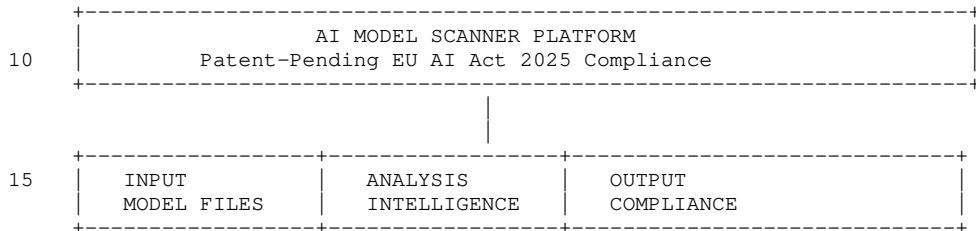
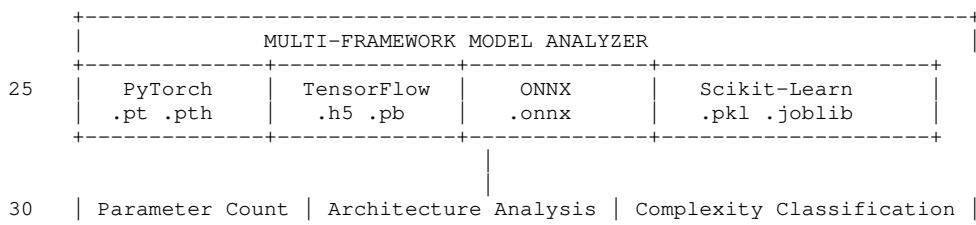


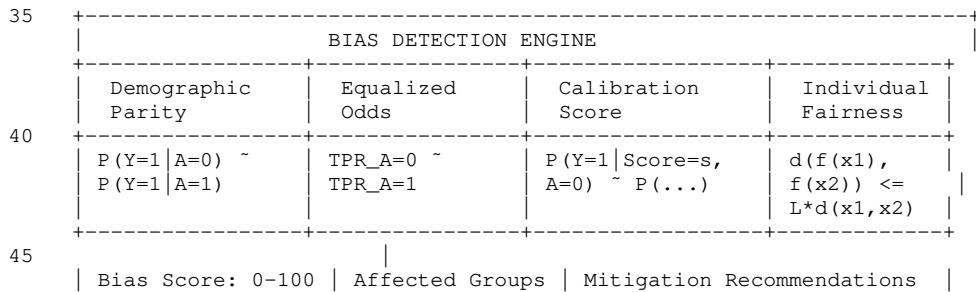
5 FIGUUR 1: SYSTEEM ARCHITECTUUR OVERZICHT



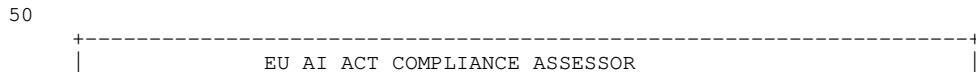
20 FIGUUR 2: MULTI-FRAMEWORK ANALYZER



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)
```

=====
PAGINA 3 van 6

```

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

```

145 +-----+  

  | STEP 1: Model Upload  

  |   - Framework Detection (PyTorch/TensorFlow/ONNX/scikit-learn)  

  |   - File Validation (.pt, .pth, .h5, .pb, .onnx, .pkl, .joblib)  

+-----+
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150

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PAGINA 4 van 6

```

+-----+  

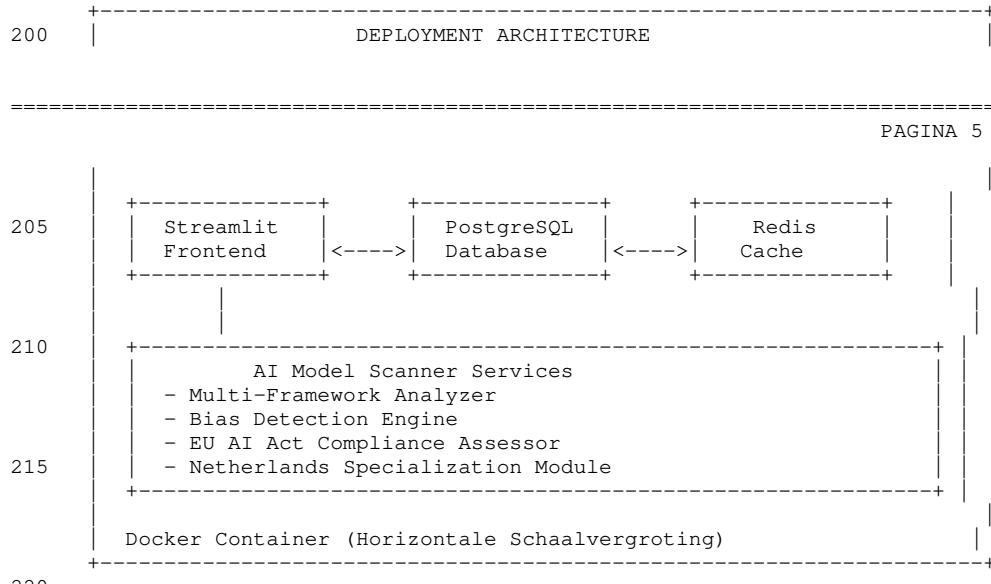
| STEP 2: Architecture Analysis |
```

```

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



PAGINA 5 van 6

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

240	+-----+ PATENT VALUE PROPOSITION +-----+	
245	[4 pages * 1 copy] left in - 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) 	
250		
260	=====	

PAGINA 6 van 6

255	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	

=====
BELANGRIJKE TECHNISCHE CORRECTIES
=====

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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