

## AI Ethics - Digital Twins in regulatory assessments



- Human Agency and Oversight
- Accountability
- Transparency
- Diversity, Non-discrimination and Fairness
- Technical Robustness and Safety
- Privacy and Data Governance

## Summary

Ethics refers to morality and the greater good for society. Ethics can, however, differ based on geographic location, culture, and situational context amongst other factors. Simple rules are insufficient to capture true ethics. Access to ethical insights at an organizational, cultural and contextual level is needed. The goal of AI Ethics in particular, is to ensure responsible conduct when applying AI technologies. AI Ethics is set to evolve further to include AI that will support fair market conduct by the organization across all processes.

Organizations are being held to moral and ethical standards that are difficult to define using system rules. Organizations are being held to moral and ethical standards that are difficult to define using system rules creating a greater reliance on expertise from within the organization. The ability to form an ethical opinion based on a more complete context is an innately human skill and therefore a scarce resource.

## The Challenge

The **European Artificial Intelligence Act** expected to come into effect in 2023, requires organizations to:

- Perform a pre-market conformity assessment
- Perform ongoing post-market monitoring

The national supervisory authority is not expected to conduct any conformity assessments itself, but will instead act to designate third-party organizations that have developed the capacity to conduct pre-market conformity assessments of providers of high-risk AI systems.

[read more](#)

The EU High-Level Expert Group on Artificial Intelligence (*AI HLEG*), recommends involving a **multidisciplinary team of people from within and/or outside the organization** with specific competencies or expertise.

Organizations are set to face challenges in:

- **Interpretation and explainability of subjective issues** (*gray areas / human opinion*)
- **Consistent & efficient evaluation of AI technologies**
- **Implementation of on-going monitoring**



## Digital Twin Solution

Merlynn's Tacit Object Modeler (TOM) technology provides organizations with the ability to digitally replicate human judgment and opinion.

This enables organizations to select a panel of human experts (*regulators, ethicists, etc - the people best qualified to navigate the topic*) to provide insight on the subject of ethics and morality. This panel forms the basis of a real-time monitoring capability to support the organization in its ethics-based obligations.

Deploying the Digital Twins results in:

### Interpretation and explainability of subjective issues

- The opinion of the true subject matter experts are reflected in the outcome of the Digital Twin (non-experts are no longer required to interpret guidelines, policies etc.).

- Transparency - the outcome is explained in the audit trail.

### Consistent & efficient evaluation of AI

- Digital Twins deliver consistent outcomes.
- Real-time access to advice & opinion of the expert enables the assessment to be processed more efficiently - relieving the bottleneck around the experts and delivering decisions in a much shorter time-frame.

### On-going Monitoring Capability

- Provided data required for the Digital Twin to make an assessment is available, the Twin can be consulted 24/7 365 days a year for multiple assessments.

## The Impact

The Digital Twin library provides organizations with a practical, efficient and consistent solution to systematize, defend, and recommend right and wrong behavior. TOM's transparent decisioning audit trail

enables organizations to demonstrate to regulators exactly how each Digital Twin decision has been tested and held to the highest possible moral standards (*those of the panel*).



**Source:** 2017, Robert Wood Johnson Foundation.  
<https://www.rwjf.org/en/library/infographics/visualizing-health-equity.html>