Original scientific paper

AI SYSTEMS AND PRODUCT LIABILITY IN THE EU: A PRIVATE INTERNATIONAL LAW ANALYSIS

Curzio Fossati, Post-doctoral researcher
University of Cagliari, Department of Political and Social Sciences
Via Sant'Ignazio da Laconi, 78, 09123 Cagliari (CA), Italy
curzio.fossati@unica.it

ABSTRACT

The paper analyses liability for defective AI systems from a private international law perspective.

It begins with a brief analysis of the main reasons for the adoption of the new Directive 2024/2853 of 23 October 2024 on liability for defective products and the role of this Directive in the new EU legal framework on artificial intelligence, examining in particular its interplay with Regulation 2024/1689 of 13 June 2024 laying down harmonised rules on artificial intelligence (AI Act).

The paper then focuses on the lack of a specific regulation of private international law issues in the above-mentioned legal framework and the consequent need to consider other sources of law to address these issues. To this end, it first examines the relevant provisions of Regulation 1215/2012 (Brussels I bis), in particular the special forum for torts (Article 7 (No. 2)), and its interpretation by the CJEU in cases of defective products. It also deals with the conflict-of-laws rules of Regulation 864/2007 (Rome II) - especially Article 5, on damages caused by a product - and their coordination with the 1973 Hague Convention on the Law Applicable to Products Liability.

The aim of the paper is to examine the results of the application of the current rules on jurisdiction and applicable law to cases of defective AI systems, and to highlight their main critical issues and possible solutions. The author proposes the introduction of new heads of jurisdiction and conflict-of-law rules that would strike a fairer balance between the interests at stake: protecting people from the serious harm that AI systems could cause, and promoting the free movement of these systems in the EU market.

Key words*: Applicable Law, Artificial Intelligence, EU Law, Non-contractual obligations, Jurisdiction, Product liability*

1. INTRODUCTION

As the European Commission pointed out in its White Paper of 19 February 2020, artificial intelligence is developing rapidly, changing our lives and bringing economic, social and environmental benefits, such as improving prevision and

optimising resource allocation and operations.[1] At the same time, however, the use of AI systems carries the risk of undermining both public interests in terms of health and safety and fundamental human rights, as it can be a source of physical, psychological, social or economic harm to users (loss of life, infringement of privacy, damage to property, etc.).[2] For this reason, the EU institutions have taken the initiative to outline a regulatory framework for artificial intelligence, with the dual aim of promoting the adoption of these technologies and protecting people from the potential risks they pose.

This framework mainly consists of: (i) the new Regulation 2024/1689/EU of 13 June 2024 laying down harmonised rules on artificial intelligence (AI Act);[3] (ii) the new directive 2024/2853/EU of 23 October 2024 on liability for defective products. [4]

The first act sets out harmonised rules for the placing on the market, putting into service and use of artificial intelligence systems ("AI systems")[5] in the European Union, following a "risk-based approach": the more the AI system poses potential risks to the health, safety or fundamental rights of users, the stricter the requirements are.[6]

The second one amends the regime of liability for defective products laid down in the previous Directive 85/374[7] in order to reduce the burden of proof on injured parties in all cases where it is particularly difficult to demonstrate the existence of the defect and the causal link between that defect and the damage, in particular because of the technological nature of the defective product.[8]

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1 White Paper on Artificial Intelligence - A European approach to excellence and trust, COM(2020) 65 final.

2 *Ibid*.

3 European Parliament and Council Regulation 2024/1689/EU laying down harmonised rules on artificial intelligence and amending Regulations 300/2008/EC, 167/2013/EU, 168/2013/EU, 2018/858/EU, 2018/1139/EU and 2019/2144/EU and Directives 2014/90/EU, 2016/797/EU and 2020/1828/EU [2024] OJ L1689/1 (Artificial Intelligence Act).

4 European Parliament and Council Directive 2024/2853/EU on liability for defective products and repealing Council Directive 85/374/EEC [2024] OJ L2853/1 (Product Liability Directive).

5 Article 3 (No. 1) of the AI Act defines AI system as a "machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments".

6 See AI Act, recital 26 and art. 5 (on prohibited AI practices), art. 6 (on classification rules for high-risk AI systems) and art. 50 (on transparency obligations for providers and deployers of certain AI systems).

7 Council Directive 85/374/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products [1985] OJ L210/29.

8 The EU legal framework on artificial intelligence is completed by the European Parliament and Council Regulation 2023/988/EU on general product safety [2023] OJ L135/1, and the European Parliament and Council Regulation 2023/1230/EU on machinery [2023] OJ L1653/1. These acts set out

The legal framework on artificial intelligence should have included aspects of civil liability for damage caused by AI systems. In fact, on 28 September 2022, the European Commission published a proposal for a Directive on adapting non-contractual civil liability rules to artificial intelligence (AI Liability Directive).[9] However, as indicated in the Commission Work Programme 2025, published in February 2025, the proposal was withdrawn due to the lack of foreseeable agreement.[10] The Commission stated that it would assess whether another proposal should be made or whether a different approach should be chosen.

Instead, private international law issues seem to be completely neglected in the overall regulatory intervention. This may be surprising as AI systems typically operate in a cross-border context: on the one hand, it is likely that the different operators in the chain of production and marketing of such systems, as well as the users and, more generally, the persons involved, are often located in different States; on the other hand, the use of these systems is usually via the Internet, and the damages therefore occurs in a virtual space, rather than on the territory of a specific country.[11] It is therefore necessary to consider other legal sources to resolve the private international law issues of cases involving artificial intelligence.

This paper will focus on cases of liability for defective AI systems with cross-border elements and will seek to identify the regulation of such cases by coordinating the new EU regulatory framework on artificial intelligence and pre-existing sources of private international law. To this end, it will first analyse Directive 85/374/EEC on product liability and the main issues it has raised in cases of damage caused by defective AI systems (para. 2.1). Then, it will examine the new Directive 2024/2853/EU (para. 2.2.) and its interplay with the AI Act and with a possible EU regime on AI liability (para. 2.3). The article then turns to private international law issues (para. 3), starting with the relevant rules of the Regulation 1215/2012/EU

new rules on product conformity (outside the scope of the AI Regulation) and rules on the safety of machinery, considering the new risks posed by emerging digital technologies, including artificial intelligence.

9 Proposal for a European Parliament and Council directive on adapting non-contractual civil liability rules to artificial intelligence, COM(2022) 496 final (AI Liability Directive). It is worth noting that the proposal followed the European Parliament's resolution of 20 October 2020 with recommendations to the Commission on a civil liability regime for artificial intelligence (2020/2014(INL)).

10 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - Commission work programme 2025, COM(2025) 45 final, Annex IV, p. 26.

11 See: Ho-Dac, M., *The EU AI Act and Private International Law: A First Look Developments in PIL, EU Legislation, Normative Texts, Views and Comments*, 2024, available at: [https://eapil.org/2024/10/21/the-eu-ai-act-and-private-international-law-a-first-look/], Accessed 5 March 2025; Henckel, K., *Issues of conflicting laws–a closer look at the EU's approach to artificial intelligence*, Nederlands Internationaal Privaatrecht, No. 2, 2023, p. 199.

on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (Brussels I bis)[12] and the related case law of the CJEU (para. 3.1), followed by the conflict-of-law rules of the Hague Convention of 2 October 1973 on the law applicable to product liability[13] and Regulation 864/2007/EC on the law applicable to non-contractual obligations (Rome II)[14] (para. 3.2). Finally, it will make some concluding remarks on the critical aspects of the current legal framework and possible alternative solutions (para. 4).

2. THE NEW PRODUCT LIABILITY DIRECTIVE AND ITS INTERPLY WITH OTHER INSTRUMENTS OF THE EU LEGAL FRAMEWORK ON AI

2.1. DIRECTIVE 85/374/EEC AND THE AI CHALLENGES

Cases of defective AI systems have some specific elements that distinguish them from general cases of defective products. Two examples may better illustrate these peculiarities. A self-driving car crashed and seriously injured the driver: the accident was caused by a defect in the car's AI-based camera, which failed to detect an obstacle on the road and stop the car. Artificial intelligent software used in a hospital misdiagnosed a patient's disease: doctors suggested the wrong treatment and the patient died.

Such cases have raised several questions for practitioners and academics.

Firstly, it has been discussed whether the EU product liability regime could apply due to the specific nature of AI systems. This regime was originally established by Directive 85/374/EEC, which harmonised the Member States' rules on liability for damage caused by a defective product, defining the cases in which the product could be considered defective (Article 6), setting out the allocation of the burden of proof between the injured party and the producer (Articles 4 and 7), and establishing the three-year limitation period for bringing an action for damages (Article 10). Article 2 of the Directive defines "product" as all movables, except for primary agricultural products and games, even if incorporated into another movable or immovable good. This definition has led some scholars to argue that the Directive only applies when the damage is caused by AI systems embedded

[12] European Parliament and Council Regulation 1215/2012/EU on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters [2012] OJ L351/1.

[13] The Hague Conference of Private International Law Convention of 2 October 1973 on the Law Applicable to Products Liability.

[14] European Parliament and Council Regulation 864/2007/EC on the law applicable to non-contractual obligations (Rome II) [2007] OJ L199/40.

in hardware, as it does not apply to intangible and immaterial goods such as software and other digital products.[15] Furthermore, Article 9 of the Directive defines the damage caused by defective products to which it applies, i.e. death, personal injury, damage to or destruction of property other than the product itself. Some authors have therefore doubted that the Directive could apply to AI systems, as it is uncertain whether they would be able to cause such damage: again, the doubts concern artificial intelligence systems that are not embedded in hardware.[16]

On the other hand, it has also been debated whether the regime provided by the Directive 85/374 would be appropriate in cases of defective AI systems. Indeed, according to Article 4 of the Directive, the injured party bears the burden of proving the damage, the defect of the product and the causal link between the defect and the damage.[17] However, the complexity, "opacity" and unpredictability of the outputs of AI systems make it quite difficult for the injured party to shift the burden of proof, especially on the causal link.[18]

2.2. THE NEW PRODUCT LIABILITY DIRECTIVE AND DAMAGES CAUSED BY DEFECTIVE AI SYSTEMS

These reasons contributed to the EU legislator's decision to amend the regime of the Directive 85/374.[19] In particular, as stated in the Explanatory Memorandum of the proposal for the new Product Liability Directive, it was legally unclear how

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15 Cappiello, B., AI-Systems and non-contractual liability: a european private international law analysis, Giappichelli, Torino, 2022, p. 68; Bruggemeier, G., *Tort Law of the European Union*, Kluwer Law International, Alphen aan del Rijin, 2015, p. 293; Wuyts, D., *The product liability directive more than two decades of defective products in Europe*, Journal of European Tort Law, Vol. 5, No. 1, 2014, p. 1.

16 Bussani, M.; Palmer, V.V., *The liability regimes of Europe – their fracades and interiores*, in: Bussani, M.; Palmer, V.V. (eds.), Pure economic loss in Europe, Cambridge University Press, Cambridge, 2011, p. 3; Tutt, A., *An FDA for Algorithms*, Administrative Law Review, Vol. 69, No. 1, 2017, p. 83.

17 Pursuant to Article 6 (1) of the Directive 85/374 "a product is defective when it does not provide the safety which a person is entitled to expect, taking all circumstances into account, including: (a) the presentation of the product; (b) the use to which it could reasonably be expected that the product would be put; (c) the time when the product was put into circulation", and pursuant to Article 6 (2) "a product shall not be considered defective for the sole reason that a better product is subsequently put into circulation". According to Article 7, the producer could be exempted from liability by proving special circumstances, such as the fact that the product was not put into circulation or that the defect causing the damage was probably not present at the time when the product was put into circulation.

18 Cappiello, *op. cit.*, note 15, p. 68; Zech, H., *Liability for AI: public policy considerations*, ERA Forum, Vol. 22, No. 1, 2021, p. 147. The term "opacity" appears frequently in the EU legal framework on AI and in the preparatory work. It refers to the so-called "black box effect" of AI systems, i.e. the impossibility of understanding the decision-making process of AI systems based on algorithms.

19 See *inter alia* Karanikić Mirić, M., *Product Liability Reform in EU*, Eu and Comparative Law Issues and Challenges Series (ECLIC), Vol. 7, 2023, p. 387.

to apply the definitions of Directive 85/374 to "products in the modern digital and circular economy (e.g. software and products that need software or digital services to function, such as smart devices and autonomous vehicles)"; furthermore, "the burden of proof […] was challenging for injured persons in complex cases (e.g. those involving […] AI-enabled products)".[20]

In order to address these challenges, the new Directive 2024/2853 introduces two important changes. Firstly, it provides a new definition of product as "movable property, even if integrated into, or connected to another movable or immovable", included "electricity, digital manufacturing files, raw materials and software".[21] Secondly, the new Directive maintains the same rule on the injured party's burden of proof as in Article 6 of Directive 85/374, but adds significant (rebuttable) presumptions in favor of the victim, in certain cases.[22]

These new provisions have two important implications. First, it is now clear that the EU product liability regime covers damage caused by AI systems, whether or not they are embedded in hardware, since the new definition of products includes immaterial and intangible goods. Secondly, the new presumptions set out in Article 10 lighten the burden of proof for persons injured by defective AI systems. In particular, Article 10 (3) provides that the defectiveness of the product or the causal link between its defectiveness and the damage, or both, shall be presumed where: "(a) the claimant faces excessive difficulties, in particular due to technical or scientific complexity, in proving the defectiveness of the product or the causal link between its defectiveness and the damage, or both; and (b) the claimant demonstrates that it is likely that the product is defective or that there is a causal link between the defectiveness of the product and the damage, or both".[23]

2.3. THE INTERPLAY BETWEEN THE NEW PRODUCT LIABILITY DIRECTIVE, THE AI ACT AND A POSSIBLE AI LIABILITY REGIME

There are strong links between the new Product Liability Directive and the AI Act as they could be seen as complementary.[24] The AI Act sets out specific standards that an AI system should meet before being placed on the EU market. The

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20 Proposal for a European Parliament and Council Directive on liability for defective products, Explanatory memorandum, COM(2022) 495 final, pp. 1-2.

21 New Product Liability Directive, art. 4 (a).

22 New Product Liability Directive, art. 10.

23 New Product Liability Directive, art. 10 (4).

24 See Poesen, M., *Jigsaw Pieces Falling into Place: Do the Territorial Scopes of the AI Act and the Revised Product Liability Directive Dovetail?*, 2025, available at:

New Directive ensures, among other things, that if AI systems are defective (also because they do not meet the requirements laid down in the AI Act) and cause damage, the victim can claim compensation from the manufacturer.[25] The complementarity between the two instruments is clear from Article 10 (2) (b) of the new Product Liability Directive. According to this provision, the product is presumed to be defective if the claimant proves that "the product does not comply with mandatory product safety requirements laid down in Union or national law that intended to protect against the risk of the damage suffered by the injured person". This provision could clearly be interpreted to mean that if an AI system is involved, the defect of that system will be presumed if the claimant proves that it does not comply with the requirements laid down in the AI Act.[26]

Furthermore, even the withdrawn proposal for the AI Liability Directive would have been complementary to both the AI Act and the Product Liability Directive. In fact, this proposal was based on two main provisions: (i) the power of national courts to order providers to disclose evidence of high-risk AI systems suspected of causing damage (Article 3); (ii) a rebuttable presumption of the existence of a causal link between the defendant's fault and the output of the AI system in certain cases, some of which related to the failure to comply with the requirements and obligations under the AI Act (Article 4). In addition, Article 1 (3) (c) of the proposal stated that the AI Liability Directive would not affect any rights recognized to an injured person by national provisions enacting the Product Liability Directive.

It is worth noting, however, that despite the withdrawal of the proposal, any AI liability regime that might be introduced would be complementary to the Product Liability Directive. Indeed, Article 2 (4) (b) of the latter states that this Directive is without prejudice to the rights which an injured person may have under national provisions on contractual or non-contractual liability for causes other than the defectiveness of a product, including national provisions implementing Union law. Therefore, in cases of damage caused by AI, any AI liability regime that might be adopted would be complementary to the Product Liability Directive: The latter regime would apply in cases where the victim claims to have suffered damage caused by a defect of an AI system, whereas the former regime would apply where the victim claims damages for a reason other than the defect of the system, such as damage caused intentionally by the use of a tool based on artificial intelligence.[27]

[https://eapil.org/2025/01/29/jigsaw-pieces-falling-into-place-do-the-territorial-scopes-of-the-ai-act-and-the-revised-product-liability-directive-dovetail/], Accessed 5 March 2025.

25 See the proposal for the new Directive on liability for defective products, Explanatory memorandum, p. 4 and Directive 2024/2853, recital 13.

26 See Poesen, *op. cit.*, note 24.

27 An example of damage deliberately caused by using AI could be a machine learning algorithm that has been programmed to transfer money from a bank account to the operator's bank account (see Lein,

3. PRIVATE INTERNATIONAL LAW ISSUES IN CASES OF DAMAGE CAUSED BY DEFECTIVE AI SYSTEMS

While the instruments that compose the EU legal framework on AI are complementary, they are not consistent in terms of their respective territorial scope.[28] The AI Act provides a specific rule on its territorial scope (Article 2), which states that the Act applies not only to operators of AI systems established or located in the EU, but also to providers and deployers established or located in a third country, where the AI system is placed on the EU market or where its output is used in the EU.[29] Instead, the New Product Liability Directive does not contain a provision on its territorial scope in international cases, neither in the form of a unilateral scope rule nor in the form of a bilateral conflict-of-law rule.

From a private international law perspective, these inconsistencies may raise the following issues in cross-border cases of liability for defective AI systems. First, in the absence of specific rules on jurisdiction in the new EU legal framework on artificial intelligence, jurisdiction for cases of damage caused by a defective AI system that does not comply with the requirements of the AI Act should be governed by the general rules on jurisdiction set out in the Brussels I bis Regulation. However, these rules only apply if the defendant (i.e. the operator of the defective AI system) is established in a Member State, due to the territorial scope of application of Brussels I bis.[30] If the defendant is established in a Third country, the national rules of the Member States apply to determine jurisdiction. Second, the regime of the AI Act (which sets out the requirements that operators must comply with) applies automatically by virtue of Article 2 of the Act,[31] whereas the regime of the Product Liability Directive should only apply where general rules of private international law refer to the law of a Member State (which enacted the Directive).[32] It is therefore necessary to take into account different sources of law and to try to coordinate them with the new legal framework on IA in order to

E.; Migliorini, S.; Bonzé, C., *Study on the Rome II Regulation (EC) 864/2007 on the law applicable to non-contractual obligations*, British Institute of International and Comparative Law, 2021, p. 66).

28 See Poesen, *op. cit.*, note 24.

29 AI Act, art. 2 (1).

30 Brussels I bis Regulation, art. 6.

31 See: Henckel, *op cit.*, note 11, p. 207, who argues that "Article 2 of the AI Act provides an express unilateral scope rule with extraterritorial effect" which displaces "the traditional – multilateral – conflict of laws reference"; Cappiello, *op. cit.*, note 15, pp. 201-202, who argues that the provisions of the AI Act are also intended "to ensure the protection of EU crucial interest and fundamental values", so that they should be applied "via art. 16 Rome II, as overriding mandatory rules, this discarding the application of less protective foreign regulations".

32 See Poesen, *op. cit.*, note 24.

determine the heads of jurisdiction and the conflict-of-law rules applicable in the cases under consideration.

3.1. JURISDICTION

Under the Brussels I bis Regulation, the most relevant rules for determining jurisdiction in cases of damage caused by defective AI systems - apart from the rules on prorogation of jurisdiction (Articles 24 and 25)[33] - are the general rule (Article 4 (1)) and the special rule for torts (Article 7 (No. 2)). These provisions give the plaintiff the choice of bringing the claim before the courts of the Member State in which he is domiciled (the general *forum*) or before the court of the place where the harmful event occurred or is likely to occur (the special *forum delicti*). As the CJEU has held since the well-known judgment in the Case *Bier v Mines de potasse d'Alsace*, the special rule on jurisdiction in matters of torts and delicts allows the plaintiff to bring proceedings both in the court of the place of the event giving rise to the damage and in the court of the place where the damage occurred.[34]

Concerning disputes over defective products, in the Case *Zuid-Chemie v Philippo's Mineralenfabriek* the CJEU has held that the place where the harmful event occurred, i.e. where the event causing the damage produces its harmful effects, is "the place where the initial damage occurred as a result of the normal use of the product for the purpose for which was intended".[35] Furthermore, in the Case *Kainz v Pantherwerke* the Court of Justice clarified that the place of the event giving rise to the damage is the place where the defective product was manufactured.[36] More recently, in the Case *Verein für Konsumenteninformation v Volkswagen* the CJEU held that, when the damage consists of the sale of a car unlawfully equipped by the manufacturer with software that manipulates data relating to exhaust emissions, the harmful consequences of the event giving rise to the damage occur at the place where the car is purchased.[37]

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33 Article 25 Brussels I bis confers jurisdiction on the court designated in an agreement between the parties to settle disputes which have arisen or which may arise in connection with a particular legal relationship, while Article 26 confers jurisdiction on the court of a Member State before which a defendant enters an appearance.

34 Case C-21/76 *Handelskwekerij G. J. Bier BV v Mines de potasse d'Alsace SA* [1976] *ECR 01735, par. 19. For the so-called "ubiquity theory" adopted by the Court since this judgment, see:* Carrascosa González, J., *Distance Torts: The Mines de Potasse Decision Forty Years On*, Yearbook of Private International Law, Vol. 18, 2016/2017, pp. 19-38; Mankowski, P., *Art. 7*, in: Magnus U.; Mankowski, P. (eds.), Brussels Ibis Regulation – Commentary, Dr. Otto Schmidt KG, Köln, 2022, p. 108 ff.

35 Case C-189/08 *Zuid-Chemie BV v Philippo's Mineralenfabriek NV/SA* [2009] ECR I-06917, par. 32.

36 Case C-45/13 *Andreas Kainz v Pantherwerke AG* [2014] ECLI:EU:C:2014:7, par. 29.

37 Case C-343/19 *Verein für Konsumenteninformation v Volkswagen Ag* [2020] ECLI:EU:C:2020:534, par. 35. It is worth noting that the principles laid down in *Volkswagen* and *Zuid-Chemie* are not in-

The application of both general and special *forum* to cases of damage caused by defective AI systems may raise some critical issues.

Regarding article 4 (1), it may be difficult to determine the domicile of the defendant, given the virtual nature of the services under consideration.[38] Furthermore, if multiple entities are involved in the production chain of the AI system, the general forum could lead to the jurisdiction of the courts of each Member State where these entities are domiciled (i.e. established), which could discourage the victim from starting any action in that forum.[39]

The main issues related to the special rule of jurisdiction concern the identification of the place where the product was manufactured and the place where the harmful consequences occurred. In fact, the latter may coincide with several places: the place where the algorithm on which the system is based was developed, the place where the software that uses the system was produced and, in the case of software incorporated into a hardware, the place where it was assembled.[40] All of them could be adopted as heads of jurisdiction.[41] Furthermore, it is difficult to determine the place where the harmful consequences occurred, especially in cases where the AI system is not embedded in hardware. On the one hand, it may not

compatible: in the latter case, the CJEU held that the damage consisting in the impossibility of using the defective product for the purpose for which it was intended occurred at the place where it was first used, whereas in *Volkswagen* the Court pointed out that the specific harmful consequence of the damage in question – i.e. the purchase of a vehicle at a price higher than its real value – occurred at the place of purchase, see Eichmüller P.; Lehmann, M., *A Further Twist to Emissions Scandal Litigation: Jurisdiction in Case of Self-Imported Cars*, 2021, availabe at: [https://eapil.org/2021/06/08/a-further-twist-to-emissions-scandal-litigation-jurisdiction-in-case-of-self-imported-cars/], Accessed 5 March 2025.

38 It may be useful to bear in mind that in the Case C-523/10 *Wintersteiger AG v Products 4U Sondermaschinenbau GmbH* [2012] ECLI:EU:C:2012:220, par. 34, the CJEU held that, in cases of damage caused by internet activity consisting in the online display of advertisements infringing a trademark, the advertiser's establishment is in the place where the decision to activate the display process is taken. This criterion could also be useful for determining the domicile of the defendant in cases of defective AI systems.

39 It should be noted that in cases of multiple defendants, pursuant to Art. 8 (1) Brussels I bis Regulation the plaintiff may sue all the defendants "in the courts for the place where any one of them is domiciled, provided that the claims are so closely connected that it is expedient to hear and determine them together to avoid the risk of irreconcilable judgments resulting from separate proceedings".

40 See Cappiello, *op. cit.*, note 15, p. 176.

41 It is worth noting that recital 13 of the new Product Liability Directive states that "a developer or producer of software, including providers of AI systems within the meaning of Regulation (EU) 2024/1689 of the European Parliament and of the Council, should be treated as a manufacturer". Based on this statement, it could be argued that the place where the defective AI system is manufactured is the place of establishment of the provider of the system, i.e. the entity that develops the system and places it on the market or puts it into service under its own name or trademark, whether in return for payment or free of charge, see AI Act, art. 3, No. 3.

be easy to find the place where the defective product was first used (in accordance with the principle laid down in *Zuid-Chemie*): the output of the AI system causing the damage is usually transmitted to the user via the Internet, and it may not be possible to trace the specific place where the user accessed the service offered by the system.[42] On the other hand, the criterion of the place of purchase (set out in *Volkswagen*) could be troubling in cases where the AI system is free (e.g., a chatbot freely downloadable from a smartphone's app store) or embedded in another product (e.g., an AI-based software installed in a self-driving car).[43]

3.2. APPLICABLE LAW

The applicable law in cases of damage caused by defective products shall be determined by the Rome II Regulation and, in certain cases, by the 1973 Hague Convention.

Indeed, Article 28 Rome II states that the Regulation shall not prejudice the application of international conventions to which one or more Member States are parties (at the time of the adoption of the Regulation) and which lay down conflict-of-law rules relating to non-contractual obligations. The 1973 Hague Convention on the law applicable to product liability therefore prevails over the Rome II Regulation for the seven Member States bound by the Convention (Croatia, Finland, France, Luxembourg, Netherlands, Slovenia and Spain).

It is worth noting, however, that the applicability of the Convention to cases of damage caused by a defective AI system is uncertain. Indeed, its material scope of application includes liability for damage caused by a product, which is defined as including "natural and industrial products, whether raw or manufactured and whether movable or immovable".[44] As this definition makes no reference to intangible products such as software, it is questionable whether it includes AI systems.[45]

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42 See Lutzi, T., *Private international law online: internet regulation and civil liability in the EU*, Oxford University Press, Oxford, 2020, p. 102; De Miguel Asensio, P., *Conflict of Laws and the Internet*, Edward Elgar Publishing, Cheltenham, 2020, p. 100.

43 See Cappiello, *op. cit.,* note 15, p. 176, who argues that in the cases under consideration, the place where the harmful consequences occur is the palace of the purchase of the hardware in which the AI system is embedded, or the place where the software based on AI is downloaded by the user.

44 See the 1973 Hague Convention, art. 2 and art. 3.

45 See Henckel, *op cit.*, note 11, p. 215, who recalls that the Convention, as stated in its Explanatory Memorandum, covers damage caused by "all products made or in any way altered by the hand of man". This broad scope shall therefore include damage caused by defective AI systems, since these systems are still created by humans.

If we argue that the Convention does apply in these cases, the applicable law is the internal law of the State in which the damage occurs, if in that State there is the habitual residence of the injured person, or the principal place of business of the person claimed to be liable, or the place where the product was acquired (Article 4). However, if the injured person is habitually resident in the State where the producer has the principal place of business or where the product was acquired, the law of that State applies (Article 5).[46] Furthermore Article 7 contains a clause guaranteeing the defendant's foreseeability of the applicable law: neither the law of the State of the place of injury nor the law of the State of the habitual residence of the injured person shall apply if the defendant proves that he could not reasonably have foreseen that the product would be made available through commercial channels in those States.

In cases that do not fall within the scope of the Convention, the Rome II Regulation will apply. Under Rome II, the law chosen by the parties by virtue of Article 14 applies in the first instance. Otherwise, the law must be determined in accordance with the special rule laid down in Article 5, on product liability.[47] This rule lists three applicable laws in a subsidiary order: (i) the law of the country where the injured person had his/her habitual residence when the damage occurred, (ii) the law of the country where the product was purchased, and finally (iii) the law of the country where the damage occurred. Each of these laws applies only if the product was marketed in the respective country. However, other applicable laws take precedence. Firstly, the law of the country of the common habitual residence of the injured party and the person claimed to be liable.[48] Secondly, the law of the country of the habitual residence of the latter, if he could not reasonably foresee that the product would be marketed in one of the countries designated by the first

[46] Pursuant to Article 6 of the Convention, if it is not possible to determine the law in accordance with either Article 4 or Article 5, the internal law of the country in which the person claimed to be liable has the principal place of business shall apply, unless the claimant bases the claim on the internal law of the country where the damage occurred.

[47] It is worth noting that the scope of Article 5 is uncertain, as the Regulation does not provide a definition of product. Some scholars argue that the scope of the provision is consistent with that of the Directive 85/374/EEC (see: Marenghi, C., *Responsabilità del produttore e giurisdizione nel regolamento "Bruxelles I": il forum commissi delicti tra esigenze di coerenza e limiti all'interpretazione intertestuale alla luce di una recente sentenza della Corte di giustizia*, Diritto del commercio internazionale, No. 4, 2014, p. 1123; Palao Moreno, G., *Product liability: jurisdiction and applicable law in cross-border cases in the European Union*, ERA Forum, Vol. 11, No. 1, 2010, p. 55). Otherwise it could be argued that Article 5 applies to all damage caused by products, whether defective or not (see Franzina, P., *Il regolamento n. 864/2007/CE sulla legge applicabile alle obbligazioni extracontrattuali ("Roma II")*, Le Nuove Leggi Civili Commentate, No. 5, 2008, p. 1004). Anyway, after the adoption of the new Product Liability Directive and its new broad definition of product, it can be argued that Article 5 also covers damage caused by defective AI systems.

[48] In fact, Article 5 (1) Rome II states that Article 4 (2) shall not be prejudiced.

paragraph. Finally, the law of the country with which the case is manifestly more closely connected, pursuant to the escape clause (Article 5, para. 2).

The application of these conflict-of-laws rules in cases involving artificial intelligence raises several difficulties.

Firstly, it may be difficult to locate where the damage occurred and where the AI system was purchased. According to Article 5, the place of the damage shall be interpreted, in coherence with Article 4, as the place of the direct harmful consequences of the damage (irrespective of the place of the event giving rise to the damage and of the indirect consequences). Determining this place, therefore, raises the same problems as those discussed above regarding jurisdiction. Even the criterion of the place of purchase of the product could raise the same issues in the area of applicable law as in that of jurisdiction, related to the virtual nature of the place where these systems are usually acquired by users (i.e. online marketplace).

The main problem arising from the application of Article 5 (1) Rome II to cases of damage caused by a defective AI system concerns the requirement of "marketing". The Regulation does not define the term "marketed" used in this provision. Scholars have argued that this should be interpreted broadly, as the activity of simply placing a product in the stream of the market and offering it to the public for use, and not requiring specific efforts such as advertising or targeting.[49] Two main issues arise in cases involving artificial intelligence. First, when the damage is caused by defective AI-based software that can be downloaded from the Internet by users around the world, that product can be considered to be marketed in any country, and the manufacturer (i.e. the producer/developer of the software) would hardly be able to argue that he/she could not foresee that the product would be marketed in one country.[50] Second, in cases involving an AI system that is embedded in another product, it is unclear whether the marketing requirement has to be determined only with regard to the hardware or also with regard to the artificial intelligence software on which the latter is based.

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[49] See Dickinson, A., *The Rome II Regulation*, Oxford University Press, Oxford, 2010, p. 363; Huber, P.; Illmer, M., *International product liability. A Commentary on Article 5 of The Rome II Regulation,* Yearbook of Private International Law, Vol. 9, 2007, p. 31. It is worth noting that the definitions offered by the AI Act - assuming that they could also be used to interpret the Rome II Regulation in cases involving AI - are not so clarifying. Indeed, Article 3 (9) and (10) of the AI Act define "placing on the market" as the first making available of an AI system on the Union market, and "making available on the market" as the supply of an AI system for distribution or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge.

[50] See Henckel, *op. cit.*, note 11, p. 223. The same observation applies to the "foreseeability clause" in Article 7 of the 1973 Hague Convention.

Finally, two general observations on the conflict-of-law rules of the Rome II Regulation applicable to the cases under consideration must be made. First, in most cases of damage caused by the defectiveness of an online service based on artificial intelligence, the applicable law will be the law of the State of the habitual residence of the injured person, due to the fact that it is the first in the cascade list of Article 5 and - as we have observed above - the producer/developer of the AI system offering it online will hardly be able to prove that he did not foresee the marketing of the system in a particular country. This result is particularly favorable to the injured party, but it could discourage operators of AI systems from marketing them online. Second, due to the universal application of Rome II Regulation,[51] the applicable law designated by Article 5 could also be the law of a Third country, which could be disadvantageous for producers and developers of AI systems established in a EU Member State. Indeed, if the injured party is habitually resident in a Third country, liability should be assessed according to the law of that country and the regime laid down in the Product Liability Directive would not apply.

4. CONCLUSION

The new legal framework on artificial intelligence aims to strike the right balance between protecting users of AI systems from the potential harm they can cause and ensuring the free movement of AI-based goods and services across borders, facilitating the development, marketing and use of these systems. However, the gap in the regulation of private international law issues in the new EU legal framework on artificial intelligence risks undermining this aim.

The lack of a special head of jurisdiction for cases of liability for defective AI systems and the inconsistency between the territorial scope of the AI Act and the new Product Liability Directive lead to a difficult coordination between different legal sources, in particular between the Brussels I bis Regulation and national rules on jurisdiction. Furthermore, the heads of jurisdiction of that Regulation and the related criteria established by the CJEU are not easily applicable to cases involving AI systems. Several doubts and uncertainties therefore remain about the right localisation of the elements on which these rules are based (in particular, *locus damni* and *locus acti*). These criticisms undermine the predictability of the competent court, to the detriment of producers and developers of AI systems. The conflict-of-law rules of the 1973 Hague Convention and the Rome II Regulation are also unsuitable for determining the applicable law in cases of damage caused by defective AI systems. These rules are too favorable to the injured party because

[51] See Article 3 Rome II Regulation.

of the priority given to the criterion of his/her habitual residence and the difficulty of applying the foreseeability clauses in cases of AI systems marketed online.

New head of jurisdiction and conflict of laws rules which foster a fairer balance between the position of the parties and their interests should therefore be adopted.[52]

A possible solution could be to base these new rules on a single objective criterion, more flexible than the *locus commissi delicti* and inspired by the proximity principle, such as the criterion of "the most significant impact of the damage".[53] This criterion could confer jurisdiction on a single court – avoiding the uncertainties created by the CJEU's ubiquity principle – and could determine a single applicable law. However, it could be criticized for giving too much discretion to the judge in assessing jurisdiction and applicable law, thereby jeopardizing their predictability.

Alternatively, the new special rules could be based on subjective criteria, such as the place of establishment of the person claimed to be liable or the place of habitual residence of the injured party. The adoption of one or the other criterion is extremely delicate, since it presupposes a choice between two opposing approaches: one that is more favorable to the operators of AI systems and, more generally, to the free movement of these systems, and one aimed at protecting the victim.

The latter solution seems preferable as it is more consistent with the EU regime on liability for defective products. In addition, the criterion of the habitual residence of the victim would determine a single competent court and a single applicable law, as opposed to the place of establishment of the person alleged to be liable. Indeed, in the case of damage caused by a defective AI system, more than one person involved in the chain of production and marketing of this system could be held liable, so that this criterion could lead to the designation of different places.

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[52] It is worth noting that in Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee on the application of Regulation (EC) No 864/2007 on the law applicable to non-contractual obligations (Rome II Regulation), COM(2025) 20 final, of 31 January 2025, the Commission stated that while "the ongoing development of the technology and the legal landscape in terms of substantive rules governing the use of AI will shape the issues relating to the application of Rome II to AI cases in the future […] it is difficult to assess whether and to what extent specific rules may be needed in Rome II, as the identification of approaches to address the complexities associated with the expanding use of AI is still emerging". The Commission therefore concluded that "the time may not yet be ripe to consider possible amendments to Rome II to introduce AI-specific rules". This conclusion is not very satisfactory, because as the EU legislator has just introduced a new legal framework for AI, a regulation of private international law issues in line with this framework is urgently needed.

[53] In favor of the application of this criterion for all cyber delicts see El Hage, Y., *How to locate a cyber torts*, Yearbook of Private International Law, Vol. 24, 2022/2023, p. 463.

However, in order not to undermine excessively the position of producers/developers of AI systems, the rules based on this criterion should be both accompanied by new foreseeability clauses, relying on the intention to market criterion. According to this possible clause, the law of the country of the allegedly liable person (i.e. the developer or producer of the AI system) will apply if he/she proves that he/she did not intend to market the product in the country of the injured party's habitual residence. In order to assess this intention, the criteria set out by the CJEU in the Case *Pammer and Hotel Alpenhof* could be considered, including the language, the currency, the telephone number and the top-level domain name used in the website through which the AI system is marketed.[54] Furthermore, in order to avoid the problematic consequences of the application of the law of the Third country where the injured person has his/her habitual residence, the national rules enacting the Product Liability Directive and those of the AI Act should be considered as overriding mandatory provisions, as long as they aim to protect core EU values such as public health and safety and fundamental human rights, as the right to life and to the integrity of the person.[55]

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[54] C-585/08 and C-144/09, *Pammer and Hotel Alpenhof* [2010] ECLI:EU:C:2010:740, parr. 93-94. It's worth recalling that the above criteria were laid down by Article 17 (1) (c) Brussels I bis, which limits the application of the special rules on jurisdiction in Section 4 of the Regulation to cases of consumer contracts "concluded with a person who pursues commercial or professional activities in the Member State of the consumer's domicile or, by any means, directs such activities to that Member State or to several States including that Member State, and the contract falls within the scope of such activities".

[55] It is worth remembering that this solution is followed by Article 29 (7) of European Parliament and Council Directive 2024/1760/EU on corporate sustainability due diligence and amending Directive 2019/1937/EU and Regulation 2023/2859/EU [2024] EC L1760/1.

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