2021 G20 Rome Summit Final Compliance Report

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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			+1
Canada		0	
China			+1
France			+1
Germany		0	
India			+1
Indonesia		0	
Italy			+1
Japan			+1
Korea		0	
Mexico		0	
Russia		0	
Saudi Arabia		0	
South Africa	−1		
Turkey		0	
United Kingdom			+1
United States			+1
European Union			+1
Average		+0.45 (73%)	

Background

For the first time ever, the G20 addressed the issue of trustworthy human-centred 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."[829]

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 principles and recommendations of the Organisation for Economic Co-operation and Development (OECD).[830] 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

[829] G20 Leaders' declaration Building consensus for fair and sustainable development, RANEPA (Moscow). Access Date: 8 December 2021. https://www.ranepa.ru/images/media/g20/2018buenosaires/buenos_aires_leaders_declaration.pdf
[830] 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

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 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."[831]

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."[832]

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."[833] The ministers also pledged to "consider the specific needs of MSMEs [micro, small and medium-sized enterprises] 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."[834] The G20 digital economy ministers' pledges were then supported by the G20 leaders and incorporated into the G20 Rome Leaders' Declaration.[835]

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 Intelligence[836] 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:

[831] G20 Osaka Leaders' Declaration, RANEPA (Moscow). Access Date: 8 December 2021. https://www.ranepa.ru/images/News_ciir/Project/G20_new_downloadings/FINAL_G20_Osaka_Leaders_Declaration.pdf

[832] G20 Riyadh Summit Leaders' Declaration, RANEPA (Moscow). Access Date: 8 December 2021. https://www.ranepa.ru/ciir/sfery-issledovanij/gruppa-dvadtsati/dokumenty-gruppy-dvadtsati/saudovskoe-predsedatelstvo-2020/G20%20Riyadh%20Summit%20Leaders%20Declaration_EN.pdf

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

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

[835] G20 Rome Leaders' Declaration, RANEPA (Moscow). Access Date: 8 December 2021. https://www.ranepa.ru/ciir/sfery-issledovanij/gruppa-dvadtsati/dokumenty-gruppy-dvadtsati/italyanskoe-predsedatelstvo-2021/G20-ROME-LEADERS-DECLARATION.pdf

[836] 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

- 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.

MSMEs are "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 [small and medium sized enterprise] is 250 employees."[837]

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.[838] 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."[839]

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

[837] 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
[838] 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
[839] 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

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 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 [Artificial Intelligence] 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 micro, small and medium-sized enterprises (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 [Artificial Intelligence] 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.[840]

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.[841]

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.[842]

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.[843]

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."[844]

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.[845]

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)

[840] 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

[841] 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

[842] 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

[843] 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

[844] 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

[845] 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

to "to increase the productivity and competitiveness of SMEs [small and medium-sized enterprises] through the adoption of digital technologies and skills." The UTD should hold at least three thematic workshops on emerging technologies 4.0, such as big data, internet of things, cloud computing, data analytics, machine learning, artificial intelligence, virtual and augmented reality, additive manufacturing (3D printing) or cybersecurity.[846]

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."[847]

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.[848]

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."[849] 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.[850]

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

[846] 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

[847] 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

[848] 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

[849] "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

[850] 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

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.[851]

On 11 February 2022, the 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.[852]

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.[853]

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 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.[854]

On 11 April 2022, Minister of Economy Martín Guzman 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.[855]

On 25 April 2022, within the framework of the visit to the State of Israel, in a delegation also made up of governors, ministers and other officials, Minister of Science, Technology and Innovation Daniel Filmus held a meeting with the Senior Director of Government Affairs and Public Policies of Google Israel, Doron Avni, with the aim of knowing first-hand the Israeli experience in AI. In addition, Google announced the opening of a software engineering area in Google Argentina that will provide solutions to computer problems at an international level. In this way, the Argentine subsidiary of the company will go from being a support area to producing tools with added value.[856]

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[851] 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.casarosada.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

[852] 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

[853] 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

[854] 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

[855] 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

[856] Filmus visited Google Israel: Cooperation for the development of artificial intelligence in Argentina, Minister of Science, Technology and Innovation, 25 April 2022. Translation provided by Google Translate. Access Date: 25 October 2022. https://www.argentina.gob.ar/noticias/filmus-visito-google-israel-cooperacion-para-el-desarrollo-de-inteligencia-artificial-en

On 4 May 2022, Minister Guzman confirmed that the Science and Technology function would have an investment of ARS18.6 million that equals to 0.31 per cent of the gross domestic product. 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.[857]

On 11 May 2022, Minister 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.[858]

On 13 June 2022, in line with the dialogue activities initiated on April 5, and within the framework of the "International AI Forum. Towards a Multidisciplinary Argentine Center for AI," the Economic and Social Council in collaboration with the Team Europe held a new work meeting in order to move towards the co-design of an ethical and institutional agenda to frame the progress of artificial intelligence in our country.[859]

Argentina has taken strong in all five groups of the G20 AI Principles. 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.

Analysts: Elena Alekseeva and Irina Popova

Australia: 0

Australia has partially complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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 AI. Among the main issues – uncertainty and complexity of AI-based systems and relative regulations; growing international competition; growing

[857] 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

[858] 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

[859] New forum-workshop on Artificial Intelligence together with the EU's Team Europe, Government of Argentina (Buenos Aires) 13 June 2022. Translation provided by the analyst. Access date: 3 October 2022. https://www.argentina.gob.ar/noticias/nuevo-foro-taller-sobre-inteligencia-artificial-junto-al-team-europe-de-la-ue.

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. [860]

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.[861]

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: +1

Brazil has fully complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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 AI sector in the country. The Ministry of Science, Technology and Innovation (MCTI) is responsible for several policies and initiatives aimed at the sector.[862]

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.[863]

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.[864]

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[860] 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

[861] 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

[862] 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.

[863] 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.

[864] 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.

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 private institutions. The objective of MCTI Futuro is to promote large-scale training of researchers and students in emerging technologies.[865]

On 2 March 2022, Minister Pontes participated in the launch of studies carried out by Huawei, Inatel 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.[866]

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.[867]

On 15 September 2022, the Ministry of Education signed a Cooperation Agreement with the technology company Oracle, so that the Oracle Academy program is made available free of charge. It offers a variety of educational and technological resources for the institutions that are part of the federal, state, district and municipal education networks, which adhere to the agreement. Among the mechanisms offered by Oracle Academy are classroom learning tools, curricula, software, cloud technology and practice environments. Oracle also includes complete programming programs in Java, Database, Cloud Programming and modules for emerging technologies, such as Data Science, Big Data and Artificial Intelligence. These are some of the learning paths already available.[868]

On 21 September 2022, MCTI promoted the event Webs of Innovation, which brings together participants from local innovation ecosystems, in the city of Goiânia. With the theme "Digital transformation as a driver of economic and social development," the event discussed the research and development of exponential technologies such as artificial intelligence, and how these future technologies will impact organizations.[869]

On 28 September 2022, MCTI launched the second edition of the Conecta Startup Brasil program. The initiative aims to strengthen the innovation ecosystem in the five regions of the country. This is

[865] 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

[866] 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.

[867] 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.

[868] Ministry of Education partners with technology company and makes Oracle Academy available, Brazilian Government (Brasilia) 15 September 2022. Translation provided by the analyst Access Date: 3 October 2022. https://www.gov.br/mec/pt-br/assuntos/noticias/ministerio-da-educacao-firma-parceria-com-empresa-de-tecnologia-e-disponibiliza-a-oracle-academy.

[869] Focusing on digital transformation, MCTI promotes event Teias da Inovação in Goiânia (GO), Brazilian Government (Brasilia) 21 September 2022. Translation provided by the analyst Access Date: 3 October 2022. https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2022/09/com-foco-na-transformacao-digital-mcti-promove-evento-teias-da-inovacao-em-goiania-go.

done by connecting new startups to training, fostering and real market challenges, stimulating open innovation.[870]

Brazil has taken strong actions has taken strong in all five groups of the G20 AI Principles and also specifically supported small and medium-sized enterprises.

Thus, Brazil receives a score of +1.

Analyst: Irina Popova

Canada: 0

Canada has partially complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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 materials[871].

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.[872]

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 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.[873]

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

[870] Ministry presents second edition of Conecta Startup Brasil program, Brazilian Government (Brasilia) 28 September 2022. Translation provided by the analyst Access Date: 3 October 2022. https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2022/09/ministerio-apresenta-segunda-edicao-do-programa-conecta-startup-brasil.
[871] 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
[872] 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
[873] 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

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.[874]

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.[875]

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.[876]

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.[877]

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 communications shelters, to supporting businesses interested in adopting artificial intelligence, to advancing physical and mental health, reconciliation and inclusivity.[878]

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

[874] 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

[875] 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

[876] 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

[877] 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

[878] 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

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.[879]

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 [Artificial Intelligence] 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. 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.[880]

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.[881]

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

France: +1

France has fully complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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 AI which will mobilize EUR2 billion in public-private

[879] 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

[880] 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.

[881] 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.

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.[882]

On 19 April 2022, France and Germany announced providing funding worth EUR17.9 million to support five projects to develop new solutions in the field of artificial intelligence. The main goal of the projects is to develop AI solutions in the area of sustainability, to detect and combat potential epidemics at an early stage, and to make the industry more resilient to supply chain disruptions. Some of the projects involve small and medium-sized enterprises.[883]

On 15 June 2022, the French Presidency of the European Council circulated a consolidated compromise text of the proposed Artificial Intelligence Act, which aims to establish a legal framework for the development and deployment of "trustworthy" AI in the EU.[884]

France has taken strong actions in all five key spheres listed in the G20 AI Principles and some of them take micro, small and medium-sized enterprises and start-ups as a target group.

Thus, France receives a score of +1.

Analysts: Nikita Shilikov and Andrey Shelepov

Germany: 0

Germany has partially complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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.[885]

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 Shelepov

[882] 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

[883] France and Germany to fund five joint AI project to strengthen crisis resilience, German Federal Ministry for Economic Affairs and Climate Action (Berlin) 19 April 2022. Access Date: 1 October 2022. https://www.bmwk.de/Redaktion/EN/Pressemitteilungen/2022/04/20220419-france-and-germany-to-fund-five-joint-ai-projects-to-strengthen-crisis-resilience.html.

[884] EU: Artificial Intelligence Act: latest Presidency compromise text, Statewatch (London) 3 May 2022. Access Date: 1 October 2022. https://www.statewatch.org/news/2022/may/eu-artificial-intelligence-act-latest-presidency-compromise-text/.

[885] 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/

India: +1

India has fully complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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 and 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. 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.[886]

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.[887]

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.[888]

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.[889]

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.[890]

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

[886] 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.
[887] 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.
[888] 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.
[889] 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.
[890] 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.

Indonesia: 0

Indonesia has partially complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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.[891]

On 29 November 2021, the Aeronautics and Space Research Organisation of the National Research and Innovation Agency developed a platform that used 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.[892]

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 and 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.[893]

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.[894]

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.[895]

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[891] 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

[892] 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/

[893] 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/

[894] 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/

[895] 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

On 2 September 2022, the government initiated several policies to support the development of digital talent, Coordinating Minister for Economic Affairs, Airlangga Hartarto emphasized. "It is predicted that by 2030, there will be a shortage of 47 million digital talents in the Asia-Pacific region. Currently, Indonesia needs around 600 thousand digital talents every year. To that end, the government has initiated various policies," he said in an official statement.[896]

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 [Artificial Intelligence] 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 24 policies to be implemented over the next three years including promotion of necessary skills and competencies, support for enterprises in AI-based products certification, promotion of AI startups, etc.[897]

On 6 December 2021 the Ministry of Economic Development and Ministry of Economy and Finance approved the Decree that earmarked EUR45 million to promote research and development and innovation on artificial intelligence, blockchain and IoTs 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.[898]

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 AI is, in fact, the data protection legislation.[899]

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

[896] Govt has initiated policies to develop digital talent: minister, Antara News (Jakarta) 2 September 2022. Access Date: 1 October 2022. https://en.antaranews.com/news/247713/govt-has-initiated-policies-to-develop-digital-talent-minister
[897] 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
[898] 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
[899] 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.

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.[900]

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 [Artificial Intelligence] 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 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.[901]

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 Development Organization and the Japan Science and Technology Agency and will also be used to fuel research into 5G networks, big data, and semiconductors.[902]

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.[903]

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

[900] 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

[901] 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/

[902] 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

[903] 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/

the end of the fiscal year ending in March 2023, expanding them to more than 40 locations nationwide by around 2025.[904]

On 28 January 2022, METI, 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.[905]

On 1 February 2022, 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.[906]

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.[907]

On 8 April 2022, the METI 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 on how to prepare and commence utilisation of AI in their enterprises, providing practical steps for decision-making.[908]

On 29 July 2022, METI established an office named the "Web 3.0 Policy Office" under the Minister's Secretariat. The office has the mandate of strengthening the framework for developing the business environment in relation to Web 3.0. It will serve as a Cross-Departmental Internal Organization, bringing together all government bodies responsible for Web 3.0. These include "departments responsible for industrial finance, taxation, and corporate system (vehicles)," as well as those responsible for "media and content, sports, fashion, and the other related industries," the METI announcement said. The office will operate by gathering information about the challenges facing the Web 3.0 business environment in Japan and overseas from stakeholders. The ministry added that the initiative should help in stemming the exodus of Web 3-related businesses from the country.[909]

On 13 August 2022, the Justice Ministry planned to use an artificial intelligence-equipped system to translate Japanese laws and ordinances into English from next fiscal year. In its Basic Policy on Economic and Fiscal Management and Reform for fiscal 2022, the government set a target of doubling

[904] 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/

[905] "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

[906] 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/

[907] 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/

[908] 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

[909] Japan establishes 'Web 3.0 Policy Office' to formulate metaverse-related policies, CoinGeek (Saint John's) 29 July 2022. Access Date: 1 October 2022. https://coingeek.com/japan-establishes-web-3-0-policy-office-to-formulate-metaverse-related-policies/

foreign direct investment stock in Japan from JPY40 trillion at the end of 2020 to JPY80 trillion in 2030. The swift translation of laws and regulations into English was identified as an important task to achieve the goal.[910]

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 [Artificial Intelligence] 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.[911]

On 8 June 2022, the Ministry of Science and ICT (Information and Communications Technology) (MSIT) 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 AI manufacturing industry. The amount of funding for 2022–2024 exceeds KRW1.4 billion (USD1.1 million).[912]

On 15 July 2022, the MSIT announced five key development directions regarding the country's innovation development under the new administration. Minister Lee Jong-Ho put emphasis on 1) research and development systems design and development, supported with extra budget allocations with a special emphasis given to AI development; 2) private investment attraction; 3) talent development; 4) public-private partnership development; 5) usage technologies to support vulnerable population and resolve social problems. Also, the MSIT plans to revisit various regulations as to "overhaul the public agencies and public commissions."[913]

On 28 July 2022, Korea and Argentina signed the renewed Memorandum of Understanding on cooperation in ICT. The parties specified mutual interest in joint promotion of artificial intelligence technologies.[914]

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[910] Govt to use AI translation system to publish laws in English from next fiscal year, The Japan News (Tokyo) 13 August 2022. Access Date: 1 October 2022. https://japannews.yomiuri.co.jp/politics/politics-government/20220813-51378/

[911] 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

[912] 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/

[913] MSIT to unveil the five key strategies under the new administration, Ministry of Science and ICT (Sejong-si) 15 July 2022. Access Date: 6 October 2022. https://www.msit.go.kr/eng/bbs/view.do?sCode=eng&mId=4&mPid=2&pageIndex=3&bbsSeqNo=42&nttSeqNo=706&searchOpt=ALL&searchTxt=

[914] MSIT to sign the renewed MoU with Argentina on ICT cooperation, Ministry of Science and ICT (Sejong-si) 29 July 2022. Access Date: 6 October 2022. https://www.msit.go.kr/eng/bbs/view.do?sCode=eng&mId=4&mPid=2&pageIndex=2&bbsSeqNo=42&nttSeqNo=712&searchOpt=ALL&searchTxt=

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 [Artificial Intelligence] 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.[915]

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 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.[916]

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.[917]

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

[915] 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.

[916] 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.

[917] 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

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.[918]

On 2 August 2022, Ministry of Foreign Affairs, the National Autonomous University of Mexico (UNAM) and the Huawei company formalized a strategic alliance through the signing of the Letter of Intent "Alliance to Promote the Development of Digital Capabilities in Mexico", which was carried out within the framework of the "Artificial Intelligence Forum: first results," at the UNAM facilities. The Letter of Intent reaffirms the commitment to promote the creation of new data scientists.[919]

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 [Artificial Intelligence] 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.[920]

On 1 September 2022, the government launched several IT educational projects for school and university students – "Kod buduchevo" ("Code of Future") and "Tsifroviye Kafedry" ("Digital Lecterns") respectively. The project provides extra supplementary educational opportunities in coding, AI-technologies, information security, etc. – 135 courses in total. The government plans to enroll 113 thousand students by the end of 2022.[921]

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

Saudi Arabia: 0

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

[918] 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.

[919] Foreign Ministry promotes digitalization for the country's growth, Mexican Government (Mexico City) 2 August 2022. Translation provided by the analyst. Access Bate: 3 October 2022. https://www.gob.mx/sre/prensa/cancilleria-impulsa-digitalizacion-para-el-crecimiento-del-pais?idiom=es.

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

[921] In the new academic year, educational IT projects will be launched for all categories of citizens, Ministry of Digital Development, Connection and Mass Communication (Moscow) 1 September 2022. Translation provided by the analyst. Access Date: 7 October 2022. https://digital.gov.ru/ru/events/41908/

On 23 May 2022, the Saudi delegation held a series of meetings with chief executive officers (CEOs) of major international digital companies on the sidelines of the World Economic Forum held in Davos, Switzerland. Minister of Technologies and Information technologies Abdullah Alswaha held a meeting with C Vijayakumar, the CEO of HCL Technologies and discussed issues related to cooperation between the Ministry and the company. As it was mentioned, the Saudi delegation pushed forward cooperation agenda in telecommunications, Internet of Things and AI technologies.[922]

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.[923]

On 26 October 2022, the Future Investment Initiative launched the "Algoritmi Prize" Initiative to promote innovations in robotics and AI technologies. As the press release stated, "the winning applicants will then receive funding to develop and scale their technology, while getting access to the FII Institute's platforms where they will be able to share their research with investors, academics and decision-makers".[924]

Saudi Arabia has initiated consultations that could contribute to the implementation of the G20 AI Principles, and also dedicated extra funding through a non-profit platform as to promote AI-related innovations. In this regard, Saudi Arabi has taken actions matching at least two spheres mentioned in the G20 AI Principles – investing in AI research and creating enabling policy environment.

Thus, Saudi Arabia receives a score of 0.

Analyst: Alexander Ignatov

South Africa: −1

South Africa has failed to comply with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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.[925]

Analyst: Alexander Ignatov

[922] Minister of Communications Meets Number of Executives of Major International Technology Firms, ITU Officials to Promote Growth of Digital Economy, Ministry of Communications and Information Technologies (Riyadh) 23 May 2022. Access Date: 7 October 2022. https://www.mcit.gov.sa/en/news/minister-communications-meets-number-executives-major-international-technology-firms-itu

[923] AI Ethics Principles, Public Consultation Platform (Riyadh) 17 August 2022. Access Date: 10 November 2022. https://istitlaa.ncc.gov.sa/en/Transportation/NDMO/AIEthicsPrinciples/Pages/default.aspx

[924] FII Institute Launches New Technology Award, FII Institute (Riyadh) 26 October 2022. Access Date: 10 November 2022. https://fii-institute.org/press/fii-institute-launches-new-technology-award/

[925] 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/

Turkey: 0

Turkey has partially complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] Principles, while considering the specific needs of micro, small and medium-sized enterprises 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 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.[926]

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.[927]

On 2 June 2022, the Analysis System Narcotics Network was launched as to assist the national security forces in preventing crime. The locally developed software harnesses thousands of pieces of data from a criminal database and employs artificial intelligence (AI) to detect suspicious activities.[928]

On 21 July 2022, Turkey and Poland offered exemplary AI strategies. Turkey announced its National Artificial Intelligence Strategy for 2021-2025 prepared by the Presidency's Digital Transformation Office and the Industry and Technology Ministry. The very agenda contains key concepts to turn the country into a "digital Turkey," meaning a globally competitive Turkey in the field of technological progress and productivity. The strategy consists of six priorities, namely: 1) Training AI specialists and increasing employment in the field; 2) Supporting research, entrepreneurship and innovation; 3) Access to quality data and technical infrastructure; 4) Making arrangements to accelerate socioeconomic adaptation; 5) Strengthening international cooperation; 6) Structural and business updates to accelerate the power transformation.[929]

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.

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 [Artificial Intelligence] Principles, while considering the specific needs of micro, small and medium-sized enterprises and start-ups.

[926] 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
[927] 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
[928] High-tech AI system clamps down on drug crimes in Turkey, Daily Sabah (Istambul) 2 June 2022. Access Date: 1 October 2022. https://www.dailysabah.com/turkey/high-tech-ai-system-clamps-down-on-drug-crimes-in-turkey/news
[929] Poland and Turkey offer exemplary AI strategies, Daily Sabah (Istambul) 21 July 2022. Access Date: 1 October 2022. https://www.dailysabah.com/opinion/op-ed/poland-and-turkey-offer-exemplary-ai-strategies

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.[930]

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.[931]

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.[932]

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.[933]

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.[934]

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.[935]

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."[936]

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[930] 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

[931] 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

[932] 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

[933] 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

[934] 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

[935] 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

[936] 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

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."[937]

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."[938]

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.[939]

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.[940]

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.[941]

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.[942]

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.[943]

On 28 June 2022, the government has published its response to its consultation on Intellectual Property and Artificial Intelligence. "Following this consultation, the Government intends to amend copyright law

[937] 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
[938] 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
[939] 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
[940] 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
[941] 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
[942] 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
[943] 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

to make it easier to analyse material for the purposes of machine learning, research and innovation. This will promote the use of AI technology, and wider "data mining" techniques, for the public good".[944]

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 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.

Analysts: Elena Alekseeva and Nikita Shillikov

United States: +1

The United States has fully complied with the commitment to advance the implementation of the G20 AI [Artificial Intelligence] 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.[945]

On 9 December 2021, the Australia–United Kingdom–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, AI, quantum technologies, and additional undersea capabilities – they also discussed other additional capabilities and agreed to identify potential opportunities for collaboration in those areas.[946]

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.[947]

On 29 March 2022, President Joe 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

[944] Artificial Intelligence and IP: copyright and patents. Intellectual Property Office (London) 28 June 2022. Access Date: 6 October 2022 https://www.gov.uk/government/news/artificial-intelligence-and-ip-copyright-and-patents
[945] 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/.
[946] 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-aukus-joint-steering-group-meetings/.
[947] 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/.

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.[948]

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

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 [Artificial Intelligence] 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 AI in the long term.[949] 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.[950]

On 28 September 2022 the Commission adopted two proposals to adapt liability rules to the digital age, circular economy and the impact of global value chains. The Commission proposes for the first time a targeted harmonisation of national liability rules for AI, making it easier for victims of AI-related damage to get compensation. The new rules will ensure that victims benefit from the same standards of protection when harmed by AI products or services, as they would if harm was caused under any other circumstances. The purpose of the AI Liability Directive is to lay down uniform rules for access to information and alleviation of the burden of proof in relation to damages caused by AI systems, establishing broader protection for victims (be it individuals or businesses), and fostering the AI sector by increasing guarantees.[951]

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

[948] 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/.
[949] 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
[950] 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
[951] New liability rules on products and AI to protect consumers and foster innovation, European Commission (Brussels) 28 September 2022. Access Date: 30 September 2022. https://ec.europa.eu/commission/presscorner/detail/en/ip_22_5807

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