Erasmus School of Law

The EU AI Act

A Gamechanger for MASS?

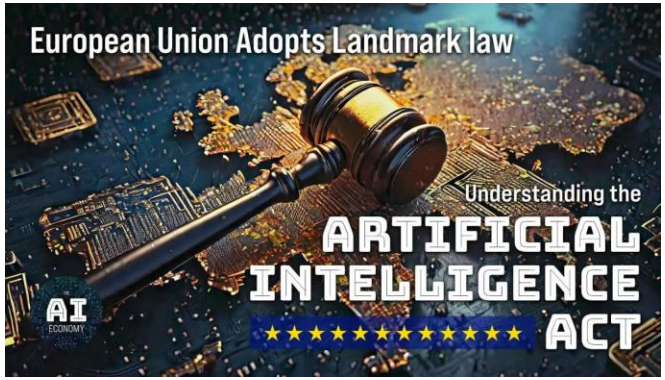
Frank Stevens

Erasmus University Rotterdam

1. Introduction.

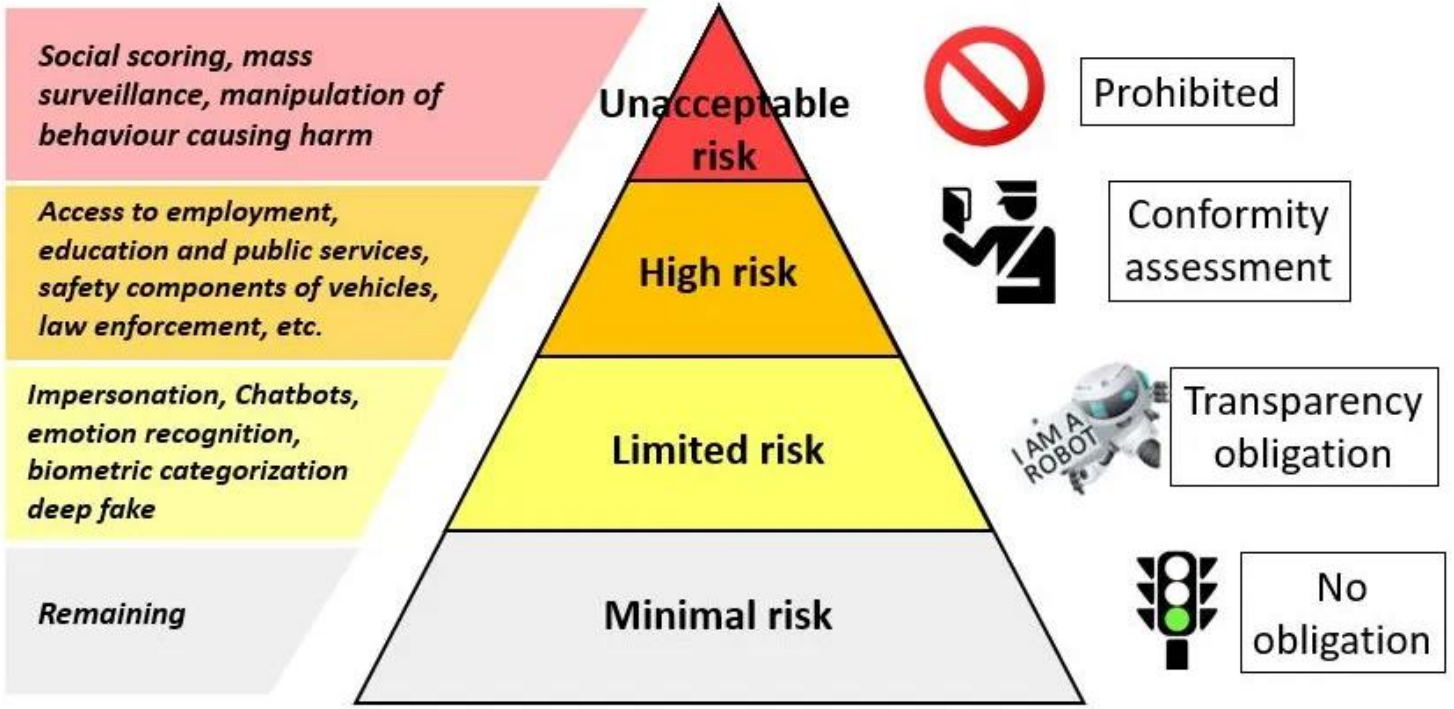
- The AI Act

- Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonized rules on artificial intelligence and amending Regulations (...)



1. Introduction.

- basic scheme of the AI Act



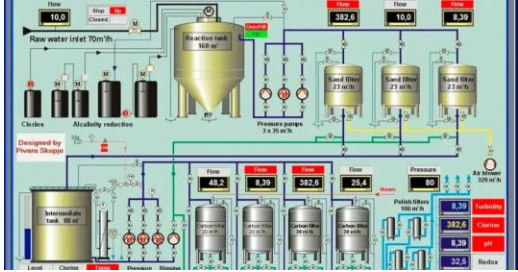
1. Introduction.

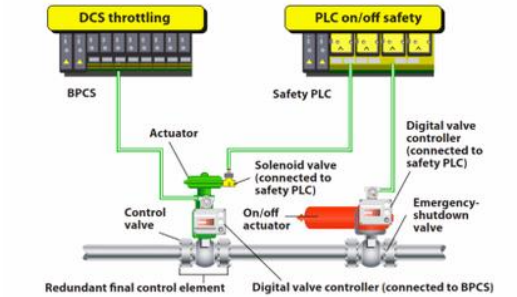
- AI and MASS
- obviously software and computer programs involved, but:

    - is it an *AI system*?
    - if so, is it a *high risk* AI system?

    - are there any *exceptions* that apply?

2. AI system - Definition.





- industry has been using (safety critical) software for decades
  - DCS (Distributed Control Systems), ESD (Emergency Shutdown), etc.

- AI is not meant to apply to 'classic' software (see Recital 12)
- where to draw the line?

- 'AI' is notoriously difficult to define ...
  - AI Act definition based on updated OECD definition of an AI system
  - see also the Explanatory Memorandum on the updated OECD definition of an AI system, OECD Artificial Intelligence Papers, March 2024, No. 8.

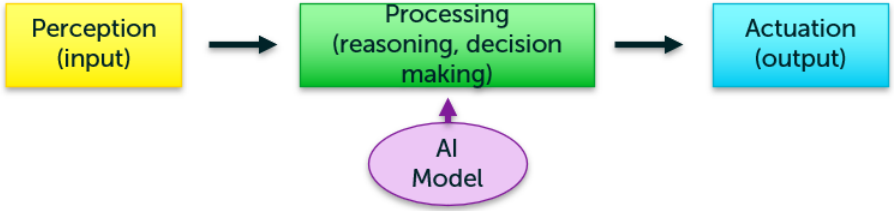
2. AI system - Definition.

- Art. 3.(1)
- 'AI system' means:

  - a machine-based *system*
  - designed to operate with varying levels of autonomy
  - *may* exhibit adaptiveness after deployment
  - that *infers* from input how to generate outputs (predictions, content, recommendations, or decisions)
  - outputs that can *influence* physical or virtual environments
  - for explicit or implicit objectives

2. AI system - Definition.

- a machine-based *system*
  - 'system' is more than a 'model'



- designed to operate with varying levels of autonomy
  - system A (very) low autonomy, system B (very) high autonomy
  - they are both 'AI systems'

2. AI system - Definition.

- *may* exhibit adaptiveness after deployment

- that *infers* from input how to generate outputs (predictions, content, recommendations, or decisions)
  - ChatGPT etc.: same question, different answers
  - autopilot in simulator: same circumstances = same 'decisions'

2. AI system - Definition.

- outputs that can *influence* physical or virtual environments
  - capability ("can") is sufficient
  - physical environment: operating valves, rudders, engine controls, ...
  - virtual environment: AI system providing input to other systems (e.g. autopilot)

- for explicit or implicit objectives
  - e.g. self-driving car:
  - explicit objective: stop at red light
  - implicit objective: avoid accidents, increase road safety

2. AI system - Definition.

- conclusion:

    - ***very*** complex definition ...
    - Commission must develop guidelines on the application of the definition (Art. 96.1.f)

3. High-risk.

- if it is an AI system, is it a high-risk system?

- Art. 6 — two possibilities:
  - AI systems with *safety impact*
    - AI system intended to be used as a safety component of a product covered by the EU harmonization legislation listed in Annex I; AND
    - this product is required to undergo a third-party conformity assessment

  - AI systems *listed in Annex III*
    - not (immediately) relevant for MASS

3. High-risk.

- safety component
  - Art. 3.(14)
  - ‘safety component’ means a component
    - which fulfils a safety function, or
    - the failure or malfunctioning of which endangers the health and safety of persons or property;

    - weather routing systems?
    - heating & air-conditioning system for crew quarters?

3. High-risk.

- EU harmonization legislation listed in Annex I
  - Section B of Annex I includes:
  - Directive 2014/90/EU on marine equipment
    - marine equipment = equipment placed or to be placed on board an EU ship and for which the **approval of the flag State administration** is required

- third-party conformity assessment
  - marine equipment must design, construction and performance requirements of the relevant international instruments
  - conformity must be assessed by an agreed body

4. Exceptions.

- Art. 2.2

For AI systems classified as high-risk AI systems in accordance with Article 6(1) related to products covered by the Union harmonisation legislation listed in Section B of Annex I, only Article 6(1), Articles 102 to 109 [amendments] *and Article 112* [evaluation and review] *apply.*
Article 57 [AI Regulatory Sandboxes] *applies only in so far as the requirements for high-risk AI systems under this Regulation have been integrated in that Union harmonisation legislation.*

- Marine Equipment Directive = Section B

4. Exceptions.

- Art. 105: § 5 added to Art. 8 Marine Equipment Directive:

  For AI systems which are safety components within the meaning of Regulation (EU) 2024/1689, when carrying out its activities pursuant to paragraph 1 and when adopting technical specifications and testing standards in accordance with paragraphs 2 and 3, the Commission shall take into account the requirements set out in Chapter III, Section 2, of that Regulation.

4. Exceptions.

- other exceptions:
  - AI systems or AI models, including their output, specifically developed and put into service for the *sole purpose* of *scientific research and development* (Art. 2.6)
  - research, testing or development activity regarding AI systems or AI models *prior to* their being placed on the market or put into service. Testing in real world conditions is *not* covered by this exclusion. (Art. 2.8)
  - AI systems released under *free and open-source licences*, unless placed on the market or put into service as high-risk AI systems (Art. 2.12)