



RANEP
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2021 G20 Rome Summit Interim Compliance Report

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Feedback, as always, is welcome and is kept anonymous.

We encourage readers to send comments to

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5. Digital Economy: Artificial Intelligence

“Well aware of the benefits stemming from the responsible use and development of trustworthy human-centered Artificial Intelligence (AI), we will advance the implementation of the G20 AI Principles, while considering the specific needs of MSMEs and start-ups to encourage competition and innovation.”

G20 Rome Leaders’ Declaration

Assessment

	No Compliance	Partial Compliance	Full Compliance
Argentina			+1
Australia		0	
Brazil		0	
Canada		0	
China			+1
France		0	
Germany		0	
India			+1
Indonesia		0	
Italy			+1
Japan			+1
Korea		0	
Mexico		0	
Russia		0	
Saudi Arabia	-1		
South Africa	-1		
Turkey		0	
United Kingdom			+1
United States			+1
European Union			+1
Average		+0.30 (65%)	

Background

For the first time ever, the G20 addressed the issue of trustworthy human-centered Artificial Intelligence (AI) development at the 2018 Buenos Aires Summit. The G20 leaders pledged to “continue ... work on artificial intelligence’ along with ‘emerging technologies and new business platforms’ to maximize the benefits of digitalization and emerging technologies for innovative growth and productivity.”⁶⁰⁰

In 2019 during Japan’s G20 Presidency the G20 trade and digital economy ministers held a joint meeting resulted in adoption of the G20 AI Principles drawn from the ORCD principles and recommendations⁶⁰¹. The Section 1 of the Principles covers the basic aspects of responsible stewardship of Trustworthy AI, namely: proactive engagement of stakeholders in responsible stewardship of trustworthy AI in pursuit of benefits for people and the planet; respect the rule of law, human rights and democratic values throughout the AI system lifecycle; implementation of mechanisms and safeguards such as capacity for human determination; commitment to transparency and responsible disclosure regarding AI systems; application of systematic risk management approach to each phase of the AI system lifecycle; accountability of AI actors for the proper functioning of AI systems. At the 2019 Osaka Summit the G20 leaders committed to “a human-centered

⁶⁰⁰ G20 Leaders’ declaration Building consensus for fair and sustainable development, RANEPА (Moscow). Access Date: 8 December 2021. https://www.ranepa.ru/images/media/g20/2018buenosaires/buenos_aires_leaders_declaration.pdf

⁶⁰¹ G20 AI Principles, RANEPА (Moscow). Access Date: 8 December 2021.

https://www.ranepa.ru/images/News_ciiir/Project/G20_new_downloadings/G20_AI_Principles.pdf

approach to AI and welcomed the non-binding G20 AI Principles in order to ‘foster public trust and confidence in AI technologies and fully realize their potential.’⁶⁰²

At the 2020 Riyadh Summit the G20 members reaffirmed their commitment regarding responsible use of AI technologies. In the G20 Riyadh Summit Leaders’ Declaration the G20 members pledged to “promote multi-stakeholder discussions to advance innovation and a human-centered approach to Artificial Intelligence (AI)” taking into account “the Examples of National Policies to Advance the G20 AI Principles.”⁶⁰³

In 2021, the G20 digital economy ministers reaffirmed their “willingness to implement trustworthy Artificial Intelligence (AI) and to commit to a human-centered approach ... guided by the G20 AI Principles, drawn from the OECD Recommendations on AI” and “build on the Examples of National Policies to advance the G20 AI principles.”⁶⁰⁴ The ministers also pledged to “consider the specific needs of MSMEs and start-ups, for the implementation of trustworthy AI that is human-centered, fair, transparent, robust, accountable, responsible, safe and secure and protects privacy, so as to encourage competition, innovation, diversity and inclusion.”⁶⁰⁵ The G20 digital economy ministers’ pledges were then supported by the G20 leaders and incorporated into the G20 Rome Leaders’ Declaration.⁶⁰⁶

Commitment Features

This commitment requires the G20 members to take measures aimed at the implementation of the G20 AI principles while considering the specific needs of businesses including MSMEs and start-ups.

The abbreviation “AI” stands for “artificial intelligence.” In its Recommendation of the Council on Artificial Intelligence⁶⁰⁷ that has laid the foundation for the OECD/G20 AI Principles, the OECD defines the term “AI system” as “a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments.” For better understanding of the G20 AI Principles such terms as “AI system lifecycle,” “AI actors” and “Stakeholders” regarding the AI development should be taken into consideration:

- AI system lifecycle phases involve: i) “design, data and models”; which is a context-dependent sequence encompassing planning and design, data collection and processing, as well as model building; ii) “verification and validation”; iii) “deployment”; and iv) “operation and monitoring”;
- AI actors are those who play an active role in the AI system lifecycle, including organisations and individuals that deploy or operate AI.

Stakeholders encompass all organisations and individuals involved in, or affected by, AI systems, directly or indirectly. AI actors are a subset of stakeholders.

⁶⁰² G20 Osaka Leaders’ Declaration, RANEPА (Moscow). Access Date: 8 December 2021.

https://www.ranepa.ru/images/News_ciir/Project/G20_new_downloadings/FINAL_G20_Osaka_Leaders_Declaration.pdf

⁶⁰³ G20 Riyadh Summit Leaders’ Declaration, RANEPА (Moscow). Access Date: 8 December 2021.

https://www.ranepa.ru/ciir/sfery-issledovaniy/gruppa-dvadtsati/dokumenty-gruppy-dvadtsati/saudovskoe-predsedatelstvo-2020/G20%20Riyadh%20Summit%20Leaders%20Declaration_EN.pdf

⁶⁰⁴ Declaration of G20 Digital Ministers, RANEPА (Moscow). Access Date: 8 December 2021. https://www.ranepa.ru/ciir/sfery-issledovaniy/gruppa-dvadtsati/dokumenty-gruppy-dvadtsati/italyanskoe-predsedatelstvo-2021/DECLARATION-OF-G20-DIGITAL-MINISTERS-2021_FINAL.pdf

⁶⁰⁵ Declaration of G20 Digital Ministers, RANEPА (Moscow). Access Date: 8. December 2021. https://www.ranepa.ru/ciir/sfery-issledovaniy/gruppa-dvadtsati/dokumenty-gruppy-dvadtsati/italyanskoe-predsedatelstvo-2021/DECLARATION-OF-G20-DIGITAL-MINISTERS-2021_FINAL.pdf

⁶⁰⁶ G20 Rome Leaders’ Declaration, RANEPА (Moscow). Access Date: 8 December 2021. <https://www.ranepa.ru/ciir/sfery-issledovaniy/gruppa-dvadtsati/dokumenty-gruppy-dvadtsati/italyanskoe-predsedatelstvo-2021/G20-ROME-LEADERS-DECLARATION.pdf>

⁶⁰⁷ Recommendation of the Council on Artificial Intelligence, OECD 22 May 2019. Access Date: 8 December 2021.

<https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449>

The abbreviation “MSMEs” stands for “micro, small and medium-sized enterprises.” where “small firms are generally those with fewer than 50 employees, while micro-enterprises have at most 10, or in some cases 5, workers.” Regarding medium-sized enterprises, it is worth mentioning that “the most frequent upper limit designating an SME is 250 employees.”⁶⁰⁸

Section 2 of the G20 AI Principles “National policies and international cooperation for trustworthy AI” covers suggested actions to be taken by the G20 members to ensure implementation of the G20 AI Principle.⁶⁰⁹ This list is divided into five general groups:

- Investing in AI research and development;
- Fostering a digital ecosystem for AI;
- Shaping an enabling policy environment for AI;
- Building human capacity and preparing for labor market transformation; and
- International co-operation for trustworthy AI.

Investing in AI research and development. This line of action implies long-term public and private investment in research and development, including inter-disciplinary efforts, and open datasets that are representative and respect data protection to spur innovation, improve interoperability and use of AI standards.

Regarding fostering a digital ecosystem for AI, the Principles suggest development of digital technologies and infrastructure, and mechanisms for sharing AI knowledge. Also, the Principles encourage governments to support safe, fair, legal and ethical sharing of data.

Shaping an enabling policy environment for AI means facilitation of an agile transition from the research and development stage to the deployment and operation stage that includes “a controlled environment in which AI systems can be tested, and scaled-up.” Also, there is a recommendation for governments to “review and adapt, as appropriate, their policy and regulatory frameworks and assessment mechanisms as they apply to AI systems.”⁶¹⁰

Building human capacity and preparing for labor market transformation component prioritizes closer engagement with stakeholders and better provision of skills necessary for effective usage of AI-based applications. Governments should also consider ways to ensure a fair transition for displaced workers such as training programs, direct support for displaced persons, provide better access to new opportunities in the labor market, foster entrepreneurship and productivity, and “aim to ensure that the benefits from AI are broadly and fairly shared.”

International cooperation for trustworthy AI embraces all kinds of intergovernmental cooperation aimed at progressing on “responsible stewardship of trustworthy AI.” Suggested actions include, but are not limited to: work together in the OECD and other global and regional fora to foster the sharing of AI knowledge; encourage international, cross-sectoral and open multi-stakeholder initiatives to garner long-term expertise on AI; development of multi-stakeholder, consensus-driven global technical standards for interoperable and trustworthy AI; and development, and their own use, of internationally comparable metrics to measure AI

⁶⁰⁸ Small and Medium-Sized Enterprises (SMEs), OECD Glossary of Statistical Terms, 2 December 2005. Access Date: 8 December 2021. <https://stats.oecd.org/glossary/detail.asp?ID=3123>

⁶⁰⁹ G20 AI Principles, RANEPa (Moscow). Access Date: 8 December 2021. https://www.ranepa.ru/images/News_ciir/Project/G20_new_downloadings/G20_AI_Principles.pdf

⁶¹⁰ Recommendation of the Council on Artificial Intelligence, OECD 22 May 2019. Access Date: 8 December 2021. <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449>

research, development and deployment, and gather the evidence base to assess progress in the implementation of these principles.

To ensure full implementation of the commitment, a G20 member should take strong actions in all five spheres mentioned above. Strong action here implies concrete steps that go beyond a mere declaration of intentions or participation in bilateral and multilateral discussions on the topic, and are supported with allocation of resources, relevant amendments in national legislation, building-up necessary institutional foundation, etc. Also, full compliance requires that at least some of actions taken by a G20 member consider MSMEs and start-ups as a target group.

Partial compliance in the context of the commitment means lack of strong actions in each of five key spheres, listed in the Section 2 of the G20 AI Principles. Absence of actions specifically targeting MSMEs and start-ups as a target group is also considered as partial compliance even if a G20 member takes strong actions in all key spheres. Strong action taken in at least one of the key spheres should be regarded as a partial compliance.

Absence of any strong actions taken by a G20 member means no compliance with the commitment. Weak actions that mean actions not matching requirements for strong actions mentioned above, taken in all five spheres do not serve as a precondition for partial compliance.

Scoring Guidelines

-1	The G20 member has not taken any or at least one strong action aimed at implementation of the G20 AI Principles
0	The G20 member has taken strong actions that match at least one of five key spheres but lacks strong actions in other spheres or no action that takes MSMEs and start-ups as a target group has been found
+1	The G20 member has taken strong actions in all five key spheres listed in the G20 AI Principles and some of them take MSMEs and start-ups as a target group

Compliance director and lead analyst: Alexander Ignatov

Argentina: +1

Argentina has fully complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups to encourage competition and innovation.

On 1 November 2021, the National Agency for the Promotion of Research, Technological Development and Innovation, through the Argentinean Technological Fund allocated grants for integration projects in highly qualified human resource companies aimed at strengthening scientific and technical capacities in six strategic areas, including digital transformation. There are 13 annual payments vary from ARS360,000 to ARS405,000 over three years.⁶¹¹

On 1 November 2021, the National Agency for the Promotion of Research, Technological Development and Innovation, through the Argentinean Technological Fund allocated grants for projects of technological and productive development up to ARS15 million to strengthen national productive capacity innovations in the framework of federal innovation programme.⁶¹²

⁶¹¹ RRHH AC 2021 FASE 2, National agency for the promotion of research, technological development and innovation (Buenos Aires) 1 November 2021. Translation provided by the analyst. Access Date: 13 February 2022.

<http://www.agencia.mincyt.gob.ar/frontend/agencia/convocatoria/471>

⁶¹² AR+ANR 30000 (Licencias), National agency for the promotion of research, technological development and innovation (Buenos Aires) 1 November 2021. Translation provided by the analyst. Access Date: 13 February 2022.

<http://www.agencia.mincyt.gob.ar/frontend/agencia/convocatoria/470>

On 18 November 2021, the Ministry of Productive Development has pledged ARS950 million to support the development of 68 knowledge economy hubs so that they can strengthen the structures of productive innovation that will add value to the regional economy and new knowledge sector industries. This initiative aims to guide the connection between existing information communication and technology (ICT) hubs and the local manufacturing structure to provide competitiveness-enhancing solutions.⁶¹³

On 29 November 2021, the government together with the Inter-American Development Bank launched the project “Learning Analytics, Artificial Intelligence and Behavioural Sciences for Quality Education in the Aftermath of the COVID-19 Pandemic” amounting to ARS200,000.⁶¹⁴

On 4 January 2022, the Ministry of Productive Development has allocated more than ARS12 billion over the course of 2021 to “promote knowledge economy enterprises and projects among universities, technology clusters and companies.”⁶¹⁵

On 6 January 2022, the Ministry of Productive Development has earmarked ARS200 million to support projects that solve various technological challenges in the public sector. “Programa Traccionar Economía del Conocimiento” is part of open innovation initiatives in knowledge related to the use of new technologies and information to obtain goods, provide services and/or improve processes to optimize country’s productive potential.⁶¹⁶

On 6 January 2022, the Ministry of Productive Development, through the Secretariat of Small and Medium Enterprises and Entrepreneurs approved an assistance of more than ARS88 million to be used for consulting services, creation and implementation of 19 Digital Transformation Units (UTD) to “to increase the productivity and competitiveness of SMEs [small and medium-sized enterprises] through the adoption of digital technologies and skills.” UTD should hold at least three thematic workshops on emerging technologies 4.0, such as big data, internet of things (IoT), cloud computing, data analytics, machine learning, artificial intelligence, virtual and augmented reality, additive manufacturing (3D printing) or cybersecurity.⁶¹⁷

On 6 January 2022, the Secretariat for Small and Medium Enterprises and Entrepreneurs announced that would provide ARS25 million under the Programme “ICT Manufacturing Conglomerates Competitiveness Support” to “support local manufacturing and export promotion for conglomerates made up of micro, small and medium enterprises in the software and computer systems sector.”⁶¹⁸

⁶¹³ Productive Development earmarks \$950M for the development of 68 Knowledge Economy Node projects, Ministry of Productive Development (Buenos Aires) 18 November 2021. Translation provided by the analyst. Access Date: 12 February 2022. <https://www.argentina.gob.ar/noticias/desarrollo-productivo-destina-950m-para-el-desarrollo-de-68-proyectos-de-nodos-de-la>

⁶¹⁴ Learning Analytics, Artificial Intelligence and Behavioral Sciences for Educational Quality in the post-pandemic of COVID-19, Inter-American Development Bank (Argentina) 29 November 2021. Translation provided by the analyst. Access Date: 13 February 2022. <https://www.iadb.org/en/project/AR-T1251>

⁶¹⁵ Productive Development earmarked more than \$12 billion to promote Knowledge Economy enterprises and projects, Ministry of Productive Development (Buenos Aires) 4 January 2022. Translation provided by the analyst. Access Date: 13 February 2022. <https://www.argentina.gob.ar/noticias/desarrollo-productivo-destino-mas-de-12-mil-millones-para-promover-empresas-y-proyectos-de>

⁶¹⁶ Productive Development allocates \$200 million to promote linkage projects between state and private companies, Ministry of Productive Development (Buenos Aires) 6 January 2022. Translation provided by the analyst. Access Date: 13 February 2022. <https://www.argentina.gob.ar/noticias/desarrollo-productivo-destina-200-millones-para-impulsar-proyectos-de-vinculacion-entre>

⁶¹⁷ The Government approved the creation of 19 Digital Transformation Units to increase the productivity of SMEs, productivity of SMEs, Ministry of Productive Development (Buenos Aires) 6 January 2022. Translation provided by the analyst. Access Date: 13 February 2022. <https://www.argentina.gob.ar/noticias/el-gobierno-aprobo-la-creacion-de-19-unidades-de-transformacion-digital-para-aumentar-la>

⁶¹⁸ Productive Development extends the call to promote exports of SME clusters in the ICT and software sector, Ministry of Productive Development (Buenos Aires) 6 January 2022. Translation provided by the analyst. Access Date: 13 February 2022. <https://www.argentina.gob.ar/noticias/desarrollo-productivo-extiende-la-convocatoria-para-promover-las-exportaciones-de>

On 8 January 2022, the Ministry of Industrial Development launches “production of the future” in Technopolis where attendees will be able to play interactive games, observe satellite, advanced technology innovations: nanosatellite for using the internet of things, a robot arm industry 4.0 and a siloboom sensor.⁶¹⁹

On 13 January 2022, President Alberto Fernandez and Minister of Productive Development Matias Kulfas took part in the virtual launch of the First National Mini Satellite General San Martin, which “will provide internet access to rural producers throughout the country.”⁶²⁰ The Ministry of Productive Development contributed almost ARS50 million for an initiative which involves building the smallest satellites in order to create a constellation of Internet communications providing full coverage of the entire region and stimulate the growth of agricultural production in the various countries.

On 17 January 2022, the Economic and Social Council has completed the selection process of the “Call for Innovative Projects for Future Education and Work” initiatives. A total of 20 projects will access ARS150.7 million to bridge the digital divide, develop technology skills to enhance employment opportunities in vulnerable sectors, lay the foundation for technology training, train teachers in computer science and build a system to monitor technological change. The projects were selected in four areas: 1) Technology 4.0 training; 2) Digital education for vulnerable populations; 3) Training in 4.0 technologies; 4) Monitoring of the jobs of the future.⁶²¹

On 26 January 2022, President Fernández headed the presentation of the Digital Inclusion and Educational Transformation Programme Santa Fe + Connected to “expand and modernize the infrastructure of the connectivity system and guarantee a quality internet service for the Santa Fe, with the objective of promoting digital inclusion, educational transformation, the reduction of technological gaps, and greater efficiency in the provision of public services in that jurisdiction.” This initiative will be financed by Development Bank of Latin America and the Province Santa Fe for ARS124.6 million.⁶²²

On 11 February 2022, Ministry of Science, Technology and Innovation published on its official website about funding of seven new inter-agency projects on strategic issues. The ministry will allocate ARS100 million to Biosensor platform for the diagnosis of infectious diseases, Inter-institutional research and development to generate high-impact capabilities in life sciences research, etc.⁶²³

On 23 February 2022, President Fernández has announced the presentation of the investment plan for around ARS15 billion for innovation initiatives in SMEs to boost the benefits of the Knowledge Economy Law.⁶²⁴

On 11 March 2022, under the Secretariat of Scientific and Technological Articulation the new Federal Programmes “Building Science” and “Equipping Science” were launched to increase infrastructure and

⁶¹⁹ Productive Development inaugurated the "Producing the Future" space in Tecnópolis, Ministry of Productive Development (Buenos Aires) 8 January 2022. Translation provided by the analyst. Access Date: 13 February 2022.

<https://www.argentina.gob.ar/noticias/desarrollo-productivo-inauguro-en-tecnopolis-el-espacio-produciendo-futuro>

⁶²⁰ "This is sovereignty," said the President after the launch of Argentina's first miniature satellite, Ministry of Productive Development (Buenos Aires) 13 January 2022. Translation provided by DeepL Translate. Access Date: 13 February 2022.

<https://www.argentina.gob.ar/noticias/esto-es-soberania-dijo-el-presidente-luego-del-lanzamiento-del-primer-satelite-miniatura>
⁶²¹ Innovative projects for the education and work of the future: 20 initiatives will receive 150 million pesos, Economic and Social Council (Buenos Aires) 17 January 2022. Translation provided by DeepL Translate. 13 February 2022.

<https://www.argentina.gob.ar/noticias/proyectos-innovadores-para-la-educacion-y-el-trabajo-del-futuro-20-iniciativas-recibiran>

⁶²² 124.6 million investments: the president highlighted "inclusive development in Argentina" when presenting the Santa Fe + Conectada education programme, Casa Rosada Presidencia (Buenos Aires) 26 January 2022. Translation provided by DeepL Translate. Access Date: 13 February 2022. <https://www.caserosada.gob.ar/slider-principal/48409-inversion-de-124-6-millones-de-dolares-el-presidente-destaco-el-desarrollo-inclusivo-en-la-argentina-al-presentar-el-programa-educativo-santa-fe-conectada>

⁶²³ 7 new Inter-institutional Projects on Strategic Themes to be funded, Ministry of Science, Technology and Innovation (Buenos Aires) 11 February 2022. Translation provided by DeepL Translate. Access Date: 13 February 2022.

<https://www.argentina.gob.ar/noticias/se-financiaran-7-nuevos-proyectos-interinstitucionales-en-temas-estrategicos>

⁶²⁴ More support for Argentine science, Ministry of Science, Technology and Innovation (Buenos Aires) 23 February 2022.

Translation provided by DeepL Translate. Access Date: 13 March 2022. <https://www.argentina.gob.ar/noticias/mas-apoyo-para-la-ciencia-argentina-la-agencia-idi-anuncio-15-mil-millones-de-inversion>

equipment to boost research. The objectives of both programmes include encouraging researchers to settle in the provinces; promoting the federalization of the scientific and technological system through the production, dissemination and appropriation of scientific and technological knowledge throughout the national territory; and prioritising geographic areas of lesser relative development, reducing existing asymmetries between jurisdictions and regions of the country.⁶²⁵

On 11 April 2022, Minister of Economy Martín Guzmán announced to invest more than USD500,000 to the construction of the nanotechnology production area. This financing will allow to promote exports; to trade with regional and non-traditional markets such as Iran, Holland, Saudi Arabia; and to double the company's workforce.⁶²⁶

On 4 May 2022, Minister Guzmán confirmed that the Science and Technology function would have an investment of ARS18,600,000 that equals to 0.31 per cent of the GDP. Investments are aimed to create knowledge that allows critical sectors for adding value and foreign exchange to have a more dynamic pattern in industry and agro-industry, energy, software.⁶²⁷

On 11 May 2022, Minister of Science, Technology and Innovation Daniel Filmus and President of the Empretec Foundation Adrián Lebendiker signed a cooperation and collaboration framework agreement aimed at strengthening the capacities of scientific-technological enterprises, science and technology-based companies, technology service centres and innovative SMEs. The agreement allows to strengthen the capacities of different projects and enterprises and promotes science and technology-based companies for the production of goods and services based on knowledge with the possibility of generating quality employment and exports with high added value.⁶²⁸

Argentina has taken strong in all five groups of the G20 AI Principle. The government allocated grants for integration projects in highly qualified human resource companies aimed at strengthening scientific and technical capacities in digital transformation, for development of technology skills to enhance employment opportunities in vulnerable sectors and lay the foundation for technology training in computer science and for promotion the development of computer products and solutions to support local manufacturing and enterprises.

Thus, Argentina receives a score of +1.

Analyst: Elena Alekseeva

Australia: 0

Australia has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 18 March 2022, the government announced that it has opened consultation on digital economy regulation settings in Australia. The government is seeking feedback on regulatory frameworks, particularly in relation to automated decision making and artificial intelligence (AI). Among the main issues – uncertainty and complexity

⁶²⁵ New Federal Programmes "Building Science" and "Equipping Science", Ministry of Science, Technology and Innovation (Buenos Aires) 11 March 2022. Access Date: 17 June 2022. <https://www.argentina.gob.ar/noticias/nuevos-programas-federales-construir-ciencia-y-equipar-ciencia>

⁶²⁶ Medical supply SME announces USD 500,000 investment in nanotechnology development, Ministry of Economy (Buenos Aires) 11 April 2022. Access Date: 17 June 2022. <https://www.argentina.gob.ar/noticias/pyme-de-insumos-medicos-le-anuncio-guzman-inversiones-por-usd-500000-para-el-desarrollo-de>

⁶²⁷ Daniel Filmus and Martín Guzmán announced an increase in the Science Budget, Ministry of Science, Technology and Innovation (Buenos Aires) 4 May 2022. Access Date: 17 June 2022. <https://www.argentina.gob.ar/noticias/daniel-filmus-y-martin-guzman-anunciaron-un-aumento-en-el-presupuesto-de-ciencia>

⁶²⁸ The Ministry of Science signed an agreement with the Banco Nación to strengthen the capacities of scientific-technological undertakings, Ministry of Science, Technology and Innovation (Buenos Aires) 11 May 2022. Access Date: 17 June 2022. <https://www.argentina.gob.ar/noticias/el-ministerio-de-ciencia-firmo-un-convenio-con-el-banco-nacion-para-fortalecer-las>

of AI-based systems and relative regulations; growing international competition; growing need for extra actions and regulations ensuring public trust and confidence; eradication of bias and discrimination; and privacy. The consultations are said to be completed on 22 April 2022.⁶²⁹

On 19 April 2022, the Federal Court has made a decision on the AI inventorship case. The Court has decided that an AI system cannot be recognized as an inventor following Australia's patent rulings thus establishing a remarkable law practice.⁶³⁰

Australia has taken strong actions in all areas, but did not specifically supported small and medium-sized enterprises.

Thus, Australia receives a score of 0.

Analyst: Alexander Ignatov

Brazil: 0

Brazil has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 24 November 2021, Minister of Science, Technology and Innovation Marcos Pontes participated in the launch of the Joint Parliamentary Front for Artificial Intelligence (Frente). Deputies and senators participated in the launching ceremony of the Frente, whose mission will be to debate and forward within the National Congress agendas of interest to the artificial intelligence (AI) sector in the country. The Ministry of Science, Technology and Innovation (MCTI) is responsible for several policies and initiatives aimed at the sector.⁶³¹

On 10 January 2022, the government series of free courses offered by the Facti foundation in the area of Information and Communication Technology began. QualiFacti de Verão is an initiative that is part of the "MCTI Futuro" program of the Ministry of Science, Technology and Innovation, which is aimed at technological training throughout the country. 8 courses will be offered in January on the following topics: Information Security, Artificial Intelligence, Internet of Things, Cloud and Big Data. According to the foundation, the summer courses aim to provide students with the opportunity to combine the vacation period with new learning.⁶³²

On 8 February 2022, the Secretariat of Financial and Project Structures Laboratory of Machine Learning in Finance and Organizations at the University of Brasília entered into a partnership to facilitate fundraising outside the budget for research and development projects in Brazil. The goal is to use data science and Artificial Intelligence and create a tool that will facilitate the search for funding sources for science and technology projects around the world.⁶³³

On 22 February 2022, the MCTI Futuro Program opened enrollment for several free training courses in the area of technology, including AI. The program will offer 70,000 places through MCTI partnerships with several

⁶²⁹ Australia: Digital economy regulation settings, Lexology (London) 19 April 2022. Access Date: 10 June 2022.

<https://www.lexology.com/library/detail.aspx?g=9d830bfa-46f6-4b36-98a4-7f4323511e59>

⁶³⁰ The Full Federal Court overturns AI inventorship in Australia, Lexology (London) 19 April 2022. Access Date: 10 June 2022.

<https://www.lexology.com/library/detail.aspx?g=3dcb2239-ce64-4a12-9a3a-32d4a8deef80>

⁶³¹ Parliamentary front focused on artificial intelligence launched, Brazilian Government (Brasilia) 24 November 2021. Translation provided by the analyst. Access Date: 4 April 2022. <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2021/11/lancada-frente-parlamentar-voltada-para-inteligencia-artificial>.

⁶³² MCTI initiative offers summer courses in the area of Information and Communication Technology, Brazilian Government (Brasilia) 10 January 2022. Translation provided by the analyst. Access Date: 4 April 2022. <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2022/01/iniciativa-do-mcti-oferece-cursos-de-verao-na-area-de-tecnologia-da-informacao-e-comunicacao>.

⁶³³ Ministry will use data science and artificial intelligence to bring project investments closer, Brazilian Government (Brasilia) 8 February 2022. Translation provided by the analyst. Access Date: 4 April 2022. <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2022/02/ministerio-vai-usar-ciencia-de-dados-e-inteligencia-artificial-para-aproximar-investimentos-de-projetos>.

private institutions. The objective of MCTI Futuro is to promote large-scale training of researchers and students in emerging technologies.⁶³⁴

On 2 March 2022, Minister Pontes participated in the launch of studies carried out by Huawei, Intel and the Federal Institute of Ceará, on artificial intelligence and talent development during the Mobile World Congress. The works entitled IA Whitepaper Brazil and 5G+ Pan-Industry Talent Development bring trends and challenges of these markets in the country.⁶³⁵

On 23 March 2022, the government launched a public notice to select Artificial Intelligence innovation projects in startups, along the lines of themes: Agro, Health, Industry, Smart Cities and Tourism. In all, there will be BRL80 million in economic subsidy resources, which do not need to be returned to the Federal Government.⁶³⁶

Brazil has taken strong actions in the three (out of five) areas and also specifically supported SMEs.

Thus, Brazil receives a score of 0.

Analyst: Irina Popova

Canada: 0

Canada has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 4 November 2021, Innovative Solutions Canada started a new program led by the Royal Canadian Mounted Police (RCMP). Increasingly people who engage in illegal behavior use sophisticated digital technologies including different methods of encryption in order to evade prosecution. The RCMP is looking for an artificial intelligence decryption system that would be able to process the captured data files and generate lists of specific words to analyze and gain access to the encrypted materials⁶³⁷.

On 11 November 2021, François-Philippe Champagne, Minister of Innovation, Science and Industry, joined international AI experts, with official representatives from eighteen member countries of the Global Partnership on Artificial Intelligence (GPAI) and the European Union, for the second annual plenary of the GPAI in Paris, France. During the opening ceremony, Minister Champagne focused on the positive changes that the GPAI has made in its first year under Canada's chair. Working groups have explored the best way to harness AI to solve complex challenges affecting the world, such as those relating to the COVID-19 pandemic, foster more inclusive economic growth or improve working conditions anywhere on the planet. The projects completed in 2021 will serve as the foundation for the next phase of the GPAI's work.⁶³⁸

⁶³⁴ MCTI Futuro program will offer 70,000 free training spots in the technology area, Brazilian Government (Brasilia) 2 March 2022. Translation provided by the analyst. Access Date: 4 April 2022. <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2022/02/programa-mcti-futuro-vai-oferecer-70-mil-vagas-de-capacitacao-gratuita-na-area-de-tecnologia>

⁶³⁵ Minister talks about Artificial Intelligence at Mobile World Congress in Barcelona, Brazilian Government (Brasilia) 22 February 2022. Translation provided by the analyst. Access Date: 4 April 2022. <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2022/03/ministro-fala-sobre-inteligencia-artificial-no-mobile-world-congress-em-barcelona>.

⁶³⁶ Federal Government launches public selection of R\$ 80 million for innovation in Artificial Intelligence in startups in the country, Brazilian Government (Brasilia) 23 March 2022. Translation provided by the analyst. Access Date: 4 April 2022. <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2022/03/governo-federal-lanca-selecao-publica-de-r-80-milhoes-para-inovacao-em-inteligencia-artificial-em-startups-no-pais>.

⁶³⁷ Government of Canada invites small businesses to develop an artificial intelligence decryption service, Government of Canada (Ottawa) 4 November 2021. Access Date: 20 February 2022 <https://www.canada.ca/en/innovation-science-economic-development/news/2021/11/government-of-canada-invites-small-businesses-to-develop-an-artificial-intelligence-decryption-service.html>

⁶³⁸ Minister Champagne attends the Global Partnership on Artificial Intelligence Paris Summit, Government of Canada (Ottawa) 11 November 2021. Access Date: 20 February 2022 <https://www.canada.ca/en/innovation-science-economic-development/news/2021/11/minister-champagne-attends-the-global-partnership-on-artificial-intelligence-paris-summit.html>

On 19 January 2022, Minister of Official Language and Minister responsible for Atlantic Canada Opportunities Agency Act Ginette Petitpas Taylor, along with Member of Parliament for Fredericton Jenica Atwin and CEO of the New Brunswick Innovation Foundation (NBIF) Jeff White, officially launched the NBIF's new Artificial Intelligence Fund. The AI Fund features a suite of programs designed to accelerate artificial intelligence (AI) applied research capacity in New Brunswick and will focus on building a strong AI talent pool, engaging industry and supporting technology adoption of AI by companies.⁶³⁹

On 11 February 2022, Minister Champagne announced the 29 organizations across the country that are receiving CAD80 million in funding in the third phase of the CanCode program. This investment will enable these organizations to offer 3 million training opportunities for students, from kindergarten to Grade 12, to learn digital skills, like coding, data analytics and digital content development.⁶⁴⁰

On 28 February 2022, Minister Champagne announced the Semiconductor Challenge Callout, a fund of CAD150 million through the Strategic Innovation Fund to make targeted investments to build on Canada's domestic strengths associated with the development and supply of semiconductors. He also announced CAD90 million in funding for the National Research Council of Canada's Canadian Photonics Fabrication Centre.⁶⁴¹

On 17 February 2022, François-Philippe Champagne, Minister of Innovation, Science and Industry, announced that the National Cybersecurity Consortium will receive up to CAD80 million to lead the Cyber Security Innovation Network. This funding will help foster a strong national cyber security ecosystem in Canada and position the country as a global leader in cyber security.⁶⁴²

On 28 April 2022, Minister Champagne announced that Canada is joining trusted partners in endorsing the Declaration for the Future of the Internet. By signing the declaration, Canada is committing to work with like-minded partners to affirm and promote the shared vision of an open, trusted and secure Internet that fosters democratic values and respect for human rights. Partners in this declaration are inviting others who share this vision to join in working together, with civil society and other stakeholders, to affirm guiding principles for the future of the global Internet.⁶⁴³

On 20 May 2022, Minister of Northern Affairs, Minister for PrairiesCan and Minister for CanNor Daniel Vandal announced that the government is investing nearly CAD128,000 to support the Yukon's innovation sector as it continues to strengthen and grow. This announcement aligns with Canadian Innovation Week, an opportunity to celebrate, recognize and support ingenuity across the country. This funding, delivered by CanNor, supports three initiatives in Whitehorse. Though each project serves a different purpose, they all exemplify ingenuity and creativity within their fields. The impacts of these projects range from creating modular

⁶³⁹ New Brunswick Innovation Foundation Launches Artificial Intelligence Fund, Government of Canada (Fredericton) 19 January 2022. Access Date: 20 February 2022 <https://www.canada.ca/en/atlantic-canada-opportunities/news/2022/01/new-brunswick-innovation-foundation-launches-artificial-intelligence-fund.html>

⁶⁴⁰ Government of Canada announces funding recipients that will help prepare millions of students for the digital world, Government of Canada (Ottawa) 11 February 2022. Access Date: 16 June 2022 <https://www.canada.ca/en/innovation-science-economic-development/news/2022/02/government-of-canada-announces-funding-recipients-that-will-help-prepare-millions-of-students-for-the-digital-world.html>

⁶⁴¹ Government of Canada announces significant investment in the Canadian semiconductor and photonics industries, Government of Canada (Ottawa) 28 February 2022. Access Date: 16 June 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2022/02/government-of-canada-announces-significant-investment-in-the-canadian-semiconductor-and-photonics-industries.html>

⁶⁴² Government of Canada announces next phase to strengthen Cyber Security Innovation Network, Government of Canada (Ottawa) 17 February 2022. Access Date: 16 June 2022 <https://www.canada.ca/en/innovation-science-economic-development/news/2022/02/government-of-canada-announces-next-phase-to-strengthen-cyber-security-innovation-network.html>

⁶⁴³ Government of Canada endorses the Declaration for the Future of the Internet, Government of Canada (Ottawa) 28 April 2022. Access Date: 16 June 2022 <https://www.canada.ca/en/innovation-science-economic-development/news/2022/04/government-of-canada-endorses-the-declaration-for-the-future-of-the-internet.html>

communications shelters, to supporting businesses interested in adopting artificial intelligence, to advancing physical and mental health, reconciliation and inclusivity.⁶⁴⁴

On 16 June 2022, Minister Champagne, with Minister of Justice and Attorney General David Lametti, introduced the Digital Charter Implementation Act, 2022, which will significantly strengthen Canada's private sector privacy law, create new rules for the responsible development and use of artificial intelligence, and continue advancing the implementation of Canada's Digital Charter. As such, the act will include three proposed acts: the Consumer Privacy Protection Act, the Personal Information and Data Protection Tribunal Act, and the Artificial Intelligence and Data Act. The proposed Artificial Intelligence and Data Act will introduce new rules to strengthen Canadians' trust in the development and deployment of AI systems.⁶⁴⁵

Canada has taken strong actions in one out of five key spheres listed in the G20 AI Principles. However, no action targeted micro, small and medium sized enterprises and start-ups.

Thus, Canada receives a score of 0.

Analyst: Nikita Shilikov

China: +1

China has fully complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups (MSMEs).

On 14 December 2021, the Foreign Affairs Ministry published the Position Paper on Regulating Military Applications of Artificial Intelligence (AI). The document reveals the principles China aims to adhere in military applications of AI in terms of strategic security, military policies, law and ethics, technological security, research and development, risk management and control, rules-making, and international cooperation.⁶⁴⁶

On 24 January 2022, Director of the Bureau of the small and medium enterprises of the Ministry of Industry and Information Technology (MIIT) Liang Zhifeng announced the MIIT would offer guidance and support to small and medium-sized enterprises (SMEs) to accelerate the process of digital industrialization and industrial digital through innovation and entrepreneurship. He also pledged to cultivate a group of innovative SMEs to enter the high-end digital industries including the metaverse, blockchain, artificial intelligence and other emerging fields.⁶⁴⁷

China has taken strong actions in all five key spheres listed in the G20 AI Principles and some of them take MSMEs and start-ups as a target group

Thus, China receives a score of +1.

Analyst: Andrey Shelepov

⁶⁴⁴ Government of Canada invests to support innovation in the Yukon, Government of Canada (Ottawa) 20 May 2022. Access Date: 16 June 2022 <https://www.canada.ca/en/northern-economic-development/news/2022/05/government-of-canada-invests-to-support-innovation-in-the-yukon.html>

⁶⁴⁵ New laws to strengthen Canadians' privacy protection and trust in the digital economy, Government of Canada (Ottawa) 16 June 2022. Access Date: 16 June 2022 <https://www.canada.ca/en/innovation-science-economic-development/news/2022/06/new-laws-to-strengthen-canadians-privacy-protection-and-trust-in-the-digital-economy.html>

⁶⁴⁶ Position Paper of the People's Republic of China on Regulating Military Applications of Artificial Intelligence (AI), Ministry of Foreign Affairs of the People's Republic of China (Beijing) 14 December 2021. Access Date: 1 April 2022. https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/wjzcs/202112/t20211214_10469512.html

⁶⁴⁷ China to cultivate SMEs engaging in metaverse: MIIT, Global Times (Beijing) 24 January 2022. Access Date: 1 April 2022. <https://www.globaltimes.cn/page/202201/1246737.shtml>

France: 0

France has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 8 November 2021, Minister of Higher Education, Research and Innovation Frédérique Vidal and the Secretary of State in charge of the Digital Transition and Electronic Communications Cédric O, presented phase 2 of the national strategy for Artificial Intelligence (AI) which will mobilize EUR2 billion in public-private co-financing. The public contribution to the strategy is mainly financed by the Investments for the Future Program (EUR577 million) and France 2030 (EUR700 million). The government launched a national strategy for Artificial Intelligence in 2018. The national strategy for artificial intelligence has laid the foundations for a long-term structuring of the AI ecosystem, at all stages of technological development: research, development and innovations, applications, placing on the market and intersectoral distribution, support and supervision of deployment.⁶⁴⁸

France has taken an effort to increase investments in AI-related technologies. However, no action matching other four key spheres under the G20 framework has been found within the monitoring period.

Thus, France receives a score of 0.

Analyst: Nikita Shilikov

Germany: 0

Germany has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

From 29 March to 1 April 2022, the Federal Ministry for Economic Cooperation and Development co-organized a series of meetings in Cape Town under the first Africa-Asia AI Policy Maker Network. The programme has focused on the promotion of local AI innovation, AI ethics and how AI can contribute to the achievement of the SDGs. The event formed part of “FAIR Forward – Artificial Intelligence for All” (FAIR Forward), a project being implemented by the German government.⁶⁴⁹

Germany has taken steps in some areas covered by the commitment, including international cooperation for trustworthy AI.

Thus, Germany receives a score of 0.

Analyst: Andrey Sheleпов

India: +1

India has fully complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 30 November 2021, the National Association of Software and Services Companies, the Ministry of Electronics and Information Technology and Government of Andhra Pradesh inaugurated the Centre of Excellence on Internet of Things (IoT) and artificial intelligence (AI) at Andhra University Campus in Visakhapatnam. The Centre is aimed at promoting innovation in emerging technologies of IoT, AI and robotics. It would provide open labs and infrastructure to create and validate solutions from design to prototype to democratise innovation, and support entrepreneurship as an incubation facility for peer-to-peer learning.

⁶⁴⁸ Artificial intelligence, Government of France (Paris) 8 November 2021. Translation provided by Google Translate. Access Date: 20 February 2022 <https://www.gouvernement.fr/intelligence-artificielle>

⁶⁴⁹ Launching the Africa-Asia Policy Maker Network on Responsible AI, Research ICT Africa (Cape Town) 16 May 2022. Access Date: 29 August 2022. <https://researchictafrica.net/2022/05/16/launching-the-africa-asia-policy-maker-network-on-responsible/>

Start-ups in the state are also expected to benefit through the launch of the new Centre with newer opportunities in areas of their development, mentorship, funding, and the adoption of their solutions in the industry.⁶⁵⁰

On 3 December 2021, Minister for Electronics and Information Technology, Railways and Communications Ashwini Vaishnaw felicitated 20 projects offering solutions to various social and economic problems using Artificial Intelligence for Responsible AI for Youth, a national program for government schools.⁶⁵¹

On 11 February 2022, Principal Scientific Adviser to the government of India K Vijay Raghavan launched “Swarajability,” an AI-based job platform for people with disabilities to help them seek job opportunities in the tech sector.⁶⁵²

On 9 March 2022, Minister of Road Transport and Highways Nitin Gadkari mentioned his ministry would integrate AI-grounded technology in the government systems aimed at improving mobility and strengthening road safety.⁶⁵³

On 17 March 2022, an Artificial Intelligence and Robotics Technology Park (ARTPARK) was launched at the Indian Institute of Science (IISc) in Bengaluru. It is a joint initiative of the IISc and AI Foundry set up using a grant from the Department of Science and Technology of the Indian Government. The ARTPARK’s aim is to create a globally leading AI and robotics innovation ecosystem in India.⁶⁵⁴

India has taken strong actions in all five key spheres listed in the G20 AI Principles and some of them take MSMEs and start-ups as a target group

Thus, India receives a score of +1.

Analyst: Andrey Shelepov

Indonesia: 0

Indonesia has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises (MSMEs) and start-ups.

On 19 January 2021, the government unveiled a draft presidential regulation, derived from the recently passed Job Creation Law, that offers leeway for foreign investment in tech-based start-ups in special economic zones. The regulation will further ease the process for start-ups to hire foreign workers without being required to have a government-approved plan to use foreign employees, which is included in an article of the jobs law.⁶⁵⁵

⁶⁵⁰ MeitY, NASSCOM, Govt of Andhra Pradesh launch 'CoE of IoT & AI' in Vizag, INDIAai (New Delhi) 3 December 2021. Access Date: 1 April 2022. <https://indiaai.gov.in/news/meity-nasscom-govt-of-andhra-pradesh-launch-coe-of-iot-ai-in-vizag>.

⁶⁵¹ IT Minister felicitates 20 AI Projects from govt schools, INDIAai (New Delhi) 3 December 2021. Access Date: 1 April 2022. <https://indiaai.gov.in/news/it-minister-felicitates-20-ai-projects-from-govt-schools>.

⁶⁵² India Launches "Swarajability" an AI-based platform for the disabled jobseekers,, INDIAai (New Delhi) 11 February 2022. Access Date: 1 April 2022. <https://indiaai.gov.in/news/india-launches-swarajability-an-ai-based-platform-for-the-disabled-jobseekers>.

⁶⁵³ Minister of Road Transport and Highways, Nitin Gadkari to strengthen road safety with AI, INDIAai (New Delhi) 9 March 2022. Access Date: 1 April 2022. <https://indiaai.gov.in/news/minister-of-road-transport-and-highways-nitin-gadkari-to-strengthen-road-safety-with-ai>.

⁶⁵⁴ Govt launched AI & Robotics Technology Park at IISc, boost to R&D, INDIAai (New Delhi) 17 March 2022. Access Date: 1 April 2022. <https://indiaai.gov.in/news/govt-launched-ai-robotics-technology-park-at-iisc-boost-to-r-d>.

⁶⁵⁵ Indonesia to relax foreign investment rules for local start-ups, the Jakarta Post (Jakarta) 19 January 2021. Access Date: 31 March 2022. <https://www.thejakartapost.com/news/2021/01/19/govt-eyes-foreign-investment-in-indonesian-start-ups-sez-through-new-draft-rules.html>

On 29 November 2021, the Aeronautics and Space Research Organisation of the National Research and Innovation Agency developed a platform that used artificial intelligence (AI) to monitor natural resources and the environment. The use of AI to monitor natural resources and the environment is still in the development phase.⁶⁵⁶

On 14 January 2022, the government issued Regulation 7 of 2021 (GR 7/2021) implementing regulation of the Omnibus Law to provide greater protection and empowerment to Indonesia's cooperatives, micro, small, and medium-sized enterprises (MSMEs). GR 7/2021 provides several facilities to encourage the growth of local MSMEs, such as mandating regional governments to provide at least 30 per cent of the total land area for commercial areas for the promotion and development of MSMEs. In addition, the regulation has made it easier for MSMEs to obtain a business license, tax reductions, and reliefs, and are exempt from paying the provincial or the regency/city minimum wage.⁶⁵⁷

On 27 January 2022, the Directorate General of Higher Education, Research, and Technology of the Ministry of Education, Culture, Research, and Technology worked with a tech company to develop Indonesian digital talents in the field of AI. The cooperation is stated in a memorandum of agreement signed by both parties through a virtual ceremony. This collaboration is an effort made by the Directorate General of Higher Education to accelerate the growth of AI talent in Indonesia. The scope of the collaboration includes improving the competence of human resources at Indonesian universities, through various activities such as AI skills training for lecturers and students, AI curriculum development in universities, translation workshops and research discussions, as well as development and support for the AI startup ecosystem.⁶⁵⁸

On 9 February 2022, the government announced start of drafting a regulation to support the improvement of the mass media ecosystem and empower the community. The attempt is a response to the development of the media industry ecosystem and digital technologies, such as augmented reality, virtual reality, metaverse, artificial intelligence, and 5G.⁶⁵⁹

Indonesia has taken steps in some areas covered by the commitment, including investing in AI research and development, fostering a digital ecosystem, and building human capacity and preparing for labor market transformation.

Thus, Indonesia receives a score of 0.

Analyst: Pavel Doronin

Italy: +1

Italy has fully complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 24 November 2021, the Government presented the Strategic Programme on Artificial Intelligence for 2022 – 2024. The Program outlines twenty-four policies to be implemented over the next three years including

⁶⁵⁶ Indonesia Develops AI-Based Platform for Natural Resource Monitoring, OpenGov Asia (Singapore) 29 November 2021. Access Date: 31 March 2022. <https://opengovasia.com/indonesia-develops-ai-based-platform-for-natural-resource-monitoring/>

⁶⁵⁷ Indonesia's Omnibus Law: New Protection and Empowerment Measures for Small Businesses, ASEAN Briefing (Kowloon) 14 January 2022. Access Date: 31 March 2022. <https://www.aseanbriefing.com/news/indonesias-omnibus-law-new-protection-and-empowerment-measures-for-small-businesses/>

⁶⁵⁸ Indonesia Developing High-Skilled AI Talent, OpenGov Asia (Singapore) 27 January 2022. Access Date: 31 March 2022. <https://opengovasia.com/indonesia-developing-high-skilled-ai-talent/>

⁶⁵⁹ Govt Preparing Regulation to Improve Indonesia's Media Ecosystem: Minister, Medcom.id (Jakarta) 9 February 2022. Access Date: 31 March 2022. <https://www.medcom.id/english/national/akW9V13N-govt-preparing-regulation-to-improve-indonesia-s-media-ecosystem-minister>

promotion of necessary skills and competencies, support for enterprises in AI-based products certification, promotion of AI startups, etc.⁶⁶⁰

On 6 December 2021 the Ministry of Economic Development and Ministry of Economy and Finance approved the Decree that earmarked EUR45 million to promote R&D and innovation on artificial intelligence, blockchain and IoT's applications. The initiative focuses on these strategic sectors: industry and manufacturing; education; agribusiness; health care; environment and infrastructure; culture and tourism; logistics and mobility; security and information technology; aerospace.⁶⁶¹

On 9 March 2022, the Data Protection Authority published the statement it had submitted to the Chamber of Deputies of the Italian Parliament concerning the European Commission's Proposal for a Regulation on Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act). In particular, the Garante noted the interrelation between artificial intelligence and data protection and highlighted that, at the moment, the only legislation currently in force in the field of artificial intelligence (AI) is, in fact, the data protection legislation.⁶⁶²

On 24 May 2022, the National Cybersecurity Strategy 2022-2026 was published. The Strategy contains 82 measures on three major issue areas: protection of national strategic assets; response to national cyber threats, incidents and crises; and development of digital technologies, research, and industrial competitiveness. The Strategy provides for cooperation with other European countries on AI research within the framework of the Digital Europe 2021-2027 budget, amounting to EUR7.59 billion; utilization of "the most recent artificial intelligence and machine learning technologies" to promote cybersecurity; the establishment of National Cybersecurity Campus to, inter alia, carry out AI research.⁶⁶³

Italy took action in all five spheres listed in the G20 AI Principles and also targeted specific needs of micro, small and medium-sized enterprises and start-ups.

Thus, Italy receives a score of +1.

Analyst: Andrei Sakharov

Japan: +1

Japan has fully complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 6 July 2021, the Ministry of Economy, Trade and Industry (METI) and the European Commission's Directorate-General for Communications Networks, Content and Technology held a EU-Japan workshop on monitoring artificial intelligence (AI) systems. Government agencies, companies, and experts had discussions based on use cases of monitoring and evaluation of AI systems after the start of operations.⁶⁶⁴

On 18 October 2021, Japan was set to launch GBP637 million worth tech fund that would accelerate research and development of advanced technologies and reinforce economic security. The government is planning to launch the fund next year and investments will be focused on quantum technology, robotics, AI and biotechnology. The fund will be managed by the country's New Energy and Industrial Technology

⁶⁶⁰ Strategic Programme on Artificial Intelligence, Ministro per l'innovazione tecnologica e la transizione digitale (Rome) 24 November 2021. Access Date: 29 August 2022. <https://assets.innovazione.gov.it/1637777513-strategic-program-aiweb.pdf>

⁶⁶¹ Artificial intelligence, blockchain and internet of things, Ministero dello sviluppo economico (Rome) 27 July 2022. Translation provided by the analyst. Access Date: 29 August 2022. <https://www.mise.gov.it/index.php/it/incentivi/fondo-per-interventi-volti-a-favorire-lo-sviluppo-delle-tecnologie-e-delle-applicazioni-di-intelligenza-artificiale-blockchain-e-internet-of-things>

⁶⁶² Italy: Garante publishes statement on proposed AI Regulation, Data Guidance 14 March 2022. Access Date: 21 June 2022. <https://www.dataguidance.com/news/italy-garante-publishes-statement-proposed-ai>.

⁶⁶³ National Cybersecurity Strategy 2022 – 2026, Agenzia per la Cybersicurezza Nazionale 24 May 2022. Access Date: 21 June 2022. https://www.acn.gov.it/ACN_EN_Strategia.pdf

⁶⁶⁴ A EU-Japan AI Workshop on Monitoring AI Systems' Operations Held, the Ministry of Economy, Trade, and Industry (Tokyo) 6 July 2021. Access Date: 31 March 2022. <https://opengovasia.com/indonesia-develops-strong-digital-ecosystem-through-partnership/>

Development Organization and the Japan Science and Technology Agency and will also be used to fuel research into 5G networks, big data, and semiconductors.⁶⁶⁵

On 23 December 2021, the Fair Trade Commission and Ministry of Economy, Trade and Industry proposed a draft of Guidelines for Business Collaboration with Startups and Investment in Startups for the purpose of promoting open innovation and ensuring fair and free competitive environments. The draft of Guidelines categorizes potential issues related to investment contracts into nine: disclosure of trade secrets, violation of non-disclosure agreements, work without compensation, bearing the cost of work outsourced by an investor to a third party, purchase of unnecessary goods or services, appraisal rights (i.e., right to demand purchase of the shares under certain conditions), restrictions on research and development activities, restrictions on business partners, and most favorable treatment conditions.⁶⁶⁶

On 23 December 2021, the National Police Agency was set to create a permitting system for the use of level four self-driving cars for transportation services in rural areas. The government aims to put level four automated driving systems to practical use in areas, aimed mainly at elderly passengers, by the end of the fiscal year ending in March 2023, expanding them to more than 40 locations nationwide by around 2025.⁶⁶⁷

On 28 January 2022, the Ministry of Economy, Trade and Industry, with the Expert Group on How AI Principles Should be Implemented, compiled the document, "Governance Guidelines for Implementation of AI Principles Ver. 1.1," which summarizes what to put into practice when respecting the Social Principles of Human-Centric AI.⁶⁶⁸

On 1 February 2022, the METI published "Governance Guidelines for the Practice of AI Principles." The guidelines follow work of the AI Social Implementation Architecture Study Group, which examined "the ideal state of AI governance in Japan, such as regulations, standardization, guidelines, audits, etc.," as well as trends in AI principles and regulations overseas.⁶⁶⁹

On 8 March 2022, the government announced that it would set a national strategy to promote the development of quantum and artificial intelligence technologies through cooperation between the public and private sectors. At a meeting of its Council of New Form of Capitalism Realization, the government ensured that investment would be expanded intensively to support research and development in the areas, in addition to other important fields of biotechnology and advanced medicine.⁶⁷⁰

On 8 April 2022, the Ministry of Economy, Trade, and Industry released governance Code and AI guidebooks for SMEs. In particular, the METI highlighted that the Code summarises the measures required of business owners to promote digital transformation within companies and introduces good practices and efforts through measures such as digital transformation brands. The AI Guidebook is meant to provide SMEs with guidance

⁶⁶⁵ Japan to launch £637 million tech fund for AI and 5G, IT Pro (London) 18 October 2021. Access Date: 31 March 2022.

<https://www.itpro.co.uk/business/policy-legislation/361270/japan-tech-fund-ai-5g>

⁶⁶⁶ JFTC and METI Proposes Guidelines for Business Collaboration with Startups and Investment in Startups, JD Supra (California) 10 January 2022. Access Date: 31 March 2022. <https://www.jdsupra.com/legalnews/jftc-and-meti-proposes-guidelines-for-3462662/>

⁶⁶⁷ Japan to create legal framework for level 4 self-driving cars, Free Malaysia Today (Selangor) 23 December 2021. Access Date: 31 March 2022. <https://www.freemalaysiatoday.com/category/business/2021/12/23/japan-to-create-legal-framework-for-level-4-self-driving-cars/>

⁶⁶⁸ "Governance Guidelines for Implementation of AI Principles Ver. 1.1" Compiled, the Ministry of Economy, Trade, and Industry (Tokyo) 28 January 2022. Access Date: 31 March 2022. / https://www.meti.go.jp/english/press/2022/0128_003.html

⁶⁶⁹ Japan publishes AI governance guidelines, International Association of Privacy Professionals (Portsmouth) 1 February 2022. Access Date: 31 March 2022. <https://iapp.org/news/a/japan-publishes-ai-governance-guidelines/>

⁶⁷⁰ Japan to Set National Strategy for Quantum, AI Technologies, Nippon (Tokyo) 8 March 2022. Access Date: 31 March 2022. <https://www.nippon.com/en/news/yjj2022030800956/>

on how to prepare and commence utilisation of AI in their enterprises, providing practical steps for decision-making.⁶⁷¹

Japan has taken actions in all areas covered by the commitment.

Thus, Japan receives a score of +1.

Analyst: Pavel Doronin

Korea: 0

Korea has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 9 December 2021, the proposed amendment to the Act on Development of Cloud Computing and Protection of Its Users passed at the plenary session of the National Assembly. The Proposed Amendment seeks to promote the use of cloud computing services by the national and local governments in addition to public sector customers.⁶⁷²

On 8 June 2022, the Ministry of Science and ICT (Information and Communications Technology) announced that three major Korean universities are selected as recipients of government funding under the “AI Chip Talent Nurturing Program.” The program is designed to provide advanced training to undergraduate students for artificial intelligence (AI) manufacturing industry. The amount of funding for 2022 – 2024 exceeds KRW1.4 billion (USD1.1 million).⁶⁷³

Korea has taken strong actions in just one key sphere listed in the G20 AI Principles.

Thus, Korea receives a score of 0.

Analyst: Alexander Ignatov

Mexico: 0

Mexico has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 1 November 2021, Foreign Ministry’s Chief Officer for North America Roberto Velasco concluded his trip to Canada in Quebec. At the meeting, Mexico set the priorities for its work with the province of Quebec during the 2021-2023 period in the areas of trade, investment, the economy, research and innovation, and education. Parties plan to “strengthen the region’s supply chains, increase competitiveness and take advantage of technological advances in areas such as electric vehicles, battery development, stronger small and medium-sized enterprises, promoting creativity and improving its commercialization, and the ethical use of artificial intelligence, as well as other cutting-edge technologies.”⁶⁷⁴

On 5 November 2021, Mexico and Canada held a meeting on post-pandemic economic recovery, including building more resilient supply chains. Minister of Innovation, Science and Industry of Canada François-Philippe Champagne urged to promoted investment opportunities in Canada’s automotive, information and

⁶⁷¹ Japan: METI releases governance code and AI guidebooks for SMEs, Data Guidance (London) 8 April 2022. Access Date: 15 April 2022. <https://www.dataguidance.com/news/japan-meti-releases-governance-code-and-ai-guidebooks>

⁶⁷² Legislative Amendment to Promote the Use of Cloud Services by the National and Local Governments, Lexology (London) 20 December 2021. Access Date: 10 June 2022. <https://www.lexology.com/library/detail.aspx?g=136a5973-8907-48e3-918c-197fcf7417f1>

⁶⁷³ MSIT to select three universities to nurture talent in AI semiconductors, Korea-EU Research Centre 8 June 2022. Access Date: 22 June 2022. <https://k-erc.eu/msit-press-releases-ai-semiconductor-talent-nurturing/>

⁶⁷⁴ Chief Officer for North America Roberto Velasco concludes his visit to Canada in Quebec, Mexican Government (Mexico City) 1 November 2021. Access date: 4 April 2022. <https://www.gob.mx/sre/prensa/chief-officer-for-north-america-roberto-velasco-concludes-his-visit-to-canada-in-quebec?idiom=en>

communications technology/digital, cleantech and life sciences sectors, and highlighted the importance of collaboration in science and research that advance scientific exploration, technological development and innovation in areas like digital and emerging technologies, including artificial intelligence.⁶⁷⁵

On 10-12 November 2021, the National Council for Science and Technology of Mexico held Congress for the Generation of Industrial Solutions Based on Artificial Intelligence. The congress through keynote speeches and a discussion panel provided a general overview to businessmen, entrepreneurs, developers, academics and students of the type of problems that can be solved through the use of Artificial Intelligence. It also offered training tutorials that allowed attendees to become familiar with tools, techniques and methodologies that they can adopt and incorporate into their own projects.⁶⁷⁶

On 7 June 2022, within the framework of the forum “Towards the implementation in Mexico of the UNESCO Recommendation on the Ethics of Artificial Intelligence,” the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Mexico presented the Recommendation on the Ethics of Artificial Intelligence. UNESCO’s Mexico office announced its intention to install an Artificial Intelligence (AI) Committee, whose purpose is to serve as a space for multidisciplinary and plural dialogue to provide tools for the development of policy strategies focused on human beings for the ethical governance of AI with the collaboration of multiple stakeholders from the public and private spheres, for which it contemplates convening public entities, industry and academia.⁶⁷⁷

Mexico took actions on two areas of the commitment.

Thus, Mexico receives a score of 0.

Analyst: Irina Popova

Russia: 0

Russia has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises (MSMEs) and start-ups.

On 4 April 2022, the Government has published several amendments to the grant competition rules. The government allocated extra sums for promotion of information technology-based solutions for local businesses; the allocated sum was lifted up to RUB14 billion for 2022.⁶⁷⁸

Russia has taken strong action in just one key sphere listed in the G20 AI Principles and also targeted the needs of MSMEs.

Thus, Russia receives a score of 0.

Analyst: Alexander Ignatov

⁶⁷⁵ Minister Champagne concludes productive visit to the United States and Mexico, Canadian Government (Ottawa) 5 November 2021. Access date: 4 April 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/11/minister-champagne-concludes-productive-visit-to-the-united-states-and-mexico.html>.

⁶⁷⁶ About Congress, Congreso de Generación de Soluciones Industriales Basadas en Inteligencia Artificial (Mexico City). Translation provided by the analyst. Access date: 4 April 2022. <https://sibia.cicese.mx/2021>

⁶⁷⁷ The IFT and UNESCO organize a forum on the Artificial Intelligence Ethics Recommendation in which it was proposed to create an AI committee in Mexico, UN Mexico (Mexico City) 7 June 2022. Translation provided by the analyst. Access Date: 20 June 2022. <https://mexico.un.org/es/185213-el-ift-y-la-unesco-organizan-foro-sobre-la-recomendacion-de-etica-de-la-inteligencia>.

⁶⁷⁸ Grants for Russia IT Companies, ОБЪЯВЛЯЕМ. РФ (Moscow) 6 April 2022. Translation provided by the analyst. Access Date: 10 June 2022. <https://xn--90aivcdt6dxbc.xn--p1ai/measures/finansy/5649>

Saudi Arabia: -1

Saudi Arabia has failed to comply with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises (MSMEs) and start-ups.

On 17 August 2022, the Public Consultation Platform initiated public consultations on the draft AI Ethic Principles. This project aims to support the Kingdom's efforts towards achieving its vision and national strategies related to adopting AI technology, encouraging research and innovation, and driving economic growth for prosperity and development. Public consultations are set to be concluded by 1st September 2022.

Saudi Arabia has initiated consultations that could contribute to the implementation of the G20 AI Principles, but this action is not considered strong enough to affect the score.

Thus, Saudi Arabia receives a score of -1.

Analyst: Alexander Ignatov

South Africa: -1

South Africa has failed to comply with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises (MSMEs) and start-ups.

No evidence of South Africa taking steps to advance the G20 AI Principles while considering the specific needs of MSMEs and start-ups to encourage competition and innovation has been found so far.

Thus, Saudi Arabia receives a score of -1.⁶⁷⁹

Analyst: Alexander Ignatov

Turkey: 0

Turkey has partially complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises (MSMEs) and start-ups.

On 24 August 2021, Turkey launched a national strategy for artificial intelligence outlining goals and objectives for the period 2021–2025. The government aims to increase the contribution of artificial intelligence (AI) to the country's gross domestic product to 5 per cent, and to reach an overall number of 50,000 jobs in the sector by 2025. Other objectives covered in the strategy include investing in human capital (e.g. training AI specialists, supporting the creation of AI jobs), encouraging AI research and innovation, supporting AI entrepreneurship, ensuring the availability of quality data and an enabling technical infrastructure, and engaging in international cooperation mechanisms focused on AI.⁶⁸⁰

On 13 November 2021, Turkey and China held a meeting to bolster collaboration in the field of digital technologies at an international fair held in Turkey's financial and cultural hub Istanbul.⁶⁸¹

Turkey has taken steps in some areas covered by the commitment, including investing in AI research and development shaping an enabling policy environment for AI, building human capacity and preparing for labor market transformation, and international cooperation for trustworthy AI.

⁶⁷⁹ This non-compliance was determined after searching the following websites: <https://www.thepresidency.gov.za/>, <https://www.gov.za/>, <https://www.dcdt.gov.za/>, <https://www.dst.gov.za/>, <https://www.greengazette.co.za/>

⁶⁸⁰ Turkey launches national AI strategy, The Digital Watch observatory (Geneva) 24 August 2021. Access Date: 31 March 2022. <https://dig.watch/updates/turkey-launches-national-ai-strategy>

⁶⁸¹ Turkey, China look to boost cooperation in digital technologies, Xinhua (Beijing) 13 November 2021. Access Date: 31 March 2022. http://www.news.cn/english/europe/2021-11/13/c_1310308998.htm

Thus, Turkey receives a score of 0.

Analyst: Pavel Doronin

United Kingdom: +1

The United Kingdom has fully complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

On 1 November 2021, the Defense Science and Technology Laboratory presented “innovative telexistence concepts” that are said to provide people with the capability to adopt risky duties in dangerous environments without physical presence.⁶⁸²

On 9 November 2021, 11 UK organizations were awarded a share of just under GBP7 million of government funding. At least some of them are designed as to secure the country’s telecommunication systems and protect digital infrastructure against cyber attacks.⁶⁸³

On 18 November 2021, Minister for Tech and Digital Economy Chris Philp led an international summit of digital ministers to “champion the use of technology” to meet the world’s largest challenges, which include the pandemic, climate, exclusion and inequality. The UK works together on issues relating to the digital transformation of government, digital identity systems, digital infrastructure and civil servants’ skills.⁶⁸⁴

On 8 December 2021, the government’s Centre for Data Ethics and Innovation published a roadmap setting to “build a world-leading AI [artificial intelligence] assurance ecosystem.” This initiative is oriented to build surroundings of gear and services that could pick out and mitigate the variety of dangers posed by way of AI.⁶⁸⁵

On 12 January 2022, the government supported by the British Standards Institution and the Alan Turing Institute piloted a new initiative to “lead in shaping global technical standards for Artificial Intelligence.” It creates practical tools for businesses, develop educational materials, improve the governance of AI, supplement pro-innovation regulation and liberate the massive economic capability of these technology to boost funding and employment.⁶⁸⁶

On 1 February 2022, the government presented the Turing AI Fellowships Initiative to “maintain the best talent in artificial intelligence” and accelerate the careers of high potential researchers AI technologies. The sum of GBP46 million was allocated as to provide the initiative with necessary financial support.⁶⁸⁷

⁶⁸² Dstl grasps telexistence potential to reduce risk to personnel, UK Government (London) 1 November 2021. Access Date: 7 March 2022. <https://www.gov.uk/government/news/dstl-grasps-telexistence-potential-to-reduce-risk-to-personnel>

⁶⁸³ Government backs ground-breaking space technology to tackle climate change, UK Government (London) 9 November 2021. Access Date: 7 March 2022. <https://www.gov.uk/government/news/government-backs-ground-breaking-space-technology-to-tackle-climate-change>

⁶⁸⁴ UK backs digital revolution of public services at international summit, Department for Digital, Culture, Media & Sport (London) 18 November 2021. Access Date: 17 March. <https://www.gov.uk/government/news/uk-backs-digital-revolution-of-public-services-at-international-summit>

⁶⁸⁵ Centre for Data Ethics and Innovation publishes world first roadmap to catalyse development of AI assurance ecosystem, Centre for Data Ethics and Innovation (London) 8 December 2021. Access Date: 17 March. <https://www.gov.uk/government/news/centre-for-data-ethics-and-innovation-publishes-world-first-roadmap-to-catalyse-development-of-ai-assurance-ecosystem>

⁶⁸⁶ New UK initiative to shape global standards for Artificial Intelligence, Department for Digital, Culture, Media & Sport (London) 12 January 2022. Access Date: 17 March 2022. <https://www.gov.uk/government/news/new-uk-initiative-to-shape-global-standards-for-artificial-intelligence>

⁶⁸⁷ Turing Artificial Intelligence Fellowships, UK Government (London) 1 February 2022. Access Date: 17 March 2022. <https://www.gov.uk/government/publications/turing-artificial-intelligence-fellowships>

On 11 February 2022, the Robotics Growth Partnership has launched the Vision for Cyber-Physical Infrastructure to “bring together tools for developing and building connected smart machines across all sectors and help accelerate the innovation process.”⁶⁸⁸

On 14 March 2022, Business Secretary Kwasi Kwarteng confirmed the investment of GBP39.8 billion R&D budget for 2022-2025. It would help deliver the government’s Innovation Strategy and “drive forward ambitions as a science superpower.”⁶⁸⁹

On 14 March 2022, Science and Innovation Minister George Freeman announced the GBP2 million boost for 13 new projects. These projects include “Rolls-Royce developing a power station for space that could power the generation of water, breathable oxygen and fuels for solar exploration; new imaging technology which can withstand the high radiation levels on Mars.”⁶⁹⁰

On 17 May 2022, the Cabinet Office announced the creation of New “Think Before you Link” App, which will help businesses and the public protect themselves from potential espionage, conduct users their own digital due diligence and increase awareness of the growing threat from digital espionage to UK citizens.⁶⁹¹

On 23 May 2022, the Department for Business, Energy & Industrial Strategy has announced the “Smart Meter System based Internet of Things Applications Programme” (of up to GDP1.8 million), which supports innovation to determine the technical and commercial feasibility of SMS-based IoT sensor devices.⁶⁹²

On 30 May 2022, the government presented a financing scheme that would provide 5,000 public buildings with connection to high-speed broadband. GBP164 million UK government investment will boost speeds for thousands of nearby homes and businesses, drive up productivity in public services and create better experiences for people.⁶⁹³

On 13 June 2022, Minister Philp unveiled the new “UK Digital Strategy” to grow the economy and create more high-skilled, high wage jobs and cement the UK as a global tech superpower.⁶⁹⁴

On 13 June 2022, the Department for Digital, Culture, Media & Sport has published ‘National Data Strategy’, which drives the UK in building a world-leading data economy while ensuring public trust in data use.⁶⁹⁵

The United Kingdom has taken strong actions in all five dimensions. The government invested in AI research and development, adopted roadmap setting to build a world-leading AI assurance ecosystem, to create practical tools for businesses, develop educational materials and improve the governance of AI. Also, the UK held

⁶⁸⁸ Robotics Growth Partnership launches cyber-physical infrastructure vision, Department for Business, Energy & Industrial Strategy (London) 11 February 2022. Access Date: 15 March 2022. <https://www.gov.uk/government/news/robotics-growth-partnership-launches-cyber-physical-infrastructure-vision>

⁶⁸⁹ Government announces plans for largest ever R&D budget, UK Government (London) 14 March 2022. Access Date: 15 March 2022. <https://www.gov.uk/government/news/government-announces-plans-for-largest-ever-rd-budget>

⁶⁹⁰ New space funding paves the way for pioneering approaches to energy, communication and resources, UK Government (London) 14 March 2022. Access Date: 15 March 2022. <https://www.gov.uk/government/news/new-space-funding-paves-the-way-for-pioneering-approaches-to-energy-communication-and-resources>

⁶⁹¹ New app to counter malicious approaches online, Cabinet Office (London) 17 May 2022. Access Date: 17 June 2022. <https://www.gov.uk/government/news/new-app-to-counter-malicious-approaches-online>

⁶⁹² Smart Meter System based Internet of Things applications programme, Department for Business, Energy & Industrial Strategy (London) 23 May 2022. Access Date: 17 June 2022. <https://www.gov.uk/government/publications/smart-meter-system-based-internet-of-things-applications-programme>

⁶⁹³ Levelling up push sees more than 5,000 public buildings plugged into high-speed broadband, Department for Digital, Culture, Media & Sport (London) 30 May 2022. Access Date: 17 June 2022. <https://www.gov.uk/government/news/levelling-up-push-sees-more-than-5000-public-buildings-plugged-into-high-speed-broadband>

⁶⁹⁴ New Digital Strategy to make UK a global tech superpower, Department for Digital, Culture, Media & Sport (London) 13 June 2022. Access Date: 17 June 2022. <https://www.gov.uk/government/news/new-digital-strategy-to-make-uk-a-global-tech-superpower>

⁶⁹⁵ National Data Strategy, Department for Digital, Culture, Media & Sport (London) 13 June 2022. Access Date: 17 June 2022. <https://www.gov.uk/guidance/national-data-strategy>

summits on international co-operation for trustworthy AI in order to meet the world's largest challenges, which include the pandemic, climate, exclusion and inequality, transformation of government, digital identity systems, digital infrastructure and skills of civil servants.

Thus, the United Kingdom receives a score of +1.

Analyst: Elena Alekseeva

United States: +1

The United States has fully complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises (MSMEs) and start-ups.

On 3 November 2021, Director of the White House Office of Science and Technology Policy Eric Lander and Canada's Minister of Innovation, Science and Industry Francois-Philippe Champagne announced their intention to launch a bilateral collaborative initiative to fund research projects in the areas of artificial intelligence and quantum science.⁶⁹⁶

On 9 December 2021, the Australia – United Kingdom – the United States (AUKUS) Joint Steering Group for Advanced Capabilities met at the Pentagon. The participants committed to finalizing a program of work in relation to advanced capabilities. Beyond the four initial areas of focus outlined in the Joint Leaders' Statement on AUKUS – cyber capabilities, artificial intelligence (AI), quantum technologies, and additional undersea capabilities – they also discussed other additional capabilities and agreed to identify potential opportunities for collaboration in those areas.⁶⁹⁷

On 16 February 2022, the National Artificial Intelligence Research Resource (NAIRR) Task Force convened its fifth public meeting, continuing its efforts launched in June 2021 to develop a vision and implementation plan for a national cyberinfrastructure that would connect American researchers from all backgrounds and regions to the computational, data, and testing resources that fuel AI research and innovation.⁶⁹⁸

On 29 March 2022, President Joseph Biden and Prime Minister of the Republic of Singapore Lee Hsien Loong made a joint statement discussing, inter alia, the US-Singapore Partnership for Growth and Innovation (PGI), which aims to secure inclusive growth for our economies and regions in new and forward-looking areas: digital economy, energy and environmental technology, advanced manufacturing, and health services. New initiatives announced under the PGI included the development of interoperable ethical AI governance frameworks and plans for a US business development mission to Singapore to facilitate new business opportunities and strengthen partnerships in advanced manufacturing.⁶⁹⁹

The United States has taken strong actions in all five key spheres listed in the G20 AI Principles and some of them take MSMEs and start-ups as a target group

⁶⁹⁶ Joint statement to Leaders from the United States' Director of the White House Office of Science & Technology Policy and Canada's Minister of Innovation, Science and Industry, The White House (Washington) 18 November 2021. Access Date: 1 April 2022. <https://www.whitehouse.gov/ostp/news-updates/2021/11/18/joint-statement-to-leaders-from-the-united-states-director-of-the-white-house-office-of-science-technology-policy-and-canadas-minister-of-innovation-science-and-industry-2/>.

⁶⁹⁷ Readout of AUKUS Joint Steering Group Meetings, The White House (Washington) 17 December 2021. Access Date: 1 April 2022. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/17/readout-of-aucus-joint-steering-group-meetings/>.

⁶⁹⁸ Readout of the Fifth National Artificial Intelligence Research Resource (NAIRR) Task Force Meeting, The White House (Washington) 22 February 2022. Access Date: 1 April 2022. <https://www.whitehouse.gov/ostp/news-updates/2022/02/22/readout-of-the-fifth-national-artificial-intelligence-research-resource-nairr-task-force-meeting/>.

⁶⁹⁹ U.S.-Singapore Joint Leaders' Statement, The White House (Washington) 29 March 2022. Access Date: 1 April 2022. <https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/29/u-s-singapore-joint-leaders-statement/>.

Thus, the US receives a score of +1.

Analyst: Andrey Shelepov

European Union: +1

The European Union has fully complied with the commitment to advance the implementation of the G20 AI Principles, while considering the specific needs of micro, small and medium-sized enterprises (MSMEs) and start-ups.

On 3 May 2020, the European Parliament adopted a set of proposals to develop artificial intelligence (AI) in the long term.⁷⁰⁰ The final report from Parliament's special committee on artificial intelligence in the digital age proposes an EU Roadmap for AI, a holistic approach for a common, long-term position that highlights the EU's key values, objectives and values about AI and continues the EU's current legislative efforts in this area. The report proposes a favourable regulatory environment: to support innovation and avoid regulatory burden, only high-risk AI applications should be strictly regulated. The Parliament said digital infrastructure should be strengthened, ensuring access to services for everyone. The EU should support the development of AI skills so that people have the skills needed for life and work. The military and security aspects of AI also need to be tackled: the EU should cooperate internationally with like-minded partners to promote its human-centric, EU-value based vision.⁷⁰¹

The EU is making efforts in investing in AI research and development; shaping an enabling policy environment for AI; fostering digital ecosystem for AI (creating a digital single market) as well as developing the international digital cooperation; some of the actions consider MSMEs and start-ups as a target group (e.g. the Digital Europe Programme). The new proposals adopted in the EU Roadmap for AI also provide support for building human capacity and preparing for labor market transformation.

Thus, the European Union receives a score of +1.

Analyst Ksenia Dorokhina

⁷⁰⁰ The future of AI: the Parliament's roadmap for the EU, European Parliament (Strasbourg) 3 May 2022. Access Date: 20 June 2022. <https://www.europarl.europa.eu/news/en/headlines/society/20220422STO27705/the-future-of-ai-the-parliament-s-roadmap-for-the-eu>

⁷⁰¹ European Parliament resolution of 3 May 2022 on artificial intelligence in a digital age (2020/2266(INI)), European Parliament (Strasbourg) 3 May 2022. Access Date: 20 June 2022. https://www.europarl.europa.eu/doceo/document/TA-9-2022-0140_EN.html