

## SECTION VI

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### CIVIL LIABILITY FOR DAMAGES CAUSED BY AUTONOMOUS CAR VEHICLES: THE POLISH PERSPECTIVE

#### 1. Introduction

The development of autonomous cars and the real prospect of their participation in road traffic in the future are factors making the issue of civil liability for damages caused by the motion of such vehicles highly relevant. Road accidents involving autonomous cars are becoming a reality: the first fatal pedestrian accident involving a self-driving car occurred in Arizona on 18 March 2018.<sup>1</sup> These developments raise the fundamental question of whether the existing legal framework relating to liability for damage caused by the motion of conventional vehicles driven by humans can properly fulfil its function and purpose also concerning the redress for damage caused by the motion of autonomous cars. The doubts expressed in this regard in Polish and foreign legal literature justify taking under scrutiny possible ways of ensuring the appropriate adjustment of the legal framework, either through the interpretation of the existing applicable provisions by courts or through legislative changes.

In the scholarly debate, various bases for liability are examined with the view to verifying their suitability for claiming compensation for damage caused by the use of autonomous vehicles. Among the liability regimes known to the Polish Civil Code<sup>2</sup> (hereinafter: Civ.C.), attention is given first and foremost to the tort liability of car

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<sup>1</sup> Cf. T. Griggs, D. Wakabayashi, "How a Self-Driving Uber Killed a Pedestrian in Arizona", *The New York Times*, March 21, 2018, <https://www.nytimes.com/interactive/2018/03/20/us/self-driving-uber-pedestrian-killed.html> (accessed 20.06.2022).

<sup>2</sup> Ustawa – Kodeks cywilny z dnia 23 czerwca 1964 r. [The Civil Code of 23 June 1964], consolidated text, *Journal of Law* [J. of L.] 2020, item 1740, with subsequent amendments.

possessors for damages caused by the motion of mechanical vehicles (cf. section 4 of this chapter) and the regime of liability for defective products (cf. section 5).<sup>3</sup> Within the sphere of contractual liability, attention is paid to the issue of liability under the regime of warranty for physical defects of an autonomous vehicle as an object of a sales agreement (cf. section 9); the warranty regime grants the buyer more rights than just compensation for damages. All of the above-mentioned regimes of liability focus either on the motion of the vehicle itself or on a defect of the vehicle causing the damage. There is, however, a wider variety of possible causes of damage resulting from the traffic of autonomous vehicles, and they also require consideration.<sup>4</sup> For instance, the issue of liability of entities conducting research works concerning the motion of autonomous vehicles may be worth considering (cf. section 6). Prospectively, the issue of liability of entities operating centralized IT systems that manage the traffic of highly advanced autonomous vehicles may gain in importance in connection with possible failures of such systems leading to road accidents (cf. section 7). Additionally, there are questions related to the currently widely debated issues of introducing special regulations on civil liability for damages caused by artificial intelligence (AI); these issues also have significance in the context of autonomous cars, as they operate with the assistance of AI systems (cf. section 8). Finally, since in practice the first point of a claim for compensation for damages sustained as a result of a traffic accident are insurance companies or the Insurance Guaranty Fund, the issue of the compulsory third party liability insurance of motor vehicle possessors, with emphasis on specific aspects connected with autonomous cars, cannot be left out (cf. section 10). The views expressed in legal literature, mostly Polish literature, serve as the point of reference in this chapter, while the development of Polish case law concerning the topic of this chapter remains a matter of the future for the time being.

It is hard to overlook the international dimension of the topic at hand. One should mention in that regard the changes introduced to the Vienna Convention on Road Traffic of 8 November 1968<sup>5</sup> which entered into force on 23 March 2016.<sup>6</sup> The added Art. 8 section 5bis *in fine* of the Convention permits the use of vehicle systems that influence the way vehicles are driven, provided that such systems

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<sup>3</sup> M. Matusiak-Frączzak, Ł. Frączzak, „Odpowiedzialność cywilna za wypadki komunikacyjne z udziałem pojazdów autonomicznych” [Legal aspects of the admission of autonomous cars to traffic. A task for the Polish legislator. Outline of the problem], *Państwo i Prawo* 2019, No. 11, p. 115.

<sup>4</sup> As rightly observed by G. Urbanik, „Odpowiedzialność za szkody wyrządzone przez pojazd autonomiczny w kontekście art. 446 k.c.” [Liability for damages caused by an autonomous vehicle in the context of Art. 446 of the Civil Code], *Studia Prawnicze. Rozprawy i Materiały* 2019, No. 2, Vol. 25, pp. 83–84.

<sup>5</sup> J. of L., No. 5, item 40.

<sup>6</sup> Cf. <https://unece.org/fileadmin/DAM/trans/doc/2014/wp1/ECE-TRANS-WP1-145e.pdf> – the proposed amendments and <https://treaties.un.org/doc/Publication/CN/2015/CN.529.2015.Reissued.06102015-Eng.pdf> – the acceptance of amendments (accessed 20.06.2022).

can be overridden or switched off by the driver. This marks a departure from the previous position under the Convention which required the driver to maintain complete control of the vehicle at all times. In other words, Art. 8 section 5bis of the Convention can be read as permitting the participation of partly autonomous vehicles in road traffic.<sup>7</sup> Furthermore, the universal (cross-border) nature of the technological development of autonomous cars is a natural stimulus for comparative analyses of civil liability for damages caused by such vehicles.<sup>8</sup> In addition, from the perspective of Poland as a member of the European Union, the EU dimension of the issue is, of course, also important, because at least some liability regimes relevant in the context of the topic of this chapter are harmonized at the EU level. This applies in particular to the Defective Product Liability Directive 85/374/EEC (hereinafter: Dir. 85/374)<sup>9</sup> and Directive 2009/103 relating to insurance against civil liability in respect of the use of motor vehicles, and the enforcement of the obligation to insure against such liability (hereinafter: Dir. 2009/103),<sup>10</sup> as well as proposed legislation relating to the issue of civil liability for damages caused by AI (cf. section 8).

## 2. Provisions of Polish law relating directly to autonomous cars

The only existing regulation in Polish law relating directly to autonomous vehicles is contained in the Road Traffic Law of 20 June 1997 (hereinafter referred to as RTL),<sup>11</sup> in its Part II, Chapter 5, Section 6, entitled “Use of roads for the purposes of research works concerning autonomous vehicles” (Arts. 65k–65n RTL). These provisions were added to the RTL by the Act of 11 January 2018 on Electromobility and Alternative Fuel<sup>12</sup> which simultaneously introduced

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<sup>7</sup> J. Loranc-Borkowska, “Civil Liability for Damage Caused by a Physical Defect of an Autonomous Car in Polish Law”, *Studia Iuridica Lubliniensia* 2020, No. 5, Vol. XXIX, p. 169.

<sup>8</sup> Cf. e.g. an expert’s report published by the European Commission – E. Karner, B. A. Koch, [in:] E. Karner, B. A. Koch, M. A. Geistfeld, *Comparative Law Study on Civil Liability for Artificial Intelligence*, pp. 66–80 and concerning U.S. law – M. Geistfeld, *ibidem*, pp. 122–129.

<sup>9</sup> Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products of 25 July 1985, on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, OJ L210, 7.08.1985, pp. 29–33.

<sup>10</sup> Directive 2009/103/EC of the European Parliament and of the Council of 16 September 2009 relating to insurance against civil liability in respect of the use of motor vehicles, and the enforcement of the obligation to insure against such liability, OJ L263, 7.10.2009, pp. 11–31.

<sup>11</sup> Ustawa – Prawo o ruchu drogowym z dnia 20 czerwca 1997 r. [Traffic law act of 20 June 1997], consolidated text, J. of L. 2021, item 450, with subsequent amendments.

<sup>12</sup> Ustawa o elektromobilności i paliwach alternatywnych z dnia 11 stycznia 2018 r. [Act of 11 January 2018 on electromobility and alternative fuels], cf. Art. 55 of this act in its original version published in J. of L. 2018, item 317.

amendments to the RTL. The regulation in the RTL allows carrying out research works in road traffic on public roads, particularly for the use of autonomous vehicles in public transportation and other public tasks, provided that the safety requirements are met and the permission to carry out these works has been obtained by their organizer (Art. 65l, section 1 RTL). In the light of the above-mentioned regulation, the Polish lawmaker does not currently permit the normal use of autonomous vehicles on public roads, but only allows for test drives of such vehicles.<sup>13</sup>

### 3. The concept of an “autonomous car”

An autonomous car is most often defined as a car vehicle that, due to technology, is capable of moving without human intervention.<sup>14</sup> Formulating a universal doctrinal definition is, however, a difficult task because there are different levels of car automation. This diversity may be reflected in the variety of terms used to describe the category of vehicles at hand, e.g. – autonomous cars, driverless cars, self-driving cars, robotic cars.<sup>15</sup> A dichotomous distinction is also drawn between semi-autonomous and autonomous vehicles<sup>16</sup>. The commonly used classification elaborated by the SAE (Society of Automotive Engineers) is a useful and acknowledged taxonomy of levels of automation for car vehicles.<sup>17</sup> It provides for the scale of vehicle automation from level 0 to level 5 (level 0 – no automation, level 1 – driver assistance, level 2 – partial automation, level 3 – conditional driving automation, level 4 – high driving automation, level 5 – full driving automation). In the light of this scale, levels 4 and 5 are characterized by a high level of automation, and cars at these levels of automation can be considered autonomous

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<sup>13</sup> G. Urbanik, *op. cit.*, p. 88.

<sup>14</sup> J. Loranc-Borkowska, *op. cit.*, p. 168; A. Wilk, „Odpowiedzialność za szkody wyrządzone przez ruch tzw. pojazdów autonomicznych. Czy polskie prawo nadąga za rozwojem techniki?” [Liability for the damages caused by autonomous vehicles. Does the Polish law keep up with technological progress?], *Edukacja Prawnicza* 2019, No. 2, p. 23; M. Czenko, „Odpowiedzialność za szkodę spowodowaną ruchem pojazdu autonomicznego w systemie amerykańskiego prawa cywilnego” [Liability for damage caused by autonomous vehicles in the American law], *Zeszyt Studencki Kół Naukowych Wydziału Prawa i Administracji UAM* 2017, No. 7, p. 105.

<sup>15</sup> M. Czenko, „Odpowiedzialność...”, p. 105, stressing the diversity of English terminology in that regard.

<sup>16</sup> A. Michalak, *Odpowiedzialność cywilnoprawna w obrocie oprogramowaniem komputerowym w erze sztucznej inteligencji* [Civil liability concerning computer software in the era of artificial intelligence], Warszawa 2021, p. 406.

<sup>17</sup> SAE International’s standard J3016: Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems (2014), <http://www.sae.org/autodrive>, and for the table with levels [https://www.sae.org/binaries/content/assets/cm/content/news/press-releases/pathway-to-autonomy/automated\\_driving.pdf](https://www.sae.org/binaries/content/assets/cm/content/news/press-releases/pathway-to-autonomy/automated_driving.pdf) (accessed 20.06.2022).

cars,<sup>18</sup> although a view has also been expressed that the category of autonomous vehicles begins as early as level 3 of the above-mentioned classification.<sup>19</sup>

The normative definition of an autonomous car in Polish law is contained in Art. 65k RTL. The fact that the Polish lawmaker employs the term “autonomous cars” justifies its use also in the title of this chapter, even if various terms are used in the legal literature to define vehicles that operate with a reduced or eliminated role of the driver, as stated above. According to Art. 65k RTL, an autonomous vehicle is a car equipped with systems that control the motion of this vehicle and enable this motion without intervention on the part of the driver, who may take control of the vehicle at any moment. This legal definition has been adopted as part of the Polish legislation concerning research works relating to such vehicles (cf. section 2). In the light of this definition, it is unclear to what extent an autonomous car would be allowed to move without human intervention, and in particular, whether the requirement that the driver must be capable of taking control of the car implies that the car must be equipped with a steering system that includes a steering wheel, gas pedal, and brakes.<sup>20</sup> An important supplement to the above definition is, however, contained in Art. 65n section 1, p. 2 RTL which states that the organizer of research works is required to ensure that during the research work there is always a person authorized to drive the autonomous vehicle who is seated in the seat intended for the driver and who can take control of the vehicle at any time, particularly in the event of a danger to road safety. In the light of the above requirement, vehicles operating without the participation of a driver seated inside the car (or rather an “operator” understood as the “successor of the driver”<sup>21</sup>) which are not equipped with a steering system and other elements serving to take control by a human, cannot be considered admissible on Polish roads, even if such vehicles were to be used only for testing purposes.<sup>22</sup>

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<sup>18</sup> Cf. variety of terms mentioned by K. Ludwichowska-Redo, „Samochody autonomiczne – wyzwanie dla polskiego prawa cywilnego?” [Autonomous cars – a challenge for Polish private law?], [in:] *Z badań nad prawem prywatnym. Księga pamiątkowa dedykowana Profesorowi Andrzejowi Kochowi* [From research on private law. A jubilee book dedicated to Professor Andrzej Koch], eds. A. Olejniczak, M. Orlicki, J. Pokrzywniak, Warszawa 2021, p. 203.

<sup>19</sup> G. Urbanik, *op. cit.*, p. 87.

<sup>20</sup> M. Czenko, *O testowaniu samochodów autonomicznych (krytycznych) słów kilka* [A few (critical) comments concerning the testing of autonomous cars], <https://www.transport-publiczny.pl/wiadomosci/o-testowaniu-samochodow-autonomicznych-krytycznych-slow-kilka-57672.html> (accessed 20.06.2022); A. Wilk, *op. cit.*, p. 24.

<sup>21</sup> L. Helińska, B. Paczocha, A. Piskorz, „Prawne aspekty ochrony konsumenta oraz odpowiedzialności za szkody w kontekście samochodów autonomicznych” [Legal aspects of consumer protection and liability for damages in the context of autonomous cars], *Internetowy Kwartalnik Antymonopolowy i Regulacyjny* 2020, No. 7, p. 39.

<sup>22</sup> M. Czenko, *O testowaniu...* (an on-line comment), the author seems to require that these other elements include the gas and brake pedal; J. Kuźmicka-Sulikowska, „Nowe wyzwania dla odpowiedzialności deliktowej przewidzianej w polskim prawie – wybrane uwagi w związku z funkcjonowaniem

Against this background, a question may be raised how the national definition of an autonomous vehicle fits the above-mentioned levels of autonomy according to the SAE's taxonomy. The positions on this issue are divergent. According to the restrictive view, the national definition does not apply to vehicles at levels 4 and 5, but only to vehicles at levels 2 and 3.<sup>23</sup> According to a more liberal approach, only advanced autonomous vehicles classified at level 5 are excluded from the national definition.<sup>24</sup> The view is also presented that the national definition encompasses autonomous vehicles from level 3 to 5, save for vehicles that are only under remote control, as such vehicles would not comply with the statutory requirement concerning the presence of a driver in the vehicle. According to the latter view, the definition in the RTL does not exclude vehicles with very limited participation of the driver, e.g. cars with a "kill-switch" mechanism, i.e. a mechanism which only allows the operator to immediately stop the car, or cars in the "platooning" model, in which vehicles are driven together in a group with the driver sitting only in the vehicle at the head of the group.<sup>25</sup> The relationship between the national definition of an autonomous vehicle and the commonly used scale of levels of vehicle automation remains, therefore, ambiguous due to the unclear scope of the requirement concerning the participation of the person operating the vehicle (vehicle operator) in the national regulation. The lack of clarity in this regard can be problematic because, according to the respective national implementing regulation concerning autonomous vehicles, the report on research works should include an indication of the vehicle's level of autonomy according to the SAE classification.<sup>26</sup> This lack of clarity does not, however, prevent considering the entire scale of vehicle automation in the further analysis in this chapter, even if the use of the most technically advanced vehicles at level 5 (or maybe also at level 4) might currently seem unacceptable in the light of Polish law. After all, technological progress may result in the further liberalization of the law in this area, so it is reasonable at this point to consider the issue of liability for damages caused by autonomous car vehicles, including vehicles with a very high degree of automation.

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tak zwanych pojazdów autonomicznych" [New challenges for tort liability regulated in Polish law — selected comments in connection with the functioning of so-called autonomous vehicles], *Wrocławsko-Lwowskie Zeszyty Prawnicze* 2020, No. 11, p. 175; G. Urbanik, *op. cit.*, p. 88.

<sup>23</sup> J. Loranc-Borkowska, *op. cit.*, p. 170; the author believes that the concept of an autonomous car in the RTL is thus consistent with the definition contained in Art. 8 (section 5bis) of the Vienna Convention.

<sup>24</sup> J. Kuźmicka-Sulikowska, *op. cit.*, p. 175.

<sup>25</sup> G. Urbanik, *op. cit.*, pp. 87–88.

<sup>26</sup> Rozporządzenie Ministra Infrastruktury w sprawie wzoru sprawozdania z prac badawczych związanych z testowaniem pojazdów autonomicznych oraz ich wyposażenia z dnia 17 października 2018 r. [Regulation of the Minister of Infrastructure on the template of the report on research works related to testing of autonomous vehicles and their equipment of 17 October 2018], J. of L. 2018, item 2023. Cf. point 2.14. in the attachment to the cited Regulation which refers to the SAEJ3016\_201609 classification.

#### 4. Tort liability of the car possessor

The first potential basis of tort liability for damages caused by the motion of autonomous cars that needs to be analysed is Art. 436 Civ.C., which regulates the liability for damage caused by the motion of a mechanical means of transport propelled by natural forces. Paragraph 1 of this article regulates the liability of an independent (owner-like) possessor of a vehicle. In addition, the second sentence of Art. 436 § 1 Civ.C. clarifies that if the owner-like possessor gives away her or his vehicle to a dependent possessor the latter person is liable for damage (e.g. a lessee or a usufructuary). Article 436 § 1 Civ.C. states that the car possessor is liable on the same principles as in the preceding article, that is in Art. 435 Civ.C., which in turn regulates the liability of a person who runs on her or his own account an enterprise or establishment set in motion by natural forces (steam, gas, electricity, liquid fuels, etc.). The reference to Art. 435 Civ.C. means that the liability provided for in Art. 436 § 1 Civ.C. is an instance of strict (risk-based) liability and the possessor of a vehicle is exempted from liability in three situations: (1) when the damage is caused by force majeure, (2) when the damage is caused exclusively by the fault of the person who sustained damage, (3) when the damage is caused exclusively by the fault of a third party for whom the possessor of the vehicle is not responsible.

Of course, tort liability of the person driving the vehicle is possible, regardless of whether she or he is the possessor of the vehicle, on the general basis of tort liability, i.e. Art. 415 Civ.C. The latter provision requires, however, the perpetrator of the act to be at fault, at least in the form of unintentional fault caused by failure to exercise due care, whereas Art. 436 § 1 Civ.C., on the other hand, creates a much more convenient basis for the injured party to claim the strict liability of the possessor of the vehicle.

Article 436 § 1 Civ.C. (in conjunction with Art. 435 § 1 Civ.C.) addresses liability for damages caused by vehicle's motion. This concept of "motion", according to the prevailing view, is not limited to strictly kinetic motion, but is understood functionally, meaning that the vehicle is in motion from the moment its functioning is initiated until it reaches its destination. As a result, short intervals during the vehicle's kinetic motion do not disrupt its functional motion. A proposal was made in legal literature to separate liability for damages caused by a vehicle from the requirement of "motion", as the risks posed by vehicles are not only linked with their motion, whether kinetic or functional. While this position has been argued for both conventional and autonomous vehicles, it has been emphasized that, particularly in the context of autonomous vehicles, it is justified to make civil liability conditional on an autonomous vehicle's "active existence", such as logging on or data processing<sup>27</sup>. Since Art. 436 § 1 Civ.C.

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<sup>27</sup> W. Robaczyński, „Czy 'ruch pojazdu' powinien być przesłanką odpowiedzialności za pojazd autonomiczny?” [Should the 'vehicle's motion' be a premise for liability for an autonomous vehicle?], *Przegląd Sądowy* 2022, No. 4, pp. 7, 14–15, summary in English – pp. 17–18.

clearly links civil liability with vehicle's motion, it appears that such a change – if justified – would necessitate legislative intervention. There are, however, other potential bases of civil liability for damages caused by autonomous vehicles that do not expressly require the damage to be caused by the vehicle's motion. They are discussed in subsequent sections of this chapter.

Article 436 § 1 Civ.C. unquestionably provides a basis for claiming compensation for damage caused by the motion of autonomous cars. The concept of a motor vehicle being set in motion by the forces of nature is broad. It applies to all vehicles (not just land vehicles) equipped with engines that process natural forces. Autonomous cars meet the above criterion,<sup>28</sup> and the type of their engine – internal combustion, electric, or hybrid – is irrelevant.<sup>29</sup> It is justified to assume that the mere fact that the damage was caused by the motion of an autonomous vehicle, and not a “conventional” vehicle, does not exclude the application of Art. 436 § 1 Civ.C. Although this provision came into force at a time when autonomous vehicles did not exist, it links tort liability to the motion of the vehicle itself, rather than human conduct, and places liability on the vehicle's possessor. This circumstance makes it possible to apply this provision to the motion of autonomous vehicles in which the participation of the driver (operator) is limited or even eliminated.

However, the uniqueness of autonomous vehicles raises questions about the potential application of exemptions from strict liability under Art. 436 § 1 Civ.C. due to defects in autonomous vehicles. Such defects may play a proportionally greater role as a possible cause of accidents than in the case of conventional vehicles, because the driver's participation in making significant decisions regarding the motion of an autonomous vehicle is limited or eliminated, even if statistically autonomous vehicles might turn out to be safer.<sup>30</sup> According to the prevailing view expressed so far concerning “conventional” vehicles, a technical failure of a vehicle is not considered a manifestation of force majeure, which is the first of the three above-mentioned exemptions from liability under Art. 436 § 1 Civ.C.<sup>31</sup> Moreover, the traditional approach excludes the qualification of vehicle's defects caused by its manufacturer as justifying an exemption resulting from the sole fault of a third party.<sup>32</sup> It is, however, considered possible for the car possessor who was liable for the damage to take recourse against the manufacturer of the car.<sup>33</sup>

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<sup>28</sup> K Panfil, [in:] *Kodeks cywilny. Komentarz* [Civil Code. Commentary], ed. K. Osajda, Warszawa 2021, Art. 436, comment No. 15; M. Matusiak-Frączczak, Ł. Frączczak, *op. cit.*, p. 120.

<sup>29</sup> J. Kuźmicka-Sulikowska, *op. cit.*, p. 172.

<sup>30</sup> K. Ludwichowska-Redo, *op. cit.*, p. 207.

<sup>31</sup> M. Safjan, [in:] *Kodeks cywilny. Komentarz* [Civil Code. Commentary], vol. 1, ed. K. Pietrzykowski, Warszawa 2021, Art. 436, comment No. 10; G. Urbanik, *op. cit.*, p. 89.

<sup>32</sup> M. Safjan, *op. cit.*, Art. 436, comment No. 12, in case law – judgement of the Supreme Court of 4 October 1966 (II CR 328/66), *Legalis*, No. 12809.

<sup>33</sup> J. Kuźmicka-Sulikowska, *op. cit.*, p. 177.



However, as already mentioned, the limitation (or even a possible elimination) of the driver's participation in the motion of autonomous vehicles increases the importance of factors other than faulty decisions of the driver among the possible sources of damage caused by the motion of such vehicles. This raises questions about the possibility of departing from the traditional approach to exemptions from liability under Art. 436 § 1 Civ.C., as far as defects in autonomous vehicles are concerned.

Regarding the "force-majeure" exemption, its inapplicability, as per the established view in case law and legal literature, to defects in the vehicle should be considered valid also in the case of autonomous vehicles. Force majeure must be related to the existence of unavoidable external factors. A defect inherent in the vehicle or a failure of the vehicle's mechanisms are circumstances that do not meet this requirement, which also remains valid for autonomous vehicles.<sup>34</sup>

The situation is less obvious with regard to the traditionally accepted inaptitude of the exemption concerning the sole fault of a third party to exclude the car possessor's liability due to the malfunction of a car caused by faulty conduct on the part of the manufacturer. Applying this traditional approach to autonomous cars would mean that the possessor of an autonomous car could not be exempted from strict liability, but she or he could still be entitled to recourse against the manufacturer.<sup>35</sup> However, an opposing liberal approach allowing the application of this exemption to autonomous cars also has supporters.<sup>36</sup> Indeed, the increasing importance of technical defects as a possible cause of accidents in the case of autonomous cars, as opposed to conventional cars where the main cause of accidents still appears to be resting on the imperfections of human conduct, might justify at least some doubts regarding the relevance of this traditional approach for the issue of autonomous cars. As a result, it seems that a departure from the traditional approach in the case of autonomous vehicles would not have to be *prima facie* ruled out, although this is a preliminary observation. For such an interpretation to be adopted, it would be necessary to precisely define the circumstances justifying a different treatment of technical defects in a non-autonomous vehicle (no exemption available) and an autonomous vehicle (exemption available). The question should be considered whether the fact that in the case of autonomous vehicles the cause of the damage might statistically turn out to be mostly the defectiveness of the vehicle and not the driver's error, would be a sufficient reason to justify a shift from the traditional view when one takes into consideration that

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<sup>34</sup> K. Ludwichowska-Redo, *op. cit.*, p. 208.

<sup>35</sup> In this vein K. Ludwichowska-Redo, *op. cit.*, p. 209; G. Urbanik, *op. cit.*, pp. 89–90; J. Loranc-Borkowska, *op. cit.*, p. 175, fn. 54; J. Kuźmicka-Sulikowska, *op. cit.*, p. 184.

<sup>36</sup> A. Michalak, *op. cit.*, p. 409–410; also A. Wilk, *op. cit.*, p. 25. The latter author does not, however, clearly specify whether, in her opinion, the possessor's liability is excluded due to the sole fault of a third party (producer) or force majeure.

liability under Art. 436 § 1 Civ.C., already in its present shape, is not dependent on human conduct.

A liberal approach could, however, be more readily justified in the future with regard to the possible exoneration of the owner of an advanced, remotely controlled autonomous vehicle in the event of damage caused by such a vehicle solely as a consequence of the failure of the control system resulting from a fault on the part of the system administrator<sup>37</sup> (cf. sections 7 and 8 regarding the liability of such entities). It seems that in such a case there could also be a possibility of exoneration of the car possessor due to force majeure when the operation of the system is disturbed by natural phenomena and cannot be attributed to the fault of the administrator of such a system. Another situation that might justify the exclusion of possessor's liability due to third-party fault as the sole cause of the damage could be a cyber-attack (hacking) on an autonomous vehicle.<sup>38</sup>

Summarizing the remarks concerning Art. 436 § 1 Civ.C., it must be concluded that there is no obstacle to applying the strict liability rule based on this provision to liability for damages caused by the motion of autonomous cars.

Serious doubts arise, however, regarding the possibility of applying Art. 436 § 2 Civ.C. to autonomous cars. This provision provides for a derogation from Art. 436 § 1 Civ.C. In its first sentence Art. 436 § 2 Civ.C. stipulates that in the case of a collision of mechanical means of transport, the persons identified in Art. 436 § 1 Civ.C., i.e. owner-like or dependent car possessors, may claim from each other the redress of damages only in accordance with the general principles of tort liability. The reference to "general principles" basically mandates the application of Art. 415 Civ.C. that requires the existence of a fault on the part of the perpetrator; the fault should take at least the form of negligence (a lack of proper care). This means that in the case of a collision of vehicles, the person liable among the car possessors is the one who acted at least negligently when driving the car. While Art. 436 § 2 Civ.C. formally provides for an exception to the general rule contained in Art. 436 § 1 Civ.C., it, however, concerns a case of very significant practical importance, as collisions of cars constitute a large part of road accidents. Simultaneously, the liability of possessors of colliding cars towards third parties, in particular pedestrians, remains unchanged: it is the strict liability regulated in Art. 436 § 1 Civ.C. (save for third parties transported out of courtesy, to which I shall revert).

The application of fault-based liability in situations envisaged by Art. 436 § 2 Civ.C. inevitably requires the presence of human conduct that led to the

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<sup>37</sup> Cf. J. Kuźmicka-Sulikowska, *op. cit.*, pp. 185–186.

<sup>38</sup> A. Michalak, *op. cit.*, p. 409, indicating that autonomous vehicles are more vulnerable to cyber-attacks than non-autonomous vehicles; in a different vein – K. Ludwichowska-Redo, *op. cit.*, p. 209, who assumes that the car possessor will be liable jointly and severally with the hacker (the latter would undisputedly bear a fault-based liability under Art. 415 Civ.C.).

harmful event and could be assessed in terms of a possible fault. It seems that the key to assessing the applicability of Art. 436 § 2 Civ.C. in such situations is the degree of autonomy of vehicles. The potential fault-based liability of the driver (or rather the operator) of an autonomous vehicle could come into play if the circumstances indicated a need for the operator to take control of the vehicle and the design of the vehicle made it possible, but the operator failed to act in a timely and appropriate manner.<sup>39</sup> It should, however, be considered that, along with the technological advancement of autonomous vehicles, the operator's influence on the vehicle's motion may be further reduced, and ultimately may be eliminated. Such a development of autonomous vehicles would best serve the idea of automated road traffic vehicles, e.g. in the case of use of vehicles designed for people who are disabled to a degree rendering them completely incapable of operating a vehicle, or people under the influence of alcohol or other intoxicants.<sup>40</sup> While an attempt to establish the fault of operators might already be problematic with regard to less advanced autonomous cars, it would be rather pointless to attempt to establish this factor in the case of fully advanced automatic self-driving cars. For the same reasons, it would be unreasonable to seek to identify in such cases the driver (other than the vehicle possessor) who would be liable under the general fault-based tort formula of Art. 415 Civ.C.

As far as collisions between conventional and autonomous cars are concerned, several scenarios need consideration. First, it would be fairly simple to assess the case of a collision between a non-autonomous (conventional) vehicle and an autonomous vehicle that was caused solely by the fault of the possessor of a non-autonomous vehicle. In this situation, the possessor of the non-autonomous vehicle would be liable for the damage under Art. 436 § 2 Civ.C.<sup>41</sup> Second, complications would arise, however, if the cause of the collision was both the malfunction of an autonomous car and the fault of the possessor of a conventional car. In such a scenario, under the existing rules, only the possessor of the conventional car would be liable for damage against the possessor of the autonomous car, as well as the former possessor would have to bear the burden of her or his own damage. This might, however, raise objections since it would seem just to proportionally distribute the financial burden of the liability between both possessors.<sup>42</sup> Third, a situation where the driver of a conventional vehicle would not be at fault and the damage would be caused solely by the malfunction of the autonomous vehicle, could also raise doubts. There would then be no basis for liability of the possessor of an autonomous vehicle (or her/his insurer), and while the possessor of a conventional vehicle would not

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<sup>39</sup> A. Wilk, *op. cit.*, p. 25–26; G. Urbanik, *op. cit.*, p. 90, indicating that this would be possible in a semi-automatic vehicle.

<sup>40</sup> A. Michalak, *op. cit.*, p. 412 in fn 89.

<sup>41</sup> M. Matusiak-Frącczak, Ł. Frącczak, *op. cit.*, p. 122.

<sup>42</sup> K. Ludwichowska-Redo, *op. cit.*, p. 211.

be liable against the possessor of an autonomous vehicle either, any of her or his claims could be directed only to third parties, e.g. the vehicle manufacturer for liability for a defective product. It has been suggested that in such a scenario, the possessor of the conventional car should be treated as a non-motorized road user who could seek redress of damage from the possessor of the autonomous vehicle under strict liability.<sup>43</sup> The above suggestion is tempting. It would, of course, require a certain differentiation corresponding to the varied degrees of vehicle automation and the resulting varying influence of the operator on the motion of the vehicle. As a result, the chances of establishing the operator's fault would vary accordingly. The question of concurring contributory conduct on the part of the possessor of the conventional car, as a factor potentially justifying a reduction of the compensation (Art. 362 Civ.C.), could also become relevant in this situation. The disadvantage of this concept may, however, rest upon drawing an analogy to a non-motorized road user in a situation involving a collision of vehicles in motion. The latter instance is obviously regulated in the first sentence of Art. 436 § 2 Civ.C. concerning the mutual liability of vehicle possessors. It therefore seems that the implementation of the above concept would require legislative intervention. Such an intervention would be desirable. Otherwise, there would be no clear ground for the liability of the possessor of the autonomous vehicle towards the "innocent" possessor of the conventional vehicle, who would only have claims against other parties.

Similar problems with similar consequences could arise in the case of a collision involving only autonomous vehicles when the faulty conduct of any of the possessors could not be established, but the collision would be caused solely by a technical malfunction of one or both of the vehicles. Under existing rules, there would be no civil liability of possessors of both cars against one another in the described scenario and also – consequently – no liability of their insurance companies.<sup>44</sup>

It appears, therefore, desirable to introduce legislative changes that would allow a more balanced assessment of liability in the case of collisions involving autonomous cars by putting emphasis on the risk factor connected with a possible severe malfunction of such cars. Such a development would correspond to the views expressed in the Polish legal literature that generally (i.e. not necessarily in a direct reference to the issue of autonomous vehicles) critically assess the criterion of fault as a decisive criterion in the light of the first sentence of Art. 436 § 2 Civ.C.<sup>45</sup>

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<sup>43</sup> M. Matusiak-Frączczak, Ł. Frączczak, *op. cit.*, p. 122; J. Kuźmicka-Sulikowska, *op. cit.*, p. 190.

<sup>44</sup> K. Ludwichowska-Redo, *op. cit.*, pp. 212–213.

<sup>45</sup> *Ibidem*, p. 210; cf. also M. Wilejczyk, „Odpowiedzialność cywilna w razie zderzenia się pojazdów *de lege ferenda*” [Civil liability in the case of a collision of vehicles *de lege ferenda*], [in:] *O dobre prawo dla ubezpieczeń. Księga jubileuszowa Profesora Eugeniusza Kowalewskiego* [Good law for insurance. Jubilee book of Professor Eugeniusz Kowalewski], ed. E. Bagińska *et al.*, Toruń 2019, p. 551 *et seq.*, citing further views in this vein in Polish legal literature.

Next, Art. 436 § 2 Civ.C. contains the second sentence which provides a further exception from the strict liability regulated in Art. 436 § 1 Civ.C., as it stipulates that possessors of vehicles shall also be liable only under the general rules (i.e. essentially fault-based liability) towards those whom they have transported out of courtesy. It is irrelevant in the context of the second sentence of Art. 436 § 2 Civ.C. whether the damage sustained by a third party carried out of courtesy results from a collision with another vehicle or other circumstances. For reasons already set out above, in the case of autonomous vehicles with an advanced level of automation in which the operator could not be held to be at fault for the accident, there would be no liability on the part of the car possessor towards persons transported out of courtesy. These persons would be able to address their claims only to other parties, e.g. to the car manufacturer on account of liability for a defective product.<sup>46</sup> It should be noted that the current law, which bases the liability of the car possessors towards the people transported out of courtesy on fault, is also being criticised.<sup>47</sup>

In conclusion, it can be expected that the further advancement of autonomous vehicle technology, limiting or even eliminating the operator's influence on the vehicle's motion, will reduce the importance of fault-based liability as regulated in Art. 436 § 2 Civ.C. This should increase the importance of car manufacturers' liability, notably under the liability regime for a defective product.<sup>48</sup> The latter regime is dealt with in the next section of this chapter.

## 5. Liability for an autonomous car as a defective product

The regime of liability for a defective product provides for strict liability that is borne – essentially – by the producer of the product towards anyone who has been harmed by a defective product, provided that the damage remains in an adequate causal link with the defect of the product (Art. 4 Dir. 85/374). The regulation on liability for a defective product in the Civil Code (Arts. 449<sup>1</sup> *et seq.*) implements the EU standards contained in the Dir. 85/374. In the Polish regulation, the term “hazardous product” (*produkt niebezpieczny*) has been employed, but for the sake of terminological consistency with the Dir. 85/374, the term “defective product” will be used hereinafter. Legal researchers are probably prompted to consider liability for damage caused by autonomous vehicles in terms of liability for a defective product by the fact that autonomous cars are a technological novelty. This, somewhat intuitively, may lead to treating them as hazardous. Autonomous vehicles, as such, should not, however, be considered unsafe products.<sup>49</sup> According

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<sup>46</sup> M. Matusiak-Frącczak, Ł. Frącczak, *op. cit.*, p. 123.

<sup>47</sup> K. Ludwichowska-Redo, *op. cit.*, pp. 213–214.

<sup>48</sup> A. Michalak, *op. cit.*, p. 414.

<sup>49</sup> L. Helińska, B. Paczocha, A. Piskorz, *op. cit.*, p. 42.

to Art. 449<sup>1</sup> § 3 Civ.C., a defective product is any product that does not provide the safety that one would expect when using such product in a normal manner. This provision also specifies that the circumstances surrounding the introduction of a product to the market, in particular, the way of presenting it and information provided to a consumer about properties of the product, shall determine whether the product is defective; one may not maintain that a product does not provide safety merely because a similar product in an improved form has been introduced to the market.

For a specific autonomous vehicle to be considered a defective product in the legal sense, it is, therefore, necessary to define the level of safety that can be expected from an abstract model of such a vehicle. It is not the level of safety of the car in general, but the level of safety of the autonomous vehicle.<sup>50</sup> Moreover, it seems that the abstract model of a non-defective autonomous vehicle should not be uniform, as the expected level of safety could vary depending on the level of the vehicle's automation. The fact that a given vehicle that is characterized by a high level of autonomy has never been placed on the market does not make it impossible to define an abstract model of such a vehicle by determining the level of safety expected from it.<sup>51</sup> The fact that some possible flaws in technologically novel products might not be fully known when they are first introduced to the market in terms of their long-term effects, should only add to the need to establish an abstract level of their safety, at least in the light of the state of technical and scientific knowledge at the time of their introduction to the market. One could even consider introducing further-reaching changes consisting in extending the period of liability for an innovative product or eliminating (or limiting) the possibility for the manufacturer to free herself or himself from liability if she or he proves that the state of scientific and technical knowledge at the time the product was put into circulation was not such as to enable the existence of a defect to be discovered, which will be discussed later in this section of the chapter.

A “product” within the meaning of the provisions concerning this regime of liability at hand means a movable even if it has been attached to another thing; a product also means animals and electricity (Art. 449<sup>1</sup> § 2 Civ.C.). An autonomous vehicle is certainly a moveable.<sup>52</sup> It is, however, a very unique moveable, since computer software is essential for its functioning. For this reason, the question of product liability of both the car manufacturer and the software manufacturer should be examined.<sup>53</sup>

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<sup>50</sup> *Ibidem*.

<sup>51</sup> Differently L. Helińska, B. Paczocha, A. Piskorz, *op. cit.*, p. 42, with regard to vehicles on the 5<sup>th</sup> level of the SAE scale.

<sup>52</sup> In the light of Polish civil law things – movables or immovables – are only tangible objects (Art. 45 Civ.C.).

<sup>53</sup> M. Matusiak-Frącczak, Ł. Frącczak, *op. cit.*, pp. 121–122.

According to the prevailing view, computer programs as such (standalone software) are not movables within the meaning of Art. 45 Civ.C. and Art. 449<sup>1</sup> § 2 Civ.C., but intangible objects. If they are, however, incorporated into a product (movable), they may determine its hazardous properties.<sup>54</sup> As a consequence, the liability of the producer of an autonomous car for damages caused by the vehicle and resulting from defects in the software used in it, cannot be ruled out, if the hazardous properties of the software have been revealed in the course of the normal use of the car, and in the light of the scientific and technical knowledge at the time when the given car was placed on the market, the producer knew or should have known about those hazardous properties.

Due to the tangible nature of a “product” required by its definition in Art. 449<sup>1</sup> § 2 Civ.C., the liability of the producer of software used in an autonomous car under the product liability regime is debatable. The ramifications, however, of excluding software as such from the scope of the regime in question, and leaving it entirely within the realm of fault-based liability under Art. 415 Civ.C., might raise objections. It has been argued that nowadays confining the concept of a product to tangible objects has no convincing justification, considering the protective motives underlying the product liability regime. Therefore, it would be desirable to adopt a solution, be it in the form of a legislative change or through the case-law of the CJEU, that software or digital content may be considered a product under the Dir. 85/374, and making the product available to the recipient constitutes an act of putting it on the market for the sake of applying the product liability regime.<sup>55</sup>

The fact that computer software is an essential element for the functioning of an autonomous vehicle raises another question, namely whether the software producer could be held liable under this special regime not as the producer of the “product”, but as the producer of a “component part” of a defective product (if she or he is a different person than the manufacturer of the vehicle). In this case, the respective basis would be Art. 449<sup>5</sup> § 1 Civ.C. which stipulates that the producer of materials, raw materials, or a component part of a product bears the same liability as the producer of the product unless the damage was caused solely by the product’s defective construction or by following the instructions of the producer. To analyse this issue, it is necessary to refer to the concept of a “component part” within the meaning of Art. 3 section 1 Dir. 85/374 and the implementing Art. 449<sup>5</sup> § 1 Civ.C. While in the light of the Dir. 85/374 the concept of the product relates only to tangible objects, the Directive does not contain any wording stating that

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<sup>54</sup> Among others N. Baranowska, P. Machnikowski, „Odpowiedzialność za produkt wobec rozwoju nowych technologii” [Liability for defective products with respect to the development of new technologies], *Studia Prawa Prywatnego* 2017, No. 2, pp. 39–40, pointing out that this issue has not been clearly resolved under Directive 85/374; L. Bosek, „Perspektywy rozwoju odpowiedzialności cywilnej za inteligentne roboty” [Perspectives on development of civil liability for intelligent robots], *Forum Prawnicze* 2019, No. 2, p. 8.

<sup>55</sup> N. Baranowska, P. Machnikowski, *op. cit.*, p. 44.

a component part within the meaning of the Directive must be a tangible object.<sup>56</sup> Furthermore, the decisive conclusion should not be derived from the fact that Polish civil law recognizes a “component part” of a thing as a tangible object.<sup>57</sup> Given the needs arising from technological advancement, it is justified to extend the application of the provisions governing the liability for defective products borne by producers of component parts also to producers of software and digital content used in movables (such as autonomous vehicles) if they are defective and cause the movable to malfunction.<sup>58</sup> For the sake of avoiding a lack of clarity regarding the notion of the product and its component parts the scope of those concepts could be further clarified by the lawmaker or in case-law.<sup>59</sup>

Furthermore, after the product has been placed on the market, the software used in it may be updated by its producer. It does not appear justified to hold the producer of the entire product responsible for damages caused by the updated software.<sup>60</sup> This issue may concern not only positive updates but also the absence of an update required to ensure the safety of a product containing digital content (such as an autonomous vehicle), e.g. to protect against new forms of cyberattacks. It seems that the best way to confirm the liability of the software producer under the product liability regime would be to normatively modify the concept of a “product”, as well as a “component part” of a product by explicitly including software and digital content in the scope of these concepts. Such changes would have the effect of broadening the scope of entities liable under this special regime, thus providing better protection to users of products with digital content.

It might also be desirable to introduce an express obligation to supply an update of the software to ensure the safe functioning of the product with digital content throughout the entire duration of its use, given that technological dangers might

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<sup>56</sup> *Ibidem*.

<sup>57</sup> Cf. Art. 47 § 1 Civ.C.; only exceptionally law allows treating intangible objects as component parts – cf. Art. 50 Civ.C.

<sup>58</sup> In this vein – N. Baranowska, P. Machnikowski, *op. cit.*, p. 44, but it seems that the authors make a *de lege ferenda* suggestion, as they put forward a valid argument that adopting such a solution currently without simultaneously recognizing standalone software as a product within the meaning of the Dir. 85/374 would lead to legal inconsistency since the producer of the digital content would not be liable for damages caused by placing it on the market otherwise than on a tangible medium, but could be liable as the producer of the component part.

<sup>59</sup> According to the “Report on the safety and liability implications of Artificial Intelligence, the Internet of Things and robotics” from the European Commission, February 19, 2020, COM(2020) 64 final, p. 14: “Although the Product Liability Directive’s definition of product is broad, its scope could be further clarified to better reflect the complexity of emerging technologies and ensure that compensation is always available for damage caused by products that are defective because of software or other digital features. This would better enable economic actors, such as software developers, to assess whether they could be considered producers according to the Product Liability Directive”.

<sup>60</sup> N. Baranowska, P. Machnikowski, *op. cit.*, pp. 44–45, making an exception for cases where an update was needed to remove a defect that already existed at the time the product was placed on the market.



emerge after the product has been placed on the market. Under the current regime of the Dir. 85/374 the producer may avoid liability by demonstrating that the state of scientific and technical knowledge at the time the product was introduced to the market was not such that the existence of the defect could be discovered (the so-called “later defect defence”; Art. 449<sup>1</sup> § 3 Civ.C., Art. 7 (e) Dir. 85/374). It has been pointed out that there could be a potential increase in the use of the “later defect defence” in such situations, and, therefore the notion of “putting into circulation” that is currently used in the Dir. 85/374 could be revisited to consider the fact that products may change and be altered.<sup>61</sup> However, Art. 15 (1) (b) Dir. 85/374 already allows Member States to derogate from Art. 7 (e) Dir. 85/374 and maintain or, subject to the procedure set out in Art. 15 (2) Dir. 85/374, provide in their domestic laws that the producer shall be liable even if she or he proves that the state of scientific and technical knowledge at the time the product was put into circulation was not such that the existence of a defect could be discovered. The Polish lawmaker did not take this opportunity and did not derogate from the “later defect defence”. Although this chapter does not purport to address whether a general elimination of this defence within the product liability regime would be desirable, it appears reasonable to accept that such a product-specific elimination with regard to products with digital content (including autonomous vehicles) should be recommended. A respective adjustment could consist in introducing the obligation to consider also the state of knowledge when the defect occurred.<sup>62</sup> This could take place either through an amendment to the Dir. 85/374, or, even under the current wording of the Dir. 85/374, through a legislative change in Polish law, given that Member States are allowed to derogate from Art. 7 (e) Dir. 85/374. On the other hand, issues regarding possible contributory negligence on the part of the vehicle’s operator resulting from a failure to download a safety update might also become relevant in this context.<sup>63</sup>

Another drawback connected with the application of the product liability regime in its current shape to autonomous vehicles is caused by significant limitations of liability for damage to property,<sup>64</sup> which are also largely derived from Dir. 85/374 (cf. Art. 9 (b) Dir. 85/374). First, the compensation for damage to property does not include damage to the product itself (Art. 449<sup>7</sup> § 1 Civ.C.). Second, the compensation does not include the loss of profits (Art. 449<sup>7</sup> § 1 Civ.C.). Third, compensation cannot be claimed if the damage to property does not exceed the equivalent of 500 EUR (Art. 449<sup>7</sup> § 2 Civ.C.) and, fourth, a manufacturer is liable for damage to property only if the thing destroyed or damaged is considered an item which is usually intended for personal use and the aggrieved party primarily used it for this purpose (Art. 449<sup>2</sup> Civ.C.). In the context of liability for damages caused by an autonomous vehicle,

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<sup>61</sup> Cf. “Report on the safety...”, p. 15.

<sup>62</sup> N. Baranowska, P. Machnikowski, *op. cit.*, p. 44.

<sup>63</sup> *Ibidem*.

<sup>64</sup> K. Ludwichowska-Redo, *op. cit.*, p. 216.

the last limitation may have particularly severe consequences, e.g. in the case of a taxi car (used for professional purposes) that has been damaged after having been hit by an autonomous vehicle in motion. The catalogue of these limitations could, therefore, be revised with the view to improving the prospect of redress for damage to property caused by autonomous vehicles.

On the other hand, it has been raised that the current shape of the general limitations of strict liability for a defective product (i.e. limitations that apply to any damage, be it damage to a person or property) could be insufficient in the context of autonomous vehicles. Suggestions have been made to introduce a specific limitation allowing a shift of civil liability from the producer to the vehicle operator if the producer could prove that the operator was in a position to avoid the accident by taking control of the vehicle, especially when the vehicle signalled an imminent danger.<sup>65</sup>

## **6. Tort liability of the organizer of research works concerning autonomous cars**

The fact that Polish law allows for research works involving the testing of autonomous vehicles on public roads (cf. section 2) raises the question of the civil liability of the organizer of such works. This question is all the more important as the application for a permit to carry out research works must be accompanied by a document confirming the conclusion of a compulsory insurance contract covering the liability of the organizer (Art. 651 section 4, p. 1 RTL). The provisions of civil law do not provide, however, a separate basis for the civil liability of the organizer of such works. As a result, doubts are expressed about the existence of such grounds for liability, assuming that the obligation to conclude an insurance contract cannot itself create a basis for civil liability, because insurance liability cannot exist without the underlying civil liability.<sup>66</sup> However, the view regarding the alleged lack of grounds for the organizer's tort liability is not necessarily justified. After all, the grounds for liability already provided for in civil law, such as the general basis of tort liability (Art. 415–416 Civ.C.), may be applied, although surely the requirement to establish a fault on the part of the organizer of the research works may limit the practical significance of this liability in comparison to the strict liability of the car possessor or the producer of a defective product. One should not rule out, however, the strict liability of the organizer of research works based on Art. 435 Civ.C., which regulates the liability of a person who runs on her or his own account an enterprise or establishment set in motion

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<sup>65</sup> M. Matusiak-Frącczak, Ł. Frącczak, *op. cit.*, p. 122.

<sup>66</sup> M. Czenko, *O testowaniu...* (an on-line comment).

by natural forces (steam, gas, electricity, liquid fuels, etc.). Such a person is liable for any personal or property damage caused by the operation of the enterprise or establishment unless the damage is due to force majeure or is solely caused by a fault on the part of the aggrieved party or a third party for whom the person running an enterprise or establishment is not responsible.

## **7. Liability of the administrator of an IT system managing the remote-controlled traffic of autonomous cars**

Along with technological progress, autonomous remote-controlled vehicles may gain in importance. With regard to the damage caused by the motion of such vehicles resulting from a failure of the remote control system, the question is raised whether liability should be borne in such an instance by the possessor of the car according to Art. 436 § 1 Civ.C., who would then be entitled to recourse against the supplier of defective software, or, alternatively, such an event should be classified as a completely separate cause of damage that is not related to the motion of the vehicle itself. As for the latter option, it is posited to implement rules regulating the liability of entities operating car traffic control centres if malfunctions of such centres lead to damage, and this liability should supersede the liability of car possessors.<sup>67</sup> It seems, however, that *de lege lata* the respective basis for liability of such entities could already be found in Art. 435 Civ.C. regarding the above-mentioned strict liability for damages caused by the functioning of an enterprise that relies, inter alia, on the use of electricity in its operational activity (cf. remarks concerning Art. 435 Civ.C. in section 6). The open question, however, could be, first, whether such liability should be even stricter (e.g. take the form of absolute liability without the possibility of relying on a “force-majeure” exemption), and second, whether such a unique liability regime would only constitute an alternative to the liability of the autonomous vehicle’s possessor, or would supersede this liability. Each of these issues would require a very careful and balanced consideration.

## **8. Tort liability for artificial intelligence in the context of autonomous cars**

Developments concerning the regulation of the issue of liability for damage caused by the functioning of AI also involve a potential tort liability for damage caused by artificial intelligence in the context of using AI systems to

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<sup>67</sup> J. Kuźmicka-Sulikowska, *op. cit.*, pp. 185, 190.

ensure the functionality of autonomous vehicles. Legislative actions planned at the EU level will certainly be of key importance for the possible formation of specific grounds for tort liability in this area. In that regard, one needs to mention the resolution of the European Parliament of 20 October 2020 with recommendations to the Commission on a civil liability regime for artificial intelligence.<sup>68</sup> This proposal distinguishes between the strict liability of operators of high-risk AI systems (Arts. 4–7) and liability based on fault for other AI systems (Arts. 8–9). “High-risk” is defined in Art. 3 point (c) of the proposal as meaning a significant potential in an autonomously operating AI system to cause harm or damage to one or more persons in a manner that is random and goes beyond what can reasonably be expected; the significance of the potential depends on the interplay between the severity of possible harm or damage, the degree of autonomy of decision-making, the likelihood that the risk materializes and the manner and context in which the AI system is being used. As far as the use of AI in autonomous vehicles is concerned, it might be dubious whether the regulations on civil liability for AI could provide a one-size-fits-all solution for AI systems applied in vehicles as being either “high-risk” or “other” AI systems, considering the varying levels of automation of vehicles. At least concerning fully autonomous cars, it seems appropriate to assume that the fact that these essentially AI-controlled vehicles would move in public spaces and could cause significant harm to such important legal interests as life, health, and property, as well as expose the public at large to risks, could justify treating them as operated by “high-risk” AI systems.<sup>69</sup>

The person liable in the light of the proposal is the “operator” of the AI. The proposal distinguishes between the frontend and backend operators. A “frontend operator” means any natural or legal person who exercises a degree of control over a risk connected with the operation and functioning of the AI system and benefits from its operation (Art. 3 point (e) of the proposal). In turn, the “backend operator” means any natural or legal person who, on a continuous basis, defines the features of the technology and provides data and an essential backend support service and therefore also exercises a degree of control over the risk connected with the operation and functioning of the AI system (Art. 3 point (f) of the proposal); the “backend operator” should be liable under the proposal as long as her or his liability is not already covered by Dir. 85/374/EEC (Art. 3 point (d) of the proposal). In the case of autonomous vehicles, the frontend operator would be the natural person deciding whether to use the vehicle, choosing the destination, or – depending on the level of autonomy of the vehicle – defining other travel parameters. On the other hand, the backend operator could be considered to be the manufacturer of the car, manufacturer of the car software, or other entity providing services related to autonomous vehicles (e.g. administrator of an AI

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<sup>68</sup> OJ C404, 6.10.2021, pp. 107–128.

<sup>69</sup> Cf. “Report on the safety...”, p. 16.

system for remote control of the traffic of such vehicles) when any of these parties would control an autonomous vehicle continuously by providing such services as, e.g. cloud navigation services, updating map data or the software installed in the vehicle, or deciding when the vehicle needs specific maintenance.<sup>70</sup> With regard to autonomous cars, it may be difficult to clearly determine the liable entity in specific cases, especially as there may ultimately be two car operators of the same car, each with different functions. In the expert report published by the European Commission,<sup>71</sup> the view was expressed that in cases of strict liability, liability should be borne by this operator who has more control over the risks posed by the operation, whereas an optimal solution allowing to avoid uncertainty, would be a legislative determination of which operator is liable under which circumstances, for instance by deciding that for autonomous vehicles with a level of automation of 4 or 5, the liable person is the provider running the system who enters the vehicle into the respective national registry of vehicles.

## 9. Seller's liability for physical defects of an autonomous car

Apart from the issue of tort liability, attention should also be paid to the issue of liability of the seller of an autonomous vehicle towards the buyer for the defects in the vehicle. These issues are regulated in the provisions on the specific liability of the seller, which is the warranty for defects in the sold item (Arts. 556 *et seq.* Civ.C.). It is a special instance of strict contractual liability. The redress of damage is not the main remedy available to the buyer under the warranty regime, because the buyer may withdraw from the sales contract, make a declaration concerning the reduction of the sales price, demand that the defective thing be replaced for one free from defects, or demand that the defects be removed (Arts. 560 and 561 Civ.C.). If any of the above special rights under the warranty regime have been exercised by the buyer, she or he may also demand redress of damage sustained by having concluded the contract without being aware of the existing defect, even if the damage was the consequence of circumstances for which the seller is not liable (basically meaning that the seller is not at fault). In particular, the buyer may seek redress of damage by claiming reimbursement for the costs of contracting, receiving, transporting, safe-keeping, and insuring the sold item, as well as reimbursement for outlays made to the extent that she or he derived no profit from those outlays (Art. 566 § 1 Civ.C., the first sentence, and Art. 566 § 2 Civ.C.). This right to claim damages under the warranty regime does not prejudice the provisions on the redress of full damage

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<sup>70</sup> *Liability for artificial intelligence and other emerging digital technologies*, Luxembourg 2019, p. 41, <https://op.europa.eu/en/publication-detail/-/publication/1c5e30be-1197-11ea-8c1f-01aa75ed71a1/language-en/format-PDF/source-247772326> (accessed 20.06.2022).

<sup>71</sup> *Ibidem*, pp. 41–42.

under the general principles (Art. 566 § 1 Civ.C., the second sentence); relying on this option renders it necessary to demonstrate a fault on the part of the seller, at least in the form of negligence (a lack of due care). Rights under the warranty regime are vested in the seller against the buyer. They are not granted to third parties who suffered damage as a result of the sold item's defects; in such cases, third parties may only seek redress of damage under the regime of tort liability and liability for a defective product<sup>72</sup> discussed in earlier sections of the chapter.

The situation in which the automatic functions of an autonomous car do not work properly can be classified as a physical defect, occurring when the sold item does not have the properties that a thing of that type should have, given the aim specified in the contract or arising from circumstances or the purpose of the item (Art. 556<sup>1</sup> § 1, p. 1 Civ.C.)<sup>73</sup>. It seems that physical defects of an autonomous car could also be established in the situation in which an autonomous car would not have the properties of which the seller has assured the buyer (Art. 556<sup>1</sup> § 1, p. 2 Civ.C.) or would not be fit for the purpose that the buyer informed the seller of at the time the sales contract was concluded and the seller did not make reservations regarding this purpose (art. 556<sup>1</sup> § 1, p. 3 Civ.C.).

Malfunction of an autonomous car can, however, be in many instances attributed to defects of the software. Against this background, it may be problematic whether the concept of a physical defect of a vehicle also includes a defect of the software installed in it, as the software is an intangible good and its defect does not mean that the car's physical components are defective. One of the proposed solutions is to consider the vehicle's software as a "component part" of a thing (a car) within the meaning of Art. 47 § 2 Civ.C., which would allow classifying the defectiveness of software installed in an autonomous vehicle as a physical defect of the vehicle itself.<sup>74</sup> This view cannot be accepted because a component part of a thing according to the current definition in Polish civil law may be, as already mentioned above (cf. section 5), only a tangible object, subject to exceptions explicitly provided for in the law.

Another suggested approach is linked with the fact that software is protected by copyright and, therefore, a defect in the software may be considered a potential defect in the intellectual property right (copyright) as the object of sale. This would be *prima facie* a viable solution in the light of Art. 555 Civ.C. which stipulates that the provisions on the sale of things shall apply respectively to the sale of, i.a. rights. As a result, it is thought that Art. 555 Civ.C. could allow the provisions of the Civil Code on the warranty to be applied to software installed in an autonomous car.<sup>75</sup> This position may, however, also raise objections. First,

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<sup>72</sup> There is no need to address in this chapter the contentious issue of whether the liability regime for a defective product belongs to the tort regime or not.

<sup>73</sup> J. Loranc-Borkowska, *op. cit.*, p. 170.

<sup>74</sup> *Ibidem*.

<sup>75</sup> So, L. Helińska, B. Paczocha, A. Piskorz, *op. cit.*, p. 38.

it is not obvious that it would be possible to respectively apply the concept of a physical defect via Art. 555 Civ.C. to the intangible subject matter of intellectual property rights. The traditional view rejects this possibility.<sup>76</sup> Second, and most importantly, the sale of an autonomous car will not, in practice, be accompanied by the sale of copyright to software installed in the car, because the copyright holder will not be interested in transferring to the individual buyer the rights to the software used in an infinite number of cars of a given vehicle model. Therefore, in this case, seeking the possibility of applying the warranty regime in the contract of sale of rights appears pointless. Rather, the sale of an autonomous vehicle will be accompanied by a non-exclusive license agreement or sub-license agreement for the use of a computer program.<sup>77</sup>

Another possible trail could be derived from the fact that computer programs are protected by copyright as “works”, and there is a separate regime of liability for defects in the work regulated in Art. 55 section 1 of the Law on Copyright and Related Rights.<sup>78</sup> This option is also not without its drawbacks. First, the personal scope of this regulation is limited to contracts between actual authors of works and their contractors.<sup>79</sup> In a typical situation, the buyer of an autonomous car will not, however, conclude a contract, for example, a license contract, directly with a natural person who is the developer of the software, but with the seller of the car, who will have to obtain her or his own title to conclude contracts regarding copyright.

Second, the literal wording of this provision implies that its scope is limited only to defects in commissioned works. While according to the prevailing view, it also applies to existing works that are the subject of assignment agreements or license agreements,<sup>80</sup> there is a margin of uncertainty as to whether it would apply to existing works.<sup>81</sup> If one were to follow a narrow interpretation of Art. 55

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<sup>76</sup> Generally, with regard to defects in the right as the subject of sale – S. Buczkowski, [in:] *Kodeks cywilny. Komentarz*, t. 2 [Civil Code. Commentary, Vol. 2], eds. Z. Resich, J. Ignatowicz, Warszawa 1972, p. 1283; directly in relation to the defects of the patent – K. Szczepanowska-Kozłowska, [in:] E. Nowińska, U. Promińska, K. Szczepanowska-Kozłowska, *Własność przemysłowa i jej ochrona* [Industrial property and its protection], Warszawa 2014, p. 117; differently – M. du Vall, E. Traple, [in:] *Prawo patentowe* [Patent law], ed. E. Traple, Warszawa 2017, p. 461.

<sup>77</sup> Permitted private use does not cover the use of computer programs (Art. 77 in conjunction with Art. 23 of the Copyright Act – cf. next footnote).

<sup>78</sup> Ustawa o prawach autorskim i prawach pokrewnych z dnia 4 lutego 1994 [Act on copyright and related rights of 4 February 1994], consolidated text, J. of L. 2021, item 1062.

<sup>79</sup> A. M. Niżankowska-Horodecka, [in:] *Ustawy autorskie. Komentarze*, t. 1 [Copyright Acts. Commentaries, Vol. 1], ed. R. Markiewicz, Warszawa 2020, p. 1306.

<sup>80</sup> J. Barta, R. Markiewicz, [in:] *Prawo autorskie i prawa pokrewne. Komentarz* [Law on copyright and related right. Commentary], eds. J. Barta, R. Markiewicz, Warszawa 2011, p. 377; T. Targosz, [in:] *Prawo autorskie i prawa pokrewne. Komentarz* [Law on copyright and related right. Commentary], ed. D. Flisak, Warszawa 2014, p. 811.

<sup>81</sup> In this vein A. Gołaszewska, [in:] *Prawo autorskie i prawa pokrewne. Komentarz* [Law on copyright and related right. Commentary], eds.. W. Machała, R. M. Sarbiński, Warszawa 2019, p. 959.

section 1 of the Law on Copyright and Related Rights, this provision would not be useful for a buyer who concluded a contract for the sale of an autonomous vehicle equipped with software that had been generally developed for a given model of a vehicle.<sup>82</sup> As a consequence, the issue of the seller's liability for defects in the software installed in the autonomous car should preferably be contractually regulated between the parties in the sales agreement, because indicating the statutory basis for this liability may currently raise doubts.

It seems that to ensure the best possible protection for the buyer with regard to the seller's liability as provided for by law, the optimal solution should be rather straightforward. An autonomous vehicle is a very complex device that combines elements of software and hardware. This does not, however, change the fact that an autonomous vehicle is first and foremost a thing (tangible object) that is the subject of the sales agreement. For this reason, it would not be appropriate to construe defects in an autonomous vehicle caused by malfunctioning of the digital content as pure software defects. These are rather defects in the tangible item with digital content, treated as a single complex object of sale. Therefore, the liability for defects in such a vehicle should rather be linked with the warranty regime under the sales contract also when they are caused by malfunctions of the digital content that is installed in the vehicle. A significant change in this direction is provided for in the Dir. 2019/771 on certain aspects concerning contracts for the sale of goods (Dir. 2019/771),<sup>83</sup> which should have been implemented into Polish law by January 1, 2022.<sup>84</sup> Article 2 section 5 point (b) Dir. 2019/771 classifies as "goods" also any tangible movable items that incorporate or are inter-connected with digital content or a digital service in such a way that the absence of that digital content or digital service would prevent the goods from performing their functions and defines such goods as "goods with digital elements". Furthermore, Art. 10 section 1 sentence 2 Dir. 2019/771 introduces liability of the seller of goods with digital elements for a lack of conformity of such goods with the sales contract, and Art. 10 section 2 and 3 regulate the seller's additional liability when the sales contract provides for a continuous supply of the digital content or digital service over a period of time. Proper implementation of Dir. 2019/771 into Polish law should be of great importance for establishing the basis for liability of the seller of autonomous cars in the event of defects resulting from the malfunction of the software installed in the vehicle.

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<sup>82</sup> L. Helińska, B. Paczocha, A. Piskorz, *op. cit.*, p. 38.

<sup>83</sup> Directive (EU) 2019/771 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the sale of goods, amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC, OJ L136, 22.5.2019, pp. 28–50.

<sup>84</sup> As of 12 May 2022, works are underway on the draft act implementing the Directive into Polish law.



## 10. Issue of insurance against civil liability in respect of the use of autonomous vehicles

The issue of insurance against civil liability in respect of the use of autonomous vehicles is of obvious importance. In cases where the damage was caused by the motion of a motor vehicle, compensation claims are satisfied by the insurance company under the compulsory third-party liability insurance of motor vehicle possessors or by the Insurance Guaranty Fund in those situations where no insurance cover exists that are listed in Art. 98 of the Act of 22 May 2003 on compulsory insurance, the Insurance Guaranty Fund, and the Polish Office of Motor Insurers.<sup>85</sup> In practice, the insurer (or the Fund) is the first point of claim for compensation for personal injury or material damage, and this is the easiest way for the injured party to get compensation. Autonomous cars are not treated in Polish law (or in EU law in the Dir. 2009/103 which harmonizes issues of insurance against civil liability in respect of the use of motor vehicles) any differently from conventional cars as regards motor insurance. This means that autonomous vehicles, like all vehicles, must be covered by motor liability insurance.

However, as indicated above, in the case of autonomous vehicles, there is a limitation, and with time, perhaps even the elimination of the influence of the vehicle's operator on the vehicle's motion. This circumstance increases the importance of other potential events causing damage in connection with the motion of such vehicles, such as software defects, lack of software updates, break-ins into the vehicle's information system, failure of navigation systems, or the inability to take control by a human in the event of an imminent accident. These factors may justify a wider delineation of the scope of parties on which the insurance obligation should be imposed than just possessors of autonomous vehicles, e.g. car manufacturers or software suppliers.<sup>86</sup> Against this background, the current personal scope of compulsory insurance against civil liability in respect of the use of motor vehicles in Polish law may be insufficient for the proper allocation of the financial burden of redressing damage caused by autonomous vehicles. To some extent, the need to extend the scope of parties required to obtain civil liability insurance is reflected by the already applicable requirement for an insurance contract to be concluded by an entity applying for a permit to conduct research works involving autonomous vehicles (cf. section 6). It is proposed, as a possible

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<sup>85</sup> Ustawa o ubezpieczeniach obowiązkowych, Ubezpieczeniowym Funduszu Gwarancyjnym i Polskim Biurze Ubezpieczycieli Komunikacyjnych z dnia 22 maja 2003 r. [Act on compulsory insurance, the Insurance Guarantee Fund and the Polish Bureau of Motor Insurers of 22 May 2003], consolidated text, J. of L. 2021, item 854.

<sup>86</sup> A. Wilk, *op. cit.*, p. 26, pointing to efforts in the UK to develop a new shape for autonomous vehicle insurance.

future legislative solution, to introduce additional obligatory insurance against civil liability in respect of the use of autonomous vehicles and to create a separate insurance fund for autonomous vehicles, similar to the existing Insurance Guaranty Fund, in which, apart from vehicle possessors, also vehicle manufacturers and software suppliers should participate.<sup>87</sup> Since the issues of insurance against civil liability in relation to the use of motor vehicles are already harmonized in Dir. 2009/103, and further legislative action with regard to insurance against liability caused by robots and AI systems is of interest to the European Parliament<sup>88</sup> and the Commission<sup>89</sup>, appropriate changes could be provided for in EU law.

It is difficult to predict at this point to what extent the popularization of autonomous vehicles will affect the cost of insurance. On the one hand, the fact that these vehicles are controlled by a computer may lead to the recognition of such vehicles as safer than conventional ones, which are controlled by humans with all the imperfections of human reactions. This could imply that insurance prices in the case of autonomous cars should drop. On the other hand, minimizing the participation of the autonomous vehicle operator in the vehicle's motion, as well as increasing technological advancement of these vehicles, may mean a greater risk of accidents caused only by technical failures, which in turn may increase insurance prices.<sup>90</sup> It seems reasonable to suppose that the technological novelty of autonomous vehicles combined with the lack of broader data on accidents involving such cars outside the sphere of test works may mean that, initially, the cost of insurance against civil liability in respect of damage caused by such vehicles will be higher than in the case of conventional vehicles. If, over time, statistics relating to the real traffic of autonomous vehicles on public roads show that this traffic causes less damage than conventional vehicle traffic, insurance costs could drop.<sup>91</sup> It can also be assumed that the reactions of the insurance sector may differ depending on the level of vehicle automation.

## 11. Outcome

Under the law currently in force, civil liability for damage caused by the use of autonomous vehicles may be based on the strict liability of the car possessor as provided for in Art. 436 § 1 Civ.C. It should be expected, however, that the increase in the technological advancement of autonomous vehicles, leading to the reduction

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<sup>87</sup> G. Urbanik, *op. cit.*, pp. 91–92.

<sup>88</sup> European Parliament resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics, OJ C252, 18.07.2018, pp. 239–257.

<sup>89</sup> Cf. “Report on the safety...”, p. 16.

<sup>90</sup> A. Wilk, *op. cit.*, p. 27 pointing to both opposing arguments.

<sup>91</sup> J. Kuźmicka-Sulikowska, *op. cit.*, p. 191.

or even elimination of the role of autonomous vehicle operators, will result in a gradual reduction in the application of fault-based liability in a very important case, concerning liability in the event of a vehicle collision in mutual relations between possessors of colliding cars (Art. 436 § 2 Civ.C.). The declining significance of this basis for redressing damage will probably contribute to the increase in the importance of civil liability on other grounds, e.g. under the regime of autonomous car producers' liability for a defective product, the liability of remote traffic management system operators, or the liability of organizers of test work concerning autonomous vehicles. Moreover, appropriate adjustments to the provisions on liability for defective products (Dir. 85/374) would be desirable, allowing a clearer integration of software products and tangible goods equipped with software into this regime of liability. Such changes would be important to increase the usefulness of this regime in the context of the damage caused by autonomous vehicles.

Given that, in practice, damage caused by car traffic accidents is redressed through the payment of compensation by the car possessor's insurance company or by the Insurance Guaranty Fund (cf. section 10), possible changes to the scope of parties that should make obligatory contributions to cover damages caused by autonomous vehicles should be considered. More precisely, the fact that the decision-making role of operators of such vehicles regarding the vehicle's motion decreases while the importance of failure of such vehicles as a possible cause of damage increases, may justify the introduction of an obligation to obtain insurance against liability for damage caused by autonomous vehicles also by parties other than vehicle possessors, in particular by manufacturers of autonomous vehicles and producers of software installed in such vehicles.

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