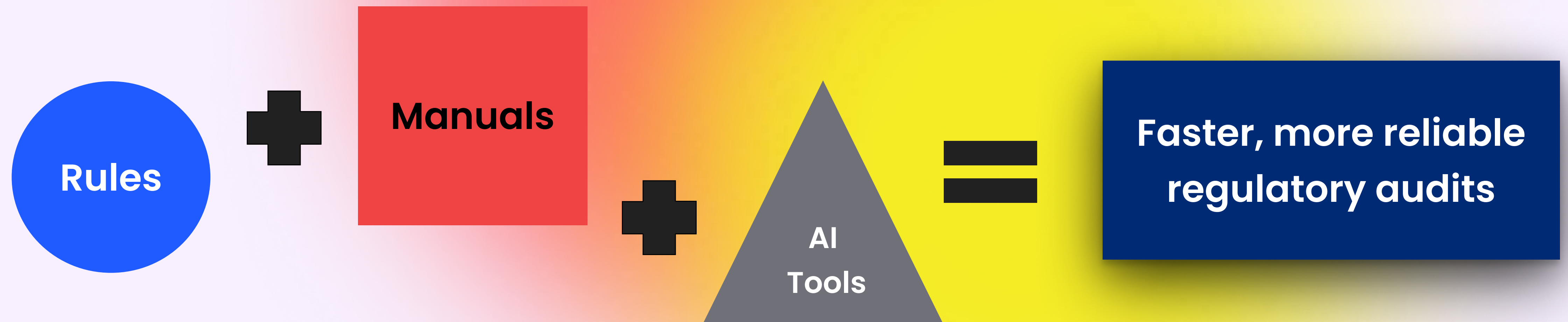


Regulatory Maze AI

AI-powered compliance insights for aviation maintenance



Challenge: AI Audit Aid (AAA) by **TRAFICOM**

Liikenne- ja viestintävirasto

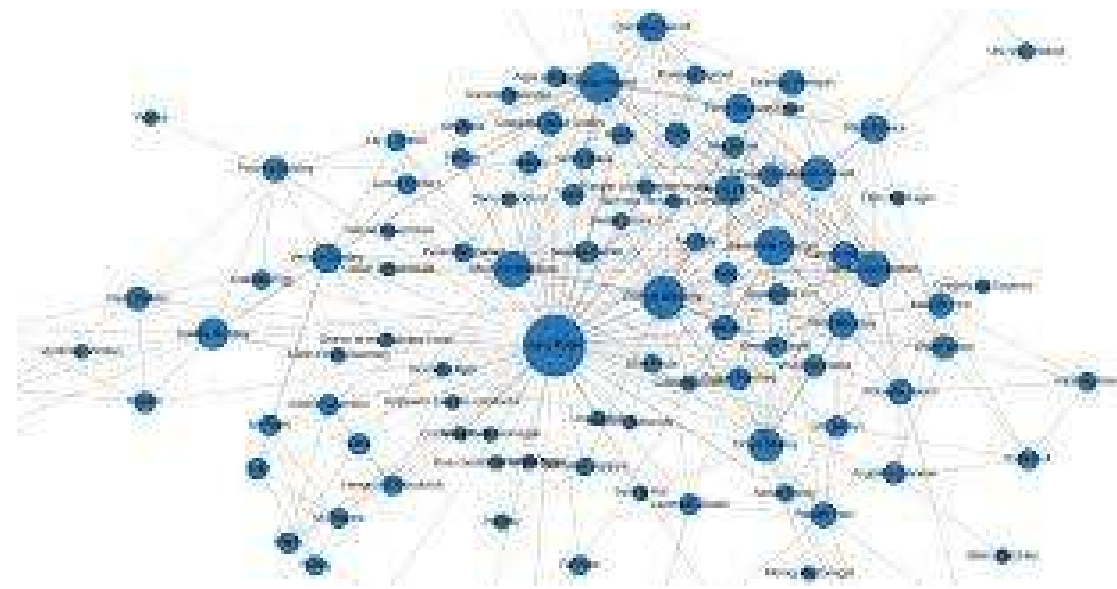
Use AI to quickly audit maintenance handbooks for EU1321/2014 Part-145 compliance.

The Problem

- Auditors process huge, dense manuals → cognitive overload
- Manual cross-checking is slow and error-prone
- Regulations are fragmented and complex

??? Hackathon driver ??? **Can we show AI can handle a realistic regulatory manual and output meaningful findings within minutes?**

SOLUTION



- AI + Knowledge Graph to process a handbook
- Detect gaps, deviations, and non-conformities
- Generate explainable findings for auditors

HOW IT WORKS

1
Build Regulation
Oriented Graph -
ROG

2
Upload handbook

3
Embeddings

4
Clause matching &
reasoning

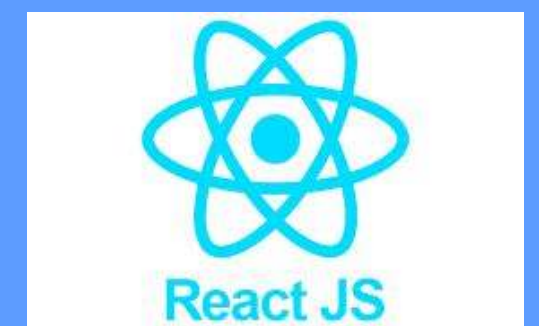
MVP scope:

- Handle 114 pages of Part-145 requirements
- Output findings in <10 minutes

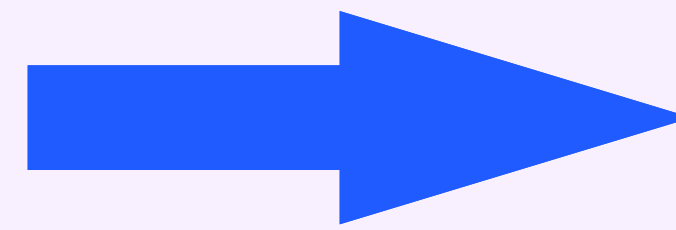
Results / MVP Demo

- 14 pages → 30 findings in 10 minutes
- Findings are actionable and explained
- Knowledge graph allows tracing reasoning for each flag
- UI is interactive and easy to explore

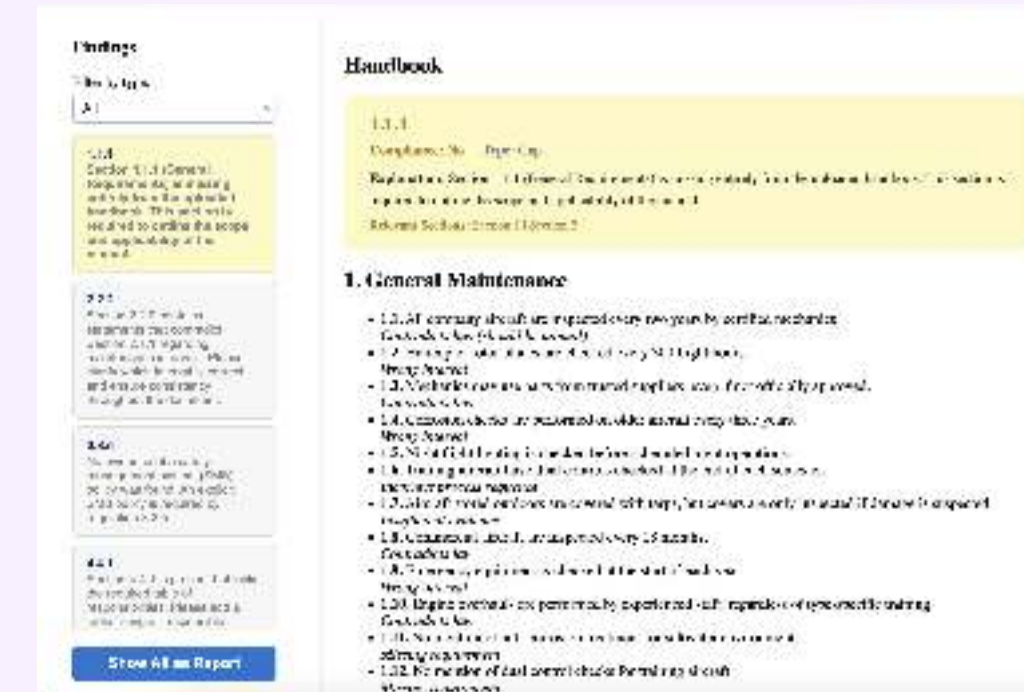
We used



User flow



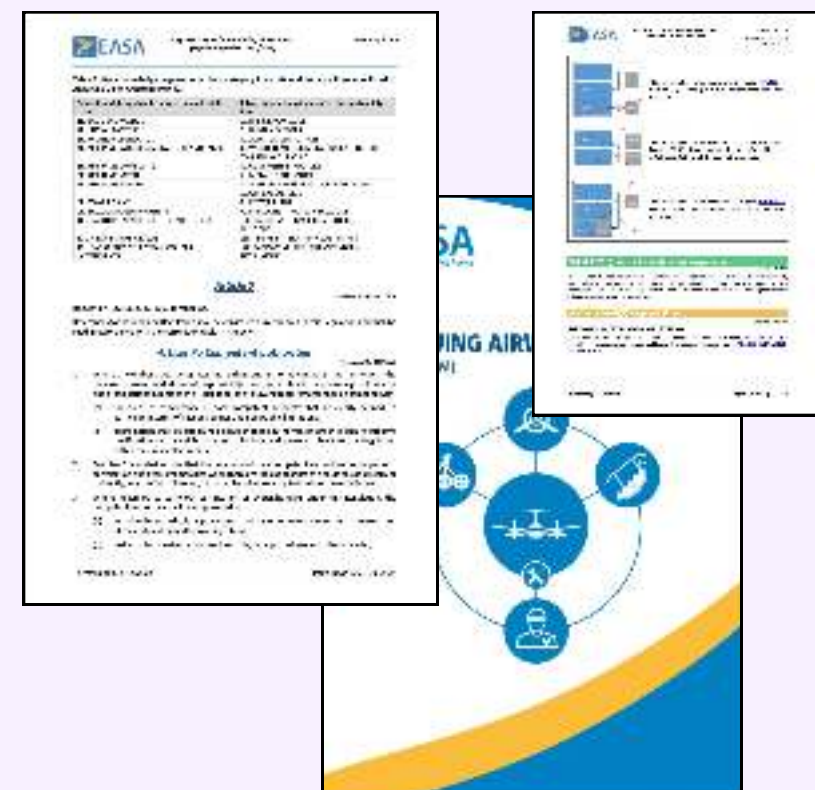
<10 minutes



Upload a handbook

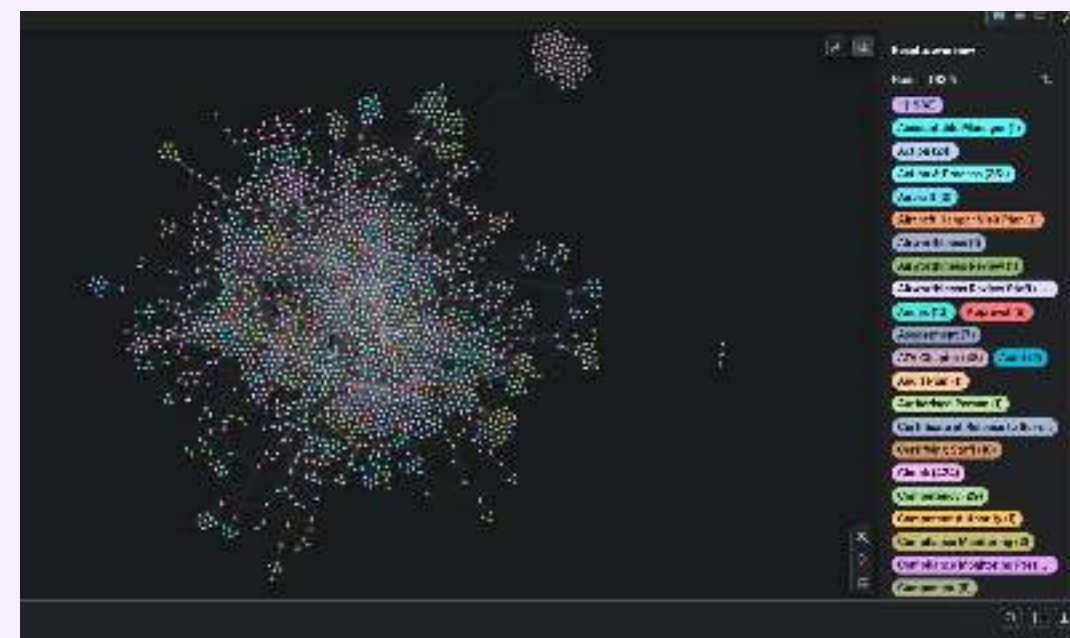
Work with findings

Inside the AI Pipeline

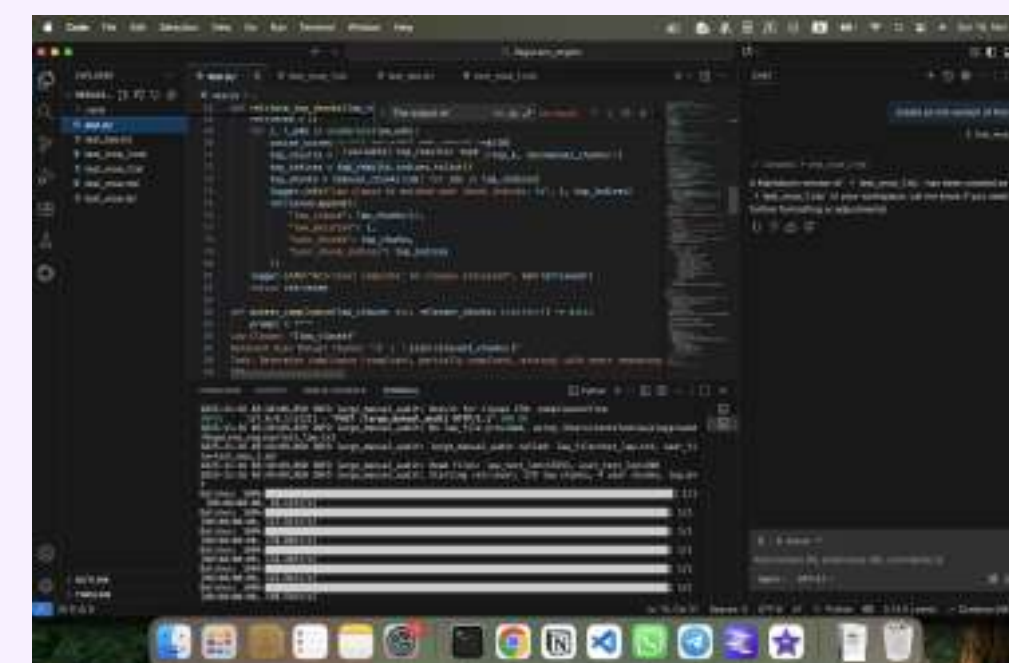


ANNEX II (PART-145)

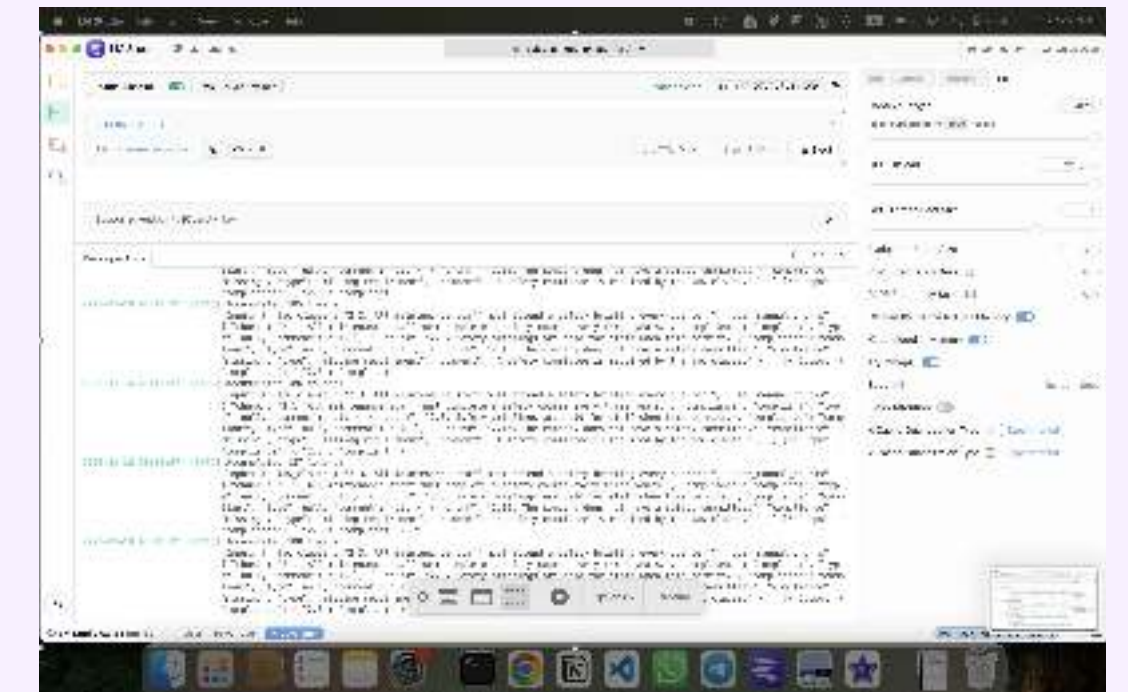
Rules to check



Regulation Oriented Graph
LLM Graph Builder by Neo4J



Match related rules using
embeddings + cosine
similarity



Manuals and
Rules comparison

LM Studio + llama-2-7b-chat

Key Takeaways

- AI can tackle real regulatory complexity !!!
- Regulatory Oriented Knowledge Graph + AI = actionable compliance insights

Next Steps

- Enhance knowledge graph reasoning
- Enhance AI pipeline for fast, cloud-ready production use
- Expand to other regulated industries: maritime, financial sector

Team



Billal MOKHTARI

AI & DATA SCIENCE

Final year AI & DS student at ESTIN| ex Former Manager of the Technical Department at the School of AI Béjaïa

mokhtaribillal1@gmail.com
+33 6 68 91 18 97



Yuri Zubarovskiy

AI HACKER & HUSTLER

Full-stack & AI developer with financial regulatory expertise

zentelechia@gmail.com
+358 40 621 45 16



Lilia MAHDID

AI & ML

AI & DS Eng. | Data Scientist @ENGIE | ISIMA MSc Graduate - Scholarship Awardee | Samsung Innovation Campus Graduate

liliamahdid01@gmail.com
+33 7 53 48 47 97