

# NGI

Partnership for innovative technological solutions to ensure privacy & enhance trust for the human-centric Internet

6<sup>th</sup> Results Webinar, 19 May 2021

# Webinar – Agenda

Timing	Topic
15:00 – 15:10	<b>Welcome</b> <i>Jean-Luc Dorel, DG Connect, European Commission</i>
15:10 – 15:20	<b>Introduction</b> <i>Alasdair Reid, NGI Trust coordinator, EFIS Centre</i>
15:20 – 16:20	<b>NGI Trust Funded projects results</b> <i>NGI Trust Project managers</i>
16:20 – 16:55	<b>Round table discussion and exchange - Q&amp;A</b> <i>All</i>
16:55 – 17:00	<b>Wrap-up and close</b>

# Welcome and Introduction: NGI TRUST in a snapshot

Jean-Luc Dorel, DG Connect & Alasdair Reid, EFIS Centre

## Project partners



## Key facts & figures

- Duration: December 2018 - November 2021
- 3 open calls :
  - 300 applications;
  - 448 applicants;
  - 36 countries.
- 3<sup>rd</sup> party funding: €5.6m:
  - 57 funded projects;
  - 84 funded third parties;
  - 20 countries.



# NGI TRUST objectives

1. Reinforce, structure and develop the community of researchers, innovators and technology developers in the field of privacy and trust enhancing technologies
2. Build on the state of the art in privacy and trust enhancing technologies by focusing support for third-party projects in a limited number of priority topics
3. Improve user trust and acceptance of emerging technologies by focusing on applications and solutions that develop a more open, robust and dependable Internet and strengthen Internet Governance
4. Foster the exploitation and commercialisation of the results of selected third-party projects through a tailored process of coaching and mentoring



TRUST

57 PROJECTS FUNDED  
12 THEMATIC AREAS



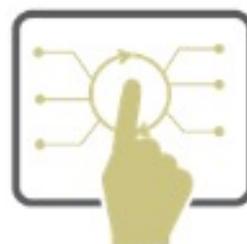
BEYOND PASSWORDS



BETTER PRIVACY



SAFER BROWSING



USER CONTROL



IMPACT OF AI



HUMAN-CENTRIC INTERNET



STRONGER TOOLS



EFFECTIVE IDENTITY



PERSONAL DATA  
MANAGEMENT



DATA ETHICS



SECURING THE  
INTERNET OF THINGS



ADVANCING IDENTITY

# NGI

Iakovos Delioglani, Q-PLAN International Advisors



## WHAT IS TETRA ABOUT?

TETRA is a **business accelerator** helping projects that have received funding through an NCI open call to successfully enter the market.



Co-funded by the Horizon 2020 programme of the European Union

## TRAINING

**Bootcamps and webinars** on different topics such as intellectual property, sales and new markets, leadership skills, investments, **pitching** and much more.

## MENTORING

**Individual mentoring** from experts, startup founders and investors.

## BUILDING NETWORKS

Access to **matchmaking, connect with investors and corporations.**

A graphic consisting of a blue-to-red gradient rectangle with a white speech bubble shape at the bottom center containing the text "NGI TETRA SERVICE LIST".

## NGI TETRA SERVICE LIST

### **Access open for all:**

- Webinars
- Training materials (website)
- Public tender portal subscription (Tenderio open call)

### **Access to bootcamp participants only:**

- Hands-on trainings with dedicated coaches
- Networking and matchmaking, incl. tickets to large startup events
- Individual mentoring by international business experts
- Connections to local/regional DIHs and incubators
- Guidelines for skill development (TETRA master plans)

# NGI TETRA

## CATALOGUE OF TOPICS

### Intellectual Property Rights Advisory

- fundamentals of IP
- IP management in open-source environment

### Transversal competences and soft skills

- individual and team skill analysis
- team management and growth
- identification of unique selling points

### New markets, sales and business models

- (new) market uptake strategy and tactics
- customer validation and commercialization

### Investment readiness

- fundraising, incl. access to public and private investments
- financial portfolios and management
- pitching and investor relations

Build-up bootcamp	Scale-up bootcamp
<b>IPR Advisory</b> <ul style="list-style-type: none"> <li>• Fundamentals of IP</li> <li>• Coaching during the day in case there are specific questions</li> </ul>	<b>IPR Advisory</b> <ul style="list-style-type: none"> <li>• IP licensing specificities</li> <li>• IP management in open-source environment</li> <li>• Coaching during the day in case there are specific questions</li> </ul>
<b>Transversal competence and soft skills</b> <ul style="list-style-type: none"> <li>• Individual transversal competences and skills</li> <li>• Team related transversal competences and skills</li> <li>• Methodologies to develop new solutions using design thinking techniques</li> </ul>	<b>Transversal competence and soft skills</b> <ul style="list-style-type: none"> <li>• Team management: analysis of strengths and weaknesses in the team;</li> <li>• Methodologies to complete a successful team</li> <li>• Unique selling points: Identify, map and communicate them</li> <li>• Key points to deliver a memorable online pitch</li> </ul>
<b>New markets, sales and business models</b> <ul style="list-style-type: none"> <li>• Business modelling: Basics of the value proposition and business model canvas</li> <li>• Design and operation on market uptake strategies and tactics</li> </ul>	<b>New markets, sales and business models</b> <ul style="list-style-type: none"> <li>• Business model canvas deep dive: key partners and value chains, customer segmentation, structuring costs and revenues</li> <li>• Overall company and commercialisation strategy</li> </ul>
<b>Investment readiness</b> <ul style="list-style-type: none"> <li>• Why should you consider raising investments and what are the best options for a beginning business?</li> <li>• How to introduce (sell) your idea to different audiences?</li> </ul>	<b>Investment readiness</b> <ul style="list-style-type: none"> <li>• (Startup) finances (making your books attractive for investors)</li> <li>• Raising your first investment vs raising a follow-up investment</li> </ul>
<b>Access to equity funding</b> <ul style="list-style-type: none"> <li>• Introduction to company financing</li> <li>• Equity as an integral part of financial portfolio</li> </ul>	<b>Access to equity funding</b> <ul style="list-style-type: none"> <li>• Deep dive into the company financing with an investor</li> <li>• Basics of legal and accounting issues, incl. lifecycle of investment</li> </ul>
	<b>Access to (international) public contracts</b> <ul style="list-style-type: none"> <li>• How to find the right tender and consortium partner</li> <li>• How to prepare a winning proposal &amp; (secret) strategies</li> </ul>



# Bootcamp

29 June – 1 July 2021

— Online

business.ngi.eu



Build-up



[HTTPS://BUSINESS.NGI.EU/JOIN-NOW/EVENTS/ONLINE-BUILD-UP-BOOTCAMP-2/](https://business.ngi.eu/join-now/events/online-build-up-bootcamp-2/)

INFO@TETRAPROJECT.EU



The NGITETRA project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 825147

Day 1

# SHAPE



Transversal competences and skills

Design thinking to shape your idea

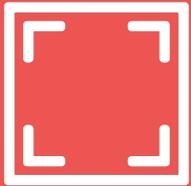
Understand your market

Define your value proposition

Community engagement for open source projects

Day 2

# FRAME



Proposition validation, first customers

Introduction to business modelling

Team competencies and skills

Intellectual Property basics

Communicating your idea (customers, partners, investors)

Day 3

# BOOST



Funding opportunities  
NGI Open calls, investors, grants, alternative funding

Investors' insights

Pitching competition



# JOIN NOW

- 01 Open call
- 02 Webinars
- 03 Events

## 02 Webinars

Webinars



02.06.2021

Webinar #19: Intellectual Property in the World of Blockchain



Webinars



26.05.2021

Webinar #18: Introduction to Intellectual Property for ICT start-ups



## Past Webinars

Webinars



21.04.2021

Webinar #17: Managing Copyright with Open Source Licenses and Creative Commons



Webinars



31.03.2021

Webinar #16: Equity financing for your venture



Webinars



03.03.2021

Webinar #15: IP Basics Research



Applications due this weekend!

[business.ngi.eu](https://business.ngi.eu)  
[info@tetraproject.eu](mailto:info@tetraproject.eu)

# NGI TRUST Funded Projects Results

Project	Third party
<b>CryptPad SMC</b> [Stronger Tools]	Xwiki SAS
<b>CUBBIT</b> [Stronger Tools]	Cubbit
<b>MQ2M</b> [Stronger Tools]	TU Delft
<b>SID:SO&amp;C</b> [Stronger Tools]	7Signals OÜ
<b>COP-MODE</b> [Beyond Password]	Joao P. Vilela

CRYPTPAD

*Xwiki SAS – Aaron MacSween*

# CryptPad

## Secure Mobile Collaboration

# CryptPad

## Secure Mobile Collaboration

### *Objectives*

- Develop techniques to mitigate risk of malicious JavaScript
- Prototype mobile and desktop apps to improve UX



# CryptPad

## Secure Mobile Collaboration

### *Results*

- Small teams can't target many platforms
- Client-side caching via IndexedDB reduces network and CPU load
- ServiceWorkers allow for fully-offline use and a consensual update system on the web

# CUBBIT

*Cubbit – Gianluca Granero*



## Cubbit Hive

Cubbit on-premises distributed cloud

Recycling IT resources to provide organizations and enterprises with encrypted, inexpensive and green cloud storage





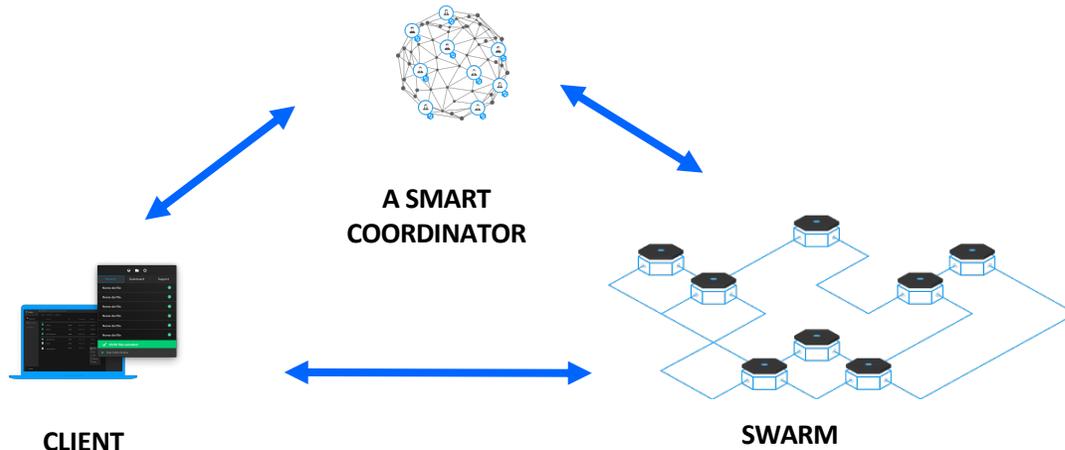
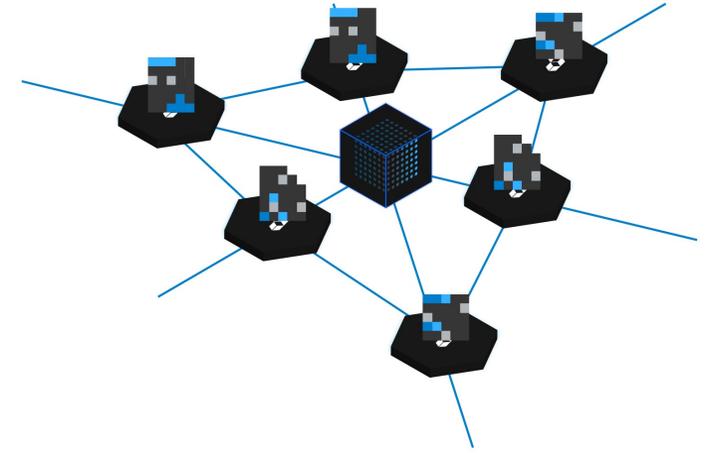
# What is Cubbit?

Cubbit is a software platform that enables the full power of edge computing offering a **distributed cloud** solution.

The idea is simple: a **small central coordinator** and a **myriad of network cells spread across the network**.

On top of this infrastructure **many different products can be deployed**, leveraging the benefits of edge storage and computing.

First end-user products released are **cloud storage solutions: sync and share** immediately and eventually **object storage**.



**Cubbit's technology is made of:**

**Coordinator:** a super-node that manages metadata, monitor the network and optimize performances.

**Swarm:** the peer to peer network based on devices that offer some space

**Client:** software that the user can use on computers or other devices.



# The path of a file

**Enhanced security:** each file is encrypted with a randomly generated key. This key is never stored on any super-node accessible from Cubbit.

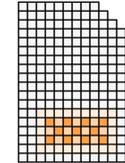
**Zero knowledge:** our technology ensures that only the final user can access his/her own files.

**Transfer:** the client splits each encrypted file in 36 encrypted chunks and spread them across the swarm

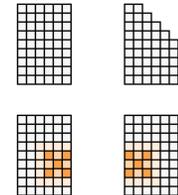
1. File upload



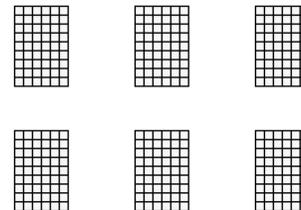
2. Encryption



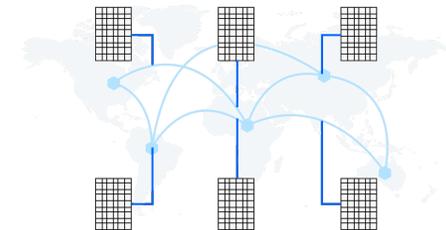
3. Splitting



4. Redundancy



5. Distribution

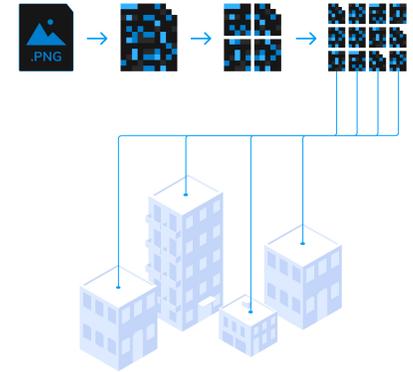




# Cubbit on-premises: key features for critical and sensitive organizations

## Data Sovereignty

Cubbit is an European (specifically Italian) entity, not subject to any other jurisdiction.



### Data protection and security access

Cubbit is **fully GDPR compliant**. Data are encrypted on the client (and never travels unencrypted). Once encrypted, data are divided into chunks, redundant and sent to different nodes spread over the swarm.

### Proprietary Software with some open-source

The stack of Cubbit is made of **proprietary software** written from scratch by Cubbit personnel, and integrated with few open-source tools. This is fully auditable.

### Permanent ledger of operations

You can enable a secure log of operations of files and establish retention of files themselves. If so an user can eventually copy, but not permanently delete them you have the power to recover in a “time machine” style

### Hardware/Operating system Neutrality

From day 0 Cubbit has been totally hardware independent, leveraging the best practices. There is **no specific hardware/operating system which is needed** ever to deploy Cubbit solution and stack.



## Project checkpoint: what do we have now?

The public swarm stripped to be deployed on smaller and dedicated installation

**A private complete system (TRL6) we can install On-premise.**

A full solution which is completely hosted  
Inside an organization intranet  
With Sync&Share functionalities and already  
conceived to host Object storage in the future

The installation will require our intervention, not  
Aimed to be self deployable



## Cubbit on-premises: target sectors

Main sectors of European countries are invested by these needs of **sovereignty** and **security**.

Public Sector	Private Sector	B2B2C
<ul style="list-style-type: none"><li>● Health care</li><li>● Research Institution and University</li><li>● PA</li><li>● Military</li></ul>	<ul style="list-style-type: none"><li>● Bank, financial institutions and industrial groups</li><li>● Energy</li><li>● Defence</li></ul>	<ul style="list-style-type: none"><li>● Telco</li><li>● Hardware producers</li><li>● Antivirus</li></ul>
They have <b>big data</b> and many <b>regulatory issues</b>	They have a <b>big number of underutilized devices</b>	We found out that a swarm dedicated to their customers could really <b>add them margins and retentions</b>

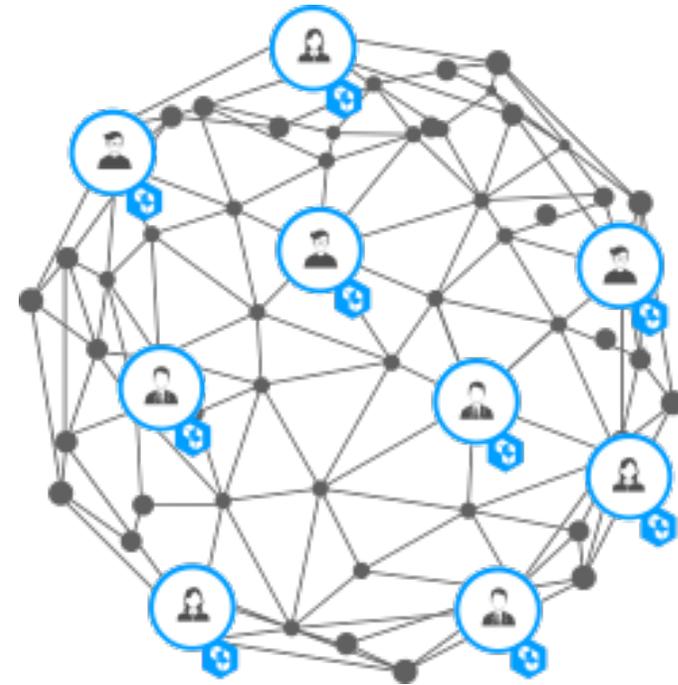


## What's next

**CDN:** serve the user with the closest and fastest node for content

**VPN/SDN:** control what shows up coming from where

**Distribute Computing:** distribute CPU intensive tasks



MQ2M

*TU Delft – Joshua Slater*

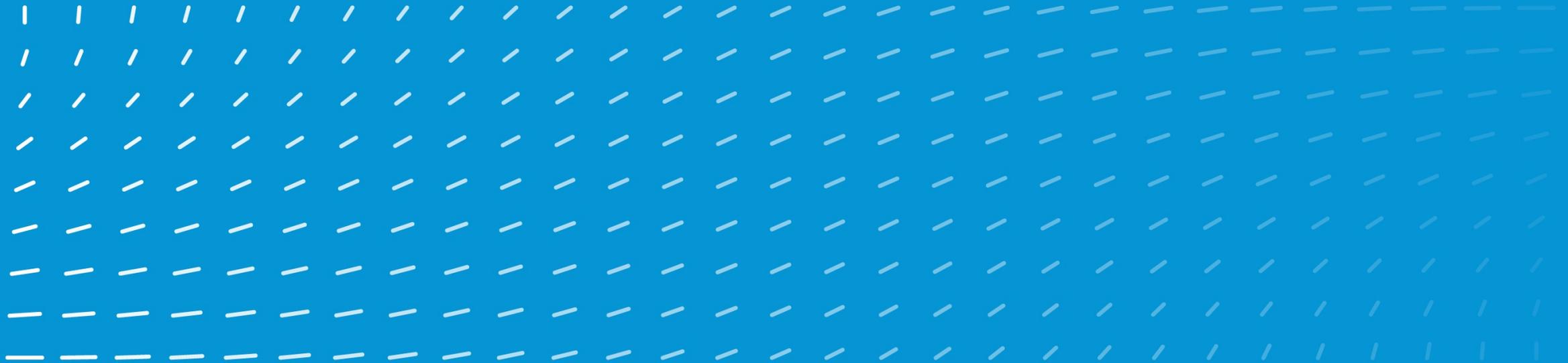


# QuTech

Creating the  
quantum future

# MQ2M: Market Analysis for MDI-QKD for secure communication

6<sup>TH</sup> RESULTS WEBINAR  
JOSHUA SLATER



QuTech

QuTech is a collaboration between



# Objectives and Contributions

## The System

- QKD offers a means to securely distribute cryptograph keys.
- QKD security is based on laws of physics
- QKD security offers forward security
- but, QKD is hardware; it needs access to physical infrastructure

## MQ2M Objectives

1. Explore commercial potential of quantum-resilient cryptography  
Tech: MDI-QKD
2. Understand how to integrate into communication infrastructure
3. Requirements of early adopters
4. Understand potential customers
5. Investigate parties to help bring to market through, co-development or integration
6. Ultimate goal: sign a launching customer  
→ To secure communication now and in the quantum-age

## Contributions

1. Interview at least 10 potential customers
  - Government: DICTU, LOGIUS, RINUS, NLNCSA, NASA
  - Financial: RaboBank, ING, ABN,
  - Telcom: EuroFiber, KPN, NDIX, AMS-IX, EuroNetworks, Equinix, AsteroidHQ
  - Fiber/Hardware supplies: CISCO, Juniper, Tallgrass, RosenburgerOSI,
  - CyberSecurity: SafeLogic, Apticv, Avensus,
2. Mapping of potential market: Fiber suppliers to end-users
3. New partnership exploitation
  - SmartPhotonics / BrightPhotonics
  - CISCO
4. Identification of hardware providers for secure communications, router system providers, fiber supplies, encryption companies.

# Results and Next Steps

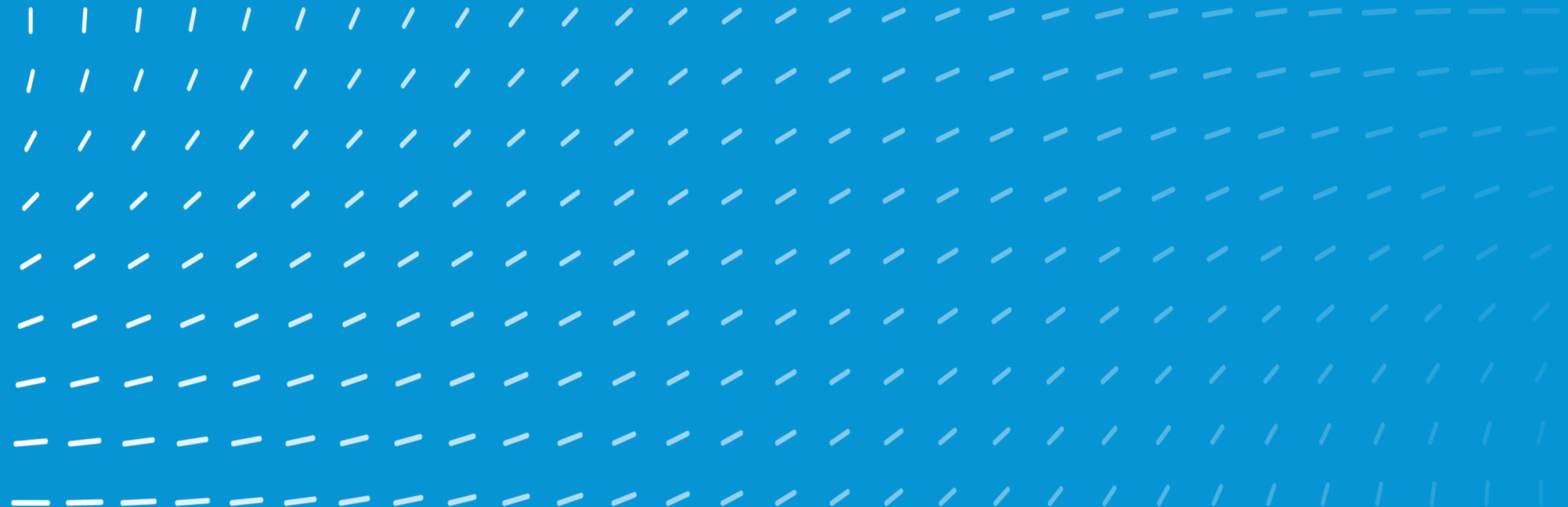
## Results

1. Very segmented market place:
  - On infrastructure side: Fiber, to lighting, to WDM, to infrastructure location, to network, to user
  - On cybersecurity side: Encryptors, to VPN, to KMS
2. Most promising launching customer:
  - Telecom, acting as an MSP, with own Fiber.
  - Government network
3. Partnerships needed to go-to-market:
  - Friendly first customer, Telecom/MSP, willing to offer MS.
  - Much time is needed to develop know-how for operational deployment
  - Long list of “integration-compatible” partners needs to develop
4. Solid-footing for TRL development:
  - Juniper Advisor
  - Partnerships with 1 company signed.
5. Intellectual Property:
  - Two Patents filed; Three more in production

## Next Steps

1. POCs
  - 1 Telecom signed up
  - 1 more very interested
2. Tech Dev
  - Working on agreement with 2 more companies for Tech Dev
3. Government Grants
  - EU & NL have released calls & funds for SMEs doing quantum-safe encryption. Apply for these funds and get POCs with a government network (preferably NL)
4. Found Spin-off
  - Government money for SMEs for POCs is there.
  - Now's the time: Build with this, work with Telecoms for MS POC
5. Call-To-Action:
  - Founding partners with more business experience





**JOSHUA SLATER**

**MQ2M: MARKET ANALYSIS FOR MDI-QKD FOR SECURE COMMUNICATION**

**J.A.SLATER@TUDELFT.NL**

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**QuTech**

[www.qutech.nl](http://www.qutech.nl)

QuTech is a collaboration between



**SID:SO&C**

*7Signals OÜ – Elena Tairova*

# SID-SO&C: Objectives & Contributions



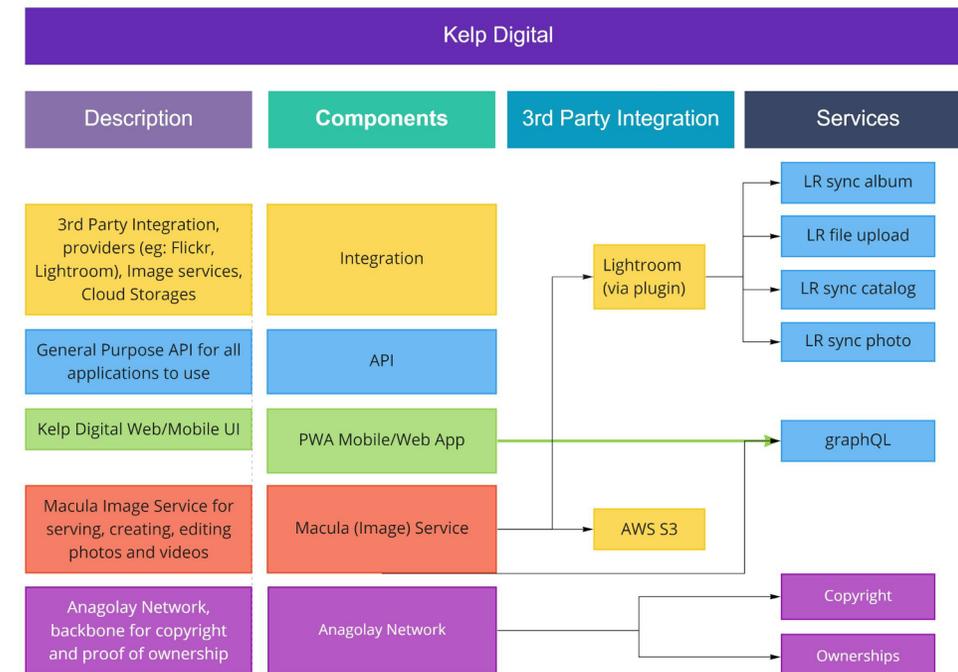
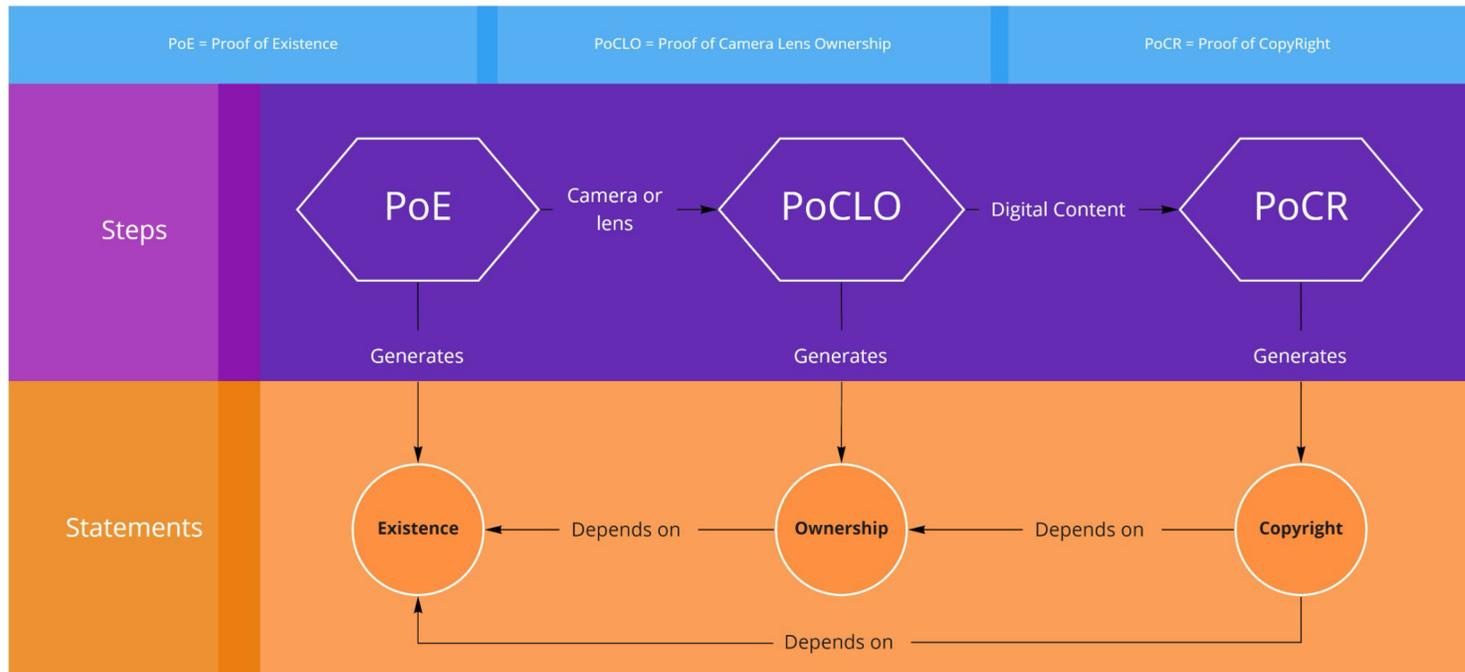
KELP.  
DIGITAL



Anagolay  
Network

1 Robust platform for provable copyright & ownership statements

2 Content management tool with built-in copyright protection



# SID-SO&C: Results & Next Steps



**Sync your collections with Kelp**



**Verify & prove ownership**



**Claim copyright for eligible work**



**Set your terms: access, license**



**Share with a link: simple & secure**



**Sell & licence with min effort**

**Kelp.Digital Web app with Adobe Lightroom integration**

**Equipment ownership verification (Camera & Lens)**

**Anagolay.Network testnet & Copyright engine Rules&Operations**

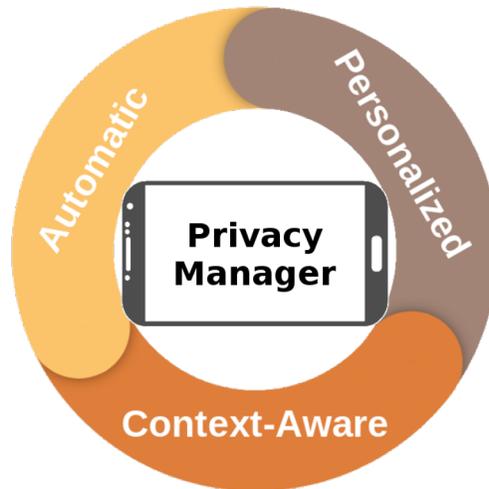
**Beta Release & Customers Validation Q2-Q3 2021**

**Sharing through Unified link Q4 2021**

**Marketplace launch Q3 2022**

# COP-MODE

## COntext-aware Privacy protection for MOBILE DEVICES



Check our website:

<https://cop-mode.dei.uc.pt/>

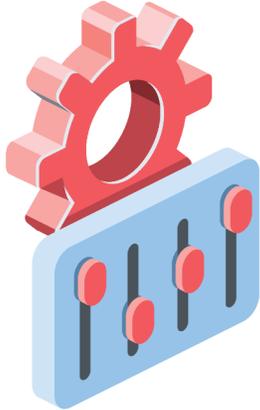
João P. Vilela, Alastair Beresford, Ricardo Mendes

# The Problem



Dozens of apps

X



Multiple Configurations

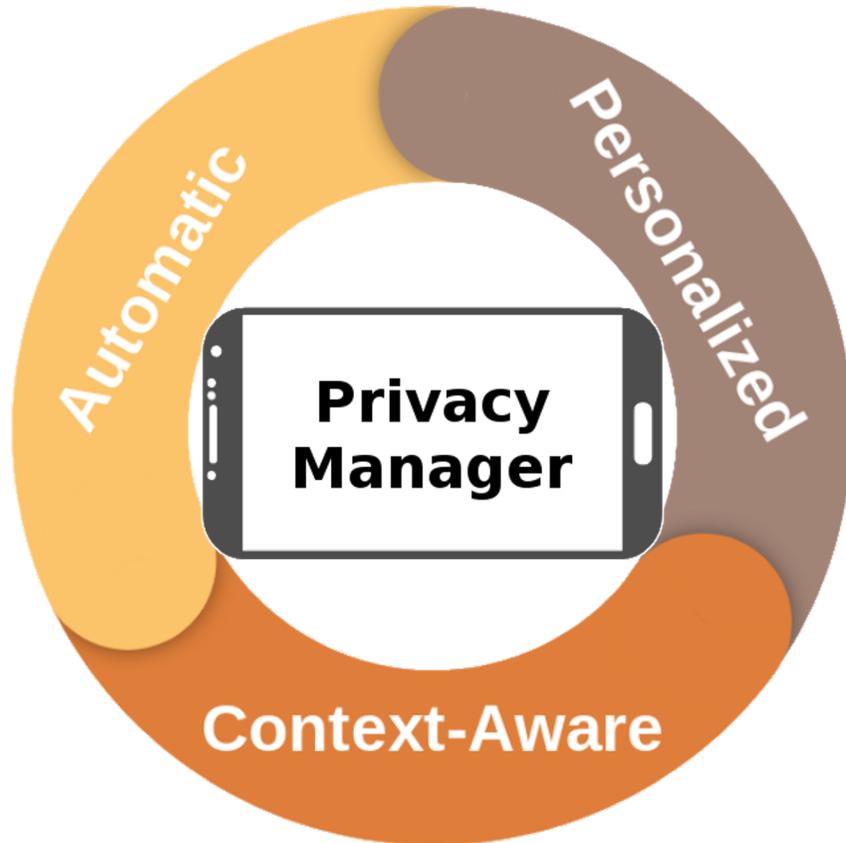
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Privacy Loss



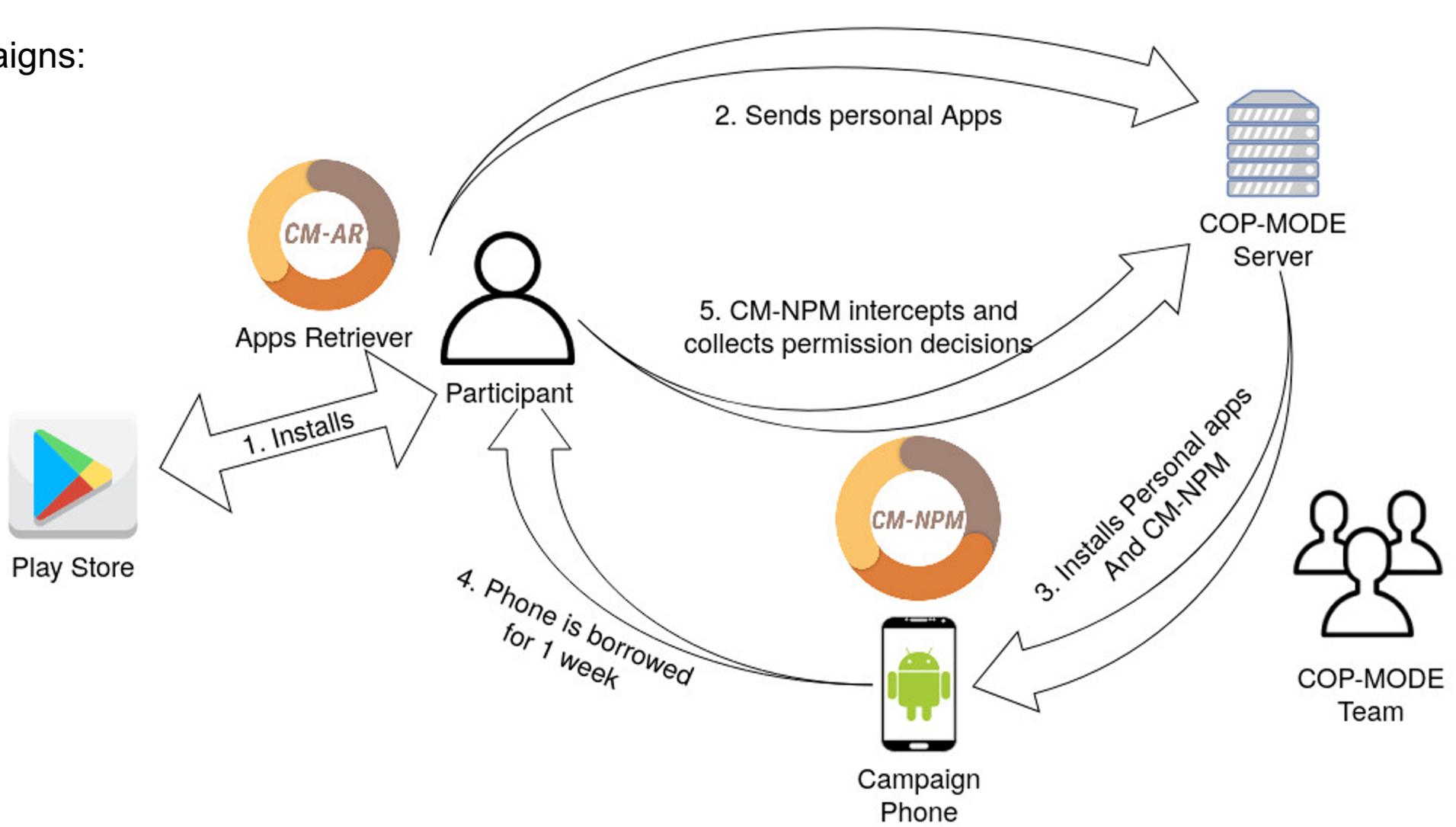
## COP-MODE: Goals



- **Automated** privacy preferences
- According to **personal** privacy preferences
- Adaptable to user **context**

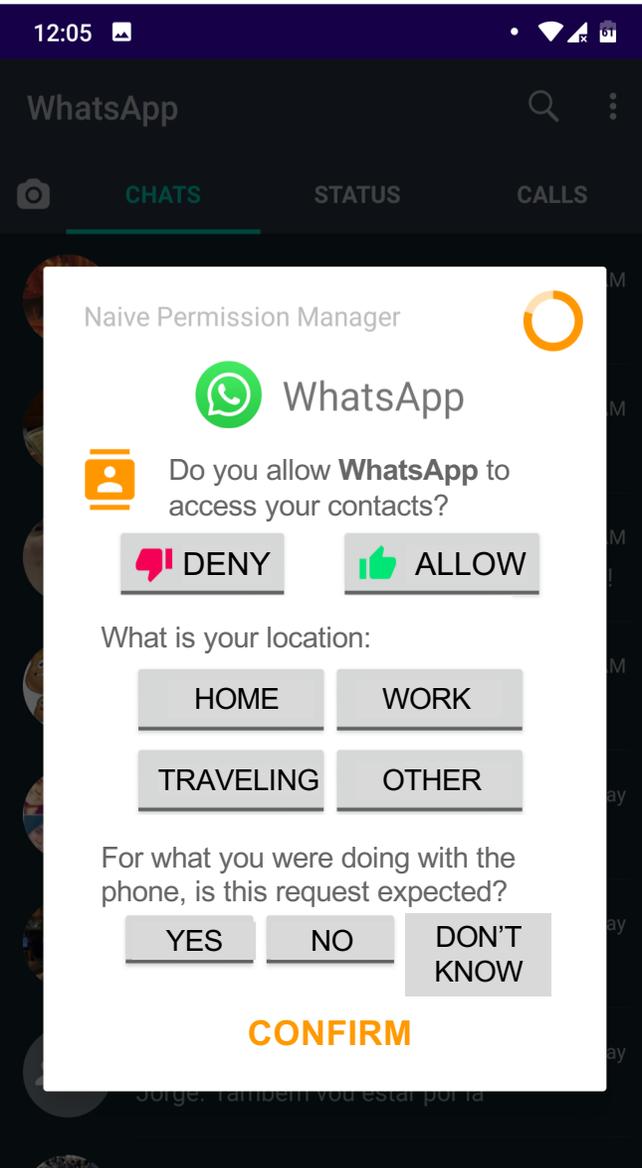
# COP-MODE: Approach

Campaigns:



TRUST

# COP-MODE: Approach



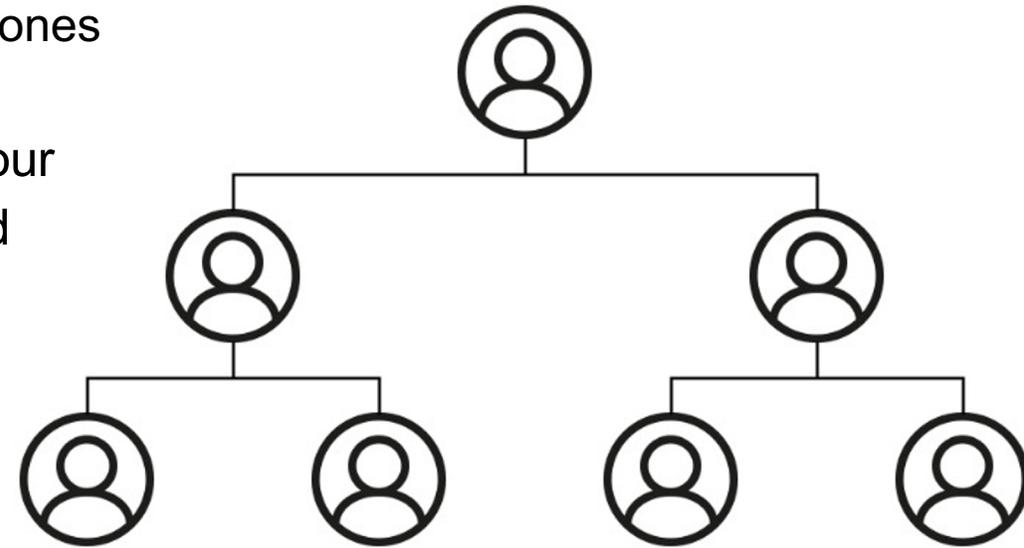
Data gathering to create privacy profiles:

- Over 90 participants using our phones
- 50K+ privacy decisions
- 43 permissions requests per hour
- Half of permissions unexpected
- $\frac{1}{3}$  permissions denied

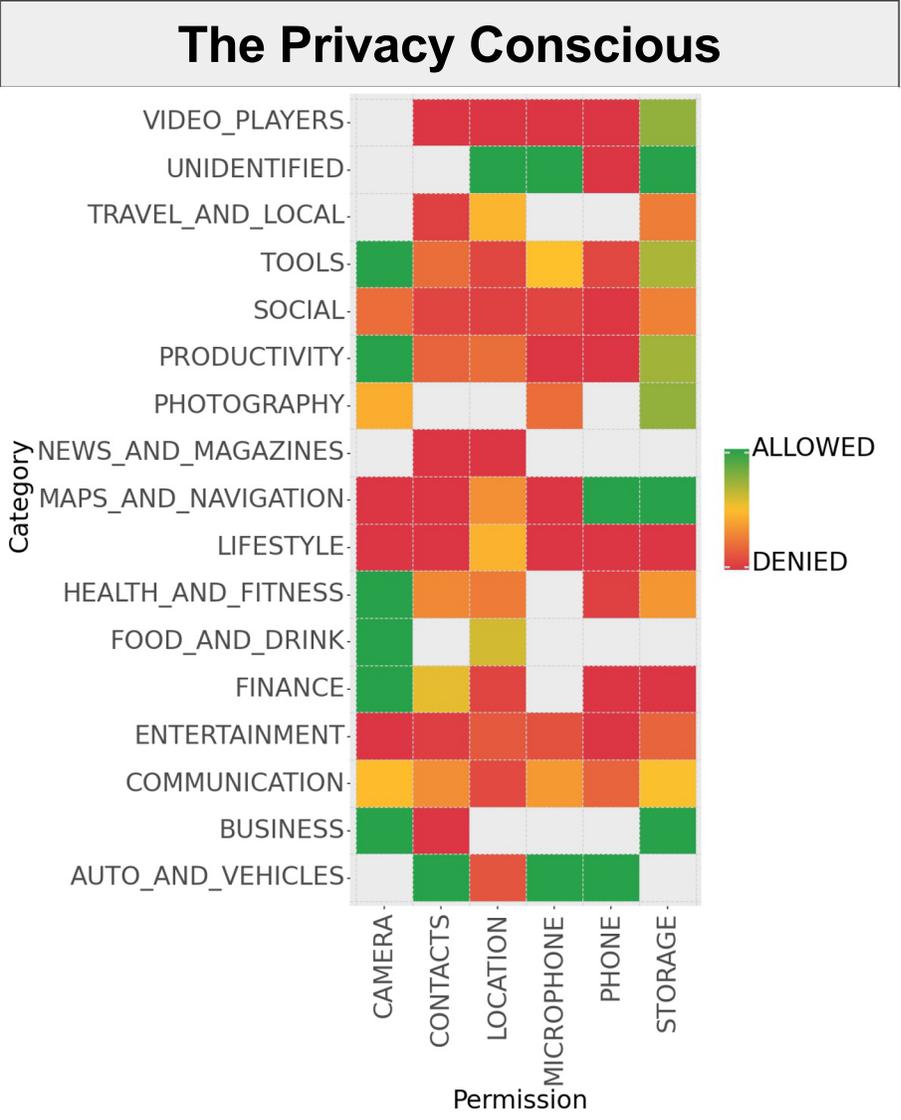
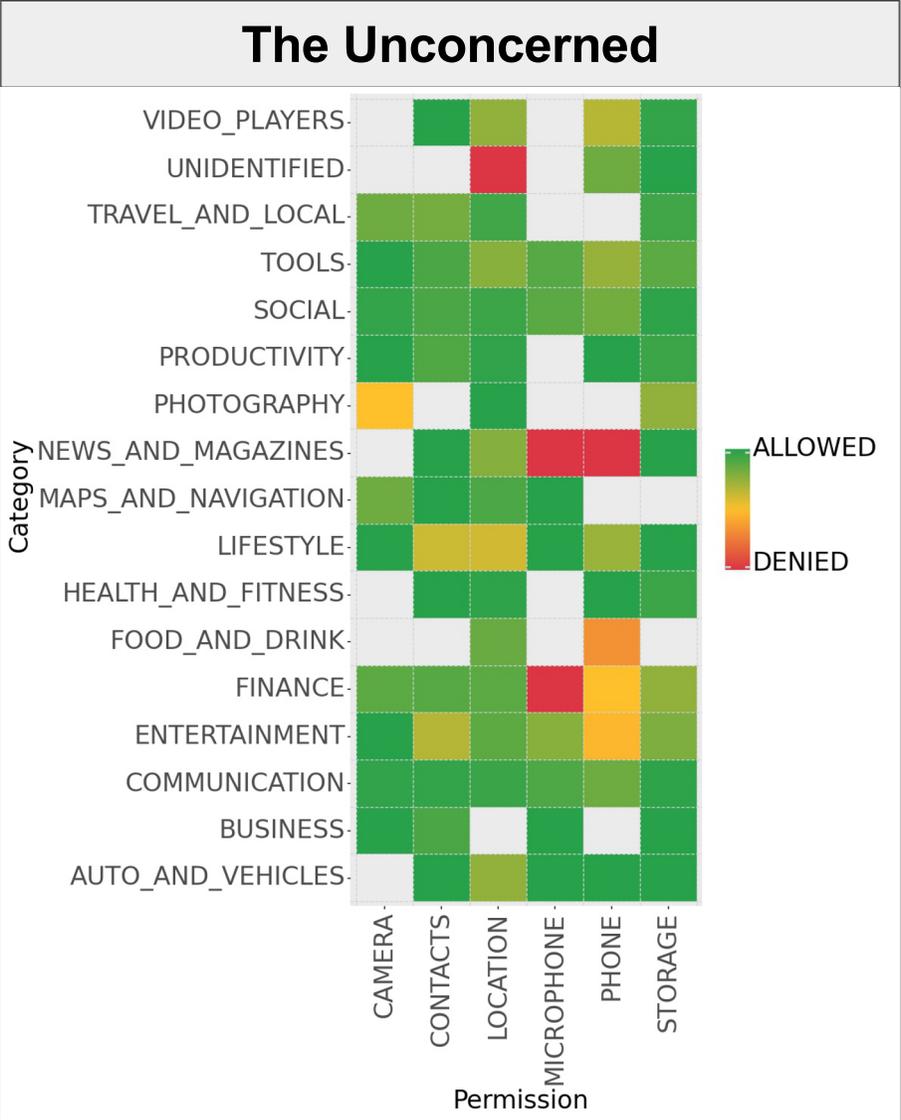
## ○ Effect of context:

- Allow more at work & travelling
- Than at home

## ○ Strong correlation with user expectancy



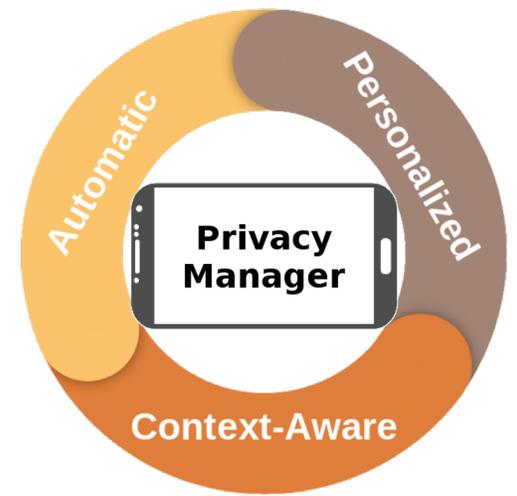
# COP-MODE: Example Privacy Profiles



TRUST

## COP-MODE Results

- **Privacy profiles created**
- **Now automating privacy decisions** using the profiles



<https://cop-mode.dei.uc.pt/>

## Follow-up:

- **Federated mechanisms to create profiles with privacy guarantees**
- **Smartphone app for privacy awareness**

# Round table discussion and exchange - Q&A

Experience and learning from the project – how can the NGI initiative further improve support third-party projects

What's next: the route to market – or scale-up - what can NGI do to help ?

Future NGI : what should we be focusing on in terms of privacy and trust in future initiatives for a human-centric internet

## More information/contact us

- Project coordinator : Mr Alasdair Reid @ EFIS Centre - [www.efiscentre.eu](http://www.efiscentre.eu)
- Email : [NGI-Trust-support@lists.geant.org](mailto:NGI-Trust-support@lists.geant.org)
- Twitter: [@NgiTrust](https://twitter.com/NgiTrust)
- NGI\_TRUST wiki : <https://wiki.geant.org/display/NGITrust>
- NGI.eu website : <https://www.ngi.eu/about/>



The NGI\_TRUST project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 825618

