

Open Source and the **Next Normal**
Open Apereo '21
the open source conference for education
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ESUP-OTP

An open-source Multi-Factor Authentication (MFA) provider for Apereo CAS

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Presentation outline

1. Introduction

- MFA providers with Apereo CAS
- What's the issue then?

2. ESUP-OTP

- Goal and purpose
- Technical design

3. How ESUP-OTP works in “real life”

Hang on! A few words about ESUP first!



- 80+ member institutions
- Our mission? To **develop/support/promote** open source solutions for Higher Ed
- **Strong partnership with Apereo**, collaborating on projects like **uPortal, CAS, OAE, Karuta, ...**

Alright... Now that it's done, let's move on to the more interesting stuff!

MFA providers with Apereo CAS

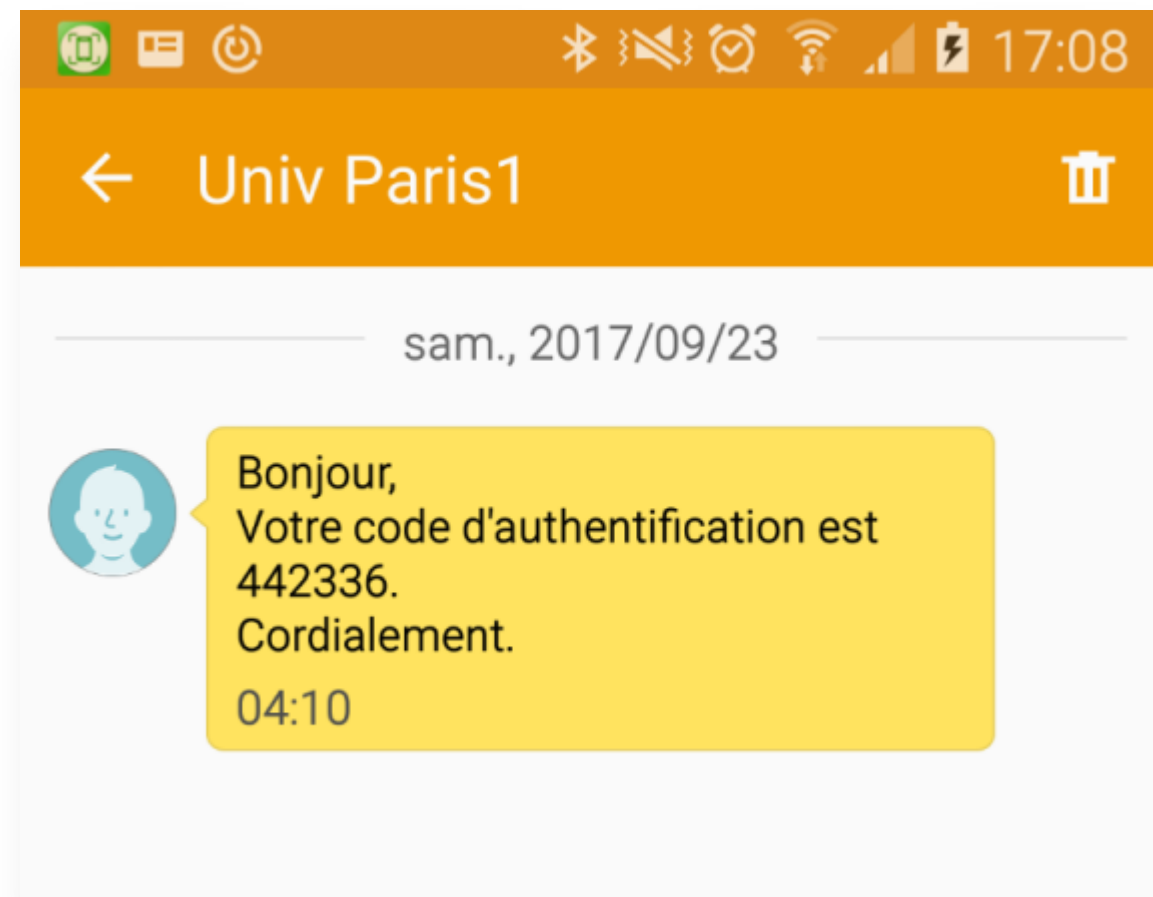
- **Starting with v5, CAS supports several MFA providers such as...**
 - ✓ Duo Security
 - ✓ Twilio Authy
 - ✓ Acceptto
 - ✓ YubiKey
 - ✓ WiKID
 - ✓ FIDO
 - ✓ Swivel Secure
 - ✓ Google Authenticator
 - ...
- **However, most of them are...**
 - not open-source 😞
 - expensive 😓
 - and/or not self-hosted 😬

ESUP-OTP
TO THE RESCUE!

ESUP-OTP > Goal and purpose

- **ESUP-OTP aims to :**
 - ▶ **be open-source & free** (MIT License)
 - ▶ **be self-hosted**
 - ▶ **be easy to use**
 - ▶ **let users choose** their MFA option(s)
 - ▶ **let managers help out/assist users** when necessary

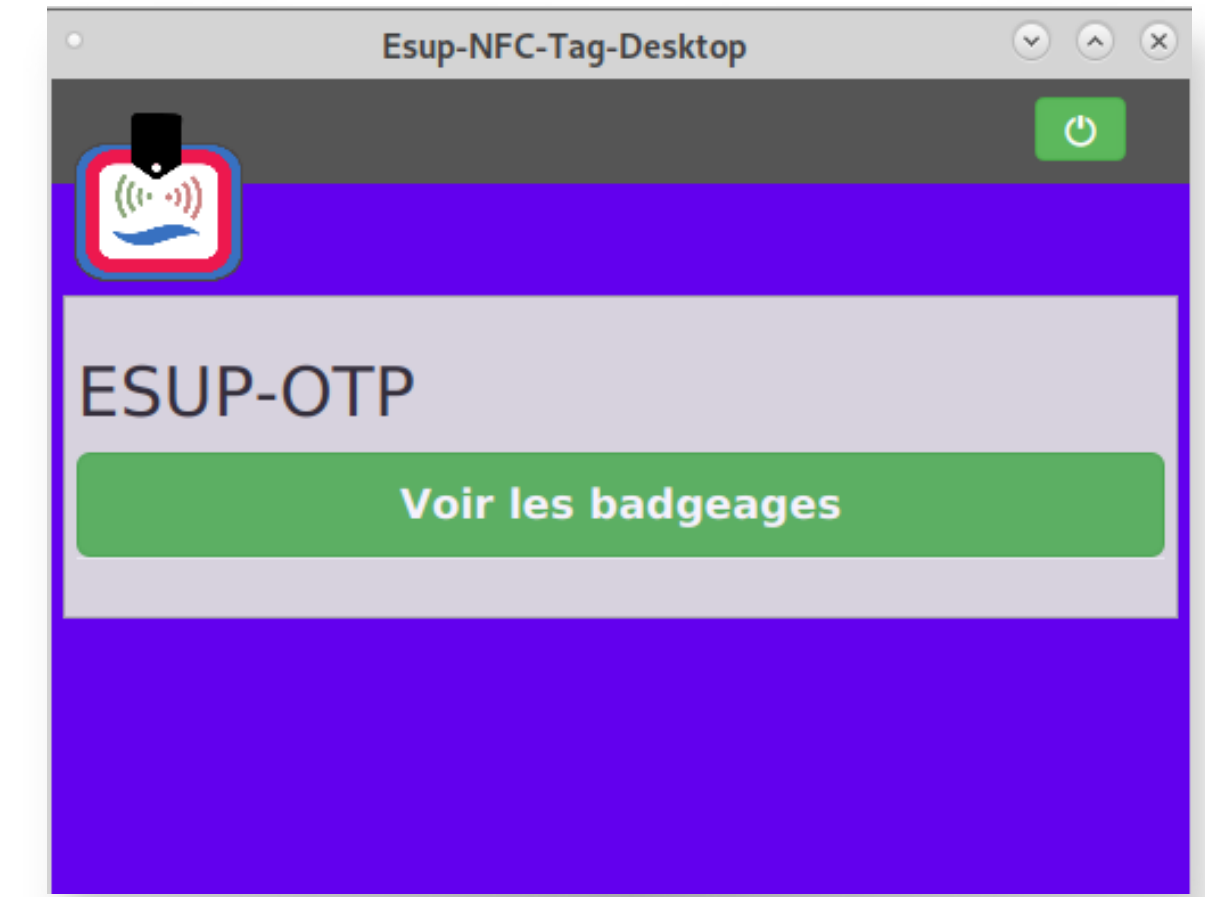
ESUP-OTP > The different MFA options



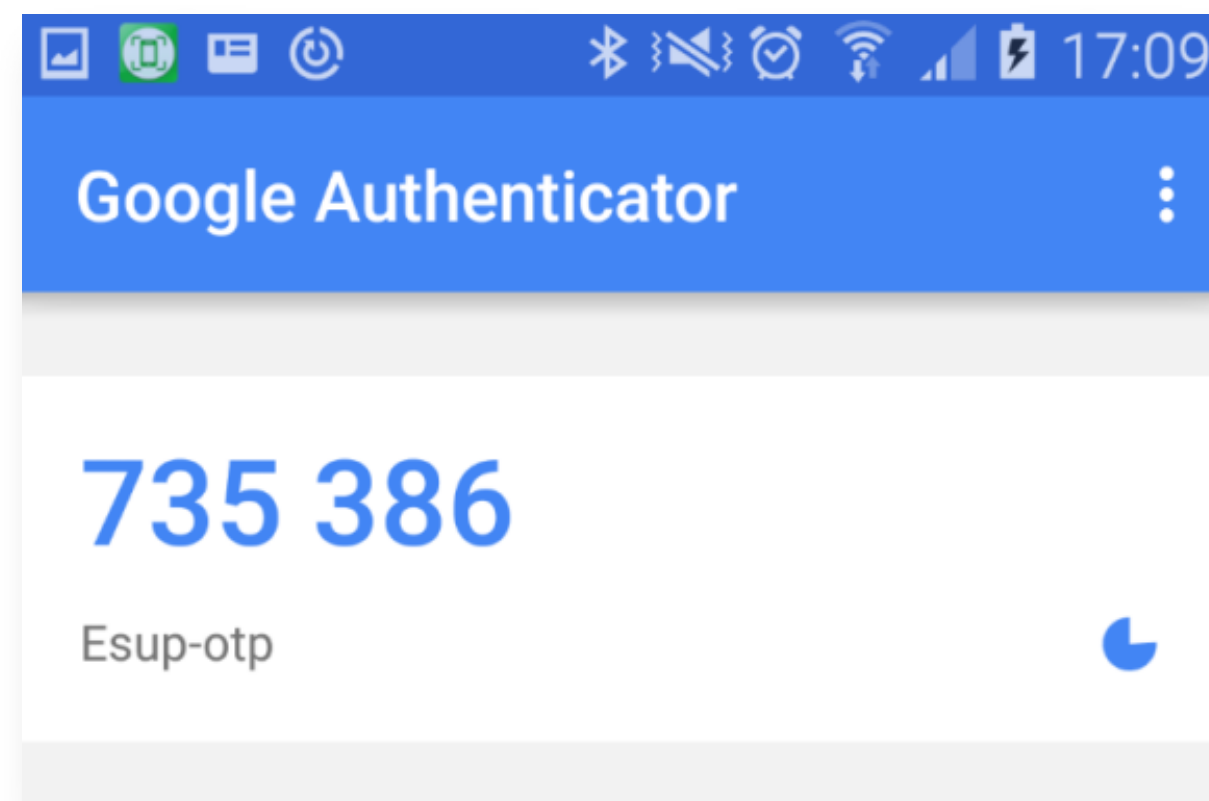
SMS/Mail



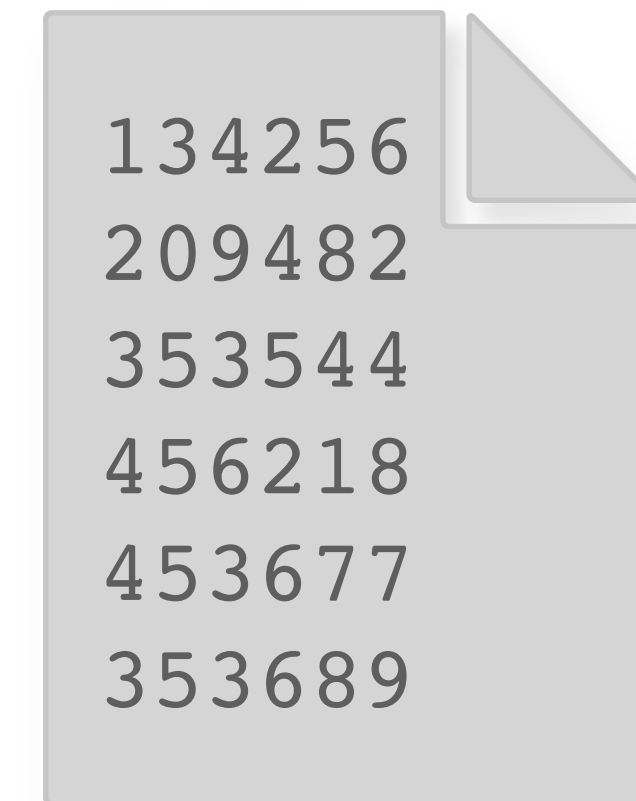
Mobile push



NFC swipe

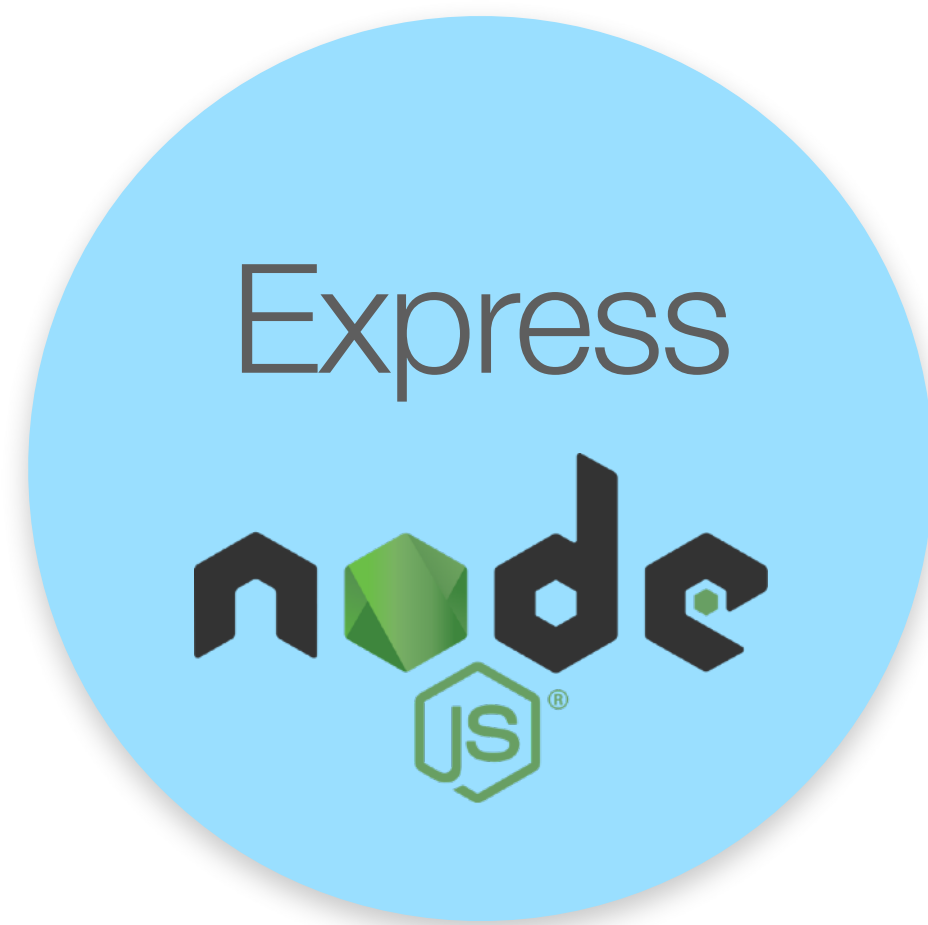


TOTP w/ Google Auth



Random code list

ESUP-OTP > Technical design



ESUP OTP MANAGER

CASsified web application

User preferences

User help/assistance

Administration UI

https



ESUP OTP API

REST API

Code generation methods

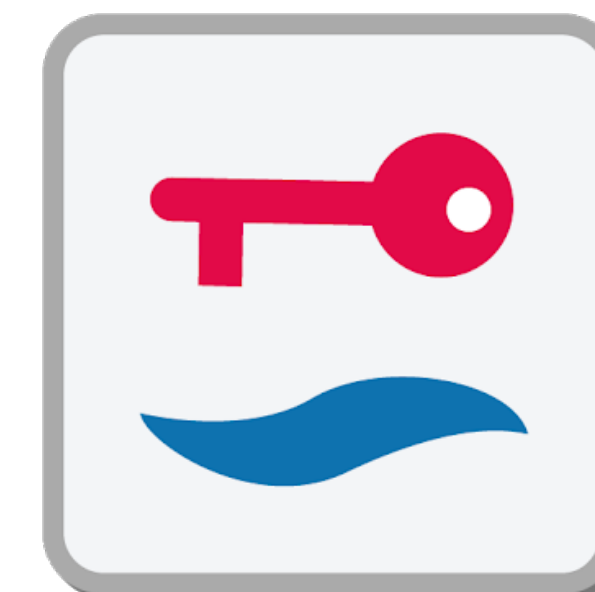
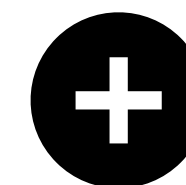
Code transports

https



ESUP OTP CAS

CAS module

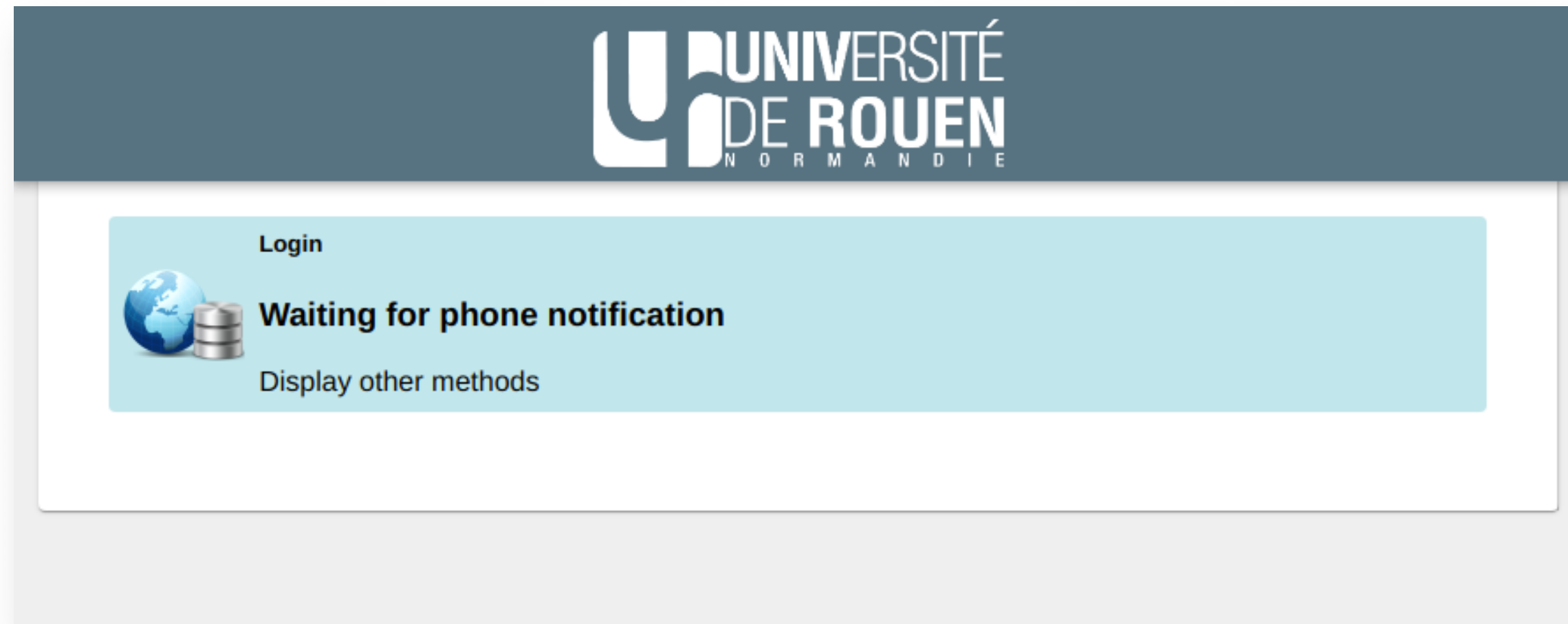


ESUP-Auth

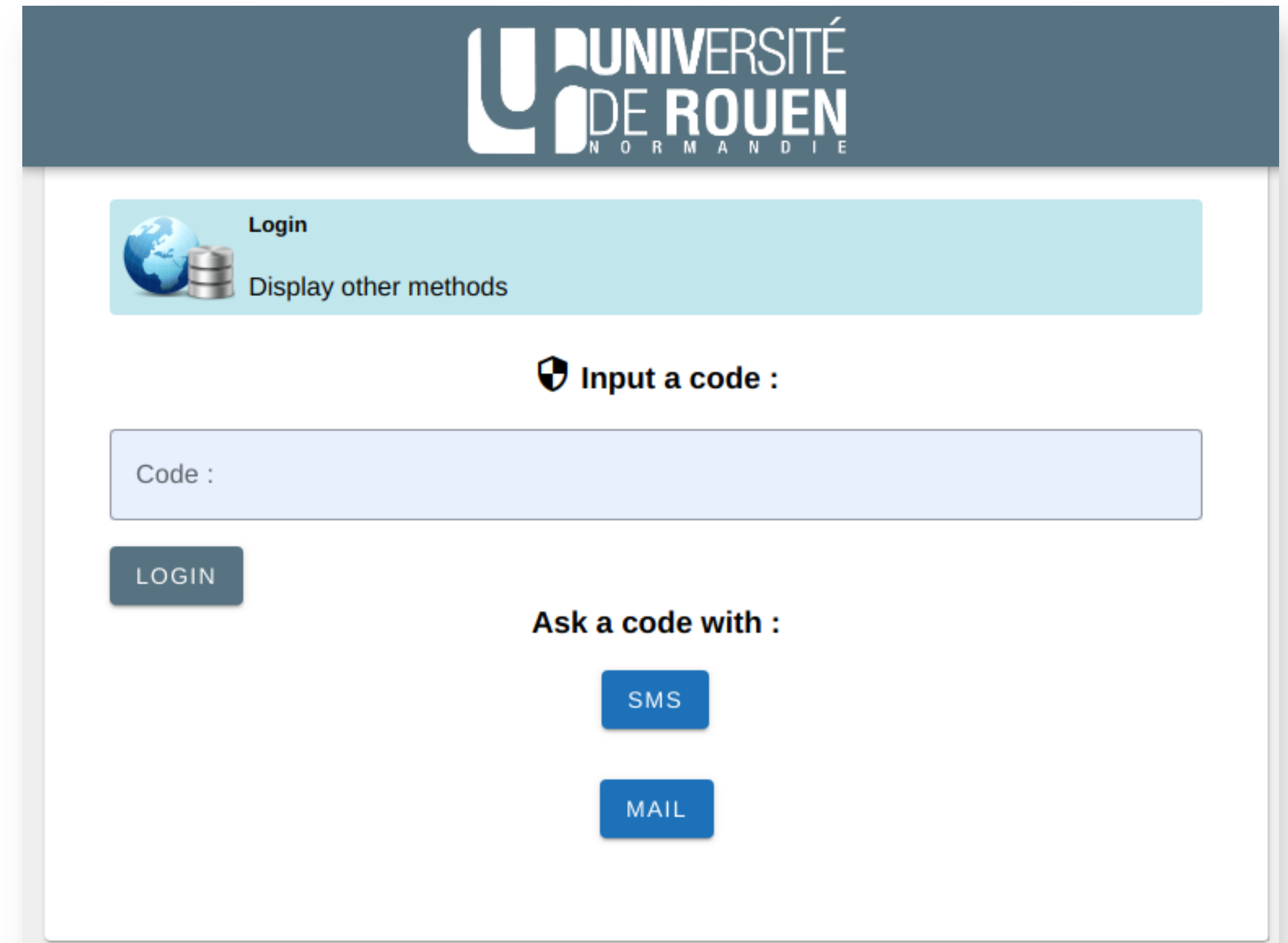
Mobile application

Now AVAILABLE on Google Play
and coming soon on AppStore (*under review*)

ESUP-OTP > From a user's POV...



Waiting for push (or NFC) notification...



... or input code from Google-Auth, SMS, mail

ESUP-OTP with CAS v6.3.3

ESUP-OTP > From a user's POV...

The screenshot shows the 'Preferences' page of the ESUP-OTP system. The left sidebar contains navigation options: Home, Preferences, Timed password, Backup codes, Notification (highlighted), EsupNFC, Manager, Administration, Logout, and a globe icon. The main content area is titled 'Preferences' and 'Notification'. It features a toggle switch for 'Deactivate' (off) and 'Activate' (on). Below this, the section 'Method for connecting via smartphone notifications' contains a QR code with the text 'Please scan this code in the smartphone application'. Below the QR code, there are instructions: 'If your smartphone does not have a functional picture app or you are having difficulties to scan the code above. Go to the menu "Settings" then click "Activate without scan".' followed by three input fields: 'Enter your login : amvin', 'Enter your activation code : 786557', and 'Enter this hostname : https://esup-otp-api.univ-lyon1.fr/'. The final instruction is 'Then press "Ok".'

ESUP-OTP push enrollment with QR-Code

Device enrollment for notifications

ESUP-OTP > From a user's POV...

Preferences

Backup codes

Deactivate Activate

Method for generating a random codes list

Available codes : 10
Used codes : 0

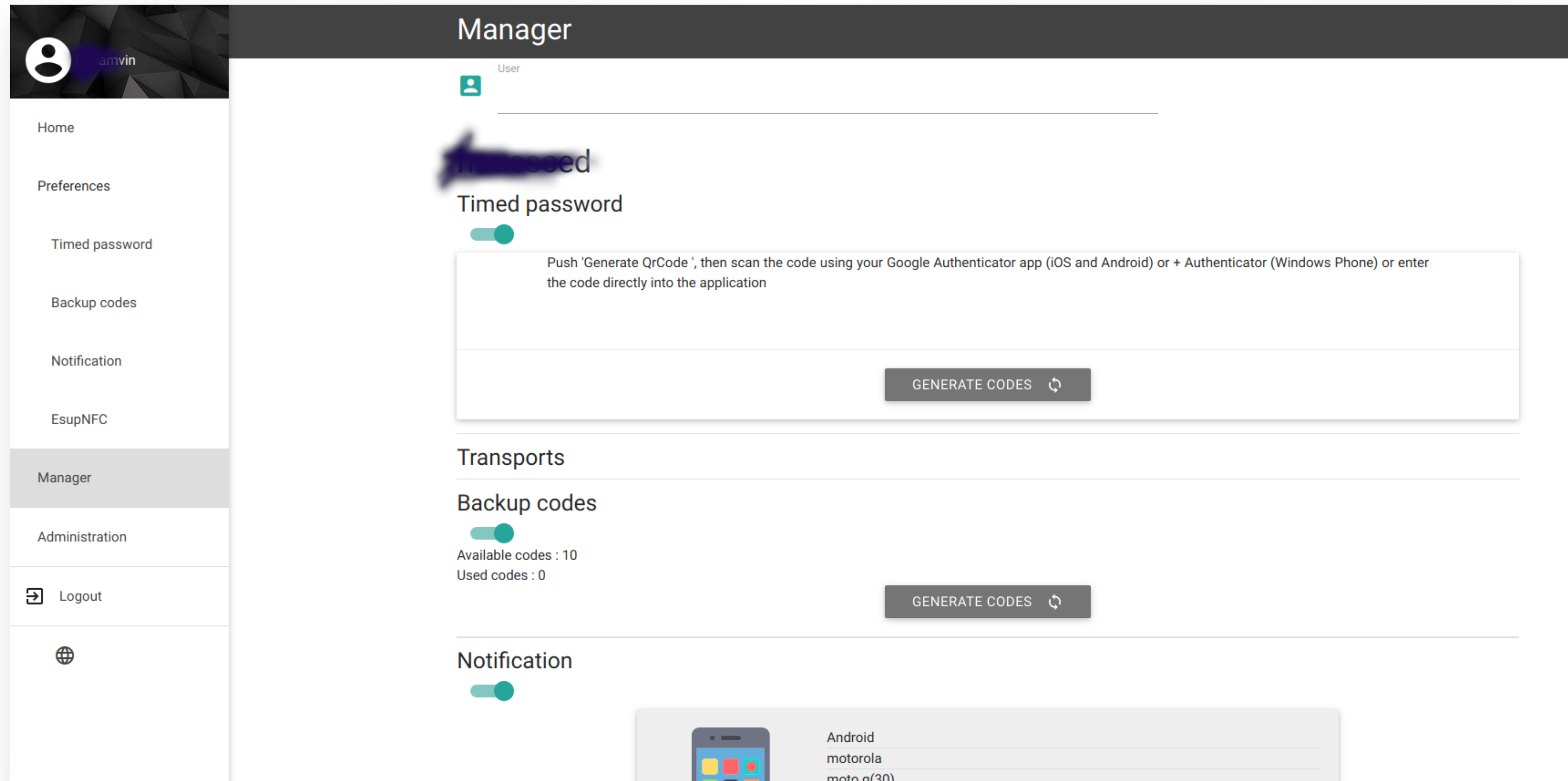
Generated codes

- 047977
- 712822
- 751743
- 233073
- 325458
- 509099
- 381898
- 715190
- 919323

ESUP-OTP backup codes

Random code list

ESUP-OTP > From a user's POV...



ESUP-OTP Manager Interface

“Someone please call 911”

ESUP-OTP > From a user's POV...

The screenshot displays the 'Administration' section of the ESUP-OTP interface. On the left is a sidebar menu with options: Home, Preferences, Timed password, Backup codes, Notification, EsupNFC, Manager, Administration (highlighted), Logout, and a globe icon. The main content area is titled 'Administration' and contains several settings sections, each with a 'Deactivate' and 'Activate' toggle switch:

- Timed password:** Deactivate Activate
- Transports:** Sms: Deactivate Activate; Mail: Deactivate Activate
- One time password:** Deactivate Activate
- Transports:** Sms: Deactivate Activate; Mail: Deactivate Activate
- Backup codes:** Deactivate Activate
- Notification:** Deactivate Activate

ESUP-OTP Admin Interface

On the admin side

And... voilà!

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- ★ Francis Le Coq

- ★ ... and others!

- **ESUP-OTP is on Github!** Go take a look at:



<https://github.com/search?q=org%3AesupPortail+esup-otp>

- Got any questions? Drop us a line at contact-tech@esup-portail.org