Innovating in the era of Trustworthy AI

Daniel Alonso
Responsible Promotion and Positioning ITI
Chair of BDVA i-Spaces
Coordinator of EUHubs4Data
Experimentation environments to allow small actors (SMEs, start-ups, ...) to have their data driven solutions quickly tested, piloted and exploited before going to the market.
The EUHubs4Data project aims to leverage the power of AI, data, and robotics through strategic partnerships and initiatives. Key milestones include:

- **2014**: EUHubs4Data project launch.
- **2016**: Strategic Research, Innovation and Policy Framework (SRIP) for AI, Data and Robotics PPP.
- **2020**: GAIA-X.
- **2021**: European federation of data-driven innovation hubs.
- **2022**: DEP instruments: data spaces, EDIHs, TEFs, etc.
- **2023**: European federation of data-driven innovation hubs.

- Ethics monitoring group created
- External Ethics Advisor selected and hired
- Defined process to assess applications and selected experiments
- Monitoring of experiments
- Assessment of critical ethical issues arising during the project
EUH4D experiments

- Data management of sensitive personal data
- Processing of potentially sensitive personal data
- Specification of the Datasets used
- Missing data set description
- Unclear GDPR applicability
- Contractual basis for processing of public personal data
- Sensitivity of potentially used data sets
- Ineffective/unclear anonymization
- Consensual processing of personal data

- Ethical and Legal expertise in the medical domain
- Dual Use or potential danger of abuse of the results
- Potential use of AI in medical applications
- Potential ethical concerns related to the environment
- Project timeline and potential checkpoints
- Discrimination based on sociodemographic data
- Responsibility and safety
- Application of the GDPR to historic data sets
- Opacity in automated decision making

Ethics a major concern in data driven innovation ... appropriate measures to be taken (with the help of the DIHs)

... probably all mostly uncritical and/or handled, but we wouldn’t have known without the experiments

The biggest risk we see is unawareness and lack of experience of most SMEs
High-risk AI systems

- Biometric identification system (without agreement**)
- Critical infrastructure
  - road traffic, water, gas, heating and electricity
  - digital infrastructure**
  - emission/polution control**
- Education and vocational training
  - Admission
  - Assessment & Steering**
- Employment
  - Recruitment&Selection
  - Performance evaluation
- Access to public & private services
  - Benefits
  - Creditworthyness
  - Emergency Response
  - Insurance Premiums/Claims
- Law enforcement
  - Offender / victim /crime prediction & profiling
  - „lie detectors“
  - detect deep fakes
  - Reliability of evidence estimation
  - Big data forensics**
- Imigration
  - Profiling
  - Document forensics
  - Eligability checks
- Judicial authorities
  - Interpreting the law

Guess how many EUH4D experiments in the first round would fall into one of these categories ...
High-risk AI systems

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• High-risk AI systems developed on the basis of training, validation and testing data sets that meet the quality criteria

• Training, validation and testing data sets shall be relevant, representative, free of errors and complete

• Appropriate statistical properties, including, where applicable, as regards the persons or groups of persons on which the high-risk AI system is intended to be used

i-Spaces might be the only way to achieve this ...
• Advanced Machine Learning Model Validation and Testing
• Design and development of AI models, their training and validation
• MLOps Infrastructure

→ Continuous testing at the core of risk management
→ Appropriateness of measures & best practices...

• Assessment on data governance
• Assessment on ethical aspects of AI
• AI Consulting
• AI Training & Consulting for data-driven strategy
• Consultancy for Architecture Specification

→ EUH4D catalogue
We really want to see ethics as an innovation opportunity!

• Outcome of the project: ethics handbook for practitioners

• Ethics as a service -> ethics innovation

• Service catalogue including more specific services

• EUH4D / i-Spaces as a unique testing environment where to assess AI risk, check data governance, ... -> regulatory sandboxes
Learning from the collaboration with other initiatives, addressing needs of regional companies, adapting EUH4D offer to regional specificities. Already in place:

- Training services in ethical and regulatory aspects around health applications
- Ethics assessment
- Support to the development of unbiassed AI applications
- Customizable technological infrastructure for the development of AI experiments
Conclusions

• Early to know if AI regulation will boost innovation … SMEs are barely aware of this …

• But definitively includes additional steps in the development, testing and experimentation phases

• Regulatory sandboxes concept fits perfectly with i-Spaces

• i-Spaces are not only useful, in some cases the most appropriate

• EUH4D, i-Spaces group and individual i-Spaces are already working on that …
Thank you!

Find more:
www.iti.es
https://thedatacyclehub.com/en/
https://euhubs4data.eu/
dalonso@iti.es

iotweek.org