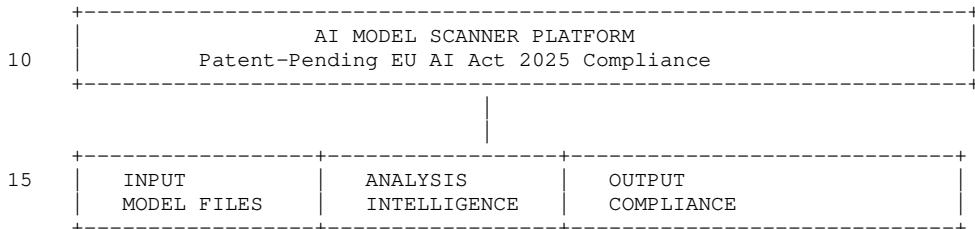
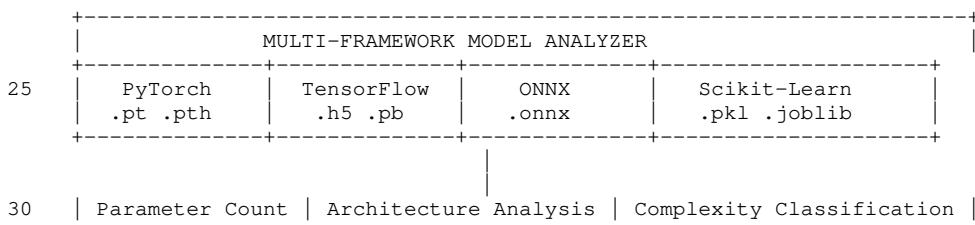


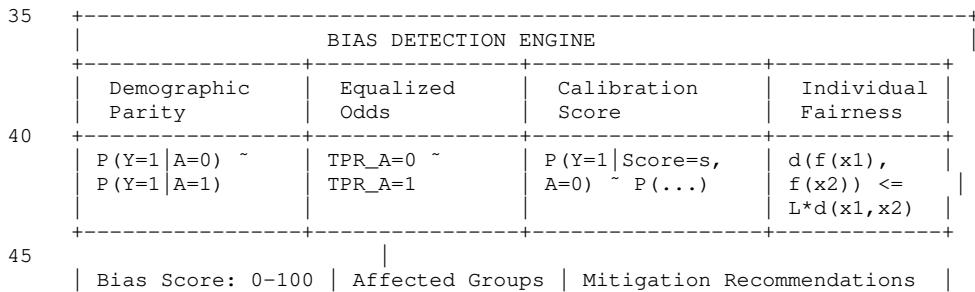
5 FIGUUR 1: SYSTEEM ARCHITECTUUR OVERZICHT



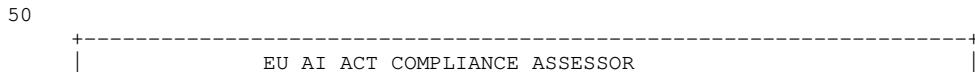
20 FIGUUR 2: MULTI-FRAMEWORK ANALYZER



FIGUUR 3: BIAS DETECTION ENGINE



FIGUUR 4: EU AI ACT COMPLIANCE ASSESSOR



ARTICLE 5 Prohibited Practices	ARTICLES 19-24 High-Risk Systems	ARTICLES 51-55 General Purpose AI (GPAI)
- Social Score - Manipulation - Subliminal - Biometric ID	- QMS Required - Tech Docs - Record Keeping - CE Marking	- Foundation Model - >1B Parameters - Compute Limits - Adversarial Test
EUR 35M or 7% Global Turnover	EUR 15M or 3% Global Turnover	EUR 15M or 3% Global Turnover

FIGUUR 5: NEDERLANDS SPECIALISATIE

NETHERLANDS SPECIALIZATION		
BSN Detection	UAVG Compliance	Penalty Engine
- 9-digit BSN - Checksum Valid - Privacy Risk - GDPR Art.9	- AP Authority - Data Residency - Local Rules - NL Specific	- EUR 35M Max - 7% Turnover - Risk Scaling - Regional Multi

```

80 +-----+-----+
FIGUUR 6: MATHEMATISCHE FORMULES (GECORRIGEERD)

85 BIAS DETECTION ALGORITHMS:

  Formule 1 - Demographic Parity:
     $P(Y=1|A=0) \sim P(Y=1|A=1)$ 

90 Formule 2 - Equalized Odds:
     $TPR_{A=0} \sim TPR_{A=1}$  EN  $FPR_{A=0} \sim FPR_{A=1}$ 

  Formule 3 - Calibration Score:
     $P(Y=1|Score=s, A=0) \sim P(Y=1|Score=s, A=1)$ 

95 Formule 4 - Individual Fairness:
     $d(f(x_1), f(x_2)) \leq L \cdot d(x_1, x_2)$ 

BSN CHECKSUM VALIDATIE (GECORRIGEERD - Officieel Nederlands Algoritme):
100 checksum = (digit_0 * 9) + (digit_1 * 8) + (digit_2 * 7) +
            (digit_3 * 6) + (digit_4 * 5) + (digit_5 * 4) +
            (digit_6 * 3) + (digit_7 * 2) - (digit_8 * 1)

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105 BSN is geldig als: checksum mod 11 == 0

  Voorbeeld: BSN 111222333
    = (1x9) + (1x8) + (1x7) + (2x6) + (2x5) + (2x4) + (3x3) + (3x2) - (3x1)
    = 9 + 8 + 7 + 12 + 10 + 8 + 9 + 6 - 3
110   = 66 mod 11 = 0 Y GELDIG

PENALTY CALCULATION:

115 penalty = MAX(
    fixed_amount * regional_multiplier,
    revenue * percentage * regional_multiplier
  )

120 waarbij:
  fixed_amount = EUR 35,000,000 (Artikel 5) of EUR 15,000,000 (Artikelen 19-24)
  percentage = 7% (Artikel 5) of 3% (Artikelen 19-24)
  regional_multiplier = Nederland-specifieke compliance factor

```

```

125 FIGUUR 7: SYSTEEM FLOW DIAGRAM

```

```

INPUT
  |
  +--> Multi-Framework Analysis
    |
    +--> Bias Detection
      |
      +--> EU AI Act Assessment
        |
        +--> Netherlands Specialization
          |
          +--> Real-time Monitoring
            |
            +--> Compliance Reports

```

140

FIGUUR 8: PROCESSING PIPELINE

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145 +-----+
  | STEP 1: Model Upload
  |   - Framework Detection (PyTorch/TensorFlow/ONNX/scikit-learn)
  |   - File Validation (.pt, .pth, .h5, .pb, .onnx, .pkl, .joblib)
+-----+
150 |

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+-----+
| STEP 2: Architecture Analysis |
+-----+

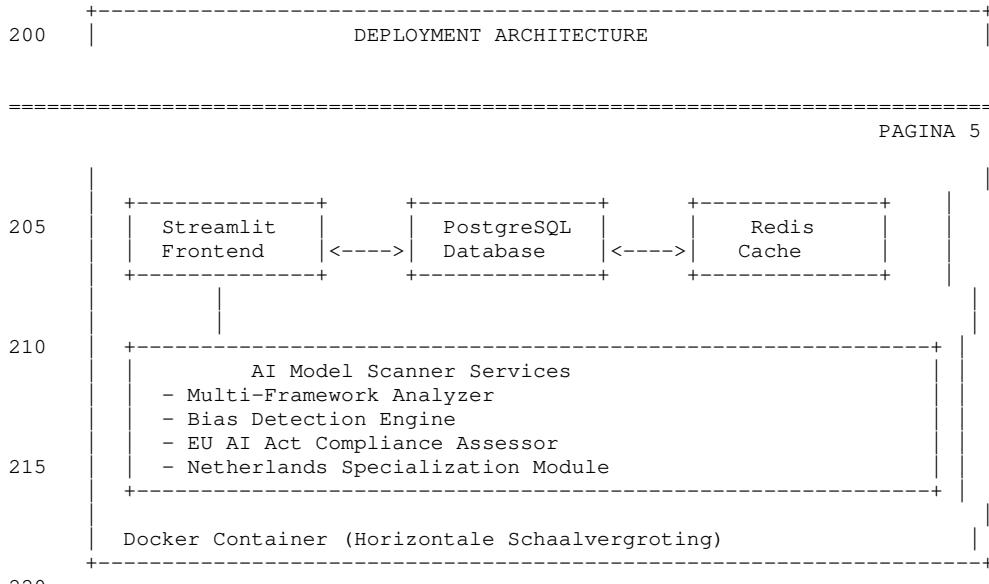
```

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155 |     - Parameter Count (threshold: <1M, 1M-100M, 100M-1B, >1B)
156 |     - Layer Configuration
157 |     - Model Complexity Classification
158 |
159 |
160 +-----+
160 | STEP 3: Bias Detection
161 |     - Demographic Parity (threshold: 0.80)
162 |     - Equalized Odds (TPR & FPR comparison)
163 |     - Calibration Score (per demographic group)
164 |     - Individual Fairness (Lipschitz continuity, L=1.0)
165 |
166 |
170 +-----+
170 | STEP 4: EU AI Act Classification
171 |     - Article 5 Check (Prohibited Practices)
172 |     - Articles 19-24 Validation (High-Risk Systems)
173 |     - Articles 51-55 Assessment (GPAI Models)
174 |     - Penalty Calculation (EUR 35M / EUR 15M)
175 |
176 |
180 +-----+
180 | STEP 5: Netherlands Compliance
181 |     - BSN Detection (9-digit pattern + checksum)
182 |     - UAVG Validation (AP authority integration)
183 |     - Regional Penalty Multipliers
184 |     - Dutch Language Support
185 |
186 |
190 +-----+
190 | STEP 6: Report Generation
191 |     - PDF/HTML Output
192 |     - Technical Documentation
193 |     - Remediation Recommendations
194 |     - Compliance Certificate (with AP stamp)
195

```

FIGUUR 9: DEPLOYMENT ARCHITECTUUR



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FIGUUR 10: COMPETITIVE ADVANTAGE MATRIX

FEATURE	DataGuardian	Systeem A	Systeem B	Systeem C
Automated Bias	Y	N	N	W
Multi-Framework	Y	N	N	W
BSN Detection	Y	N	N	N
EU AI Act 2025	Y	W	W	W
Cost (Annual)	EUR 2.5K-25K	EUR 50K-500K	EUR 75K-400K	EUR 100K+
Cost Savings	BASELINE	95%	96%	97%

235 Legend: Y = Full Support, W = Partial Support, N = No Support

FIGUUR 11: VALUE PROPOSITION

PATENT VALUE PROPOSITION	
Market Opportunity:	EUR 447M (EU-wide AI compliance market)
Target Market:	1.8M EU companies using AI
Netherlands Market:	EUR 23M (150,000 companies)
Penalty Prevention:	Up to EUR 35M per violation
Cost Savings:	95-97% vs commerciele oplossingen
Processing Speed:	<30s (vs hours manually)

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Accuracy:	95%+ bias, 98%+ compliance
First-Mover Advantage:	EU AI Act enforced Feb 2025
Patent Protection:	20 years (until 2045)
Patent Value:	EUR 1M - EUR 2.5M

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BELANGRIJKE TECHNISCHE CORRECTIES

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265 BSN FORMULE CORRECTIE:

OUD (FOUT):
checksum = SUM(digit_i x (9-i)) mod 11 N INCORRECT

270 NIEUW (CORRECT):
checksum = (digit_0 x 9) + (digit_1 x 8) + ... - (digit_8 x 1) Y CORRECT

De laatste digit (digit_8) gebruikt factor 1, NIET factor (9-8)=1 via formule.
275 Dit is het officiële Nederlandse BSN 11-proef algoritme.

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EINDE TEKENINGEN EN FORMULES

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