

ETHICS CERTIFICATION FOR AUTONOMOUS AND INTELLIGENT SYSTEMS

IEEE PILOT WITH WIENER STADTWERKE

JUNE 2021

Dr Clara Neppel
Senior Director European Operations

ADVANCING TECHNOLOGY FOR HUMANITY

ABOUT IEEE

- 400,000 Members
- 160 Countries
- 46 Technical Societies and Councils
- 1900+ Annual Conferences
- Global Humanitarian Efforts
- Developing market relevant open standards and solutions

ETHICALLY ALIGNED DESIGN

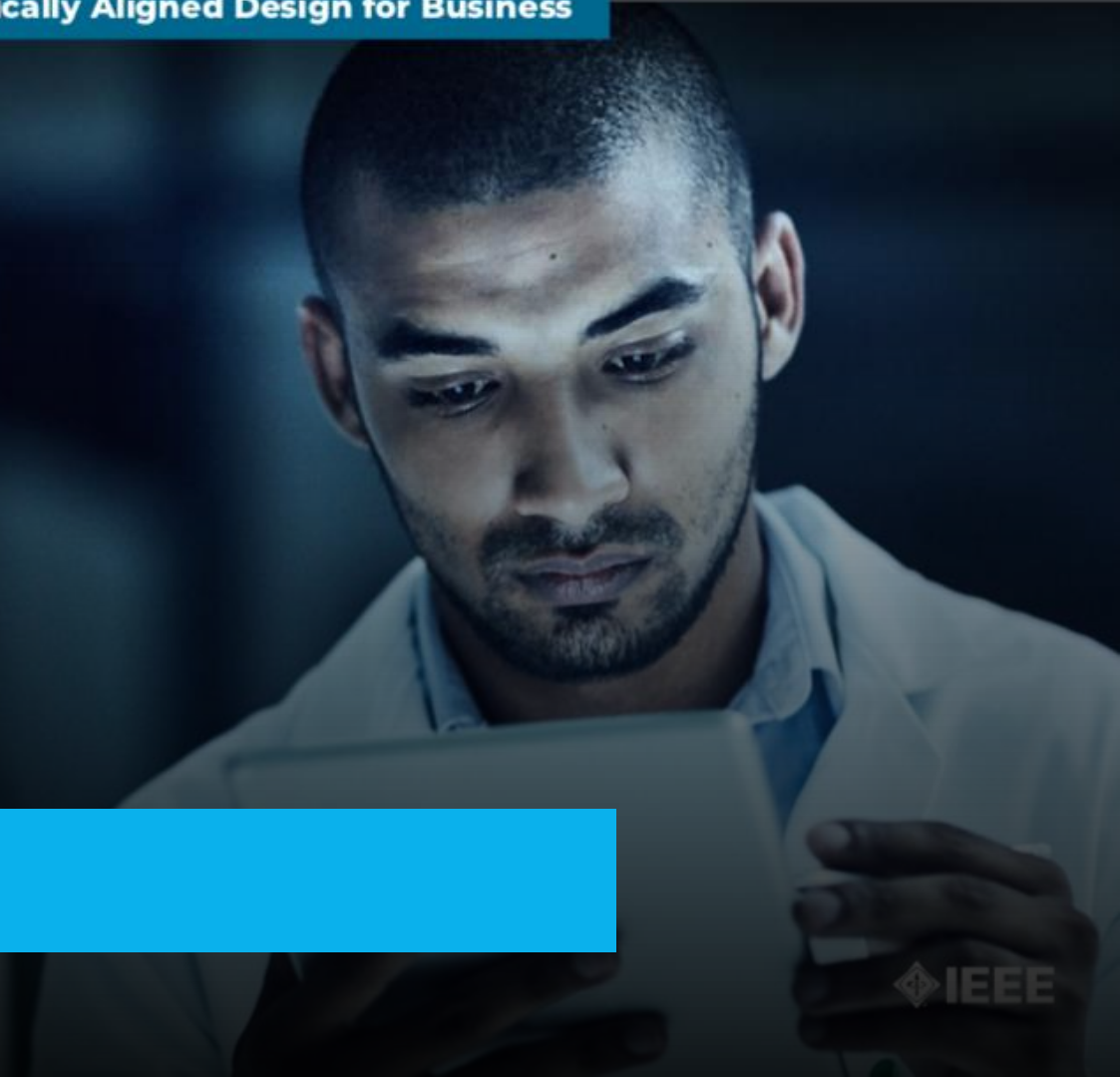
First Edition

A Vision for Prioritizing Human Well-being
with Autonomous and Intelligent Systems

Communities

A Call to Action for Businesses Using AI

Ethically Aligned Design for Business

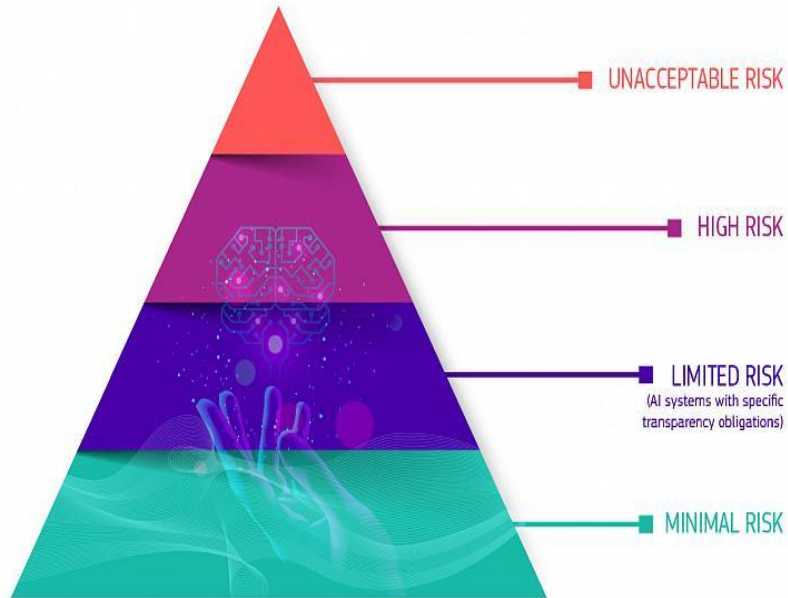


AI ETHICS READINESS FRAMEWORK

	Lagging	Basic	Advanced	Leading
Internal training, support, and people resources	<ul style="list-style-type: none"> • Employees on their own to find appropriate AI ethics resources • May be encouraged but no official support • More focused on compliance 	<ul style="list-style-type: none"> • Workshops and certifications required for team members • Access to and support from evangelizers • Review board of experts 	<ul style="list-style-type: none"> • Advisory boards • Key stakeholders and evangelizers for each product/solution • Employees add to existing processes for their specific use cases 	<ul style="list-style-type: none"> • Ethical AI practices are embedded into decisions rather than inserted as modules • Infused into all roles and onboarding
Leadership buy-in	<ul style="list-style-type: none"> • Leadership recognizes but does not prioritize AI ethics 	<ul style="list-style-type: none"> • Completed introductory level of training • Compliance focused knowledge 	<ul style="list-style-type: none"> • Including AI ethics standards in new projects • AI ethics is included in collective agreements • Leadership is updated/ 	<ul style="list-style-type: none"> • Ethical practices and perspectives are infused into product strategy • Incentive strategy to reward ethical behavior and create consequences for

How
prepared
are you?

Proposal for EU Harmonized Rules on AI



“Mandatory requirements applicable to the design and development of certain AI systems before they are placed on the market that will be further operationalised through harmonised **technical standards**”

High Risk - horizontal mandatory requirements and **conformity assessment**

Limited Risk - Transparency obligations

Minimal Risk - Voluntary codes of conduct



Make the implicit explicit and verifiable for the entire AI ecosystem



STANDARDS

Developing a growing series of standards that promote innovation, foster interoperability and honor human values.

- **Technical**
- **Socio-technical**



CERTIFICATION

Developing metrics and processes towards the implementation of a certification methodology.

- **Transparency**
- **Accountability**
- **Algorithmic bias**



GOVERNANCE

Support responsible Artificial Intelligence Systems innovation through proper governance mechanisms.

- **Business**
- **Cities**
- **Public bodies**

STANDARDS PROJECTS EXAMPLES

- Standard for Model Process for Addressing Ethical Concerns During System Design
- Recommended Practice for Assessing the Impact of Autonomous and Intelligent Systems on Human Well-Being
- Approved Draft Guide for Architectural Framework and Application of Federated Machine Learning
- Recommended Practice for Organizational Governance of AI
- Standard for Responsible AI Licensing

<https://standards.ieee.org/initiatives/artificial-intelligence-systems>

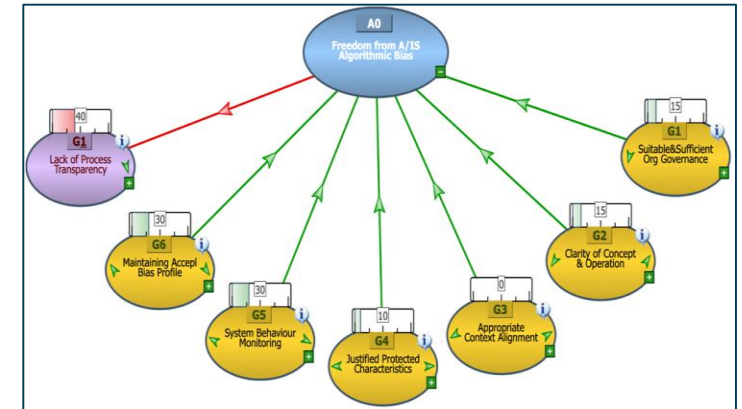
ECPAIS - Key Objectives

- **Develop SMART Criteria for Assessment of Ethical Properties**
- **Focus on Ethical:**
 - ✓ Accountability, Algorithmic Bias, Transparency
 - Privacy
- **Structure Foundational Ethical Criteria for Objective Evaluation**
- **Develop Eco-system for Conformity Assessment & Certification**



ECPAIS – Value Proposition

- **Certification is a basis for trust in products and services**
- **Independent Scrutiny**
 - ✓ Identifies Strengths and Shortfalls
 - ✓ Demonstrates Duty of Care
- **Adaptive and agile**
 - ✓ Assessment effort proportionate to the risk profile
 - ✓ Rapid tailoring to the needs of a sector
- **Demonstrate implementation towards the proposed EU AI regulation**



Towards a Positive Vision for Humanity

TRUST

