Assessing government algorithms

A quick overview of the *Fundemental Rights and Algorithms Impact Assessment* and the *Algorithm assessment framework*

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COLLEGE VOOR
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A tale of two assessment frameworks

- Netherlands Court of Audit
  - 2021-01: *Algorithm Assessment Framework*
  - 2022-05: *An Audit of Algorithms*
- Utrecht Data School/Utrecht University/Ministry of Internal Affairs
  - 2021-07: *Fundamental Rights and Algorithms Impact Assessment*
- **All available in English**

Utrecht University

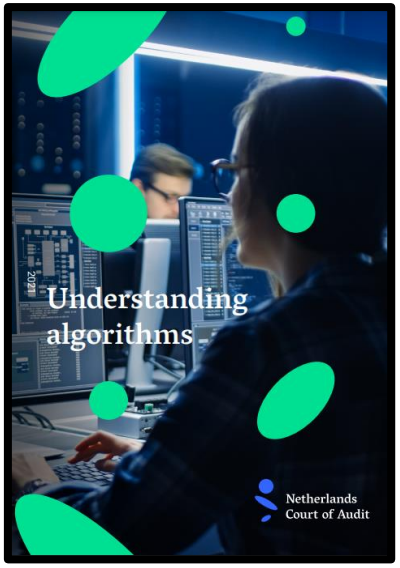
Netherlands Court of Audit

UTRECHT DATA UDS SCHOOL

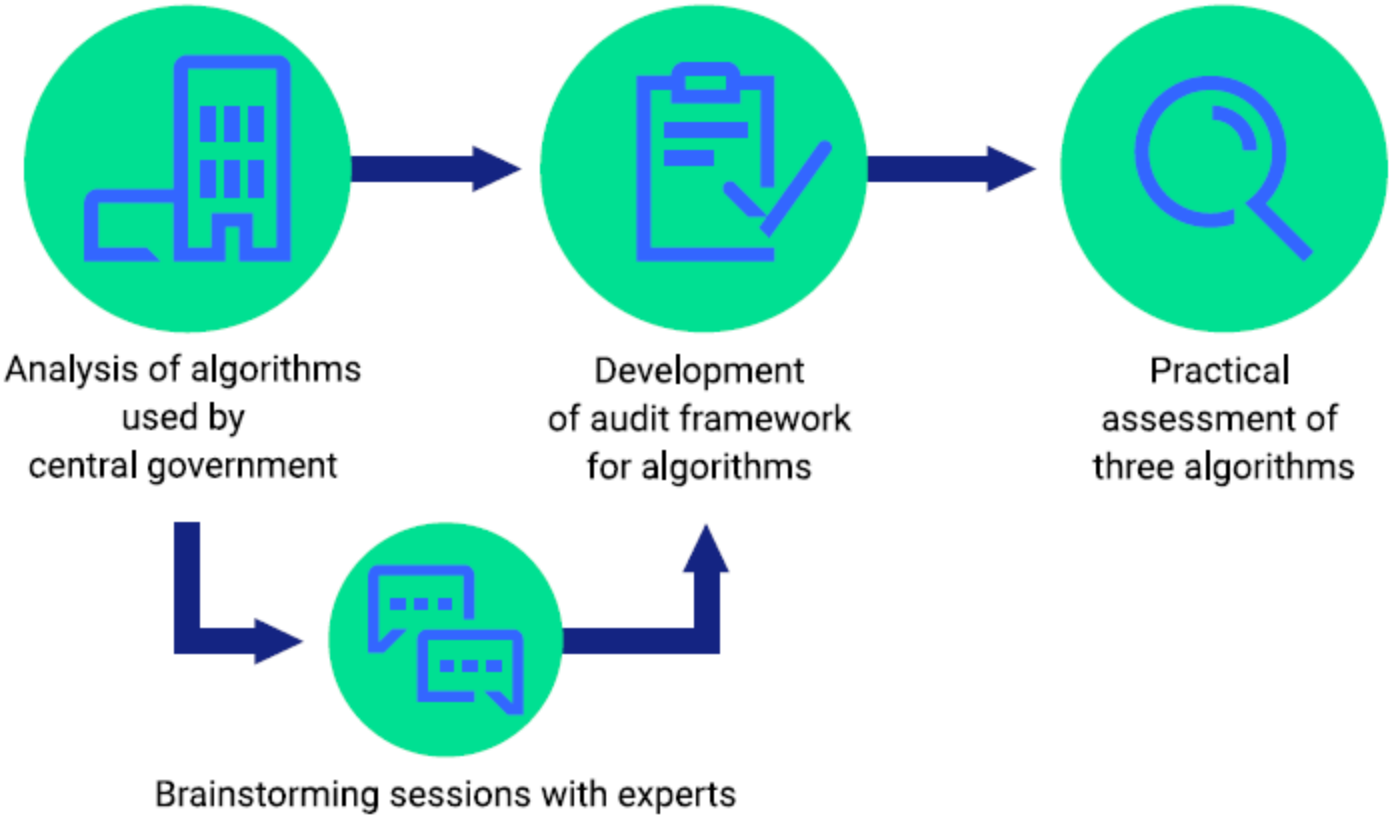
Ministry of the Interior and Kingdom Relations

Netherlands Court of Audit's Algorithm Assessment framework

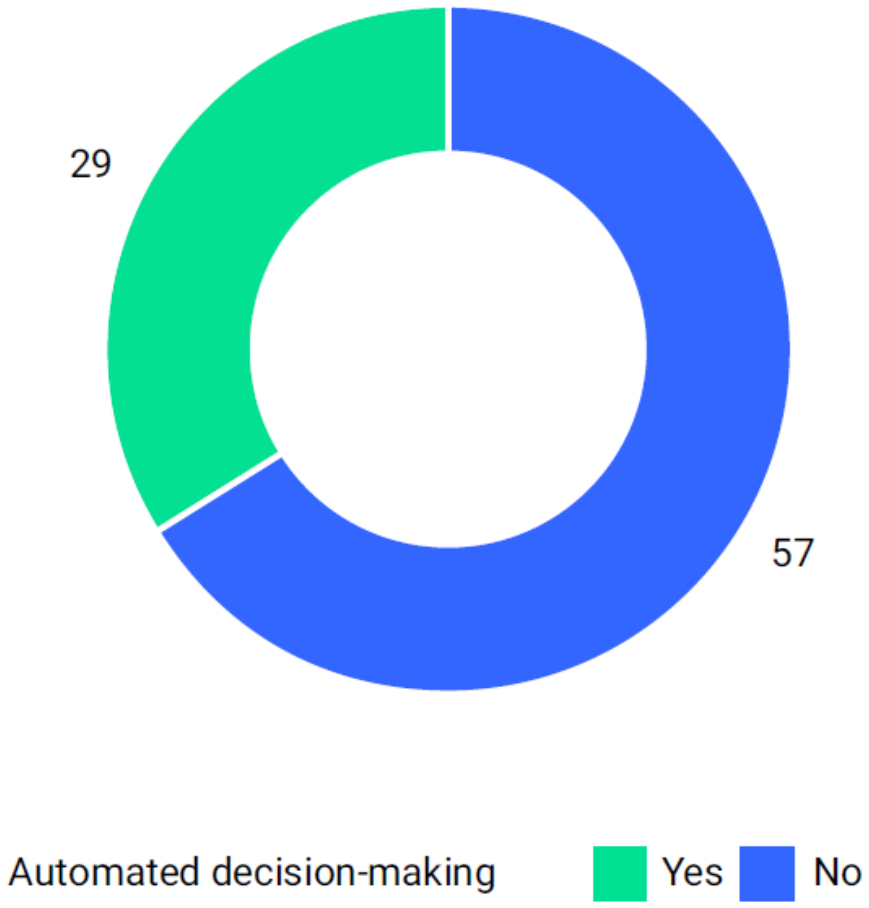
- Opportunities
  - Efficiency
  - Transparency (instructions are often more clearly defined than human decision making
- Threats:
  - Impacts of government algorithms may not be clear.
  - Discrimination
  - Lack of control on algorithms produces by external parties
- Demystification: debunk 'myths and hypes'
- *No specific tools for auditing or analysing algorithms have been developed'*



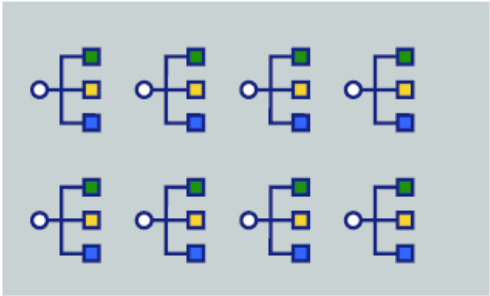
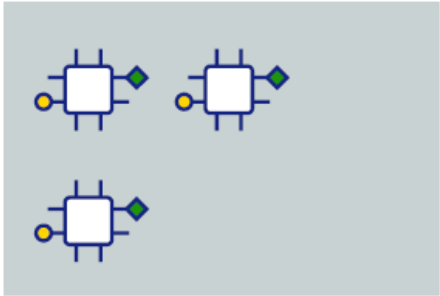
Netherlands Court of Audit's Algorithm Assessment framework



The majority of the algorithms do not use automated decision-making



Simple algorithms → **Sophisticated algorithms**

Decision trees	Statistical machine learning models	Neural networks
		
Example: Deciding on the amount and duration of a benefit payment	Detecting applications with a high risk of inaccuracies, in order to prompt extra checks	Detecting human trafficking by using facial recognition software to examine pictures on suspects' telephones

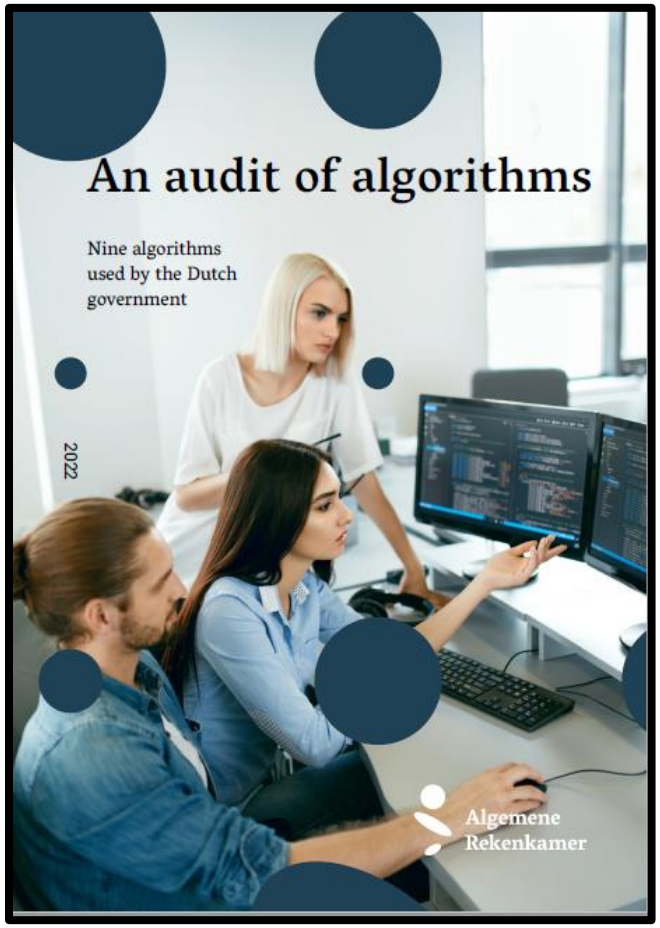
The audit framework

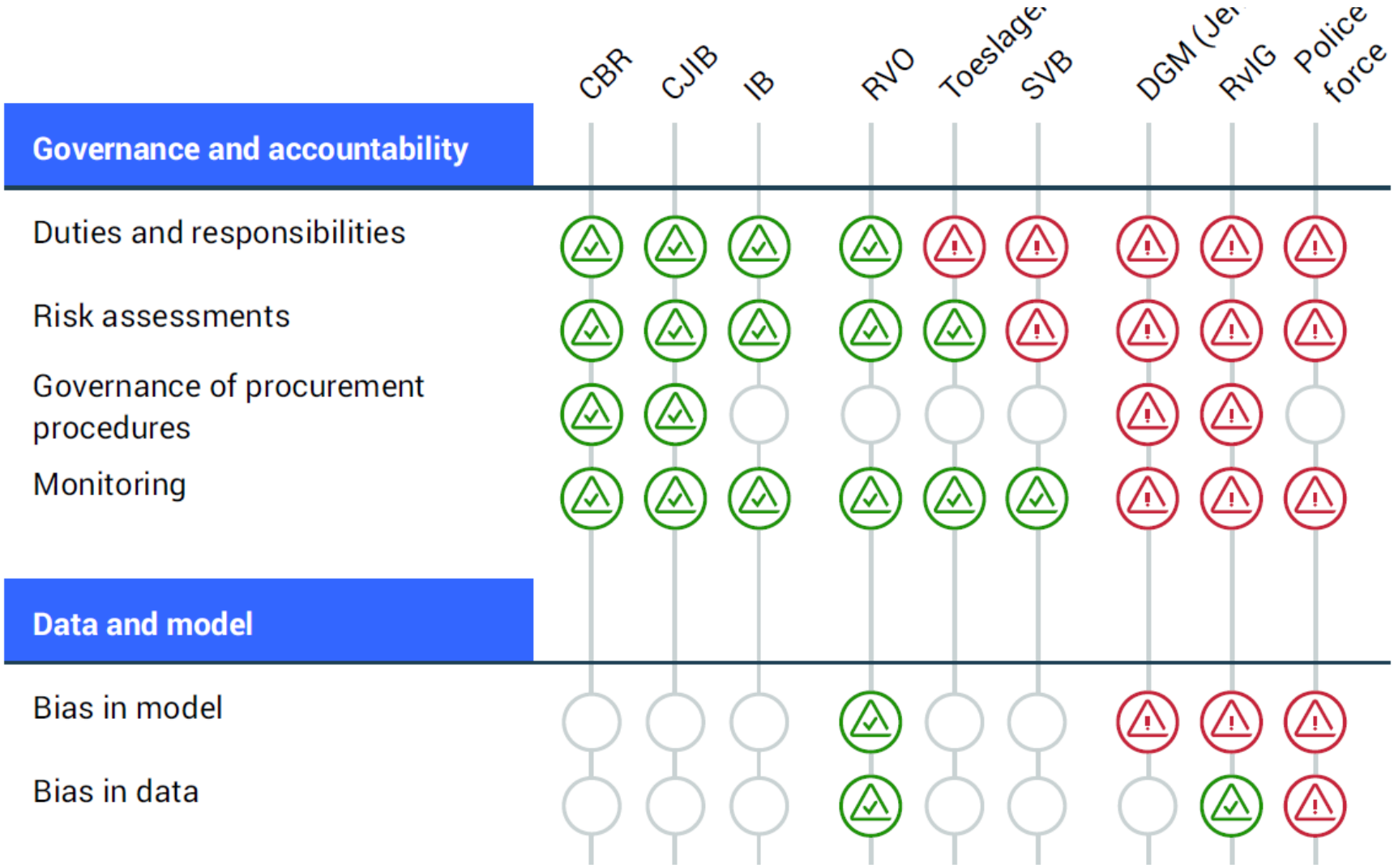
- Five perspectives
  - Governance and accountability
  - Model and data
  - Privacy
  - IT General Controls
  - Ethics

Context			Ethical principles									
No.		Subject	1.1 Human autonomy	2.1 security and quality algorithm	2.2 Privacy and dataprotection	3.1 non-discrimination / fairness	3.2 Impact on society	4.1 Accountability	4.2 Explainable algorithms	Risk	Audit question
2.09		Model & Data				✓				Very limited sources of input mean a higher risk of error and non-compliance with objectives and legislation.	Were the various stakeholders and 'e users' of the algorithm involved in th development process?

An audit of 9 government algorithms

- Algorithms included:
  - Image recognition algorithm to check the quality of photo's in identity documents
  - Algorithm that links traffic fines with vehicle registration numbers
  - Algorithm for grant applications to help enterprises through Covid-19
  - Policing algorithm to forecast where and when high risks exists of incidents
  - Alert local authorities to the need for performing regulatory checks on social assistance benefits.



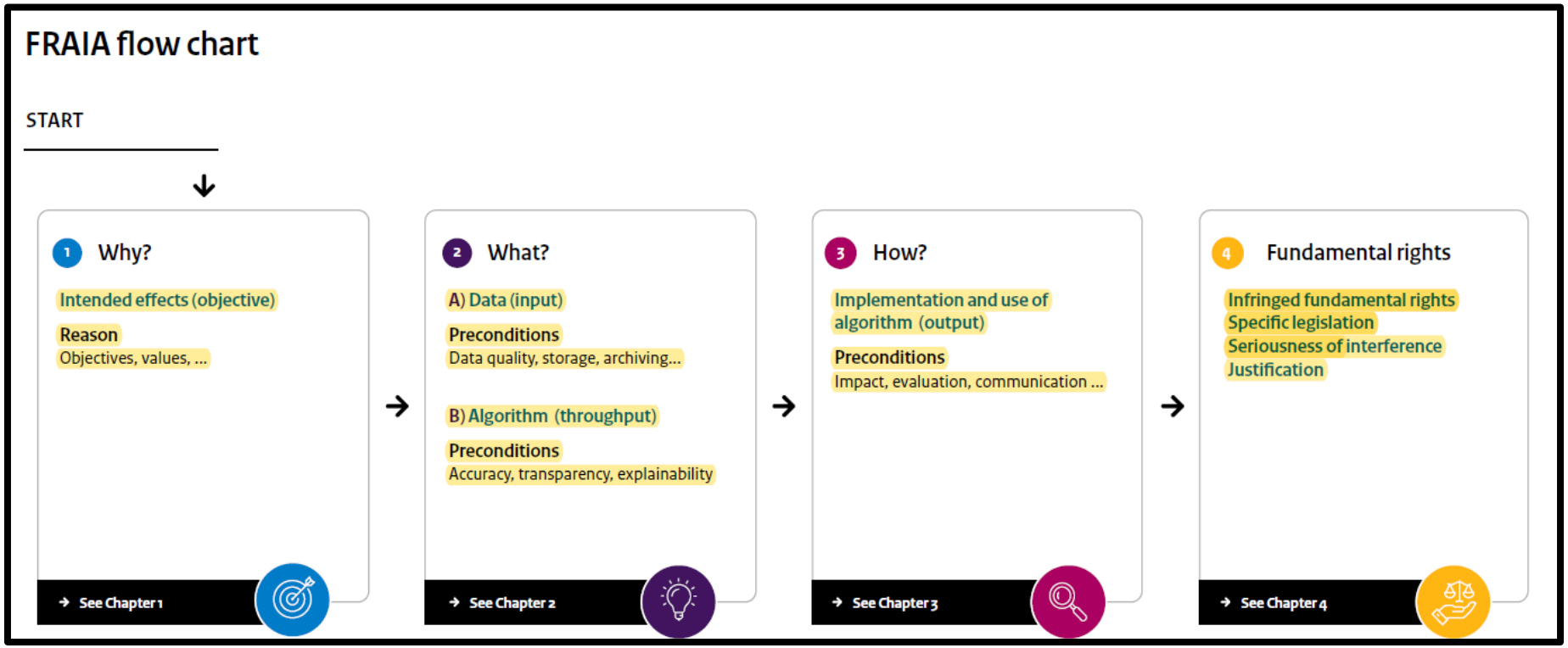

CBR
CJIB
IB
RVO
Toeslage
SVB
DGM (Je
RvIG
Police force
Governance and accountability
Duties and responsibilities
Risk assessments
Governance of procurement procedures
Monitoring
Data and model
Bias in model
Bias in data

Privacy
Data protection impact assessment
Data minimalisation
Privacy policy
IT general controls
Access management
Change management (including logging)
Back-up and recovery
Algorithm does/does not meet the requirements set out in the audit framework

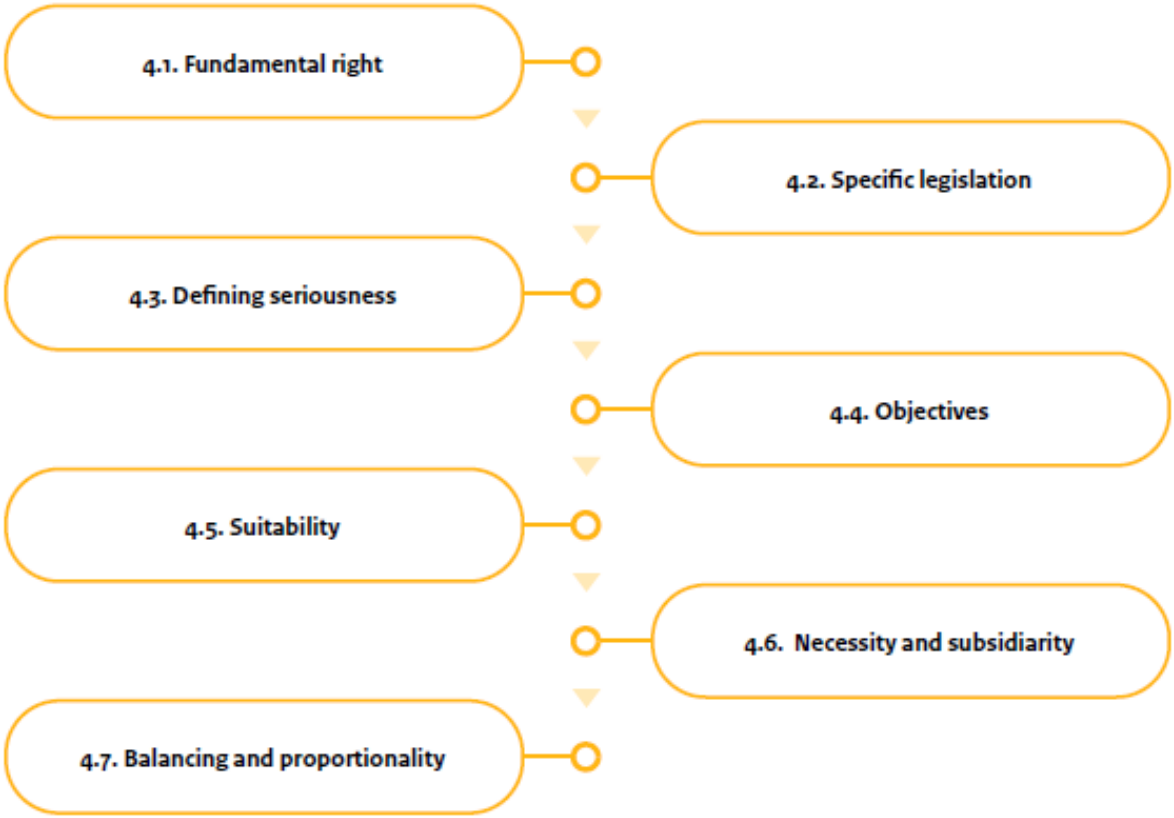
Fundemental Rights and Algorithms Impact Assessment (FRAIA)

- Discussion and decision making tool for government organizations that wish to design, use or reassess an algorithm.
- Based on other existing tools:
  - Algorithm assessment framework from the chamber of audit
  - GDPR Data Protection Impact Assessment Template
  - EU Ethical Guidelines for Trustworthy AI
  - Non-discrimination by design guideline

Fundemental Rights and Algorithms Impact Assessment (FRAIA)



Phase 4: Fundemenal Rights



FRAIA's application: the example of Rotterdam

- General Training programme: 75+ public servants have been trained
- FRAIA applied in Rotterdam:
  - License plate scanning: Worries about algorithm were debunked with FRAIA
  - The city stopped with the employment of a an AI system that predicted potential fraud by citizens who received social minimum assistance.
  - The city wishes to create a citizenpanel to discuss algorithms used by the municipality based on FRAIA

Thank you

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