

COMPROMISE AMENDMENT 1

General

Covers: AMs 64-70, 72-78, 82, 87-91, 100, 113 and all related AMs

1. Welcomes the Commission communication entitled ‘A European strategy for data’; believes that it is a prerequisite for the viability of European *businesses and their competitiveness at the global scale, the progress of universities, research centres* and nascent AI, *as well as a crucial step towards a data society built on rights and EU values and defining the conditions for and establishing the Union’s leading role in the data economy*, which will lead to better services, *sustainable* growth and *quality* jobs; *considers that ensuring trust in digital services and in safe smart products is fundamental for the digital single market to grow and thrive, and should be at the core of both public policy and business models;*
 2. Notes that the COVID-19 crisis *has highlighted* the role *and the need* of *high quality* real-time *databases, information and data sharing, as well as shortcomings in infrastructure and interoperability of solutions across Member States; stresses the impact of the digital transformation and the availability of a wide range of technologies on the Union’s economy and society; welcomes the commitment for establishing sectoral data spaces; considers it crucial to speed up the creation of inter alia a Common European Health Data Space;*
- 2 a (new) Underlines that future legislation related to data must be designed to facilitate technological development, innovation, data access, interoperability and cross-border data portability; urges in that respect the Commission to perform in advance an evaluation and mapping of the existing legislation to assess what adjustments and additional requirements are needed to support the data society and economy and safeguard fair competition and legal clarity for all relevant actors; calls for the Union to be a leader in establishing an international framework for data, while respecting international rules;*
- 2 b (new) Believes that the free flow of data in the Union must remain the founding principle and sees its critical role to seize all the potential of the data economy; highlights that the significant increase in the amount of data available, particularly as a result of smart connected objects, and the broader data access and use, could entail challenges related to data quality, bias, protection and security or unfair trading conditions that will have to be addressed; believes that achieving the goals of the Data Strategy should not unduly distort competitive markets within the Union;*

COMPROMISE AMENDMENT 2

Values and principles

Covers: AMs 81, 92-98, 102, 104-119, 121-130, 132 and all related AMs

3. Believes that the Union's aim must be an ***EU-wide data governance*** and a human-centric, data society ***and economy based on the EU*** values of privacy, transparency, and ***respect of fundamental rights and freedoms and empowering citizens to take meaningful decisions over the data produced by or relating to them;***
- 3 a (new) ***Stresses that individuals should have full control of their data and be further assisted in enforcing their data protection and privacy rights regarding the data they generate; underlines the right to data portability and the data subject's access, rectification and erasure rights provided for by the GDPR; expects future proposals to support the enjoyment and meaningful exercise of these rights; stresses that in line with the GDPR principle of purpose limitation, the free sharing of data shall be limited to non-personal data, for example, industrial or commercial data, or securely, effectively and irreversibly anonymised personal data, including in the case of mixed data sets; stresses that any misuse of data, including through mass surveillance, must be ruled out;***
4. Notes that a well-built data society ***and economy should be designed to benefit all consumers, workers, entrepreneurs, start-ups and SMEs as well as researchers and local communities, respect labour rights, create quality employment without lowering working conditions, improve the citizens' quality of life, and narrow existing digital gaps without creating new ones, especially for vulnerable groups and those who are disadvantaged in terms of abilities and access to digital tools;***
5. Stresses that the increasing volume, development, ***sharing***, storage and processing of industrial and public data in the Union is a source of ***sustainable*** growth and innovation that should be tapped ***into, in compliance with Union and Member States' laws such as data protection, competition law and intellectual property rights;*** notes that ***data is becoming increasingly valued by the market;*** believes that ***economic*** growth can be ***secured by ensuring a level playing field and a competitive, multi-player and fair market economy, whilst ensuring interoperability and access to data for actors of all sizes, in order to counter the market imbalances;***
6. Stresses that the Union's data strategy must support ***and contribute to*** sustainability, the Green Deal and ***the*** Union's climate targets, ***including climate neutrality by 2050, as well as the resilient recovery of the Union economy and social cohesion;*** points out that ***ICT can have a positive handprint to reduce carbon emissions in many sectors, and simultaneously calls for measures to reduce the sector's own carbon footprint by ensuring energy and resource efficiency, especially considering the exponential growth of data processing and its environmental effects, recalling in this respect the Union's goals for reducing greenhouse gas emissions by 2030;***

COMPROMISE AMENDMENT 3

Data governance and spaces

Covers: AMs 133, 135, 137-149, 151-152, 154-196, 234, 250 and all related AMs

7. Supports the creation of a data governance framework ***and the*** common European data spaces ***subject to EU rules and*** covering ***transparency***, interoperability, sharing, ***access, portability and security*** of data, to enhance the flow and reuse of ***non-personal or fully***

GDPR compliant, securely anonymised personal data, in industrial and public environments, both at cross-sector and sector-specific levels;

8. ***Insists that the data governance model, including Common European Data spaces, must be built on a decentralised, data operating environment, to support the creation and emergence of interoperable and secure data ecosystems; highlights that the Common European Data spaces should reap the potential of future and already existing data spaces or data sharing schemes which may be organised in a distributed or centralised way;***
- 8 a (new) Believes that data management services and data architectures designed to store, use, re-use and curate data are critical components of the value chain of the European digital economy; takes into account that vast amount of data processing will be moving towards edge e.g. to smart connected objects; supports the further uptake of decentralised digital technologies, which enables individuals and organisations to manage data flows based on self-determination (e.g. Distributed Ledger Technologies); stresses that costs and skills related to access and storage of data determine the speed, depth and scale of the adoption of digital infrastructures and products, especially for SMEs and start-ups;***
- 9 ***Calls for the creation of a Commission-led expert group that would have the capacity to help and advise the Commission to set common Union-wide guidelines on data governance to make the interoperability and data sharing a reality within EU; calls on the Commission to involve regularly Member States, relevant agencies and other bodies and relevant stakeholders such as citizens, civil society and businesses, to improve such governance framework; stresses the importance of coordination of regulators involved in the data economy;***
- 9 a (new) Stresses that common European data spaces should prioritise crucial economic sectors, the public sector and other areas of public interest; supports the creation of further such data spaces in the future; calls on the Commission to address fragmentation in the single market and unjustified diverging rules in Member States in order to ensure the development of common data spaces in the EU;***
- 9 b (new) Notes that common European data spaces need to be accessible to all market participants, both commercial and non-commercial, including start-ups and SMEs, and take advantage of collaboration opportunities with SMEs, research institutions, public administration and civil society, while increasing the legal certainty of data usage procedures for private and public actors of all sizes; considers it crucial to avoid any risk of unauthorised access to common European data spaces and to create tools to counter possible misconducts; stresses the importance of cybersecurity, including the cooperation with EU ENISA and the EU Cybersecurity Competence Centre;***
10. ***Urges the Commission and Member States to build interoperable, sectoral data spaces that follow common guidelines, legal requirements and data sharing protocols, in order to avoid creating silos and to enable cross-sectoral innovations; stresses that the management of sectoral data spaces should take into account requirements and procedures foreseen in sectoral legislation; insists that any actor operating in the EU and taking advantage of European data spaces must comply with EU legislation;***
11. ***Encourages the Commission to use common European data spaces to enhance trust, adopt common standards and regulations, and encourage building well-formed application programming interfaces (APIs) along with robust authentication mechanisms, and to consider using pre-agreed, clearly specified and time-bound***

sandboxes to test innovations *and new business models as well as new data management and processing tools, both in public and private sectors;*

- 11 a (new) *Believes that well-formed APIs would provide the essential access to data and interoperability within the data spaces, and would also enable automatised and real-time interoperability between different services and inside public sector; calls on the Commission and Member States to further improve individuals' access to effective remedies under the GDPR and guarantee the interoperability and data portability of digital services and, in particular by application programming interfaces (APIs), enabling a user to interconnect between platforms and increasing their options to choose between different kinds of systems and services;*
12. Notes the need to *support* private and public sector actors, *especially SMEs and start-ups*, to identify *and capitalise on* the data they *generate and* possess; *calls for action* to increase the findability of data to fuel data spaces *by facilitating, curating, cataloguing and forming generally accepted taxonomies and cleansing routines;* calls on the Commission to *provide guidance, tools and funding from existing programmes* to improve the findability of metadata within data spaces; *highlights initiatives such as the Nordic Smart Government which intends to enable SMEs to voluntarily share data automatically and in real time through a decentralised digital ecosystem;*
13. *Recalls the key role that will be played by data intermediaries as structural enabler to organise data flows;* welcomes the Commission's plans for intermediaries labelling/certification for creation of interoperable *and non-discriminatory* data ecosystems; *calls on the Commission to ensure interoperability by developing minimum criteria between data intermediators; urges the Commission to work together with European and international standard setting organisations to identify and close gaps in data standardisation;*
14. Recalls that personal and *non-personal data, such as* industrial data, are not always separable *or are difficult and costly to separate, with the result that a high amount of data currently remains unused; recalls, in this context, that datasets in which different types of data are inextricably linked, are always treated as personal data, including in cases where the personal data represents only a small part of the dataset;* urges the Commission and European data protection authorities to *provide further* guidance on *lawful processing of data* and on practices in the utilisation of mixed data sets in industrial environments, while *fully respecting Regulation 2016/679 (GDPR) and Regulation 2018/1807 (free flow of non-personal data); considers that the use of privacy protecting technology should be encouraged to increase legal certainty for businesses, inter alia through clear guidelines and a list of criteria for effective anonymisation; stresses that the control of such data always lies with the individual and should be automatically protected;* calls on the Commission to consider creating a *legislative framework and a clear definition for* horizontal and cross-cutting personal data *spaces* alongside other data spaces *also to further clarify* the challenge of mixed data sets; *calls on the Commission to empower citizens and companies* via, for example, trustworthy intermediators such as MyData operators, which *facilitate transfers of* data with the consent of the owners *and provide adequate granularity of permissions;* *emphasises the need to further develop digital identities, which are essential foundation of trustworthy, multi-player data economy; therefore calls on the Commission to revise the Regulation on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation) and to present a legislative proposal "A trusted and secure European e-ID; calls on the Commission to*

analyse whether also organisations and things, such as sensors, should need digital identities to facilitate cross-border use of trust services, essential for multi-player data economy;

- 14 a a (new) Supports the Commission's intention to promote the development of nine common European data spaces, namely industrial (manufacturing), Green Deal, mobility, health, financial, energy, agriculture, public administration, and skills; calls for their development as a matter of urgency; supports the possibility of extending the concept of common European data spaces to other sectors;*
- 14 b (new) Highlights that some specific sectors, such as health, need to be addressed with special attention; agrees with the Commission that citizens should have secure access to a comprehensive electronic record of data concerning their health and that they should retain control over personal health data and be able to share it securely with authorised third parties, while unauthorised access should be prohibited, in compliance with data protection legislation; stresses that insurance companies or any other service provider entitled to have access to information stored in e-health applications should not be allowed to use data obtained from these e-health applications for the purpose of discriminating, including in the setting of prices, as this would run counter to the fundamental right of access to health;*
- 14 c (new) Welcomes the Commission's support for the establishment of a common European agriculture data space; recalls the potential of agricultural data and wide access to it to increase sustainability, competitiveness and use of resources across the entire agri-food and forestry chains, contribute to the development of innovative and sustainable techniques, improve access to relevant information for consumers, and reduce food waste and the sector's ecological footprint; urges relevant Member States' authorities to enhance and invest in the development of data collection and processing tools for agricultural sub-sectors, as well as for data on the export and import of inter alia agricultural goods and products;*
- 14 c a (new) Calls on the Commission to explore the potential merits and scope of creating common European data spaces for the cultural and creative sectors and industries and for cultural heritage; points out that the cultural sector has a significant amount of reusable data, which combined with other sources, including open data sources and data analytics, could help cultural institutions;*
- 14 c b (new) Calls for the creation of a European data space for tourism with the objective of helping all actors in the sector, especially SMEs, benefit from vast amounts of data when implementing policy and projects at the regional and local levels, facilitating recovery and boosting digitalisation;*
- 14 d (new) Supports the Commission's initiative to create European wide strictly defined approach to data altruism and to establish a clear definition and rules on "data altruism" in compliance with EU data protection principles notably purpose limitation, which requires that data is processed for "specified, explicit and legitimate purposes"; supports the Commission's proposal for data altruism to always be conditional on informed consent and to always be revocable; underlines that data donated under data altruism is meant to be processed for purposes of general interest and should not be used to pursue solely commercial interests;*
- 14 e (new) Urges the data governance framework to promote the "data for the public good" principle while always protecting the rights of EU citizens;*

COMPROMISE AMENDMENT 4

Data act, access and interoperability

Covers: AMs 153, 197-200, 202, 204-233, 235-240, 242-249, 251-256 and all related AMs

15. Urges the Commission to present a data act to encourage and enable an increasing *and fair* B2B, B2G, G2B and G2G flow of data in all sectors;
16. Encourages the Commission to facilitate *data sharing culture and* voluntary data sharing schemes *such as implementation of best-practices, fair contractual model agreements and security measures; notes that voluntary data sharing should be enabled by a solid legislative framework that ensures trust and encourages businesses to make data available to others, particularly across borders; urges the Commission to clarify rights of utilisation, notably in B2B and B2G market settings; urges the Commission to incentivise businesses to exchange their data, whether original, derived or co-generated, possibly through a reward system and other incentives, while respecting trade secrets, sensitive data and intellectual property rights; encourages the Commission to work on collaborative approaches for sharing data and standardised data agreements, to enhance predictability and trustworthiness; stresses the need for contracts to set clear obligations and liability for accessing, processing, sharing and storing of data in order to limit the misuse of such data;*
17. *Notes that market imbalances resulting from concentration of data restrict competition, increase entry barriers to the market and diminish wider data access and use; notes that B2B contractual agreements do not necessarily guarantee adequate access to data for SMEs, for reasons of asymmetries in negotiation power or expertise; notes that there are specific circumstances, such as systematic imbalances in B2B data value chains, where access to data should be compulsory e.g. via well-formed APIs that ensure fair access to players of all sizes or implementing competition rules to counter business-to-business unfair or illegal practices; highlights that such imbalances are present in different sectors;*
18. Calls on the Commission *and Member States* to examine actors' rights *and obligations* to access data they have been involved in generating *and improve their awareness, in particular the rights to access data, to port them, to urge another party to stop using data, to correct them or to delete them, while also identifying their holders and delineating the nature of such rights; calls on the Commission to clarify actors' rights to participate in the economic value created by applications trained using data they have been involved in generating;*
- 18 a (new) *Considers it important to guarantee that legal and technical support is facilitated for companies, especially micro, SMEs and start-ups, both at national and Union level, for example in the context of Digital Innovation Hubs under the Digital Europe Programme, to enhance the use and sharing of data and compliance with GDPR; considers that access to co-generated data should be provided in a manner that respects fundamental rights, supports a level playing field and the involvement of social partners even at company level; stresses that such access rights must be made technically possible and granted through standardised interfaces;*
19. Calls on *all EU institutions* and the Member States *as well as local and regional administrations* to lead by example and provide real-time services and a policy based on

- real-time data; *stresses that digitalisation represents an opportunity for public administrations to reduce unnecessary administrative burdens and existing silos among public bodies and authorities, in order to manage effectively non personal data, which will benefit the development and provision of public services;*
20. Calls for more and better secondary uses of *securely* anonymised personal data *and use of the developed privacy-enhancing and -preserving technologies*, especially in G2B/G2G exchanges, to boost innovation *and* research and *improve services in the public interest; stresses the need for tools to ensure that such secondary uses must always be in full compliance with EU data protection and privacy law; stresses that access to data does not preclude privacy;*
 21. Stresses *the role of the public sector in fostering an innovative and competitive data economy; stresses in this context* the need to avoid service provider or technological lock-ins for publicly collected data *or for data of general public interest collected by private entities*; calls for public procurement processes and funding programmes to *secure later* data access *rights*, interoperability *and portability* requirements *based on common technical standards; to achieve interoperability, supports the use of open standards, open source software and hardware, open source platforms and open, well-formed APIs where appropriate; highlights the need to protect and promote access for SMEs and in particular start-ups to public procurement processes in the context of the digitalisation of public administrations to foster the creation of a dynamic and competitive European digital sector;*
 - 21 a (new) *Calls on the Commission to further define in B2G data sharing under which circumstances, conditions and incentives the private sector should be obliged to share data with the public sector e.g. due to the necessity of the data for the organisation of data-driven public services; stresses that compulsory B2G data sharing schemes, e.g. in force majeure situations should have a clearly defined scope and timeline and be based on clear rules and obligations to avoid unfair competition;*
 - 21 b (new) *Calls for improved coordination among Member States to facilitate G2G data sharing and also the cross border flow of data across sectors, through government and stakeholder dialogue, with the objective of establishing a collective approach to data based on the principles of findability, accessibility, interoperability, and reusability; calls on the Commission to examine opportunities for data curation at scale;*
 22. Reminds the Commission and the Member States to *implement fully the* Open Data Directive *inter alia by improving the implementation in terms of the quality and publication of the data and to respect its* objectives when negotiating the implementing act on high-value data sets; calls for these data sets to include inter alia a list of company and business registers; *underlines the societal benefits of promoting better access to public sector data in ways that strengthen usability across the Union; calls on the Commission to provide a strong link between those high-value data sets and the common European data spaces within the forthcoming data legislation and deployment;*
 - 22 a (new) *Stresses the importance both for the economy and the society of wide reuse of public sector data, which should be, to the extent possible, 'real-time' or at least up-to-date, easy to access and process thanks to machine-readable and user-friendly formats; encourages the Commission to coordinate with the Member States the facilitation of sharing non-sensitive public-sector generated data sets in machine readable formats beyond what is required in the Open Data Directive, either for free, whenever possible,*

or covering the costs, and give guidance on a common model for sharing of data in accordance with the GDPR requirements; while preserving the flexibility of updates of the high-value data sets, encourages the Commission to extend the scope of the Open Data Directive to additional public data sets and to implement a principle of implicit digital transparency of public sector data, that will encourage Member States to implicitly publish existent digital raw data in real-time;

- 22 b (new)** *Calls on the Commission to identify and establish a voluntary, open and interoperable Environmental, Social & Governance (ESG) data register on corporate sustainability and responsibility performance that are crucial to enable sustainable investments and that would improve the transparency of companies' sustainability and responsibility, so companies can better demonstrate actions towards green deal goals; calls on the Commission to assess which datasets are essential for the ecological transition and supports in particular the opening up of private data when justified for public research purposes;*

COMPROMISE AMENDMENT 5

Infrastructure

Covers: AMs 71, 84, 99, 101, 131, 136, 241, 258-315 and all related AMs

23. Calls on the Commission and the Member States, in order to strengthen the Union's technological sovereignty, to *promote research and innovation* and work on technologies that facilitate *open collaboration*, data sharing and analytics, and to invest in capacity building and high-impact projects, innovation and deployment of digital technologies, *while respecting the technological neutrality principle*;
- 23 a (new)** *Stresses that the ongoing emergency situation exposed shortcomings and vulnerabilities both at Union and Member States' level in the digital area; calls for Commission and Member States to continue addressing effectively the digital divide both across and within Member States, by improving access to high-speed broadband, very high capacity networks and ICT services, including in most peripheral and rural inhabited areas, thus promoting cohesion and economic and social development; points out the potential role for satellite connectivity in ultimately remote areas;*
24. Recalls that the success of the Union's data and AI strategies depends on the wider ICT ecosystem, closing the digital gap, *accelerating the technological developments in inter alia the IoT, AI, cybersecurity technology, fibre, 5G, 6G, quantum and edge computing, robotics, distributed ledger technologies including block chain, digital twins, high-performance computing and visual processing technology, and intelligent connectivity at the edge, e.g. via large-scale, open calls for projects that combine edge and IoT; underlines that technological advancement based on data processing and the interconnectedness of digital products and services must be complemented with legally binding ethical standards to mitigate threats to privacy and data protection;*
- 24 a (new)** *Acknowledges the current success of the European High Performance Computing Joint Undertaking; believes that it is an important instrument to exchange information and data between scientists and researchers and more broadly private and public actors; welcomes the Commission proposal to maintain and advance Europe's leading role in supercomputing and quantum computing;*

24 b (new) *Highlights that the digital sector has significant potential to contribute to reducing carbon emissions globally; notes that the sector is estimated to be responsible more than 2% of global greenhouse gas emissions⁴; stresses that the sector's continued expansion must be accompanied by a focus on energy and resource efficiency to counter environmental effects; notes that new technological solutions, such as fibre compared to copper and energy efficient programming, produce a much smaller carbon footprint; stresses the need for improved usage of critical raw materials and their circularity while reducing and recycling E-waste;*

(a) <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0066&from=EN>

24 c (new) *Highlights that data centres account for a growing share of the world's electricity consumption, with the potential for further increase if no action is taken; notes the Commission's intention of achieving highly energy-efficient, sustainable and climate-neutral data centres by 2030; supports the promotion of innovative and best available solutions, waste minimisation, and green data storage techniques especially looking into the synergy between the district heating and cooling and use of the waste heat generated when cooling data centre facilities, for mitigating the environmental, resource and energy impact of data centres; calls for more transparency for consumers in relation to the CO₂ emissions of data storage and sharing;*

25. *Calls on the Commission and Member States to promote competitive markets while strengthening European businesses and to support the development of European cloud offerings; welcomes the initiatives of the European Cloud Federation such as a European Alliance for Industrial Data and Clouds and funding, as well as Gaia-x, which aim to develop a federated data infrastructure, creating an ecosystem that allows scalability, interoperability and self-determination of data providers by design to help organisations' or individuals' self-determination to have control over their data; supports competitive Union markets in the areas of Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS) and the development of specialised and niche cloud services and applications; urges the Commission to remain vigilant about any potential abuses of market power by dominant actors in oligopolistic markets operating in the Union that could inhibit competition or consumer choice; stresses that cloud infrastructures should be based on the principles of trust, openness, security, interoperability and portability; stresses that data portability principles should overcome, to the extent necessary, differences in IT providers' infrastructures and practices to ensure porting users' data; notes that users may not have the exact same configuration and service when porting their data from one provider to another;*

26. *Calls on the Commission, in cooperation with Member States, to fast-track the development of a 'cloud rule book' that will establish principles for the provision of competitive cloud services in the Union, represent a solid framework to enhance clarity and facilitate compliance for cloud services as well as inter alia to oblige service providers to reveal where data is processed and stored while ensuring users have sovereignty over their data; notes that it should further allow users to seamlessly migrate their data via interoperable interfaces to other service providers; believes that the Cloud rulebook should aim to prevent technological lock ins, especially in public procurement; considers the use of CEN Workshop Agreements (CWAs) in specific areas, such as cloud services, as a way to increase efficiency in creating harmonised standards; stresses that while the choice of a cloud operator lies with the businesses and consumers, all cloud operators, when established or acting in EU, must follow EU*

rules, norms and standards and their compliance should be monitored; notes that in the event that an EU operator uses cloud services located in non-EU countries, it is important to ensure the application of as high level of legal protection as in EU in the event of disputes, including intellectual property;

- 26 a (new)** *Supports the Commission’s work to take advantage of the review of horizontal and vertical competition guidelines to introduce new tools to counter excessive market concentration, inherent to data markets, including, inter alia ongoing monitoring for at-risk-markets and, where necessary, ex-ante regulation;*
- 27.** *Emphasises the importance of trust and a strengthened cybersecurity framework for a stable data economy, as well as of a culture of security for entities handling large amounts of data; stresses the importance of state-of-the-art underlying digital infrastructure and calls on the Commission and Member States to co-invest to reach its full deployment; calls for the support of further development of technology for secure sharing of data, e.g. via secure multi-party computing and encryption technology; urges the Commission to present solutions and cybersecurity standards suited to market players of all sizes, including micro-, small- and medium-sized enterprises; supports the joint and coordinated approach on the EU toolbox on 5G cybersecurity and the secure 5G deployment in the EU;*
- 27 a (new)** *Calls on the Commission to promote abusability, vulnerability and interoperability audits of the infrastructure for data sharing; draws attention to the significant and rapidly rising costs generated by cyberattacks; recalls that increased connectivity may increase cyber threats and crime, as well as cyberterrorism and the risk of natural and technological accidents, such as those affecting trade secrets; welcomes in this respect the Commission’s proposal for a revised Directive on security of network and information systems (NIS) and the new European Cybersecurity Competence Centre, in order to improve cyber resilience and respond more effectively to cyber-attacks;*
- 27 b (new)** *Stresses that the safe uptake of products and services in the data-fuelled consumer-facing and industrial IoT European ecosystems should include security and privacy by design; encourages the use of transparency enhancing tools; supports the Commission’s ambition to develop a digital ‘product passport’;*

COMPROMISE AMENDMENT 6

Research, skills, competence and AI

Covers: AMs 79, 80, 83, 85-86, 103, 201, 203, 257, 316-347 and all related AMs

- 28.** *Recognises the potential of data access to accelerate scientific research and education programmes; welcomes the Commission’s work in enabling the sharing of data for research and education; welcomes the development of the European Open Science Cloud (EOSC) as an open, trusted and federated environment in Europe to store, share and re-use research data across borders; promotes the publicly funded research data in accordance with the principle of “as open as possible as closed as necessary”; highlights the value of strategic partnership agreements between universities to further promote cooperation in the various fields of data science;*

- 28 a (new)** *Underlines the importance of achieving a high level of overall digital literacy as well as promoting public-awareness activities; stresses that the Union's growth potential depends on skills of its population and workforce and thus calls on Members States for special attention on software engineering, ICT talent attraction, and data literacy for all, in order to build a European know-how focusing on next-generation and forefront technologies; highlights the need for the law enforcement and judicial administration staff to have an adequate level of digital skills, as these play a crucial role in the process of digitalisation of the justice system in all Member States; notes that the Commission has proposed ambitious targets for digital skills in the EU through the Digital Education Action Plan and highlights the need for close monitoring of its implementation, development and performance;*
- 28 b (new)** *Underlines that competitive access to data and facilitation of cross-border use are of utmost importance for the development of AI, which relies on high-quality and increased data availability to create non-personal data sets able to train algorithms and improve their performance;*
- 28 c (new)** *Highlights the need to prevent all kinds of, and especially gender, biases being inadvertently reflected in algorithm-based applications; encourages to that effect the transparency of algorithms, AI systems and applications' design;*
- 28 d (new)** *Reminds that citizens have a right to receive an explanation of and to dispute the decisions taken by algorithms, in line with GDPR, in order to reduce the uncertainty and opacity, while special attention should be given to well-being and transparency in working life;*
29. Calls on the Commission to promote *best practices in STEM education, with a specific focus on gender equality, as well as involvement and employment of women in tech;*
- 29 a (new)** *Welcomes Digital Europe, Horizon Europe, Space Programme and Connecting Europe Facility programmes, as well as the European Digital Innovation Hubs that will help European businesses to keep up with the opportunities of digital transition; underlines the importance of the quantum earmarking in Horizon Europe; recalls also the role Recovery and Resilience Facility should play in contributing to the digital agenda;*
30. Calls for public and private funding *particularly for micro-, small- and medium-sized enterprises to support the digital transition and to fully capitalise on the potential of the data economy as well as to integrate digital technologies and skills; underlines that the achievement of a level playing field for micro-, small- and medium-sized enterprises not only includes access to data, but also entails the skills to carry out analytics and to extract insights from such information;*
31. Calls on social partners to explore the potential of digitalisation, data and AI to increase *sustainable productivity while respecting workers' rights, improve the well-being and employability of workforces, invest in upskilling, reskilling, outskilling and lifelong learning as well as investing in digital literacy schemes; notes that awareness raising, education and transparency of data driven technologies is important for the citizens, to be able to understand, and be part of, fair implementation; stresses the employees' right to know where and how their data is collected, used, stored or shared; calls for the prevention of disproportionate and undue surveillance at work; considers that trade unions at the national level should be more involved to provide recommendations and guidelines on data protection and privacy in the workplace;*

COMPROMISE AMENDMENT 7

Global rules

Covers: AMs 63, 134, 348-367 and all related AMs

32. Believes that global rules governing the use of data are inadequate; *invite the Commission to come forward with comparative analysis of data regulatory environment in third countries; notes that European companies operating in some third countries are increasingly faced with unjustified barriers and digital restrictions; calls on the Commission and Member States to increase efforts with like-minded third countries in international and multilateral fora and in bilateral and trade discussions to agree on new international ethical and technical standards to govern the use of new technologies, such as AI, IoT and 5G, 6G, which promote Union's values, fundamental rights, principles, rules and standards and ensure the Union's market remains competitive and open to the rest of the world; highlights the need for international rules and standards to foster global cooperation aimed at strengthening data protection and establishing safe and appropriate data transfers while fully respecting EU and Member States' laws and standards;*
33. Calls for the free flow of data between the Union and third countries *under the condition that data protection, privacy, security and other, clearly defined, justified and non-discriminatory public policy interests are met e.g. via adequacy decisions; believes that such free flow of data across borders is needed to seize the full potential of the data economy and stresses that preserving the flow of data must remain a foundation of Europe's objectives; supports allowing access to common European data spaces to stakeholders that fully comply with all relevant Union legislation; calls on the Commission together with the Member States to negotiate new rules for the global digital economy, including the prohibition of unjustified data localisation requirements; recalls the importance of advancing in e-commerce negotiations at WTO level and calls for the inclusion of ambitious and comprehensive digital trade chapters in EU free trade Agreements; supports EU's active role and participation in other international fora supporting international cooperation on digitalisation, e.g. UN, OECD, ILO and UNESCO;*

COMPROMISE AMENDMENT 8

Recitals

Covers: AMs 9-62

- A. whereas digitalisation *keeps transforming* the economy, society and citizens' daily lives, and whereas data, which is duplicated every 18 months, is at the heart of this transformation; *whereas the volume of data stored worldwide will increase from 33 ZB in 2018 to expected 175 ZB in 2025^x; whereas these processes will only accelerate in the future;*

x <https://eur-lex.europa.eu/legal->

<content/EN/TXT/PDF/?uri=CELEX:52020DC0066&from=EN>

- A a (new) whereas digitalisation is not only an economic opportunity but is also relevant for security, geopolitical resilience and strategic autonomy of the Union;*
- A b (new) whereas the EU requires the availability of interoperable, flexible, scalable, reliable IT architecture, capable of supporting the most innovative applications; whereas artificial intelligence is one of the strategic technologies for the 21st century both globally and in Europe^{1a}; whereas an adequate infrastructure is needed in the EU, in particular high-performance hardware to run applications and store data;*
- 1a https://www.europarl.europa.eu/doceo/document/TA-8-2019-0081_EN.html*
- B. whereas data is an essential resource for **sustainable** economic **recovery**, growth and **quality** job creation, and **data driven technologies could present an opportunity to reduce human exposure to harmful and hazardous working conditions** and **promote** societal progress, and a key enabler of the transition to green and climate-neutral societies **as well as in boosting Europe's and its companies' global competitiveness**;*
- B a (new) whereas the European strategy for data should be coherent both with the **SME and Industrial Strategies**, since it will be instrumental, inter alia, to achieve industrial policy objectives and will be beneficial to help European businesses, including SMEs, to successfully face the digital transition; whereas the gap between large and small/medium businesses in advanced digital technologies still exists; whereas incentivising the use of data and increasing data access and availability, together with more legal certainty, can represent a competitive advantage for micro, SMEs and start-ups in order to reap the benefits of the digital transition;*
- B c (new) whereas public sector and government-generated data at national and local level is a resource that can serve as a powerful engine for promoting economic growth and creating new jobs and that can be harnessed in the development of AI systems and data analytics, contributing to a stronger, competitive and more interconnected industry;*
- B d (new) whereas different initiatives exist to encourage female participation and diversity in ICT sector; whereas the gender gap continues to exist across all digital technology domains, with Artificial Intelligence and cybersecurity being among the domains with the largest gaps; whereas this gender gap has a concrete impact on the development of AI, reproducing and enhancing stereotypes and bias, since it has predominantly been designed by males;*
- B e (new) whereas, in its February 2020 Communication “A European Strategy for data”, the Commission specifies that ICT’s environmental footprint is estimated to be between 5% and 9% of global electricity use and more than 2% of global greenhouse gas emissions; whereas the digital sector has significant potential to contribute to reducing carbon emissions globally; whereas the 2018 Joint Research Centre study on Artificial Intelligence indicated that data centres and data transmission could represent 3 to 4% of the total electricity consumption of the Union; whereas the Commission expects a 28% increase in data centre consumption from 2018 to 2030^{1b}; whereas 47% of digital carbon emissions are due to consumer equipment (computers, smartphones, tablets, connected objects); whereas it is necessary to minimise the*

ecological footprint of digital technology and in particular the volume of electrical and electronic waste;

^{1b} <https://ec.europa.eu/digital-single-market/en/news/energy-efficient-cloud-computing-technologies-and-policies-eco-friendly-cloud-market>

- C. whereas the Union must urgently take action to reap the benefits of data by building *a competitive, innovation-friendly*, ethically sustainable, human-centric, trustworthy and secure data society *and economy* that respects human, *fundamental and labour* rights, democracy *and the rule of law and aims to build a new open and inclusive knowledge economy, in cooperation with the education system and the cultural enterprises, which ensures the right to quality education and entrepreneurship, especially among the new generations, and promotes social innovation and new business models;* *whereas investments in skills in cloud and big data can help companies that have not yet embraced technology to turn their business around; whereas companies considered to be at the forefront of technology must remain constantly updated on recent innovations in order not to lose their competitive advantage;*
- C a (new) whereas cloud markets (i.e. IaaS, PaaS, SaaS) are characterised by a high degree of market concentration, which may put start-ups, SMEs and other European actors at a competitive disadvantage in the data economy; whereas the Commission should ensure competitive markets through interoperability, portability and open infrastructures, and remain vigilant about any potential abuses of market power by dominant actors;*
- C b (new) whereas the EU Earth observation system Copernicus should serve as an example of socio-economic benefits of freely and openly available large amount of data for European citizens and businesses;*
- D. whereas all uses of personal *and mixed industrial* data should be consistent with the General Data Protection Regulation and the e-Privacy Directive; *whereas, according to Eurobarometer, the share of European citizens who would like to take a more active role in controlling the use of their personal data, including health, energy consumption and shopping habits is 46%;*
- D a (new) whereas the processing of workers' data has become increasingly complex; whereas in a growing number of contexts workers interact with technologies, applications, software, tracking devices, social media or in-vehicle devices that monitor their health, biomedical data, communications and interactions with others, as well as their level of engagement and concentration, or behaviours; whereas workers and trade unions should be more involved in the design of such data processing; whereas only Article 88 of GDPR is devoted to employment;*
- D aa (new) whereas B2B and B2G data sharing initiatives work for example towards tackling societal and environmental challenges; whereas incentives for data sharing can be inter alia fair compensation, exchange of best practices, public recognition programmes;*
- D b (new) whereas proper enforcement should be pursued in particular with respect to purpose limitation and data minimisation aspects; whereas protection of privacy should remain a priority; whereas there is non-personal or public sector data*

respectively consistent with Regulation on Free Flow of non-personal data and Open Data Directive;

D c (new) whereas health is a particularly sensitive sector for the processing of personal data and no personal information concerning a patient's health should be communicated without the patient's full and informed consent; whereas it is particularly important in the field of health to guarantee a high level of protection of the rights of individuals and the need to respect the principles of limitation and minimisation of data;

E. whereas the Union should be an active global player in setting rules *and standards* based on its values;

F. whereas at least 20% of the funds under the Recovery and Resilience Facility will be made available for digital infrastructure and capacities, providing a boost to Union's digital transition, which in turn will support the data economy;

Citations

Covers: AMs 1-8

The European Parliament,

- having regard to Article 173 of the Treaty on the Functioning of the European Union (TFEU), which concerns the competitiveness of EU industry and refers, inter alia, to actions aimed at fostering better exploitation of the industrial potential of innovation and technological development,
- having regard to Article 114 of the TFEU,
- having regard to Articles 2 and 16 of the TFEU,
- having regard the Charter of Fundamental Rights of the European Union,
- ***having regard to the communication to the Commission of 21 October 2020 entitled 'Open source software strategy 2020 – 2023' (C(2020)7149),***
- having regard to the Commission communication of 19 February 2020 entitled 'A European Strategy for Data' (COM(2020)0066) and the final report from the High-Level Expert Group on Business-to-Government Data Sharing entitled 'Towards a European strategy on business-to-government data sharing for the public interest',
- having regard to the Commission's inception impact assessment of 2 July 2020 entitled 'Legislative framework of the governance of common European data spaces',
- having regard to the Commission communication of 17 April 2020 entitled 'Guidance on Apps supporting the fight against COVID 19 pandemic in relation to data protection'¹,

¹ OJ C 124I, 17.4.2020, p. 1.

- having regard to Commission Recommendation (EU) 2020/518 of 8 April 2020 on a common Union toolbox for the use of technology and data to combat and exit from the COVID-19 crisis, in particular concerning mobile applications and the use of anonymised mobility data²,
- having regard to Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information³,
- having regard to the Commission proposal of 6 June 2018 establishing the Digital Europe programme for the period 2021-2027 (COM(2018)0434),
- having regard to the Commission communication of 25 April 2018 entitled ‘Towards a common European data space’ (COM(2018)0232) and its accompanying Commission Staff Working Document (SWD(2018)0125),
- having regard to Commission Recommendation (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information⁴,
- having regard to the Commission communication of 10 May 2017 entitled ‘Mid-Term Review on the implementation of the Digital Single Market Strategy: A Connected Digital Single Market for All’ (COM(2017)0228), and its accompanying Commission Staff Working Document (SWD(2017)0155),
- having regard to the Commission communication of 10 January 2017 entitled ‘Building a European Data Economy’ (COM(2017)0009), and its accompanying Commission Staff Working Document (SWD(2017)0002),
- having regard to the Commission communication of 14 September 2016 entitled ‘Connectivity for a Competitive Digital Single Market – towards a European Gigabit Society’ (COM(2016)0587) and its accompanying Commission Staff Working Document (SWD(2016)0300),
- having regard to the Commission communication of 19 April 2016 entitled ‘Digitising European Industry: Reaping the full benefits of a Digital Single Market’ (COM(2016)0180) and its accompanying Commission Staff Working Document (SWD(2016)0110),
- having regard to the Commission communication of 19 April 2016 entitled ‘European Cloud Initiative - Building a competitive data and knowledge economy in Europe’ (COM(2016)0178) and its accompanying Commission Staff Working Documents (SWD(2016)0106) and (SWD(2016)0107),
- having regard to the Commission communication of 6 May 2015 entitled ‘A Digital Single Market Strategy for Europe’ (COM(2015)0192) and the accompanying Commission Staff Working Document (SWD(2015)0100),
- having regard to the Commission communication of 2 July 2014 entitled ‘Towards a thriving data-driven economy’ (COM(2014)0442) and its accompanying Commission

² OJ L 114, 14.4.2020, p. 7.

³ OJ L 172, 26.6.2019, p. 56.

⁴ OJ L 134, 31.5.2018, p. 12.

Staff Working Document (SWD(2014)0214),

- having regard to the Joint European Roadmap towards lifting COVID-19 containment measures of 15 April 2020,
- ***having regard to the Member States' Joint Declaration on Building the next generation cloud for businesses and the public sector in the EU of 15 October 2020,***
- having regard to Council Conclusions of 9 June 2020 on Shaping Europe's Digital Future⁵,
- having regard to Council Conclusions of 7 June 2019 on the future of a highly digitised Europe beyond 2020: Boosting digital and economic competitiveness across the Union and digital cohesion,
- ***having regard to the Court of Justice of the European Union ruling on the Schrems II case C-311/18 of 16 July 2020,***
- having regard to its resolution of 17 April 2020 on EU coordinated action to combat the COVID-19 pandemic and its consequences⁶,
- having regard to its resolution of 12 February 2019 on a comprehensive European industrial policy on artificial intelligence and robotics⁷,
- having regard to its resolution of 1 June 2017 on digitising European industry⁸,
- having regard to its resolution of 10 March 2016 entitled 'Towards a thriving data-driven economy'⁹,
- having regard to the opinion of the European Economic and Social Committee on the Commission Communication entitled 'Building a European Data Economy' (TEN/630-EESC-2017),
- ***having regard to the findings of the Digital Economy and Society Index 2020 of 11 June 2020,***
- ***having regard to the OECD report entitled 'Building back better: a sustainable, resilient recovery after COVID-19', of 5 June 2020,***
- having regard to Rule 54 of its Rules of Procedure,
- having regard to the report of the Committee on Industry, Research and Energy (A9-0000/2020),

⁵ OJ C 202 I, 16.6.2020, p. 1.

⁶ Texts adopted, P9_TA(2020)0054.

⁷ Texts adopted, P8_TA(2019)0081.

⁸ OJ C 307, 30.8.2018, p. 163.

⁹ OJ C 50, 9.2.2018, p. 50.