Enhancing Automated Decision-Making in Administrative Law Through Digital Twins of Legislation: A Grounded Theory Approach

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Appendix

A. Coding Tree from Expert Interviews (MAXQDA Analysis))

1. **Core Category 1: Only partial transformation — not all laws are automatable**

   (a) Deterministic algorithms vs. machine learning algorithms
   (b) Feasibility by domain and type of law
   (c) Must not be "Black Box Effect"
   (d) Barriers, Challenges, and Risks in ADM
   (e) Evaluation of Evidence
   (f) Margin of Discretion
   (g) Enablers and Strategies for ADM

2. **Core Category 2: Semantic Standardization and Ontological Alignment**

   (a) Level of Definition within Law
   (b) Semantic Definitions
   (c) Semantic Definitions within EU context
   (d) Standardization of vocabulary
   (e) Legal Ontologists

3. **Core Category 3: Transformation of Existing Legislation into High-Quality ADM-Supporting Structures**

   (a) Process of Transformation of Existing Legislation
   (b) Qualities and Characteristics of ADM-supporting Legislative Frameworks

      i. Interoperability
      ii. Computable Law
      iii. Explainability
      iv. From Text to Machine-Readable Law
      v. Open Source

     vi. Reliability
    vii. Traceability
  viii. Transparency of Algorithm
     ix. Trustworthiness
      x. Usability

4. **Core Category 4: Adapting Legislative Drafting Processes and Governance for ADM**

    (a) Adapting Legislative Drafting Processes
    (b) Algorithm-first Prototyping
    (c) Law Making is Conservative
    (d) Thoroughness of Lawmakers under the Rule of Law
    (e) Change Management & Governance

        i. Adopt Law
       ii. Change Management for Process to ADM
      iii. Collaboration for ADM
      iv. Lobby for ADM
       v. Feedback Loops for ADM
      vi. Lack of Political Will for ADM

    (f) Shared Responsibility for Drafting ADM-Capable Legislation

        i. Role of the Judiciary within ADM
       ii. Legislative vs. Executive Responsibilities
      iii. National Legislative Processes (Austria, EU)
      iv. Who Should Drive & Regulate ADM?