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CONFIDENTIAL

SURVEY ON ICT USAGE AND E-COMMERCE IN ENTERPRISES 2022

GENERAL INFORMATION:

- 1 The aim of the survey is to collect data about the use of information and communication technologies by the enterprises, the access and use of the Internet, e-commerce, ICT specialists and skills, ICT security, the use of robotics, and the use of ICT and the environment. These data are necessary for the implementation of policy programmes of both the Government and the Private Sector.
- 2 All requested information must be supplied by the **IT manager of the enterprise**. Regarding the enterprise's background information (Module X), these should be provided by the General Manager or by the Accountant or by any other person responsible.
- 3 An authorised employee of the Statistical Service will contact the IT manager of the enterprise by phone in order to fill in the questionnaire.
- 4 Definitions of the terms used in the questionnaire can be found in the glossary attached.
- 5 The reference period for the data is the survey period (2022), unless the question refers to other specific period.
- 6 The collection of data is carried out in accordance with the Official Statistics Law of 2021 (Law No. 25(I)/2021). The Statistical Service is bound by the Statistics Law to treat all information obtained as **CONFIDENTIAL**. Your responses will be used solely for statistical purposes.

S. Karagiorgis
Director
Statistical Service

January, 2022

Module A: Access and use of the internet

(Scope: all enterprises)

- A1. How many persons employed have access to the internet for business purposes?**
(including fixed line and mobile connection)
(Filter question)

If you can't provide this value,

please indicate an estimate of the percentage of the total number of persons employed who have access to the internet for business purposes

(Number)

%

If the value=0, go to C1

Use of a fixed line connection to the internet for business purposes

- A2. Does your enterprise use any type of fixed line connection to the internet?** (e.g. ADSL, SDSL, VDSL, fiber optics technology (FTTP), cable technology, etc.)
(Add national examples)
(Filter question)

Yes ☐

No ☐
->go to A4 (if optional included)
else go to A5

- A3. What is the maximum contracted download speed of the fastest fixed line internet connection of your enterprise?**
(additional categories at national level can be added, if needed)
(Tick only one)

a) less than 30 Mbit/s	<input type="checkbox"/>
b) at least 30 but less than 100 Mbit/s	<input type="checkbox"/>
c) at least 100 Mbit/s but less than 500 Mbit/s	<input type="checkbox"/>
d) at least 500 Mbit/s but less than 1 Gbit/s	<input type="checkbox"/>
e) at least 1 Gbit/s	<input type="checkbox"/>

Use of a mobile connection to the internet for business purposes

The following question refers to the usage of portable devices connecting to the internet through mobile telephone networks for business purposes. This includes the use of devices where the enterprise provides the devices and pays for the subscription and the costs of use fully or at least up to a limit.

- A4. How many persons employed use a portable device provided by the enterprise, that allows connection to the internet via mobile telephone networks, for business purposes?**
(e.g. portable computers or other portable devices such as smartphones)

If you can't provide this value,

(Number)

please indicate an estimate of the percentage of the total number of persons employed who use a portable device provided by the enterprise, that allows connection to the internet via mobile telephone networks, for business purposes
(e.g. portable computers, or other portable devices such as smartphones)

%

Meetings via the internet

(Scope: enterprises with access to the internet, i.e. if A1>0)

A5. Does your enterprise conduct remote meetings (via e.g. Skype, Zoom, MS Teams, WebEx, etc.)?	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/> -> go to A8

A6. Does your enterprise have any ICT security guidelines for conducting remote meetings via the internet (e.g. password requirement, end-to-end encryption)?	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>

A7. Does your enterprise have guidelines to favour remote meetings via internet instead of business travelling?	Yes	No
	<input type="checkbox"/>	<input type="checkbox"/>

Remote access

(Scope: enterprises with access to the internet, i.e. if A1>0)

A8.	Do any of the persons employed have remote access to the following? (via computers or portable devices such as smartphones)	Yes	No
	a) E-mail system of the enterprise	<input type="checkbox"/>	<input type="checkbox"/>
	b) Documents of the enterprise (e.g. files, spreadsheets, presentations, charts, photos)	<input type="checkbox"/>	<input type="checkbox"/>
	c) Business applications or software of the enterprise (e.g. access to accounting, sales, orders, CRM) <i>Please exclude applications used for internal communication, e.g. Skype, Teams, Yammer</i>	<input type="checkbox"/>	<input type="checkbox"/>

(If NO to A8a, A8b and A8c) and (A1>0) -> go to B1

If YES to A8a then go to A9

A9. How many persons employed have remote access to the e-mail system of the enterprise? (via computers or portable devices such as smartphones)	<div style="border: 1px solid black; padding: 5px; width: 100px; text-align: center;">(Number)</div>
If you can't provide this value,	

please indicate the percentage of all persons employed who have remote access to the e-mail system of the enterprise	<div style="border: 1px solid black; display: inline-block; width: 40px; height: 20px; text-align: center; line-height: 20px;"> <div style="display: flex; justify-content: space-around; width: 100%;"> </div> </div> %
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If YES to A8b or A8c then go to A10

<p>A10. How many persons employed have remote access to the documents, business applications or software of the enterprise (e.g. files, spreadsheets, presentations, charts, photos, access to accounting, sales, orders, CRM)? (via computers or portable devices such as smartphones)</p> <p>If you can't provide this value, please indicate the percentage of all persons employed who have remote access to the documents, business applications or software of the enterprise</p>	<div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 20px;"> (Number) </div> <div style="border: 1px solid black; display: inline-block; width: 40px; height: 20px; text-align: center; line-height: 20px;"> <div style="display: flex; justify-content: space-around; width: 100%;"> </div> </div> %
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<p>A11. Does your enterprise have any ICT security guidelines for remote access? (e.g. requirement to conduct password-secured remote meetings, prohibition of using of public Wi-Fi for work, use of VPN, requirements concerning privacy of data)</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
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Module B: e-Commerce sales

(Scope: enterprises with access to the internet, i.e. if A1>0)

In e-commerce sales of goods or services, the order is placed via web sites, apps or EDI-type messages by methods specifically designed for the purpose of receiving orders.

The payment may be done online or offline.

e-Commerce **does not include** orders written in e-mail.

Please report **web and EDI-type sales separately**. They are defined by the method of placing the order:

- WEB sales: the **customer** places the order on a website or through an app;
- EDI type sales: an **EDI-type order message is created from the business system of the customer**.

Web sales of goods or services

Web sales cover orders, bookings and reservations placed by your customers via

- your enterprise's **websites or apps**:
 - online store (webshop);
 - web forms;
 - extranet (webshop or web forms) ;
 - booking/reservation applications for services;
 - apps for mobile devices or computers;
- **e-commerce marketplace websites or apps** (used by several enterprises for trading goods or services).

Orders written in e-mail are **not** counted as web sales.

B1.	During 2021, did your enterprise have web sales of goods or services via:	Yes	No
	a) your enterprise's websites or apps? (including extranets)	<input type="checkbox"/>	<input type="checkbox"/>
	b) e-commerce marketplace websites or apps used by several enterprises for trading goods or services? (e.g. e-Bookers, Booking, hotels.com, eBay, Amazon, Amazon Business, Alibaba, Rakuten, TimoCom etc.)	<input type="checkbox"/>	<input type="checkbox"/>

If both B1 a) and B1 b) = "No" then go to B8	
B2. What was the value of your web sales? (please refer to the provided definition of web sales) Please answer to a) OR b)	
a) What was the value of your web sales of goods or services, in 2021?	(National currency, excluding VAT) _____
OR b) What percentage of total turnover was generated by web sales of goods or services, in 2021? <i>If you cannot provide the exact percentage an approximation will suffice.</i>	□ □ □ , □ %

Question B3 should be answered only if both B1 a) and B1 b) = "Yes"	
B3. What was the percentage breakdown of the value of web sales in 2021 for the following: (Please refer to value of web sales you reported in B2) <i>If you cannot provide the exact percentages an approximation will suffice.</i>	
a) via your enterprise's websites or apps? (including extranets)	□ □ □ %
b) via e-commerce marketplace websites or apps used by several enterprises for trading goods or services? (e.g. e-Bookers, Booking, hotels.com, eBay, Amazon, Amazon Business, Alibaba, Rakuten, TimoCom etc.) <i>[Please add national examples of e-commerce marketplaces incl. government marketplaces]</i>	□ □ □ %
TOTAL	1 0 0 %

B4.	What was the percentage breakdown of the value of web sales in 2021 by type of customer:	
	(Please refer to value of web sales you reported in B2)	
	<i>If you cannot provide the exact percentages an approximation will suffice.</i>	
	a) Sales to private consumers (B2C)	<input type="text"/> <input type="text"/> <input type="text"/> %
	b) Sales to other enterprises (B2B) and Sales to public sector (B2G)	<input type="text"/> <input type="text"/> <input type="text"/> %
	TOTAL	1 0 0 %

B5.	During 2021, did your enterprise have web sales to customers located in the following geographic areas? -optional		
		Yes	No
	a) Own country	<input type="checkbox"/>	<input type="checkbox"/>
	b) Other EU countries	<input type="checkbox"/>	<input type="checkbox"/>
	c) Rest of the world	<input type="checkbox"/>	<input type="checkbox"/>

The following question (B6) should only be answered if at least two of the above possible responses in question B5 a) , b) or c) are answered with "Yes", otherwise check next filter instruction before question B7

B6.	What was the percentage breakdown of the value of web sales in 2021 to customers located in the following geographic areas?	
	(Please refer to value of web sales you reported in B2)	
	<i>If you cannot provide the exact percentages an approximation will suffice.</i>	
	a) Own country	<input type="text"/> <input type="text"/> <input type="text"/> %
	b) Other EU countries	<input type="text"/> <input type="text"/> <input type="text"/> %
	c) Rest of the world	<input type="text"/> <input type="text"/> <input type="text"/> %
	TOTAL	1 0 0 %

The following question (B7) should only be answered if B5b)="Yes" otherwise go to B8.

B7.	Regarding web sales to other EU countries: did your enterprise experience any of the following difficulties during 2021?			
		Yes	No	
	a) High costs of delivering or returning products when selling to other EU countries	<input type="checkbox"/>	<input type="checkbox"/>	
	b) Difficulties related to resolving complaints or disputes when selling to other EU countries	<input type="checkbox"/>	<input type="checkbox"/>	
	c) Adapting product labelling for sales to other EU countries	<input type="checkbox"/>	<input type="checkbox"/>	
	d) Lack of knowledge of foreign languages for communicating with customers in other EU countries	<input type="checkbox"/>	<input type="checkbox"/>	
	e) Restrictions from your business partners to sell to certain EU countries	<input type="checkbox"/>	<input type="checkbox"/>	
	f) Difficulties related to the VAT system in other EU countries (e.g. uncertainty regarding VAT treatment in different countries)	<input type="checkbox"/>	<input type="checkbox"/>	

EDI-type sales
<p>EDI-type sales cover orders placed by customers via EDI-type messages (EDI: Electronic Data interchange) meaning:</p> <ul style="list-style-type: none"> • in an agreed or standard format suitable for automated processing; • EDI-type order message created from the business system of the customer; • including orders transmitted via EDI-service provider; • including automatic system generated demand driven orders; • including orders received directly into your ERP system. <p>Examples of EDI: EDIFACT, XML/EDI (e.g. UBL, Rosettanet, <i>[please add national examples]</i>).</p>

B8.	<p>During 2021, did your enterprise have EDI-type sales of goods or services?</p> <p>(Filter question)</p>	Yes <input type="checkbox"/>	No <input type="checkbox"/> -> go to C1
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B9.	What was the value of your EDI-type sales?	
	(please refer to the provided definition of EDI-type sales)	
	Please answer to a) OR b)	
	a) What was the value of your EDI-type sales of goods or services, in 2021?	(National currency, excluding VAT) _____
	<p>OR</p> <p>b) What percentage of total turnover was generated by EDI-type sales of goods or services, in 2021?</p> <p><i>If you cannot provide the exact percentage an approximation will suffice.</i></p>	□ □ □, □ %

Module C: ICT specialists and skills		
(Scope: all enterprises)		
C1.	Does your enterprise employ ICT specialists? ICT specialists are persons employed for whom ICT is the main job. For example, to develop, operate or maintain ICT systems or applications.	Yes <input type="checkbox"/> No <input type="checkbox"/>
C2.	Did your enterprise provide any type of training to develop ICT related skills of the persons employed, during 2021?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	a) Training for ICT specialists <i>Tick "No" if your enterprise didn't employ ICT specialists during 2021.</i>	<input type="checkbox"/> <input type="checkbox"/>
	b) Training for other persons employed	<input type="checkbox"/> <input type="checkbox"/>
C3.	Did your enterprise recruit or try to recruit ICT specialists during 2021? (Filter question)	Yes <input type="checkbox"/> No <input type="checkbox"/> ->go to C6
C4.	During 2021, did your enterprise have vacancies for ICT specialists that were difficult to fill?	Yes <input type="checkbox"/> No <input type="checkbox"/> ->go to C6
C5.	Did your enterprise have any of the following difficulties to recruit ICT specialists during 2021?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	a) Lack of applications	<input type="checkbox"/> <input type="checkbox"/>
	b) Applicants' lack of relevant ICT related qualifications from education and/or training;	<input type="checkbox"/> <input type="checkbox"/>
	c) Applicants' lack of relevant work experience	<input type="checkbox"/> <input type="checkbox"/>
	d) Applicants' salary expectations too high	<input type="checkbox"/> <input type="checkbox"/>
C6.	Who performed your enterprise's ICT functions in 2021 (e.g. maintenance of ICT infrastructure; support for office software; development or support of business management software/systems and/or web solutions; security and data protection)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	a) own employees (incl. those employed in parent or affiliate enterprises)	<input type="checkbox"/> <input type="checkbox"/>
	b) external suppliers	<input type="checkbox"/> <input type="checkbox"/>

Module D: ICT Security	
(Scope: enterprises with access to the internet, i.e. if A1>0)	
ICT security means measures, controls and procedures applied on enterprise's ICT systems to ensure integrity, authenticity, availability and confidentiality of enterprise's data and systems.	

D1.	Does your enterprise apply any of the following ICT security measures on its ICT systems?	Yes <input type="checkbox"/> No <input type="checkbox"/>
	a) authentication via strong password (e.g. minimum length, use of numbers and special characters, changed periodically, etc.)	<input type="checkbox"/> <input type="checkbox"/>
	b) authentication via biometric methods used to access the enterprise's ICT system (e.g. authentication based on fingerprints, voice,	<input type="checkbox"/> <input type="checkbox"/>

	face)		
	c) authentication based on a combination of at least two authentication mechanisms (i.e. combination of e.g. user-defined password, one-time password (OTP), code generated via a security token or received via a smartphone, biometric method (e.g. based on fingerprints, voice, face))	<input type="checkbox"/>	<input type="checkbox"/>
	d) Encryption of data, documents or e-mails	<input type="checkbox"/>	<input type="checkbox"/>
	e) Data backup to a separate location (including backup to the cloud)	<input type="checkbox"/>	<input type="checkbox"/>
	f) Network access control (management of user rights in enterprise's network)	<input type="checkbox"/>	<input type="checkbox"/>
	g) VPN (Virtual Private Network extends a private network across a public network to enable secure exchange of data over public network)	<input type="checkbox"/>	<input type="checkbox"/>
	h) ICT security monitoring system that allows to detect suspicious activity in the ICT systems and alerts the enterprise about it, other than standalone anti-virus software	<input type="checkbox"/>	<input type="checkbox"/>
	i) Maintaining log files that enable analysis after ICT security incidents	<input type="checkbox"/>	<input type="checkbox"/>
	j) ICT risk assessment, i.e. periodical assessment of probability and consequences of ICT security incidents	<input type="checkbox"/>	<input type="checkbox"/>
	k) ICT security tests (e.g. performing penetration tests, testing security alert system, review of security measures, testing of backup systems)	<input type="checkbox"/>	<input type="checkbox"/>

D2.	Does your enterprise make persons employed aware of their obligations in ICT security related issues in the following ways?	Yes	No
	a) Voluntary training or internally available information (e.g. information on the intranet)	<input type="checkbox"/>	<input type="checkbox"/>
	b) Compulsory training courses or viewing compulsory material	<input type="checkbox"/>	<input type="checkbox"/>
	c) By contract (e.g. contract of employment)	<input type="checkbox"/>	<input type="checkbox"/>

D3.	Does your enterprise have document(s) on measures, practices or procedures on ICT security? (Filter question) (Documents on ICT security and confidentiality of data cover employee training in ICT use, ICT security measures, the evaluation of ICT security measures, plans for updating ICT security documents, etc.)	Yes <input type="checkbox"/>	No <input type="checkbox"/> ->go to D5
D4.	When were your enterprise's document(s) on measures, practices or procedures on ICT security, defined or most recently reviewed? (Documents on ICT security and confidentiality of data cover employee training in ICT use, ICT security measures, the evaluation of ICT security measures, plans for updating ICT security documents, etc.) (Tick only one)		
	a) within the last 12 months	<input type="checkbox"/>	
	b) more than 12 months and up to 24 months ago	<input type="checkbox"/>	
	c) more than 24 months ago	<input type="checkbox"/>	

D5.	During 2021, did your enterprise experience any ICT related security incident leading to the following consequences?	Yes	No
	a) Unavailability of ICT services due to hardware or software failures	<input type="checkbox"/>	<input type="checkbox"/>
	b) Unavailability of ICT services due to attack from outside, e.g. ransomware attacks, Denial of Service attacks	<input type="checkbox"/>	<input type="checkbox"/>
	c) Destruction or corruption of data due to hardware or software failures	<input type="checkbox"/>	<input type="checkbox"/>
	d) Destruction or corruption of data due to infection of malicious software or unauthorised intrusion	<input type="checkbox"/>	<input type="checkbox"/>
	e) Disclosure of confidential data due to intrusion, pharming, phishing attack, intentional actions by own employees	<input type="checkbox"/>	<input type="checkbox"/>
	f) Disclosure of confidential data due to unintentional actions by own employees	<input type="checkbox"/>	<input type="checkbox"/>

D6.	Who carries out the ICT security related activities (e.g. security testing, ICT training on security, resolving ICT security incidents) in your enterprise? Exclude upgrades of pre-packaged software	Yes	No
	a) own employees (incl. those employed in parent or affiliate enterprises)	<input type="checkbox"/>	<input type="checkbox"/>
	b) external suppliers	<input type="checkbox"/>	<input type="checkbox"/>

D7.	Does your enterprise have insurance against ICT security incidents?	Yes	No
		<input type="checkbox"/>	<input type="checkbox"/>

Module E: Use of robotics

(Scope: all enterprises)

A robot is a machine which is programmed to move and perform certain tasks automatically.

E1.	Does your enterprise use any of the following types of robots? (Filter question)	Yes	No
	a) Industrial robots (e.g. robotic welding, laser cutting, spray painting, etc.) <i>An industrial robot is an automatically controlled, reprogrammable, multipurpose manipulator programmable in three or more axes, which may be either fixed in place or mobile for use. Most of industrial robots are based on a robotic arm and a series of links and joints with an end effector that carries out the task.</i> <u>Do not include CNC-machines, 3D printers and devices that are fully controlled by an operator.</u>	<input type="checkbox"/>	<input type="checkbox"/>
	b) Service robots (e.g. used for surveillance, cleaning, transportation, etc.) <i>A service robot has a degree of autonomy and can operate in complex and dynamic environments that may require interaction with persons, objects or other devices. They use wheels or legs to achieve mobility and are often used in inspection, transport or maintenance tasks.</i> <i>Examples are: autonomous guided vehicles, inspection and maintenance robots, cleaning robots, etc.</i> <u>Do not include software robots.</u>	<input type="checkbox"/>	<input type="checkbox"/>

If E1a) and E1b) = "No" then go to F1

E2.	<p>Please indicate the number of industrial and service robots used by the enterprise</p> <p>Please count each individual robot separately in cases where they are integrated into a production line (e.g. one robotic arm counts as one robot).</p> <p><i>If you cannot provide the exact number, an approximation will suffice</i></p>	<div style="border: 1px solid black; width: 100px; height: 40px; margin: 0 auto;"></div> <p>(Number)</p>
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E3.	Please indicate if the following reasons influenced the decision to use robots in your enterprise:	Yes	No
	a) High cost of labour	<input type="checkbox"/>	<input type="checkbox"/>
	b) Difficulties to recruit personnel	<input type="checkbox"/>	<input type="checkbox"/>
	c) To enhance safety at work	<input type="checkbox"/>	<input type="checkbox"/>
	d) To ensure high precision or standardized quality of processes and/or goods and services produced	<input type="checkbox"/>	<input type="checkbox"/>
	e) To expand the range of goods produced or services provided by the enterprise	<input type="checkbox"/>	<input type="checkbox"/>
	f) Tax or other government incentives	<input type="checkbox"/>	<input type="checkbox"/>

Module F: ICT and the environment

(Scope: all enterprises)

F1.	Does your enterprise apply any measures to affect the following?	Yes	No
	a) Amount of paper used for printing and copying	<input type="checkbox"/>	<input type="checkbox"/>
	b) Energy consumption of the ICT equipment	<input type="checkbox"/>	<input type="checkbox"/>

F2.	Does your enterprise consider environmental impact of ICT services, or ICT equipment when selecting them (e.g. energy consumption, etc.)?	Yes	No
		<input type="checkbox"/>	<input type="checkbox"/>

F3.	What does your enterprise do with ICT equipment (e.g. computers, monitors, mobile phones) when it is no longer used?	Yes	No
	a) It is disposed of in electronic waste collection/recycling (incl. leaving it to the retailer to dispose of)	<input type="checkbox"/>	<input type="checkbox"/>
	b) The ICT equipment is kept in the enterprise (e.g. to be used as spare parts, fear of sensitive information being disclosed)	<input type="checkbox"/>	<input type="checkbox"/>
	c) It is sold, returned to a leasing enterprise, or donated	<input type="checkbox"/>	<input type="checkbox"/>

Module X: Background information*¹

(X1-X3) available in some countries from SBS, the business register or administrative data and thus not to be included; latest available information should be provided

X1.	Main economic activity of the enterprise, during 2021	...
X2.	Average number of employees and self-employed persons (persons employed), during 2021	...
X3.	Total turnover (in monetary terms, excluding VAT), for 2021	...

Community Survey on ICT Usage and e-Commerce in Enterprises Glossary

App(s)

A mobile app, short for mobile application or just app, is application software designed for a specific purpose (e.g. entertainment, shopping, etc.), downloaded and used on computers depending on their operating system. (e.g. portable devices such as tablets, Smartphones, etc.)

Further information: http://en.wikipedia.org/wiki/Mobile_app;
<http://www.techopedia.com/definition/2953/mobile-application-mobile-app>

Authentication methods

Authentication is a way to ascertain that a user is who they claim to be. This is usually performed by presenting one or more challenges to the user. There are three broad categories of challenges:

1) Something the user knows. The user is asked for a secret, known only to her. Typical examples are passwords and PINs, but can also take the form of security questions.

2) Something the user has. The user is in possession of a unique token, like a key. In the case of computer tokens, this can take the form of an NFC tag, or a device.

3) Something the user is. Aka biometrics. The user is asked to present a part of her body that forms unique and repeatable patterns, like fingerprints, voice, or face recognition.

Source: <https://www.enisa.europa.eu/topics/csirts-in-europe/glossary/authentication-methods>

Biometric authentication

Biometric authentication is a security process that relies on the unique biological characteristics of an individual to verify that he is who he says he is. Biometric authentication systems compare a biometric data capture to stored, confirmed authentic data in a database. If both samples of the biometric data match, authentication is confirmed. Typically, biometric authentication is used to manage access to physical and digital resources such as buildings, rooms and computing devices. Types of biometric authentication technologies:

Retina scans produce an image of the blood vessel pattern in the light-sensitive surface lining the individual's inner eye.

Iris recognition is used to identify individuals based on unique patterns within the ring-shaped region surrounding the pupil of the eye.

¹ For indicators E31, E32, E33 (background characteristics) of the monitoring framework 2016-2021

Fingerscanning, the digital version of the ink-and-paper fingerprinting process, works with details in the pattern of raised areas and branches in a human finger image.

Finger vein ID is based on the unique vascular pattern in an individual's finger.

Facial recognition systems work with numeric codes called faceprints, which identify 80 nodal points on a human face.

Voice identification systems rely on characteristics created by the shape of the speaker's mouth and throat, rather than more variable conditions.

Source: <https://searchsecurity.techtarget.com/definition/biometric-authentication>

Business process

A business process or business method is a collection of related, structured activities or tasks that produce a specific service or product (serve a particular goal) for a particular customer or customers. Business processes can be of three types: *Management processes* (e.g. corporate governance, strategic management), *Operational processes* (e.g. purchasing, manufacturing, marketing and sales etc) and *Supporting processes* (e.g. accounting, recruitment, technical support etc).

Source: http://en.wikipedia.org/wiki/Business_process

CRM

Customer Relationship Management (CRM) is a management methodology which places the customer at the centre of the business activity, based in an intensive use of information technologies to collect, integrate, process and analyse information related to the customers.

One can distinguish between:

1. Operational CRM – Integration of the front office business processes that are in contact with the customer.
2. Analytical CRM – Analysis, through data mining, of the information available in the enterprise on its customers. This aims to gather in depth knowledge of the customer and how to answer to its needs.

Denial of service attack

A denial-of-service attack (DoS attack) or distributed denial-of-service attack (DDoS attack) is an attempt to make a computer resource unavailable to its intended users. Although the means to carry out, motives for, and targets of a DoS attack may vary, it generally consists of the concerted efforts of a person or persons to prevent an internet site or service from functioning efficiently or at all, temporarily or indefinitely. Perpetrators of DoS attacks typically target sites or services hosted on high-profile web servers such as banks, credit card payment gateways, and even root name servers.

One common method of attack involves saturating the target (victim) machine with external communications requests, such that it cannot respond to legitimate traffic, or responds so slowly as to be rendered effectively unavailable. In general terms, DoS attacks are implemented by either forcing the targeted computer(s) to reset, or consuming its resources so that it can no longer provide its intended service or obstructing the communication media between the intended users and the victim so that they can no longer communicate adequately.

DSL

Digital Subscriber Line (DSL) is a family of technologies that provides digital data transmission over the wires of a local telephone network. DSL is widely understood to mean Asymmetric Digital Subscriber Line (ADSL), the most commonly installed technical varieties of DSL. DSL service is delivered simultaneously with regular telephone on the same telephone line as it uses a higher frequency band that is separated by filtering.

Source: <http://en.wikipedia.org/wiki/DSL>

EDI, EDI-type	<p>Electronic Data Interchange (EDI) refers to the structured transmission of data or documents between organizations or enterprises by electronic means. It also refers specifically to a family of standards (EDI-type) and EDI-type messages suitable for automated processing.</p> <p>Source: http://en.wikipedia.org/wiki/Electronic_Data_Interchange</p>
EDI e-commerce	<p>Orders initiated with EDI-type messages. EDI (electronic data interchange) is an e-business tool for exchanging different kinds of business messages. EDI is here used as a generic term for sending or receiving business information in an agreed format suitable for automated processing (e.g. EDIFACT, XML, etc.) and without the individual message being manually typed. "EDI e-commerce" is limited to EDI messages placing an order.</p> <p>Source: OECD, DSTI/ICCP/IIS(2009)5/FINAL</p>
Electronic commerce (e-Commerce)	<p>An e-commerce transaction is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organisations. e-Commerce comprises orders made in Web pages or apps, extranet or EDI and excludes orders made by telephone calls, facsimile, or manually typed e-mail. The type is defined by the method of making the order.</p> <p>Source: OECD, DSTI/ICCP/IIS(2009)5/FINAL</p>
E-mail	<p>Electronic transmission of messages, including text and attachments, from one computer to another located within or outside of the organisation. This includes electronic mail by internet or other computer networks.</p>
ERP	<p>Enterprise Resource Planning (ERP) consists of one or of a set of software applications that integrate information and processes across the several business functions of the enterprise. Typically ERP integrates planning, procurement, sales, marketing, customer relationship, finance and human resources.</p> <p>ERP software can be customised or package software. These latter are single-vendor, enterprise wide, software packages, but they are built in a modular way allowing enterprises to customise the system to their specific activity implementing only some of those modules.</p> <p>ERP systems typically have the following characteristics:</p> <ol style="list-style-type: none"> 1. are designed for client server environment (traditional or web-based); 2. integrate the majority of a business's processes; 3. process a large majority of an organization's transactions; 4. use enterprise-wide database that stores each piece of data only once; 5. allow access to the data in real time.
Extranet	<p>A closed network that uses internet protocols to securely share enterprise's information with suppliers, vendors, customers or other businesses partners. It can take the form of a secure extension of an Intranet that allows external users to access some parts of the enterprise's Intranet. It can also be a private part of the enterprise's website, where business partners can navigate after being authenticated in a login page.</p>
Internet	<p>The internet is a global system of interconnected computer networks that use the standard internet Protocol Suite (TCP/IP) to serve billions of users worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks of local to global scope that are linked by a broad array of electronic and optical networking</p>

technologies. The internet carries a vast array of information resources and services, most notably the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support electronic mail.

Source: <http://en.wikipedia.org/wiki/internet>

Relates to internet Protocol based networks: www, Extranet over the internet, EDI over the internet, internet-enabled mobile phones.

Intrusion

An intrusion is an attempt to bypass security controls on a information system. Means of intrusion can be eavesdropping, viruses, worms, trojan horses, logic or time bombs, brute force attacks, etc.

Intrusion detection is a process with the purpose of detecting intrusions or attempts of intrusions into a computer or network to compromise the confidentiality, integrity or availability by observation of system, application and user activity as well as network traffic. Intrusion detection systems take preventive actions against intrusions without direct human intervention.

Malicious software

Malicious software, also known as "malware" is any piece of software that performs undesirable operations such as data theft or some other type of computer compromise.

Source: <https://www.enisa.europa.eu/topics/csirts-in-europe/glossary/malware>

**Marketplace(s)
(e-Commerce marketplaces)**

The term "e-commerce marketplaces" refers to websites or apps used by several enterprises for trading products e.g. Booking, eBay, Amazon, Amazon Business, Alibaba, Rakuten, etc.). e-Commerce marketplaces are different from e-commerce platforms. The latter provide scalable, self-made online solutions for business that would like to set up their own e-commerce website.

Online payment

An online payment is an integrated ordering-payment transaction

Pharming

The term "pharming" connotes an attack to redirect the traffic of a website to another, bogus website in order to acquire sensitive information.

Phishing

Phishing is a criminally fraudulent attempt to acquire sensitive information such as usernames, passwords and credit card details by masquerading as a trustworthy entity in an electronic communication.

Ransomware

Ransomware is a type of malware (like Viruses, Trojans, etc.) that infect the computer systems of users and manipulates the infected system in a way, that the victim can not (partially or fully) use it and the data stored on it. The victim usually shortly after receives a blackmail note by pop-up, pressing the victim to pay a ransom (hence the name) to regain full access to system and files.

Source: <https://www.enisa.europa.eu/topics/csirts-in-europe/glossary/ransomware>

Robots - Robotics

According to their intended application, robots may be industrial or service robots. An industrial robot is an automatically controlled, reprogrammable, multipurpose manipulator programmable in three or more axes, which may be either fixed in place or mobile for use in industrial automation applications.

A service robot is a machine that has a degree of autonomy and is able to operate in complex and dynamic environment that may require interaction with persons, objects or other devices, excluding its use in industrial automation applications.

**Robotic process automation
(Artificial Intelligence based)**

Artificial Intelligence based robotic process automation refers to software that automates business processes (e.g. workflows automation) based on Artificial Intelligence technologies.

Sales via website (web sales)

Web sales are sales made via an online store (web shop), via web forms on a website or extranet, or apps. Web sales are distinguished from EDI sales. In particular, the type of e-commerce transaction is defined by the method of making the order. This approach should mitigate the interpretation problems where both types, EDI and Web, are used in the process. An example is a situation where an order is made by the customer through a web application but the information is transmitted to the seller as an EDI-type message. Here the type of selling application is however web; EDI is only a business application to transmit information about the sale. Web sales can be done by mobile phones using an internet browser.

Source: OECD, DSTI/ICCP/IIS(2009)5/FINAL

Speech recognition

Speech recognition is the ability of a machine or program to identify words and phrases in spoken language and convert them to a machine-readable format.

VPN

A virtual private network (VPN) extends a private network across a public network, and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network. Applications running on a computing device, e.g., a laptop, desktop, smartphone, across a VPN may therefore benefit from the functionality, security, and management of the private network. Encryption is a common, though not an inherent, part of a VPN connection.

Source: https://en.wikipedia.org/wiki/Virtual_private_network

Web e-commerce

Web (e-commerce) sales are sales made via an online store (web shop), via web forms on a website or extranet, or apps regardless of how the web is accessed (computer, laptop, mobile phone etc.)

Source: OECD, DSTI/ICCP/IIS(2009)5/FINAL

Website

Location on the World Wide Web identified by a Web address. Collection of Web files on a particular subject that includes a beginning file called a home page. Information is encoded with specific languages (Hypertext mark-up language (HTML), XML, Java) readable with a Web browser, like Netscape's Navigator or Microsoft's Internet Explorer.

Wi-Fi

Wi-Fi (or Wi-fi, WiFi, Wifi, wifi), short for 'Wireless Fidelity', is a set of ethernet standards for wireless local area networks (WLAN) currently based on the IEEE 802.11 specifications. New standards beyond the 802.11 specifications, such as 802.16 have been developed. Wi-Fi was intended to be used for wireless devices and LANs, but is now often used for internet access (one of the main international standards for wireless broadband internet access and networking, with widespread use in business, homes and public spaces). It is based on radio signals with a frequency of 2.4 GHz and theoretically capable of speeds of over 54 Mbit/s. It enables a person with a wireless-enabled computer or personal digital assistant to connect to the internet when close to an access point called a hotspot.

xDSL

Digital Subscriber Line. DSL technologies are designed to increase bandwidth available over standard copper telephone wires. Includes IDSL, HDSL, SDSL, ADSL, RADSL, VDSL, DSL-Lite.

XML

The Extensible Markup Language is a markup language for documents containing structured information. Structured information contains both content (words, pictures, etc.) and some indication of what role that content plays (for example, content in a section heading has a different meaning from content in a footnote, which means something different than content in a figure caption or content in a database table, etc.). Almost all documents have some structure. A markup language is a mechanism to identify structures in a document. The XML specification defines a standard way to add markup to documents.

Source: <http://www.xml.com/>