

## COMMODITY SECTORS

### AREA 4.0 SERVICES

#### 401.00 Consultations

- 401.01 Consulting for financing and contributions
- 401.02 Strategic and technological consultancy

#### 402.00 Appraisals and certifications

- 402.01 Technical reports
- 402.02 Certifications of management systems
- 402.03 Certifications of skills: security, emergency, operator, etc.

#### 403.00 Training

- 403.01 Training: for the 4.0 approach
- 403.02 Training: management and methodologies
- 403.03 Training: enabling technologies
- 403.04 Training: IT technologies and architectures
- 403.05 Training: operators

#### 404.00 Advanced manufacturing solutions

- 404.01 Robot and corobotics
- 404.02 Advanced automation
- 404.03 Autonomous vehicles (AGV)

#### 405.00 Additive Manufacturing

- 405.01 3D printers
- 405.02 Software for Additive Manufacturing

#### 406.00 Augmented Reality

- 406.01 Display systems augmented reality (RA)
- 406.02 Virtual Reality Display Systems (RV) tablet / smartphone

#### 407.00 Simulation

- 407.01 Virtual representation of the product or service and integration with IoT
- 407.02 Simulation of partial or total processes
- 407.03 Simulation between interconnected machines

#### 408.00 Horizontal / Vertical Integration

- 408.01 Digital integration of production processes
- 408.02 Process integration between offices
- 408.03 Integration of logistics flows
- 408.04 Integration of information flows
- 408.05 Management and business models
- 408.06 PLM systems (Product Lifecycle Management)- PDM (Product data

Management)

#### 409.00 Industrial internet (IIoT)

- 409.01 Sensors, RFID chips, actuators, mobile devices, HMI technologies, etc.
- 409.02 Position and motion control sensors
- 409.03 Process sensors, vision and cameras
- 409.04 Identification systems: RFID, barcode and QR-code readers, etc.
- 409.05 Systems for monitoring the status of machines
- 409.06 Adaptation of machines and systems to 4.0
- 409.07 Human machine interface
- 409.08 Communication interfaces: Profibus, Profinet, EtherNet, EtherCAT, etc.
- 409.09 Machine and plant interconnections
- 409.10 Communication infrastructures: wireless, ultra-broadband, 4G, 5G, etc.
- 409.11 Management software, platforms and digital applications
- 409.12 Predictive maintenance of the machines and intervention planning
- 409.13 Traceability systems

#### 410.00 Cloud - Cloud and fog computing

- 410.01 IaaS services (infrastructure as a Service)
- 410.02 PaaS Services (Platform as a Service)
- 410.03 SaaS (Software as a Service) Services
- 410.04 BPaaS services (Business Process as a Service)
- 410.05 Fog-computing (local data storage and processing)

#### 411.00 Cyber security

- 411.01 Protection of: networks, data, programs, machines and systems
- 412.00 Big data and analytics
- 412.01 Data acquisition, organization and storage
- 412.02 Data management platforms
- 412.03 Confidentiality and data security

### MANUFACTURING AND PROCESS AUTOMATION

- 01.00 electric equipment
- 02.00 electronic equipment

- 03.00 automation for storage and transportation
- 04.00 computers and peripherals
- 05.00 work piece and tool handling
- 06.00 industrial robots
- 07.00 packaging systems and products
- 08.00 software for manufacturing
- 09.00 software for product development

### CAD, CAM, CAE AND PLM

- 10.00 assembly lines and assembly techniques

### LOGISTICS, STORAGE AND WORKSHOP EQUIPMENT

- 11.00 workshop equipment
- 12.00 forklifts and cranes
- 13.00 storage
- 14.00 industrial logistics
- 15.00 automatic storehouse
- 16.00 handling systems
- 17.00 storage systems and accessories
- 18.00 working-environment cleaning systems

### MACHINE TOOLS

- 19.00 tool grinding machines
- 20.00 boring machines
- 21.00 sheet metal working cells and systems
- 22.00 machining centers
- 23.00 electro-erosive and other electrochemical processes
- 24.00 screwing and threading machines
- 25.00 milling machines
- 26.00 refrigeration plants and equipment
- 27.00 plants and components for lubrication
- 28.00 honing, lapping and polishing machines
- 29.00 lubricating coolants
- 30.00 machines, systems and equipment for foundry
- 31.00 machines, systems and equipment for casting
- 32.00 machines for forging
- 33.00 machines for the deformation of sheet metal
- 34.00 machines for processing of rods, profiles and pipes

- 35.00 machines for marking and engraving
- 36.00 machines for deburring and chamfering
- 37.00 cutting machines
- 38.00 machines for cutting and punching
- 39.00 transfer machines and work units
- 40.00 retrofitted and certified machine tools
- 41.00 machines, equipment and material for welding and cutting
- 42.00 micromachining
- 43.00 planers, shapers, slotting and broaching
- 44.00 presses
- 45.00 presses for special applications
- 46.00 rapid prototyping
- 47.00 grinding
- 48.00 saws and miter saws
- 49.00 flexible manufacturing systems and cells
- 50.00 software for machine tools
- 51.00 lathes
- 52.00 drills and drilling

## MATERIALS

- 53.00 steels
- 54.00 aluminum and light alloys
- 55.00 brass
- 56.00 copper
- 57.00 cast iron
- 58.00 technical and industrial gas
- 59.00 jets steel and special alloys
- 60.00 plates
- 61.00 forged parts
- 62.00 composite materials
- 63.00 sintered materials
- 64.00 coatings
- 65.00 special profiles and tubes
- 66.00 other materials

## METROLOGY AND QUALITY CONTROL

- 67.00 quality control, software
- 68.00 image data processing
- 69.00 testing machines
- 70.00 measuring instruments and machines

## PARTS, COMPONENTS AND ACCESSORIES

- 71.00 accessories

- 72.00 electrical and electronic equipment for machine tools
- 73.00 hydraulic and pneumatic components
- 74.00 mechanical components
- 75.00 controls and drives
- 76.00 lubrication and cooling
- 77.00 disposal systems

## SYSTEMS AND MACHINES FOR METAL TREATMENT, FINISHING AND CLEANING

- 78.00 accessories for metal cleaning
- 79.00 machines and equipment for surface treatment and finishing
- 80.00 machines and equipment for galvanic treatments
- 81.00 machines and equipment for heat treatments
- 82.00 machines for metal cleaning
- 83.00 safety, environment and depuration

## PRODUCTION-WASTE DISPOSAL AND ECOLOGICAL SERVICES

- 84.00 containers for solid waste collection
- 85.00 collection containers of waste oils
- 86.00 various disposal devices
- 87.00 machines for industrial cleaning
- 88.00 systems and components for water treatment and depuration
- 89.00 exhaust and filtration systems
- 90.00 cooling and air-treatment systems
- 91.00 balers, shredders and briquetting presses for shaving and swarf compaction
- 92.00 lubricating-coolant treatments

## TOOLS AND EQUIPMENT

- 93.00 reamers
- 94.00 cutters
- 95.00 spindles
- 96.00 tool and accessories
- 97.00 tips
- 98.00 tool adjusting and balancing
- 99.00 work piece clamping systems
- 100.00 systems and equipment
- 101.00 components for tools
- 102.00 cutting tools
- 103.00 deformation tools
- 104.00 portable tools

## SERVICES

- 105.00 services for the company
- 106.00 services for the production

## MOLDS

- 107.00 components and accessories for molds
- 108.00 tool holders and accessories
- 109.00 extrusion dies
- 110.00 forging and hot-pressing dies
- 111.00 molds for hydroforming
- 112.00 drawing dies
- 113.00 molds for casting
- 114.00 die casting
- 115.00 blanking and punching dies
- 116.00 molds for progressive blanking
- 117.00 other molds

## SUBCONTRACTING

- 118.00 assembly and installation of mechanical, electrical, electronic and fluid devices
- 119.00 extrusions
- 120.00 foundries and die casting
- 121.00 mechanical works for third parties
- 122.00 non-chip-forming machining
- 123.00 chip-forming machining
- 124.00 metal wire working
- 125.00 carpentry working
- 126.00 machining EDM
- 127.00 design, prototyping, testing
- 128.00 grinding and superfinishing
- 129.00 welding and cutting
- 130.00 surface treatment and finishing

## PUBLISHING

- 140.00 components and systems
- 141.00 semi-finished components

## PUBLISHING

- 150.00 publishing
- 151.00 technical journals

## ASSOCIATIONS AND SCHOOLS

- 160.00 associations
- 161.00 chambers of commerce
- 162.00 schools and institutes