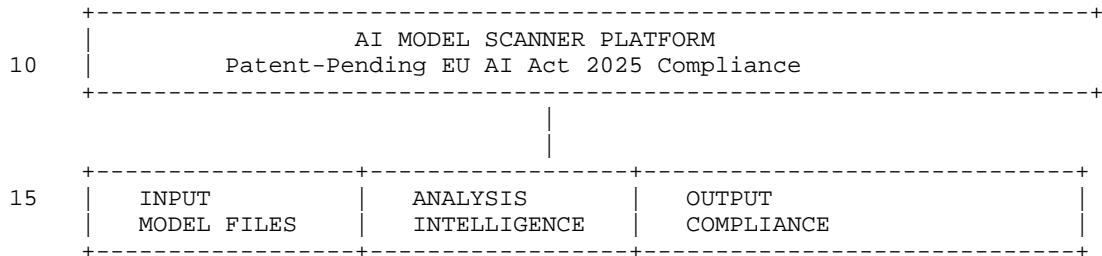
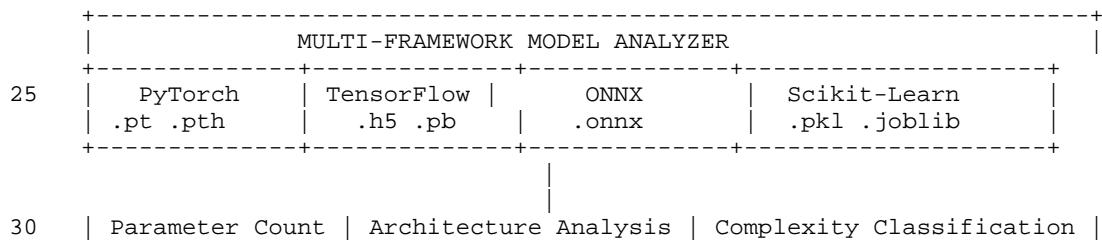


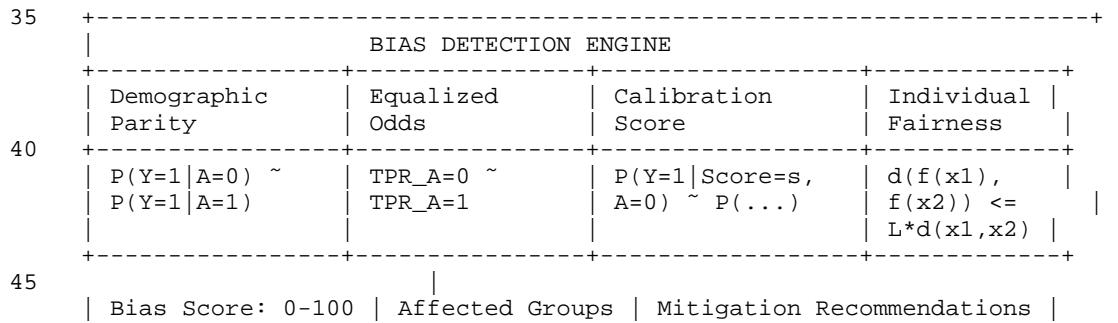
5 FIGUUR 1: SYSTEEM ARCHITECTUUR OVERZIETH



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) |
|----|--|---|--|
| 55 | | | |
| 60 | - Social Score - Manipulation - Subliminal - Biometric ID | - QMS Required - Tech Docs - Record Keeping - CE Marking | - Foundation Model - >1B Parameters - Compute Limits - Adversarial Test |
| 65 | 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 |
| 75 | - 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)
```

```
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 ✓ GELDIG
```

PENALTY CALCULATION:

```
115  penalty = MAX(  
                  fixed_amount x regional_multiplier,  
                  revenue x percentage x 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
```

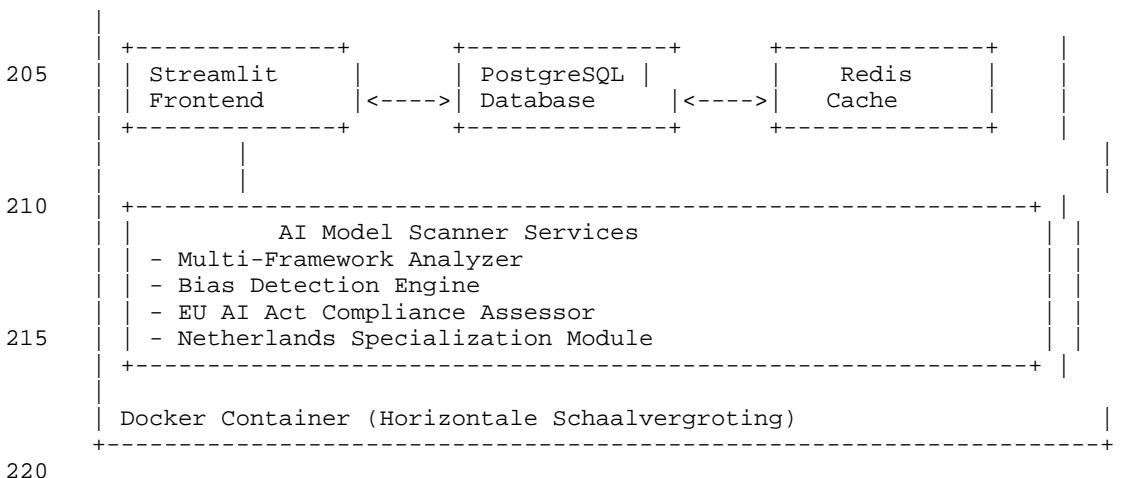
FIGUUR 8: PROCESSING PIPELINE

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

```
+-----+
| STEP 2: Architecture Analysis
|   - Parameter Count (threshold: <1M, 1M-100M, 100M-1B, >1B)
+-----+
160
+-----+
| STEP 3: Bias Detection
|   - Demographic Parity (threshold: 0.80)
|   - Equalized Odds (TPR & FPR comparison)
|   - Calibration Score (per demographic group)
|   - Individual Fairness (Lipschitz continuity, L=1.0)
+-----+
170
+-----+
| STEP 4: EU AI Act Classification
|   - Article 5 Check (Prohibited Practices)
|   - Articles 19-24 Validation (High-Risk Systems)
|   - Articles 51-55 Assessment (GPAI Models)
|   - Penalty Calculation (EUR 35M / EUR 15M)
+-----+
180
+-----+
| STEP 5: Netherlands Compliance
|   - BSN Detection (9-digit pattern + checksum)
|   - UAVG Validation (AP authority integration)
|   - Regional Penalty Multipliers
|   - Dutch Language Support
+-----+
185
+-----+
| STEP 6: Report Generation
|   - PDF/HTML Output
|   - Technical Documentation
|   - Remediation Recommendations
|   - Compliance Certificate (with AP stamp)
+-----+
195
```

FIGUUR 9: DEPLOYMENT ARCHITECTUUR

```
+-----+
|           DEPLOYMENT ARCHITECTURE
+-----+
```



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) |

| | | PAGINA 17 van 18 |
|-----|--|------------------|
| | Accuracy: 95%+ bias, 98%+ compliance | |
| 255 | First-Mover Advantage: EU AI Act enforced Feb 2025 | |
| | Patent Protection: 20 years (until 2045) | |

| | | | |
|--------|---------------|-------------------|----------|
| | Patent Value: | EUR 1M - EUR 2.5M | |
| +----- | | | -+-----+ |

260
=====
BELANGRIJKE TECHNISCHE CORRECTIES
=====

265 BSN FORMULE CORRECTIE:

OUD (FOUT):
checksum = SUM(digit_i x (9-i)) mod 11 ✗ INCORRECT
270

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

=====
EINDE TEKENINGEN EN FORMULES
=====