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ANNEX

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to the

COMMISSION IMPLEMENTING REGULATION (EU)

laying down the technical specifications of data requirements for the topic ‘ICT usage and e-commerce’ for the reference year 2023, pursuant to Regulation (EU) 2019/2152 of the European Parliament and of the Council

ANNEX

Technical specifications of data requirements for the topic ICT usage and e-commerce

Mandatory/ optional	Scope (filter)	Variable
Mandatory variables	(i) for all enterprises:	(1) main economic activity of the enterprise, in the previous calendar year (2) average number of employees and self-employed persons, in the previous calendar year (3) total value of turnover (in monetary terms, excluding VAT), in the previous calendar year (4) number of employees and self-employed persons or percentage of the total number of employees and self-employed persons who have access to the internet for business purposes
	(ii) for enterprises with employees and self-employed persons who have access to the internet for business purposes:	(5) use of any type of fixed connection to the internet (6) having a website (7) having a mobile app for clients (such as for loyalty program, e-commerce, customer support) (8) use of social networks (9) use of enterprise's blogs or microblogs (10) use of multimedia content sharing websites or apps (11) having web sales of goods or services via the enterprise's websites or apps (including extranets), in the previous calendar year (12) having web sales of goods or services via e-commerce marketplace websites or apps used by several enterprises for trading goods or services, in the previous calendar year (13) having EDI-type sales (receipt of orders placed via Electronic Data Interchange

Mandatory/ optional	Scope (filter)	Variable
		<p>messages) of goods or services, in the previous calendar year</p> <p>(14) use of Enterprise Resource Planning (ERP) software to manage resources by sharing information among different functional areas such as accounting, planning, production, marketing</p> <p>(15) use of Customer Relationship Management (CRM) software for managing information about customers such as relations or transactions</p> <p>(16) use of Business Intelligence (BI) software for accessing and analysing data, presenting analytical findings to provide detailed insights for decision-making and strategic planning</p> <p>(17) sharing data electronically with suppliers or customers within the supply chain, for example via websites or apps, EDI-systems, real-time sensors or tracking</p> <p>(18) performing data analytics (from internal and external data sources) by own employees</p> <p>(19) having data analytics performed by an external enterprise or organisation for the enterprise (including data analytics based on data from internal and external sources)</p> <p>(20) buying cloud computing services used over the internet</p> <p>(21) use of Artificial Intelligence technologies performing analysis of written language (such as text mining)</p> <p>(22) use of Artificial Intelligence technologies converting spoken language into machine-readable format (speech recognition)</p> <p>(23) use of Artificial Intelligence technologies generating written or spoken language (natural language generation, speech synthesis)</p> <p>(24) use of Artificial Intelligence technologies identifying objects or persons based on images or videos (image recognition, image processing)</p> <p>(25) use of machine learning (such as deep learning) for data analysis</p>

Mandatory/ optional	Scope (filter)	Variable
		<p>(26) use of Artificial Intelligence technologies automating different workflows or assisting in decision-making (such as Artificial Intelligence based software robotic process automation)</p> <p>(27) use of Artificial Intelligence technologies enabling physical movement of machines via autonomous decisions based on observation of surroundings (autonomous robots, self-driving vehicles, autonomous drones)</p> <p>(28) invoices sent in electronic form, in a standard structure suitable for automated processing (e-invoices), excluding the transmission of PDF files, in the previous calendar year</p> <p>(29) invoices sent in electronic form not suitable for automated processing, including the transmission of PDF files, in the previous calendar year</p> <p>(30) invoices sent in paper form, in the previous calendar year</p>
	(iii) for enterprises using any type of fixed internet connection:	(31) maximum contracted download speed of the fastest fixed internet connection in the ranges: [0 Mbit/s, < 30 Mbit/s], [30 Mbit/s, < 100 Mbit/s], [100 Mbit/s, < 500 Mbit/s], [500 Mbit/s, < 1 Gbit/s], [\geq 1 Gbit/s]
	(iv) for enterprises having a website:	<p>(32) enterprise's website has a description of goods or services, price information</p> <p>(33) enterprise's website has online ordering or reservation or booking (such as shopping cart)</p> <p>(34) enterprise's website has a possibility for visitors to customise or design online goods or services</p> <p>(35) enterprise's website has tracking or status of orders placed</p> <p>(36) enterprise's website has personalised content on the website for regular/recurrent visitors</p> <p>(37) enterprise's website has a chat service for customer support (a chatbot, virtual agent or a person replying to customers)</p>

Mandatory/ optional	Scope (filter)	Variable
		(38) enterprise's website has advertisement of open job positions or online job application (39) enterprise's website has content available in at least in two languages
	(v) for enterprises which had web sales, in the previous calendar year:	(40) value of web sales of goods or services, or percentage of total turnover generated by web sales of goods and services, in the previous calendar year (41) percentage of value of web sales generated by web sales to private consumers (Business to Consumers: B2C), in the previous calendar year (42) percentage of value of web sales generated by web sales to other enterprises (Business to Business: B2B) and to public sector (Business to Government: B2G), in the previous calendar year
	(vi) for enterprises which had web sales of goods and services via the enterprise's websites or apps and via e-commerce marketplace websites or apps used by several enterprises for trading goods or services, in the previous calendar year:	(43) percentage of value of web sales of goods or services generated by sales via the enterprise's websites or apps, in the previous calendar year (44) percentage of value of web sales of goods or services generated by sales via e-commerce marketplace websites or apps used by several enterprises for trading goods or services, in the previous calendar year
	(vii) for enterprises which had EDI-type sales of goods and services, in the previous calendar	(45) value of EDI-type sales of goods or services or percentage of the total turnover generated by EDI-type sales of goods or services, in the previous calendar year

Mandatory/ optional	Scope (filter)	Variable
	year:	
	(viii) for enterprises performing data analytics (from internal and external data sources) by own employees:	<p>(46) performing data analytics on data from transaction records such as sale details, payments records (for example from ERP, enterprise’s webshop)</p> <p>(47) performing data analytics on data about customers such as customer purchasing information, location, preferences, customer reviews, searches (for example from CRM system or enterprise’s website)</p> <p>(48) performing data analytics on data from social media, including from enterprise’s own social media profiles (such as personal information, comments, video, audio, images)</p> <p>(49) performing data analytics on web data (such as search engine trends, web scraping data)</p> <p>(50) performing data analytics on location data from the use of portable devices or vehicles (such as portable devices using mobile telephone networks, wireless connections or GPS)</p> <p>(51) performing data analytics on data from smart devices or sensors (such as Machine to Machine (M2M) communications, sensors installed in machinery, manufacturing sensors, smart meters, Radio frequency identification (RFID) tags)</p> <p>(52) performing data analytics on government authorities’ open data (such as enterprise public records, weather conditions, topographic conditions, transport data, housing data, buildings data)</p> <p>(53) performing data analytics on satellite data (such as satellite imagery, navigation signals, position signals), including data acquired from enterprise’s own infrastructure or from externally provided service (for example AWS Ground Station) and excluding location data from the use of portable devices or vehicles using GPS)</p>
	(ix) for enterprises buying cloud computing services used over the	<p>(54) buying e-mail as a cloud computing service</p> <p>(55) buying office software (such as word processors or spreadsheets) as a cloud computing service</p>

Mandatory/ optional	Scope (filter)	Variable
	internet:	<p>(56) buying finance or accounting software applications as a cloud computing service</p> <p>(57) buying Enterprise Resource Planning (ERP) software applications as a cloud computing service</p> <p>(58) buying Customer Relationship Management (CRM) software applications as a cloud computing service</p> <p>(59) buying security software applications (such as antivirus program, network access control) as cloud computing service</p> <p>(60) buying hosting the enterprise's database(s) as a cloud computing service</p> <p>(61) buying storage of files as a cloud computing service</p> <p>(62) buying computing power to run the enterprise's own software as a cloud computing service</p> <p>(63) buying computing platform providing a hosted environment for application development, testing or deployment (such as reusable software modules, application programming interfaces (APIs)) as a cloud computing service</p>
	(x) for enterprises using Artificial Intelligence technologies, referring specifically to mandatory variables (21) to (27), purpose of use:	<p>(64) use of Artificial Intelligence technologies for marketing or sales (such as customer profiling, price optimisation, personalised marketing offers, market analysis based on machine learning, chatbots based on natural language processing for customer support, autonomous robots for orders processing)</p> <p>(65) use of Artificial Intelligence technologies for production or service processes (such as predictive maintenance or process optimization based on machine learning, tools to classify products or find defects in products based on computer vision, autonomous drones for production surveillance, security or inspection tasks, assembly works performed by autonomous robots)</p> <p>(66) use of Artificial Intelligence technologies for organisation of business administration processes or management (such as business virtual assistants based on machine learning</p>

Mandatory/ optional	Scope (filter)	Variable
		<p>and/or natural language processing (for example for document drafting), data analysis or strategic decision making based on machine learning (for example risk assessment), planning or business forecasting based on machine learning, human resources management based on machine learning or natural language processing (for example candidates pre-selection screening, employee profiling or performance analysis)</p> <p>(67) use of Artificial Intelligence technologies for logistics (such as autonomous robots for pick-and-pack solutions in warehouses for parcel shipping, tracing, distribution or sorting, route optimization based on machine learning)</p> <p>(68) use of Artificial Intelligence technologies for ICT security (such as face recognition based on computer vision for authentication of ICT users, detection and prevention of cyber-attacks based on machine learning)</p> <p>(69) use of Artificial Intelligence technologies for accounting, controlling or finance management (such as machine learning to analyse data that helps to make financial decisions, invoice processing based on machine learning, machine learning or natural language processing for bookkeeping documents)</p> <p>(70) use of Artificial Intelligence technologies for research and development (R&D) or innovation activity, excluding research on AI (such as analysis of data for conducting research, solving research problems, developing a new or significantly improved product/service based on machine learning)</p>

Mandatory/ optional	Scope (filter)	Variable
Optional variables	(i) for enterprises with employees and self-employed persons who have access to the internet for business purposes:	<p>(1) pay to advertise on the internet (such as adverts on search engines, on social media, on other websites or apps)</p> <p>(2) selling (access to) any of the enterprise's own data (such as data about the enterprise's customers' preferences, data from the enterprise's smart devices or sensors), in the previous calendar year</p> <p>(3) purchasing (access to) any data (such as data about other enterprise's customers' preferences, data from other enterprise's smart devices or sensors), in the previous calendar year</p>
	(ii) for enterprises using social networks or enterprise's blogs or microblogs or multimedia content sharing websites or apps:	<p>(4) use of social media to develop the enterprise's image or market products (such as advertising or launching products)</p> <p>(5) use of social media to obtain or respond to customer opinions, reviews, questions</p> <p>(6) use of social media to involve customers in development or innovation of goods or services</p> <p>(7) use of social media to collaborate with business partners (such as suppliers) or other organisations (such as public authorities, non-governmental organisations)</p> <p>(8) use of social media to recruit employees</p> <p>(9) use of social media to exchange views, opinions or knowledge within the enterprise</p>
	(iii) for enterprises paying to advertise on the internet:	<p>(10) use of targeted advertising based on content or keywords searched by internet users</p> <p>(11) use of targeted advertising based on the tracking of internet users' past activities or profile</p> <p>(12) use of targeted advertising based on the geolocation of internet users</p> <p>(13) use of any other method of targeted advertising on the internet than the ones specified in optional variables (10), (11) or (12)</p>

Mandatory/ optional	Scope (filter)	Variable
	(iv) for enterprises using Artificial Intelligence technologies, referring specifically to mandatory variables (21) to (27), way of acquisition:	<p>(14) developed by own employees (including those employed in parent or affiliate enterprise)</p> <p>(15) commercial software or systems were modified by own employees (including those employed in parent or affiliate enterprise)</p> <p>(16) open-source software or systems were modified by own employees (including those employed in parent or affiliate enterprise)</p> <p>(17) commercial software or systems ready to use were purchased (including examples where it was already incorporated in a purchased item or system)</p> <p>(18) external providers were contracted to develop or modify them</p>
	(v) for enterprises which did not use any Artificial Intelligence technologies, referring specifically to mandatory variables (21) to (27):	(19) consideration of using any of Artificial Intelligence technologies, referring specifically to mandatory variables (21) to (27)
	(vi) for enterprises which did not use but considered to use Artificial Intelligence technologies, referring specifically to mandatory variables (21) to (27):	<p>(20) Artificial Intelligence technologies not used because the costs seem too high</p> <p>(21) Artificial Intelligence technologies not used because there is a lack of relevant expertise in the enterprise</p> <p>(22) Artificial Intelligence technologies not used because of incompatibility with existing equipment, software or systems</p> <p>(23) Artificial Intelligence technologies not used because of difficulties with availability or quality of the necessary data</p> <p>(24) Artificial Intelligence technologies not used because of concerns regarding violation of data protection and privacy</p>

Mandatory/ optional	Scope (filter)	Variable
		<p>(25) Artificial Intelligence technologies not used because of lack of clarity about the legal consequences (such as liability in case of damage caused by the use of Artificial Intelligence)</p> <p>(26) Artificial Intelligence technologies not used because of ethical considerations</p> <p>(27) Artificial Intelligence technologies not used because they are not useful for the enterprise</p>
	(vii) for enterprises having sent invoices in electronic form, in a standard structure suitable for automated processing (e-invoices), excluding the transmission of PDF files, in the previous calendar year:	(28) percentage of e-invoices out of all invoices sent, or percentage of e-invoices out of all invoices sent in the following ranges: [0,<10], [10,<25], [25,<50], [50,<75], [\geq 75], in the previous calendar year

Measurement unit	Absolute figures, except for characteristics related to turnover in national currency (thousands) or percentage of (total) turnover
Statistical population	<p><i>Activity coverage:</i> NACE Sections C to J, L to N and group 95.1</p> <p><i>Size class coverage:</i> Enterprises with 10 or more employees and self-employed persons. Enterprises with less than 10 employees and self-employed persons may be covered optionally</p>
Breakdowns	<p><i>Activity breakdown</i> for calculation of national aggregates:</p>

	<ul style="list-style-type: none"> • aggregates of NACE sections and group C+D+E+F+G+H+I+J+L+M+N+95.1, D+E • NACE sections: C, F, G, H, I, J, L, M, N • NACE divisions: 47, 55 • aggregates of NACE divisions: 10+11+12+13+14+15+16+17+18, 19+20+21+22+23, 24+25, 26+27+28+29+30+31+32+33 • aggregate of the divisions and groups: 26.1+26.2+26.3+26.4+26.8+46.5+58.2+61+62+63.1+95.1 <p>for contribution to the European totals only</p> <ul style="list-style-type: none"> • NACE sections: D, E • NACE divisions: 19, 20, 21, 26, 27, 28, 45, 46, 61, 72, 79 • NACE group: 95.1 • aggregates of NACE divisions: 10+11+12, 13+14+15, 16+17+18, 22+23, 29+30, 31+32+33, 58+59+60, 62+63, 69+70+71, 73+74+75, 77+78+80+81+82 <p><i>Size class of number of employees and self-employed persons: 10+, 10-49, 50-249, 250+; optional: 0-9, 0-1, 2-9</i></p>
Data transmission deadline	5 October 2023