



## **FRR Quality Mark for Robotics and Artificial Intelligence**

Partner Information Package

The Foundation for Responsible Robotics and Deloitte  
Version 1.1





**Aimee van Wynsberghe,  
President and Co-Founder of  
the Foundation for Responsible  
Robotics**

If you haven't come face to face with a robot yet, chances are that in the next five to ten years you will. Right now, more and more of the products you buy have interacted with robots that build, transport, or test them. In the future robots will welcome us in stores, care for us as patients in hospitals and assist teachers in education. When you think about the kind of things robots will do, the places they will work and the materials used to make them it's important to consider the bigger picture: are these robots contributing to a fair, democratic, sustainable, privacy respecting, secure, and safe society? Addressing this question is what we call responsible robotics.

*What is responsible robotics?*

The answer to this question changes as quickly as the technology in question. The first step towards an answer acknowledges that it is up to us – the humans behind the robots – to be accountable for the responsible and ethical

development of this technological innovation. Addressing ethical issues in robotics and AI means proactively taking stock of the impact these innovations will have on societal values like safety, security, privacy, and well-being. With robots coming into our homes we can no longer wait for bad things to happen so that we can fix them. We must do the hard task of getting it right the first time. Our families, the environment, and our society can't afford to be broken by poorly designed and implemented robotics.

For this reason, The Foundation for Responsible Robotics has partnered with Deloitte to create the FRR Quality Mark for Robotics and AI. Through this quality mark we want to empower robotics producers to produce both ethically and responsibly. Of equal importance, we want to build trust between developers of Robotics and AI and the consumer. For the robotics industry to thrive this trust is paramount. In this brochure you will find more information about the inspiration for the project and the power of combining our expertise with Deloitte's. We encourage robotics companies to get involved with this project. This brochure has the information you need to participate. Industry and academia must work together to *earn* the trust of the public so that the future of robotics is responsible.

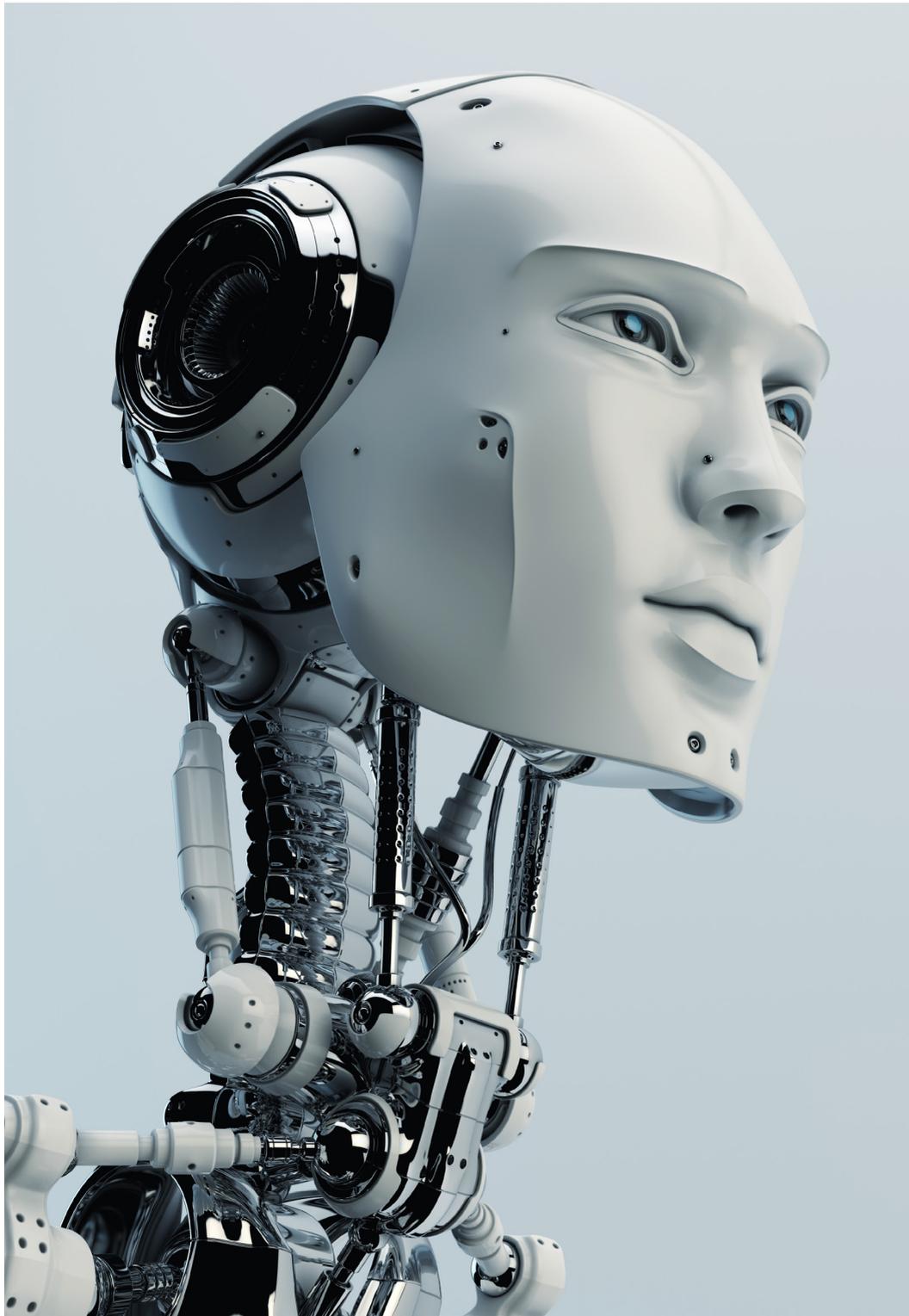
# Why a Quality Mark for Robotics and AI?

The developments in Robotics and Artificial Intelligence surface questions: Can these technologies survive without public trust?

The number of robot applications in key areas such as deliveries, autonomous transport, policing, the service industry, entertainment, elder care, child care, medicine, surgery, healthcare and agriculture is massively increasing.

The worldwide proliferation of these Robotics and AI technologies is beginning to impact significantly on human lives. Despite its touted successes, cracks are beginning to appear, and questions are being asked about social justice, gender

and race bias, as well as about privacy and the erosion of other human rights. The responsible use of Robotics and AI has great potential benefits for humanity, from monitoring and repairing climate change destruction to assisting in the early diagnosis of diseases. But if these technologies are to truly succeed in making our world a better place, the public must be able to place their trust in it. ➔



## Quality Mark For Robotics and Artificial Intelligence

The Foundation for Responsible Robotics and Deloitte are bringing together their diverse skill sets to create the FRR Quality Mark for Robotics and AI. This will ensure that best practices are met for the responsible design and development of the technology. The aim is to promote important features of products that will contribute to a better world, including sustainability, integrity, safety and security, and ethical design together with a consideration of societal impact,

**For consumers:** Whether they are a concerned parent, an NGO worker, a farmer or just someone looking for a job, the FRR Quality Mark for Robotics and AI will foster transparency and responsibility to protect societal values.

**For producers:** We want to help producers to design and innovate responsibly. We will work with these companies to assess their products and build a pathway for responsible innovation in their company.

### Privacy

Recent data breaches like the Cambridge Analytica breach have shown the importance of clear privacy regulations and disclosure,

but also what can happen if things go wrong. Although companies are supposed to disclose this information in their privacy statements and agreements, 81% of US consumers, according to Deloitte research, believe that consumers have lost control over how personal information is collected and used by companies<sup>1</sup>. Therefore, the FRR Quality Mark for Robotics and AI includes the principle of privacy to the framework. Through the FRR Quality Mark for Robotics and AI, we aim to promote the concept of privacy-by-design and the responsible usage and storage of customer data.

# 81%

of US consumers believe that consumers have lost control over how personal information is collected and used by companies.

### Sustainability

Responsible robotics design and development is becoming increasingly important for consumers. This trend includes sustainability. Research has shown that 87% of consumers would prefer to buy products from companies that demonstrate a commitment to sustainability. However, 86% of these consumers also believe that there is not enough information on products for consumers to assess their sustainability<sup>2</sup>. The FRR Quality Mark for Robotics and AI aims to lower this number through providing transparency on several key sustainability factors to the consumer.

*“Society could reap enormous benefits from AI and Robotics, but only if we get it right. We need to counter the scare stories, and the hype, or risk a public backlash. We must offer the public a mark of quality that helps them to make informed decisions.”*

**- Former Robot Wars judge and co-director of the Foundation for Responsible Robotics, Professor Noel Sharkey**

87%

of consumers would prefer to buy from companies and brands that demonstrate a commitment to sustainability, however;

86%

of consumers believe that there's not enough information on products for consumers to assess their sustainability.

# A project of the FRR and Deloitte

Deloitte supports the FRR through the Deloitte Impact Foundation and is contributing its AI and auditing expertise to help create the FRR Quality Mark for Robotics and AI.



**Marc Verdonk, Partner and Innovation Manager Risk Advisory, Deloitte Netherlands**

The aim of the FRR Quality Mark for Robotics and AI is to create a recognisable quality mark for consumers, comparable with the Fairtrade certification for products that adhere to fair trade standards. As a consumer, you should be able to rely on a standard. You don't have to understand all the details of the technology, you just have to know that someone with the right expertise using the right framework can ensure it is being made and used in a responsible way.

## **Avoiding bias and ensuring security and privacy**

An important aspect of the ethical use of AI is avoiding bias. There have been many instances in which algorithms unintentionally replicated bias. A recent example is an AI-powered recruiting tool of a multinational technology company that showed bias against women. The algorithm was actually properly trained, but it was fed with data of historical profiles of candidates that had been hired. And since they had hired more men than women in the past, the system taught itself that male candidates were better. The output of AI-powered algorithms is determined by the quality of the input data as well as by what the algorithm is doing. Therefore, both will be considered in the assessment process.

Another example of an aspect the FRR Quality Mark for Robotics and AI will take into account is security. If you want to promote the ethical use of Robotics AI, security should be a priority. Take for example a doll that uses AI to interact with children. If the doll can be hacked and used for something completely different, the consequences can be disastrous.

Another aspect is privacy. Take for example delivery robots. They need cameras to see the road. In theory, these cameras are able to film people who are passing by. But you can also consciously design the robots in a way that the camera is unable to film anyone above their knees. That is an ethical consideration. The FRR Quality Mark for Robotics and AI will therefore not only look at if the product is working properly and if it has been thoroughly tested, but also at the considerations that have been made throughout the design process.

Apart from the product, the FRR Quality Mark for Robotics and AI assesses the company that creates the product: its mission and vision, its policies and procedures, how operations are run, the people that are working there, and their professionalism and expertise. In all these aspects, the principles of creating something in an ethical

manner have to be safeguarded.

For consumers, the FRR Quality Mark for Robotics and AI can help them trust a technology that can be hard to understand. It can also help them to make a well-considered decision about what kind of robotic or AI-powered products they want to buy or use. For companies, the FRR Quality Mark for Robotics and AI can help to develop robots and AI in a transparent and responsible way. The FRR Quality Mark for Robotics and AI sets a standard that companies can adhere to. Companies want to show their customers that they actually do care about ethics. An independent quality mark can help to demonstrate that they take ethical considerations seriously.

“By contributing our knowledge and experience in auditing, innovation, and AI we can help to create trust in the chain from producer to consumer”.

*Marc Verdonk, Deloitte*

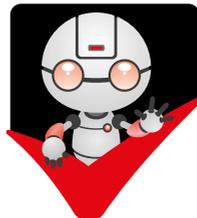
# The Quality Mark Framework

The FRR Quality Mark for Robotics and AI intends to promote transparency and trust to the Robotics and AI technology consumer.

The FRR Quality Mark for Robotics and AI assesses a product for seven principles, each of them covering an important aspect of the concept of Responsible Robotics. These principles were fabricated using co-design between ethics experts in The Foundation for Responsible Robotics and subject matter experts in Deloitte.

The principle security assesses the degree in which the product was tested for vulnerabilities and confirms the security of the Robotics product. This includes for example cybersecurity, hardware, software and technical security. Next to this, the product is evaluated for safety. For example: its primary intention and product safety. Looking at privacy, the product is assessed for GDPR compliance, data minimization, ease of use and privacy by default.

Whereas previous principles focus on the technical aspects of the product, the company and the product are also assessed for ethical and environmental aspects like fairness, sustainability, accountability and transparency. This includes aspects like gender or racial bias, environmental effects and transparency on the design, development and maintenance process.



**FOUNDATION  
FOR RESPONSIBLE  
ROBOTICS**

**quality  
mark**



## Security

Solutions should be rigorously tested for vulnerabilities and must be verified safe and protected from security threats. The effectiveness of protective measures is tested periodically.



## Safety

In the course of their operation, solutions must not jeopardize the physical safety or well-being of human beings. The solutions should be sufficiently tested and have clear usage instructions.



## Privacy

The solution was designed aligned to the Privacy by Design practice. Personal data is processed lawfully and to a minimum, kept safe from external or internal influences.



## Fairness

The solution shall operate in a non-discriminative way and ensure fundamental rights and ethical principles are protected. Next to this, the purpose and tasks of the solution are clearly stated and designed to respect the full range of human abilities.



## Sustainability

The solution should take actions to reduce negative environmental impact and observe principles of fair employment and labor practices. Next to this, the solution shall take in account social and cultural justice.



## Accountability

The solution shall be designed as far as is practicable to comply with existing laws and fundamental rights and freedoms. Furthermore, actions, intent and decisions of the solution should be traceable.



## Transparency

The solution shall be transparent about the fact that an AI engine is used. The decisions made by this model should be explainable. Next to this, the entity must have a traceability mechanism in place to ensure auditability.

# Partner information

As a partner, you can bring a valuable contribution to the FRR Quality Mark for Robotics and Artificial Intelligence project.

The Foundation for Responsible Robotics and Deloitte are actively looking for three different kinds of partners:

- **Pilot partners**
- **Advisory partners**
- **Funding partners**

## **Pilot partners**

As a pilot partner you can contribute to the development of the FRR Quality Mark for Robotics, AI framework and evaluation process.

You will provide feedback on the assessment process by being one of the first organizations to undergo the assessment. Your involvement in the FRR Quality Mark for Robotics and AI can show your customers that your company cares about important aspects like privacy, security and sustainability. In approximately 2 meetings we will discuss the framework and assessment process, after which we

will ask you for your feedback. We will use this feedback to update our draft framework (time investment: ca. 4 hours).

## **Advisory partners**

As our Quality Mark is still in development, we aim to join forces with professionals with expertise in quality mark development. Are you the 'FairTrade' in your field and do you think you could advise us in developing this framework and process, or do you have specific expert knowledge on one of the seven principles? For this purpose, we have set-up an advisory board with industry experts in their respective fields. If you are interested in joining this board, please contact us to explore the possibilities

## **Funding partner**

Do you want to support the Foundation for Responsible Robotics in their important mission to stimulate responsible robotics development? Please reach out to us to discuss options regarding funding and sponsoring.

# Contact us



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