EUROPEAN AI ACT
AI HUB GERMANY

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2023

REBOTNIX
GERMANY

AI HUB GERMANY

With the vote of 18.05.2023 in the responsible committee of the European Parliament, the way to AI regulation was confirmed. Since the year 2021, REBOTNIX has been dealing with this draft law with the aim to establish a certification body in Europe.

AI and applied sciences use many types of different neural networks and conduct excellent research in Europe. For many areas in business and daily life, AI is considered a gamechanger, because it can provide a significant increase in productivity, comfort and safety.

The scope of the AI ACT certification includes the validation of existing and future AI-based processes. This documentation, which is required by the legislators, is to be ensured for all applications in all risk areas.

In order to promote the quality of industrial AI systems and make it verifiable, REBOTNIX has launched a unique initiative. With the AI HUB Germany, industrial companies now have the opportunity to prove, improve and certify quality characteristics of AI systems.

FOCUS ON QUALITY

AI HUB GERMANY

AI systems enable technical machines, any kind of sensor technology and robotics in combination with chat-based large Foundation models to independently process and solve abstractly described tasks and problems.

With the new EU-wide rules for AI applications and the AI HUB GERMANY, we want to ensure for Europe that AI systems are supervised by humans so that they are safe, transparent, traceable, non-discriminatory and environmentally friendly.

The development of competencies forms one pillar of the AI HUB Germany. This includes knowledge exchange and technology transfer between industry and regulators.

The AI HUB Germany meets this challenge for ensuring the quality of industrial AI application. Starting with the acquisition of data from different sources and protocols, the annotation of data as well as the development of large Foundation Models. Running mature AI models on hardware chips of existing and next generations with the lowest power consumption is the focus of AI HUB Germany.

Our goal is also to coordinate AI control efforts with other regions of the world and to create mechanisms for effective and economical enforcement of AI.

AI HUB GERMANY

The AI HUB Germany has the following focus areas.

- The AI HUB Germany is a platform that supports industrial customers in the development and implementation of AI solutions.

- An important part of the offering is the certification of AI applications according to recognized standards and guidelines. The certification is intended to ensure the quality, safety and ethics of AI applications and to strengthen trust in the technology.

- The AI HUB Germany connects AI experts and users from different fields and institutions. The aim is to promote the exchange of knowledge and experience and to strengthen the application of AI.

- AI HUB Germany is an artificial intelligence service provider that tests hardware and software in various protection and risk classes for their performance and reliability in challenging environments. Performs hardware and software stress testing for demanding environments in various protection and risk classes.

AI HUB GERMANY

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The HUB also offers the following advantages.

- One benefit of the HUB is to facilitate access to AI models and applications from various fields such as speech synthesis, image processing, vector indexing, robotics. The AI HUB Germany promotes collaboration and knowledge transfer between research, business and society.

- Ability to train, test, and publish custom AI models via an API interface.

- We support compliance with quality and security standards for security-relevant infrastructures such as production, energy or system-relevant administration.

AI ACT READY
AI HUB GERMANY

In the start-up phase, the AI HUB Germany focuses on the rapid realization of the certification on the one hand. The following framework conditions have already been realized.

- Two ISO 27001 certified data centers in Düsseldorf and Berlin currently provide up to 250 GPU servers for the validation and documentation of developed AI models. It is planned to expand to 1000 GPU servers by the end of 2023.

- REBOTNIX grants full access to the security concept, risk management according to Article 9 of the AI ACT, of the entire data processing chains, according to Article 48 AI ACT for the competent EU authorities.

AI ACT READY

AI HUB GERMANY

- REBOTNIX VISIONTOOLS project management software documenting data quality, documentation and traceability, transparency, human supervision, precision and robustness. We give full access to the source codes for any certification from the relevant EU authorities.

- REBOTNIX VISIONTOOLS TRAINING Frameworks Software. We grant full access to documentation of neural layer structures, source codes for all networks for the responsible EU authority.

- REBOTNIX VISIONTOOLS provide measurement tools for accuracy in 6 classes, MAP,CL,CLS,LOC,IOU,BIAS. Documentation and assessment of risk methodology for classification of high risk AI systems that pose risks to health and safety or fundamental rights of individuals. Tools for AI systems for trustworthy conformity assessment procedures. We give full access to the source codes for certification by the relevant EU authority.

- REBOTNIX VISIONTOOLS, historical long-term documentation per trained weight and added dataset. We hand over measurement certificates for each active model including operational documentation of security and risk classification, Data Governance Act, Open Data Directive and other initiatives under AI ACT and EU strategy. We provide full access to the source codes and documentation for the relevant EU authority.

- REBOTNIX Inference Engine on industry edge hardware devices. We grant full access to the kernel source codes, the driver for each the certification of the relevant EU authority.

AI ACT READY

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- We provide statistics on all Foundation Models generated including the number of categories trained, the balance within a selective number of categories.

- We create concepts for improving the models below and above thresholds related to the number of categories as well as the number of data sets per category. We use transfer learning with pre-trained models as well as models trained from scratch, depending on the requirements and the data. We also disclose all sources of the training data and storage locations of the data including backup concept. Developer interfaces, so-called API (Application Programming Interface) can be executed in the own or external data center as well as locally (on-premise).

- Supporting the models and architectures for NLP,TRANSFORMERS,CRNN,CNN as well as all proprietary and in-house development of Text to Speech, Speech to Text and 2D and 3D Nerf. Thus, we provide conformance based on high quality management and technical documentation evaluation. We provide full access to the source codes for certification by the relevant EU authority.

REBOTNIX®

ABOUT REBOTNIX

REBOTNIX is a leading provider of industrial solutions for smart city, energy, recycling, manufacturing and we operate our solutions in data centers in Germany and Europe. With more than 100 successful AI projects, REBOTNIX offers innovative and sustainable products and services that include both software and hardware. Our goal is to increase the efficiency and profitability of our customers.

REBOTNIX VISIONTOOLS is a powerful software solution for visual AI analysis of objects and data. With REBOTNIX hardware, such as the GUSTAV Edge Device, users in the AI HUB can perform various applications such as identification, inspection and sorting of objects, as well as collect and process measurement data from production equipment. The software is modular and can be combined with different industrial cameras, sensors and interfaces.

As a general contractor, we take on the planning, installation and maintenance of complex AI applications that meet high requirements in terms of security and quality. Industrial customers benefit from our many years of experience and technical know-how in this area.

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SUMMARY

The AI Act offers the opportunity to preserve our digital sovereignty and secure the prosperity of the future in Europe. It aims to ensure that AI systems comply with European values, fundamental rights and principles. However, it may also create challenges for European AI developers and users if compliance checks are too complicated and compliance costs too high.

The AI HUB Germany is intended to be a business-friendly space where innovative AI solutions can be tested, validated and certified to meet safety, transparency, non-discrimination and environmental sustainability requirements.

The AI HUB Germany is an initiative that supports AI companies by enabling them to have their products and services tested according to high ethical and ecological standards. The aim is to strengthen trust in AI and promote the competitiveness of the German economy.

This is to maintain and increase the value proposition for trustworthy AI in Europe.

HTTPS://REBOTNIX.COM/AIHUB

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