FIGURE 1: SYSTEM ARCHITECTURE OVERVIEW

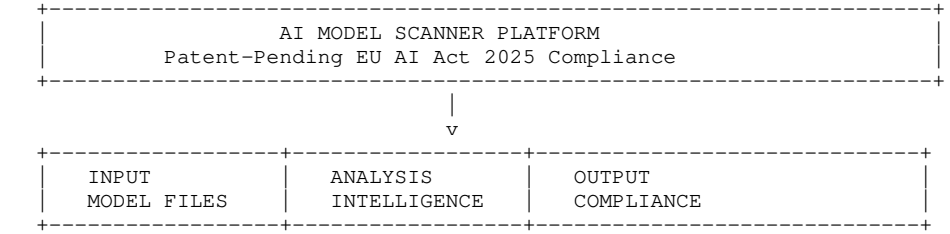


FIGURE 2: MULTI-FRAMEWORK ANALYZER

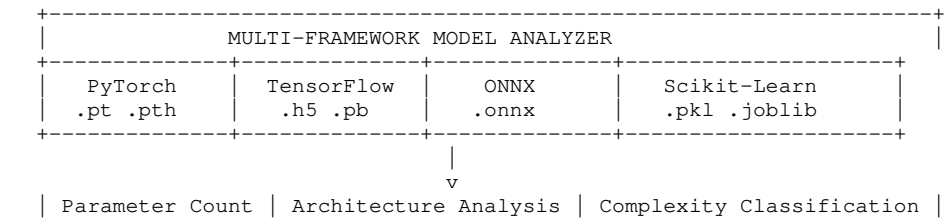


FIGURE 3: BIAS DETECTION ENGINE

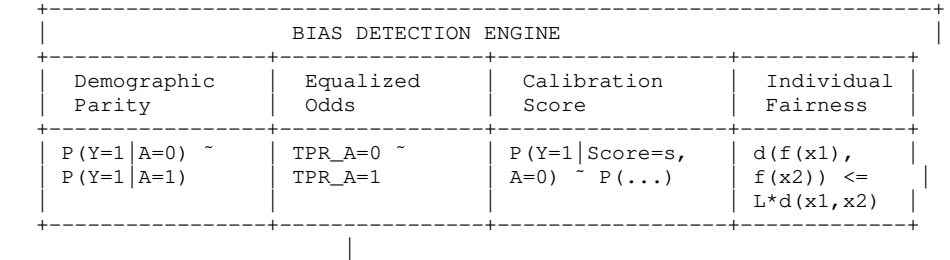
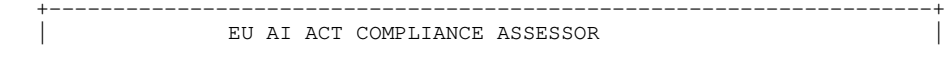


FIGURE 4: EU AI ACT COMPLIANCE ASSESSOR



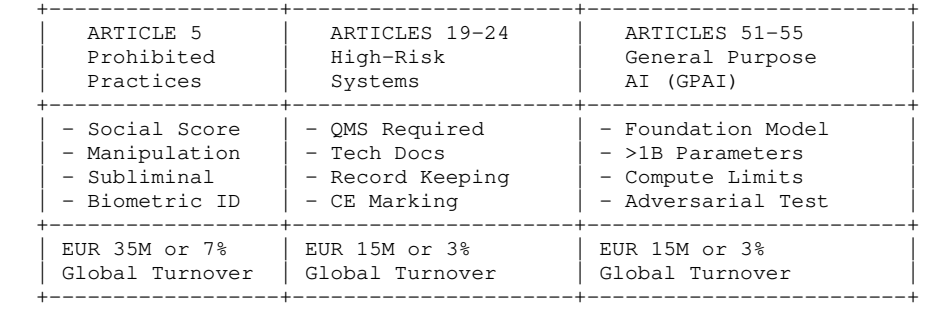
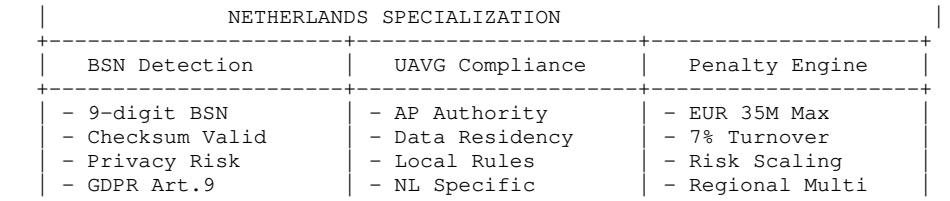


FIGURE 5: NETHERLANDS SPECIALIZATION



```
+----------------------+----------------------+--------------------+
```

FIGURE 6: MATHEMATICAL FORMULAS (CORRECTED)

BIAS DETECTION ALGORITHMS:

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

Formula 2 - Equalized Odds:
$TPR_{A=0} \sim TPR_{A=1}$ AND $FPR_{A=0} \sim FPR_{A=1}$

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

Formula 4 - Individual Fairness:
$d(f(x1),f(x2)) \leq L*d(x1,x2)$

BSN CHECKSUM VALIDATION (CORRECTED - Official Dutch Algorithm):

```
checksum = (digit_0 x 9) + (digit_1 x 8) + (digit_2 x 7) +
           (digit_3 x 6) + (digit_4 x 5) + (digit_5 x 4) +
           (digit_6 x 3) + (digit_7 x 2) - (digit_8 x 1)
```


BSN is valid if: checksum mod 11 == 0

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

PENALTY CALCULATION:

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

where:
fixed_amount = EUR 35,000,000 (Article 5) or EUR 15,000,000 (Articles 19-24)
percentage = 7% (Article 5) or 3% (Articles 19-24)
regional_multiplier = Netherlands-specific compliance factor

FIGURE 7: SYSTEM FLOW DIAGRAM

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

FIGURE 8: PROCESSING PIPELINE

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



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

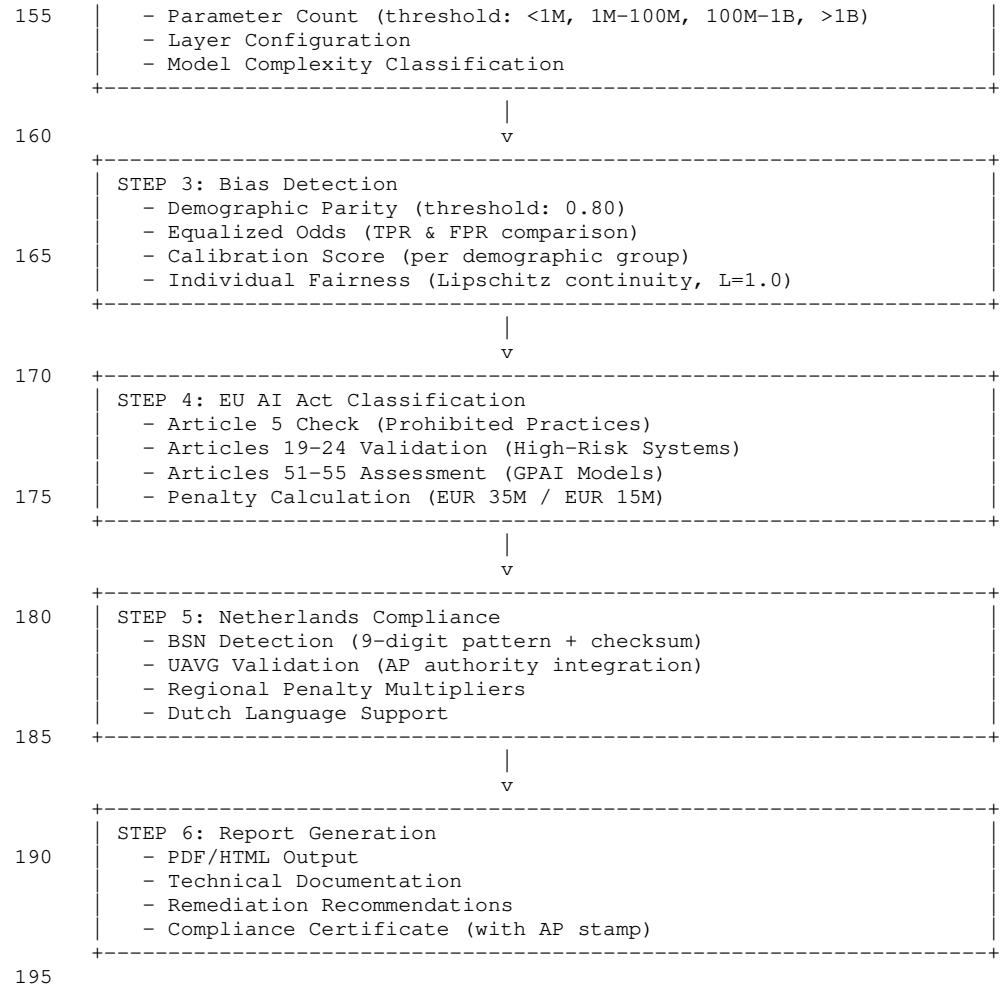


FIGURE 9: DEPLOYMENT ARCHITECTURE

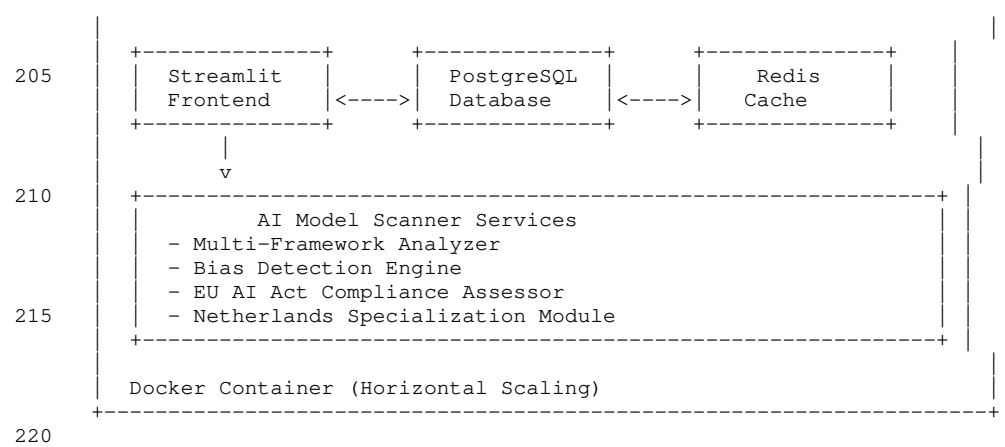
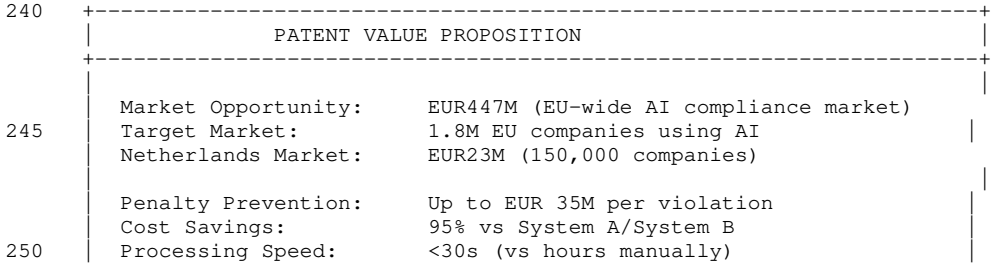


FIGURE 10: COMPETITIVE ADVANTAGE MATRIX

FEATURE	DataGuardian	System A	System B	System C
Automated Bias	?	x	x	!
Multi-Framework	?	x	x	!
BSN Detection	?	x	x	x
EU AI Act 2025	?	!	!	!
Cost (Annual)	EUR2.5K-25K	EUR50K-500K	EUR75K-400K	EUR100K+
Cost Savings	BASELINE	95%	96%	97%

Legend: ? = Full Support, ! = Partial Support, x = No Support

FIGURE 11: VALUE PROPOSITION



IMPORTANT TECHNICAL CORRECTIONS

BSN FORMULA CORRECTION:

OLD (INCORRECT):

```
checksum = SUM(digit_i x (9-i)) mod 11  x WRONG
```

NEW (CORRECT):

```
checksum = (digit_0 x 9) + (digit_1 x 8) + ... - (digit_8 x 1) ? CORRECT
```

The last digit (digit_8) uses multiplication factor 1 with subtraction, not derived from the general formula pattern. This is the official Dutch government BSN 11-proof algorithm specification.

END OF DRAWINGS AND FORMULAS