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# Perspectives for Open Source AI
## Regulatory approaches of the EU, U.S., and China

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**Abstract**: The world's first most comprehensive law regulating artificial intelligence, the EU Artificial Intelligence Act, has been enacted in June 2024 and entered into force in August 2024. The AI Act aims to provide transparency and ensure safe use of AI systems by introducing obligations and requirements for developers and deployers based on the risk posed by AI systems. Despite the long legislation process that launched in 2020 and multiple negotiations, the final version of the Act includes a number of controversial and arguable provisions that undermine both the concept of open source and the future of open source AI systems. Notoriously, the AI Act includes an exemption for "AI systems released under free and open source licenses" (Article 2(12)), however it does not provide a precise definition of such systems, thus incentivizing the creation of "openish" AI systems. Such approach taken in the first framework AI regulation with extraterritorial effect raises concerns both in the legal and IT circles, especially after the release of the Open Source AI Definition by the Open Source Initiative in October 2024. This research paper provides a critical and detailed analysis of the provisions of the EU AI Act on open source AI systems and aims to develop suggestions on filling in the legal gaps in the AI Act covering open source AI. This paper further examines the legislative initiatives covering open source AI systems in the USA, particularly California, and China and compares their legal approaches to promoting open source AI projects.

**Keywords**: artificial intelligence, open source, EU Artificial Intelligence Act

## 1 Introduction

The EU has been the first jurisdiction to enact a comprehensive piece of legislation regulating artificial intelligence (AI). The European Commission released its proposal[1] on the Artificial Intelligence Act (AI Act) in 2021, which was followed by the European Council adopting its common position in December 2022.[2] In June 2023, the European Parliament adopted[3] its amendments to the Commission proposal, which served as the Parliament's negotiating position in the forthcoming trilogues between the Council, the Parliament, and

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1. Proposal for a Regulation of The European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts. COM/2021/206 final

2. Council of the EU. Artificial Intelligence Act: Council calls for promoting safe AI that respects fundamental rights. 6 December 2022 https://www.consilium.europa.eu/en/press/press-releases/2022/12/06/artificial-intelligence-act-council-calls-for-promoting-safe-ai-that-respects-fundamental-rights/ accessed 3 October 2024

3. European Parliament. Amendments adopted by the European Parliament on 14 June 2023 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts (COM(2021)0206 – C9-0146/2021 – 2021/0106(COD)). 14 June 2023 <https://www.europarl.europa.eu/doceo/document/TA-9-2023-0236_EN.html > accessed 22 October 2024

the Commission, with the latter acting as a mediator between the Council and the Parliament.[4] After months of negotiations, the Council and the Parliament reached a provisional agreement on the AI Act on 9 December 2023.[5] The final version of the AI Act was approved by the Council on 21 May 2024[6], enacted on 13 June 2024, and entered into force on 1 August 2024, with the majority of its provisions initially planned to become applicable from 2 August 2026.[7] The AI Digital Omnibus has shifted these deadlines to 2027 and 2028.[8]

One of the main objectives of the AI Act is to ensure that AI systems are safe, ethical, and trustworthy. It sets obligations for developers and deployers of AI systems, based on a risk-based approach, categorizing the AI systems into four levels of risk: minimal or no risks, limited risks, high risks, and unacceptable risks.[9] At the same time, some AI systems, for different reasons, are explicitly exempt from the application of the AI Act. One of the exemptions covers "AI systems released under free and open-source licences"[10] (Article 2(12)). Although the key reason behind this exemption is to enhance innovation and research in open source technologies, the provisions of the AI Act relating to open source AI create uncertainty as to the classification of AI systems as open source and as to the real exemptions provided in the AI Act, which, as will be demonstrated further in this paper, result to be very limited in scope.

This paper provides a detailed analysis of the provisions of the AI Act relating to open source AI and is divided into six sections. Following the Introduction, the second section analyzes the definitions related to AI technologies as stipulated in the EU AI Act. The terms "AI system", "AI model", "GPAI model", and "foundation model" have been subject to extensive debate and are crucial in understanding the subject matter of AI regulations. The third section opens with the analysis of the reasons behind the exemption for open source AI in the AI Act, as well as safety concerns relating to open source AI. Further sub-sections delve into the definition of open source AI, both as it is provided in the AI Act and as it is understood in the open source community. The fourth section addresses in detail the exemption for open source AI systems provided in the AI Act and analyzes the particular obligations from which open source AI systems are exempt. The fifth section of this paper includes an international perspective on regulating open source AI and provides an overview of the different legislative initiatives in the United States of America, particularly the state of California, and China in this area. In conclusion, this paper estimates the impact of the AI Act for the future of open source AI. It finds that the adopted text of the AI Act has the impact of undermining the role of the open source community and discourages contributing to, and maintaining, Europe-based open source projects. Lastly, this paper elaborates suggestions on amendments to the provisions of the AI Act concerning open source AI that would contribute

4. European Union. Glossary of summaries. Trilogues https://eur-lex.europa.eu/EN/legal-content/glossary/trilogue.html accessed 22 October 2024

5. Council of the EU. Artificial intelligence act: Council and Parliament strike a deal on the first rules for AI in the world. 9 December 2023 https://www.consilium.europa.eu/en/press/press-releases/2023/12/09/artificial-intelligence-act-council-and-parliament-strike-a-deal-on-the-first-worldwide-rules-for-ai/ accessed 3 October 2024

6. Council of the EU. Artificial intelligence (AI) act: Council gives final green light to the first worldwide rules on AI. 21 May 2024 https://www.consilium.europa.eu/en/press/press-releases/2024/05/21/artificial-intelligence-ai-act-council-gives-final-green-light-to-the-first-worldwide-rules-on-ai/ accessed 3 October 2024

7. Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) [2024] OJ L2024/1689

8. European Commission. EU agrees to simplify AI rules to boost innovation and ban 'nudification' apps to protect citizens. 7 May 2026 https://ec.europa.eu/commission/presscorner/detail/en/ip_26_1024 accessed 22 June 2026

9. Council of the EU. Artificial Intelligence Act https://www.consilium.europa.eu/en/policies/artificial-intelligence/#what accessed 4 October 2024

10. The EU AI Act uses hyphenation in the term "open-source", as, for example, is stated in Merriam-Webster Dictionary (see https://www.merriam-webster.com/dictionary/open-source). However, the Open Source Initiative (OSI) insists on not using hyphenation because "open source" is "a lexicalized compound noun which is no longer transparent with respect to its meaning (i.e., open source is not just about being source-viewable, but also about defining user freedoms) which can then be further compounded (with for example"open source license")" (see https://opensource.org/blog/is-open-source-ever-hyphenated). This point of view is supported by the Cloud Native Computing Foundation (CNCF) (see https://github.com/cncf/foundation/blob/main/style-guide.md). Furthermore, the OSI chose to always capitalize "Open Source" because "it is a proper noun with a specific definition" (see https://opensource.org/blog/is-open-source-ever-hyphenated). The author of this paper shares the view of the OSI as concerns non-hyphenating the term "open source".

to promoting innovation and ensuring Europe's digital sovereignty.

## 2 Defining artificial intelligence

Before delving into the definition of open source AI, it is important to understand, and agree upon, a definition of an AI system itself. Various jurisdictions and international organizations have undertaken attempts to legally define AI. Although the resulting definitions are very close to each other, there are a number of factors worth paying attention to the way these definitions were elaborated. This section focuses on the analysis of the terms used in the EU AI Act, namely "AI system", "AI model", "GPAI model".

The term "AI system" has gone through a number of modifications since the Commission Proposal in 2021. [11] Initially, an AI system was defined as software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with. Annex I listed the following techniques and approaches:

(a) *Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning;*

(b) *Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge bases, inference and deductive engines, (symbolic) reasoning and expert systems;*

(c) *Statistical approaches, Bayesian estimation, search and optimization methods.*

In the subsequent versions of the AI Act, Annex I was deleted, and the notion of AI system has gone through significant modifications. The final draft of the AI Act includes the following definition:

> *AI system is a machine-based system 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* (Article 3(1)).

According to the Analysis of the final compromise text with a view to agreement, these modifications pursued the following objectives: (1) aligning the definition of AI system with the definition provided in the OECD Recommendation on AI[12]; (2) an intention to exclude simpler traditional software systems or programming approaches, which are based on the rules defined solely by natural persons to automatically execute operations.[13]

With regard to the first objective, Recital 12 of the AI Act outlines that the notion of AI system should be closely aligned with the work of international organizations working on AI "to ensure legal certainty, facilitate international convergence and wide acceptance, while providing the flexibility to accommodate the rapid technological developments in this field."

Such alignment of the definition of AI system with the definition proposed by an international organization, particularly the OECD, has a number of implications. On the one hand, as specified by the OECD.AI Policy Observatory, "given the global nature of AI, if all governments can agree on the same definition, it allows for

11. Proposal for a Regulation of The European Parliament and of the *Council* laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts. COM/2021/206 final

12. OECD. Recommendation of the Council on Artificial Intelligence. OECD/LEGAL/0449. 22 May 2019 https://www.fsmb.org/siteassets/artificial-intelligence/pdfs/oecd-recommendation-on-ai-en.pdf accessed 20 February 2024

13. See Section II (2) of the Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts - Analysis of the final compromise text with a view to agreement. 26 January 2024 https://data.consilium.europa.eu/doc/document/ST-5662-2024-INIT/en/pdf accessed 29 October 2024

interoperability across jurisdictions."[14] Indeed, agreeing on a jointly and internationally accepted definition of AI system would be a significant achievement, that would create a solid basis for legal regulation of AI, including at inter-governmental level. However, in such a case, it would be logical to jointly elaborate the definition of AI system with states that are world leaders in AI technologies, particularly China.[15]

On the other hand, the fact that the EU abandoned its definition of AI system and adopted the one elaborated by the OECD suggests some political context influencing this decision. The forerunner of the OECD, the Organization for European Economic Co-operation (OEEC), was formed to administer the U.S. aid under the Marshall Plan (European Recovery Program) for the reconstruction of Europe after World War II.[16] In the political context, the Marshall Plan followed the Truman Doctrine[17], which became the basis of the Cold War.[18] Nowadays, although the OECD is primarily an economic organization, the political context of its decisions cannot be excluded. Despite statements that China should be admitted to the OECD[19], it is still neither a member of the OECD, nor is it an adherent to the OECD Recommendation on AI.

As to the second objective, Recital 12 specifies that the notion of AI system "should be based on key characteristics of AI systems that distinguish it from simpler traditional software systems or programming approaches and should not cover systems that are based on the rules defined solely by natural persons to automatically execute operations."

However, some of the characteristics of AI systems as worded in the definition still remain unclear. It might seem that the wording "designed to operate with varying levels of autonomy", i.e. with "some degree of independence of actions from human involvement and of capabilities to operate without human intervention" (Recital 12), may also mean that such level of autonomy could be zero.[20] However, according to Commission guidelines on AI system definition published in February 2025, [21] the wording "some degree of independence of actions" in Recital 12 excludes the systems that are designed to operate solely with full manual human involvement and intervention. In contrast, the wording "may exhibit adaptiveness after deployment" indeed means that a system does not necessarily have to possess adaptiveness or self-learning capabilities after deployment to constitute an AI system.[22]

Recital 12 further states that the key characteristic of an AI system is its capability to infer, which means obtaining outputs (such as predictions, content, recommendations, or decisions) which can influence the environment (physical or virtual) and deriving models/algorithms from inputs/data. Under Recital 12, the techniques that enable inference include machine learning approaches and logic- and knowledge-based approaches. As mentioned in the Commission Guidelines on the definition of an AI system, these approaches should be referred to as "AI techniques." Machine learning approaches learn from data how to achieve certain objectives and include a large variety of techniques enabling a system to learn, such as supervised learning, unsupervised

14. OECD.AI Policy Observatory. Updates to the OECD's definition of an AI system explained https://oecd.ai/en/wonk/ai-system-definition-update accessed 23 February 2023

15. See Techopedia. Top 10 Countries Leading in AI Research & Technology in 2024. 29 January 2024 https://www.techopedia.com/top-10-countries-leading-in-ai-research-technology accessed 26 February 2024

16. OECD. A brief history https://www.oecd.org/60-years/ accessed 26 February 2024

17. Department of State. Office of the Historian. The Truman Doctrine, 1947 https://history.state.gov/milestones/1945-1952/truman-doctrine accessed 29 October 2024

18. Centre virtuel de la connaissance sur l'Europe (CVCE). The Cold War (1945–1989). The Truman Doctrine https://www.cvce.eu/en/education/unit-content/-/unit/55c09dcc-a9f2-45e9-b240-eaef64452cae/b2a7bc2f-f999-4d0f-8b20-22c9e3f46e15 accessed 29 October 2024

19. Financial Times. We should admit China to the OECD, head says. 25 July 2005 https://www.ft.com/content/1f94b7f0-fd48-11d9-b224-00000e2511c8 accessed 26 February 2024

20. Bernhard Nessler, Christiane Wendehorst 'The concept of 'AI system' under the new AI Act: arguing for a three-factor approach' European Law Institute. 11 December 2024 https://www.europeanlawinstitute.eu/fileadmin/user_upload/p_eli/Publications/ELI_Response_on_the_definition_of_an_AI_System.pdf accessed 17 November 2025

21. European Commission. The Commission publishes guidelines on AI system definition to facilitate the first AI Act's rules application. 6 February 2025 https://digital-strategy.ec.europa.eu/en/library/commission-publishes-guidelines-ai-system-definition-facilitate-first-ai-acts-rules-application accessed 14 November 2025

22. Ibid

learning, self-supervised learning, reinforcement learning, and deep learning.[23] Logic- and knowledge-based approaches infer from encoded knowledge or symbolic representation of the task to be solved (Recital 12). Unlike in machine learning approaches, AI systems based on logic- and knowledge-based approaches learn from knowledge (such as rules, facts, relationships) encoded by human experts.[24] Thus, compared to the definition of AI system suggested in the 2021 Commission Proposal, statistical approaches, Bayesian estimation, search and optimization methods were excluded from the list of techniques and approaches used to develop AI systems.

However, the use of the word "input" in defining inference of AI systems may be confusing. With regard to machine learning approaches, "inputs" is more likely to be understood as training data, whereas for logic- and knowledge-based approaches "inputs" most likely refer to input data that is provided to or directly acquired by the AI system (Article 3(33)). If such interpretation is correct, there appears to be a confusion between not only AI techniques, but also build phase and operation phase.[25]

At the same time, some reasons for including some wordings in the definition remain unclear. For instance, the final part of the definition, "…that can influence physical or virtual environments" appears to be more illustrative and does not provide any specific guidance on differentiating AI systems from non-AI systems.[26]

Another element of the definition that apparently fails to fulfil any delimiting function is the AI system objectives. As becomes clear from the Guidelines of the Commission, the AI Act refers to the objectives that are pursued by the parties developing or deploying the system, rather than referring to algorithmic methods.[27] In this case, the purpose of this element of the AI system definition is unclear, as it is unlikely that any person would develop or deploy an AI system without any objective in mind.

Considering the ambiguity and lack of clarity in the official definition, other approaches to identifying AI systems have been proposed, such as the three-factor approach elaborated by the European Law Institute, which considers the following three factors in identifying AI systems: (1) the amount of data (for machine learning) or specific empirical knowledge (for logic- and knowledge-based approach) that went into the development of the system, (2) the extent to which new know-how is created during the system's operation, and (3) indeterminacy of outputs, i.e. whether a human would exercise discretion when preforming the task at hand.[28]

With the aim to regulate general-purpose AI (GPAI) technologies, such as ChatGPT, two more definitions were further introduced in Article 3: "general-purpose AI model" and "general-purpose AI system". According to Article 3(63),

> *'general-purpose AI model' means an AI model, including where such an AI model is trained with a large amount of data using self-supervision at scale, that displays significant generality and is capable of competently performing a wide range of distinct tasks regardless of the way the model is placed on the market and that can be integrated into a variety of downstream systems or applications, except AI models that are used for research, development or prototyping activities before they are placed on the market.*

Thus, the "general-purpose AI model" is defined via a term "AI model" that is not defined in the AI Act, as the latter defines only "AI system". Generally, AI systems are typically built by combining one or more models based on machine and/or human inputs/data and are understood to be able to evaluate a broader range

23. Ibid

24. Ibid

25. Bernhard Nessler, Christiane Wendehorst 'The concept of 'AI system' under the new AI Act: arguing for a three-factor approach' European Law Institute. 11 December 2024 https://www.europeanlawinstitute.eu/fileadmin/user_upload/p_eli/Publications/ELI_Response_on_the_definition_of_an_AI_System.pdf accessed 17 November 2025

26. Ibid

27. Ibid

28. Ibid

of information than AI models.[29] This conclusion can also be drawn from comparing the definitions "general-purpose AI model" and "general-purpose AI system", the latter being defined as:

> *… an AI system which is based on a general-purpose AI model and which has the capability to serve a variety of purposes, both for direct use as well as for integration in other AI systems.*

Among the GPAI models, the AI Act differentiates GPAI models with systemic risk, which have high impact capabilities, meaning that the cumulative amount of computation used for their training measured in floating point operations (FLOPs) is greater than $10^{25}$ (Article 51). As experts say, training a model with that amount of computing power costs between US$50 million and $100 million, and this threshold should capture models such as OpenAI's GPT-4 and Meta's LLaMA.[30] Furthermore, in case GPAI models have capabilities or impact equivalent to the ones mentioned above, they can also be classified as GPAI models with systemic risk based on the decision of the Commission, which can act *ex officio* or rely on a qualified alert from the scientific panel (Article 51(1)(b)). In such determination, the Commission should take into account the criteria listed in Annex XIII, which include the quality and size of the dataset, the amount of computation used for training the model, the model's impact on the internal market, the number of registered users, etc.

Interestingly, the 2021 Commission Proposal did not address GPAI models, which became widely available at a later point of time, when the Parliament was working on the compromise amendments (OpenAI initially released ChatGPT on 30 November 2022[31]; Google's Bard was released on 21 March 2023[32]).

In June 2023, the Parliament adopted amendments to the Commission Proposal, introducing the wording on foundation models (Amendment 99, Recital 60(e)):

> *Foundation models are a recent development, in which AI models are developed from algorithms designed to optimize for generality and versatility of output. Those models are often trained on a broad range of data sources and large amounts of data to accomplish a wide range of downstream tasks, including some for which they were not specifically developed and trained, trained through various methods such a. Those systems can be unimodal or multimodal s supervised learning or reinforced learning. AI systems with specific intended purpose or general purpose AI systems can be an implementation of a foundation model, which means that each foundation model can be reused in countless downstream AI or general purpose AI systems. These models hold growing importance to many downstream applications and systems.*[33]

The Parliament also introduced a definition of foundation models (Article 3(1)(1)(c))[34]:

*(1c) 'foundation model' means an AI system model that is trained on broad data at scale, is designed for generality of output, and can be adapted to a wide range of distinctive tasks.*

29. See, e.g., Anja Thieme and Cecily Morrison 'AI Models vs. AI Systems: Understanding Units of Performance Assessment', Microsoft Research Blog, 19 September 2022 https://www.microsoft.com/en-us/research/blog/ai-models-vs-ai-systems-understanding-units-of-performance-assessment/ accessed 31 July 2024

30. Elizabeth Gibney. What the EU's tough AI law means for research and ChatGPT. Nature. 16 February 2024 https://www.nature.com/articles/d41586-024-00497-8 accessed 27 February 2024

31. Will D. Heaven, The inside story of how ChatGPT was built from the people who made it, MIT Technology Review 3 March 2023 https://www.technologyreview.com/2023/03/03/1069311/inside-story-oral-history-how-chatgpt-built-openai/ accessed 31 July 2024

32. Will D. Heaven, Google just launched Bard, its answer to ChatGPT – and it wants you to make it better, MIT Technology Review 21 March 2023 < https://www.technologyreview.com/2023/03/21/1070111/google-bard-chatgpt-openai-microsoft-bing-search/> accessed 31 July 2024

33. European Parliament. Amendments adopted by the European Parliament on 14 June 2023 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts (COM(2021)0206 – C9-0146/2021 – 2021/0106(COD)) https://www.europarl.europa.eu/doceo/document/TA-9-2023-0236_EN.html accessed 1 August 2024

34. Ibid

In the provisional agreement reached by the Parliament and the Council in December 2023, the term "foundation models" was replaced with "general purpose AI models".[35] As seen from the final text of the AI Act, the definition of GPAI model provided in Article 3(63) is a revised version of the definition "foundation model" proposed by the European Parliament in June 2023. However, the reasons for the chosen terminology remain unclear. Some experts say that, most likely, the expression "general purpose" was chosen as a derivation of the concept of "intended purpose" of an AI system, the latter referring to the use for which the AI system was intended by the provider.[36] The policymakers might also refer to the notion of general-purpose technologies[37], examples of which include steam engine or electric motor and that play a pivotal role in driving technical progress and economic growth.[38]

Due to the challenges in providing a precise legal definition of AI, some researchers express doubts as to whether it is at all a feasible task and instead recommend focusing on the ways in which AI technologies are used. For instance, according to Schuett, policymakers should not use the term "artificial intelligence" for regulatory purposes, but instead focus on the specific risks they want to reduce.[39] With regard to the way of classification of GPAI models with systemic risk, Jitsev notes that smarter and more capable does not mean more harm and that basing regulation on any measure of capability has no scientific basis.[40]

Furthermore, some experts say that tying regulations to some fixed FLOP count or equivalent cannot be applied by regulators today, because, "as algorithmic efficiency improves, computing costs decline", so established threshold would quickly expand to cover many more models than just the largest.[41] Besides, generative AI is still at a too early stage to provide clear definitions on how training costs should be calculated and what parameters should be included in such calculation. Taking the compute capacity, even combined with the training costs of the model (as in the vetoed SB-1047 in California discussed in Section 5.1 below), could stifle innovation, make AI startups move to more AI-friendly jurisdictions, and disincentivize open source AI industry.[42]

Further sections of this paper will analyze the open source AI definition (OSAID) proposed by the Open Source Initiative (OSI) and examine the open source-related provisions of the EU AI Act, focusing on the legal perspective and on the potential impact on open source AI development in the EU.

## 3 Defining open source AI

The scope of the AI Act covers a wide range of AI systems, taking into account a number of factors, including whether the AI systems are placed on the market in the Union, whether deployers of AI systems are established or located within the Union, whether the output produced by the AI system is used in the Union, or whether affected persons are located in the Union (Article 2(1)). Thus, the AI Act has extraterritorial reach and may

35. Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts. 2021/0106(COD), Brussels, 26 January 2024 https://data.consilium.europa.eu/doc/document/ST-5662-2024-INIT/en/pdf accessed 1 August 2024

36. David Fernández-Llorca, Emilia Gómez, Ignacio Sánchez, Gabriele Mazzini, 'An interdisciplinary account of the terminological choices by EU policymakers ahead of the final agreement on the AI Act: AI system, general purpose AI system, foundation model, and generative AI.' Artificial Intelligence and Law 2024 https://link.springer.com/article/10.1007/s10506-024-09412-y#citeas accessed 29 October 2024

37. Timothy F. Bresnahan, Manuel Trajtenberg 'General Purpose Technologies: Engines of Growth?' NBER Working Paper Series, Working Paper No. 4148, 1992 https://www.nber.org/system/files/working_papers/w4148/w4148.pdf accessed 2 August 2024

38. Beth Stackpole, The impact of generative AI as a general-purpose technology. MIT Management Sloan School. 6 August 2024 https://mitsloan.mit.edu/ideas-made-to-matter/impact-generative-ai-a-general-purpose-technology accessed 29 October 2024

39. Jonas Schuett, 'Defining the scope of AI regulations' (2021) Law, Innovation and Technology 15(1) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3453632 accessed 27 February 2024

40. Nature. What the EU's tough AI law means for research and ChatGPT. 16 February 2024 https://www.nature.com/articles/d41586-024-00497-8 accessed 27 February 2024

41. Andreessen Horowitz. What You Need to Know About SB 1047: A Q&A with Anjney Midha. 19 June 2024 https://a16z.com/sb-1047-what-you-need-to-know-with-anjney-midha/ accessed 25 October 2024

42. Ibid

be applicable to providers, deployers, importers, distributors, product manufacturers of AI systems regardless of their place of establishment or location.

Despite its broad material and territorial scope, the AI Act excludes a wide range of AI systems from its application, such as AI systems applied in the areas of national security, defence, R&D, etc. This exemption also covers "AI systems released under free and open source licences" (Article 2(12)). The reason for the exemption is named in Recital 102:

> *Software and data, including models, released under a free and open-source licence that allows them to be openly shared and where users can freely access, use, modify and redistribute them or modified versions thereof, can contribute to research and innovation in the market and can provide significant growth opportunities for the Union economy.*

Recital 102 refers in general to software and data released under free and open source license, stressing that such software and data can contribute to research, innovation, and economic growth. Indeed, the economic impact of open source software and hardware was analyzed in the European Commission Report "The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy" published in 2021[43], underlining the following positive economic effects:

- in 2018, the contribution of open source to the European economy was estimated between €65 and €95 billion,
- a cost-benefit ratio of open source is of above 1:4,
- an increase of 10% of open source software contributions would annually generate an additional 0.4% to 0.6% GDP.

According to another study, "The Value of Open Source Software" published by Harvard Business School in 2024[44], "firms would need to spend 3.5 times more on software than they currently do if OSS did not exist."

Despite the evident economic benefits of open source AI, concerns have been expressed as to whether open sourcing AI models, especially highly capable foundation models, can be considered safe. Some researchers note that, unlike traditional software, where open sourcing "facilitates defensive activities to guard against misuse more so than it facilitates offensive misuse … the offence-defense balance is likely to skew more towards offence for increasingly capable foundation models."[45] Opposite to the idea of providing incentives for open source AI developers, proponents of these views call for governments to implement oversight mechanisms for open source AI models, enforcing such measures through liability law, licensing requirements, fines, and penalties.[46]

There are many opponents to such views to open source AI, making the argument that the benefits of open sourcing AI still outweigh the possibility of harm, and open source offers much more potential to ensure safety and trustworthiness of AI.[47]

43. Publications Office of the European Union. The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. 2021 https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en accessed 9 October 2024

44. Manuel Hoffmann, Frank Nagle, Yanuo Zhou, 'The Value of Open Source Software' Working Paper 24-038, Harvard Business School 2024 https://www.hbs.edu/ris/Publication%20Files/24-038_51f8444f-502c-4139-8bf2-56eb4b65c58a.pdf accessed 9 October 2024

45. Elizabeth Seger, Noemi Dreksler, Richard Moulange, Emily Dardaman, Jonas Schuett, K. Wei, et al, 'Open-Sourcing Highly Capable Foundation Models: an Evaluation of Risks, Benefits, and Alternative Methods for Pursuing Open-Source Objectives', Centre for the Governance of AI, 2023. https://doi.org/10.48550/arXiv.2311.09227

46. Ibid

47. See, e.g., The Washington Post, 'IBM: The future of AI must be open to ensure safety, accuracy and inclusivity' (9 July 2024) https://www.washingtonpost.com/creativegroup/ibm/ibm-the-future-of-ai-must-be-open-to-ensure-safety-accuracy-and-inclusivity/ accessed 22 November 2024

In his paper on the "open source" definition, Bruce Perens, the creator of the "open source" definition and the co-founder of the OSI, highlights that open source should exist within, and be subject to, the applicable legal framework:

> *Others are concerned that software could be modified for criminal use, by the addition of Trojan horse functions or locally-banned technologies such as cryptography. All of these actions, however, are covered by criminal law. A common misunderstanding about software licenses is that they must specify everything, including things like "don't use this software to commit a crime." However, no license has any valid existence outside of the body of civil and criminal law. Considering a license as something apart from the body of applicable law is as silly as considering an English-language document as being apart from the dictionary, in which case none of the words would have any defined meaning.* [48]

Just as open source software, it is reasonable to presume that open source AI should also exist within the applicable legal framework and be subject to the applicable rules and regulations.

The U.S. Cybersecurity and Infrastructure Security Agency (CISA) notes that OSS faced similar debates during the 1990s, including decades-long debates on the open sourcing of dual-use cybersecurity tools. The CISA mentions that "the general consensus among the security community is that the benefits of open sourcing security tools for defenders outweigh the harms that might be leveraged by adversaries – who, in many cases, will get their hands on tools whether or not they are open sourced."[49] The CISA further highlights that there are two sets of potential harms from foundation models: harms deliberately sought by the deployer and harms not desired by the deployer of the model, such as a cybersecurity vulnerability of the model. The former may be addressed with a multipronged risk reduction approach, including discouraging the training of specific capabilities in models, whereas for the latter the best approach is to ensure that the model is built in a secure by design manner resilient to the most common classes of vulnerabilities. Furthermore, open sourced AI models result more safe and secure as compared to closed models, since the former may be trained in a publicly verifiable way, on publicly available data, allowing others to study the model's behavior and minimize the risk of vulnerabilities. Therefore, foundation models that disclose their training datasets provide a higher level of security than models that only have their weights and code disclosed, as users of such models have only a limited ability to understand, verify, or mitigate any vulnerabilities in the model.[50]

Interestingly, in the EU AI Act, the open source exemption was introduced only at later stages of the legislative process. It was included in the provisional agreement on the AI Act reached by the Council and the Parliament on 9 December 2023 as Article 2(5g) with almost the same wording as in the final version of the Regulation published on 21 May 2024.[51] Introducing the exemption for open source AI only at the later stages of the legislative process might be the reason why the final version of the regulation does not define the term "AI systems released under free and open-source licences."

At the same time, the open source community has been working on defining open source AI even after the AI Act came into effect. The following subsections will discuss the differences between the definition elaborated by the open source community and the way open source AI is understood under the AI Act.

48. Bruce Perens. The Open Source Definition https://www.oreilly.com/openbook/opensources/book/perens.html accessed 6 September 2024

49. CISA. With Open Source Artificial Intelligence, Don't Forget the Lessons of Open Source Software. 29 July 2024 https://www.cisa.gov/news-events/news/open-source-artificial-intelligence-dont-forget-lessons-open-source-software accessed 30 October 2024

50. Ibid

51. However, the text of the provisional agreement still lacked a consistency in spelling "open source" (e.g., "free and open-source AI components" and "free and open source AI components" in Recital 60i+1). In the final version of the Regulation, the term is used with a hyphen.

### 3.1 The definition of open source AI in the open source community

Defining open source AI has been unanimously recognized as a challenging task.[52] Since the definition of open source was initially elaborated for software, just referring to the source code, it is hardly applicable to AI, which covers many more components and processes.

Despite the lack of a precise definition, the term "open source" is being used widely in the context of AI, both in legal texts, such as the EU AI Act, and by private companies, that use the term "open source" for AI systems with varying levels of transparency and openness.[53]

In the meantime, the open source community, firstly the Open Source Initiative, only lately has agreed upon a definition for open source AI.[54] Thus, we find ourselves in a situation where the EU legislators have tried to go ahead of the professional community and define and regulate technical phenomena before the community agrees on what exactly these phenomena mean.

The OSI has been working on the OSAID since 2022, applying a so-called co-design methodology, which addresses "the challenges of reaching an agreed definition within a diverse community."[55] The multiple stakeholders included professionals in their personal capacities, "with various degrees of direct involvement from their employers", such as Mozilla Foundation, Wikimedia Foundation, Creative Commons, Linux Foundation, GitHub, Microsoft, Google, Amazon, Meta, Intel, Apache Software Foundation, Samsung, the United Nations International Telecommunications Union, and others.

The OSAID v. 1.0 was released on 28 October 2024.[56] Under the released definition[57], OSAI is an AI system made available under terms and in a way that grant the following freedoms:

- *use the system for any purpose and without having to ask for permission,*
- *study how the system works and inspect its components,*
- *modify the system for any purpose, including to change its output,*
- *share the system for others to use with or without modifications, for any purpose.*

A precondition to exercising the above freedoms is to have access to the preferred form to make modifications to the system, which must include all the elements, mentioned below:

- *Data information*: sufficiently detailed information (made available under OSI-approved terms) about the data used to train the system so that a skilled person can build a substantially equivalent system.
- *Code*: the complete source code (made available under OSI-approved licenses) used to train and run the system, including full specification of how the data information was processed and filtered and how the training was done.

52. Edd Gent, The tech industry can't agree on what open-source AI means. That's a problem. MIT Technology Review, 25 March 2024 https://www.technologyreview.com/2024/03/25/1090111/tech-industry-open-source-ai-definition-problem/ accessed 5 August 2024

53. Elizabeth Gibney. Not all 'open source' AI models are actually open: here's a ranking. Nature. 19 June 2024 https://www.nature.com/articles/d41586-024-02012-5?error=cookies_not_supported&code=b5cd01c8-8dab-468c-a927-8b2b7994a27e accessed 30 October 2024

54. Open Source AI Deep Dive. "We're driving a multi-stakeholder process to define an"Open Source AI" and you can be part of the conversation" https://opensource.org/deepdive accessed 5 September 2024

55. Open Source Initiative. Open Source AI Deep Dive https://opensource.org/deepdive accessed 10 October 2024

56. Open Source Initiative. The Open Source Initiative Announces the Release of the Industry's First Open Source AI Definition. 28 October 2024 https://opensource.org/blog/the-open-source-initiative-announces-the-release-of-the-industrys-first-open-source-ai-definition accessed 22 June 2026

57. Open Source Initiative. The Open Source AI Definition – 1.0 https://opensource.org/ai/open-source-ai-definition accessed 22 June 2026

- *Parameters*[58]: the model parameters (made available under OSI-approved terms), such as weights or other configuration settings.

From a legal standpoint, data information has been one of the most controversial elements. The unclarity of the used terms "sufficiently detailed information", "a skilled person"[59], "a substantially equivalent system" might lead to minimal disclosure of training datasets, undermining the whole concept of open source.

Such approach to the issue of training data openness has been highly criticized by the community. Some have claimed that, if only weights are disclosed, such AI systems should be called "open weights", not "open source."[60] Others have drawn the analogy with software, claiming that data is part of the "source" for AI systems, meaning that "if the data aren't open, then neither is the system."[61] The discussion has also led to a proposal to introduce categorization of open source AI depending on the openness of training datasets, namely OSAI D+ (with open data), and OSAI D- (without open data, due to legitimate reasons beyond the creator's control).[62]

In response to such criticism, the OSI has noted that an AI system can be considered open source in case it makes available, besides the software and model parameters, "all the data that can be made available legally."[63] In fact, a number of legal challenges arise in the context of the openness of training datasets, mainly related to the differences in intellectual property and privacy laws in different legal systems.

In the domain of intellectual property law, the opening (i.e., reproducing, distributing, or making available to the public) of training datasets might infringe upon various provisions of copyright law and the laws on the protection of databases (such as the *sui generis* database right in the EU[64]). Thus, although entity A may have the confidence that they are entitled to use training data freely and call it "open data", this fact does not necessarily "give entity A the confidence they can give entity B guarantees in a different jurisdiction."[65] For this reason, using data that is in the public domain for training AI systems might be challenging because of the different definition of public domain/publicly available data in different jurisdictions.[66] At the same time, limiting open source AI systems only to systems trained on publicly available data would significantly and unreasonably limit the amount of available datasets and the potential of open source AI, excluding it from such areas as healthcare or any other area dealing with private or personal data.[67]

58. "Parameters" used to be referred to solely as "weights" in previous versions of OSAID (see v. 0.0.9 https://opensource.org/deepdive/drafts/open-source-ai-definition-draft-v-0-0-9 accessed 10 October 2024)

59. Reference is made to patent laws (and is not tied to any particular jurisdiction), namely the term "a person having ordinary skill in the art", used to determine whether the invention is non-obvious, or involves an inventive step, and, hence, is patentable. In OSAID – FAQ, a "skilled person" is defined as "any person having the current knowledge, experience and competence to perform a certain duty" https://hackmd.io/@opensourceinitiative/osaid-faq accessed 11 October 2024

60. Proposal to handle Data Openness in the Open Source AI definition [RFC] https://discuss.opensource.org/t/proposal-to-handle-data-openness-in-the-open-source-ai-definition-rfc/561/7 accessed 17 September 2024. See, e.g., a comment from user thesteve0 (Steven Pousty): "The degree to which OSI is allowing vendors to influence the definition and secrecy of the process has me really wondering what is going on. The insistence on following this non-free definition for AI has really caused to lose respect for OSI."

61. Julia Ferraioli. The Open Source AI Definition: where's the data? 27 June 2024 https://www.juliaferraioli.com/blog/2024/on-open-source-ai/ accessed 11 October 2024. In particular, the author mentions: "I find it counterintuitive that the OSI is advocating for the lack of distributed peer review and transparency in the name of making it more achievable for existing models to be labeled as"open source."

62. Proposal to handle Data Openness in the Open Source AI definition [RFC]. 12 September 2024 https://discuss.opensource.org/t/proposal-to-handle-data-openness-in-the-open-source-ai-definition-rfc/561 accessed 17 September 2024

63. Open Source Initiative. How we passed the AI conundrums. 9 October 2024 https://opensource.org/blog/how-we-passed-the-ai-conundrums accessed 11 October 2024

64. Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases [1996] OJ L77/20

65. HackMD. OSAID – FAQ https://hackmd.io/@opensourceinitiative/osaid-faq accessed 11 October 2024

66. Open Source Initiative. Nick Vidal, 'Copyright law makes a case for requiring data information rather than open datasets for Open Source AI'. 11 September 2024 https://opensource.org/blog/copyright-law-makes-a-case-for-requiring-data-information-rather-than-open-datasets-for-open-source-ai accessed 11 October 2024

67. Open Source Initiative. How we passed the AI conundrums. 9 October 2024 https://opensource.org/blog/how-we-passed-the-ai-conundrums accessed 11 October 2024

The data mining exception, introduced in the EU, Japan, and Singapore, does not provide a solution either, as it is limited only to the training of AI systems (i.e., reproduction of data) and does not cover sharing training datasets (i.e., making available to the public). For instance, the EU Digital Single Market Directive[68] provides for an exception to the reproduction right of copyright holders in order to carry out, for the purposes of scientific research, text and data mining[69] of the copyrighted works (Article 3). With respect to text and data mining for commercial use, Member States shall provide either an exception or limitation to the reproduction right of the copyright holders (Article 4).

In the U.S., there is an opinion that AI developers could rely on the fair use doctrine in using protected data for AI training, since downloading such data is essentially making copies for technical, non-communicative (non-expressive) use. [70] However, due to the existing legal uncertainty[71], scholars and practitioners are arguing for a data mining safe harbor to be introduced in the U.S. copyright law. [72] The fair use doctrine is based on the four-factor test, namely (1) the purpose and character of the use (commercial or non-profit), (2) the nature of the copyrighted work, (3) the used amount and substantiality of the copyrighted work, and (4) the effect of the use on the market for, or value of, the copyrighted work.[73] The fair use doctrine is considered a very flexible legal concept, that is keen to accommodate to the technological advances, but at the same time very troublesome in applying in practice.[74]

Data privacy laws are another legal challenge for opening and sharing of AI training datasets. However, the OSI has set a goal to overcome this challenge in order not to exclude open source AI systems from data-sensitive areas. With this objective, the OSAID v. 1.0 specifies that data information must include:

> *(1) the complete description[75] of all data used for training, including (if used) of unshareable data, disclosing the provenance of the data, its scope and characteristics, how the data was obtained and selected, the labeling procedures, and data processing and filtering methodologies; (2) a listing of all publicly available training data and where to obtain it; and (3) a listing of all training data obtainable from third parties and where to obtain it, including for fee.*[76]

The OSI comments that the discussions held within the open source community have helped describe four types of data, each with its own legal frameworks allowing different freedoms of distribution:

- open training data – data that can be copied, preserved, modified, and reshared, thus providing the best way to study the AI system,
- public training data – data that can be inspected as long as it remains in the network availability (data information is required in case the data becomes later unavailable),

68. Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market and amending Directives 96/9/EC and 2001/29/EC [2019] OJ L130/92

69. Text and data mining is understood as "any automated analytical technique aimed at analysing text and data in digital form in order to generate information which includes but is not limited to patterns, trends and correlations" (Article 2(2) of the Digital Single Market Directive).

70. Jenny Quang, 'Does Training AI Violate Copyright Law?' (2021) 36 Berkeley Technology Law Journal 1407

71. See, e.g., cases *Andersen v. Stability AI Ltd.*, 3:23-cv-00201, (N.D. Cal.), *Kadrey v. Meta Platforms, Inc.*, 3:23-cv-03417, (N.D. Cal.), *Tremblay v. OpenAI, Inc.*, 3:23-cv-03223, (N.D. Cal.), *Silverman v. OpenAI, Inc.*, 3:23-cv-03416, (N.D. Cal.)

72. Jenny Quang, 'Does Training AI Violate Copyright Law?' (2021) 36 Berkeley Technology Law Journal 1407

73. 17 U.S.C. § 107

74. Kluwer Copyright Blog. Mira T. Sundara Rajan, 'Is Generative AI Fair Use of Copyright Works? NYT v. OpenAI', 29 February 2024 https://copyrightblog.kluweriplaw.com/2024/02/29/is-generative-ai-fair-use-of-copyright-works-nyt-v-openai/ accessed 14 October 2024

75. The previous, Release Candidate 1, version of the OSAID published on 2 October 2024 included the words "a detailed description of all data used for training", which has been replaced with "the complete description of all data used for training" (see https://opensource.org/ai/drafts/the-open-source-ai-definition-1-0-rc1). This fact highlights the importance that the OSI is attaching to the openness of training datasets for the OSAID.

76. Open Source Initiative. The Open Source AI Definition – 1.0 https://opensource.org/ai/open-source-ai-definition accessed 30 October 2024

- obtainable training data – data that can be obtained (with full information disclosed on where to obtain it), including for a fee (data information should provide a means of understanding this data),
- unshareable non-public training data – data that cannot be shared for explainable reasons (e.g., personal data) (data information should include a detailed description of the data, so that users can understand the biases and categorization underlying the system, e.g., so that a hospital could create a dataset with identical parameters using their own patient data).[77]

Such categorization of training data appears to be a reasonable compromise between ensuring openness of AI systems and the legal protection of personal and proprietary data. However, from the three elements (data information, code, parameters) suggested by the OSI as the preferred form to make modifications to the AI systems, the element that seems to be missing is the hardware, which plays an important role in AI training and which can impair the four freedoms (use, study, modify, share) of open source AI. Indeed, in case of software, anyone who has a computer can use, study, modify, and share the source code. In case of AI systems, data centers requiring massive memory storage, energy consumption, and computing power are necessary to train and run an AI system. For instance, companies like Amazon, Meta, and Google have constructed massive facilities dedicated to housing IT infrastructure for data processing, management, and storage.[78] This hardware issue, which is difficult to change and which, presumably for this reason, has not been addressed by the OSI, may lead to a situation where the freedoms of open source AI could be exercised only by a limited number of companies who have the financial and infrastructural capacity to recreate complex AI systems.

## 3.2 The definition of open source AI in the EU AI Act

As noted above, the term used in the EU AI Act to refer to open source AI models is "AI models released under free and open-source licence". However, the AI Act does not provide a definition for the term "AI system released under free and open source licence", therefore the meaning of such AI systems or AI models has to be derived from various provisions of the AI Act, mainly a number of recitals and the articles covering GPAI models.

For instance, Recital 102 states as follows:

*General-purpose AI models released under free and open-source licences should be considered to ensure high levels of transparency and openness if their parameters, including the weights, the information on the model architecture, and the information on model usage are made publicly available. The licence should be considered to be free and open-source also when it allows users to run, copy, distribute, study, change and improve software and data, including models under the condition that the original provider of the model is credited, the identical or comparable terms of distribution are respected.*

Based on the wording of the first sentence cited above, GPAI models released under free and open source licenses do not *per se* ensure high levels of transparency and openness. They should be considered to ensure high levels of transparency and openness provided that certain information about them is made publicly available, namely: parameters (including weights), information on model architecture, information on model usage.

However, the last of the above cited sentences of Recital 102 causes confusion, as it states: "The licence should be considered to be free and open-source *also when* …" The words "*also when*" presume that the previous sentence contained a definition of free and open source license with respect to GPAI models, meaning that the above interpretation of the previous sentence (that GPAI models released under free and open source licenses do not *per se* ensure high levels of transparency and openness) is not correct. The reasons behind such logical discrepancies within one recital could be that, as mentioned in Section 2 of this paper, the language on open source AI was introduced only at the later stages of the legislative process.

77. HackMD. OSAID – FAQ https://hackmd.io/@opensourceinitiative/osaid-faq accessed 11 October 2024

78. Nathi Magubane. The hidden costs of AI: Impending energy and resource strain. Penn Today, 8 March 2023 https://penntoday.upenn.edu/news/hidden-costs-ai-impending-energy-and-resource-strain accessed 14 October 2024

Assuming that both of the cited sentences include requirements that free and open source licenses should satisfy, then, based on Recital 102, a GPAI model is distributed under free and open source license, if:

1. the following is made publicly available about the GPAI model:

- parameters, including weights,
- information on model architecture,
- information on model usage,

*or*

2. such license allows users to run, copy, distribute, study, change and improve software and data, including models under the condition that the original provider of the model is credited, the identical or comparable terms of distribution are respected.

Another mention of GPAI models released under a free and open source license can be found in Articles 53(2) and 54(6) of the AI Act, both of which refer to such AI models as follows:

*The obligation(s) set out in … shall not apply to providers of (general-purpose) AI models that are released under a free and open-source licence that allows for the access, usage, modification, and distribution of the model, and whose parameters, including the weights, the information on the model architecture, and the information on model usage, are made publicly available. …*

Based on the above text of Articles 53(2) and 54(6), a GPAI model is distributed under free and open source license, if:

1. such license allows for the access, usage, modification, and distribution of the model,

*and*

2. the following is made publicly available with respect to the GPAI model:

- parameters, including weights,
- information on model architecture,
- information on model usage.

Thus, none of the cited provisions of the AI Act provides a clear definition of what is precisely understood under a GPAI model released under free and open source license. Furthermore, taken together, the cited provisions are inconsistent and confusing. Compared to the OSAID elaborated by the OSI, the term used in the AI Act represents a mixture of (1) the freedoms that the user (deployer) should have, and (2) the elements that should be made publicly available. With respect to the user's freedoms, the provisions of the AI Act are, to a great extent, in alignment with the OSAID elaborated by the OSI, as in both cases the freedoms to use, study, modify, and share the AI system are secured. However, as regards the elements that should be made publicly available (in order to have access to the preferred form to make modifications to the system), the provisions of the AI Act deviate significantly from the OSAID, omitting requirements to make publicly available (1) the source code used to train and run the system and (2) the information on data used to train system. Furthermore, the AI Act does not clarify what should be included in the "information on model architecture" and "information on model usage", particularly whether source code should be included into such information.

As to the requirement for disclosing data information, the AI Act specifically states that "the release of GPAI models under free and open-source licence does not necessarily reveal substantial information on the dataset used for the training or fine-tuning of the model" (Recital 104). Thus, there is a direct contradiction between the term as used in the AI Act and the OSAID suggested by the OSI, as the latter puts a strong emphasis on the openness of information on the data used for the training of AI systems. Despite the fact that the exemptions for GPAI models released under a free and open source license do not cover "the obligation to produce a summary about the content used for model training" (Recital 104), such requirement to disclose training data information is only a transparency obligation and, under the AI Act, does not form a prerequisite for a GPAI model to be considered "released under a free and open-source licence".

Another discrepancy between the understanding of open source by the professional community and the term of AI models released under free and open source license under the AI Act is the monetization of AI components. According to the FSF, the word "free" refers to freedom, not price, therefore free software can be sold and purchased for a price.[79] Similar to the FSF, the OSI does not restrict selling or using open source software for commercial purposes.[80] However, the AI Act explicitly states that "AI components that are provided against a price or otherwise monetised … should not benefit from the exceptions provided to free and open-source AI components" (Recital 103). Thus, although the AI Act does not explicitly exclude monetized AI models from the definition of AI models released under free and open source license, it remains unclear why open source AI models should be excluded from the privileged treatment under the AI Act only due to their use for commercial purposes.

In summary, despite the stated exemptions for AI systems and GPAI models "released under a free and open-source license", the AI Act does not provide a clear definition for the term "released under a free and open-source licence". Besides, there are a number of significant inconsistencies between the understanding of open source AI, as derived from the provisions of the AI Act, and the OSAID, as elaborated by the OSI. The most probable effect of such regulatory approach could be that providers will not have the certainty as to whether their AI models are those "released under a free and open-source licence" and qualify for the exemption under the AI Act. This, in turn, will incentivize the creation of the so-called "openish" AI models[81], undermining the concept of open source and giving individual users a false sense of security when interacting with such AI models. Besides, since the OSAID sets a much higher threshold for AI models to be considered open source, the lowered requirements to "open source" AI models under the AI Act could diminish the practical use and recognition of the elaborated OSAID and undermine the role of the open source community.

## 4 From which particular obligations are open source AI systems exempt under the EU AI Act?

Article 2(12) of the AI Act seemingly provides for a broad exemption for AI systems released under free and open source license:

> *This Regulation does not apply to AI systems released under free and open-source licences, unless they are placed on the market or put into service as high-risk AI systems or as an AI system that falls under Article 5 or 50.*

However, Recital 104 sets additional restrictions and requirements for GPAI models that are released under a free and open source license:

79. GNU Operating System. What is Free Software? https://www.gnu.org/philosophy/free-sw.en.html accessed 18 October 2024

80. Open Source Initiative. FAQ: Can Open Source software be used for commercial purposes? https://opensource.org/faq#commercial accessed 18 October 2024. See also criterion #1 for the definition of open source ("Free Redistribution"): "The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale." https://opensource.org/osd accessed 18 October 2024

81. See, e.g., Kate Downing, 'Choose Your Own Adventure: The EU AI Act and Openish AI', 6 February 2024 https://katedowninglaw.com/2024/02/06/choose-your-own-adventure-the-eu-ai-act-and-openish-ai-2/ accessed 18 October 2024

> *The providers of general-purpose AI models that are released under a free and open-source licence, and whose parameters, including the weights, the information on the model architecture, and the information on model usage, are made publicly available should be subject to exceptions as regards the transparency-related requirements imposed on general-purpose AI models, unless they can be considered to present a systemic risk, in which case the circumstance that the model is transparent and accompanied by an open-source license should not be considered to be a sufficient reason to exclude compliance with the obligations under this Regulation. In any case, given that the release of general-purpose AI models under free and open-source licence does not necessarily reveal substantial information on the data set used for the training or fine-tuning of the model and on how compliance of copyright law was thereby ensured, the exception provided for general-purpose AI models from compliance with the transparency-related requirements should not concern the obligation to produce a summary about the content used for model training and the obligation to put in place a policy to comply with Union copyright law, in particular to identify and comply with the reservation of rights pursuant to Article 4(3) of Directive (EU) 2019/790 of the European Parliament and of the Council.*

Articles 53(2) and 54(6) of the AI Act reiterate the provisions of Recital 104 in the part on excluding GPAI models with systemic risk from the overall exemption under Article 2(12).

Thus, the list of exceptions from the above overall exemption for AI systems released under free and open source licenses can be summarized as follows:

- high-risk AI systems,
- AI systems that fall under Article 5 (prohibited AI practices),
- AI systems that fall under Article 50 (transparency obligations for providers and deployers of certain AI systems),
- GPAI models with systemic risk (Articles 53(2) and 54(6)).

Additionally, under the cited above Recital 104, GPAI models that are released under a free and open source license have to comply with the following transparency and legal requirements:

- produce a summary about the content used for model training,
- put in place a policy to comply with Union copyright law, including with the reservation of rights by the rightholders in case of text and data mining in accordance with Article 4 of the Digital Single Market Directive.

Considering the above-mentioned list of exceptions, the exemption for AI models released under free and open source license under the AI Act applies only to the obligations for providers of GPAI models, stipulated in Section 2 of Chapter V "General-purpose AI models" of the AI Act, namely in Article 53 and Article 54.

In particular, pursuant to Article 53(2), the following obligations do not apply to the GPAI models released under free and open source license:

- draw up and keep up-to-date the technical documentation of the model, including its training and testing process and the results of its evaluation, which shall contain, at a minimum, the information set out in Annex XI for the purpose of providing it, upon request, to the AI Office and the national competent authorities (Article (53(1)(a));
- draw up, keep up-to-date and make available information and documentation to providers of AI systems who intend to integrate the GPAI model into their AI systems, so that such information and documentation shall: (i) enable providers of AI systems to have a good understanding of the capabilities and limitations of the GPAI model and to comply with their obligations pursuant to the AI Act, and (ii) contain, at a minimum, the elements set out in Annex XII (Article (53(1)(b)).

Regarding the first obligation, stipulated in Article 53(1)(a), Annex XI sets out the following information to be provided by providers of GPAI models, "as appropriate to the size and risk profile of the model":

1. a general description of the GPAI model, including the tasks that the model is intended to perform and nature of AI systems in which it can be integrated, use policies, the date of release, methods of distribution, the architecture and number of parameters, the modality and format of inputs and outputs, the license;
2. a detailed description of the above mentioned elements and relevant information of the process for the development, including:

- technical means (instructions of use, infrastructure, tools) required for the GPAI model to be integrated into AI systems,
- design specifications of the model and training process, including training methodologies and techniques, etc.,
- information on the data used for training, testing and validation, including how the data was obtained and selected, measures to detect unsuitability of data sources, methods to detect identifiable biases,
- computational resources used to train the model (e.g., number of floating point operations), training time, etc.,
- known or estimated energy consumption of the model.

As regards the second obligation set forth in Article 53(1)(b), Annex XII lists the following information that should be disclosed to providers of AI systems intending to integrate the GPAI model into their AI systems:

1. a general description of the GPAI model, including the tasks that the model is intended to perform and nature of AI systems into which it can be integrated, use policies, the date of release, methods of distribution, how the model interacts with other software and hardware, the versions of the software related to the use of the model, the architecture and number of parameters, the modality and format of inputs and outputs, the license of the model;
2. a description of the elements of the model and of the process for its development, including:

- technical means required for the GPAI model to be integrated into AI systems,
- the modality and format of inputs and outputs and their maximum size,
- information on the data used for training, testing and validation.

After a close look at the above list of obligations from which the GPAI models released under free and open source license are exempt, it is evident that nearly all of the listed categories of information are required to be disclosed in order for the AI model to be considered open source in the sense of the OSAID provided by the OSI. Although the OSAID does not explicitly mention the computational resources used to train the model and the model's energy consumption in the list of data information required to be disclosed, it may be required for disclosure in order to satisfy the requirement "so that a skilled person can build a substantially equivalent system."

At the same time, it is difficult to estimate the value of the above provided exemptions for AI models that fall under the definition of AI models released under free and open source license. As noted in Section 3.2 above, it is not clear which particular information about the GPAI model should be disclosed in order for it to qualify as "released under free and open-source licence", since the terms "parameters", "information on the model architecture", and "information on model usage" are not defined in the AI Act. Therefore, the practical value of the exemptions provided in Article 53 highly depends on the interpretation of these terms.

Another exemption for GPAI models released under free and open source license is stipulated in Article 54(6). However, it is reserved only for providers that are established in third countries and concerns the obligation to appoint an authorized representative which is established in the Union (Article 54(6)). Under Article 54, the authorized representative receives a mandate from the provider, which should empower the authorized representative to:

- verify that the obligations pursuant to Articles 53 and 55 ("Obligations of providers of GPAI with systemic risks") have been fulfilled,
- keep a copy of the relevant technical documentation at the disposal of the AI Office and national competent authorities for a period of 10 years after the GPAI model has been placed on the market,

- be addressed by, and cooperate with, the AI Office and national competent authorities on all issues relating to compliance with the AI Act.

Additionally, the authorized representative is entitled to terminate the mandate, and notify the AI Office thereof, in case it considers that the provider is acting contrary to the provisions of the AI Act.

In sum, although the abovementioned provisions of the AI Act explicitly exclude AI models released under free and open source license from its application, the actual list of exemptions is very limited, as it concerns only two (out of 113) articles of the AI Act. Furthermore, the transparency obligations from which the GPAI models released under free and open source license are exempt under Article 53 have limited practical value, as these obligations refer to the provision of information that either (i) needs to be disclosed in order for the AI model to qualify as open source in accordance with the understanding of OSAI by the open source community, particularly the OSAID elaborated by the OSI, or (ii) would most likely need to be disclosed within the terms of "parameters", "information on the model architecture", "information on model usage" under the AI Act.

This results in the overall conclusion that, despite the explicit exemption, the AI Act, in practical terms, is fully applicable to open source AI projects, unless the providers are established in a third country, pursuant to Article 54. In fact, it appears that the real beneficiaries of the exemptions for AI models released under free and open source license are GPAI model providers established in third countries, as they are not obliged to appoint an authorized representative established in the Union that would be empowered to ensure compliance with the AI Act by cooperating with, and providing documentation to, the AI Office and national competent authorities.

Such privileged position of open source AI providers that are established in third countries appears to be the result of extensive lobbying efforts by the Big Tech companies, as most of them are established in the U.S.[82] According to Corporate Europe Observatory, in 2023, the Big Tech's focus was on influencing the Parliament's position, which is reflected in the number of meetings with members of the European Parliament on AI: 185 out of 277 AI-related meetings were held with industry and trade associations, with Google, Microsoft, American Chamber of Commerce, and OpenAI being the top lobbyists.[83] As to AI-related meetings with senior Commission officials, out of 97 total meetings, 84 were held with industry and trade associations, twelve with civil society, and just one with academics or research institutes.[84]

In late 2022, after the launch of ChatGPT[85], the European Council proposed to regulate GPAI models (added to the text of the regulation as "General purpose AI systems" in Title IA) [86], which had not been mentioned in the AI Act before. However, this issue was postponed to a later point of time, which "came after an intense push by Big Tech, which tried to evade responsibility for compliance by allocating it to 'downstream deployers'." [87]

GPAI systems and foundation models were further addressed in the Parliament's position in June 2023. [88] This was also the first version of the AI Act to introduce the overall exemption for open source AI models with a new paragraph 5(e) in Article 2 ("Scope"):

82. Corporate Europe Observatory. Byte by byte. How Big Tech undermined the AI Act. 17 November 2023 https://corporateeurope.org/en/2023/11/byte-byte accessed 21 October 2024

83. Ibid

84. Ibid

85. OpenAI. Introducing ChatGPT https://openai.com/index/chatgpt/ accessed 22 October 2024

86. Council of the European Union. Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts – General approach. 25 November 2022 https://data.consilium.europa.eu/doc/document/ST-14954-2022-INIT/en/pdf accessed 22 October 2024

87. Corporate Europe Observatory. Byte by byte. How Big Tech undermined the AI Act. 17 November 2023 https://corporateeurope.org/en/2023/11/byte-byte accessed 21 October 2024

88. European Parliament. Amendments adopted by the European Parliament on 14 June 2023 on the proposal for a regulation of the European Parliament and of the Council on laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts (COM(2021)0206 – C9-0146/2021 – 2021/0106(COD)). 14 June 2023 https://www.europarl.europa.eu/doceo/document/TA-9-2023-0236_EN.html accessed 22 October 2024

> *5e. This Regulation shall not apply to AI components provided under free and open-source licences except to the extent they are placed on the market or put into service by a provider as part of a high-risk AI system or of an AI system that falls under Title II or IV. This exemption shall not apply to foundation models as defined in Art 3.*

As stated in the last sentence of the proposed paragraph 5(e), such exemption would not apply to foundation models (further replaced with "general-purpose AI models"), which were defined as follows (Article 3(1)(1)(c))[89]:

> *(1c) 'foundation model' means an AI system model that is trained on broad data at scale, is designed for generality of output, and can be adapted to a wide range of distinctive tasks.*

In September 2023, Meta shared its own position on the AI Act.[90] The very first amendment proposed by Meta was to strike out the exception of foundation models from the overall exemption for open source AI. Meta justified such amendment by arguing that carving out foundation models from the exemption "would be a disincentive for providers of foundation models from making those models available on an open source basis, undermining the established benefits which the open source model brings in terms of building trust, leveraging the expertise of thousands of contributors, benefiting competition and spurring responsible innovation by making such models available to third parties that might otherwise not have access to the technology or the means to develop such systems themselves."[91] Furthermore, Meta argued, such exception would undermine the risk-based approach established in the AI Act, therefore foundation models should be subject to the requirements of the AI Act solely when they meet the high-risk threshold. Interestingly, this approach to open source foundation models suggested by Meta is now reflected in the text of the AI Act, as the exemption applies to GPAI models, unless they are GPAI models with systemic risks (Articles 53(2) and 54(6)).

Apparently, Meta was setting hopes on utilizing the open source exemption more broadly, as it also suggested that the exemption should cover not only AI components provided under free and open source license, but also under

> *similarly permissive licences that: (i) provide open access to models; (ii) further the goal of fostering collaboration and innovation; and (*iii*) permit downstream users to use, reproduce, distribute, copy, create derivative works of, and make modifications to the model, whether provided by a commercial or non-commercial entity…*

This suggestion did not find its way into the final text of the AI Act.

Whereas the tiered regulatory approach to GPAI models may be justified by the argument that the focus should be on the risks posed and not on particular technology[92], the exemption granted to open source GPAI model providers established in third countries can be hardly explained and goes contrary to the other provisions of the AI Act. Under Recital 21 and Article 2(1)(a), the rules of the AI Act should apply "in a non-discriminatory manner", irrespective of whether the providers of AI systems are established in the Union or in a third country. Furthermore, the AI Act requires that providers of AI systems established in third countries should appoint an authorized representative within the Union that would be their contact person within the Union ensuring compliance with the AI Act (Recital 82).

Thus, from a legal point of view, the key difference in the position of providers of GPAI models released under free and open source license that are established in the EU, on the one hand, and in a third country, on the other hand, is that the latter are not obliged to have a point of contact in the EU that would serve to

89. Ibid

90. Corporate Europe Observatory. Byte by byte. How Big Tech undermined the AI Act. 17 November 2023 https://corporateeurope.org/en/2023/11/byte-byte accessed 21 October 2024

91. Corporate Europe Observatory. Meta's Suggestion on AI Act. September 2023 https://corporateeurope.org/sites/default/files/2023-11/Meta%20-%20AI%20Act%20Position%20-%204%20Column%20Doc%20-%20September%202023%20.pdf accessed 22 October 2024

92. Corporate Europe Observatory. Byte by byte. How Big Tech undermined the AI Act. 17 November 2023 https://corporateeurope.org/en/2023/11/byte-byte accessed 21 October 2024

ensure compliance[93] with the AI Act and cooperate as necessary with the AI Office and national competent authorities. Considering the vagueness of the term "GPAI model released under free and open source license", this exemption appears to be a major loophole to circumvent the transparency and compliance obligations under the AI Act, that is most likely to be utilized by providers established in third countries. Such unequal treatment of domestic and third-country providers of GPAI models, as well as very limited practical exemptions from the obligations under the AI Act, are most likely to disincentivize European GPAI model providers to open source their models, thus undermining the development of open source AI in the EU.

# 5 International perspective

Although the EU has pioneered in enacting a comprehensive legal framework in the area of AI, other jurisdictions have also undertaken a number of legislative initiatives to regulate AI. This section will analyze some of the most notorious regulations of AI in the two countries that are leaders in the development of AI technologies, namely the U.S. and China, and in particular how open source AI has been addressed in these jurisdictions.

## 5.1 United States of America

Similar to the situation with regulating data privacy, the U.S. federal government has been reluctant to enact a federal law regulating AI technologies, which has led to the states taking the initiative in their hands, despite the Trump administration explicitly forbidding state AI regulations that conflict with the federal policy.[94] California, the leader in AI technologies development across the U.S.[95], has been one of the most active states in introducing AI regulations.

President Biden's 2023 Executive Order 14110 on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence[96] was the key legal document regulating AI at the federal level before being revoked by President Trump on his first day in office in January 2025.[97] Open source AI was addressed in Section 4.6 of the Executive Order, referring to "dual-use foundation models for which the model weights are widely available." Section 4.6 acknowledged both the benefits and the risks of such models and tasked the Secretary of Commerce to "solicit input from the private sector, academia, civil society, and other stakeholders through a public consultation process on potential risks, benefits, other implications, and appropriate policy and regulatory approaches related to dual-use foundation models for which the model weights are widely available" (Section 4.6(a)).

In fulfillment of the task, the National Telecommunications and Information Administration (NTIA) published a report "Dual-Use Foundation Models with Widely Available Model Weights"[98] in July 2024. The Report defines such models as follows:

93. In particular, all GPAI models released under free and open source license have to produce a summary about the content used for model training and put in place a policy to comply with EU copyright law (Recital 104).

94. The White House. Executive Order 14365. Ensuring a National Policy Framework for Artificial Intelligence. 11 December 2025 https://www.whitehouse.gov/presidential-actions/2025/12/eliminating-state-law-obstruction-of-national-artificial-intelligence-policy/ accessed 22 June 2026

95. Stanford University. Human-Centered Artificial Intelligence. Ranking America's Top States for AI. 11 July 2024 https://hai.stanford.edu/news/ranking-americas-top-states-ai accessed 26 October 2024

96. Federal Register. Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence. 30 October 2023 https://www.federalregister.gov/documents/2023/11/01/2023-24283/safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence accessed 22 June 2026

97. AI.GOV. Executive Orders. Initial Rescissions of Harmful Executive Orders and Actions. 20 January 2025 https://www.whitehouse.gov/presidential-actions/2025/01/initial-rescissions-of-harmful-executive-orders-and-actions/ accessed 26 November 2025

98. NTIA. Dual-Use Foundation Models with Widely Available Model Weights Report. 30 July 2024 https://www.ntia.gov/issues/artificial-intelligence/open-model-weights-report accessed 23 October 2024

> *A dual-use foundation model with widely available model weights (or, in this Report, an open foundation model) is a dual-use foundation model whose model weights have been released openly to the public, either by allowing users to download them from the Internet or through other mechanisms.*

Th Report outlines that many developers provide limited or no public access to the model weights, whereas, "in contrast, some developers, such as Meta, Google, Microsoft, Stability AI, Mistral, the Allen Institute for AI, and EleutherAI, have released models – though not always their most advanced models – with weights that are widely available… ." Considering the multiple benefits and risks posed by open foundation models, the Report concludes that "current evidence is not sufficient to definitively determine either that restrictions on such open-weight models are warranted, or that restrictions will never be appropriate in the future." Instead, the Report suggests that the government should actively monitor the risks from dual-use open foundation models and be ready to take necessary steps if heightened risks emerge.

So, in the terms used by the U.S. federal government, in order for a foundation model to be open, the only element to be disclosed is the weights, meaning numerical parameters within an AI model that help determine the model's outputs in response to inputs (Section 3(u) of Executive Order 14110). The Federal Trade Commission (FTC) admits that there is an active discussion on what "open" and "open source" should mean in the context of AI, but uses the term "open-weights models", which, "despite the nascent terminology, ... have the potential to be a positive force for innovation and competition", just like open source software.[99]

Disclosing AI foundation models training data has been suggested in the AI Foundation Model Transparency Act[100] that was introduced in Congress in December 2023. The proposed bill would direct the FTC "to set transparency standards for foundation model deployers, by asking them to make certain information publicly available to consumers", "direct companies to provide consumers and the FTC with information on the model's training data, model training mechanisms, and whether user data is collected in inference", protect small deployers and researchers, help copyright owners protect their copyright by allowing them to determine if their copyrighted works were included in the AI foundation model's training data.[101] At the same time, the FTC, when establishing the standards to improve the transparency of foundation models, would be directed to consider including "alternative provisions" for open source foundation models (Section 3(g)(1)). The bill does not specify what is understood by "alternative provisions", nor does it provide a definition for open source foundation models. However, by the time of writing, the bill has not progressed any further after it had been introduced in the House of Representatives and referred to the House Committee on Energy and Commerce.[102]

With the change of administration in 2025, the executive actions taken by President Biden were revoked and new executive orders addressing AI have been signed by President Trump. [103] "Open-source and open-weights AI" are addressed in America's AI Action Plan published in July 2025[104], which includes a number of policy recommendations that would help the Federal government create a supportive environment for open models. Such measures, among others, include ensuring access to large-scale computing power for startups and academics by improving the financial market for compute and partnering with leading technology companies to increase the research community's access to world-class private sector computing, models, data, and software resources.

99. Federal Trade Commission. On Open-Weights Foundation Models. 10 July 2024 https://www.ftc.gov/policy/advocacy-research/tech-at-ftc/2024/07/open-weights-foundation-models accessed 24 October 2024

100. Congress. H.R.6881 - AI Foundation Model Transparency Act of 2023 https://www.congress.gov/bill/118th-congress/house-bill/6881 accessed 23 October 2024

101. Congressman Don Beyer. Beyer, Eshoo Introduce Landmark AI Regulation Bill. 22 December 2023 https://beyer.house.gov/news/documentsingle.aspx?DocumentID=6052 accessed 24 October 2024

102. Congress. H.R.6881 - AI Foundation Model Transparency Act of 2023. All Actions: H.R.6881 — 118th Congress (2023-2024) https://www.congress.gov/bill/118th-congress/house-bill/6881/all-actions accessed 22 June 2026

103. AI.GOV. Executive Orders https://www.ai.gov/#resources-anchor accessed 26 November 2025

104. The White House. America's AI Action Plan https://www.whitehouse.gov/wp-content/uploads/2025/07/Americas-AI-Action-Plan.pdf accessed 26 November 2026

At the same time, according to Executive Order "Preventing Woke AI in the Federal Government" [105], a new guidance to be prepared for governmental departments and wholly owned government corporations should permit vendors to "avoid requiring disclosure of specific model weights or other sensitive technical data where practicable" (Section 4).This provision was incorporated in Appendix A of the Memorandum to Heads of Executive Departments and Agencies dated 11 December 2025, requiring governmental agencies, when procuring LLMs, to "avoid requirements that compel a vendor to disclose sensitive technical data, such as specific model weights."[106]

At the state level, significant steps in regulating AI technologies have been taken by California, where Governor Newsom signed the Executive Order on AI almost two months earlier than President Biden.[107] In September 2024, a number of safety and transparency bills concerning AI technologies were signed by the Governor[108], including AB-2013[109] on generative AI training data transparency. The bill amends the Civil Code by including an obligation of the developer of the generative AI system or service to post on its website documentation regarding the data used by the developer to train the generative AI system or service. Such documentation should contain a high-level summary of the datasets used in the development of the AI system or service, including, without limitation, the following information:

- the sources or owners of the datasets,
- a description of how the datasets further the intended purpose of the artificial intelligence system or service,
- the number of data points included in the datasets, which may be in general ranges, and with estimated figures for dynamic datasets,
- whether the datasets include any data protected by copyright, trademark, or patent, or whether the datasets are entirely in the public domain,
- whether the datasets were purchased or licensed by the developer,
- whether the datasets include personal information,
- whether the datasets include aggregate consumer information,
- whether there was any cleaning, processing, or other modification to the datasets by the developer,
- the time period during which the data in the datasets were collected.

AB-2013 mentions three exemptions from the above obligation: generative AI systems or services (1) whose sole purpose is to help ensure security and integrity, or (2) whose sole purpose is the operation of aircraft in the national airspace, or (3) that were developed for national security, military, or defense purposes and are made available only to a federal entity.

The training datasets disclosure requirement enacted for generative AI systems in California mirrors the obligations for providers of GPAI models under the EU AI Act, since the latter does not provide an exemption for GPAI models released under free and open source license from the obligation to make publicly available a sufficiently detailed summary about the content used for training of the GPAI model (Article 53(1)(d)). As

105. AI.GOV. Executive Orders. Preventing Woke AI in the Federal Government 23 July 2025 https://www.whitehouse.gov/presidential-actions/2025/07/preventing-woke-ai-in-the-federal-government/ accessed 26 November 2025

106. The White House. Executive Office of the President. Memorandum to Heads of Executive Departments and Agencies. 11 December 2025 https://www.whitehouse.gov/wp-content/uploads/2025/12/M-26-04-Increasing-Public-Trust-in-Artificial-Intelligence-Through-Unbiased-AI-Principles-1.pdf accessed 23 June 2026

107. Executive Department. State of California. Executive Order N-12-23. 6 September 2023 https://www.gov.ca.gov/wp-content/uploads/2023/09/AI-EO-No.12-/_-GGN-Signed.pdf accessed 24 October 2024

108. Governor Gavin Newsom. Governor Newsom announces new initiatives to advance safe and responsible AI, protect Californians. 29 September 2024 https://www.gov.ca.gov/2024/09/29/governor-newsom-announces-new-initiatives-to-advance-safe-and-responsible-ai-protect-californians/ accessed 24 October 2024

109. AB-2013 Generative artificial intelligence: training data transparency (2023-2024) https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240AB2013 accessed 23 October 2024

concerns open source AI, a common feature of the EU and U.S. approaches is that the training dataset disclosure requirement is applicable to open source AI models, but, contrary to the understanding of the OSAID by the OSI, does not constitute a prerequisite for the AI model to be considered open source.

In 2025, Governor Newsom signed into law several new bills regulating AI, which include SB 243[110] (the Companion Chatbot law), AB 853[111] (amending California AI Transparency Act), and SB 53[112], known as Transparency in Frontier Artificial Intelligence Act (TFAIA). The TFAIA has been named a "landmark AI law that establishes the nation's first comprehensive framework for transparency, safety and accountability in the development and deployment of advanced AI models."[113] It was approved a year after SB 1047[114], a previous bill addressing safety and security for frontier AI models, had been vetoed. [115] In 2024, in his veto message, the Governor commented that "by focusing only on the most expensive and large-scale models, SB-1047 establishes a regulatory framework that could give the public a false sense of security about controlling this fast-moving technology", whereas smaller, "specialized models may emerge as equally or even more dangerous than the models targeted by SB 1047."[116] Nevertheless, the enacted TFAIA, just like its predecessor, covers solely large-scale and expensive models: its obligations are applicable to frontier developers who have trained models using a quantity of computing power greater than 10^26 integer or floating-point operations and large frontier developers who have had annual gross revenues in excess of five hundred million dollars in the preceding calendar year.

Unlike in the EU AI Act, open source AI is not exempt from the application of the TFAIA, so open source AI model developers are subject to the obligations imposed by the bill if such models fall within the definition of covered models.

Interestingly, the versions of SB 1047 preceding 19 August 2024 specifically addressed open source AI models, defining them as follows:

> *(n) "Open-source artificial intelligence model" means an artificial intelligence model that is made freely available and that may be freely modified and redistributed.*

The versions of SB 1047 preceding 19 August 2024 further mentioned open source AI in the context of the Board of Frontier Models, which is a state entity that would be established by the bill to oversee the development of such models, and the Frontier Model Division, which would be directly supervised by the Board of Frontier Models. In particular, the Frontier Model Division would appoint, and consult with, the advisory committee for open source AI that would have the following powers: (1) issue guidelines for model evaluation for developers of open source AI models that lack the ability to cause or enable critical harms, (2) advise the legislature on creating incentives for developers of open source AI models that are not covered models, (3) advise the Frontier Model Division on future policies impacting open source AI development (Section 4). Besides, one of the five members of the Board of Frontier Models would be a member of the open source community, appointed by the Governor, subject to Senate confirmation.

Unlike earlier versions of SB 1047, the TFAIA simply mentions open source community as one of the stakeholders whose input should be taken into account by the Department of Technology when making recommen-

110. SB-243 Companion chatbots (2025-2026) https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260SB243 accessed 27 November 2025

111. AB-853 California AI Transparency Act (2025-2026) https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260AB853 accessed 27 November 2025

112. SB-53 Artificial intelligence models: large developers (2025-2026) https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202520260SB53 accessed 27 November 2025

113. Skadden. Landmark California AI Safety Legislation May Serve as a Model for Other States in the Absence of Federal Standards. 2 October 2025 https://www.skadden.com/insights/publications/2025/10/landmark-california-ai-safety-legislation accessed 27 November 2025

114. SB-1047 (2023-2024) https://leginfo.legislature.ca.gov/faces/billStatusClient.xhtml?bill_id=202320240SB1047 accessed 23 October 2024

115. Office of the Governor. 29 September 2024 https://www.gov.ca.gov/wp-content/uploads/2024/09/SB-1047-Veto-Message.pdf accessed 23 October 2024

116. Ibid

dations on updating definitions used in the TFAIA.

Thus, as made clear from the wording of the TFAIA, California is eager to consider the opinion of the open source community in enacting policies on regulations concerning AI. However, considering that the language on creating incentives for developers of open source AI models was removed from the final version of SB 1047, California seems reluctant to provide political or economic incentives for open source AI and aims at imposing the same safety and transparency obligations on developers of both open source and closed source AI, without any exemption for the former.

Another highly debated bill on AI transparency is AB 412 "Generative artificial intelligence: training data: copyrighted materials."[117] The bill requires generative AI model developers to make available on their website a mechanism that would allow rightholders to request information about the developer's use of the righthoders' copyrighted works. Exempt from this requirement are, among others, AI developers that have trained their AI models exclusively on datasets that the developer makes publicly available at no cost to users on its website. The bill faces strong opposition by the tech community in California claiming that the obligations to be imposed on AI developers are not feasible.[118] AB 412 indeed goes beyond the obligations under both AB-2013, which requires AI developers to provide a high-level summary of the datasets used in the development of the AI system, and Article 53(1)(d) EU AI Act, demanding GPAI model providers make publicly available a sufficiently detailed summary about the content used for training of the GPAI model.

In sum, the understanding of open source AI in the U.S. significantly differs from the OSI's OSAID or EU's "AI system released under free and open source licence", as the regulations, both at federal and state level, either refer to models for which solely the weights are widely available or use "open source" without providing a clear definition of the term. As to the issue of training data disclosure, AB-2013, enacted in California, requires disclosure of documentation on data used to train generative AI systems, that is similar to the obligation for GPAI model providers under the EU AI Act. Overall, the U.S. federal and state (particularly, Californian) regulations provide little, if any, incentives for open source AI projects, which is most likely to serve as a disincentive for developers to open source their AI models.

## 5.2 China

China is playing a major role in the development of cutting-edge AI technologies. According to Stanford's 2025 AI Index Report, 15 notable AI models originated from China-based institutions in 2024, which is the second-best result in the world, after 40 AI models originating from the U.S. and followed by three European AI models.[119] The report specifically notes that, while the U.S. maintains its lead in quantity, Chinese models have rapidly closed the quality gap: performance differences on major benchmarks shrank from double digits in 2023 to near parity in 2024. A prominent example is the release of DeepSeek, one of the most recent Chinese AI models, demonstrating China's competitiveness in AI technologies even under the conditions of the U.S. export restrictions.[120]

China embraced open source software as early as at the end of the 20$^{th}$ century, and, fueled by government investments, open source is now also thriving in cloud computing and AI.[121] Open source LLMs are widely applied by Chinese companies due to high costs of closed source LLMs and the sensitivity of sharing data with

117. AB-412 Generative artificial intelligence: training data: copyrighted materials (2025-2026) https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202520260AB412 accessed 23 June 2026

118. Electronic Frontier Foundation. California's AB 412 Still Demands Developers Do the Impossible. 4 June 2026 https://www.eff.org/deeplinks/2026/06/californias-ab-412-still-demands-developers-do-impossible accessed 23 June 2026

119. Stanford University. Human-Centered Artificial Intelligence. The 2025 AI Index Report. https://hai.stanford.edu/ai-index/2025-ai-index-report accessed 19 June 2026

120. Elizabeth Gibney, 'China's cheap, open AI model DeepSeek thrills scientists.' Nature, 23 January 2025 https://www.nature.com/articles/d41586-025-00229-6 accessed 26 February 2025

121. Aaron Tan, The rise and rise of open source in China. ComputerWeekly.com., 22 August 2024 https://www.computerweekly.com/news/366608127/The-rise-and-rise-of-open-source-in-China accessed 27 October 2024

the model's supplier.[122] Besides, for both large companies, such as Alibaba, and start-ups, such as DeepSeek and 01.AI, open sourcing AI models offers faster commercialization and global recognition.[123] Notably, a number of Chinese open source models, such as Alibaba's Qwen 1.5 released in 2024 and Zhipu AI's ChatGLM3, outperformed some U.S. counterparts.[124] As of June 2026, the most recent open weight model Qwen 3.5 is often considered by the community to outperform U.S. models, such as Google DeepMind's Gemma 4.[125]

Another factor that is pushing China to rely on open source AI is the export controls enacted by the U.S. government.[126] Chinese groups, constrained by GPU shortages, are "willing to experiment on wild ideas" to improve their models, which is bearing results and has led to "more efficient models that are cheaper to train and use, which can appeal to budget-conscious clients and help the Chinese firms find a niche market alongside the AI giants."[127]

China has enacted multiple regulations concerning AI technologies.[128] A few months after the introduction of OpenAI's ChatGPT, China also announced it would work on a model law on AI.[129] One of the first drafts of the model law was released in August 2023.[130] The draft contained very limited provisions on open source AI, just generally proclaiming support and encouragement of open source development platforms and open source communities (Article 16 "Construction of Compute Infrastructure" of Chapter 2 "Support and Promotion of AI").

Version 2.0[131] of the model law on AI[132] was unveiled in April 2024, updated with version 3.0[133] in June 2025.

Article 90 of version 3.0 provides for the definitions as used throughout the text, including definitions of AI and foundation model:

> *a.* ***Artificial Intelligence*** *refers to automated systems that operate with a certain level of autonomy, serving specific or general objectives and capable of affecting physical or virtual environments through prediction, recommendation, or decision-making. This includes data, features, models, service provision interfaces, and embedded terminal devices.*

122. Caixin Global, China debates pros and cons of open-source AI models. ThinkChina, 28 June 2024 https://www.thinkchina.sg/technology/china-debates-pros-and-cons-open-source-ai-models accessed 27 October 2024

123. Zeyi Yang, Why Chinese companies are betting on open-source AI. MIT Technology Review, 24 July 2024 https://www.technologyreview.com/2024/07/24/1095239/chinese-companies-open-source-ai/ accessed 27 October 2024

124. ITIF. Hodan Omaar, 'How Innovative Is China in AI?' 26 August 2024 https://itif.org/publications/2024/08/26/how-innovative-is-china-in-ai/ accessed 27 October 2024

125. Rost Glukhov, Best LLMs for OpenCode — From Qwen 3.5 to Gemma 4, Tested Locally. Towards AI. 16 March 2026 https://pub.towardsai.net/best-llms-for-opencode-tested-locally-6f10ae80f733 accessed 19 June 2026

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127. MIT Technology Review. Why Chinese companies are betting on open-source AI. 24 July 2024 https://www.technologyreview.com/2024/07/24/1095239/chinese-companies-open-source-ai/ accessed 27 October 2024

128. CMS. AI laws and regulation in China. 17 February 2026 https://www.whitecase.com/insight-our-thinking/ai-watch-global-regulatory-tracker-china accessed 19 June 2026

129. Graham Webster, Jason Zhou, Mingli Shi, Hunter Dorwart, Johanna Costigan, Qiheng Chen, Forum: Analyzing an Expert Proposal for China's Artificial Intelligence Law. Stanford University. DigiChina. 23 August 2023 https://digichina.stanford.edu/work/forum-analyzing-an-expert-proposal-for-chinas-artificial-intelligence-law/ accessed 28 October 2024

130. Kwan Yee Ng, Jason Zhou, Ben Murphy, Rogier Creemers, Hunter Dorwart, Translation: Artificial Intelligence Law, Model Law v. 1.0 (Expert Suggestion Draft) – Aug. 2023. Stanford University. DigiChina https://digichina.stanford.edu/work/translation-artificial-intelligence-law-model-law-v-1-0-expert-suggestion-draft-aug-2023/ accessed 28 October 2024

131. Zenodo. The Model Artificial Intelligence Law (MAIL) v.2.0 - Multilingual Version. Published 16 April 2024 https://zenodo.org/records/10974163 accessed 19 June 2026

132. Global Times. China issues upgraded AI model law, eyeing open source and IP protection. 16 April 2024 https://www.globaltimes.cn/page/202404/1310704.shtml accessed 28 October 2024

133. Zenodo. The Model Artificial Intelligence Law (MAIL) v.3.0 - Multilingual Version. Published 28 June 2025 https://zenodo.org/records/15761453 accessed 19 June 2026

…

*h.* ***Foundation Models*** *refer to artificial intelligence models that have undergone training with the accumulation of computing power investment to a certain scale, serving general purposes, and capable of providing technological support for a wide range of downstream services. The floating-point operations (FLOPs) and other computing power standards for the identification of foundation models shall be formulated, publicly issued, and regularly updated by the National AI Administrative Authority.*

Thus, the definition of AI is similar to the ones applied by the EU and the U.S., whereas, as regards foundation models, China is taking the more flexible approach of not stipulating the exact computing power standards in a legal act, but rather delegating this power to a dedicated newly-established authority.

Importantly, in version 3.0 of the draft law, the definition of open source AI was added (Article 90(b)):

***Open-Source Artificial Intelligence*** *refers to AI systems that are released to the general public in an accessible form under open-source license frameworks. The technical components of such systems shall include, in accessible form, core elements such as foundation model weights and parameters. Depending on the technical characteristics, they shall also be accompanied by appropriately disclosed training datasets, complete descriptions of model parameters, or corresponding safety/security and compliance documentation. The degree of openness of open-source AI shall meet the practical needs of lowering barriers to technological reuse, enabling local deployment, and permitting freedom of modification, and shall not contravene other applicable laws or regulations*

If adopted, this will be the first definition of open source AI stipulated in a law – something that neither the EU nor the U.S. have done so far. Critics might argue that the definition is composed of vague words and formulations, e.g. it is not clear when disclosing training datasets to a particular extent will be considered appropriate, and on which technical characteristic the disclosure of training datasets, model parameters, or documentation should depend. However, this definition acknowledges that open source AI models differ by the degree of openness and that it is impractical to establish precise disclosure requirements, but a better approach is to set the goal that such openness is meant to pursue: "lowering barriers to technological reuse, enabling local deployment, and permitting freedom of modification." This appears to be in line with the OSI's approach as it has distinguished four types of data governed by different legal frameworks and allowing different extent of distribution, ranging from open training data to unshareable non-public training data (see Section 3.1 of this paper).

Although the definition of open source AI was introduced only in version 3.0, already version 2.0 of the model law included specific provisions on open source AI that remained unchanged in version 3.0, except for the article numbering. In particular, Article 18 highlights strong encouragement of open source AI projects by the state:

*Article 18 – Innovation In Algorithms and Foundation Models*

*The State shall support innovation in artificial intelligence algorithms, encourage the establishment and operation of open-source development platforms, open-source communities, and open-source projects, encourage the establishment of open-source artificial intelligence foundations, and promote the secure and compliant application of open-source software projects.*

…

Furthermore, Article 83 provides for exemption from liability for open source AI:

*Article 83 – Liability Exemption for Open-Source AI*

*Where individuals or organizations provide certain code modules necessary for AI development on a free and open-source basis, and clearly disclose their functions and associated safety/security risks, they shall not bear legal liability.*

> *Where individuals or organizations provide artificial intelligence on a free and open-source basis and can demonstrate that they have established an AI compliance and governance framework in conformity with national standards and have adopted corresponding safety/security governance measures, their legal liability may be mitigated or waived.*

The model law thus distinguishes two liability exemption possibilities: (1) in case code modules are provided for AI R&D on a free and open-source basis, disclosing the functions and risks, such providers are exempt from legal liability, and (2) providers of free and open source AI systems are either exempt from liability or are subject to reduced legal liability in case they have established an AI compliance governance system in accordance with national standards.

As seen from the draft, many concepts and details in the cited provisions still remain unclear (which may be due both to translation inaccuracies and to the fact that the above text is just an interim draft), such as the definitions "*free and open-source*", "*certain code modules*", or to what extent the liability may be reduced and how such liability reduction depends on the level of compliance with national standards. However, it is evident that China sees great potential in open source AI and is aiming at establishing significant incentives for providers of open source AI systems, particularly those who make their systems available for the purpose of AI R&D.

Government support for open source AI is further stated in Article 25 "Fiscal and Procurement Support", encouraging governments at all levels, as well as state-owned enterprises and public institutions, "to procure open-source artificial intelligence products and services that conform to national standards." Another economic incentive is a preferential tax treatment for the R&D of open source AI, such as super-deductions for R&D expenditures, that should be stipulated by the National AI Administrative Authority (Article 26).

Chapter V of the model law provides for a comprehensive AI governance mechanism and establishes the National AI Administrative Authority that exercises administrative responsibilities in the area of AI, including guiding and supporting the development and activities of open-source AI innovation communities, steering and coordinating such communities in the regular releases and updates of best practice guidelines for open-source AI projects (Article 63), formulating "dedicated compliance guidelines for open source AI developers, promoting the innovative development of open source AI" (Article 68).

A major change in version 3.0 of the model law, as compared to version 2.0, concerning open source AI is the addition of Article 21 "Fair Use of Copyrighted Works in Training Open-Source Foundation Models":

> *Article 21 – Fair Use of Copyrighted Works in Training Open-Source Foundation Models*
>
> *Where a developer of an open-source foundation model uses legally obtained copyrighted works in the course of model training, such use may be made without obtaining authorization from the copyright holder and without payment of remuneration—unless the copyright holder has explicitly stated that such use is not permitted.*
>
> *Developers of open-source foundation models are encouraged to provide appropriate compensation to copyright holders by reasonable means, so as to promote the dissemination and use of copyrighted works.*

Considering the jurisprudence on the use of copyrighted works for AI training both in the EU and the U.S., where, in the case of the EU, there is a clear inclination towards prohibiting such use[134] and, in the case of the U.S., the AI developers are left to rely on the flexible concept of fair use,[135] such regulatory exemption stands out by its pro-innovation character. Although this provision leaves the copyright holders the option to prohibit free use of copyrighted works for open source AI training, the wording "*developers of open-source foundation*

134. See, e.g., *GEMA v. OpenAI*, Case No. 42 O 14139/24, where the Munich Regional Court decided that ChatGPT memorized the song lyrics which, along with ChatGPT outputs, constituted unauthorized reproduction and communication to the public.

135. See, e.g., *Bartz v. Anthropic*, 3:24-cv-05417 (N.D. Cal.), where the court ruled that the use of legally acquired works for LLM training was "quintessentially transformative" and thus considered fair use, but this logic would not apply to copyrighted copies downloaded from "shadow libraries".

*models are encouraged to provide appropriate compensation to copyright holders*" leaves broad room for interpretation as to whether such compensation is mandatory and as to the amount of compensation.

Generally speaking, AI openness is an explicitly acknowledged goal in the regulatory, scientific, and industrial circles in China. A notable paper published in October 2025, prepared by leading AI experts representing, among others, AI Governance Center of Aliresearch (Alibaba Group) and DeepSeek-AI, examines the regulatory landscape that enhances AI openness.[136] The latter is understood as a holistic approach that enables the scientific community to thoroughly examine and use AI and to contribute to innovation. According to the paper, China's approach to promoting AI openness is based on six regulatory pillars: presumptive regulatory exemptions for open-source AI, including frontier AI models; presumptive exemption for AI scientific research; fast and efficient adjudication of AI cases[137] (copyright cases concerning model training, platform liability, IP protection of model parameters) via, inter alia, Internet courts dedicated to frontier technologies disputes; contextualized and evolving approach to AI-assisted scientific research; active development of science and technology ethics, which includes detailed ethics review guidelines, technical standards, and court judgments; possibility of phased testing for certain AI models[138] that gradually moves from closed sandbox environments to real-world conditions. The authors conclude that these six pillars constitute a policy portfolio that enhances innovation- and openness-friendly environment for AI developers.

In sum, China's draft model law is aiming at providing significant economic, legal, and political incentives for open source AI, which demonstrates that China is planning to fully employ the potential of open source AI. Despite the fact that the published version is only an interim draft, the revealed provisions on open source AI demonstrate China's intention to create a favorable legal regime for open source AI projects in China, by way of providing exemptions and reductions in liability, particularly for AI R&D, preferential tax treatment, supporting open source AI products in the course of public procurement, and explicitly allowing open source AI training on copyrighted works. Provided that these incentives for open source AI make their way into, or are even broadened in, the final version of the model law, combined with the Chinese courts' pro-innovation approach, China has the potential to become a highly favorable jurisdiction for open source AI projects.

## 6 Conclusion

Open source plays a crucial role in modern technologies, ensuring community cooperation, providing economic benefits, and contributing to digital sovereignty. Due to the transparency of open source software and the possibility by the community to study and modify it, open source, almost since its inception, has been considered more secure than closed source.[139]

As AI technologies advance, with very little information on how AI models are trained and operate, the community has raised the question of open sourcing AI models in order to ensure their safety and transparency. Similar to open source software, open source AI possesses significant economic potential and, despite security concerns against open sourcing highly capable AI models, offers benefits that, with necessary security mechanisms in place, outweigh the possibility of potential harm.

As governments are undertaking their first legislative initiatives in regulating AI, some of such regulations also include open source-related provisions, mostly focusing on different kinds of incentives for open source AI projects. The EU has pioneered in introducing the first comprehensive AI regulation – the AI Act, which sets

136. Yue Zhu, Bo He, Hongyu Fu, Naying Hu, Shaoqing Wu, Taolue Zhang, Xinyi Liu, Gang Xu, Linghan Zhang, and Hui Zhou. China's emerging regulation toward an open future for AI. Science 390, 132-135 (2025)

137. See, e.g., *SCLA v. A Shanghai company* (2025) available at https://mp.weixin.qq.com/s/4ZQ-qMwi82rzLPTyK7wqcg accessed 19 June 2026

138. One of the examples is the development of innovative applications for autonomous vehicles. See Xinhua News Agency, "16,000 test licenses for autonomous vehicles issued in China" (2024) available at https://www.chinadailyhk.com/hk/article/591613 accessed 19 June 2026

139. Colin Eberhardt, Graham Odds, and Matthew Dunderdale, Scott Logic, Europe Spotlight 2023. Exploring the State of European Open Source Innovation,Opportunities, and Challenges. The Linux Foundation. September 2023 https://www.linuxfoundation.org/hubfs/LF%20Research/World%20of%20Open%20Source%20Europe%20Spotlight%202023%20-%20Report.pdf?hsLang=en accessed 23 October 2024

transparency and safety obligations on providers and deployers of AI systems and also exempts "AI systems released under free and open-source licence" from its application. However, as the analysis in this paper has shown, such exemption turns out to be of very limited practical value, as it concerns only a number of disclosure obligations for GPAI models. Furthermore, taking into account the OSAID developed by the OSI, most, if not all, of these disclosures either are necessary in order for an AI system to be considered open source in accordance with the understanding of OSAI by the open source community or would otherwise need to be made under the AI Act. The most significant exemption provided for AI models released under free and open source license turns out to be the exemption granted to GPAI model providers established in third countries, as they are freed from the obligation to appoint an authorized representative in the EU, that would serve as their point of contact, ensuring compliance of the GPAI model with the AI Act and cooperating with the AI Office and national competent authorities. Such privileged position of third-country GPAI model providers, as compared to domestic providers, can be explained by the Big Tech's lobbying success at various stages of the legislative process.

The comparison of regulatory approaches to open source AI undertaken by the EU, U.S., and China has demonstrated that the latter is envisioning to create highly favorable conditions for open source AI projects, by way of providing different kinds of economic incentives, political support, and legal exemptions to open source AI. The U.S. federal government and California, at least to the moment, have not provided any benefits for open source AI, imposing the same obligations on providers of both open and closed source AI models.

Considering the very limited exemptions for open source AI systems in the AI Act and a more favorable regime for third-country providers, the EU's approach to open source raises a lot of questions. Such approach is even more surprising as the EU is proclaiming its goals to strengthen its digital sovereignty and competitiveness in innovation. Considering the multiple logical discrepancies and the undesirable impact that the current text of the AI Act may have on the open source industry, the following amendments are recommended: (1) provide a precise definition for open source AI, that should be based on the latest version of the OSAID, (2) create practical and meaningful incentives for open source AI projects, including liability exemptions, preferential tax regimes, etc., (3) shift the focus onto political and economic support of EU-based AI projects.

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