

# NGI

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

Webinar, 8 October 2021

# Webinar – Agenda

Timing	Topic
10:00 – 10:10	Welcome <i>Jean-Luc Dorel, DG Connect, European Commission</i>
10:10 – 10:20	Introduction <i>Alasdair Reid, NGI Trust coordinator, EFIS Centre</i>
10:20 – 11:35	NGI Trust Funded projects results <i>NGI Trust Project managers</i>
11:35 – 11:55	Round table discussion and exchange - Q&A <i>All</i>
11:55 – 12:00	Wrap-up and close

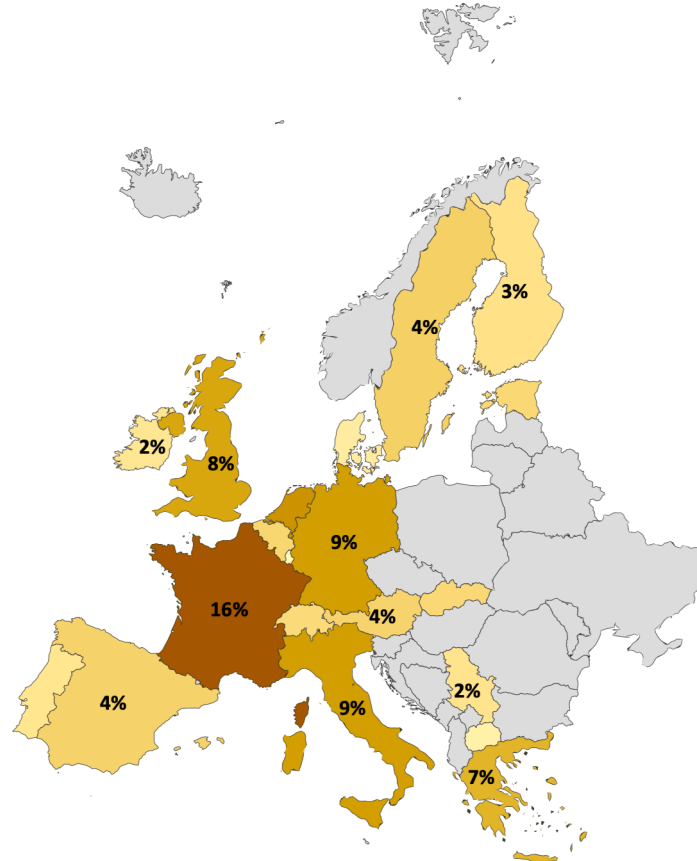
# NGI TRUST in a snapshot

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

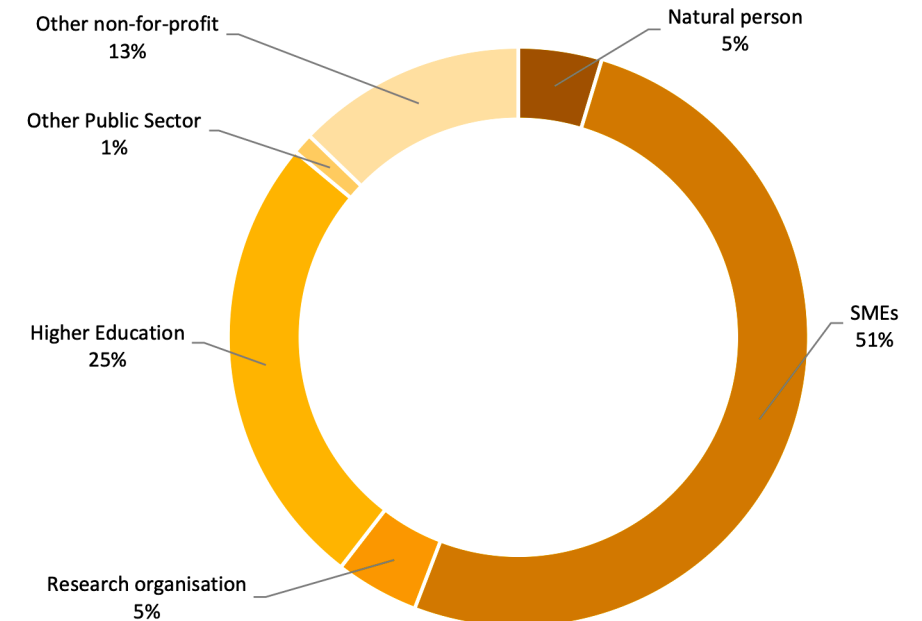
## Key facts & figures

- 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.

## Funding per Country (All Open Calls)



## Type of Applicant Organisation



# NGI TRUST Objectives & Partners

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

Reinforce, structure and develop the **community** of researchers, innovators and technology developers in the field of privacy and trust enhancing technologies

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

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

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

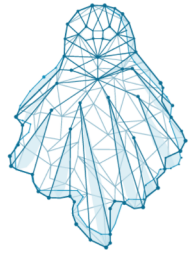


ADVANCING IDENTITY

# NGI TRUST Funded projects results

## Areas: Data Ethics/ Advancing Identity

Project	Third party
<b>CASPER / 2.0</b>	University of Belgrade, O Mundo da Carolina, Fac. of Computer Science and Engineering, KINKI
<b>FAIR-AI 2.0</b>	University of Cambridge
<b>IRIS</b>	Resonate Cooperative
<b>TruVeLedger</b>	RISE Research Institutes of Sweden
<b>MW4ALL / 2.0</b>	Least Authority
<b>Keyn / Chiff 2.0</b>	Keyn, Content Power
<b>MidPrivacy /MidScale</b>	Evolveum
<b>MedIAM</b>	Fabien Imbault



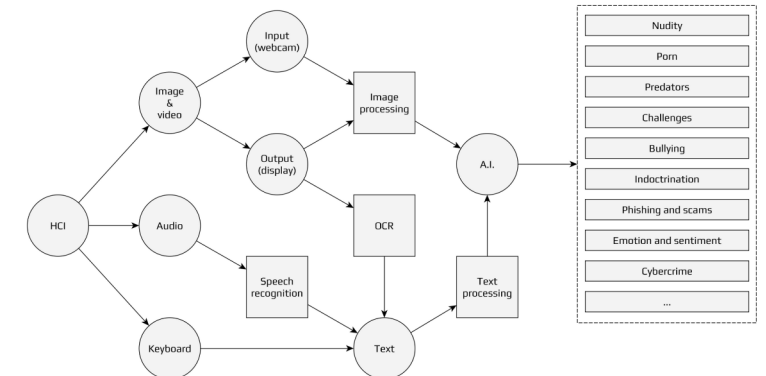
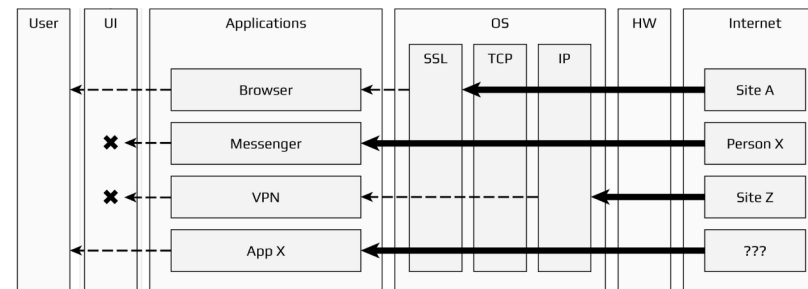
# CASPER



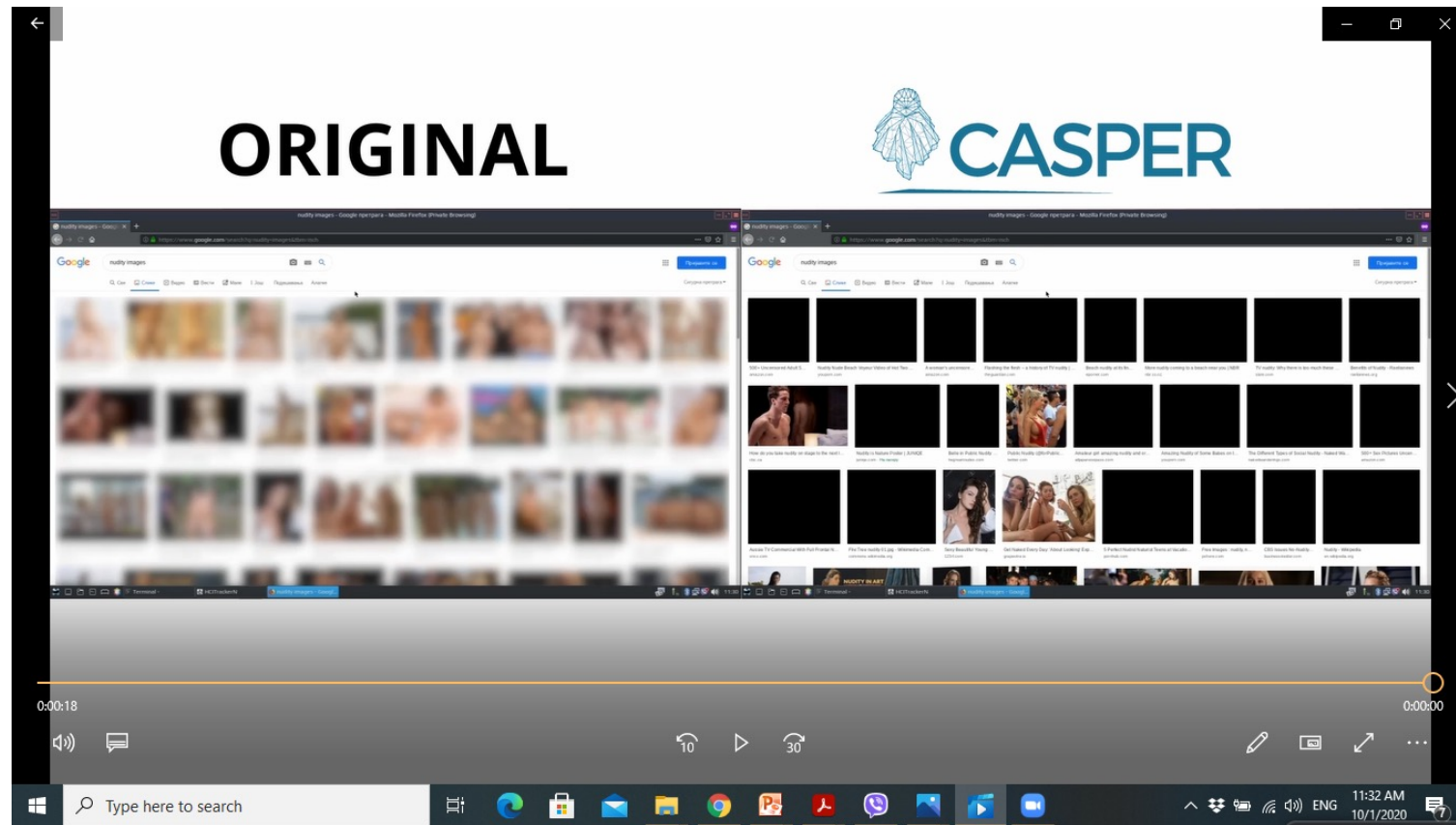
This project has received funding from the European Union's Horizon 2020 research and innovation programme under the NGL\_TRUST grant agreement no 825618.



- In shell, it is an A.I. based ghost
- Using A.I. at the HCI level to protect children
- Modular architecture
- Can analyze image/video/audio/text content
- Different types of threats can be detected



# ***RESULTS AND NEXT STEP (CASPER TO SMITS)***



- ***DEVELOPING MOBILE APP (ANDROID SOLUTION)***
- ***IMPLEMENTATION IN 1000 SCHOOLS IN SERBIA***
- ***TARGETING PARENTS IN WB6 COUNTRIES***



# Results

1. Modular platform for HCI screening, segmentation, classification, and content blocking/reporting.
2. Trained algorithms.
3. Datasets and Web application.
4. Good response from users, researchers, and relevant organizations.

# Next Steps

1. Open-source foundation creation.
2. Android/iPhone support.
3. Improving performance (efficacy and efficiency).
4. Adding support for other user groups and threat types.
5. Support for evidence preservation.
6. Support for collaboration and federated learning.

## Objectives and Contributions

Globally, **contract conflict** and **user agreement conflict**, costs 3 trillion dollars a year.

**Research question:** How does one predict if a contract will lead to a conflict in the future?

In being able to predict this, we can **avoid these costs**.

Research has found that a principal cause of conflict is: **Inaccurate** or **mistaken Rights** and **Duties** allocation.

## Solution and Method

**Develop artificial intelligence** to be able to analyse User Agreements and Contracts to detect if a **fair allocation** of Right and Duties is being made.

## Results

Three papers on detecting fair clauses:

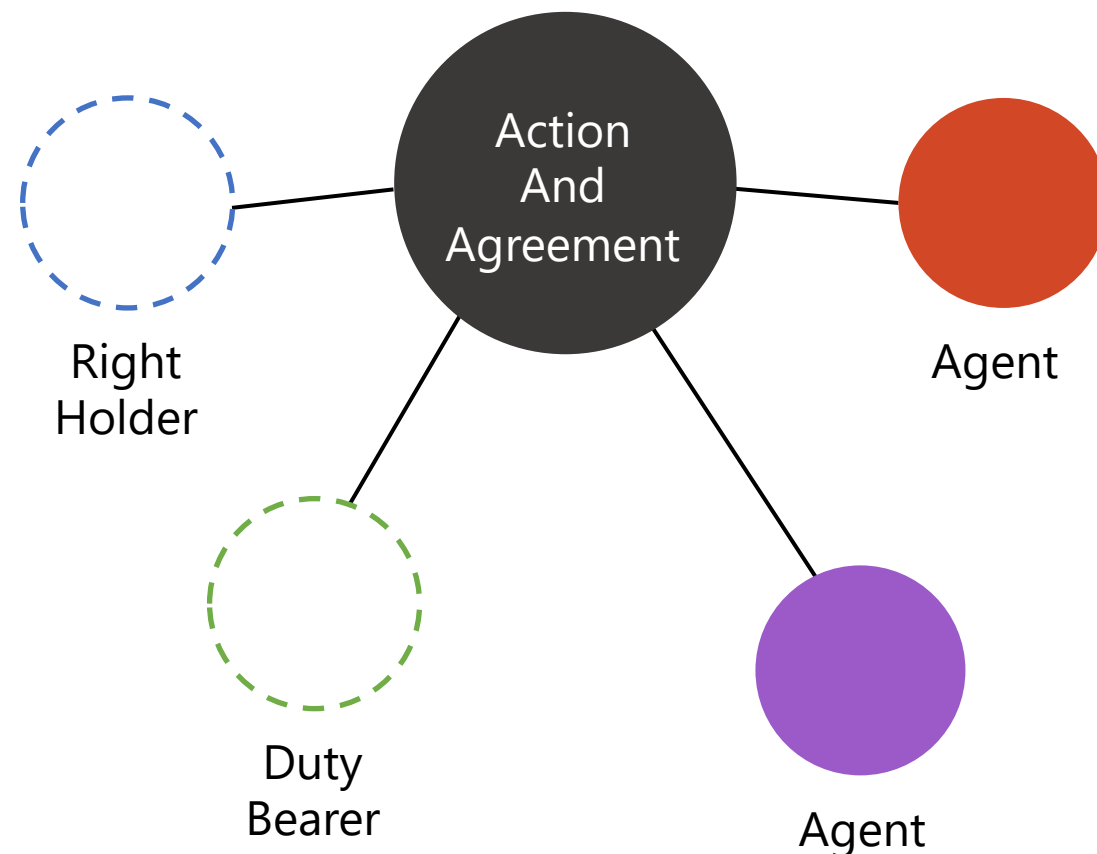
- 1 Izzidien A., Watson J., Loe B., Romero P., Fitz S., Stillwell D., "The Golden Rule as a Fairness Heuristic for Artificial Intelligence" Journal of Philosophy & Technology, special issue on AI and Responsibility. Springer, Nature Publishing Group. In Review.
- 2 Izzidien A., "Assigning legal rights and duties using artificial intelligence" Frontiers in Artificial Intelligence, Law and Technology, In Review.
- 3 Izzidien A., "Hohfeld vs. NLP Summarisers: Capturing a documents principal legal relations", Cambridge Languages Symposium, In Review.
- 4 A **fully annotated corpus** with 14,000 hand labeled legal assignments for machine learning training.

## Next Steps

*This project was a Type II (Development) NGI project.*

For **Commercialisation**, and R&D, we secured collaboration of:

1. **Center for Corporate and Commercial Law**, University of Cambridge, Dr Felix Steffek.
2. Dr Rune Nyrup of the **Levenshulme Center for the Future of Intelligence**, University of Cambridge, and Cambridge Enterprise.

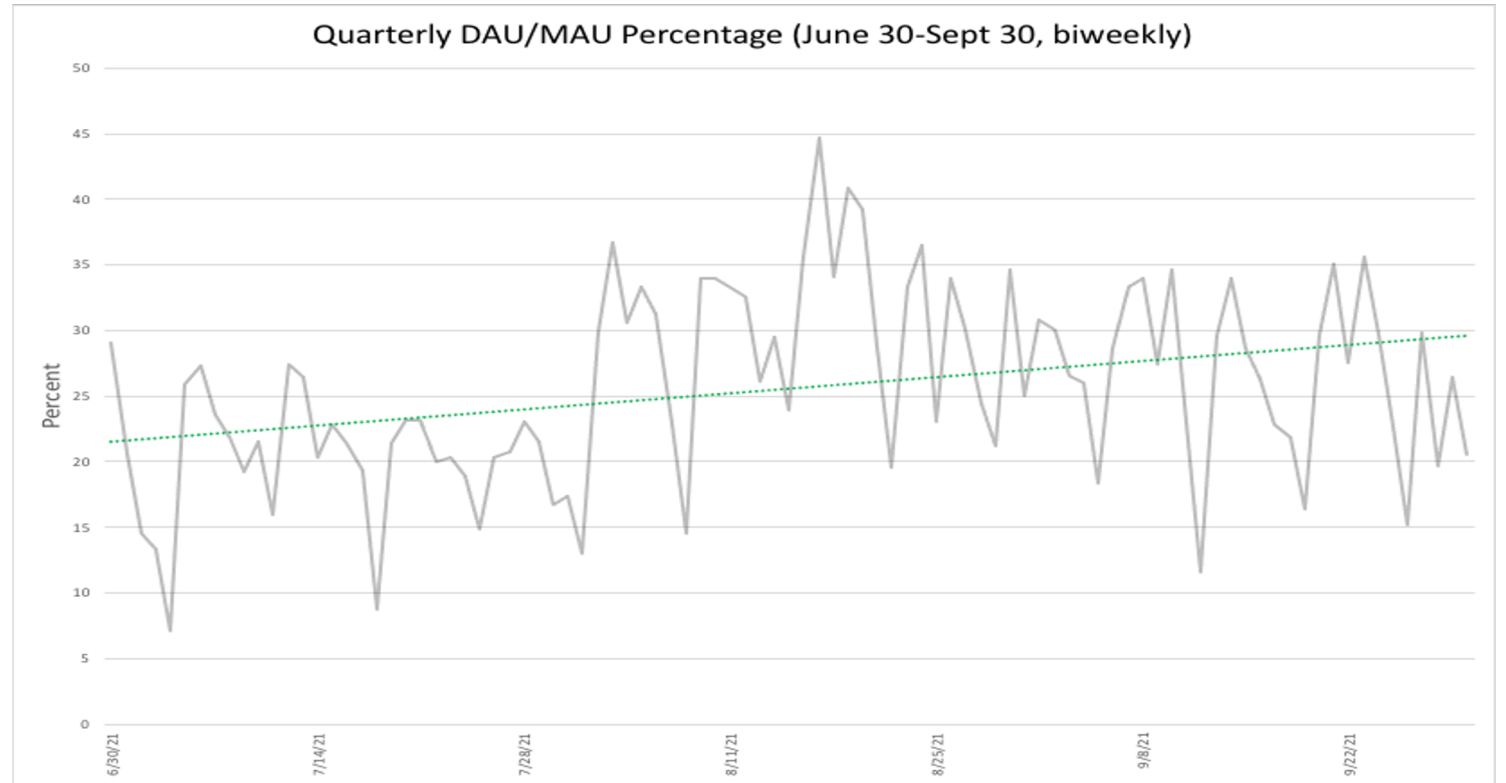


# IRIS: Identity for the Resonate IS Ecosystem Discourse Community Credentials

## Collaboration in our Ecosystem: Prioritizing Human-Centric Initiatives



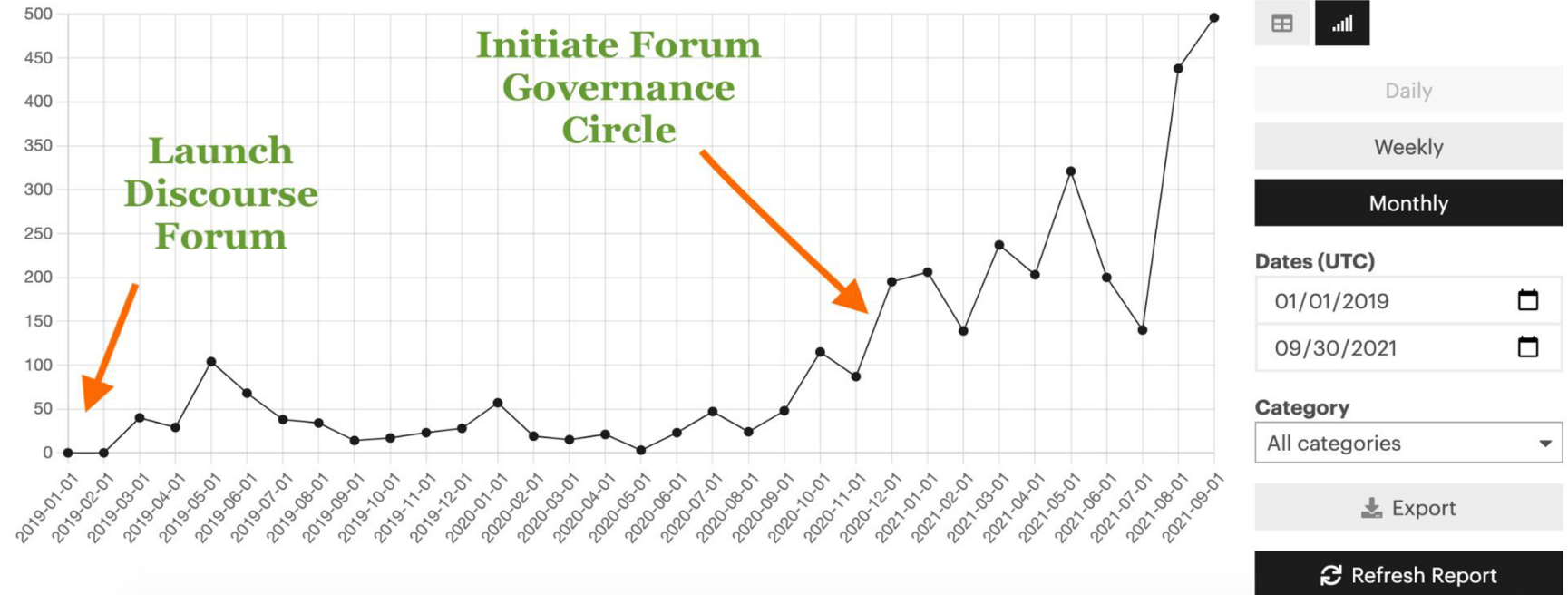
- Resonate Community Forum
- Verifiable Credentials Exclusive Content Patronage with Resonate Artist **Kallie Marie**
- Know Your Own Co-Operator (KYCO) and Community Credentials
- Play Fair Stay Fair Collaboration with **Fairbnb.coop**
- Coffee Quest: Ethical Supply Chain Initiative
- Exploratory Meetings for Organizational Principles and Resource Means with **tykn**, **Climate Justice Alliance**, and **Repaired Nations**



In Resonate's most recent quarter, engagement with the community forum has steadily increased due to the restructuring of the Community Forum — it is now more conducive to creating relationships and trust between users, and more clearly laying out the co-op's principles and process.

Our strength in Resonate begins in the **Community** and social solidarity around music. That's where we start, not as a tech solution looking for a problem. Let's take it step by step, growing organically from our co-operative, community core.

All reports | Posts ?



# Technology

Connect community path to our burgeoning tech deliverables here:

# Conclusion

Resonate's progress has carved a path people to organize and trade resources in 'digital dignity' without the market pressure for ever-increasing profits, data surveillance and coerced labor. We've steadily increased engagement to support the following:

- Decolonizing and democratizing community spaces and creative channels to break from domineering private capital
- Generating genuine accountability across adjacent communities through our collaborative ecosystem
- Connecting the international social power of music to community-led, on the ground repair
- Building security and resilience against speculation, alienation and market pressures to maximize the depth of our reach with localized cultural support systems

In conjunction with our accomplishments regarding SSI and Community Credential Plug-ins, as well as the introduction of updated technical tools to support our artists and users, we have built the principles foundations for building true trust. Our path forward utilizes these community and governance protocol updates to define the technical requirements that support 'digital dignity' for frontline communities.

# TruVeLedger

(Trusted Platform for Disruptive  
Vehicular Ad Hoc Networks using  
Distributed Ledger Technology)

Anders Lindgren, [anders.lindgren@ri.se](mailto:anders.lindgren@ri.se)

# Project Background and Objectives

- Trusted communication important for Vehicular Ad Hoc Network (VANET) applications (trusted source of sensor data, etc)
- Decentralised operation desirable
  - Large data volumes, so processing at edge beneficial
  - Potentially sensitive data, so don't want all data stored centrally
- Blockchains/Distributed Ledger Technology has potential to provide trust
  - Both VANETs and DLTs are inherently decentralized, so good fit, but current DLT solutions not optimal in terms of robustness for scenarios with network disruptions/partitioning, or where you want to keep data local.
- Goal: Identify suitable DLT mechanisms for VANETs and adapt/include in conceptual framework to show viability of DLT based trusted system for VANETs. Identify stakeholders and user scenarios.

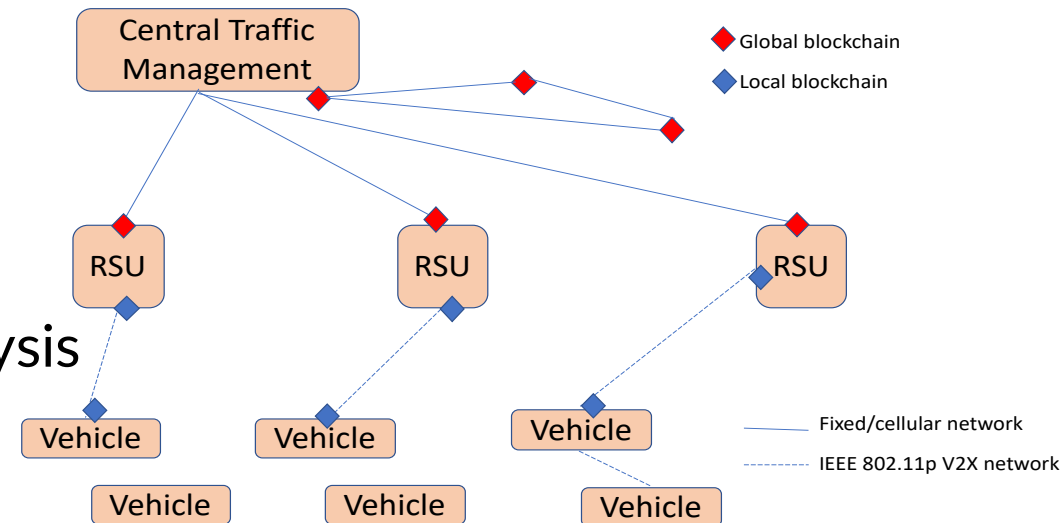
# Project results and next steps

- Results

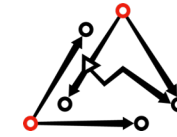
- Literature survey and stakeholder analysis
- TruVeLedger framework definition
- Paper “Towards A Distributed Ledger Based Verifiable Trusted Protocol For VANET” published in the 2021 International Conference on Digital Futures and Transformative Technologies (ICoDT2)

- Next steps

- In talks with major vehicular manufacturer to submit proposal to national Vinnova FFI vehicular industry targeted funding call





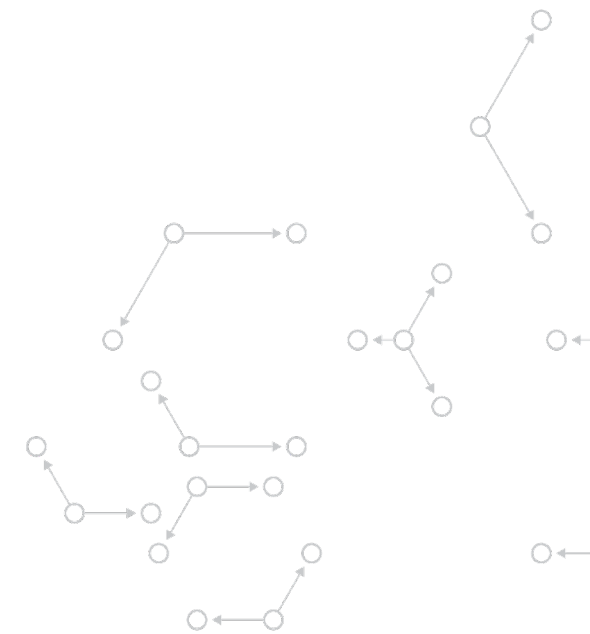


**Least Authority**  
PRIVACY MATTERS

# MW4ALL 2.0

Developing and Deploying a New Version of  
Magic Wormhole for Identity-Free File Transfer

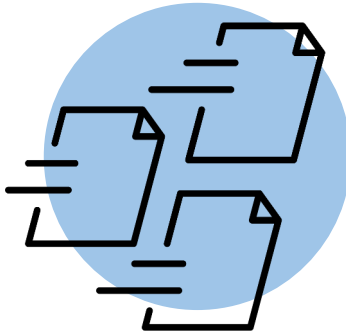
NGI\_Trust Results Webinar - 8 October 2021



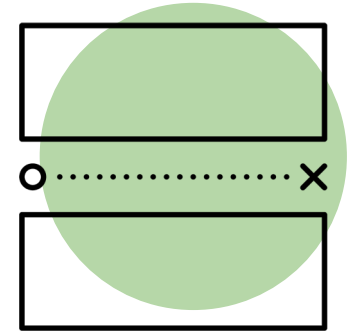
# Our competitive advantages



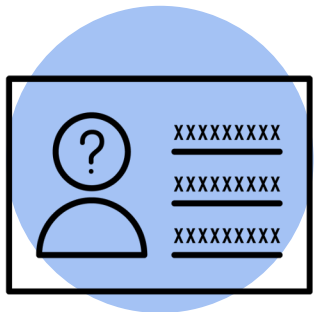
Large file size support



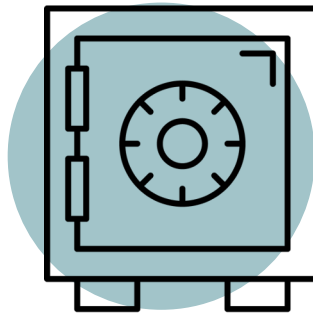
Fast



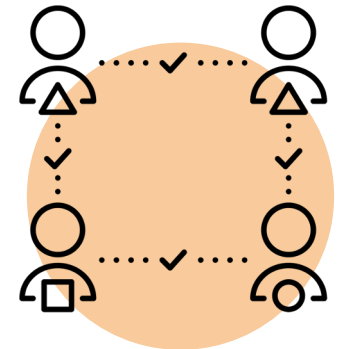
Easily share a code to send files



Identity-free



End-to-end encryption  
Data not stored on our servers



No-download web app

# What did we work on?

1. Iterative design & user research
2. Developing for scalable web-to-web transfers
3. Outreach and sustainability planning

# Demo

Transfer RECEIVE

## Send files in real-time

We don't store – and can't read – your files. We simply transfer them.  
No sign-ups. No snooping. No nonsense.

drop any file  
up to 4GB

or

select

v0.0.2-alpha

Security Privacy About Us GitHub made with love for privacy by **Least Authority** PRIVACY MATTERS

Transfer RECEIVE

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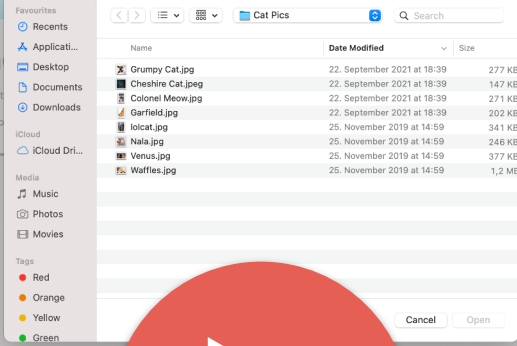
drop any file  
up to 4GB

or

select

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Transfer RECEIVE

## Ready to send from your device!

Grumpy Cat.jpg (277.5 kB)

1. Give the receiver the link below

w.leastauthority.com/#/7-crossover-snowcap Copy

2. Keep this tab open until you're notified that they have received the file

Cancel

v0.0.2-alpha

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Transfer SEND

## Receive files with ease, speed, and security

Always end-to-end encrypted.

3-congregate-minnow × Next

Eg: 7-guitarist-revenge

v0.0.2-alpha

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Transfer SEND

## Ready to download

Grumpy Cat.jpg (277.5 kB)

Download

Cancel

v0.0.2-alpha

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Transfer SEND

## Received!

Grumpy Cat.jpg (277.5 kB)

Receive more

v0.0.2-alpha

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Grumpy Cat.jpg Show all ×



- Making it easier to be secure online
- Login with your smartphone as a hybrid authenticator
  - No masterpassword
  - End-to-end encrypted
  - Privacy-by-design
  - Independent of underlying authentication method (passwords / OTP / WebAuthn)

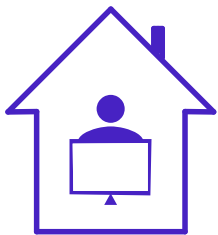


# Results NGI\_Trust project

- Solution available for B2C and B2B market
- Open sourced the core of Chiff
- Bridged the gap to WebAuthentication
- Tested and validated solution
- Found a product/market fit within BPO-companies
- Scalable solution for commercialization



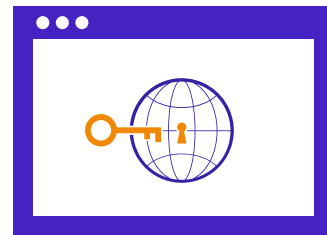
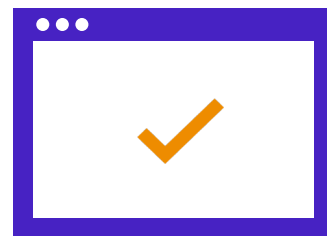
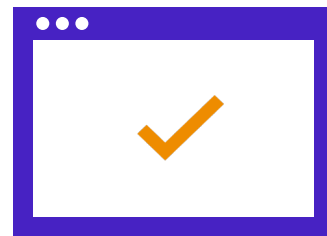
# Chiff



4<b!LkrVD8F=/6/:#wtR

: [1@C}UUhK/yJiTfL!/B

{signed challenge}



## Next steps

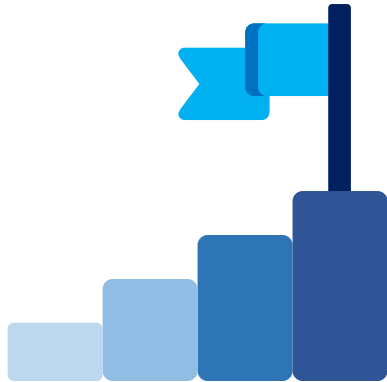
- Paid pilot to validate added value at a major contact center
- Sales and acquisition at BPO companies
- Expand and scale Chiff for teams at SMEs
- Making WebAuthn-checker website for developers

Always open for collaborating on online authentication!



<https://chiff.app>  
wouter@chiff.app





## Goals

Manage complex **provenance metadata** in identity information, thus providing transparency and accountability.



## Outcomes

Successful prototype, integrated into **midPoint**, an open source identity governance platform.

## End-to-End Metadata

Metadata managed from the sources all the way to GUI.

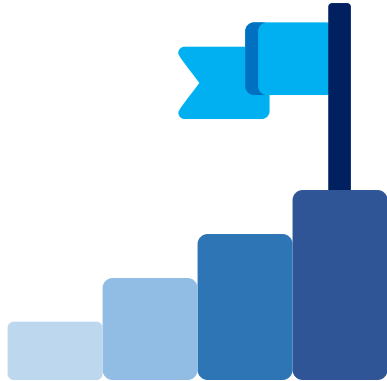
Complex metadata schema specified using **Axiom**, new metadata-aware schema language.

## Future

Personal data protection

The screenshot displays the 'Given name' field with the value 'John'. Below it, the 'provenance' section is expanded to show two entries:

- Midprivacy HR system**: This value originated from. Acquisition details include: Origin (HR feed), Resource (Midprivacy HR system), Actor (midPoint Administrator), Channel (import), and Acquired at (Wednesday, September 2, 2020, 10:21:39 AM). Mapping specification: Defined in: Midprivacy HR system.
- Midprivacy Students registry**: This value is a combination of values coming from following sources. Acquisition details include: Origin (Students registry feed), Resource (Midprivacy Students registry), Actor (midPoint Administrator), Channel (import), and Acquired at (Wednesday, September 2, 2020, 10:23:21 AM). Mapping specification: Defined in: Midprivacy Students registry.



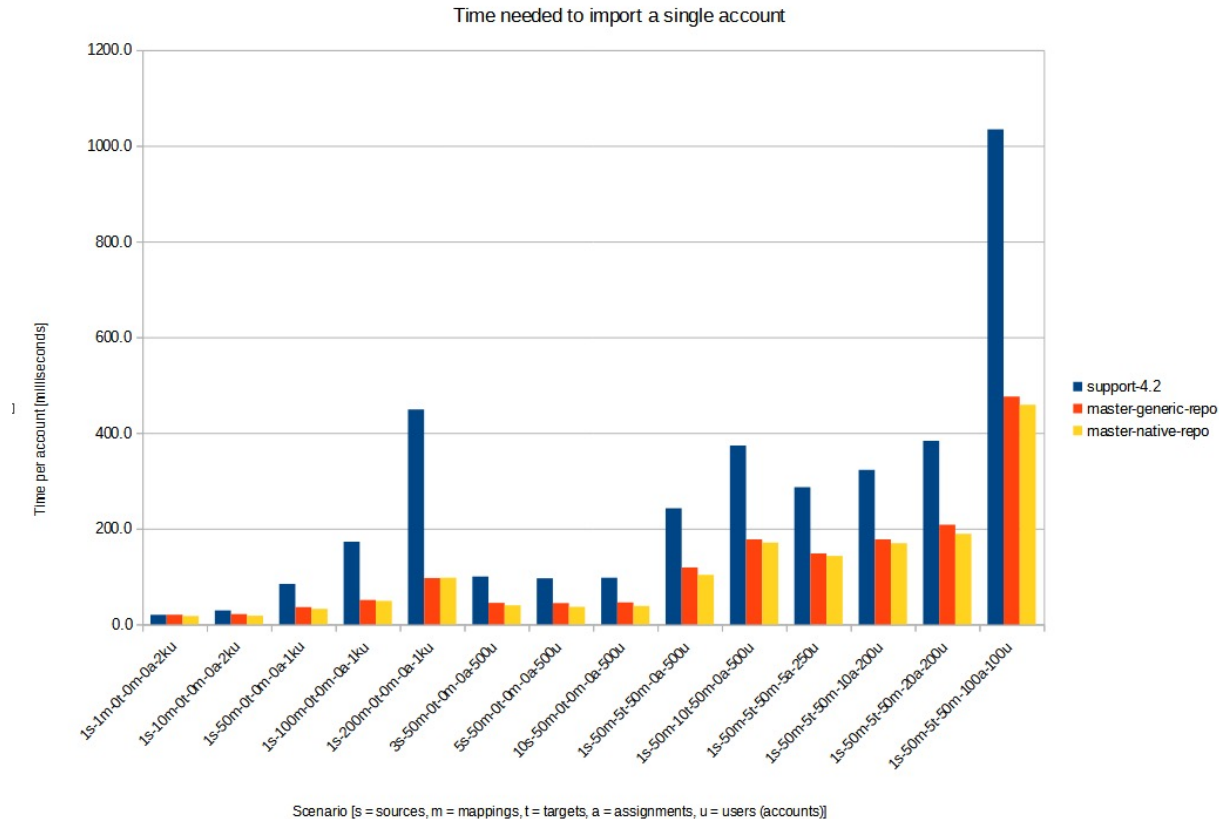
## Goals

Make **midPoint** scalable for large deployments (beyond millions of managed identities).



## Outcomes

Scalable data storage implementation, major performance and usability improvements.



## Large-Scale Deployments

Speedup by factor of 2 (or more\*)

Scalability beyond millions of identities

100% open source

## Future

New opportunities (government, academia, telco, ...)

\*) Exact numbers to be confirmed. Project is not finished yet, last tests are still running.

A nurse in blue scrubs is attending to a patient lying in a hospital bed. The nurse is leaning over the bed, and her hand is near a medical monitor displaying vital signs. The room is filled with various medical devices, including a stack of monitors on the left and another monitor on the right. The scene is set in a modern hospital room.

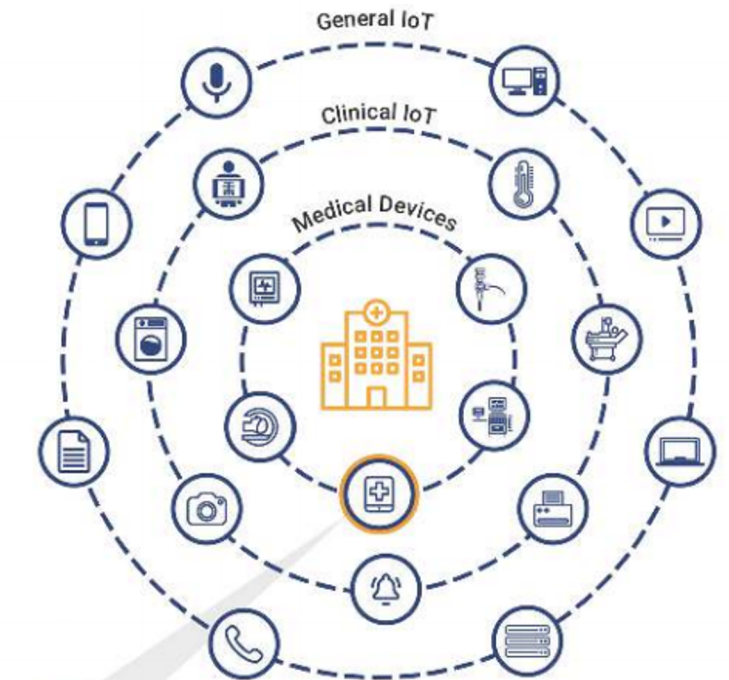
mediam

**NGI\_TRUST grant agreement n°825618**

# objectives

IAM of things (identity & access management)  
applied to medical systems

experiment involved healthcare organisations and medical  
device suppliers

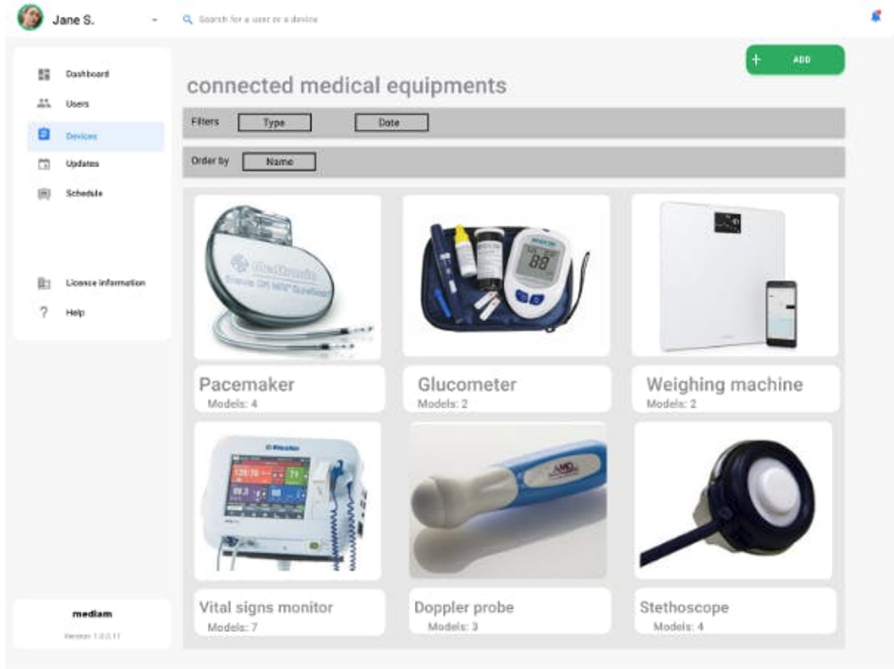


Device Information		
<b>IP</b> 172.16.21.50	<b>DEVICE MODEL</b> Accu-Chek Inform II	<b>HW VERSION</b> 0355b
<b>MAC</b> B8:78:79:21:31:DB	<b>OS</b> Linux	<b>PROTOCOLS</b> POCT1-A
<b>MANUFACTURER</b> Roche	<b>OS VERSION</b> 2.4.26	<b>SERIAL NUMBER</b> UU13117899
<b>DEVICE TYPE</b> Glucose Meter	<b>APP VERSION</b> 03.04.01	<b>VLAN</b> 8

Acti  
Go to

# results

opensource project doc.mediam.dev includes a hardware prototype and a full documentation

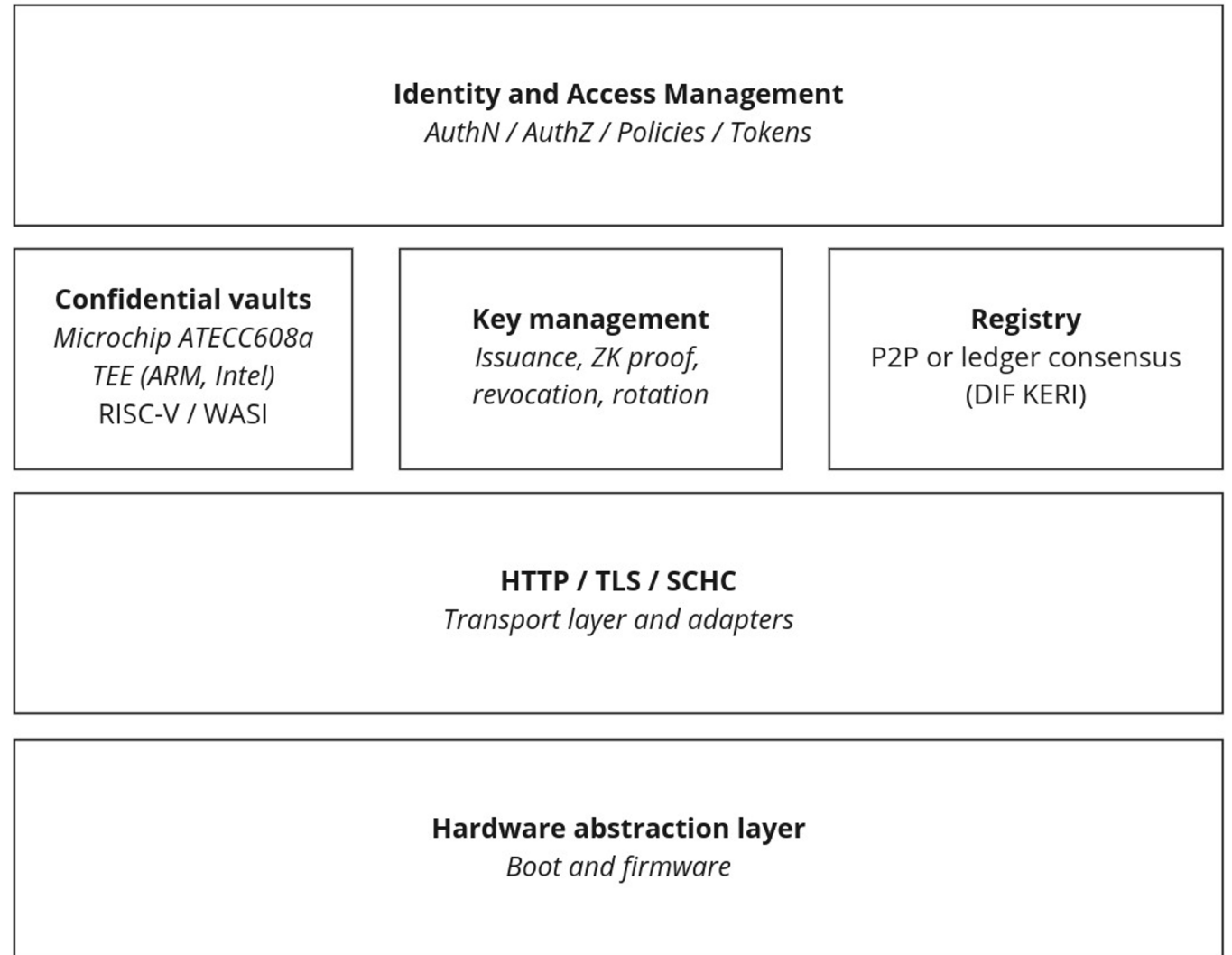


# next steps

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focus on IETF GNAP + DIF KERI  
as the core foundation

disseminate research into an  
industrial project





# 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

