



The G7 Research Group presents the

2021 G7 Cornwall Summit Interim Compliance Report

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“We have meanwhile set up a process and there are also independent institutions monitoring which objectives of our G7 meetings we actually achieve. When it comes to these goals we have a compliance rate of about 80%, according to the University of Toronto. Germany, with its 87%, comes off pretty well. That means that next year too, under the Japanese G7 presidency, we are going to check where we stand in comparison to what we have discussed with each other now. So a lot of what we have resolved to do here together is something that we are going to have to work very hard at over the next few months. But I think that it has become apparent that we, as the G7, want to assume responsibility far beyond the prosperity in our own countries. That’s why today’s outreach meetings, that is the meetings with our guests, were also of great importance.”

Chancellor Angela Merkel, Schloss Elmau, 8 June 2015

G7 summits are a moment for people to judge whether aspirational intent is met by concrete commitments. The G7 Research Group provides a report card on the implementation of G7 and G20 commitments. It is a good moment for the public to interact with leaders and say, you took a leadership position on these issues — a year later, or three years later, what have you accomplished?

Achim Steiner, Administrator, United Nations Development Programme,
in G7 Canada: The 2018 Charlevoix Summit

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22. International Cooperation: Research and Knowledge Sharing

“As our nations and communities start to recover from the pandemic and build resilience for future shocks, we will continue to work with our research and business communities to remove barriers to the open and rapid sharing of knowledge, data and tools, to the greatest extent possible, recognising the importance of research security in particular in cutting-edge fields.”

G7 2021 Research Compact

Assessment

	No Compliance	Partial Compliance	Full Compliance
Canada			+1
France			+1
Germany			+1
Italy			+1
Japan			+1
United Kingdom			+1
United States		0	
European Union		0	
Average		+0.75 (88%)	

Background

The COVID-19 pandemic that started in the beginning of 2020 has prompted global leaders to pledge their fullest efforts in finding COVID-19 prevention and mitigation measures to address the world-wide public health challenge.²⁹¹⁰ As the G7 leaders stated in their G7 Research Compact, “the global response to COVID-19 has demonstrated the progress that arises from long-term collaboration which puts science at the heart of prevention, preparedness, response, recovery and resilience.”²⁹¹¹

The G7 leaders have long acknowledged the need for a coordinated response to infectious diseases and global health challenges. At the 1996 Lyon Summit, G7 leaders made their first commitment to promote “international cooperation among research teams,” and “encourage the scientific community in its search for remedies” for diseases including human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS).²⁹¹²

At the 1997 Denver Summit, G8 leaders committed to “work to provide the resources necessary to accelerate AIDS vaccine research, and ... [to]enhance international scientific cooperation and collaboration.”²⁹¹³

At the 1998 Birmingham Summit, G8 leaders committed “to enhance mutual cooperation on infectious and parasitic diseases and support the World Health Organization’s efforts in those areas” of which AIDS and Malaria was highlighted.²⁹¹⁴

²⁹¹⁰ G7 Leaders’ Statement, G7 Information Centre (Toronto) 16 March 2020. Access Date: 29 September 2021.

<http://www.g7.utoronto.ca/summit/2020usa/covid-200316.html>

²⁹¹¹ G7 Research Compact, G7 Information Centre (Toronto) 13 June 2021. Access Date: 29 September 2021.

<http://www.g7.utoronto.ca/summit/2021cornwall/210613-research.html>

²⁹¹² Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020.

Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹¹³ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020.

Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹¹⁴ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020.

Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

At the 2000 Okinawa Summit, G8 leaders committed to “strengthening cooperation in the area of basic research and development of new drugs, vaccines and other international public health goods” with particular emphasis on HIV/AIDS, Malaria and Tuberculosis.²⁹¹⁵

At the 2001 Genoa Summit, G8 leaders affirmed their “commitment to strong and effective intellectual property rights protection as a necessary incentive for the research and development of life-saving drugs.”²⁹¹⁶

At the 2003 Evian Summit, the G8 leaders reiterated their commitment to fight against AIDS, tuberculosis and malaria through actions including research activities.²⁹¹⁷ Additionally, G8 leaders committed to improve international coordination against the new severe acute respiratory syndrome (SARS) pandemic.²⁹¹⁸ In response to persistent public health concerns in developing countries at the time, G8 leaders committed to support developing and least-developed countries in their own research and development of protections against infectious diseases, including the creation of “incentives and regulatory systems to support ethical and safe clinical trials.”²⁹¹⁹

At the 2004 Sea Island Summit, the G8 leaders coordinated a meeting with stakeholders to encourage their collaboration in HIV vaccine development.²⁹²⁰

At the 2006 St. Petersburg Summit, to contribute to the need for knowledge diffusion from developed nations to developing nations, G8 leaders supported the “intensification of scientific research and exchanges in the area of infectious diseases, with attention given to involving scientists from developing countries in international scientific research programs” and aimed “to increase scientific cooperation with developing countries, encourage partnerships between experts and laboratories of developing and developed countries, and increase the scientific potential in countries of all income levels.”²⁹²¹

At the 2009 L’Aquila Summit, the G8 leaders acknowledged the benefits of an international Intellectual Property Rights system for promoting innovations that address public health challenges.²⁹²²

The subsequent years saw the G7 continue their focus in eradicating polio, providing prevention and treatment to AIDS and enhancing surveillance capacity for infectious diseases with less emphasis on collaborative research activities until the 2014 Ebola outbreak. At the subsequent 2015 Schloss Elmau Summit, G7 leaders renewed their commitment to contribute to the coordination of research and development efforts and committed to engage in: basic research, research on epidemiology, development of new antibiotics, alternative therapies and vaccines.²⁹²³ The response to the Ebola outbreak inspired a new

²⁹¹⁵ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020. Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹¹⁶ G7/8 Summit Compliance Data Sets by Issue, 1985-2013: Health, G7 Information Centre (Toronto) 17 April 2015. Access Date: 29 September 2021. <http://www.g8.utoronto.ca/compliance/dataset/health.html>

²⁹¹⁷ Health: A G8 Action Plan, G7 Information Centre (Toronto) 2 June 2003. Access Date: 25 October 2021. http://www.g7.utoronto.ca/summit/2003evian/health_en.html

²⁹¹⁸ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020. Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹¹⁹ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020. Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹²⁰ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020. Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹²¹ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020. Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹²² Responsible Leadership for a Sustainable Future, G7 Information Centre (Toronto) 8 July 2009. Access Date: 29 September 2021. <http://www.g8.utoronto.ca/summit/2009laquila/2009-declaration.html>

²⁹²³ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020. Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

focus on “faster and targeted development of easily usable and affordable” drugs, vaccines and point-of-care technologies.

At the 2016 Ise-Shima Summit, G7 leaders continued their commitment to promoting research collaboration by committing to “explore the feasibility of partnerships such as the Vaccine Innovation for Pandemic Preparedness Partnership to conduct coordinated vaccine research and development.”²⁹²⁴

The G7 emphasis on public health emergency preparedness and coordination in infectious disease control persisted with no explicit commitment on research collaboration until the emergence of COVID-19 as a new threat to global public health. At the 2020 US Virtual Summit, the G7 leaders committed to “marshalling the full power of [their] governments to: encourage science, research, and technology cooperation.”²⁹²⁵ In particular, the leaders emphasized: real-time information sharing, pooling epidemiologic data, increasing coordinated research efforts, the launch of joint research projects and the sharing of facilities towards the objective of “improving prevention strategies and mitigation measures” and “rapid development, manufacture and distribution of treatments and a [COVID-19] vaccine.”

Commitment Features

At the 2021 Cornwall Summit, G7 leaders made the following commitment: “as our nations and communities start to recover from the pandemic and build resilience for future shocks, we will continue to work with our research and business communities to remove barriers to the open and rapid sharing of knowledge, data and tools, to the greatest extent possible, recognising the importance of research security in particular in cutting-edge fields.”²⁹²⁶

“Recover” means “to return to a normal state after an unpleasant or unusual experience or a period of difficulty.”²⁹²⁷

“Resilience” means “the ability of a system to anticipate, absorb, recover from, and adapt to a wide array of systemic threats”²⁹²⁸

“Shock” means something that causes “a disturbance in the equilibrium or permanence of something”²⁹²⁹

“Continue” is understood to mean that the commitment is “established and implemented.”²⁹³⁰ To achieve full compliance, G7 members must take new actions that build upon existing efforts.²⁹³¹

²⁹²⁴ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020. Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹²⁵ Putting Humanitarian Health First: G7 Summit Health Performance 1975-2020, G7 Information Centre (Toronto) 7 July 2020. Access Date: 16 January 2021. <http://www.g7.utoronto.ca/evaluations/dobson-kirton-putting-humanitarian-health-first.pdf>

²⁹²⁶ G7 Research Compact, G7 Information Centre (Toronto) 13 June 2021. Access Date: 29 September 2021. <http://www.g7.utoronto.ca/summit/2021cornwall/210613-research.html>

²⁹²⁷ Recover, Oxford Learner’s Dictionaries (Oxford) n.d. Access Date: 26 October 2021. <https://www.oxfordlearnersdictionaries.com/definition/english/recover>

²⁹²⁸ A systemic resilience approach to dealing with Covid-19 and future shocks, Organization for Economic Co-operation and Development (France) 28 April 2020. Access Date: 26 October 2021. <https://www.oecd.org/coronavirus/policy-responses/a-systemic-resilience-approach-to-dealing-with-covid-19-and-future-shocks-36a5bdfb/>

²⁹²⁹ Shock, Merriam-Webster’s Dictionary (Springfield) n.d. Access Date: 26 October 2021. <https://www.merriam-webster.com/dictionary/shock>

²⁹³⁰ Compliance Coding Manual for International Institutional Commitments, G7 and G20 Research Groups (Toronto) 12 November 2020. Access Date: 29 September 2021. http://www.g7.utoronto.ca/compliance/Compliance_Coding_Manual_2020.pdf

²⁹³¹ Compliance Coding Manual for International Institutional Commitments, G7 and G20 Research Groups (Toronto) 12 November 2020. Access Date: 29 September 2021. http://www.g7.utoronto.ca/compliance/Compliance_Coding_Manual_2020.pdf

G7 members have identified “work[ing] with [their] research and business communities” as the means to achieve greater research cooperation. “Work with” means the action or process of working together to the same end. “Research” refers to systematic activities in natural sciences, engineering, social sciences, humanities and interdisciplinary fields that increases the stock of knowledge and the use of this knowledge to devise new applications.²⁹³² “Research community” refers to research practitioners, collaborators and institutions such as universities, hospitals and laboratories. “Business” means “companies that buys and sells goods and services.”²⁹³³ “Business community” refers to firms and industry associations in the private sector. If the G7 member reduces barriers to research cooperation but does not work with either the research or business communities, this is beyond the scope of the commitment and should only count towards partial compliance if the barrier removed is intended to benefit either the research or business community.

The objective of this commitment is to “remove barriers to the open and rapid sharing of knowledge, data and tools” in a way that contribute to recovering from the COVID-19 pandemic and building resilience for future shocks.

“Remove” means to take away something from a place.²⁹³⁴

“Barriers” means social, legal, regulatory and administrative hindrances.²⁹³⁵ This indicates that full compliance requires not merely the act of sharing knowledge, data and tools but structural changes that enable open and rapid sharing of knowledge, data and tools.

“Open” means “to be available and ready to use.”²⁹³⁶

“Rapid” means “happening quickly or in a short period of time.”

“Knowledge, data and tools” include any input that facilitates research processes.²⁹³⁷ This may be expanded to include: “software, code, and other research resources.”

The G7 2021 Research Compact states that the efficient sharing of research data can be achieved through “improving the availability, sustainability, usability and interoperability of research data, technologies, infrastructure and services.”²⁹³⁸ Some examples may include: establishing collaborative research platforms, streamlining data sharing procedures, removing rules that restrict the sharing of research outcome and creating incentives that recognize and reward research collaborations.

“To the greatest extent possible” is understood to mean that the leaders commit to strong actions that fully utilize their ability to share knowledge, data and tools.²⁹³⁹

²⁹³² Glossary of Statistical Terms, Organisation of Economic Cooperation and Development (Paris) 12 March 2003. Access Date: 2 January 2022. <https://stats.oecd.org/glossary/detail.asp?ID=2312>

²⁹³³ Business, Cambridge Dictionary (Cambridge) 2022. Access Date: 2 January 2022. <https://dictionary.cambridge.org/dictionary/english/business>

²⁹³⁴ Remove, Oxford Learner’s Dictionaries (Oxford) n.d. Access Date: 26 October 2021. https://www.oxfordlearnersdictionaries.com/definition/english/remove_1?q=remove

²⁹³⁵ G7 Research Compact, G7 Information Centre (Toronto) 13 June 2021. Access Date: 29 September 2021. <http://www.g7.utoronto.ca/summit/2021cornwall/210613-research.html>

²⁹³⁶ Open, Oxford Learner’s Dictionaries (Oxford) n.d. Access Date: 26 October 2021. https://www.oxfordlearnersdictionaries.com/definition/english/open_1?q=open

²⁹³⁷ G7 Research Compact, G7 Information Centre (Toronto) 13 June 2021. Access Date: 29 September 2021. <http://www.g7.utoronto.ca/summit/2021cornwall/210613-research.html>

²⁹³⁸ G7 Research Compact, G7 Information Centre (Toronto) 13 June 2021. Access Date: 29 September 2021. <http://www.g7.utoronto.ca/summit/2021cornwall/210613-research.html>

²⁹³⁹ Compliance Coding Manual for International Institutional Commitments, G7 and G20 Research Groups (Toronto) 12 November 2020. Access Date: 29 September 2021. http://www.g7.utoronto.ca/compliance/Compliance_Coding_Manual_2020.pdf

To complement their commitment to sharing knowledge, data and tools, G7 members added the consideration to “recognize the importance of research security.”

“Recognize” means to acknowledge formally.²⁹⁴⁰

The G7 2021 Research Compact elaborated on “research security” to mean “effectively ensure the security and integrity of the research ecosystem, ... preventing the theft, misuse and inappropriate exploitation of our intellectual property and personal data, and other forms of misconduct.”²⁹⁴¹ Therefore, “research security” refers to the protection of intellectual property, personal data and other aspects of research integrity. The recognition of research security should be evaluated holistically with the primary objective of this commitment to remove barriers in sharing knowledge, data and tools. The latter should not compromise the protection of research security and recognizing research security should not result in restricting research cooperation. Actions that compromise one of these two principles should only be counted as partial compliance.

“In particular” means “deserving of special mention, to a higher degree than is usual or average.”²⁹⁴²

“Cutting-edge” means “the newest, most advanced stage in the development of something.”²⁹⁴³ Some examples may include Artificial Intelligence,²⁹⁴⁴ engineering robotics and synthetic biology.²⁹⁴⁵ This statement means that the importance of research security is to be emphasized in the newest research fields, but recognizing research security in all research activities would be counted towards compliance actions.

The depth dimension, or the strength of the action required to demonstrate compliance, is qualified by the phrase “continue to work,” meaning the G7 members are building on already existing work and the phrase “to the greatest extent possible,” meaning the G7 members commit to undertake strong actions.

Full compliance, or a score of +1, is assigned to G7 members that take strong action to work with both the research and business communities to remove barriers in sharing knowledge, data and tools while recognizing research security. The G7 member should demonstrate substantial action that improves the structures that enable the sharing of knowledge, data and tools. These actions must involve collaboration with both the research and the business communities to achieve full compliance.

Partial compliance, or a score of 0, is assigned if the G7 member only work strongly with either the research or business community to remove barriers in sharing knowledge, data and tools while recognizing research security. Partial compliance is also assigned if the G7 member work less than strongly with both the research and the business community. Less than strong actions include one-off actions to share knowledge, data and tools without strengthening long-term collaborative platforms or expressing support for research collaboration without committing programs, resources or frameworks for structural change.

²⁹⁴⁰ Recognize, Merriam-Webster’s Dictionary (Springfield) n.d. Access Date: 29 September 2021. <https://www.merriam-webster.com/dictionary/recognize>

²⁹⁴¹ G7 Research Compact, G7 Information Centre (Toronto) 13 June 2021. Access Date: 29 September 2021. <http://www.g7.utoronto.ca/summit/2021cornwall/210613-research.html>

²⁹⁴² Compliance Coding Manual for International Institutional Commitments, G7 and G20 Research Groups (Toronto) 12 November 2020. Access Date: 29 September 2021. http://www.g7.utoronto.ca/compliance/Compliance_Coding_Manual_2020.pdf

²⁹⁴³ Cutting edge, Oxford Learner’s Dictionaries (Oxford) n.d. Access Date: 19 September 2021. https://www.oxfordlearnersdictionaries.com/definition/american_english/cutting-edge

²⁹⁴⁴ STI Policy and the COVID-19 crisis, Organization for Economic Co-operation and Development (Paris) n.d. Access Date: 26 October 2021. <https://www.oecd.org/sti/science-technology-innovation-outlook/STIP-and-COVID-19-crisis/>

²⁹⁴⁵ OECD Science, Technology and Innovation Outlook, Organization for Economic Co-operation and Development (Paris) n.d. Access Date: 26 October 2021. <https://www.oecd.org/sti/science-technology-innovation-outlook/>

Non-compliance, or a score of -1, is assigned if the G7 member only work less than strongly with either business or research community or not at all with both communities to remove barriers in sharing knowledge, data and tools while recognizing research security.

Scoring Guidelines

-1	The G7 member work less than strongly with EITHER the research or the business community to remove barriers in sharing knowledge, data and tools while recognizing research security OR the G7 member work with NEITHER the research or the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.
0	The G7 member work strongly with EITHER the research community or the business community to remove barriers in sharing knowledge, data and tools while recognizing research security OR the G7 member work less than strongly with BOTH the research and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.
+1	The G7 member work strongly with BOTH the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

Compliance Director: Chan Wai Suet Gi Gi

Lead Analyst: Sara Teme

Canada: +1

Canada has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

On 15 June 2021, Canada and the United States signed the Memorandum of Understanding between the National Science Foundation (NSF) of the United States of America and the Natural Sciences and Engineering Research Council (NSERC) of Canada concerning Research Cooperation.²⁹⁴⁶ This first formal partnership between the NSERC of Canada and NSF paves the way for collaborations in cutting-edge technology and knowledge-sharing between the two countries' research communities.

On 23 June 2021, Canada announced an investment of CAD5.25 million under Canada's Strategy for Patient-Oriented Research (SPOR) that will create a new national training platform based at Université Laval.²⁹⁴⁷ The SPOR National Training Entity platform will centralize and streamline training activities, promote knowledge-sharing and coaching and mentoring for new researchers.

On 24 June 2021, Canada and the United States signed a Memorandum of Understanding on energy cooperation as part of the Roadmap for a Renewed US-Canada Partnership.²⁹⁴⁸ The partnership increases bilateral cooperation, including knowledge sharing on nuclear energy policies.

On 28 June 2021, the Standards Council of Canada published the Canadian Data Governance Standardization Roadmap which identifies 35 areas and gaps within data governance to assess for

²⁹⁴⁶ New US-Canada partnership announced for collaboration in research and innovation, Natural Sciences and Engineering Research Council of Canada (Ottawa) 24 June 2021. Access Date: 5 January 2022. https://www.nserc-crsng.gc.ca/Media-Media/NewsDetail-DetailNouvelles_eng.asp?ID=1271

²⁹⁴⁷ Government of Canada creates national training platform for patient-oriented research, Canadian Institutes for Health (Ottawa) 24 June 2021. Access Date: 5 January 2022. <https://www.canada.ca/en/institutes-health-research/news/2021/06/government-of-canada-creates-national-training-platform-for-patient-oriented-research.html>

²⁹⁴⁸ Canada Strengthens Energy Partnership With the United States, Natural Resources Canada (Ottawa) 24 June 2021. Access Date: 5 January 2022. <https://www.canada.ca/en/natural-resources-canada/news/2021/06/canada-strengthens-energy-partnership-with-the-united-states.html>

standardization.²⁹⁴⁹ The Canadian Data Governance Standardization Collaborative involved 220 experts across society to streamline the data sharing process with a more secure digital infrastructure founded on quality, trust and ethics.

On 29 June 2021, Canada joined the Coalition on Disaster Resilient Infrastructure, a global and multilateral partnership group involving both the public and private sector.²⁹⁵⁰ Canada committed to participating in the knowledge-sharing coalition to ensure resilient investments and mitigate future climate risks.

On 30 June 2021, Canada led the Global Partnership on Artificial Intelligence (GPAI) Council meeting to emphasize the possibility for international collaboration on projects and policies to address the socio-ethical impacts of AI.²⁹⁵¹ The GPAI involved AI experts from diverse sectors to inform governments on the potential applications of AI to address global challenges.

On 5 July 2021, Minister of Health Patty Hajdu and Minister of Innovation, Science and Industry François-Philippe Champagne announced an investment of CAD4.95 million in a new research training platform, the Implementing Smart Cities Interventions to Build Healthy Cities Training Platforms (SMART).²⁹⁵² As a component of the Canadian Institutes of Health Research Healthy Cities Research Initiative, SMART aims to deliver interdisciplinary training to new generations of researchers and build resilience and health in Canadian cities.

On 12 July 2021, Minister Champagne, Minister of Public Safety and Emergency Preparedness Bill Blair and Minister Hajdu released new National Security Guidelines for Research Partnerships to integrate national security considerations into the development, evaluation and funding of international research partnerships.²⁹⁵³ These guidelines were developed in collaboration with research communities, such as the NSERC and the Government of Canada-Universities Working Group.

On 16 July 2021, Minister Champagne and the Minister of Canadian Heritage Steven Guilbeault launched a public consultation to ensure that the modern copyright framework for artificial intelligence and the Internet of Things can respond to future challenges.²⁹⁵⁴ The Government called for stakeholders to provide input on 'Technological Protection Measures' adequacy and potential challenges in dealing with the digital economy, including the repair and interoperability of technological measures.

²⁹⁴⁹ Minister Champagne marks the launch of the Canadian Data Governance Standardization Collaborative Roadmap, Innovation, Science and Economic Development (Ottawa) 28 June 2021. Access Date: 5 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/06/minister-champagne-marks-the-launch-of-the-canadian-data-governance-standardization-collaborative-roadmap.html>

²⁹⁵⁰ Government of Canada joins the Coalition on Disaster Resilient Infrastructure, Infrastructure Canada (Ottawa) 29 June 2021. Access Date: 15 January 2022. <https://www.canada.ca/en/office-infrastructure/news/2021/06/government-of-canada-joins-the-coalition-on-disaster-resilient-infrastructure.html>

²⁹⁵¹ Minister Champagne presents Global Partnership on Artificial Intelligence priorities for 2021, Innovation, Science and Economic Development (Ottawa) 30 June 2021. Access Date: 5 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/06/minister-champagne-presents-global-partnership-on-artificial-intelligence-priorities-for-2021.html>

²⁹⁵² Investing in science-based solutions to improve health and well-being in urban areas, Canadian Institutes of Health Research (Ottawa) 5 July 2021. Access Date: 15 January 2022. <https://www.canada.ca/en/institutes-health-research/news/2021/07/investing-in-science-based-solutions-to-improve-health-and-well-being-in-urban-areas.html>

²⁹⁵³ Government of Canada takes action to protect Canadian research and intellectual property, Innovation, Science and Economic Development (Ottawa) 12 July 2021. Access Date: 5 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/07/government-of-canada-takes-action-to-protect-canadian-research-and-intellectual-property.html>

²⁹⁵⁴ The Government of Canada Launches Consultation on a Modern Copyright Framework for AI and the Internet of Things, Innovation, Science and Economic Development (Ottawa) 16 July 2021. Access Date: 5 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/07/the-government-of-canada-launches-consultation-on-a-modern-copyright-framework-for-ai-and-the-internet-of-things.html>

On 20 July 2021, Innovation, Science and Economic Development Canada launched a series of virtual roundtables with principal stakeholders in Canada's quantum research and business communities.²⁹⁵⁵ This public consultation on a collaborative platform advances the sharing of vital insights from the Canadian quantum industry to further inform the National Quantum Strategy.

On 20 July 2021, Natural Resources Canada signed a new Cooperative Research and Development Agreement with the US Environmental Protection Agency to enhance and update the ENERGY STAR Portfolio Manager, a free platform for institutional and commercial building owners to monitor and compare energy performance for potential upgrades and improvements.²⁹⁵⁶ The agreement deepens the two countries' cooperation in energy efficiency through the sharing of tools.

On 28 July 2021, Minister Champagne and Minister Hajdu launched the Biomanufacturing and Life Sciences Strategy to strengthen the life science sector and to ensure resilience to future pandemics.²⁹⁵⁷ The government committed CAD2.2 billion over seven years to invest into foundational research and research infrastructure of post-secondary institutions and affiliated research, streamline regulations to support health innovations, and create mechanisms for international and public-private partnerships.²⁹⁵⁸

On 8 August 2021, the National Research Council of Canada (NRC) announced funding of more than CAD23 million on research projects under its Ideation Fund initiatives, Challenge programs and the Supercluster support programs.²⁹⁵⁹ These investments will advance NRC scientists' collaboration with academics, industries, and non-profit organizations to generate innovative technological solutions to Canada's pressing challenges.

On 12 August 2021, Parliamentary Secretary to the Minister of Infrastructure and Communities Andy Fillmore called any legal entities validly incorporated or registered in Canada to submit proposals under the Research and Knowledge Initiative (RKI).²⁹⁶⁰ RKI aims to facilitate collaboration and partnership among key public infrastructure actors and stakeholders, and support data, research and knowledge-sharing activities.

On 12 August 2021, the Government committed CAD61.5 million for the next phase of the Canadian Longitudinal Study on Aging (CLSA).²⁹⁶¹ The CLSA is a collaboration between 160 researchers located at 26 Canadian institutions that monitor the health outcomes of over 50,000 Canadians for 20 years. The

²⁹⁵⁵ Government of Canada launches public consultations on National Quantum Strategy, Innovation, Science and Economic Development (Ottawa) 20 July 2021. Access Date: 7 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/07/government-of-canada-launches-public-consultations-on-national-quantum-strategy.html>

²⁹⁵⁶ Canada-U.S. Sign New Cooperative Research and Development Agreement on Energy Efficiency, Natural Resources Canada (Ottawa) 20 July 2021. Access Date: 12 January 2022. <https://www.canada.ca/en/natural-resources-canada/news/2021/07/canada-us-sign-new-cooperative-research-and-development-agreement-on-energy-efficiency.html>

²⁹⁵⁷ The Government of Canada announces biomanufacturing and life sciences strategy, Innovation, Science and Economic Development (Vancouver) 28 July 2021. Access Date: 7 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/07/the-government-of-canada-announces-biomanufacturing-and-life-sciences-strategy.html>

²⁹⁵⁸ Canada's Biomanufacturing and Life Sciences Strategy, Innovation, Science and Economic Development (Ottawa) 28 July 2021. Access Date: 7 January 2022. <https://www.ic.gc.ca/eic/site/151.nsf/eng/00019.html>

²⁹⁵⁹ Government of Canada funding research collaborations for breakthrough technologies, National Research Council Canada (Ottawa) 6 August 2021. Access Date: 12 January 2022. <https://www.canada.ca/en/national-research-council/news/2021/08/government-of-canada-funding-research-collaborations-for-breakthrough-technologies.html>

²⁹⁶⁰ Government of Canada announces a call for proposals to strengthen community-level data and research projects related to public infrastructure, Infrastructure Canada (Ottawa) 10 August 2021. Access Date: 15 January 2022. <https://www.canada.ca/en/office-infrastructure/news/2021/08/government-of-canada-announces-a-call-for-proposals-to-strengthen-community-level-data-and-research-projects-related-to-public-infrastructure.html>

²⁹⁶¹ Government of Canada renews investment in largest Canadian study on aging, Canadian Institutes of Health Research (Ottawa) 12 August 2021. Access Date: 12 January 2022. <https://www.canada.ca/en/institutes-health-research/news/2021/08/government-of-canada-renews-investment-in-largest-canadian-study-on-aging.html>

investment ensures the continuation of data collection for global researchers to access CLSA data for health insights.

On 13 August 2021, Minister Champagne and Minister Hajdu launched the application process for the Strategic Science Fund, an initiative to support third-party science and research organizations through a transparent and merit-based federal funding process.²⁹⁶²

On 3 November 2021, Minister Champagne and US Secretary of Commerce Gina Raimondo outlined a work plan to increase cross-border collaboration and advance post-COVID-19 economic recovery efforts, building upon the Roadmap for a Renewed US-Canada Partnership.²⁹⁶³ Through the work plan, Minister Champagne and US Secretary Raimondo agreed to cooperate on enhancing resiliency for advanced network technologies and deepen collaboration on emerging technologies.

On 11 November 2021, Minister Champagne attended the second annual plenary of the GPAI in Paris alongside leading international AI experts and 18 representatives from member countries and the European Union.²⁹⁶⁴ The Paris Summit encouraged all members to leverage the proposals and recommendations of GPAI experts to ensure a responsible and ethical development of AI.

On 22 November 2021, the Government of Canada partnered with the European Commission to examine the use of digital credentials.²⁹⁶⁵ Their partnership resulted in a series of workshops and a report entitled "Canada and the European Union Joint Workshop Series for Enabling Interoperability and Mutual Support for Digital Credentials." Future work involves addressing recommendations from the report to collaborate on digital credentials research and innovation, focusing on interoperability and mutual support while protecting privacy and personal data.

On 29 November 2021, Canada, alongside fellow G7 Health Ministers, released a joint statement reaffirming the importance of supporting research and development related to COVID-19 vaccines.²⁹⁶⁶ Additionally, ministers expressed support for information sharing via an international pathogen surveillance network.

On 13 December 2021, Minister of Health Jean-Yves Duclos tabled the annual report on Canada's public health, "A Vision to Transform Canada's Public Health System" in parliament.²⁹⁶⁷ Under the Pan-Canadian Health Data Strategy, the report aims to modernize health data collection, sharing and interoperability, and

²⁹⁶² Government of Canada opens Strategic Science Fund application process, Innovation, Science and Economic Development (Ottawa) 10 August 2021. Access Date: 15 January 2022. [canada.ca/en/innovation-science-economic-development/news/2021/08/government-of-canada-opens-strategic-science-fund-application-process.html](https://www.canada.ca/en/innovation-science-economic-development/news/2021/08/government-of-canada-opens-strategic-science-fund-application-process.html)

²⁹⁶³ Joint readout: Minister François-Philippe Champagne meets with Secretary Gina Raimondo of the United States, Innovation, Science and Economic Development (Washington D.C.) 3 November 2021. Access Date: 7 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/11/joint-readout-minister-francois-philippe-champagne-meets-with-secretary-ginaraimondo-of-the-united-states.html>

²⁹⁶⁴ Minister Champagne attends the Global Partnership on Artificial Intelligence Paris Summit, Innovation, Science and Economic Development Canada (Ottawa) 11 November 2021. Access Data: 16 January 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>

²⁹⁶⁵ Government of Canada announces partnership with the European Commission to examine the use of digital credentials, Innovation, Science and Economic Development Canada (Ottawa) 22 November 2021. Access Data: 16 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/11/government-of-canada-announces-partnership-with-the-european-commission-to-examine-the-use-of-digital-credentials.html>

²⁹⁶⁶ G7 joint statement on the Omicron variant, G7 UK 2021 (London) 29 November 2021. Access Date: 13 December 2021. <https://www.g7uk.org/g7-joint-statement-on-the-omicron-variant/>

²⁹⁶⁷ Statement from the Chief Public Health Officer of Canada on the CPHO Annual Report 2021: A Vision to Transform Canada's Public Health System, Public Health Agency of Canada (Ottawa) 13 December 2021. Access Data: 16 January 2022. <https://www.canada.ca/en/public-health/news/2021/12/statement-from-the-chief-public-health-officer-of-canada-on-the-cpho-annual-report-2021-a-vision-to-transform-canadas-public-health-system.html>

address gaps in public health surveillance and data systems in an ethical and secure manner. In addition, the report emphasizes the need to modernize collaboration structures to mobilize all of society with clear and measurable indicators to approach complex health challenges.

On 14 December 2021, Minister Duclos announced the release of the sixth “Report on Human Biomonitoring of Environmental Chemicals” in Canada based on data from the Canadian Health Measures Survey.²⁹⁶⁸ The reported human biomonitoring information contributes to the availability of data to all Canadians through the Open Government portal and the CHMS biomonitoring site.

On 15 December 2021, the Special Advisory Committee on the Epidemic of Opioid Overdoses acknowledged the significance of improving data sharing and comparability to inform evidence-based policies and to expand data collection on the broader factors that contribute to substance-related harms in various Canadian population groups.²⁹⁶⁹

On 13 January 2022, Canada recognized the research effort from the Council of Canadian Academies and the Expert Panel on Disaster Resilience in a Changing Climate.²⁹⁷⁰ Their report, “Building a Resilient Canada,” urged an integrated response and collaboration on climate change-related extreme weather events. Canada affirmed its commitment to knowledge sharing and collaboration with stakeholders through the development of a National Risk Profile and National Adaptation Strategy to strengthen communities’ resilience.

On 13 January 2022, the Canada Research Coordinating Committee released its 2020–21 progress report “Collective Response” summarizing the efforts of federal research funding organizations during the pandemic.²⁹⁷¹ The report outlined six strategic priorities for Canadian research, including enhancing interagency operation on international research, supporting Canada’s research response to COVID-19, and engagement in interdisciplinary, international, high-risk, rapid-response research.

On 14 January 2022, the Government created the Centre for Research on Pandemic Preparedness and Health Emergencies with an ongoing investment of CAD18.5 million per year.²⁹⁷² The Research Centre focuses on growing Canada’s capacity to mobilize knowledge in the recovery of the current pandemic and resilience to future pandemics through collaboration with domestic and international stakeholders. The Research Centre has already supported COVID-19 research initiatives that equip decision-makers with research evidence and address the wider impacts of the pandemic.

²⁹⁶⁸ Government of Canada announces the release of the latest results from the Canadian Health Measures Survey, Health Canada (Ottawa) 14 December 2022. Access Date: 16 January 2022. <https://www.canada.ca/en/health-canada/news/2021/12/government-of-canada-announces-the-release-of-the-latest-results-from-the-canadian-health-measures-survey.html>

²⁹⁶⁹ Joint Statement from the Co-Chairs of the Special Advisory Committee on the Epidemic of Opioid Overdoses – Latest Modelling Projections on Opioid Related Deaths and National Data on the Overdose Crisis, Public Health Agency of Canada (Ottawa) 15 December 2021. Access Date: 16 January 2022. <https://www.canada.ca/en/public-health/news/2021/12/joint-statement-from-the-co-chairs-of-the-special-advisory-committee-on-the-epidemic-of-opioid-overdoses--latest-modelling-projections-on-opioid-re.html>

²⁹⁷⁰ Government of Canada welcomes Council of Canadian Academies’ report Building a Resilient Canada, Public Safety Canada (Ottawa) 13 January 2022. Access Date: 16 January 2022. <https://www.canada.ca/en/public-safety-canada/news/2022/01/government-of-canada-welcomes-council-of-canadian-academies-report-building-a-resilient-canada.html>

²⁹⁷¹ Canada Research Coordinating Committee releases 2020–21 progress report, Canada Research Coordinating Committee (Ottawa) 13 January 2022. Access Date: 16 January 2022. <https://www.canada.ca/en/research-coordinating-committee/news/2022/01/crcc-releases-2020-21-progress-report.html>

²⁹⁷² Government of Canada creates Centre for Research on Pandemic Preparedness and Health Emergencies, Canadian Institutes of Health Research (Ottawa) 14 January 2022. Access Date: 16 January 2022. <https://www.canada.ca/en/institutes-health-research/news/2022/01/government-of-canada-creates-centre-for-research-on-pandemic-preparedness-and-health-emergencies.html>

Canada has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security. Canada has taken action to work with the research community through the Canadian Data Governance Standardization Collaborative to streamline data sharing process, the Biomanufacturing and Life Sciences Strategy that support public-private partnerships, and the Ideation Fund initiative that invest in collaborative research projects. Canada has worked with the business community by hosting a series of roundtables to consult them on Canada's National Quantum Strategy. Canada also recognized research security, particularly in its release of the National Security Guidelines for Research Partnerships.

Thus, Canada receives a score of +1.

Analyst: Serena Honekin

France: +1

France has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

On 10 November 2021, President Emmanuel Macron met with US Vice President Kamala Harris to establish the "US-France Comprehensive Dialogue on Space" to collaborate on civil, fiscal, national and space security.²⁹⁷³ This agreement seeks to strengthen existing collaborative strategies to technological advancement and future pandemic preparedness.²⁹⁷⁴

On 29 November 2021, France, alongside fellow G7 Health Ministers, released a joint statement reaffirming the importance of supporting research and development related to COVID-19 vaccines.²⁹⁷⁵ Additionally, ministers expressed support for information sharing via an international pathogen surveillance network.

On 7 December 2021, France attended the sixth annual United States - France Joint Committee Meeting (JCM) on Science and Technology Cooperation in Washington D.C.²⁹⁷⁶ The JCM brought together government and research organization representatives from France and the United States to discuss the advancements in their environmental, climate sciences, health research and emerging technology sectors. Representatives agreed to deepen cooperation in research, knowledge sharing, health affairs, climate crises, and pandemic responses.

On 8 December 2021, the Ministry of Health, the Ministry of Education, Research and Innovation, and the Ministry of Finance announced approximately EUR142 million to support 17 beneficiaries through the fifth annual Investments for the Future Program.²⁹⁷⁷ Through the National Research Agency, these pledges

²⁹⁷³ U.S. VP Harris announces expanded cooperation on space issues after meeting Macron, Reuters (Paris) 11 November 2021. Access Date: 4 December 2021. <https://www.reuters.com/world/us/us-vp-harris-announces-expanded-cooperation-space-issues-after-meeting-macron-2021-11-10/>

²⁹⁷⁴ Vice President Kamala Harris's Meeting with President Emmanuel Macron of France, White House Briefing Room (Washington D.C.) 10 November 2021. Access Date: 4 December 2021. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/10/statement-by-senior-advisor-and-chief-spokesperson-symone-sanders-on-vice-president-kamala-harris-meeting-with-president-emmanuel-macron-of-france/>

²⁹⁷⁵ G7 joint statement on the Omicron variant, G7 UK 2021 (London) 29 November 2021. Access Date: 13 December 2021. <https://www.g7uk.org/g7-joint-statement-on-the-omicron-variant/>

²⁹⁷⁶ Joint Statement on U.S. - France Science and Technology Cooperation, US Department of State (Washington D.C.) 7 December 2021. Access Date: 9 December 2021. <https://www.state.gov/us-france-science-technology-cooperation>

²⁹⁷⁷ Investments for the future: 17 new winners and 142 million for the fifth call for projects "University hospital research in health", Ministry of Higher Education, Research and Innovation (Paris) 8 December 2021. Translation provided by Google Translate. Access Date: 10 December 2021. <https://www.enseignementsup-recherche.gouv.fr/fr/investissements-d-avenir-17-nouveaux-laureats-et-142-meu-pour-le-cinquieme-appel-projets-recherche-82567>

support innovative research partnerships in academia, technological and healthcare industries. This will promote diverse projects that work towards sustainable growth, research incentivization and multi-sectoral network building domestically.

On 9 December 2021, President Macron cited digital transformation as a key priority for France's upcoming presidency of the EU.²⁹⁷⁸ France will focus on digital transformation, through the Digital Services Act and the Digital Market, that will seek to provide additional regulations, security, and accountability on digital platforms used within the EU.

France has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security. France worked with research communities through the US-France in Joint Committee Meeting that brings research representatives to share cutting-edge knowledge and deepen collaboration on research. France has also worked with business communities through the Investments for the Future program that support research partnerships between academia and industries.

Thus, France receives a score of +1.

Analyst: Theresa Jones

Germany: +1

Germany has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

On 15 July 2021, the Ministry of Health announced that it would contribute an additional EUR260 million to the World Health Organization (WHO) to aid in the global response against the COVID-19 pandemic.²⁹⁷⁹ This sum will go towards the global cooperation platform the Access to COVID-19 Tools Accelerator, which aims to accelerate the global response to the COVID-19 pandemic.

On 1 September 2021, Chancellor Angela Merkel, along with the WHO Director-General Tedros Adhanom Ghebreyesus inaugurated the Hub for Pandemic and Epidemic Intelligence based in Berlin.²⁹⁸⁰ The Hub aims to assist data science innovation for public health surveillance and response, and share expertise globally. Moreover, Germany announced an initial investment of USD100 million in the WHO Hub, which seeks to connect technology, data, tools and communities through broad partnerships across professional disciplines in order to ensure that actionable data and intelligence are widely available for the common good.

On 6 September 2021, the Federal Ministry of Health and the Ministry of Education and Research announced EUR150 million to support six coordinating German companies in their joint effort to develop COVID-19 related medicine and pharmaceuticals.²⁹⁸¹ The government funding will support: AdrenoMed AG,

²⁹⁷⁸ The French Presidency of the Council of the European Union, Ministry of Higher Education, Research and Innovation (Paris) 10 December 2021. Translated by Google Translate. Access Date: 10 December 2021. <https://www.enseignementsup-recherche.gouv.fr/fr/la-presidence-francaise-du-conseil-de-l-union-europeenne-82627>

²⁹⁷⁹ Germany supports the global COVID-19 response, World Health Organization (Geneva) 1 September 2021. Access Date: 16 January 2022. <https://www.who.int/about/funding/contributors/deu>

²⁹⁸⁰ WHO, Germany open Hub for Pandemic and Epidemic Intelligence in Berlin, World Health Organization (Berlin) 1 September 2021. Access Date: 16 January 2022. <https://www.who.int/news/item/01-09-2021-who-germany-open-hub-for-pandemic-and-epidemic-intelligence-in-berlin>

²⁹⁸¹ Spahn/Karliczek: Further impetus for the development and manufacture of supply-related drugs against COVID-19, Federal Ministry of Health(Berlin) 6 September 2021. Translation provided by Google Translate. Access Date: 16 January 2022. <https://www.bundesgesundheitsministerium.de/presse/pressemitteilungen/2021/3-quartal/arzneimittel-gegen-covid-19.html>

Apogenix AG, Atriva Therapeutics GmbH, CORAT Therapeutics GmbH, InflaRX GmbH and the DRK Baden-Württemberg-Hessen gGmbH.

On 29 November 2021, Germany, alongside fellow G7 Health Ministers, released a joint statement reaffirming the importance of supporting research and development related to COVID-19 vaccines.²⁹⁸² Additionally, ministers expressed support for information sharing via an international pathogen surveillance network.

Germany has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security. Germany has worked with the research community by investing in the WHO Hub for Pandemic and Epidemic Intelligence. Additionally, Germany has engaged with its business community by investing in six German pharmaceutical companies' joint effort to develop medicines against COVID-19.

Thus, Germany receives a score of +1.

Analyst: Ceylan E. Borgers

Italy: +1

Italy has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

On 18 June 2021, the Institute of Public Health published a report declaring the need to improve and develop new medical technologies to assist those living with disabilities and those whose health has been affected by COVID-19.²⁹⁸³

On 24 November 2021, Italy adopted the Strategic Program for Artificial Intelligence 2022-24.²⁹⁸⁴ This program includes policies to strengthen the Italian research ecosystem in AI and foster collaboration between academic, industry and public actors. Additionally, the program will finance national platforms for data sharing and software. It also aims to create more accessible data infrastructures and support start-ups with AI solutions to address problems in the public sector.

On 29 November 2021, Italy, alongside fellow G7 Health Ministers, released a joint statement reaffirming the importance of supporting research and development related to COVID-19 vaccines.²⁹⁸⁵ Additionally, ministers expressed support for information sharing via an international pathogen surveillance network.

Italy has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security. Italy has worked with its research community through the Strategic Program for Artificial Intelligence. Additionally, Italy has collaborated with business communities by adopting policies to strengthen the research environment and encourage collaboration between academia, industry and the government.

²⁹⁸² G7 joint statement on the Omicron variant, G7 UK 2021 (London) 29 November 2021. Access Date: 13 December 2021. <https://www.g7uk.org/g7-joint-statement-on-the-omicron-variant/>

²⁹⁸³ Technologies to support frailty, disability and rare diseases: development and submission of a survey during the pandemic emergency COVID-19, Higher Institute of Health (Rome) 18 June 2021. Access Date: 16 January 2022. https://www.iss.it/web/iss-en/rapporti-iss-covid-19/-/asset_publisher/0JjjK4TivXZp/content/id/5828712

²⁹⁸⁴ Artificial Intelligence: Italy launches the national strategy, Minister for technological innovation and digital transition (Rome) 24 November 2021. Translation provided by Google Translate. Access Date: 1 February 2022. <https://innovazione.gov.it/notizie/comunicati-stampa/intelligenza-artificiale-l-italia-lancia-la-strategia-nazionale/>

²⁹⁸⁵ G7 joint statement on the Omicron variant, G7 UK 2021 (London) 29 November 2021. Access Date: 13 December 2021. <https://www.g7uk.org/g7-joint-statement-on-the-omicron-variant/>

Thus, Italy receives a score of +1.

Analyst: Ceylan E. Borgers

Japan: +1

Japan has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

On 14 June 2021, the International Cooperation Agency signed a Record of Discussions with the Government of Peru under the Science and Technology Research Partnership for Sustainable Development (SATREPS).²⁹⁸⁶ This program aims to facilitate knowledge sharing between Japan and Peru and aid in the development of strategies to mitigate the impacts of climate, health and geo-political crises upon local infrastructure in the Lima Metropolitan Area.²⁹⁸⁷

On 16 June 2021, the Science and Technology Agency along with the Ministry of Education, Culture, Sports, Science and Technology hosted an online symposium to recognize the establishment of the COI-NEXT platform, which seeks to connect industry leaders with post-secondary institutions in advancing UN Sustainable Development Goals through research and development.²⁹⁸⁸ The symposium brought key stakeholders in academia, technological industries and local governments together to discuss the goals and potential outcomes of the program.

On 1 September 2021, the Government of Japan established the Digital Agency that aims to enhance digital literacy and connectivity for all Japanese citizens.²⁹⁸⁹ The Agency will seek to advance strategies, legislation and investments to promote user-friendly platforms and services that facilitate knowledge sharing and capacity building across sectors.²⁹⁹⁰

On 28 September 2021, the National Center of Incident Readiness and Strategy for Cybersecurity launched the ‘Cybersecurity for All’ initiative to ensure that cybersecurity is guaranteed to all “people, business sectors, and local regions” that live and work through cyberspace.²⁹⁹¹ This strategy will work with the Digital Agency to strengthen the technological networks and cyber infrastructure shared between foreign governments, business leaders and post-secondary institutions.²⁹⁹²

On 21 October 2021, the Cabinet Secretariat for the National Center of Incident Readiness and Strategy for Cybersecurity hosted the 14th annual ASEAN-Japan Cybersecurity Policy Meeting virtually.²⁹⁹³ Key priorities of the meeting included enhancing collaboration on cybersecurity between member states of the Association

²⁹⁸⁶ Signing of Records of Discussions, Japan International Cooperation Agency (Tokyo) 16 June 2021. Access Date: 2 December 2021. https://www.jica.go.jp/english/news/press/2021/20210616_30.html

²⁹⁸⁷ About SATREPS, Japan Science and Technology Agency (Tokyo) Access Date: 14 January 2022. <https://www.jst.go.jp/global/english/about.html>

²⁹⁸⁸ COI-NEXT Kick-Off Symposium, Japan Science and Technology Industry (Tokyo) 16 June 2021. Access Date: 2 December 2021. https://www.jst.go.jp/report/2021/210726_e.html

²⁹⁸⁹ What is the Digital Agency?, Digital Agency of Japan (Tokyo) 1 September 2021. Access Date: 2 December 2021. <https://www.digital.go.jp/en>

²⁹⁹⁰ National Data Strategy, National Strategy Office of IT, Cabinet Secretariat (Tokyo) 6 June 2021. Access Date: 3 December 2021. https://cio.go.jp/sites/default/files/uploads/documents/digital/20210901_en_05.pdf

²⁹⁹¹ Commitment to a Free, Fair, and Secure Cyberspace - About NISC (Tokyo) 22 October 2021. Access Date: 3 December 2021. <https://www.nisc.go.jp/eng/index.html>

²⁹⁹² Cybersecurity Strategy, The Government of Japan (Tokyo) 28 September 2021. Access Date: 3 December 2021. <https://www.nisc.go.jp/eng/pdf/cs-senryaku2021-en.pdf>

²⁹⁹³ Outcomes of the 14th ASEAN-Japan Cybersecurity Policy Meeting, The National Center of Incident Readiness and Cybersecurity (Tokyo) 22 October 2021. Access Date: 2 December 2021. https://www.nisc.go.jp/eng/pdf/AMSJ_CPM_20211021_eng_r2.pdf

of Southeast Asian Nations (ASEAN) through trilateral dialogue between government, academia and industry to facilitate cybersecurity exercises, cyber-infrastructure protection workshops and capacity building initiatives.

On 29 November 2021, Japan, alongside fellow G7 Health Ministers, released a joint statement reaffirming the importance of supporting research and development related to COVID-19 vaccines.²⁹⁹⁴ Additionally, ministers expressed support for information sharing via an international pathogen surveillance network.

Japan has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security. Japan has worked with both research and business community through the Cybersecurity for All initiative that aims to strength cyber infrastructure shared between businesses and post-secondary institutions and the 14th ASEAN-Japan Cybersecurity Policy Meeting that planned to facilitate cybersecurity capacity building initiatives between government, academia and industry

Thus, Japan receives a score of +1.

Analyst: Theresa Jones

United Kingdom: +1

The United Kingdom has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

On 20 July 2021, the Department for Business, Energy & Industrial Strategy published the guideline “National Security and Investment Act” which stated that prior approval from the government is required before research on 17 specified sensitive areas of the UK economy can be done, and that government intervention can only be taken under extreme conditions.²⁹⁹⁵

On 22 July 2021, the Secretary of State published the Innovation Strategy for the UK with the vision of the UK becoming a world-class innovation hub in 15 years.²⁹⁹⁶ The policy actions include forming a Business Innovation Forum to implement this strategy, investing EUR25 million through the Connecting Capability Fund to drive university-business innovation and create new Prosperity Partnerships to set up business-led projects for transformational technologies.

On 9 August 2021, the Defence Science and Technology Laboratory (DSTL), an executive agency of the Ministry of Defence, announced that it had sponsored and collaborated with academia to support innovative development, including the defence and security research programme operated by the Alan Turing

²⁹⁹⁴ G7 joint statement on the Omicron variant, G7 UK 2021 (London) 29 November 2021. Access Date: 13 December 2021. <https://www.g7uk.org/g7-joint-statement-on-the-omicron-variant/>

²⁹⁹⁵ National Security and Investment Act: guidance for the higher education and research-intensive sectors, Department for Business, Energy & Industrial Strategy (London) 20 July 2021. Access Date: 13 December 2021. <https://www.gov.uk/government/publications/national-security-and-investment-act-guidance-for-the-higher-education-and-research-intensive-sectors>

²⁹⁹⁶ UK Innovation Strategy: leading the future by creating it, Department for Business, Energy & Industrial Strategy (London) 22 July 2021. Access Date: 10 January 2022. <https://www.gov.uk/government/publications/uk-innovation-strategy-leading-the-future-by-creating-it/uk-innovation-strategy-leading-the-future-by-creating-it-accessible-webpage#secretary-of-states-foreword>

Institute.²⁹⁹⁷ The DSTL will increase its budget to GBP6.6 billion to fund research and development, in which GBP1 billion will be spent on science and technology.²⁹⁹⁸

On 26 August 2021, the Department for Digital, Culture, Media & Sport published instructions for the UK manual to undertake assessments in international data transfers.²⁹⁹⁹ The statement announced that UK adequacy, a status that allows the UK to freely transfer personal data elsewhere, is granted by the Secretary of State to remove data-related barriers between UK organizations and their international partners.³⁰⁰⁰

On 28 November 2021, the National Security Technology and Innovative Exchange, a government-led science, technology and innovation (ST&I) partnership, held a two-day annual event called the International Security Expo in Olympia, London that promoted the connection between government, industry and academia, and facilitated coherence and efficiency across the ST&I ecosystem to enhance research on national security.³⁰⁰¹

On 29 November 2021, the United Kingdom organised an urgent meeting alongside other G7 members' health ministers as part of its 2021 G7 presidency to evaluate the developments of the uprising COVID-19 variant, Omicron.³⁰⁰² Ministers expressed support for information sharing via an international pathogen surveillance network.³⁰⁰³

On 8 December 2021, the Centre for Data Ethics and Innovation (CDEI) published an independent report on its roadmap for building an effective artificial intelligence (AI) ecosystem in the UK.³⁰⁰⁴ The report stated that the CDEI has developed a reliable and trustworthy AI assurance system to support AI governance, business operations, and addressing the spread of misinformation on social media platforms.

On 17 December 2021, the DSTL issued a guideline for AI and robotics system developers to follow to ensure autonomous systems are used properly to aid humans in dangerous and difficult jobs.³⁰⁰⁵ The DSTL will continue to monitor the AI industry to ensure that AI, autonomy, and robotics are used safely and ethically.

²⁹⁹⁷ AI and data science: defence science and technology capability, Defence Science and Technology Laboratory (London) 9 August 2021. Access Date: 13 January 2022. <https://www.gov.uk/guidance/ai-and-data-science-defence-science-and-technology-capability>

²⁹⁹⁸ Dstl research and funding priorities, Defence Science and Technology Laboratory, Ministry of Defence, and Defence and Security Accelerator (London) 12 August 2021. Access Date: 30 December 2021. <https://www.gov.uk/guidance/dstl-research-and-funding-priorities>

²⁹⁹⁹ UK approach to international data transfer, Department for Digital, Culture, Media & Sport (London) 26 August 2021. Access Date: 13 December 2021. <https://www.gov.uk/government/publications/uk-approach-to-international-data-transfers>

³⁰⁰⁰ International data transfers: building trust, delivering growth and firing up innovation, Department for Digital, Culture, Media & Sport (London) 26 August 2021. Access Date: 13 December 2021. <https://www.gov.uk/government/publications/uk-approach-to-international-data-transfers/international-data-transfers-building-trust-delivering-growth-and-firing-up-innovation>

³⁰⁰¹ Industry event: International Security Expo, National Security Technology and Innovative Exchange (London) 12 October 2021. Access Date: 13 December 2021. <https://www.gov.uk/government/news/industry-event-international-security-expo>

³⁰⁰² Government takes decisive action against new COVID-19 variant, Department of Health and Social Care (London) 28 November 2021. Access Date: 13 December 2021. <https://www.gov.uk/government/news/government-takes-decisive-action-against-new-covid-19-variant>

³⁰⁰³ G7 joint statement on the Omicron variant, G7 UK 2021 (London) 29 November 2021. Access Date: 13 December 2021. <https://www.g7uk.org/g7-joint-statement-on-the-omicron-variant/>

³⁰⁰⁴ Independent report: The roadmap to an effective AI assurance ecosystem, Centre for Data Ethics and Innovation (London) 8 December 2021. Access Date: 13 December 2021. <https://www.gov.uk/government/publications/the-roadmap-to-an-effective-ai-assurance-ecosystem>

³⁰⁰⁵ Robotics and autonomous systems: defence science and technology capability, Defence Science and Technology Laboratory (London) 17 December 2021. Access Date: 13 January 2022. <https://www.gov.uk/guidance/robotics-and-autonomous-systems-defence-science-and-technology-capability>

The United Kingdom has fully complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security. The UK has worked with its research community through the Open Innovation Team and the National Security Technology and Innovative Exchange. The UK has worked with the business community through its Innovation Strategy which established a Business Innovation Forum and invested in university-business innovative collaborations.

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

Analyst: Kelly Chan

United States: 0

The United States has partially complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

On 15 June 2021, the United States signed a Memorandum of Understanding between the National Science Foundation of the United States of America and the Natural Sciences and Engineering Research Council of Canada.³⁰⁰⁶ The memorandum “paves the way for new opportunities between members of the research community in both countries to build diverse and inclusive collaborations at the frontiers of science and emerging technologies.”

On 10 August 2021, Science Advisor to the President and Director of the Office of Science and Technology Policy Eric Lander announced that his office will work with the National Science and Technology Council on the government’s implementation plan for the National Security Presidential Memorandum-33 (NSMP-33).³⁰⁰⁷ The implementation guidance will address policy concerning conflicts of interest, oversight and enforcement for disclosure violations and research security requirements for federally funded research organizations.

On 11 August 2021, the White House Office of Science and Technology Policy and the National Science Foundation sponsored a community forum with representatives from university and scientific associations to gain advice for the implementation of NSMP-33.³⁰⁰⁸

On 4 October 2021, the National Institute of Allergy and Infectious Diseases released Data Management and Sharing Guidelines in which they endorsed the rapid release of both experimental, clinical and other metadata associated with genomic, omics and other data valuable to research.³⁰⁰⁹

On 26 October 2021, through an announcement on the Strategic Partnership between the US and the Association of Southeast Asian Nations (ASEAN), the US committed to provide up to USD40 million to

³⁰⁰⁶ 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 D.C.) 18 November 2021. Access Date: 17 January 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/>

³⁰⁰⁷ Clear Rules for Research Security and Researcher Responsibility, The White House (Washington D.C.) 10 August 2021. Access Date: 15 January 2022. <https://www.whitehouse.gov/ostp/news-updates/2021/08/10/clear-rules-for-research-security-and-researcher-responsibility/>

³⁰⁰⁸ Readout of National Security Presidential Memorandum 33 Community Forum, The White House (Washington D.C.) 12 August 2021. Access Date: 17 January 2022. <https://www.whitehouse.gov/ostp/news-updates/2021/08/12/readout-of-national-security-presidential-memorandum-33-community-forum/>

³⁰⁰⁹ Data Management and Sharing Guidelines, National Institute of Allergy and Infectious Diseases (Bethesda) 4 October 2021. Access Date: 17 January 2022. <https://www.niaid.nih.gov/research/data-sharing-guidelines>

“accelerate joint research, strengthen health system capacity, and develop the next generation of human capital in health through the US-ASEAN Health Futures initiative.”³⁰¹⁰

On 29 November 2021, the US, alongside fellow G7 Health Ministers, released a joint statement reaffirming the importance of supporting research and development related to COVID-19 vaccines.³⁰¹¹ Additionally, ministers expressed support for information sharing via an international pathogen surveillance network.

On 2 January 2022, Dr. Lander issued a statement regarding implementation guidance for NSPM-33.³⁰¹² He directed federal research agencies to “develop model grant application forms and instructions that can be used by any federal research funding agency,” allowing researchers to clearly understand what to submit when applying for funding and improving consistency across agencies.

The United States has partially complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security. The US has worked with its research community by consulting research institutions on the implementation of NSPM-33, simplifying grant applications and publishing Data Management and Sharing Guidelines. However, the US has failed to collaborate strongly with the business community.

Thus, the United States receives a score of 0.

Analyst: Peter Mikulasb

European Union: 0

The European Union has partially complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security.

On 15 June 2021, the European Commission President Ursula von der Leyen and President Joe Biden of the United States announced the formation of the EU-US Trade and Technology Council (TTC) at the US-EU Summit in Brussels.³⁰¹³ The TTC is a platform for EU and the US to cooperatively solve global economic and technology issues and support collaborative technological research. The TTC puts emphasis on the proper collection and usage of data, ICT security and preventing the misuse of technology that threatens security and human rights.

On 11 November 2021, President von der Leyen announced that the EU will join the other 27 Member States in the Paris Call for Trust and Security in Cyberspace, which aims at restoring a safe internet.³⁰¹⁴ She also announced the legislation of a European Cyber Resilience Act to establish common security standards for connected devices in European markets. President von der Leyen affirmed that the EU has been working

³⁰¹⁰ Fact Sheet: New initiatives to Expand the U.S.-ASEAN Strategic Partnership, The White House (Washington D.C.) 26 October 2021. Access Date: 17 January 2022. <https://www.whitehouse.gov/briefing-room/statements-releases/2021/10/26/fact-sheet-new-initiatives-to-expand-the-u-s-asean-strategic-partnership/>

³⁰¹¹ G7 joint statement on the Omicron variant, G7 UK 2021 (London) 29 November 2021. Access Date: 13 December 2021. <https://www.g7uk.org/g7-joint-statement-on-the-omicron-variant/>

³⁰¹² Guidance for U.S. Scientific Research Security That Preserves International Collaboration, The White House (Washington D.C.) 4 January 2022. Access Date: 15 January. <https://www.whitehouse.gov/ostp/news-updates/2022/01/04/guidance-for-u-s-scientific-research-security-that-preserves-international-collaboration/>

³⁰¹³ EU-US launch Trade and Technology Council to lead values-based global digital transformation, European Commission (Brussels) 15 June 2021. Access Date: 9 January 2022. https://ec.europa.eu/commission/presscorner/detail/en/IP_21_2990

³⁰¹⁴ Speech by President von der Leyen at the Paris Peace Forum, European Commission (Washington D.C.) 11 November 2021. Access Date: 13 December 2021. https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_21_5977

closely with the US in the EU-US TTC to define shared principles for constructing a reliable and safe artificial intelligence (AI) system.

On 11 November 2021, the EU attended the second annual plenary of the GPAI in Paris alongside leading international AI experts and 18 representatives from member countries.³⁰¹⁵ The Paris Summit encouraged all members to leverage the proposals and recommendations of GPAI experts to ensure a responsible and ethical development of AI.

On 22 November 2021, the European Commission partnered with the Government of Canada to examine the use of digital credentials.³⁰¹⁶ Their partnership resulted in a series of workshops and a report entitled “Canada and the European Union Joint Workshop Series for Enabling Interoperability and Mutual Support for Digital Credentials.” Future work involves addressing recommendations from the report to collaborate on digital credentials research and innovation, focusing on interoperability and mutual support while protecting privacy and personal data.

On 24 November 2021, the European Research Council Executive Agency (ERCEA), an executive agency established by the European Commission to manage EU research programs, published a record explaining the changes in the transfer of personal data to third countries or international organizations.³⁰¹⁷ The Data Controller and the Data Protection Officer of the ERCEA will access and take actions to safeguard these personal data under extreme conditions.

On 29 November 2021, the EU, alongside fellow G7 Health Ministers, released a joint statement reaffirming the importance of supporting research and development related to COVID-19 vaccines.³⁰¹⁸ Additionally, ministers expressed support for information sharing via an international pathogen surveillance network.

On 30 November 2021, the European Commission released a statement to support the statisticians in collaboration with the Eurostat and national statistical authorities in the European Statistical System and establish guidelines on addressing the disturbance of the collection and data processing due to the pandemic.³⁰¹⁹

On 2 December 2021, at the high-level conference on “Joining forces for the next generation of Better Regulation,” Vice-President of the European Commission for Interinstitutional Relations Maroš Šefčovič elaborated on the Better Regulation agenda that includes working with stakeholders to develop “agile and

³⁰¹⁵ Minister Champagne attends the Global Partnership on Artificial Intelligence Paris Summit, Innovation, Science and Economic Development Canada (Ottawa) 11 November 2021. Access Date: 16 January 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>

³⁰¹⁶ Government of Canada announces partnership with the European Commission to examine the use of digital credentials, Innovation, Science and Economic Development Canada (Ottawa) 22 November 2021. Access Date: 16 January 2022. <https://www.canada.ca/en/innovation-science-economic-development/news/2021/11/government-of-canada-announces-partnership-with-the-european-commission-to-examine-the-use-of-digital-credentials.html>

³⁰¹⁷ Record of Personal Data Processing, European Research Council Executive Agency (Brussels) 24 November 2021. Access Date: 15 January 2022.

https://erc.europa.eu/sites/default/files/document/file/58_Trasmision_of_personal_data_of_ERCEA_Staff_to_third_parties.pdf

³⁰¹⁸ G7 joint statement on the Omicron variant, G7 UK 2021 (London) 29 November 2021. Access Date: 13 December 2021. <https://www.g7uk.org/g7-joint-statement-on-the-omicron-variant/>

³⁰¹⁹ COVID-19: Support for Statisticians, European Commission (Luxembourg) 30 November 2021. Access Date: 13 December 2021. <https://ec.europa.eu/eurostat/data/metadata/covid-19-support-for-statisticians>

future-proof regulations” to take advantage of innovations while alleviating possible risks and adverse impact.³⁰²⁰ He encouraged EU Member States to set up regulatory sandboxes for AI development and testing.

On 13 December 2021, the EU Science Hub announced that the European Commission’s Joint Research Centre (JRC) had successfully developed a new detection method for the Omicron variant.³⁰²¹ The JRC shared its findings with EU policymakers and other scientists to help leaders to monitor and suppress the further spread of the Omicron variant around the globe.

The European Union has partially complied with its commitment to work strongly with both the research community and the business community to remove barriers in sharing knowledge, data and tools while recognizing research security. The EU has worked with its research community by publishing a methodological note on maintaining the data quality for the agricultural census and guidelines on addressing the distribution on data collection and processing. Additionally, the EU has committed to working with stakeholders to create agile and future-proof regulations. However, the EU has yet to commit to specific collaboration with the business community.

Thus, the European Union receives a score of 0.

Analyst: Kelly Chan

³⁰²⁰ Speech by Vice-President Šefčovič at the high-level conference on ‘Joining forces for the next generation of Better Regulation’, European Commission (Brussels) 2 December 2021. Access Date: 13 December 2021. https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_21_6530

³⁰²¹ Efficient tracing of Omicron with new PCR test, EU Science Hub (Brussels) 13 December 2021. Access Date: 13 December 2021. <https://ec.europa.eu/jrc/en/news/efficient-tracing-omicron-new-pcr-test>