Basic information

2015/2103(INL) INL - Legislative initiative procedure	Procedure completed
Civil law rules on robotics **Subject** 3.40.06 Electronics, electrotechnical industries, ICT, robotics 7.40.02 Judicial cooperation in civil and commercial matters	

Key players

European Parliament

Committee responsible	Rapporteur	Appointed
JURI Legal Affairs	DELVAUX Mady (S&D)	20/01/2015
	Shadow rapporteur COMODINI CACHIA Therese (PPE) DZHAMBAZKI Angel (ECR) CAVADA Jean-Marie (ALDE) MAŠTÁLKA Jiří (GUE/NGL) ANDERSSON Max (Verts/ALE)	

Committee for opinion	Rapporteur for opinion	Appointed
EMPL Employment and Social Affairs	KÓSA Ádám (PPE)	10/06/2015
ENVI Environment, Public Health and Food Safety	BUŞOI Cristian-Silviu (PPE)	19/04/2016
ITRE Industry, Research and Energy	KALLAS Kaja (ALDE)	19/05/2015
IMCO Internal Market and Consumer Protection	CHARANZOVÁ Dita (ALDE)	23/06/2015
TRAN Transport and Tourism (Associated committee)	MAYER Georg (ENF)	15/06/2016
LIBE Civil Liberties, Justice and Home Affairs (Associated committee)	BONI Michał (PPE)	24/05/2016

European Commission	

Commission DG	Commissioner
Justice and Consumers	JOUROVÁ Věra

Key events

Date	Event	Reference	Summary
21/05/2015	Committee referral announced in Parliament		
15/09/2016	Referral to associated committees announced in Parliament		
12/01/2017	Vote in committee		
27/01/2017	Committee report tabled for plenary	A8-0005/2017	Summary
15/02/2017	Debate in Parliament		
16/02/2017	Decision by Parliament	T8-0051/2017	Summary
16/02/2017	Results of vote in Parliament		
16/02/2017	End of procedure in Parliament		

Technical information

Procedure reference	2015/2103(INL)
Procedure type	INL - Legislative initiative procedure
Procedure subtype	Request for legislative proposal
Legal basis	Rules of Procedure EP 47
Other legal basis	Rules of Procedure EP 165
Stage reached in procedure	Procedure completed
Committee dossier	JURI/8/03463

Documentation gateway

European Parliament

Document type	Committee	Reference	Date	Summary
Committee draft report		PE582.443	31/05/2016	
Committee opinion	IMCO	PE585.496	12/10/2016	
Committee opinion	ENVI	PE587.414	14/10/2016	
Amendments tabled in committee		PE592.395	26/10/2016	
Amendments tabled in committee		PE592.405	26/10/2016	
Committee opinion	ITRE	PE583.918	15/11/2016	

Committee opinion	TRAN	PE589.230	16/11/2016	
Committee opinion	EMPL	PE584.250	23/11/2016	
Committee opinion	LIBE	PE589.153	23/11/2016	
Committee report tabled for plenary, single reading		A8-0005/2017	27/01/2017	Summary
Text adopted by Parliament, single reading		T8-0051/2017	16/02/2017	Summary

European Commission

Document type	Reference	Date	Summary
Commission response to text adopted in plenary	SP(2017)310	16/05/2017	

Additional information

Source	Document	Date
European Commission	EUR-Lex	

Civil law rules on robotics

2015/2103(INL) - 27/01/2017 - Committee report tabled for plenary, single reading

The Committee on Legal Affairs adopted the report by Mady DELVAUX (S&D, LU) with recommendations to the Commission on Civil Law Rules on Robotics (Initiative – Rule 46 of the Rules of Procedure).

The Committee on Transport and Tourism as well as the Committee on Civil Liberties, Justice and Home Affairs, exercising their prerogatives as associated committees in accordance with Article 54 of the Rules of Procedure, also gave their opinions on the report.

More and more appliances are now able to operate interactively and autonomously to some extent. Examples include self-driving cars and autonomous weapons. Artificial intelligence and robotics are advancing at an accelerating pace and legislation needs to be updated in line with a changing world.

Now that humankind stands on the threshold of an era when ever more sophisticated robots, bots, androids and other manifestations of artificial intelligence ("AI") seem to be poised to unleash a **new industrial revolution**, which is likely to leave no stratum of society untouched. The development of robotics and artificial intelligence raises legal and ethical issues which require a prompt intervention at EU level.

Members called on the Commission to submit, on the basis of Article 114 TFEU, a **proposal for a directive** on civil law rules on robotics, following the detailed recommendations:

Common Union definitions: Members called on the Commission to propose common Union definitions of cyber physical systems, autonomous systems, smart autonomous robots and their subcategories.

Registration of smart robots: Members considered that a comprehensive Union system of registration of advanced robots should be introduced within the Union's internal market. The Commission is called upon to establish criteria for the classification of robots that would need to be registered. They also considered it essential, in the development of robotics and AI, to guarantee that **humans have control over intelligent machines at all times** and that special attention should be paid to the possible development of an emotional connection between humans and robots – particularly in vulnerable groups (children, the elderly and people with disabilities).

In order to avoid fragmentation in the internal market, the report noted that testing, certification and market approval should only be required in a single Member State and that this approach should be accompanied by effective market surveillance.

Research and innovation: welcoming the fact that more and more research projects are being funded by the Member States and the Union, Members called on the Commission and the Member States to **strengthen financial instruments** for research projects in robotics and ICT. The EU already supports robotics projects through the SPARC programme which funds innovation in robotics by European companies and research institutions. However, increased support for this particular programme is called for.

Ethical principles: Members stressed that the existing Union legal framework should be **updated and complemented**, where appropriate, by guiding ethical principles in line with the complexity of robotics and its many social, medical and bioethical implications. A clear, strict and efficient guiding ethical framework for the development, design, production, use and modification of robots is needed to complement the existing national and Union acquis. They proposed, in the annex to the resolution, a framework in the form of a **charter consisting of a code of conduct** for robotics engineers, of a code for research ethics committees when reviewing robotics protocols and of model licences for designers and users.

The report suggested that advanced robots should be equipped with a '**black box**' which records data on every transaction carried out by the machine, including the logic that contributed to its decisions.

A European Agency for robotics and artificial intelligence: Members stressed that enhanced cooperation between the Member States and the Commission is necessary in order to guarantee coherent cross-border rules in the Union. This Agency should provide the technical, ethical and regulatory expertise needed to support the relevant public actors, at both Union and Member State level. The Agency should be provided with a **proper budget** and staffing.

Intellectual property rights: Members emphasised that the protection of networks of interconnected robots and artificial intelligence has to be ensured to prevent potential security breaches. A high level of security and protection of personal data together with due regard for privacy in communication between humans, robots and AI are fundamental. The Commission and the Member States are urged to ensure that civil law regulations in the robotics sector are consistent with Regulation (EU) 2016/679 of the European Parliament and of the Council on the protection of natural persons with regard to the processing of personal data and the free movement of such data (General Data Protection Regulation).

Liability: civil liability for damage caused by robots is a crucial issue which also needs to be analysed and addressed at Union level. In this regard, the Commission is asked to submit a proposal for a legislative instrument on legal questions related to the development and use of robotics and artificial intelligence foreseeable in the next 10 to 15 years, combined with non-legislative instruments such as guidelines and codes of conduct.

Members made a further series of recommendations on autonomous vehicles (the automotive sector is in most urgent need of efficient Union and global rules), drones, medical robots and human repair. They also called on the Commission to provide significant support for the development of digital abilities as a first step towards better aligning labour market shortages and demand.

Civil law rules on robotics

2015/2103(INL) - 16/02/2017 - Text adopted by Parliament, single reading

The European Parliament adopted by 451 votes to 138 with 20 abstentions, a resolution containing recommendations to the Commission on Civil Law Rules on Robotics.

Humankind stands on the threshold of an era when ever more sophisticated robots, bots, androids and other manifestations of artificial intelligence ("AI") seem to be poised to unleash a **new industrial revolution**, which is likely to leave no stratum of society untouched. The development of robotics and artificial intelligence raises legal and ethical issues that require a prompt intervention at EU level.

Members called on the Commission to submit, on the basis of Article 114 TFEU, a **proposal for a directive** on civil law rules on robotics, bearing in mind the following recommendations:

Definition and classification of a smart robot: Parliament called on the Commission to propose common Union definitions of cyber physical systems, autonomous systems, smart autonomous robots and their subcategories.

Registration of smart robots: Parliament considered that a comprehensive Union system of registration of advanced robots should be introduced within the Union's internal market. The Commission is called upon to establish criteria for the classification of robots that would need to be registered.

Members also considered it essential, in the development of robotics and AI, to guarantee that **humans have control over intelligent machines at all times** and that special attention should be paid to the possible development of an emotional connection between humans and robots – particularly in vulnerable groups (children, the elderly and people with disabilities).

In order to avoid fragmentation in the internal market, Parliament noted that testing, certification and market approval should only be required in a single Member State and that this approach should be accompanied by effective market surveillance. It also underlined the importance of the principle of **mutual recognition** in the cross-border use of robots and robotic systems.

Research and innovation: Members asked the Commission and Member States to strengthen financial instruments for research projects in robotics and ICT, including public-private partnerships. Whilst welcoming the fact that the Member States and the Union are funding more and more research projects, Parliament called for increased EU support for the Horizon 2020 funded SPARC programme.

Ethical principles: Parliament stressed the need for a clear, strict and efficient guiding ethical framework for the development, design, production, use and modification of robots is needed to complement the existing national and Union acquis. It proposed, in the annex to the resolution, a framework in the form of a **charter consisting of a code of conduct** for robotics engineers, of a code for research ethics committees when reviewing robotics protocols and of model licences for designers and users.

The code should be based on the principles of **beneficence, non-maleficence, autonomy and justice.** Researchers and designers were asked to act responsibly and bear in mind the need to respect, dignity, privacy, and human safety.

A European Agency for robotics and artificial intelligence: in order to guarantee coherent cross-border rules in the Union, Parliament asked the Commission to consider the designation of such an Agency in order to provide the **technical, ethical and regulatory expertise** needed to support the relevant public actors, at both Union and Member State level. The Agency must be granted an appropriate budget.

Intellectual property rights: Members called on the Commission to support a horizontal and technologically neutral approach to intellectual property applicable to the various sectors in which robotics could be employed. Parliament emphasised that a high level of security and protection of personal data together with due regard for privacy in communication between humans, robots and AI are fundamental. The Commission and the Member States are urged to ensure that civil law regulations in the robotics sector are consistent with Regulation (EU) 2016/679 of the European Parliament and of the Council (General Data Protection Regulation).

Liability: the Commission is asked to submit a **proposal for a legislative instrument** on legal questions related to the development and use of robotics and artificial intelligence foreseeable in the next 10 to 15 years, combined with non-legislative instruments such as guidelines and codes of conduct.

The Commission was asked to explore the implications of all possible legal solutions, such as:

- establishing a **compulsory insurance scheme** where relevant and necessary for specific categories of robots whereby, similarly to what already happens with cars, producers, or owners of robots would be required to take out insurance cover for the damage potentially caused by their robots;
- ensuring that a **compensation fund** would not only serve the purpose of guaranteeing compensation if the damage caused by a robot was not covered by insurance;
- creating a **specific legal status** for robots in the long run, so that at least the most sophisticated autonomous robots could be established as having the status of electronic persons responsible for making good any damage they may cause.

Members made a further series of recommendations on autonomous vehicles (the automotive sector is in most urgent need of efficient Union and global rules), drones, medical robots and human repair.

Employment: stressing the need to prepare for the changes that robotics will mean for society, Parliament asked the Commission to **start monitoring** medium- and long-term job trends more closely, with a special focus on the creation, displacement and loss of jobs in the different fields/areas of qualification, as well as the consequences on the viability of the social security systems of the Member States. It also called upon the Commission to provide significant support for the development of **digital abilities** as a first step towards better aligning labour market shortages and demand.