Report on the Workshop: New Approaches Towards Compliance for AI/Data Operations

Oslo, January 15, 2025

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Table of Contents

Introduction

The workshop, *New Approaches Towards Compliance for AI/Data Operations*, brought together leading experts from academia, industry, and policymaking to address the growing challenges of compliance in the AI/Data-driven economy. As emerging legislative efforts such as the AI Act and Data Act reshape the regulatory landscape, the need for novel, research-driven solutions to embed compliance into AI and Data Operations has become paramount.

Supported by European research projects like DataPACT, enRichMyData, UPCAST, and GraphMassivizer, in collaboration with the Big Data Value Association (BDVA), the workshop explored the regulatory landscape, discussed challenges across industry verticals, and examined innovative approaches to Compliance-by-Design.

Session 1: The Regulatory Landscape

The first session focused on the complexities of emerging European regulations and their implications for businesses, researchers, and policymakers.

Key Presentations

Kimmo Rossi (European Commission): Compliance Technologies and Policy Kimmo Rossi, representing the European Commission (DG CNECT), delivered the opening keynote outlining Europe's data strategy, focusing on compliance frameworks, evolving legislation, and technological advancements for managing data and AI systems.
Key Topics Covered:
European Data Strategy:

- **Common European Data Spaces**: Envisioned to streamline data sharing across borders and sectors while upholding privacy and security.
- **Legislative Framework**:
    - **Open Data Directive**: Operational since February 2023, focusing on high-value datasets (HVDs) with applicability starting June 2024.
    - **Data Governance Act**: Enforced from September 2023 to enable trust-based data exchanges.
    - **Data Act**: Focuses on equitable access to data across sectors; applicable from September 2025.
    - **AI Act**: Addresses risk-based compliance for AI systems; application phased from August 2024.

Funding Initiatives:

- Programs like Horizon 2020, Horizon Europe, and Digital Europe have collectively allocated over €200 million to 34 projects targeting:
    - Privacy-preserving technologies (e.g., encryption, anonymization).
    - Data trading platforms and models.
    - AI-driven compliance solutions.

Compliance in Broader Context:

- Extends beyond data and AI legislation to sector-specific compliance (e.g., agriculture, finance, climate).
- Advocates reducing bureaucratic overhead via automated reporting systems.
- Proposes leveraging synthetic data where real data usage is impractical.

Future Directions:

- **Adaptive Systems**: Development of methods that adjust dynamically to shifting legislative landscapes (eLegislation).
- **AI Integration**: Utilization of AI for compliance and monitoring, including measures to address dataset biases.
- **Green and Responsible Operations**: Promoting sustainability alongside privacy and compliance.

Key Message: The keynote emphasized the transformative potential of compliance technology frameworks to reduce administrative burdens, support cross-border data

sharing, and address ethical concerns, providing a foundation for a robust and secure European Data Union.

Marko Grobelnik (Jozef Stefan Institute): OECD AI Policy Framework Marko Grobelnik discussed the **OECD AI Policy Framework**, emphasizing its focus on **human-centered values, transparency, and inclusiveness**. He detailed the importance of adopting a **lifecycle approach** for AI systems, addressing key areas such as perception, decision-making, and action. A core idea introduced was the concept of a **social sensor**, a real-time AI incident monitoring tool designed to provide feedback to policymakers about risks or breaches. This tool represents a shift toward a **bottom-up approach** in addressing compliance, complementing the top-down directives of frameworks like the AI Act. Grobelnik also underscored the urgency of preparing for a future where AI systems become increasingly decentralized and harder to regulate, making such tools essential.

Christian Bendiksen (Bull Law Firm): The Regulatory Landscape for Businesses Christian Bendiksen analyzed the **practical implications of EU compliance frameworks** on businesses. He highlighted that regulations like the AI Act, GDPR, and the Product Liability Directive often overlap, creating significant challenges for companies, particularly small and medium enterprises (SMEs). While some organizations aim to meet the "bare minimum" compliance requirements, Bendiksen noted that many exceed these obligations due to ethical commitments. He stressed the need for **human-in-the-loop compliance** systems, arguing that while automation can reduce administrative burdens, ethical judgment and nuanced decision-making remain irreplaceable. He also warned of the risks associated with regulatory overreach, advocating for pragmatic solutions that maintain competitiveness while safeguarding societal values.

Ana Garcia Robles (BDVA): Data-Driven Compliance and Sustainability Ana Garcia Robles emphasized the transformative role of **data spaces** in creating compliant and sustainable ecosystems for AI and data operations. She highlighted how data spaces enable secure and trusted data sharing across sectors, fostering collaboration and innovation. Robles also drew attention to the **need for practical, marketable solutions** arising from research projects, ensuring that academic and experimental efforts translate into tools that can be adopted by businesses. She urged stakeholders to prioritize simplicity in compliance tools, keeping the end-user's perspective central. By aligning sustainability with privacy and compliance goals, Robles underscored the importance of tools that not only meet regulatory requirements but also enhance societal benefits.

Silvia Castellvi (IDSA): The Dataspace Protocol Silvia Castellvi presented the **Dataspace Protocol (DSP)** as an essential enabler of **interoperable, secure, and sovereign data Sharing and exchange**. She detailed the multi-layered approach of DSP, addressing **technical, semantic, organizational, and legal interoperability**. Castellvi explained how DSP facilitates **policy enforcement** through mechanisms like the Open Digital Rights Language (ODRL), ensuring that data usage adheres to agreed-upon terms. By promoting standardized data exchange processes, DSP enhances collaboration across different sectors and jurisdictions. Castellvi also emphasized the scalability of the protocol, which supports domain-specific extensions while maintaining universal interoperability. Her presentation highlighted DSP's role as a cornerstone in the broader vision of European data spaces.

Natalie Bertels (KU Leuven): Regulatory Technology for Compliance Natalie Bertels highlighted the growing importance of **RegTech (Regulatory Technology)** in managing the complexities of compliance. She proposed a structured approach to classify compliance systems, presenting a table that outlines different categories based on functionality and scope. This classification, she suggested, could be a **community-driven initiative**, with ecosystems like the BDVA playing a central role. Bertels emphasized that automated systems should incorporate mechanisms for **semantic interoperability**, ensuring that legal rules are machine-readable and adaptable. She also underscored the importance of balancing automation with human oversight to address ethical ambiguities. Bertels concluded by advocating for **collaborative, multidisciplinary efforts** to align technical, legal, and ethical perspectives in compliance assessment solutions.

George Konstantinidis (Southampton University): Technological Challenges of the DGA George Konstantinidis explored the challenges and opportunities posed by the **Data Governance Act (DGA)**. He emphasized the role of **knowledge graphs** and **secure processing environments** in ensuring compliance while fostering trust in data sharing ecosystems. Konstantinidis described how knowledge graphs enable **semantic alignment**, helping organizations interpret and use shared data effectively. He also highlighted the potential of **machine-readable contracts** in automating data-sharing agreements, reducing administrative burdens, and enhancing transparency. Konstantinidis concluded by advocating for investments in scalable technologies that align with the DGA's objectives, ensuring compliance while supporting innovation.

Panel Discussion: Challenges and Opportunities

Participants: Cristina Mayer (European Commission), Marko Grobelnik, Ana Garcia Robles, Christian Bendiksen, Natalie Bertels, George Konstantinidis, Dumitru Roman

Moderated by Till Christopher Lech (SINTEF), the panel explored:

- The need for clear, coherent legal frameworks to address regulatory complexity.
- The importance of trust and transparency in fostering data sharing.
- The balance between automation and human oversight to ensure ethical compliance.
- Small, actionable steps to enable practical and scalable compliance solutions.

Recommendations from Session 1

1. **Simplify Compliance Frameworks**: Develop unified regulations that align across jurisdictions.
2. **Invest in Adaptive Tools**: Support AI-driven solutions for real-time compliance monitoring.
3. **Focus on Trust**: Build trust through secure, interoperable, and transparent data-sharing mechanisms.
4. **Embed Compliance by Design**: Integrate compliance into product development workflows.

5. **Foster Collaboration**: Encourage cross-disciplinary efforts to align legal, technical, and ethical standards.
6. **Deliver Marketable Solutions**: Ensure research projects yield practical tools that meet real-world needs.

Session 2: Use Cases and Technologies

The second session delved into practical applications and technological advancements in Compliance-by-Design.

Key Presentations

Dumitru Roman (SINTEF): Introduction to the DataPACT Project Roman introduced **DataPACT**, a European initiative aimed at creating compliance-aware data and AI pipelines. Key tools like **PipelineR**, **PolicyR**, and **GreenR** embed compliance across the pipeline lifecycle, ensuring privacy, accountability, and energy efficiency.
Audun Vennesland (Trondheim Municipality): Data-Driven City Compliance Vennesland highlighted Trondheim's efforts to streamline public data sharing while addressing challenges such as fragmented data management and inefficient compliance routines. Recommendations included automating compliance assessment and developing secure platforms for sandbox testing.

Desislava Petrova-Antonova (GATE Institute): Unlocking Data Spaces Petrova-Antonova emphasized the role of urban data spaces in fostering compliant and sustainable data sharing for supporting decision-making for the development of sustainable cities and communities. She introduced tools like **AssessR** and **GreenR** to be delivered by the DataPACT project, which evaluate legal and environmental compliance in data and AI operations within the data spaces.

Alexandre Ulisses (EVS Portugal): Compliance in Media Impact Assessment Ulisses presented **MUSES**, a tool leveraging brain-computer interface (BCI) technology for emotion recognition. He emphasized ethical data handling, GDPR compliance, and the integration of transparency and fairness in high-risk AI systems.

Anil Turkmayali (IDSA): The Dataspace Protocol Turkmayali discussed the **Dataspace Protocol** as a universal framework for data sharing. By addressing technical and semantic interoperability, DSP ensures secure, scalable, and sovereign data exchanges across diverse domains.

Recommendations from Session 2

1. **Leverage Data Spaces**: Use interoperable frameworks like DSP to enhance data sharing and compliance.
2. **Automate Compliance**: Develop tools to streamline data protection, anonymization, and policy enforcement.

3. **Integrate Ethical Standards**: Ensure fairness, transparency, and accountability in high-risk AI systems.
4. **Focus on Sustainability**: Track and reduce the environmental footprint of data operations.

Overall Conclusions and Recommendations

The workshop underscored the urgent need for innovative approaches to compliance in AI/Data Operations. Key takeaways include:

1. **Prioritize Simplification**:
    - Simplify regulatory frameworks to reduce complexity and foster compliance.
    - Develop practical tools that are accessible to both large enterprises and SMEs.
2. **Embrace Adaptive Technologies**:
    - Invest in AI-driven tools that monitor compliance in real-time.
    - Leverage RegTech solutions to automate and streamline compliance processes.
3. **Build Trust Through Transparency**:
    - Enhance trust in data sharing by ensuring secure, transparent, and interoperable systems.
    - Encourage the adoption of data sharing frameworks like the Dataspace Protocol.
4. **Embed Compliance into Design**:
    - Integrate compliance by design into data pipelines and AI systems from the outset.
    - Focus on multidisciplinary collaboration to align legal, technical, and ethical considerations.
5. **Foster Sustainability**:
    - Track and reduce the carbon footprint of data operations.
    - Align compliance efforts with broader environmental and ethical goals.
6. **Deliver Marketable Solutions**:
    - Ensure research initiatives prioritize tools that are practical, scalable, and aligned with industry needs.
7. **Leverage Ecosystems for Collaboration**:
    - Utilize platforms like BDVA to support and foster community-driven efforts for compliance challenges.

By implementing these recommendations, stakeholders can navigate the complexities of the regulatory landscape while fostering innovation, trust, and sustainability in AI/Data Operations.