

SWForum.eu

European forum of the software research community

Leveraging Open Source technologies for better services in the European software ecosystem

iii 10 October 2022

① 14:30 - 16:00 CEST







Leveraging Open Source technologies for better services in the European software ecosystem

Moderator



John Favaro

Senior research Analyst at Trust-IT
Services, SWForum.eu Communication
& Dissemination Lead

Keynote Speakers



Juncal Alonso
R&D Engineer at TECNALIA,
SWForum.eu Project Coordinator

14:30 - Welcome and SWForum.eu introduction

Luis Carlos Busquets Pérez

Programme Officer in DG CONNECT E2 (Cloud and Software Unit) SWForum.eu Project Officer

14:40 - Webinar overview, EU perspective and expectations



Webinar Speakers & Panellists

OSS R&I Projects



Ricardo VitorinoSmart Cities R&I Manager at Ubiware

□ 14:55 − **FOGPROTECT Project**

Policy & Standardisation R&I Projects



Konstantinos Oikonomou
Full Stack & Research Software Engineer at UBITECH

□ 15:25 – **PolicyCloud Project**



Giorgos Drosos

Researcher at Athens University of Economics and Business

□ 15:10 – **FASTEN Project**



Nicholas Ferguson

Senior Project Manager & Project Coordinator of Hsbooster.eu at Trust-IT Services

□ 15.30 – **HSbooster.eu Project**

Join at slido.com slido.com #SWForumWebinar





Housekeeping

- This event is being recorded in its entirety. A link to the full recordings will be shared with participants afterwards
- All presentations will be available at the SWForum.eu website immediately after the webinar
- Please don't activate your microphone and videos unless the host gives you permission
- Please do ask questions. Use the Indicate which speaker you are putting the question to and we'll also try to answer things directly in the chat.
- If you do not see the buttons at the bottom of the Zoom window, move the mouse on that window and buttons will appear
- If you experience bad quality in audio, try switching off your video (webcam button at the bottom of your Zoom screen)



Together lets leverage the open source software technologies for better services in the European ecosystem

Join the Software Forum community https://swforum.eu/join-swforum

- Share your interesting updates at the SW Forum
- Showcase your project results and impacts on your own free Project Hub
- Be included in the European Software Radar
- Get help in assessing your Market and Technological Readiness Level with the help of the SWForum.eu Team

For more details contact info@swforum.eu



Thank You!

Get in touch with us!





in **SWForum**







SWFORUM.EU



1st October 2020 – 31st March 2023

CSA H2020-ICT-2020-1 ICT-50-2020-1 Software Technologies



5 partners













Main Objective



Raise awareness





Strenghthen the

competitiveness





European Software industry

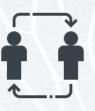
By facilitating a...

Of the



Sustainable Forum for

researchers, providers, developers, operators and policy-makers



Space for engagement



R&I Roadmaps



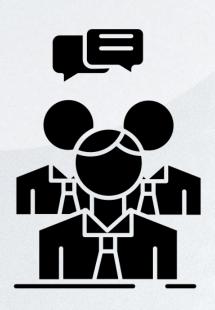
Policies



Assets

...





Objective 1 - Promote EU cross-fertilization between the areas of software, digital infrastructures, and cybersecurity

Key Results (KR)



Cross-fertilization workshops



SWForum Event

WEGreen - SWForum and HUB4CLOUD Workshop on Engineering Green and Sustainable Software in the Computing



SWForum Event

First SWForum.eu Sustainability Workshop

19 January 2022 - 19 January 2022

shop for a unity.

25 views



SWForum Event

Second SWForum.eu Workshop: Research Challenges, Collaboration, and Coordination in European Software Engineering Projects

29 June 2021 - 01 July 2021

The SWForum.eu project aims to create a self-sustainable online forum that facilitates and encourages both researchers...

Read more 348 views



SWForum Event

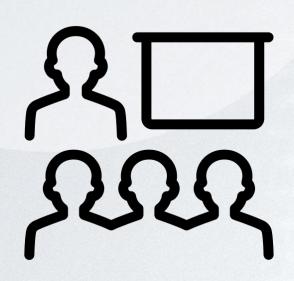
First SWForum.eu Workshop on Trustworthy Software and Open Source

23 March 2021 - 25 March 2021

Thank you to all those that joined us during the First SWForum.eu Workshop which was organised by the SWForum.eu with...

Read more 193 views





Objective 2 - Create a self-sustainable forum of researchers and practitioners in the area of software technologies and related areas.

Key Results (KR)



Sustainable Forum and Fellowship programme



Online Platform



Research and Innovation Roadmaps

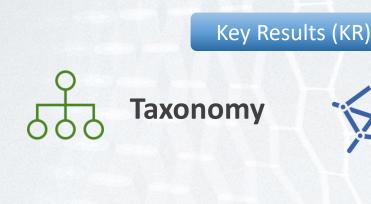


Landscape reports



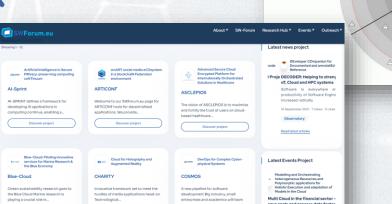


Objective 3 - Enhance the visibility of European based software technology projects, digital infrastructures and cybersecurity both in the research and in the market domain at an international level.





Project Radar





Hub of project mini-sites



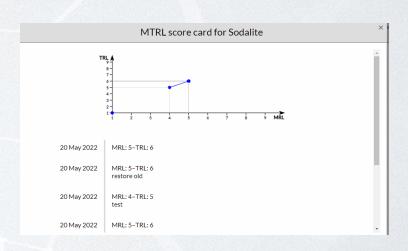


Objective 4 - Provide guidance for increasing the competitiveness of European initiatives through the definition of a methodological approach to the improvement of their MTRL, Mentoring, Technology Transfer & Best Practices guiding towards Policy Innovation.

Key Result (KR)



Customized MTRL
Methodology for the
topics addressed in
SWForum





Coordination and Su

Develop an effective way to map R&I project topics of software engineering, digital infrastructures, cybersecurity in Europe, inducing collaborations and realising synergies by proactively facilitating them through practical steps.

Continuously engage all relevant stakeholders by executing communication and marketing activities and by systematically acting upon pragmatic motivational mechanisms.

1.Mapping, cross-fertilization & synergising

SWForum.eu

3.Engaging

voiect sites

workshops

2.Roadmapping & governance Provide recommendations on policyrelated issues and the governance structure for the sustainability of the SWForum.eu community

Governance structure Fellowship programme Business model Roadmaps

Communication strategy
Web & Social media presence
Discussion fora
MTRL training

Project radar



Don't miss our next workshop!

- Open-Source Workshops for Computing and Sustainability
- Organized by the European Commission & SWForum.eu
- In Brussels, before the end of the year.



Thank You!

Get in touch with us!





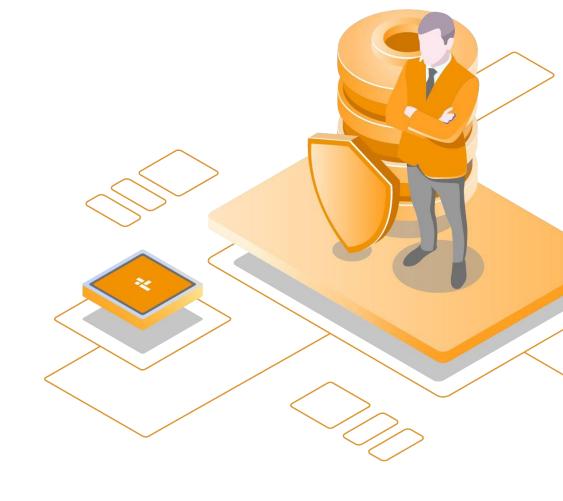
in **SWForum**





Protecting sensitive data in the computing continuum

Ricardo Vitorino (Ubiwhere)



Find me on Linkedin or say hi at rvitorino@ubiwhere.com















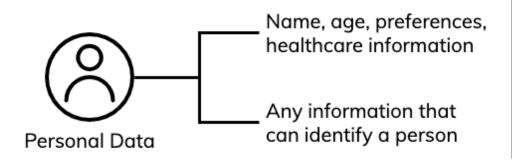




FogProtect's definition of Sensitive data

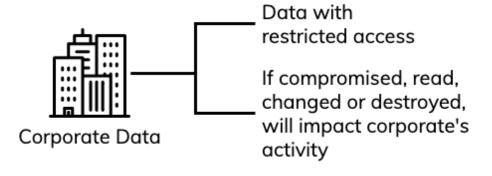


Sensitive data is *important information* with the *potential for severe consequences* if it is *compromised*.





Humiliate, harm or extort (in any way) individuals

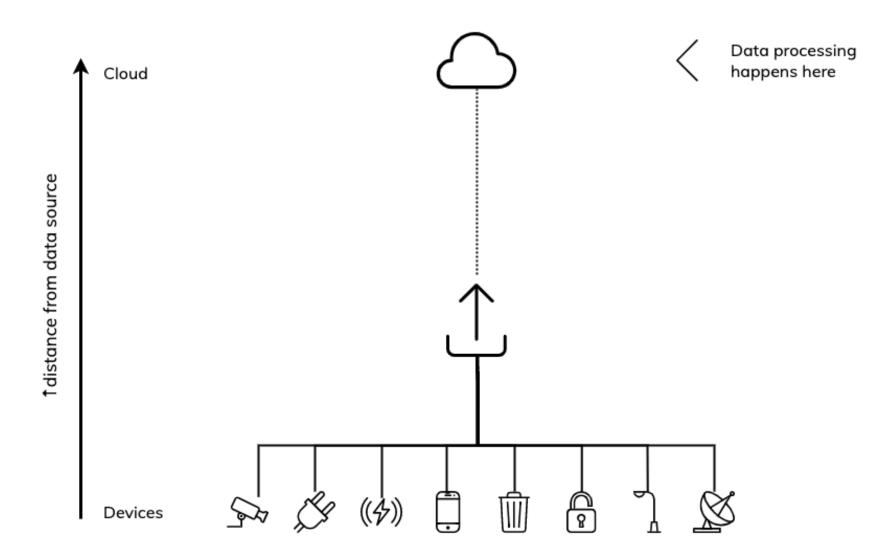




Harm entire companies and institutions to decrease profits, disrupt markets

Compute continuum challenges

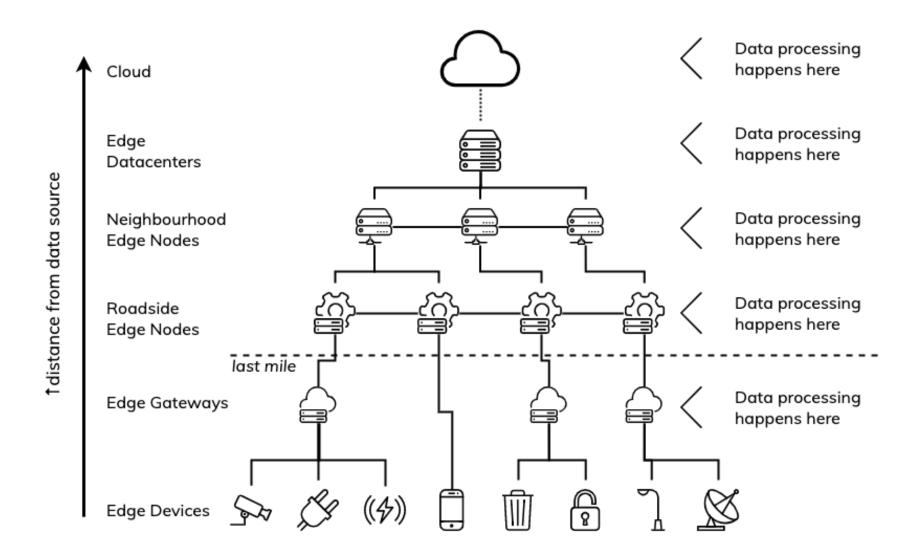




Partially based on figure from Data Security and Privacy Requirements in Edge Computing: A Systemic Review

Compute continuum challenges





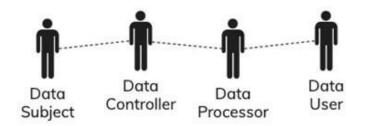
Partially based on figure from Data Security and Privacy Requirements in Edge Computing: A Systemic Review

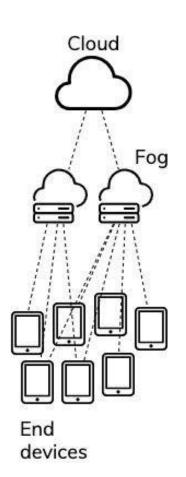
Sensitive Data Protection Challenges



- Resource limitations of fog nodes and end-devices constrain data protection methods
- Heterogeneity of fog nodes and end-devices hampers consistent security
- Node connectivity metadata can leak sensitive information
- Mobility of devices requires compliance with changing data protection policies
- Frequent changes at the edge imply highly dynamic changes of data protection risks
- Lack of transparency about stakeholders may lead to unauthorised data access

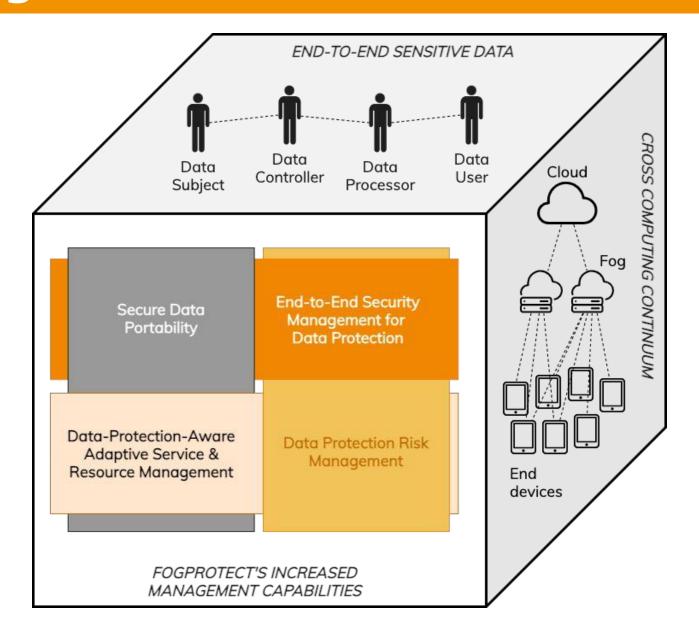
END-TO-END SENSITIVE DATA





Meet FogProtect





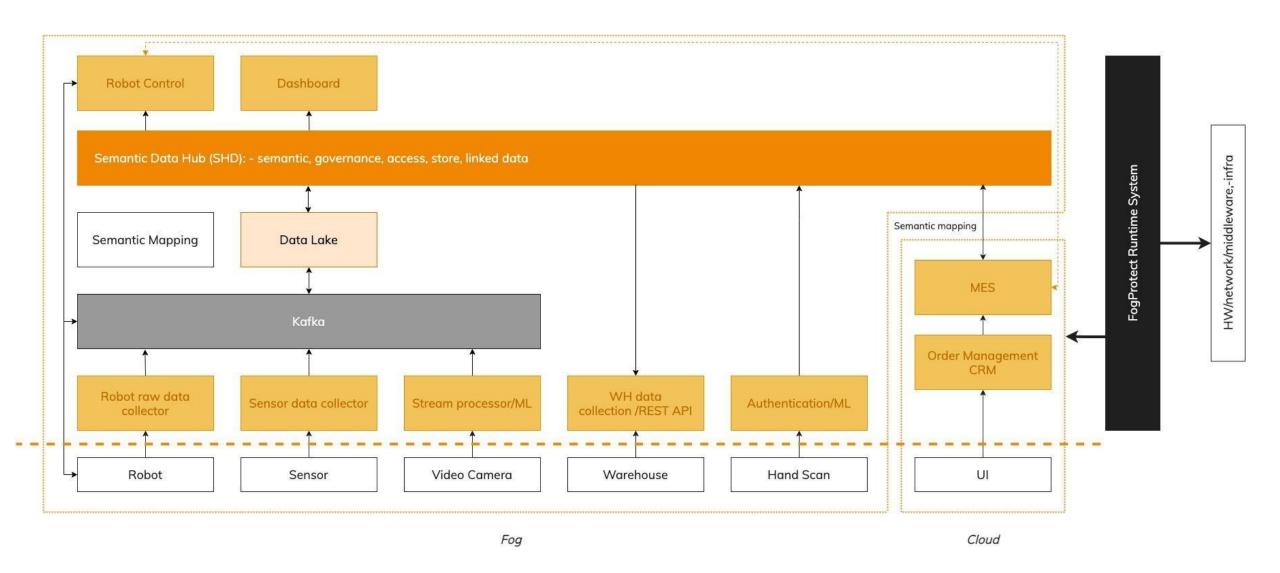
FogProtect



- The project combines four main technology innovations:
 - secure data container technology for data portability and mobility
 - data-protection-aware adaptive service and resource management
 - advanced data protection policy management
 - dynamic data protection risk management models and tools
- Demonstrated in 3 complementary real-world use cases:
 - smart manufacturing
 - smart media
 - smart cities

Smart Manufacturing





Smart Manufacturing

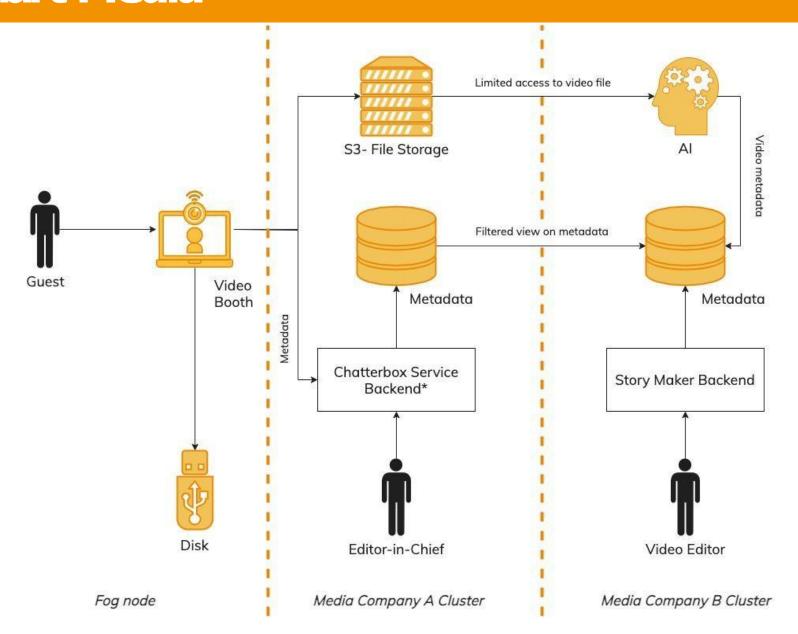






Smart Media

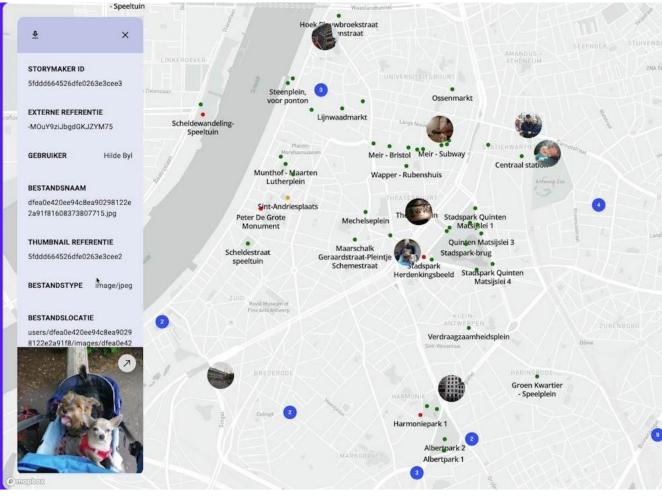




Smart Media

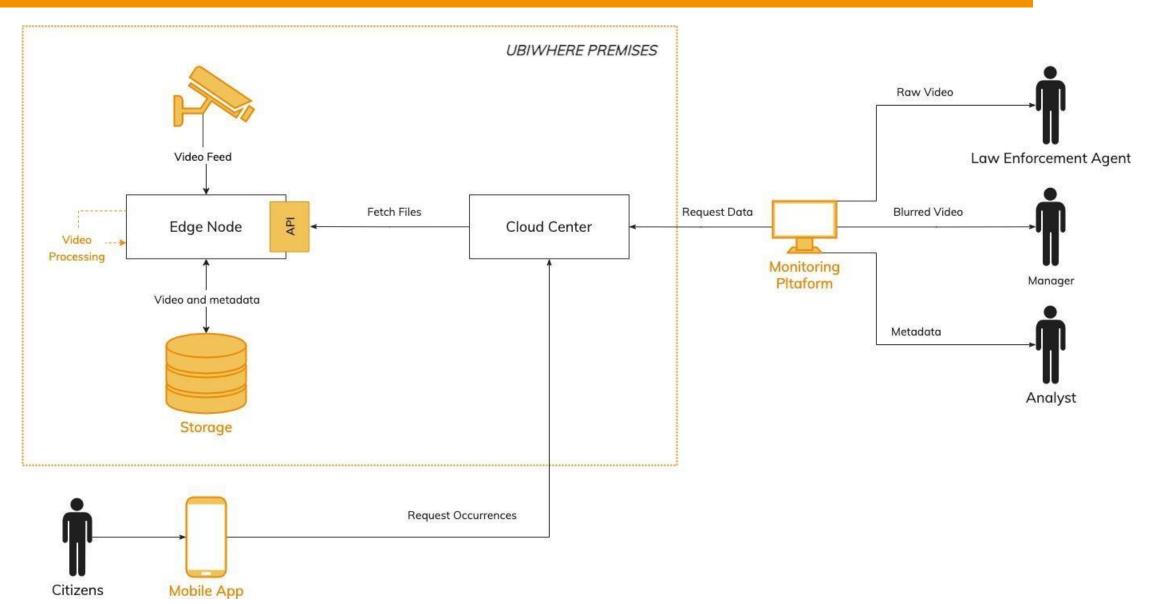


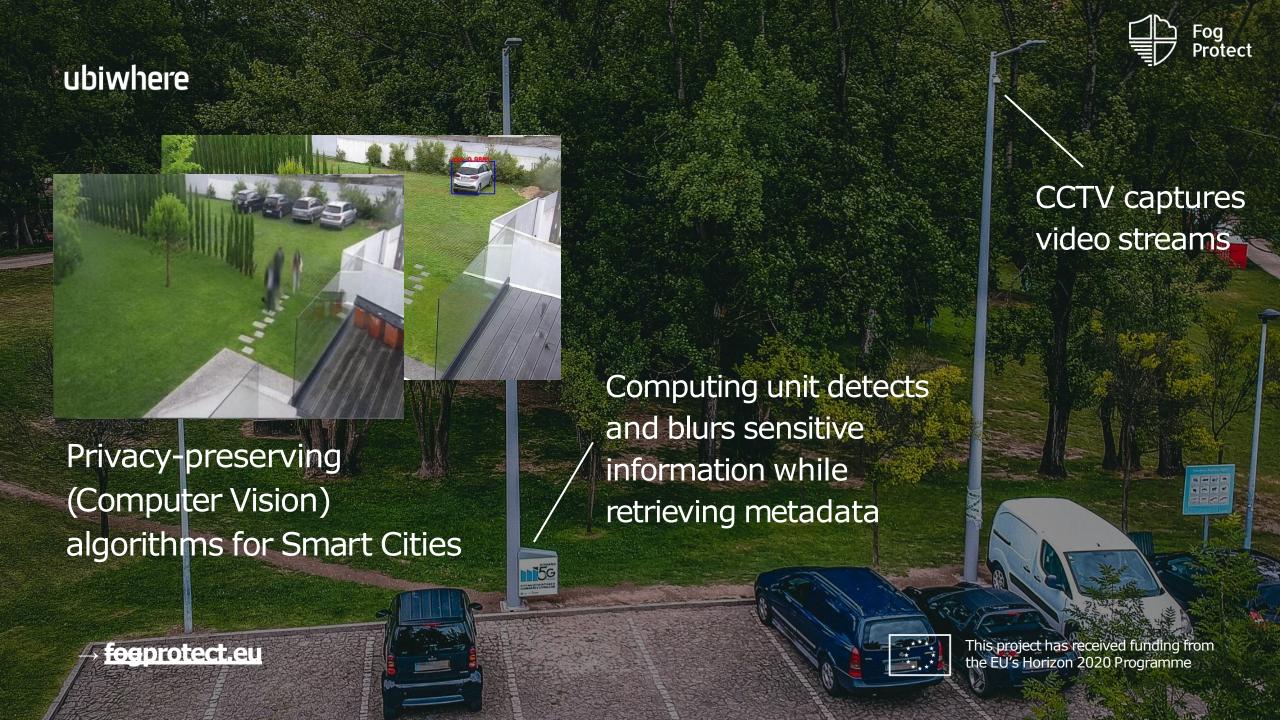


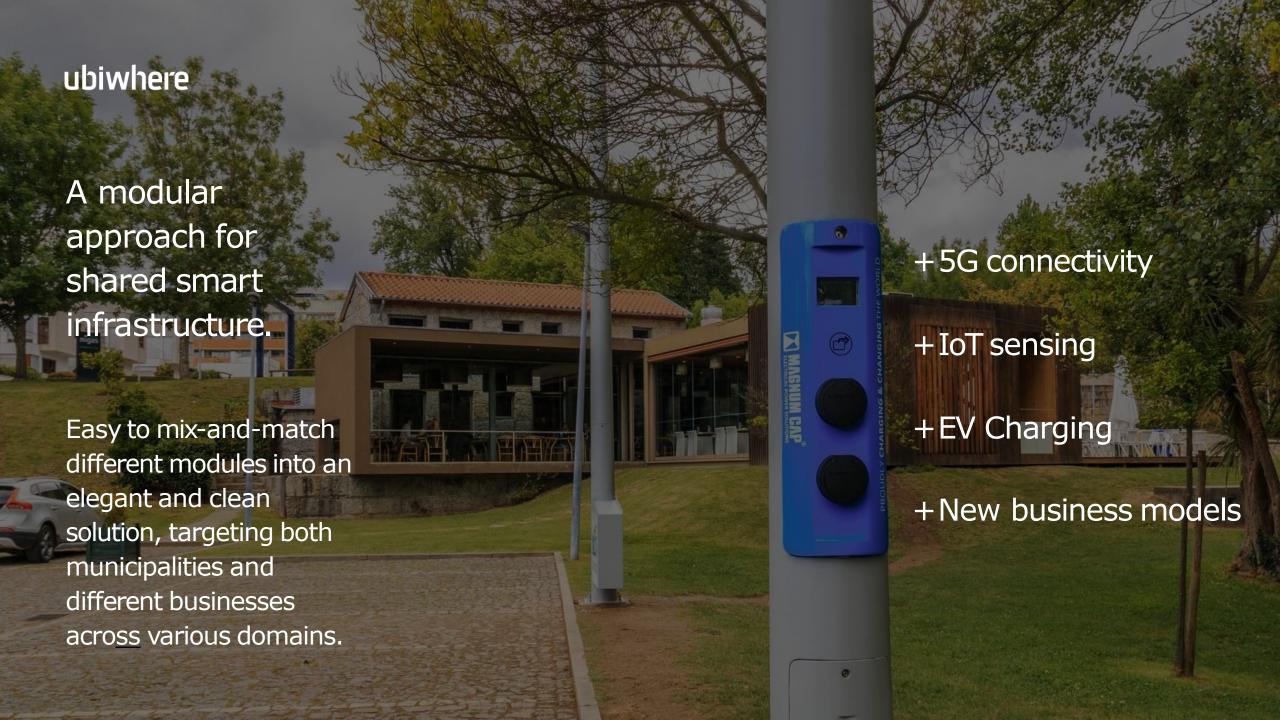


Smart Cities





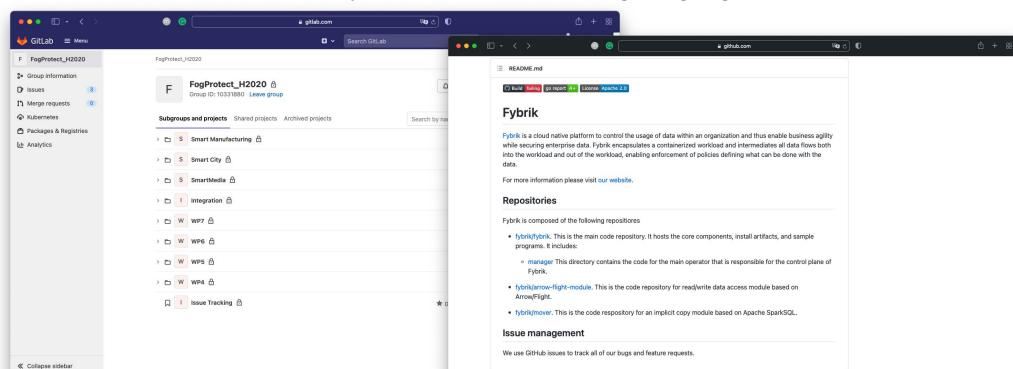




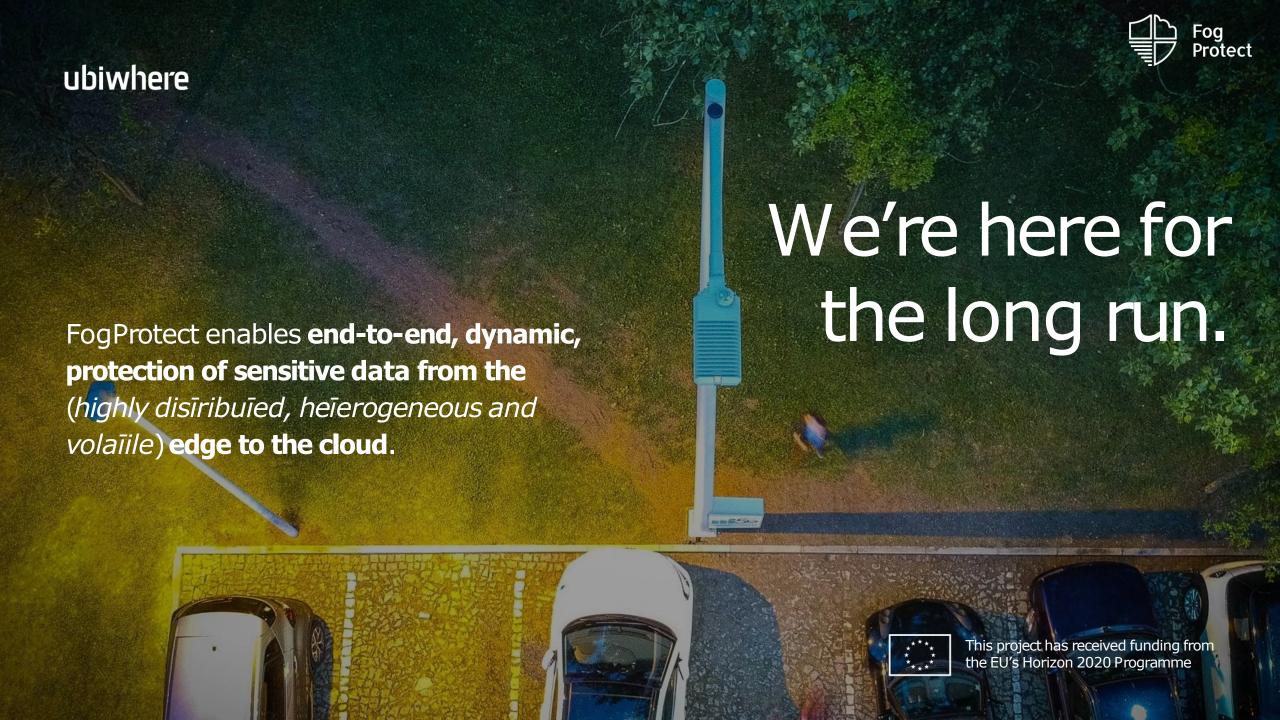
Creating Impact



- Contribute to the development of an **ecosystem that will respond to the future digitisation needs of industry and the public sector**
- Assist the development of **new doud-based services and infrastructures in Europe and foster an industrial capability in the doud computing sector**



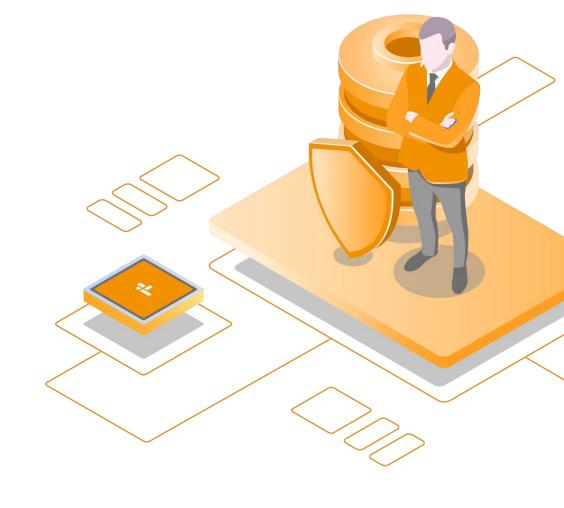
Open-source communities | Fybrik (IBM)





Thank you for your attention!

Please reach us at fogprotecteu



Find me on Linkedin or say hi at rvitorino@ubiwhere.com























Enabling Intelligent Package Management

Giorgos Drosos

Athens University of Economics and Business











Open Source Software (OSS)

Operate as a building block for creating new software

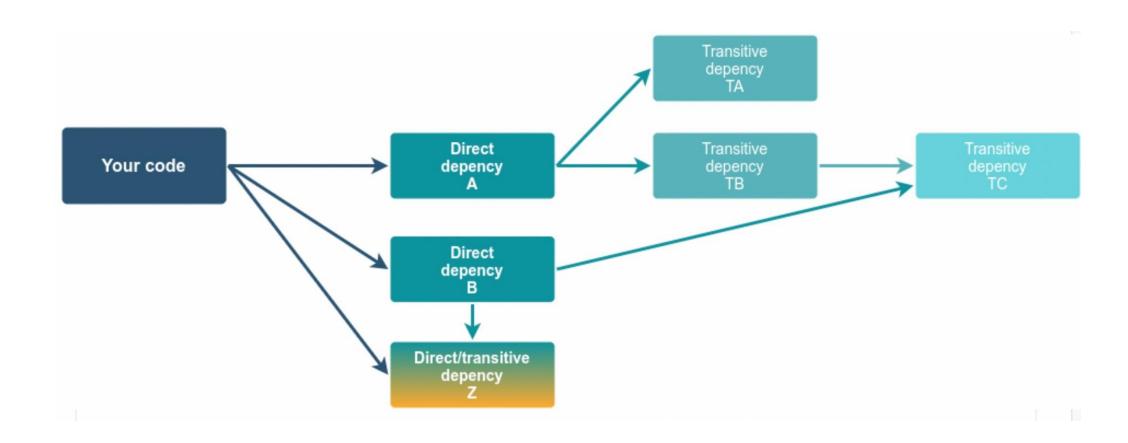


Hosted on centralized code repositories





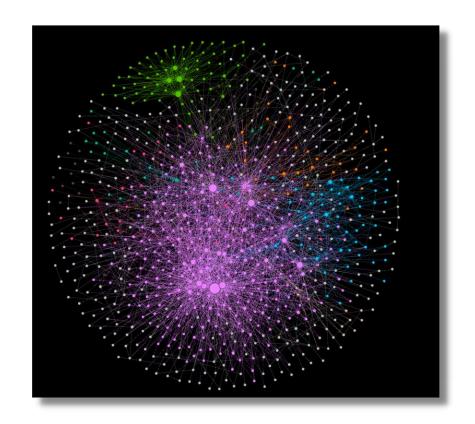
Direct vs Transitive Dependencies





Package-Based Dependency Networks

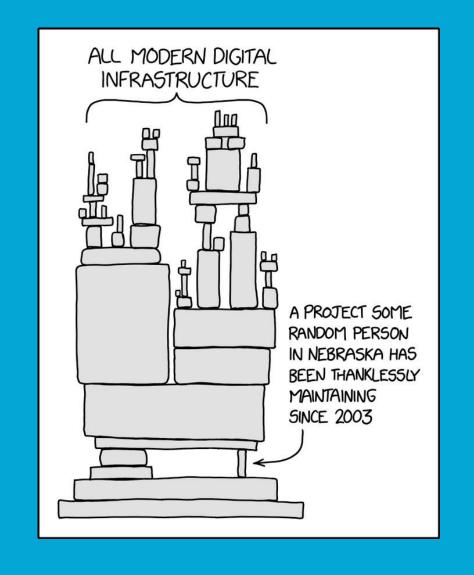
- Form huge & complex dependency networks
- Very complicated due to version constraints





Supply Chain Security Is Crucial

- **Leftpad:** Removing an NPM library of 11 LoC broke the ecosystem
- Equifax: Not updating a vulnerable package caused serious security breach for 143M users, 4B\$ damages
- event-stream: popular npm project is victim of hackers that add Bitcoin stealing code, undiscovered for 2 months





Main Challenges

Risk Estimation

"How likely is it that depending on a particular project will cause problems in the future?"

Compliance

Does my project comply with the licenses that are declared in all my transitive dependencies?"

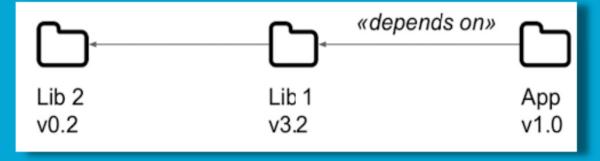
Change Impact

 Does an update to my code break other projects that dependent on my project?"

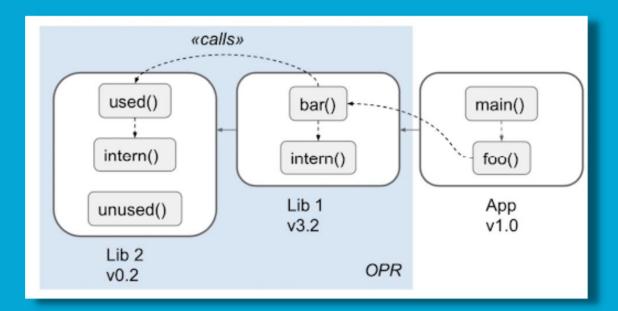




Current Sollution:
Package-Based
Dependency Networks



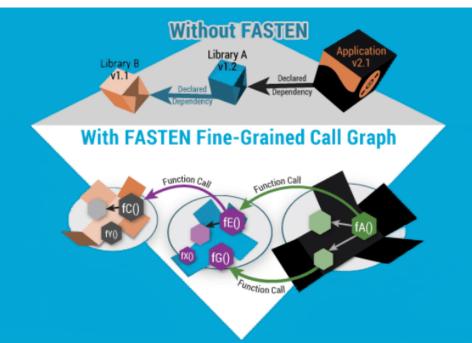
Proposal:
Call-Based
Dependency Networks





The FRSTEN Project

- Fine-Grained Analysis of Software Ecosystems as Networks
- Aims at solving the issues of package-based dependency networks by making package management robust and intelligent
- A centralized service to host the graphs and serve the analyses





Main Objectives of Fasten



Fine-grained ecosystem analysis for C, Java, Python



Ecosystem-wide change impact analysis

o "Does an update to my code break other projects that dependent on my project?"



Fine-grained compliance monitoring

O "Does my project comply with the licenses that are declared in all my transitive dependencies?"



More precise dependency risk profiling

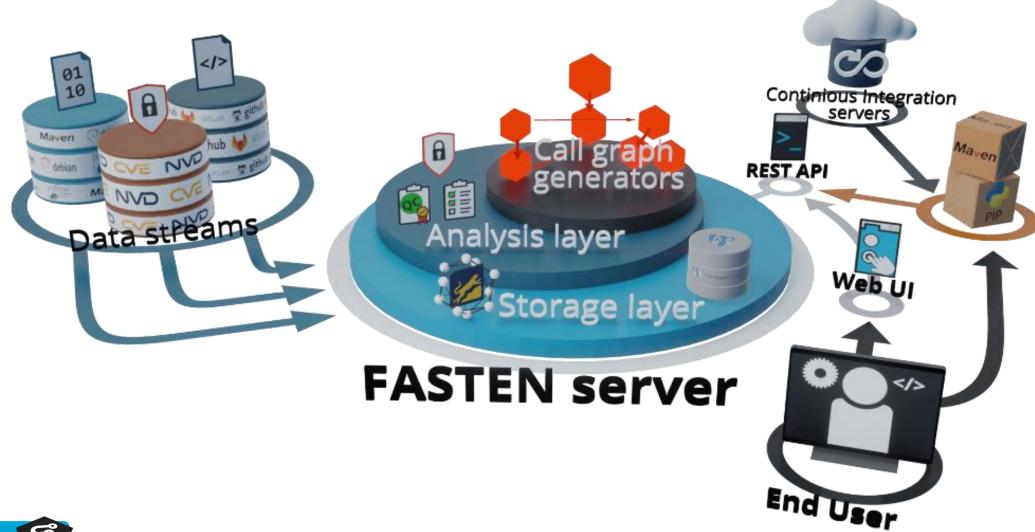
"How likely is it that depending on a particular project will cause problems in the future?



Integration into package managers



Overview of the FASTEN Architecture





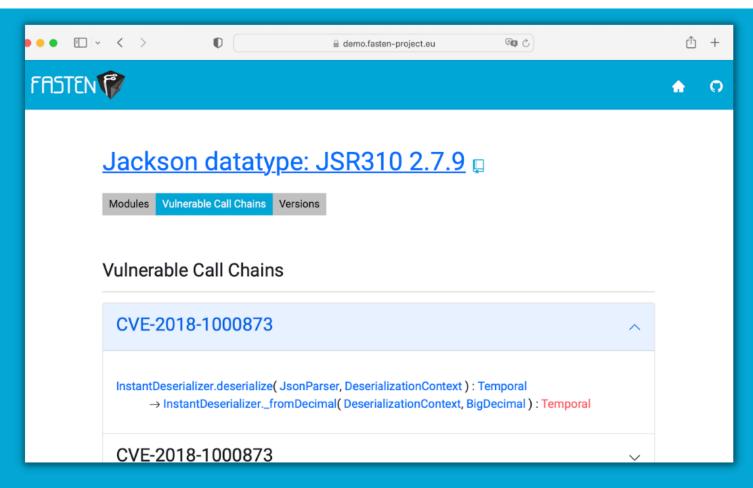
Example Use Case: Build Integration

```
<build>
   <plugins>
     <plugin>
       <groupId>eu.fasten
<artifactId>fasten-maven-plugin</artifactId>
       <version>1.0</version>
       <configuration>
       </configuration>
     </plugin>
   </plugins>
  </build>
</project>
```

```
[INFO] --- fasten-plugin:1.0:check (default) @ my-product ---
[ERROR] Errors found:
[ERROR] * the dependency some-groupid:some-gpl-dependency:42.0 license
(GPLv3) is
not compatible with the my-module license (LGPLv2.1)
[ERROR] * the dependency org.infinispan:infinispan-core:9.4.14.Final
contains a
known security vulnerability
          https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2019-10158
[ERROR]
fixed in
10.0.0
[ERROR] * the method call 'public boolean org.foo.Bar#isRed()' used from
the call
 'public com.plumb.Mario#isNotBlue()' located in dependency
com.plumb:mario:12.6
cannot be found in the dependencies tree
[INFO]
[INFO] BUILD FAILURE
[INFO]
[INFO] Total time: 22.971s
[INFO] Finished at: Tue Aug 11 12:07:12 EET 2021
[INFO] Final Memory: 6M/11M
[INFO]
```



Demo Website

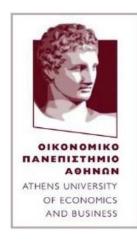


https://demo.fasten-project.eu/



FASTEN



















Thank you! Questions?



https://www.fasten-project.eu/



https://twitter.com/FastenProject



https://github.com/fasten-project

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CLOUD FOR DATA-DRIVEN POLICY MANAGEMENT

TOWARDS INTEROPERABLE DATA DRIVEN POLICYMAKING

POLICYCLOUD PROJECT

KONSTANTINOS OIKONOMOU

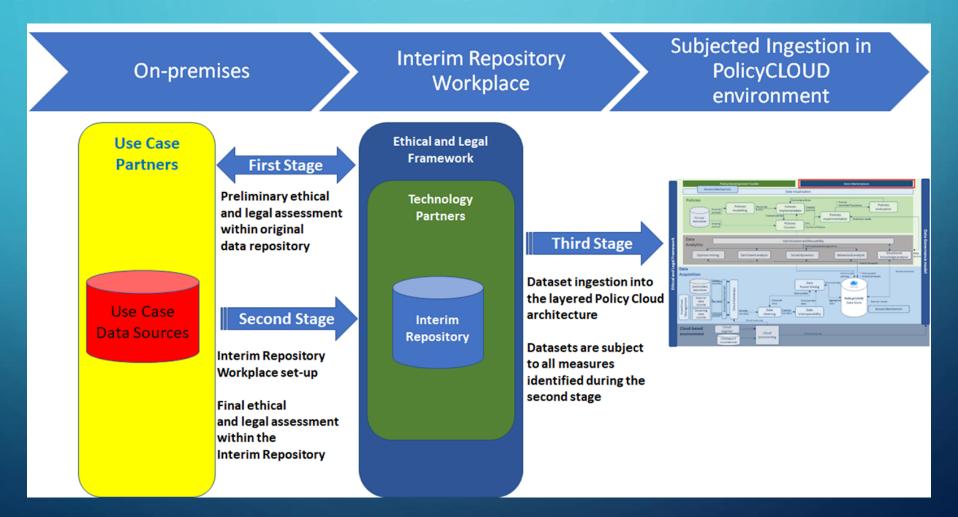
DATA DRIVEN POLICYMAKING LANDSCAPE

- "INSPIRE Data Specifications" → interoperability of spatial data sets and services
- "Health Level 7 (HL7)" \rightarrow electronic message format for health information exchange
- ullet Common European Research Information Format (CERIF) o representation of research information and research policies
- ISO/IEC 23751 \rightarrow standard for cloud computing and distributed platforms
- ullet Common Reporting Standard (CRS) o interoperable and automatic exchange of information from financial institutions
- Friend of a Friend (FOAF) & Social Interconnected Online Communities (SIOC) \rightarrow standard-based ontologies for describing social relationships and analyzing social media information

POLICYCLOUD NEEDS NOT MET

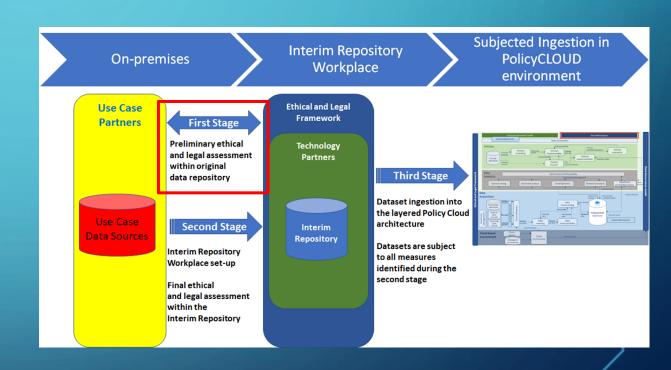
- Lack of semantic interoperability in the given domain
- Lack of semantic interoperability across datasets from different sectors
- Lack of process interoperability

3 DIMENSIONAL END-TO-END ANALYSIS USING A NOVEL INTERIM REPOSITORY WORKPLACE



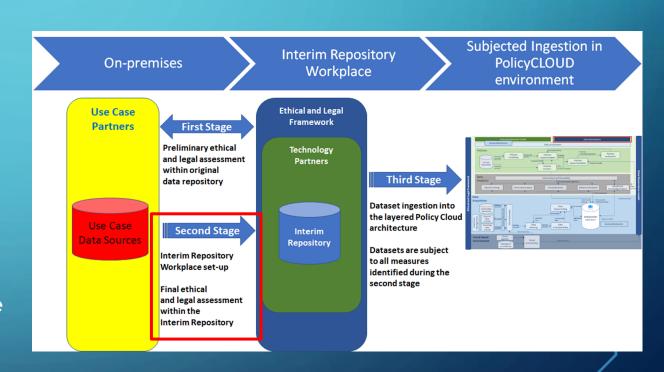
FIRST STAGE

- Preliminary assessment of the available data
- Data reside within their original data repositories
- Analysis from a legal and ethical perspective
- No data movement or processing yet
- Ensures only authorized legal and ethical personnel can access and assess the data



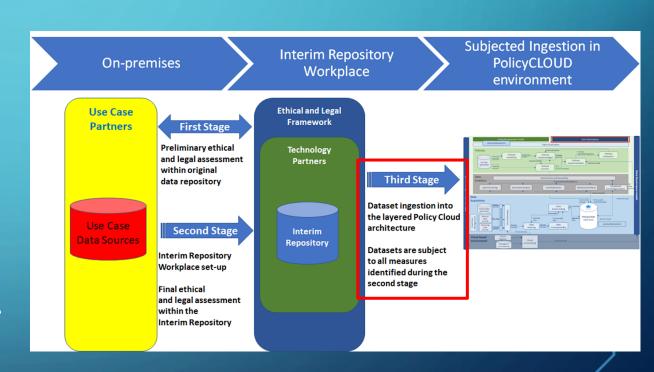
SECOND STAGE

- Occurs before the full ingestion of the data
- Interim Repository setup
- Final legal & ethical assessment
- Data/Information silos removal
- Data interoperability introductory stage
- Safe and authorized access to data



THIRD STAGE

- Occurs when dataset's legal & ethical confirmation occurs on second stage
- Dataset ingestion into the layered
 PolicyCLOUD architecture
- Data anonymization and aggregation
- Measures identified in second stage are applied to datasets before ingestion



LEGAL & ETHICAL CRITERIA

- Data and Intellectual Property Protection laws \rightarrow General Data Protection Regulation (EU) Regulation 2016/679
- ISO/IEC 27013:2015 → integrated implementation of an Information Security Management System (ISMS)
- CSA Cloud Controls Matrix and Code of Conduct for GDPR Compliance
- EU Cloud Code of Conduct → requirements for Cloud Service Providers

CONCLUSIONS

- Further effort needs to be made to standardize data interoperability in Data Driven
 Policy Making
- 3 dimensional approach proved efficient in the context of PolicyCLOUD
- Balance needs to be struck between:
 - Maximizing legal/ethical compliance \rightarrow creates over restrictive registration process
 - Maximizing registrability of data analytics tools \rightarrow failure to meet legal/ethical standards
- PolicyCLOUD solution \rightarrow requirement for users to document legal/ethical measures on platform registration \rightarrow assurance regarding legal/ethical soundness of analytics

INTERESTED FOR MORE?

- White Paper currently in development
- To be published on November 2022 via StandICT
- PolicyCLOUD project webpage (https://policycloud.eu/)





The EU Standardisation Booster



- Name: HSbooster.eu Standardisation Booster for H2020 and Horizon Europe Research Results
- Funding: Launched by the EU Commission as a part of the European standardisation strategy
- CSA (GA: 101058391)
- Duration: April 2022 March 2024
- Budget €2 million
- Backed: By External Advisory Group representing ESOs, SDOs and vertical sectors

Purpose

Give European R&I projects the opportunity to increase their impact, gain marked access and support the European green and digital agenda by using standards and contributing to standardisation

Objectives

- Build a European community around standardisation and EU Projects
- Serve EU projects through dedicated support services
- Support projects in contributing to the creation of new or revision of existing standards
- Impact on the uptake of new technologies resulting from standardisation

Partners:



- Project Coordinator
- · COMMpla Platform manager



Automated services management



 EAG management Open calls and EPE management



 Training academy management



 Proactive services management



 Premium services management



External Advisory Group

- Backed and supported by experts with complimentary expertise and roles
 - Vertical sectors
 - Technologies
 - Standardisation
 - Advisory roles
 - Market needs
 - Innovation











Economics





















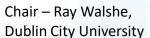


















Maitane Olabarria

Septemby General

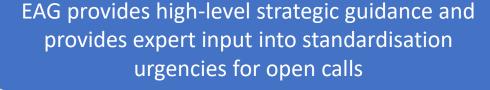


Peter for Technical Policy &

Standards



Pamela Hussey





HSbooster.eu Service Matrix



Community of 250+ Standardisation Experts

Paid to deliver Consultancy Services to projects

EU Projects

Ongoing & complete H2020/HE projects apply

Training Academy

Resources to improve expertise in standardisation

Consultancy Services

Delivered by 250+ Standardisation Experts recruited through open call



Mapping support

Mapping & Matching projects to TC/WGs



L1 Support

Helpdesk | Chatbot | Standardisation Readiness tool

Facilitating R&I innovation related stakeholders in EU projects towards EU standardisation and ensuring two-way flow of information that can contribute to identification of new areas for standardisation.







Services operate through a continuously Open Call

- R&I projects can apply online on a first-come first-served basis
- The R&I project is matched with an expert within their field and a consultancy service is tailored to their needs
- The service is free of charge for European R&I projects
- The experts are paid 800 Euros per counseling (app. 2 days of work)



OPEN CALL Topics



Sustainable Digitalisation

- Data quality & Artificial Intelligence
- Access to & usage of data
- Space
- Data and cybersecurity
- Quantum technology



Pandemics

- E-Health & personalized services
- Design & use of medical devices
- Al in Healthcare



EU Green Transition

- Clean energy
- Materials (raw and secondary)
- Green & sustainable production
- Environmental impact



Resilience

- Robust supply chains
- Climate resilience
- Hybrid civil/defence
- Data protection & cybersecurity



Smart City & Circular Economy

- Circular economy
- Transportation
- Infrastructure
- Green buildings







- Support from standardisation experts to EU projects:
 - Understand benefits of standardisation to valorise results
 - Map results to relevant standards/TWGs
 - Identify areas for new standards/revised standards
 - Develop a standardisation strategy
 - Plan and initiate standardisation activities
 - Pinpoint optimal standardisation workflows and timelines
 - Meet standardisation experts
 - Analyse standardisation potential and "readiness level"
 - Receive training to improve expertise at different levels

Support to projects provided by consortium and pool of Standardisation experts recruited from the standards community





OPEN CALL for Standardisation Experts 117 and growing!

Supporting Horizon Europe and H2020 projects address Standardisation priorities in Europe

Join our pool of experts









We are looking for:

- H2020 & Horizon Europe projects to apply for free counselling in the use of standards and participation in standardisation. Services start this Month!
 - Apply here
- Paid experts that can help with the consultation service of the above-mentioned projects. In order to become an expert, you need to have knowledge of:
 - Standardisation
 - A relevant subject area (see previous slides)
 - Join here





Thank you

Nicholas Ferguson – n.ferguson@commpla.com
Coordinator & COMMpla

www.hsbooster.eu | @HSboosterEU



SWForum.eu

European forum of the software research community

Leveraging Open Source technologies for better services in the European software ecosystem

iii 10 October 2022

① 14:30 - 16:00 CEST

