
Session 1

OCTAVE

# The business case for OCTAVE

## Voice biometrics as an authentication factor

Mario Frullone
Direttore delle Ricerche
Fondazione Ugo Bordoni

The OCTAVE Project has received funding from
the *European Union's Horizon 2020 Research and Innovation Program*,
under Grant Agreement No. 647850

# Beneficiaries

Coordinator

Industry

Research

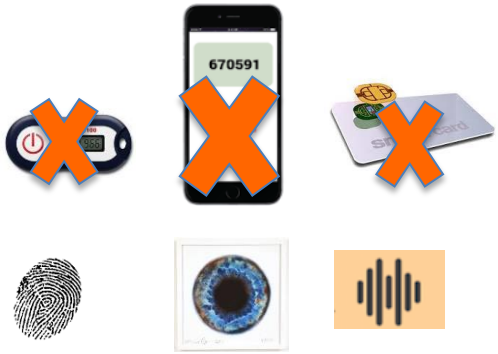
End-Users

# The Business case for OCTAVE

- **Stop with the nightmare of password selection, maintenance and recovery**
  - Relieve trouble from users
  - Save management costs for service providers
- **Increase confidence in use of critical applications of two main classes**
  - Unsupervised entry to critical infrastructures
  - Online use of data-sensitive ICT services
- **Stop with passwords being guessed/hacked/copied and tokens/cards being stolen**
  - Users must be authenticated by their own individual traits → **biometry**

# Authentication factors

- **Weak:** Textual passwords, however long
  - Can be handed over (voluntarily or forcefully)
  - Prone to social engineering attacks
- **Near-to-strong:** Smart-cards, physical tokens, smartphones
  - Can be handed over (voluntarily or forcefully)
- **Strong:** Biometric prints
  - Based on unique individual traits, are not transferable to others
  - Have risks of their own, to be overcome/minimized by technology advancements
- **Voice biometry is easy to apply, and potentially well acceptable by users**
- **The challenge of OCTAVE is to overcome risks associated with voice biometric**

# Two factor authentication

- **Widely-used examples so far**
  1. User Password + One-time code sent to a cell-phone
  2. User Password + code picked from an OTP device
  3. Smart card + one-time code sent to a cell-phone
- **The combination of weak and near-to-strong factors does not make a strong factor**
  - It just lowers the probability of fraud
- **Robust two-factor authentication**
  - Must have at least one strong factor, i.e. a biometric factor

# Can biometric prints become unusable?

- **Weak and near-to-strong credentials can be replaced when compromised**
  1. Password reset
  2. Smart card replacement
  3. OTP replacement
- **Strong factors, i.e. biometric prints, are not so easy replaceable**
  - A new enrolment *might* yield a “statistically equivalent” print
  - However, a different enrolment procedure might be performed (this is particularly true for voice, that involves also behavioural traits)
- **A basic Privacy-by-design criterion must apply**
  - *Store* and *transfer* biometric prints with the strongest encryption algorithms available

# Invited speakers…

**Giovanni Falsina,** SEA
***Environment and Airport Safety Manager***

**Vincenzo Bono,** Findomestic Banca
***Vice DG and Client Market Director***

**Nicola Sotira,** Poste Italiane
***Information Security Manager***

**Danilo Vivarelli,** Call & Call
***Managing Director***

# Invited speakers…

**Giovanni Falsina,** SEA
***Environment and Airport Safety Manager***



**Vincenzo Bono,** Findomestic Banca
***Vice DG and Client Market Director***



**Nicola Sotira,** Poste Italiane
***Information Security Manager***



**Danilo Vivarelli,** Call & Call
***Managing Director***

# Invited speakers…



**Giovanni Falsina,** SEA
***Environment and Airport Safety Manager***

**Vincenzo Bono,** Findomestic Banca
***Vice DG and Client Market Director***



**Nicola Sotira,** Poste Italiane
***Information Security Manager***



**Danilo Vivarelli,** Call & Call
***Managing Director***

# Invited speakers…



**Giovanni Falsina,** SEA
***Environment and Airport Safety Manager***



**Vincenzo Bono,** Findomestic Banca
***Vice DG and Client Market Director***

**Nicola Sotira,** Poste Italiane
***Information Security Manager***



**Danilo Vivarelli,** Call & Call
***Managing Director***

# Invited speakers…



**Giovanni Falsina,** SEA
***Environment and Airport Safety Manager***



**Vincenzo Bono,** Findomestic Banca
***Vice DG and Client Market Director***



**Nicola Sotira,** Poste Italiane
***Information Security Manager***

**Danilo Vivarelli,** Call & Call
***Managing Director***

# Thank you

Mario Frullone
Fondazione Ugo Bordoni
mfrullone@fub.it

# Questions and Answers