Maritime Safety Training Centers
& the emerging technologies

-Self-Diagnosis Tool-

Contents

1. Introduction

The use of the Information and Communication Technologies in the society have caused a change in all sectors, including in the MSTCs, with repercussion in the training needs and in the way of teaching.

Likewise, the use of ICTs can also and should be used by the Center for all its processes: teaching, administrative and internal and external communication.

Related to this is the concept of **Industry 4.0**, referred to the fourth industrial revolution that consists of the introduction of digital technologies in the industry. These allow devices and systems to collaborate with each other and with others, allowing to modify products, processes and business models.

However, the use of technology, devices and tools must be used in a coherent way according to their objectives and in a coordinated manner. It is not about using technology to use it, but to look for its real utility.

In this scenario, the **European project AT-VIRTUAL** was born. Its main goal is to improve the operability and performance of Maritime Safety Training Centres (MSTC) in the Atlantic Area (AA) by enabling businesses to develop emerging technology-based solutions to MSTCs needs in the field of simulation-based training systems for maritime security operations. This will improve AA capacity, preparedness, resilience and response to maritime and emergencies incidents in Atlantic waters, while fostering innovation and sustainable growth in businesses.

On the other hand, and as a prior step before proposing solutions based on emerging technologies, it is necessary to know the level of use of ICTs in the Centers. For this reason, and also as an informative guide, we have made this technological self-check.

This document describes **the Technological Situation of the Training Center**, in all its extension and its most common processes and that it has been completing the Online Self-Check.

Specifically, this model analyzes **four dimensions** in the operation of the Centre, each containing questions on a different set of issues:

1. **Processes:** to analyze how operations are carried out in the Center.
2. **Service Capability:** to know the level of incorporation of technology to existing services.

3. **Infrastructure:** to evaluate the digital capabilities of the Center.

4. **Clients and external agents:** identify the adaptation of the organization to the environment and the market.

2. Characteristics of a MSTC 4.0

In the methodology used is the self-diagnosis we have identified the **different characteristics** so that an MSTC is an MSTC 4.0.

CONNECTED

A center that can collect, store and access data in real time of all its elements (machines, processes, people, ...) in a safe, traceable and ubiquitous way. Everything is interconnected and integrated, allowing data to be stored automatically. Hyper connectivity.

SMART

A center capable of working automatically and autonomously, adjusting to the demands of its environment. Able to predict, prevent or correct accurately reducing errors.

FLEXIBLE

A center that reconfigures the processes before changes of the outside in a decentralized way. It can adapt to changes in its service, depending on the needs or demands of clients/customers, etc. thanks to digitalization. Massive personalization.

SOCIAL

A center that has self-employed employees, with the capacity to make decisions, motivated and adequately trained to use new technologies and perform tasks of greater added value.

EXTENDED

A center that develops the relationship with the supply chain, partners and customers, working with them in a collaborative manner to improve products, services and processes.

Enabling technologies: IoT, Cybersecurity, Cloud Computing, Artificial Vision, Big Data, Data analytics, Simulations, digital twin, Virtual Reality, Augmented Reality, Wearables, System integration, collaborative robotics, etc.

And we have also identified 4 progressive levels for each of the characteristics:

LEVELS	SCORE
BASIC	from ≥ 1 to ≤ 2
AWARE	from > 2 to ≤ 3,5
COMPETENT	from > 3,5 to ≤ 5,5
ADVANCED	> 5,5

that allow a unified diagnosis.

For each of these levels a description is made based on the values obtained during the diagnosis.

Next, according to the values obtained in its diagnosis, we explain the situation of your organization for each of the characteristics of the model.

CHARACTERISTIC	ACHIEVED LEVEL
CONNECTED	**BASIC LEVEL** A center whose processes are manually intensive. It uses simple computer systems and it is beginning with the digitalization of teaching and administrative material. The integration between systems and the information exchange are limited. Its security level for the systems is very low. The center uses few ICTs in the classrooms.
SMART	**AWARE LEVEL** The center has implemented tools and software to address processes in an integral way. They collect data automatically, but its exploitation is limited.
FLEXIBLE	**ADVANCED LEVEL** The center uses virtual, interactive and adaptive environments. The center is oriented to the customization of its training activities. The data collected in the different processes (training and administrative) are used for the development of new products and services. Its processes react autonomously.
SOCIAL	**AWARE LEVEL** The center has a digital transformation strategy and makes investments and advanced technological initiatives. Internal communication is unidirectional, although they use online channels.
EXTENDED	**COMPETENT LEVEL** There is information exchange with external agents. The center is beginning to integrate information with suppliers, customers and students. They develop additional services based on the data

3. Questionnaire

This diagnosis on the technology used in your Center, has been made exclusively for informative purposes for its assessment and does not contain recommendations or explicit advice.

Please keep in mind that you can only choose one answer, please choose the answer that is closest to how things are done in your organization.

Name of the MSTC	
VAT number	
Region/City	
Country	
Contact person	
Email	
Number of employees	

Company Area	Company Sub-Area	Question	Application
1. Processes	1.1 Strategic	What extent is your organization's strategy aligned to digital transformation?	Social

☐ Our Organization doesn't have a definite strategy

☐ A digital transformation plan is being developed with the participation of all the staff of the Training Center

☐ There is a Strategic Plan together with an ICT Project of the center (infrastructure and equipment, services and resources software, Training, Human Resources, Digital Content, Communication and Management Processes, Teaching Processes, etc.)

☐ Annual plan articulated around the center's ICT Project, with defined indicators and annual objectives

Company Area	Company Sub-Area	Question	Application
1. Processes	1.1 Strategic	What is the level of implementation of the principles of Digital Transformation in your organization?	Social

☐ These principles work at the Computer Systems Department level

☐ These principles work at the training level of Management and Computer Systems

☐ These principles work at the training level of all relevant positions in the organization

☐ The entire staff has internalized the principles of Digital Transformation through training actions and projects development

Company Area	Company Sub-Area	Question	Application
1. Processes	1.1 Strategic	What has been your organization's level of investment in technological solutions over the last few years?	Smart

- ☐ At the administrative level (Office tools, Management Applications, Renewals...)

- ☐ Implementation of integral management solutions type CRM, ERP...

- ☐ Investments in Software/hardware of Simulations and Simulators...

- ☐ Development of projects based on IOT, Big Data, Artificial Intelligence, Augmented Reality...

Company Area	Company Sub-Area	Question	Application
1. Processes	1.1 Strategic	How is the Innovation Management and Knowledge Managament carried out?	Social

- ☐ Through the Department or area meetings, our organization lacks the digital system set

- ☐ The creation of ideas and suggestions are recorded digitally and there is manual follow-up by the responsible staff.

- ☐ Through a Management System shared with employees, Technological Surveillance Systems...

- ☐ Through sharing Knowledge Management system with workers, customers and suppliers, that's to say Collaborative platforms

Company Area	Company Sub-Area	Question	Application
1. Processes	1.1 Strategic	What actions do you take aimed at early detection of market trends or new business opportunities? Do you perform market analysis?	Smart

- ☐ We do some one-time analysis

- ☐ We carry out continuous and procedural analyses (Technological Surveillance)

- ☐ By means of Business Intelligence Applications, data mining automated and continuous

- ☐ We use Big data analytic technology, predictive analytics,...

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How is the Management and Economic Planning of the Center carried out?	Smart Connected

- ☐ Through a computer application.

- ☐ By means of a software tool specialized in management

- ☐ Via multi-process interconnected systems

- ☐ Through contrasts and analysis of deviations with simulation, planning and indicators in real time

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How is the teaching schedule in training managed in your organisation?	Connected Social

☐ The Schedule management is planned and checked manually by a manager or person in charge

☐ By means of a shared and semi-automatic platform for planning schedules, with a supervisor

☐ Through planning and resources parallel systems and non-interconnected

☐ Through an intelligent schedule management system that reflects staff's availability and infrastructural needs in real-time

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How is the staff/employees information managed in your organisations?	Connected Social

☐ Through separate systems with manual entry of data

☐ Payroll send via email, person in charge introduces or validates the information before sending

☐ By means of Production System and Human Resources System that they are not connected. Employee portal used to view payroll, make time parts, or record absences.

☐ Through Employee portal with self-service and connected with production data. Single or interconnected system.

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How is the facility space and resources management carried out?	Smart Connected

☐	The management of the reservation of physical spaces and resources is done by filling in a template document that is available in digital format
☐	The management of the reserve of physical spaces and resources is done through a computer application with manual monitoring
☐	The management of the reservation of physical spaces and resources is done through a remote and real-time computer application
☐	Through an intelligent schedule management system with people's availability and real-time facilities needs

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How is the work control of the maintenance actions carried out and its analysis?	Connected Smart

☐	There is no record of the operations and tasks performed
☐	By means of a manual record of specific variables (non-centralized) in the system (in an excel or similar application) for corrective maintenance checks
☐	Through automated registration in a centralized management program for historic data and contributes to predictive maintenance
☐	Through automatic registration in the system at the task level (traceability) with intelligent analysis of the operation looking for patterns for predictive analysis. Predictive maintenance in real time. (prognosis)

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	What use is given to the information of the data collected in the different sensors / devices that people carry in the provision of services?	Smart Connected

☐ The data collected are used only on an informational level

☐ The data collected are used manually to make a choice about the provision of the service

☐ The data collected are worked automatically to make a choice about the provision of the service

☐ The data collected are worked automatically to make a choice about the provision of the service including Big Data for the improvement of the process

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How are Academic Performance Records (Academic Transcript) generated?	Connected

☐ The Academic Performance Records are not generated

☐ There is a computer application or database from which the student's academic records are generated.

☐ Teachers carry out the administrative and academic management of the training center (enrollment, student cards and absences, and students reports) through a Web application

☐ The training center's administrative and academic management computer application (enrollment, notes and absences, and records) allows students access online to academic data

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How is the order application that you use with your providers? How do you manage your supplier information?	Extended Connected

☐ Through office tools (phone, mail....) from the purchasing department

☐ Through an ERP software

☐ Through a provider-connected systems (intranet)

☐ Through interconnected systems, automatically when detecting a need for raw material or a spare part

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How do you manage your customer information and opportunities?	Extended Connected

☐ Through Office tools: Excel sheets, access...

☐ Through an ERP, a CRM

☐ Through a system which is integrating customer data with partners

☐ Through a constant access to information about your customers on the web and other sources

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	How are enabling technologies taken into account in the training of trainers? Is there a Training Plan for The Digital Competences of Teachers?	Extended Connected

☐ The enabling technologies are not taken into account.

☐ Through a training plan with refresher courses requested by staff

☐ Through a Versatility matrix involving the entire staff in the training process. There is a document establishing the competences of teaching staff, and which provides guidance for the development of the annual training plan.

☐ Through the actions raised in the previous answer and also working with the training centers and companies in the design of the curriculum training

Company Area	Company Sub-Area	Question	Application
1. Processes	1.2. Management	What level of integration of the tools and systems of administration and management does your training center have?	Social

☐ The different tools and systems used are independent. Scanned documents in folders

☐ An ERP system with manual, visual review is available,...

☐ Full integration of ERP and human resources, materials, financial and communication economic management. Local and remote access

☐ TOTAL integration in an automated and intelligent way (gives notices, business intelegence....)

Company Area	Company Sub-Area	Question	Application
2. Service Capability		What type of training does the Center offer?	Smart Connected

☐	A training Face-to-face /online (same for a group of people performing the same tasks)	
☐	Theoretical with support of multimedia material (videos, photos), with access to a repository with learning pills, mobile training, Self-service according to level.	
☐	Theoretical-practical courses in real environments and with the support of visualization systems	
☐	Theoretical-practical learning supported by total immersion simulators. (Immersive reality), m-learning platform, providing more information and learning about errors or situations of danger. With gamification tools.	

Company Area	Company Sub-Area	Question	Application
2. Service Capability		Are Virtual Learning Environments (multimedia resources, Web environments …) used in the training processes?	Flexible Extended Smart

☐	There are no virtual learning environments
☐	Some training actions have developed some didactic unit with activities within the virtual learning environment. (Blogs, Wikis, Webquest. Webinars…)
☐	Most training services have developed some didactic units with activities within the virtual learning environment. (Blogs, Wikis, Webquest. Webinars..)
☐	There is a virtual interactive community and co-creation of teaching materials among advocates, students and startapps

Company Area	Company Sub-Area	Question	Application
2. Service Capability		How do the students receive support during their training process to do exercises or assimilate concepts?	Connected Extended Flexible

☐ By means of theoretical training and static documentation only. Task description in navigable digital documents based on a query system

☐ Through a task description in dynamic documents with contextual presentation based on student profile/levels

☐ By means of contextual data based on connected sensors and student profile

☐ Through a presentation of key data of the task graphically in augmented reality

Company Area	Company Sub-Area	Question	Application
2. Service Capability		How is the programming of the different courses developed? Which are the tools used?	Flexible Extended Smart

☐ Through analogical documents and traditional classrooms

☐ By means of a digital format held in a repository.

☐ Through documents accessible from an open and interactive platform, student chats, visual supports..

☐ Through the tools raised the above answer plus individual learning simulators.....

Company Area	Company Sub-Area	Question	Application
2. Service Capability		How are resources /educational material digitized and identified?	Social Flexible

	☐	Through a Folder Infrastructure for digital resources categorized by educational levels for teachers and students
	☐	Giving access to educational digital resources from all spaces dedicated to teaching
	☐	By means of a virtual environment of collaborative work of teachers of digital educational content for teachers
	☐	Through the use of content repository to host educational digital resources for teachers and students. There is a virtual community with digital documentation sharing

Company Area	Company Sub-Area	Question	Application
2. Service Capability		Do you have any sensors to know the reactions of students in performing an exercise? Ex: wearables in people, temperature sensors....	Connected

	☐	We do not use sensors
	☐	We only use environment sensors only with standard reaction alarms
	☐	We use environment off-line sensors plus wearables in people with custom alarms
	☐	We carry out analysis with remote and online contralated wearables; biometric sensors with variable settings. Human Factor. Sensors in clothing,..

Company Area	Company Sub-Area	Question	Application
2. Service Capability		In the case of using sensors, do you collect, store and analyze student data in your practices?	Connected

☐ It is not managed

☐ The student data are collected and saved but not analyzed

☐ Biometric monitoring is available and is analyzed manually

☐ All the student data are analyzed automatically looking for patterns of behavior

Company Area	Company Sub-Area	Question	Application
2. Service Capability		How does each teacher prepare the Teaching Memory of the course?	Smart Connected

☐ Less than 50% of teachers prepare the memory of their course and/or area in digital format

☐ At least 50% of teachers prepare the memory of their course and/or area in digital format

☐ At least 75% of teachers prepare memory in a standardized and accessible format

☐ All teachers elaborate the memory in a standardized and accessible and collaborative format for the whole center

Company Area	Company Sub-Area	Question	Application
2. Service Capability		How are the reports and report cards of each student produced?	Smart Connected

☐	Only in digital format and with a manual send from the center (mail or paper)	
☐	The reports are manually introduced to a platform that the student accesses on time	
☐	They are manually introduced to a web application accessible to the user from any computer at any time where it finds more information and can interact	
☐	Different continuous evaluation variables are automatically collected. You can access a web application or app where you can find more information and interact	

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.1. Digital Infrastructure	Is ICT Infrastructure Inventoried? Ex: Computers, mobile devices, simulators, servers..	Smart Connected

☐	There is no full digital inventory
☐	The center collects in digital format only critical resources (barcode, RFID cards...)
☐	The center has digitally identified all resources
☐	The center has digitally identified all resources, sensorized and connected to know its location or status

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.1. Digital Infrastructure	How does your organisation update and maintain ICT systems?	Connected

☐ Through solving problems face-to-faceand in a corrective way

☐ By means of a preventive procedure for updating and maintaining the Systems apart from the corrective way

☐ Through a maintenance corrective, preventive and data collection to work on a predictive future

☐ There is predictive and individualized maintenance of each ICT system (software and hardware) With intelligent BIG DATA-TIME REAL analysis tools, based on external data. Generation of proactive maintenance plans

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.1. Digital Infrastructure	What type of support do the maintenance operator have in the execution or supervision of her/his task?	Smart

☐ The support is coming from a task description in navigable static documents based on a consultation system

☐ Help is based in a task description in dynamic documents with contextual presentation according to the operator's profile

☐ The support is based in the presentation of contextual data based on connected sensors and user profile

☐ The technical support is through a graphical presentation of key data in augmented reality, or expert support with on-line teleassistance with traceability.

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.1. Digital Infrastructure	What type of devices do teachers use in training?	Social

☐ Teachers use analogical devices, provided with specific spaces to teaching (computer or mobile device, projector, screen, printer).

☐ Each teacher is provided with mobile devices with cloud access to the information

☐ Training center is provided with ICT classroom, VR simulators, friendly and multimodal interfaces (Glasses, voice, haptics, touchscreens, gestures, RA…)

☐ The center counts with personalized sensor technology, custom human factor aspects

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.1. Digital Infrastructure	How do the internal communication systems for the employees of the center work?	Flexible

☐ By means of office tools (phone, mailï¿½)

☐ Through a one-way communication system: newsletters, Web…

☐ By means of a two-way communication systems: Platform, user communities, social networks …, but is manually done.

☐ Through a collaborative platform across the entire workforce including knowledge management system

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.1. Digital Infrastructure	Does the training center have tools to facilitate remote work? Is cloud software used?	Social

☐ This choice it is not feasible in the training center

☐ Only in administrative positions are provided with cloud email

☐ In the administrative and management departments they have ERP or CRM in the cloud or through VPN

☐ In all the administrative processes and for the teaching staff are used the cloud systems

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.1. Digital Infrastructure	Do you collect data from the systems used by the student on the devices in real time? How does your organisation manage computer information? Is it stored in any system?	Social Connected

☐ Those data are not collected and not managed

☐ The data colecttion is done manually via tags, QR codes

☐ Machines (computers, devices...) are connected but not all data collected are saved

☐ There are connected machines and their data are stored in real time

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.2.Security	Is your organisation labelled with or does it meet any safety standard? Ex: ISO 27001, ISO 27032, IEC 62443, ISO 22301	Connected

☐	Center does not have any certification
☐	There is no certification but assets, risks, security plan are documented through a person/company responsible for tracking systems.
☐	There is a certification and the center adheres to the recommendations.
☐	There is a certification and the Center is on alert and increasing with new cybersecurity measures

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.2.Security	What type of Internet access is offered in the center? Is it possible to get access from any computer in the office?	Connected

☐	Unrestricted free access but is not possibe to get access from any computer in the office just to avoid trouble
☐	Limited internet access to internal staff
☐	Controlled internet access to internal staff and students
☐	Internet access regulated, documented, and verified both internally and externally

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.2.Security	Does your organization have separate networks for office, educational spaces and visitors? Do you have WIFI?	Connected

☐ Shared network in offices and classrooms and/or unique WIFI for all is provided

☐ Separate network and/or WIFI for internal use of the center (office), classrooms and visits. are provided

☐ Networks segmented by functions in office, in classrooms, for visits, are provided

☐ Networks separated with DMZ between them. Presence of firewalls, proxies and encryption of communication between segments are provided

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.2.Security	What is the level of protection of your organisation's systems and jobs?	Connected

☐ Protection by role-playing access to systems and folders. Antivirus on computers. Open USB ports

☐ Individual accesses, folders and documents with passwords. Secure password policy. Secured CPD.

☐ Encrypted systems for key documentation for both save and send. USB ports locked or controlled

☐ Access through biometric systems. Registration of access to systems, directories and documents locally and by network.

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.2.Security	What is the level of surveillance, monitoring, control of your information systems?	Connected

☐ Antivirus warnings

☐ Network traffic log. Manual software update to security patches.

☐ In real time monitored network. Automatic software update to security patches. Security audits

☐ Monitored network in pursuit of excessive and unusual traffic, control of repeated connection attempts. Ethical hacking.

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.2.Security	What is the backup system like?	Connected

☐ Automatic networked system copies.

☐ There's none. Local Manual copies

☐ Only distributed copies. Redundant and automatic systems.

☐ Copies in the cloud. Regular verification of recovery procedures

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.2.Security	What is the level of Physical Security implemented in the center for ICT Resources?	Connected

☐ Against power outages, there are uninterruptible power supply systems (UPS).

☐ We define our own safety requirements using external frameworks for guidance.

☐ Our safety requirements are bound by regulations.

☐ A Disaster ICT Resource Recovery Plan has been defined and documented, and the ICT resource plan has been updated on an annual basis.

Company Area	Company Sub-Area	Question	Application
3. Infrastructure	3.2.Security	How does your organisation control internal or outsourced staff's access on-site? Access control in warehouse, office	Connected

☐ By means of Identification cards

☐ Throug identification cards with access permission chip, passwords on the computersï¿½

☐ By means of physical recognition system (iris, fingerprint...)

☐ Through wearable devices (mobile, chip card, bracelet...)

Company Area	Company Sub-Area	Question	Application
4. Clientes and external agents		How does the Training Center communicate with their clients and with the students before, during and after the training? What tools does the training center in its interaction/communication?	Connected

☐ Through standardized document models. By means of office tools (phone, mail, sms....), one-way web page

☐ By means of office tools plus web applications (whatsapp) and social networks. Two-way communication system.

☐ Through two-way communication system (the above answer) adding a customer portal or custom extranet of restricted access where the client has shared information (e.g. forums, chats, historic data...)

☐ By means of documents or reports customised to the customer's needs. Through interconnected systems (OMNICANAL) the customer automatically accesses or receives the info

Company Area	Company Sub-Area	Question	Application
4. Clientes and external agents		What tools does your organisation use in its business relationship?	Extended

☐ We do not do marketing campaigns, only through our website.

☐ At the informational level: web page, mass mailing campaigns (one-way street), events.

☐ Campaigns targeted in user communities, social networks (facebook, linkedin....) two-way street manually.

☐ Big data, artificial intelligence, with personalized communication (marketing campaigns, other needs...), chatboot

Company Area	Company Sub-Area	Question	Application
4. Clientes and external agents		How are the actions of Marketing 2.0 carried out within your organization?	Extended

☐ At least one social network is actively used to promote the company and its image.

☐ Through Web positioning actions have been carried out in search engines (SEO) and/or Internet advertising campaigns (SEM). Continuous manual monitoring of the impact of the Website and the visits it receives (Google Analytics, Visitor Log, etc.).

☐ By means of social networks plan. The company's presence on the web and social networks has been planned and a plan has been defined with concrete actions to increase the company's impact on these channels.

☐ Through a Community Manager service or by means of using comprehensive Social Media management applications (Hootsuite, etc.)

Company Area	Company Sub-Area	Question	Application
4. Clientes and external agents		How are new training activities designed in your organisation according to possible customer needs?	Extended

☐ It is very difficult to design new training actions because the training activities depends on certifications and approvals.

☐ Through a request from a customer and adjusted to the assets available at the center

☐ Through an open platform, custom projects (customization)

☐ By means of a platform, with recommendations based on variables (oriented customization), market studies and applying technology.

Company Area	Company Sub-Area	Question	Application
4. Clientes and external agents		How do you associate to your partners, for example: commercial actions, purchase actions, process improvement actions?	Flexible Smart

☐	We do not proper actions with partners, sometimes We exchange information through office tools or face-to-face tools	
☐	Sharing information through social networks, websites or workgroups	
☐	Collaborating through the interconnection of systems	
☐	By means of collaborative actions via orchestrating cloud services	

Company Area	Company Sub-Area	Question	Application
4. Clientes and external agents		How is collaboration established for innovation with external actors or stakeholders?	Extended

☐	There's no collaboration actions with external actors or stakeholders
☐	Through participation in projects under requirements or specific circumstances
☐	By means of participation with other organizations (other Training Centers, institutions or companies) in methodological innovation or innovation projects in teaching management.
☐	Through a collaborative platform intercenter, companies, Europe with artificial intelligence, big data to which we belong

Company Area	Company Sub-Area	Question	Application
4. Clientes and external agents		How do you manage your competitors' information?	Extended

☐ It is done manually through Excel Sheets or Office tools

☐ By means of a specific software and technology surveillance

☐ It is done manually through Partners and Competitors Data Integration

☐ Through Big Data actions that supose a constant access to information from different sources