Ethics & human rights for new and emerging technologies

SIENNA project Policy Brief #4

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Who is this for?

Everyone concerned with ethical, legal or human rights issues associated with new and emerging technologies with high socio-economic impact, particularly AI and robotics, genomics, and human enhancement technologies.

Technology, ethics & human rights

Human genomics, human enhancement, artificial intelligence and robotics offer benefits for both individuals and society. But these technologies also challenge human rights and our notions of what is ethical. SIENNA has developed frameworks and proposals for the ethical management and legal regulation of human genetics and genomics, technologies for human enhancement, artificial intelligence and robotics.

This policy brief presents key messages drawn from the EU-funded Horizon 2020 SIENNA project (2017-2021). SIENNA seeks to promote enhanced consideration of ethical and human rights issues in new and emerging technologies with major socio-economic impact and human rights relevance.

Key messages

Ethics and human rights must be **central considerations** in research, development, deployment and use of new and emerging technologies - **not an afterthought.**

Ethical guidance of emerging technologies is a **multi-actor process** in which a variety of actors (researchers, developers, deployers, users, policy makers, civil society actors, media, educators) have a responsibility, and all require **specialized knowledge and tools** to properly address ethical issues.

General ethical guidelines can be an important first step to create awareness of ethical issues and provide a general direction for approaching them. To be useful, these should be operationalised for particular actors and supplemented with specific tools and methods.

New technologies should be subjected to an **Ethical Impact Assessment** in which ethical and human rights issues are flagged, analysed, and proposals are made for mitigation.

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Technology, ethics and human rights
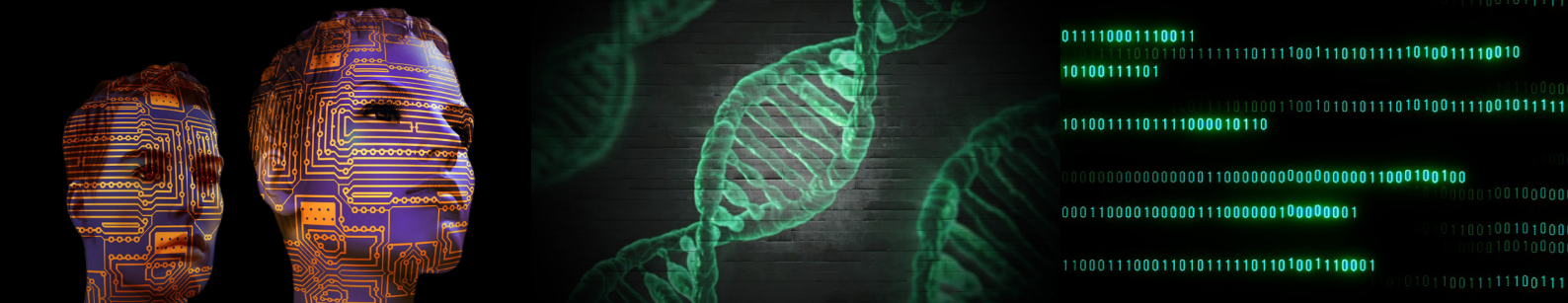
Supplementing research ethics for emerging technologies with an **Ethics by Design** approach guarantees a much better incorporation of ethical consideration in research and development.

Legislation, regulation and technical standards are important means to support ethics of emerging technologies and incentivise the use of ethical guidelines.

There is no regulatory silver bullet to **enhance legal frameworks for new technologies**. Compliance with human rights and ethical values is a multi-layered and continuous task which requires actions on different levels, with diverse tools and involvement of a wide range of actors.

Research ethics needs to be upgraded to better account for ethical issues in non-medical fields, (especially in the engineering sciences and computer and information sciences) and broader impact on society.

Higher education institutions and industry should invest in **education and training for engineers and other technology actors** to analyse, assess and address ethical issues, **and** to utilise specialised tools, such as research ethics assessment, Ethics by Design, technical standards, regulations, and Corporate Social Responsibility (CSR) policies.

Ensuring inclusivity **through the involvement of minorities, disenfranchised communities and vulnerable populations** using appropriate means, is essential to properly evaluate impacts of new and emerging technologies.

Further reading

Please check our reports, which can be accessed on our website and OpenAire. They include 1) ethical, legal and human rights analyses and recommendations for AI and robotics, human genomics and human enhancement and surveys and citizen panel reports on these technologies. Highlights include an Ethics by Design and research ethics framework for AI; ethics guidelines for human enhancement; an international code of conduct for data sharing in genomics; education and training proposals for AI ethics; policy briefs for the three technologies; 2) ethical, legal and human rights strategies and tools for emerging technologies in general.

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This policy brief was prepared in March 2021 by the SIENNA project.
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