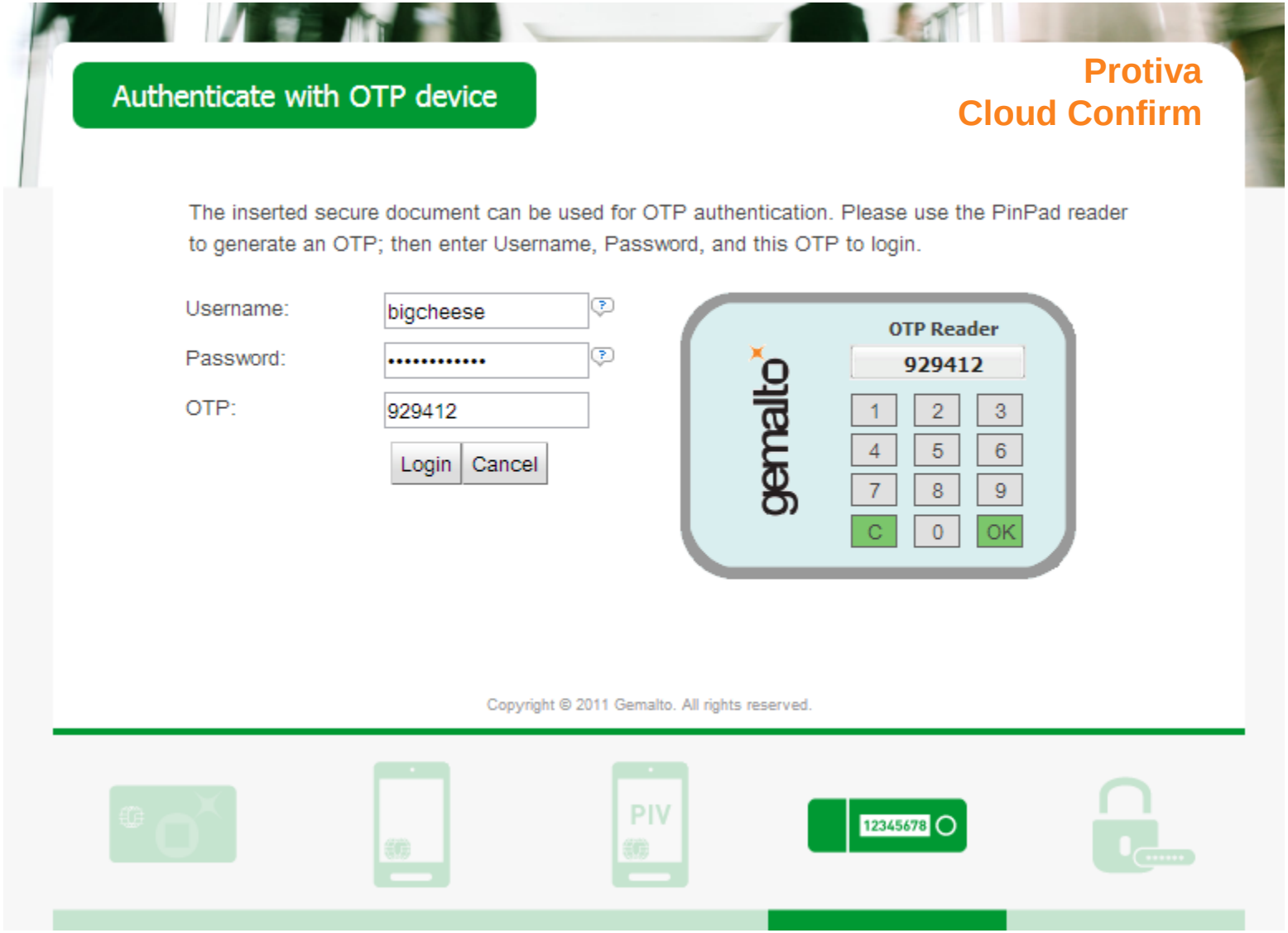
Strong Authentication

- At least 2 of:
  - Something you know (password, pin, etc.)
  - Something you have (card, mobile, etc.)
  - Something you are (biometrics)

- Independents, protected


Authenticate with OTP device
Protiva
Cloud Confirm
The inserted secure document can be used for OTP authentication. Please use the PinPad reader to generate an OTP; then enter Username, Password, and this OTP to login.
Username:
bigcheese
Password:
OTP:
929412
Login
Cancel
OTP Reader
929412
1
2
3
4
5
6
7
8
9
C
0
OK
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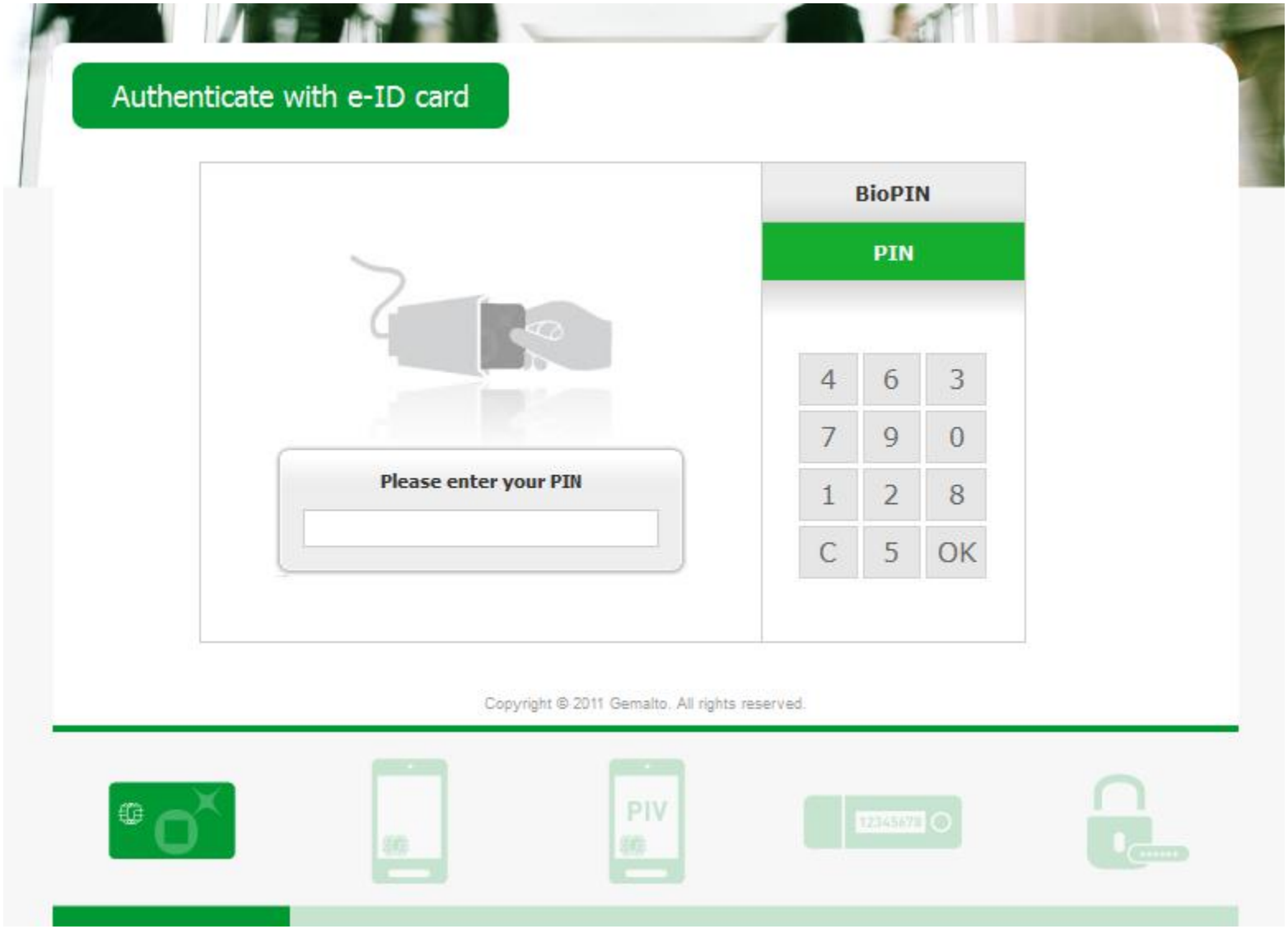
PIV
12345678


Authenticate with e-ID card
BioPIN
PIN
4 6 3
7 9 0
1 2 8
C 5 OK
Please enter your PIN
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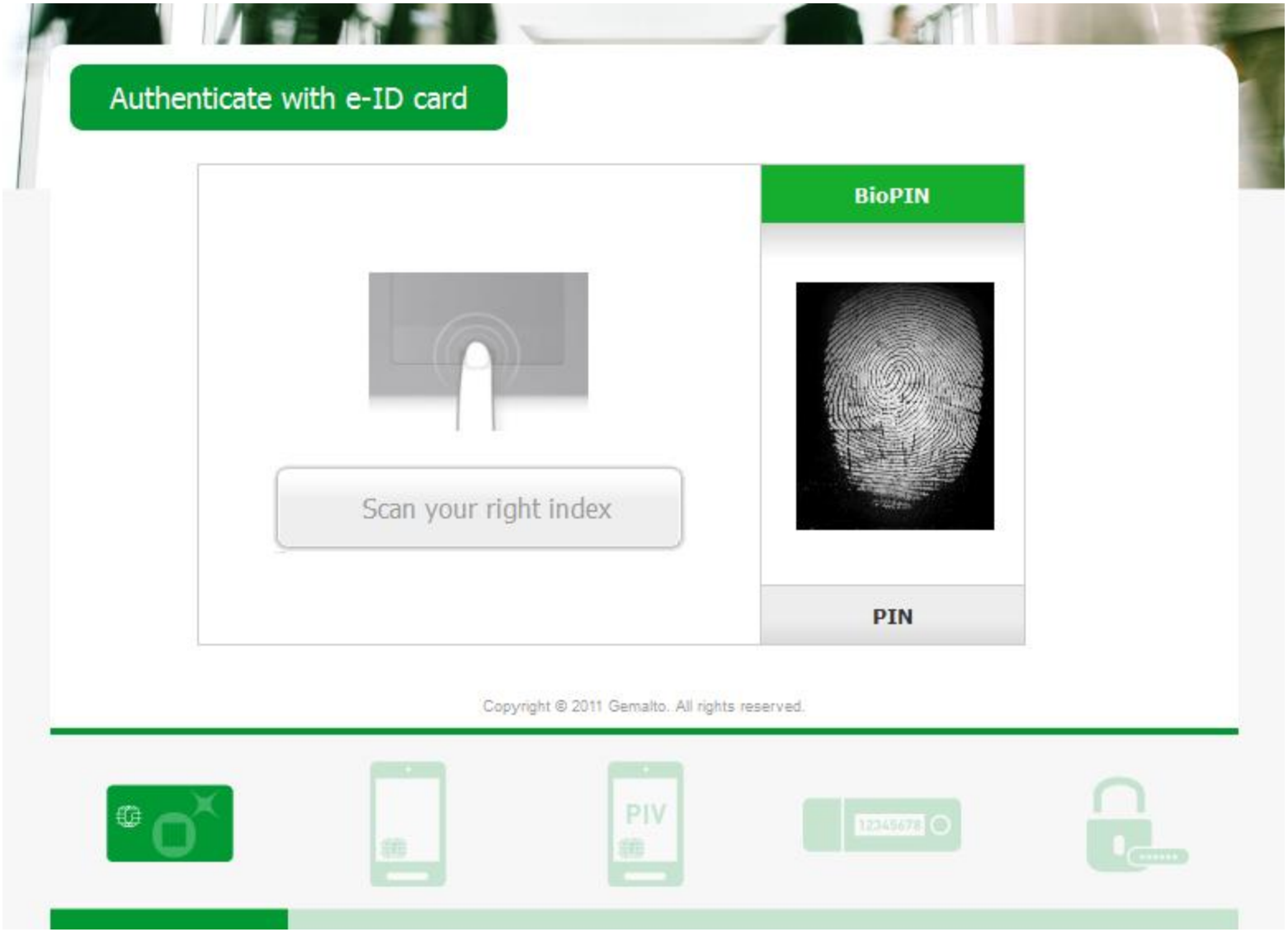
Authenticate with e-ID card
BioPIN
Scan your right index
PIN
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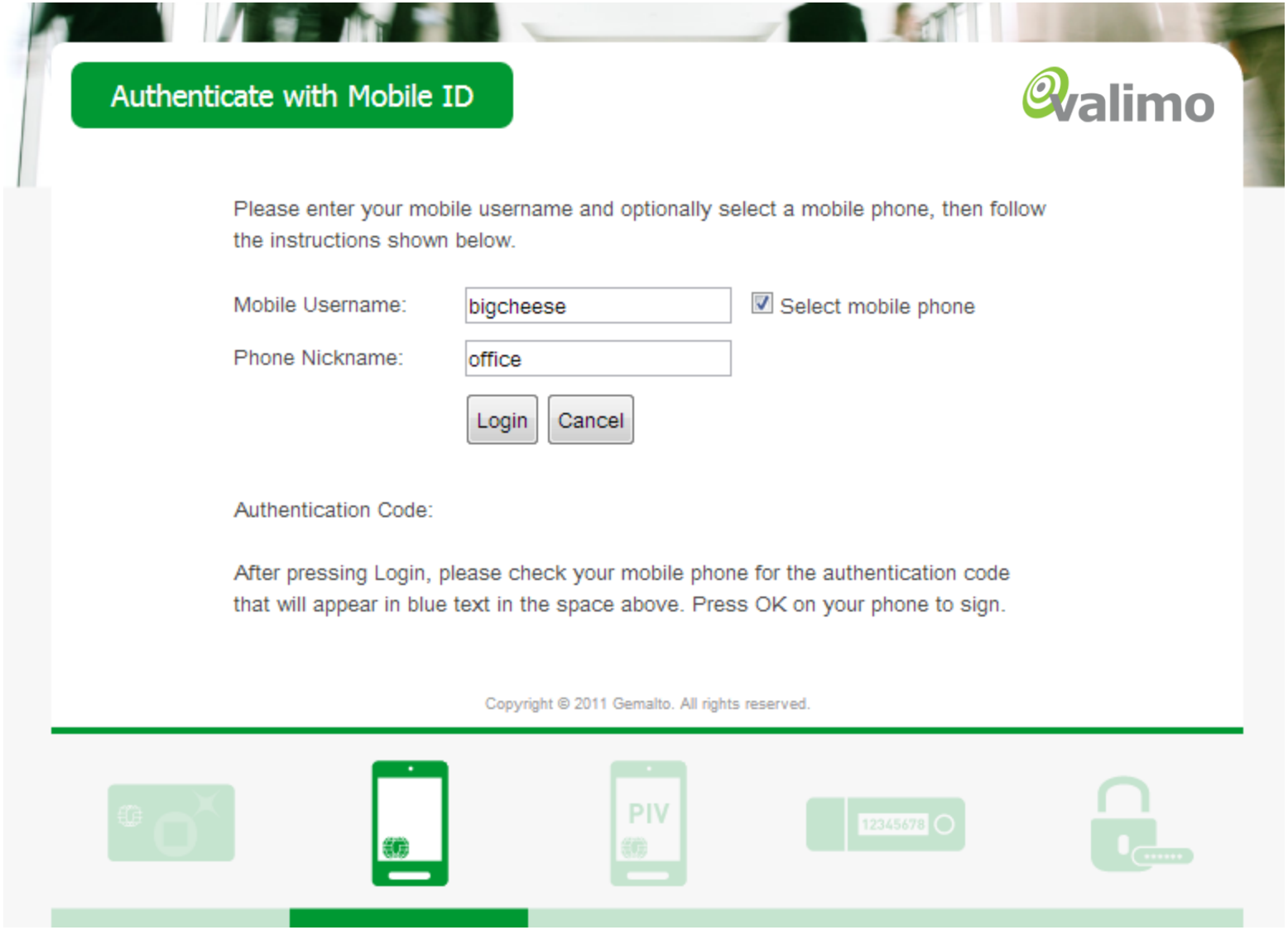
Authenticate with Mobile ID
valimo
Please enter your mobile username and optionally select a mobile phone, then follow the instructions shown below.
Mobile Username:
bigcheese
Select mobile phone
Phone Nickname:
office
Login
Cancel
Authentication Code:
After pressing Login, please check your mobile phone for the authentication code that will appear in blue text in the space above. Press OK on your phone to sign.
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PIV
12345678

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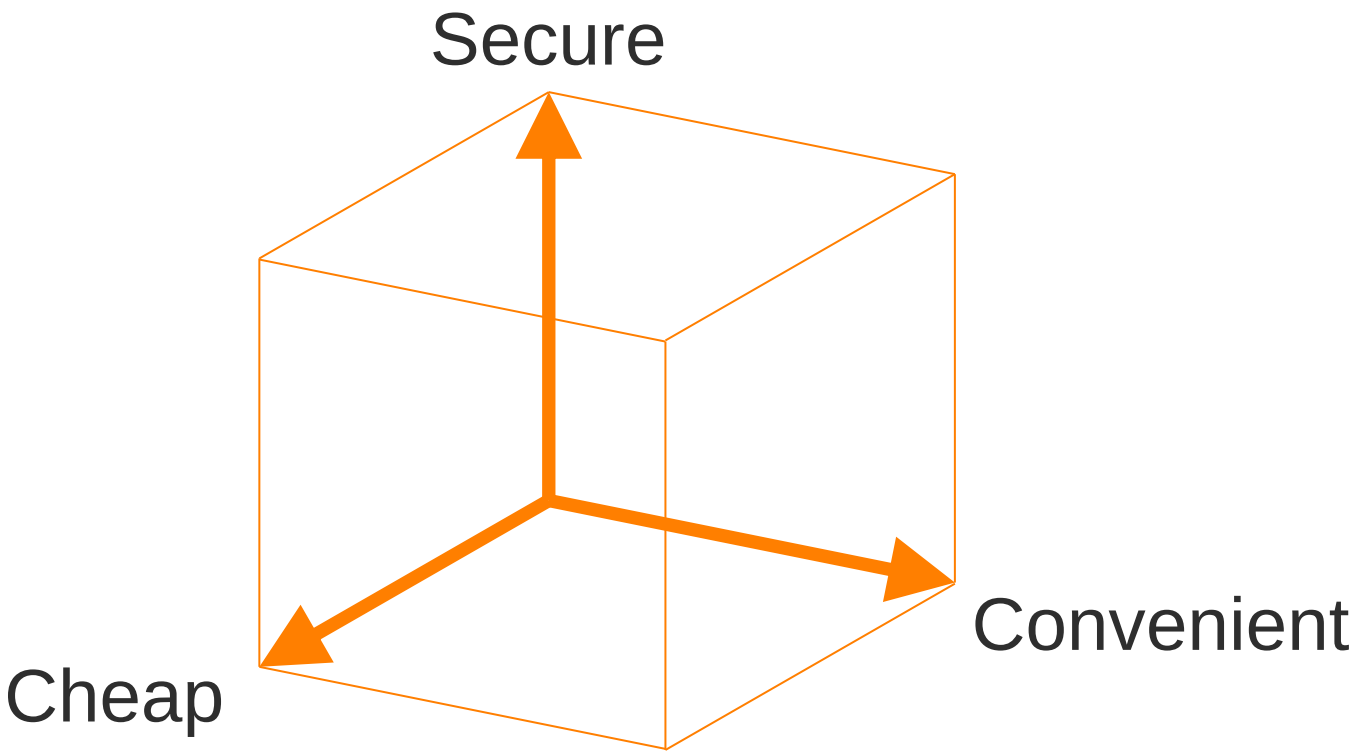
Need to define YOUR solution



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Social Login

- Identity reuse
  - Simpler for users (no new identifier to remember)
  - Single-Sign-On (SSO)
- Alleviate the application
- Privacy risks
  - Traceability
  - Disclosure of personal data

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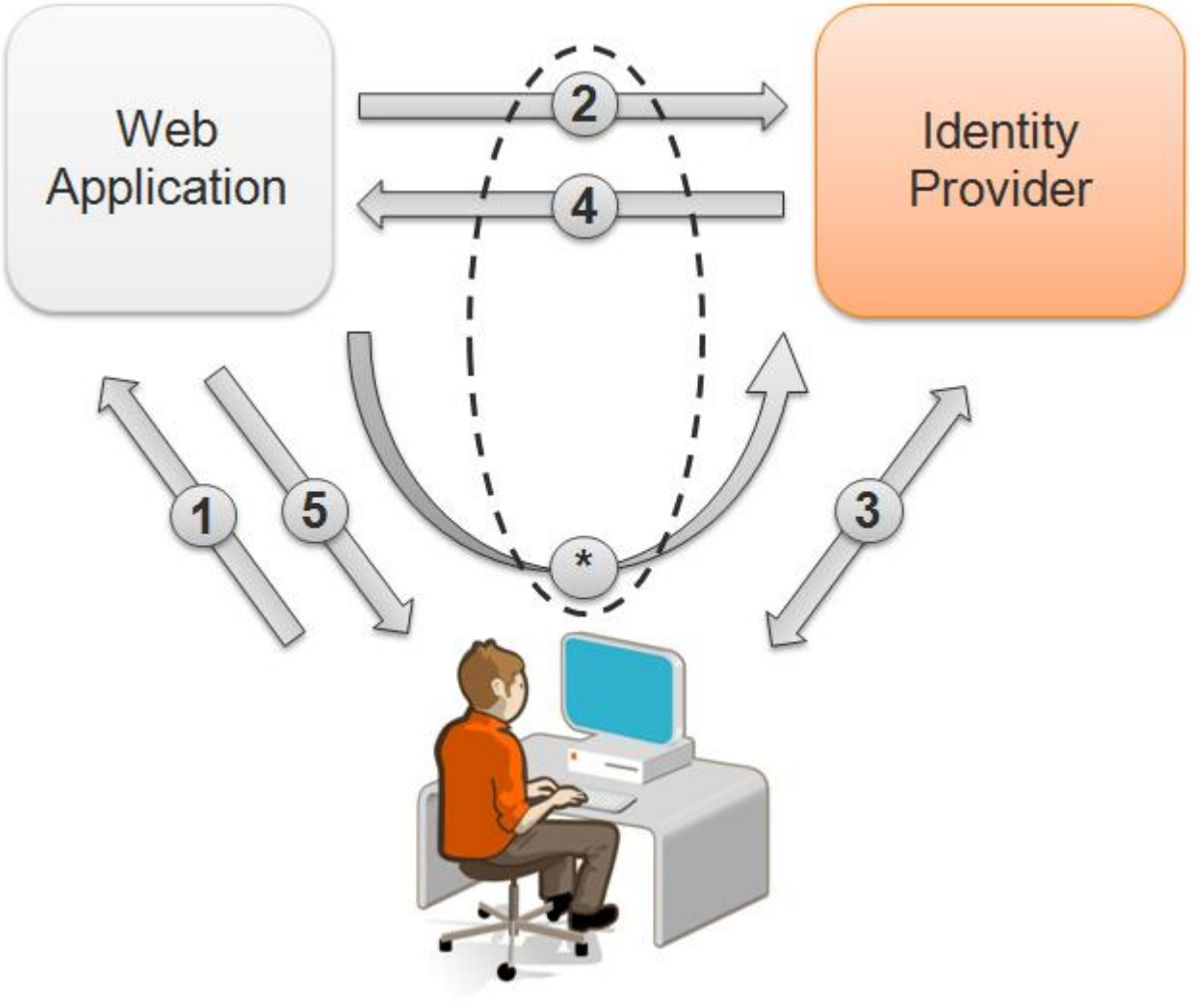
Authentication delegation



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Delegation protocols

OAuth

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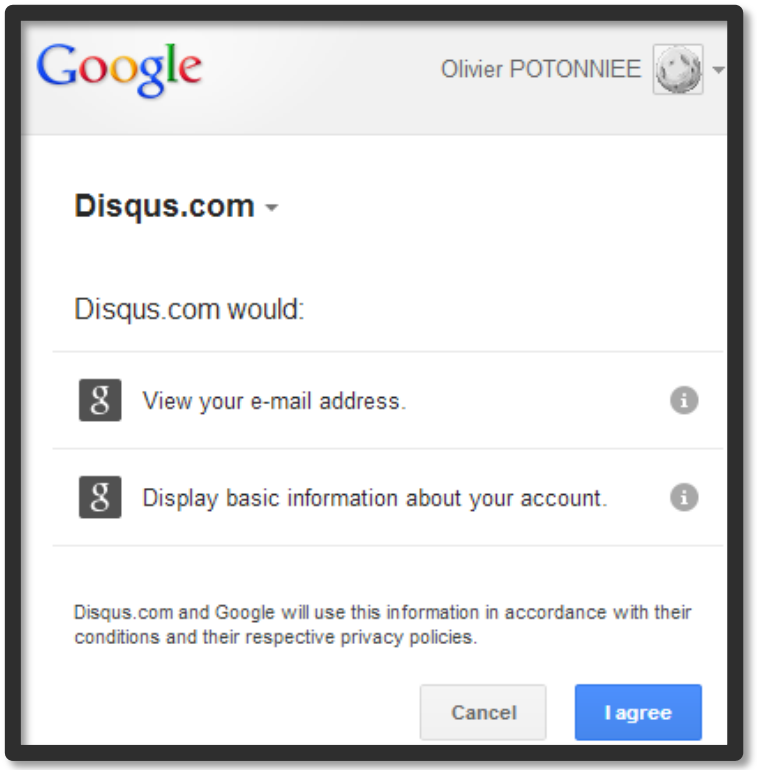
OpenID A simple URL



stackoverflow
Slashdot
sourceforge
Drupal

Google
YAHOO!
orange
WordPress
Aol.
claimID
VeriSign Labs

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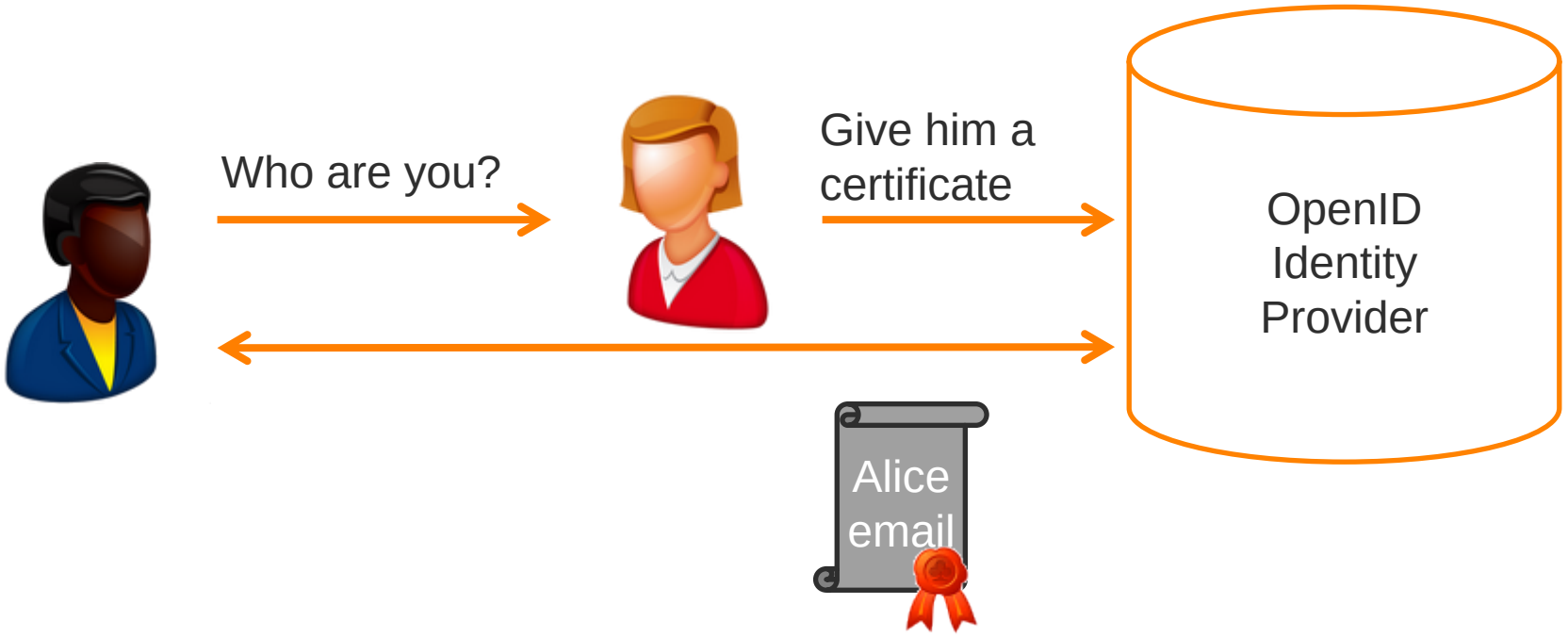
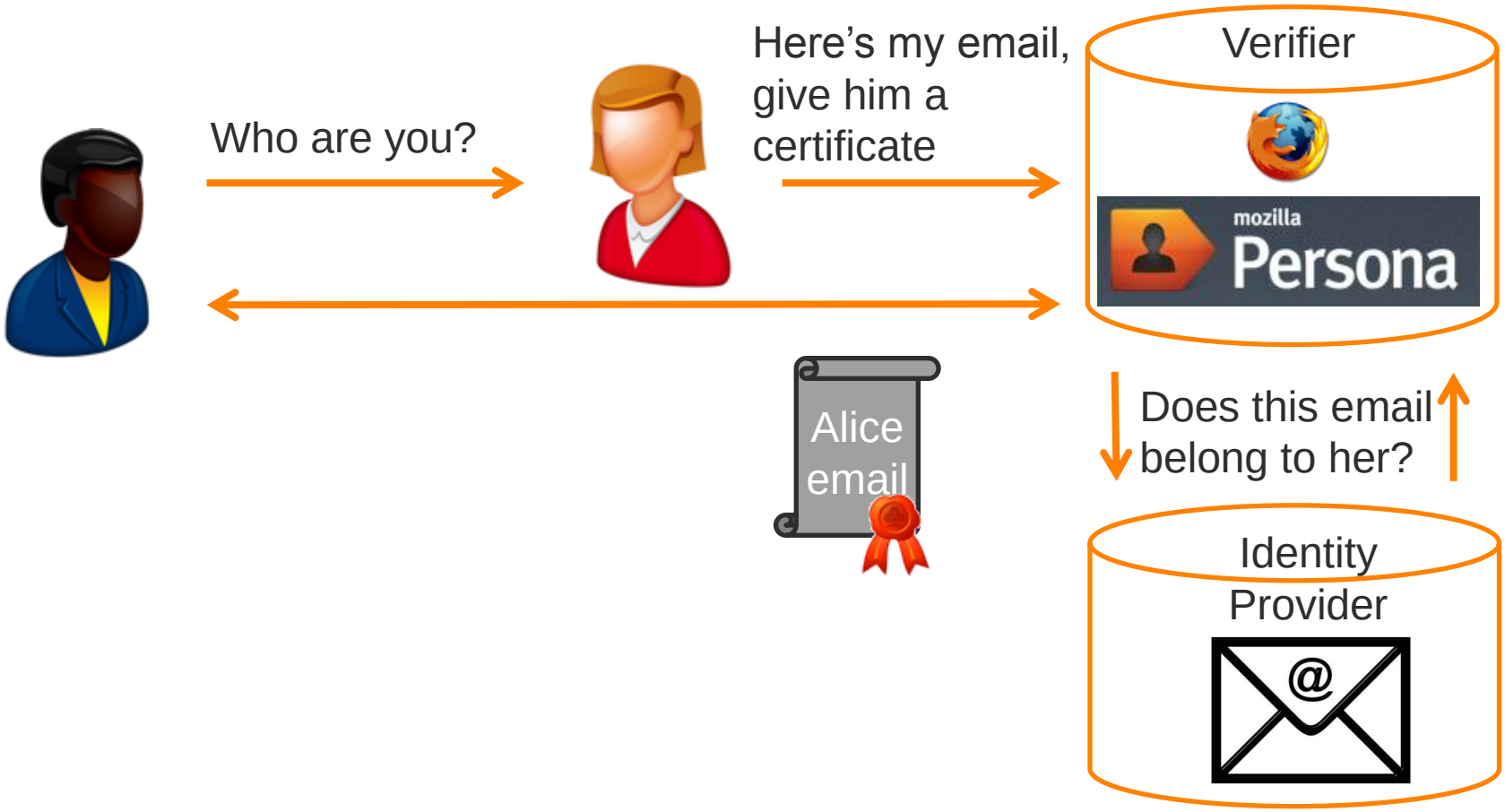
Authentication

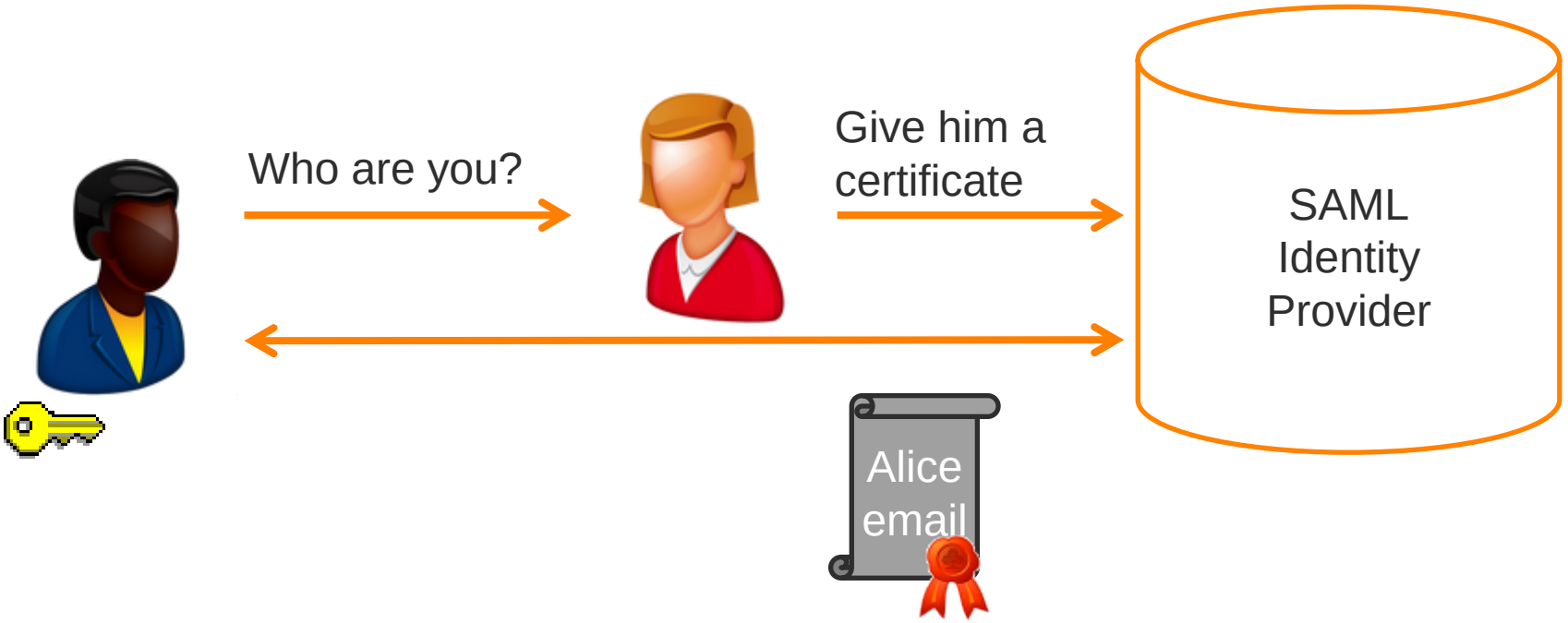


(nat sakimura)

Authentication via email



OASIS SAML Assertions



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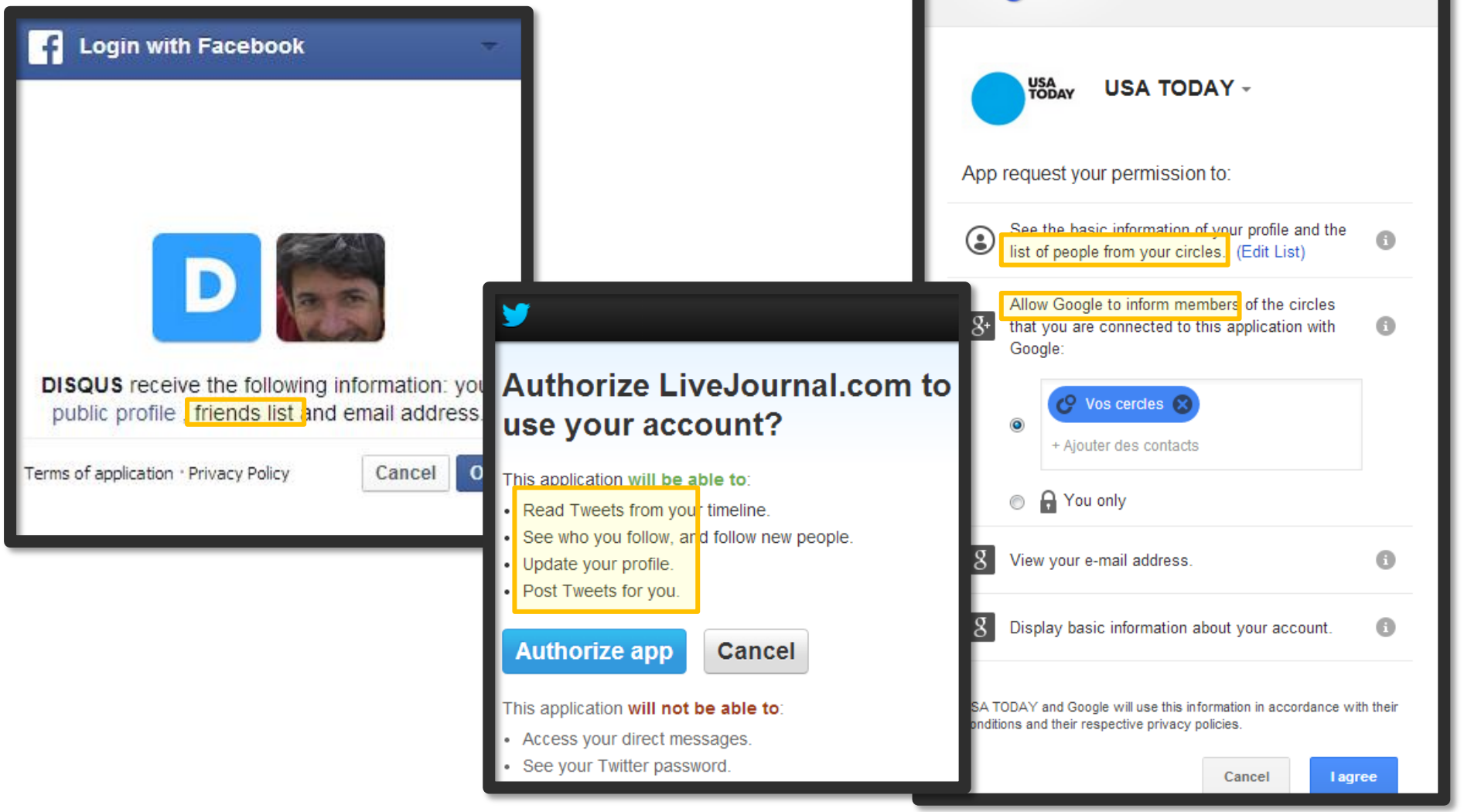
OAuth Authorization to access personal data



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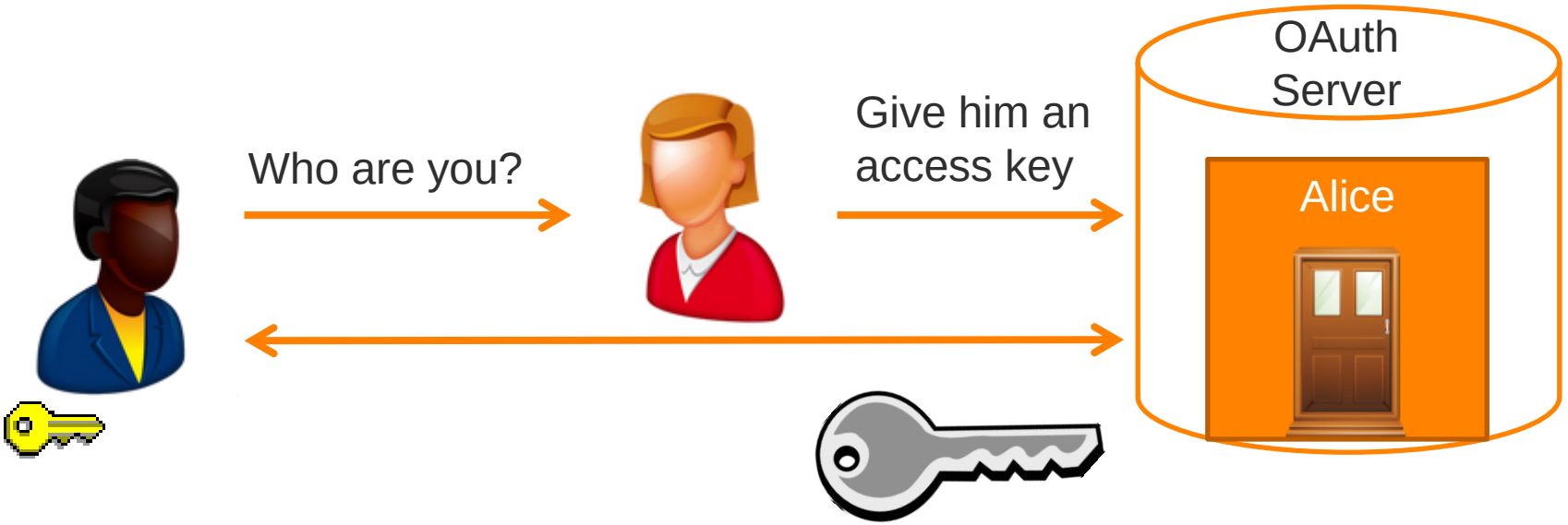
OAuth Authorization



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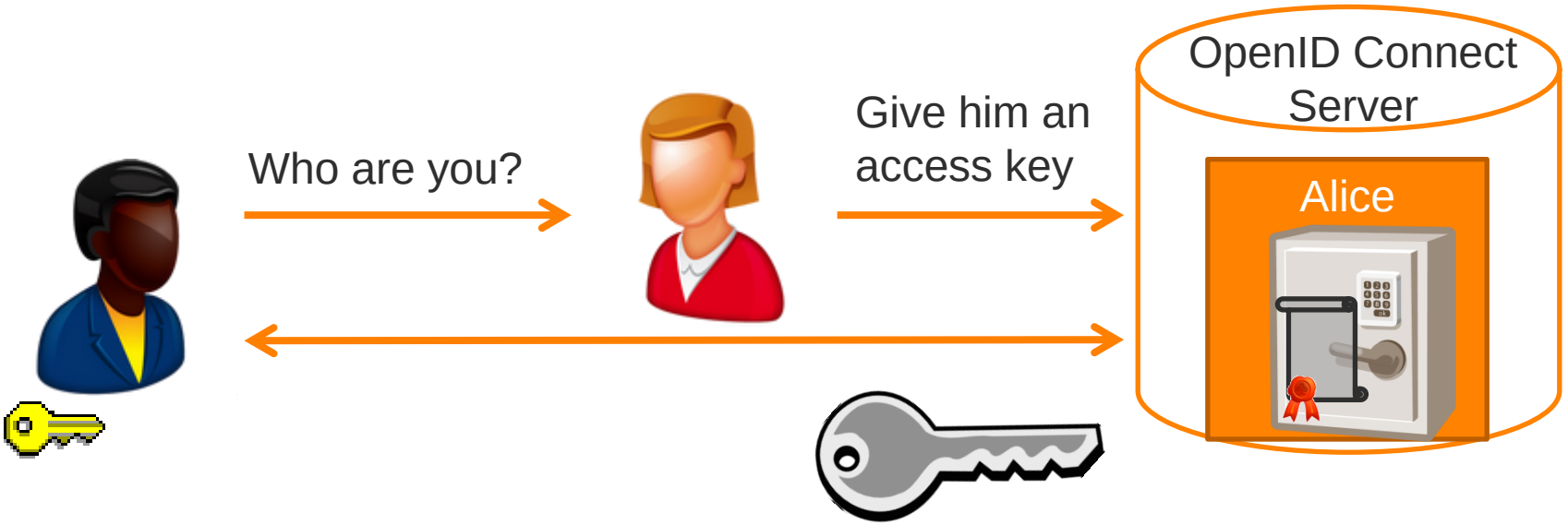
OpenID Connect

Authorization to access identity



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Define YOUR solution

- Confidentiality / Personal data sharing?
- Pre-registration of web application?
- Dependency to an identity provider?
- Authentication methods?

THE Message

- Passwords are bad
  - Strong Authentication
- Too many identities is inconvenient
  - Reuse identities (emails, social networks…)
- Authentication is a sensitive and potentially complex task
  - Delegation, SSO
- Privacy needs to be protected
  - Don’t ask for more data or access rights than needed

Thanks