Plattform
Lernende Systeme

**Shaping Artificial Intelligence
for the good of society**

What are self-learning systems?

Self-learning systems are increasingly becoming the **driver of digitalisation** in the economy and society. They are based on Artificial Intelligence (AI) technologies and methods, which are currently making great progress in terms of their performance. Self-learning systems are machines, robots and software systems that independently complete abstractly described tasks based on data that serve as a basis for learning – without each step being specifically programmed. Self-learning systems increasingly support people in their work and everyday life. They can help improve the quality of life in many areas, but also fundamentally change the interaction between humans and machines.

Opportunities and challenges

The **economic potential of AI** is enormous: completely new data-based business models are already emerging in individual sectors that are drastically changing traditional value chains. This offers opportunities for new companies, but can also become a threat to established market leaders if they do not react in time.

The development and use of AI systems requires **key competences**. These must be developed in a targeted manner. Training and further education in schools, universities and companies is crucial.

The use of AI systems also raises societal, legal, ethical and security-related questions – for example with regard to data protection, liability and transparency. These **challenges** must be discussed at an early stage in a broad-based dialogue.

Plattform Lernende Systeme

Plattform Lernende Systeme (PLS) is a network of experts on the topic of Artificial Intelligence (AI). It bundles expertise and, as an independent broker, promotes inter-disciplinary exchange and social dialogue. The approximately 200 members from science, business and society develop positions in working groups on the opportunities and challenges of AI and identify options for action to shape it responsibly. In this way, they support Germany's path to becoming a leading provider of trustworthy AI and its use as a key technology in business and society.

Plattform Lernende Systeme was founded in 2017 by the Federal Ministry of Education and Research (BMBF), and its managing office is located at acatech – German Academy of Science and Engineering.

Our goals

- Shaping AI in the sense of good, just and responsible social coexistence

- Strengthen competences for the development and handling of self-learning systems

- Bundling different perspectives as an independent broker

- Promote social dialogue on the topic of Artificial Intelligence

- Develop target images and scenarios for the application of AI systems

Further information on the self-image of
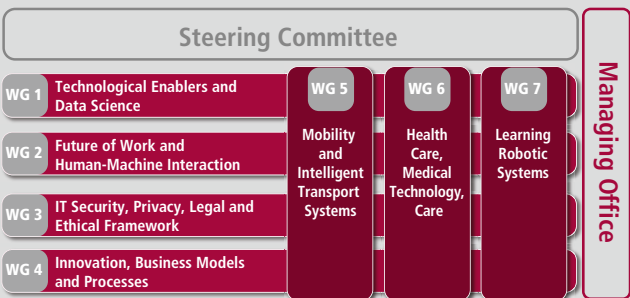Plattform Lernende Systeme:
www.plattform-lernende-systeme.de/mission-statement

Working methods and structure

At the heart of Plattform Lernende Systeme are its seven theme-specific **working groups** (WG). Around 200 interdisciplinary and cross-sectoral experts discuss technological, economic and social issues relating to the responsible use of Artificial Intelligence. They develop positions on opportunities and challenges and identify options for action.

The **steering committee**, chaired by the Federal Ministry of Education and Research and acatech, is made up of personalities from science and industry. They represent different disciplines and sectors and steer the content and strategic orientation of the platform.

The work of Plattform Lernende Systeme is coordinated by a **managing office** based at acatech. It is the point of contact for stakeholders from business, politics and society as well as for the media and interested institutions from Germany and abroad.

Steering Committee

WG 1 **Technological Enablers and Data Science**

WG 2 **Future of Work and Human-Machine Interaction**

WG 3 **IT Security, Privacy, Legal and Ethical Framework**

WG 4 **Innovation, Business Models and Processes**

WG 5 **Mobility and Intelligent Transport Systems**

WG 6 **Health Care, Medical Technology, Care**

WG 7 **Learning Robotic Systems**

Managing Office

# Themes of Plattform Lernende Systeme

In addition to technological, economic and societal questions on the use of Artificial Intelligence, Plattform Lernende Systeme also deals with concrete fields of application.

Technological Enablers and Data Science

Machine Learning and Data Science are considered the foundation of the digital transformation. They have become a decisive competitive factor in many areas of science and business. Central questions are: What will be the enablers of AI-based systems in the future? What skills are needed for this?

Future of Work and Human-Machine Interaction

In the future, Artificial Intelligence will support humans in all areas of work – from production to services to social professions. This will bring man and machine even closer together. How can it be ensured that the benefit for humans is in the foreground? How do employees make use of AI?
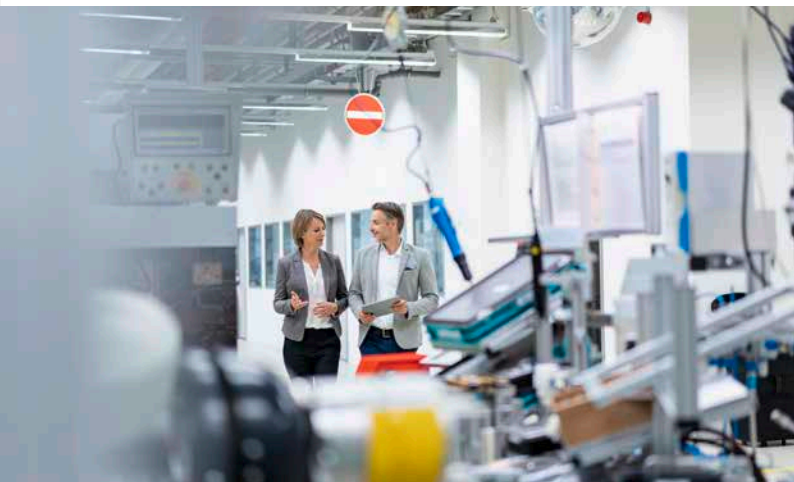
IT Security, Privacy, Legal and Ethical Framework

AI systems can make many processes more efficient, more convenient and more secure. The prerequisite is that they always function reliably and are safe from attack. New legal issues, such as liability or the handling of personal data, must be put into a legal framework. Another question to be evaluated is: What does it mean from an ethical and moral point of view to hand over human control to machines?

Innovation, Business Models and Processes

AI systems process data into knowledge – and thus make the exponentially growing amount of data usable for products and services. In addition to process improvements, this also enables completely new business models, for example for digital platforms, via which numerous companies of all sizes and industries will cooperate in the future.

Mobility and Intelligent Transport Systems

Transport modes on land, at sea and in the air are reaching ever higher levels of automation and are increasing

traffic safety and optimise traffic flows. Which technological solutions and infrastructures are suitable? Which safety-specific and legal questions need to be clarified?

Health Care, Medical Technology, Care

The intelligent linking of patient data promises great progress in medical research, diagnosis and prevention. Robot assistants can provide support during operations, in nursing care they can interconnected. Used intelligently, AI systems can assist during operations, unburden the medical staff and enable people in need of care to lead a self-determined life. Acceptance and data security are important prerequisites.

Learning Robotic Systems

Learning robotic systems can relieve humans in many ways – as portable systems in rehabilitation or logistics, as well as in environments that are dangerous for humans. The question to be explored is: What are the requirements for learning and adaptability in order to enable safe and reliable use of AI?