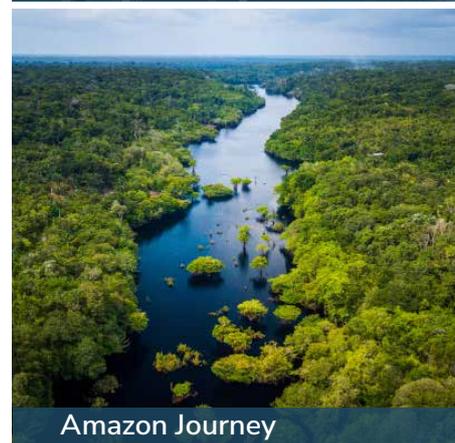




LABfaber



Urban Futurability



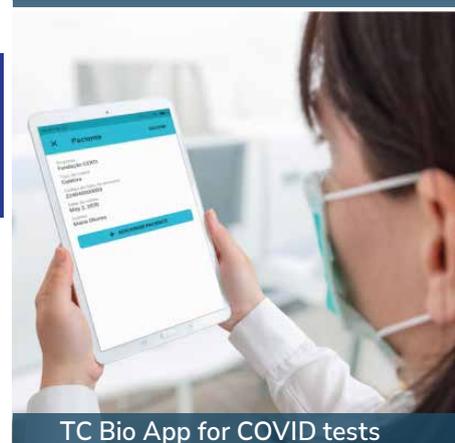
Amazon Journey



Centelha

# ANNUAL REPORT

## 2020



TC Bio App for COVID tests



To our board members, staff, clients,  
partners, and society in general:

*The year 2020 presented us with great challenges, testing our limits, and resilience. We saw the transformative power of uncertainty on a global scale. At first, we turned within the institution, striving to protect valuable resources and to find new ways to maintain our activity and business. To give priority to the maintenance of our productive capacity, we decided to do what is necessary to protect employment, which involved greater financial risk. CERTI's greatest strength lies in the quality and competence of its technical and administrative staff. We conducted a deep restructuring of our operations, with an emphasis on commercial efficiency, on more refined financial controls and on productivity. The strategy proved to be correct as early as the second semester, when we achieved a record volume of new contracts with added value significantly higher than the income projected for the entire year of 2021.*

*In compliance with the restrictions imposed by the Covid-19 pandemic, we successfully implemented remote work for the majority of our employees, in combination with strategies to control transmission, which included periodic RT-PCR testing. In this regard, we highlight the professional manner that our staff overcame the difficulties and maintain the necessary productivity.*

*We can highlight some of the most important initiatives executed during the year: the partnership with the biotechnology company BiomeHub and with the Federation of Industry of Santa Catarina, FIESC/SESI to supply RT-PCR Covid-19 tests, in which CERTI implemented an app to control testing and a robotic production line of test kits; the "Amazon Journey", which sought to strengthen entrepreneurship in the Amazon, generating income with the standing forest; the implantation of the "Electrical Corridor" in partnership with the state electrical company, CELESC, to promote charging points for electric vehicles throughout Santa Catarina; and the increasing use of artificial intelligence and IoT technologies in projects for the electrical, medical, agricultural and other sectors. These and other initiatives conducted during the year are presented in this report.*

*The Superintendency of the Institution is grateful for the efforts of the employees, the support of the board members and the trust of clients, and reaffirms the commitment of the CERTI Foundation to the development of Brazil by means of technological innovation and continuing promotion of innovative entrepreneurship.*



**Erich Muschellack**  
GENERAL SUPERINTENDENT  
& OF SCIENCE TECHNOLOGY  
AND INNOVATION

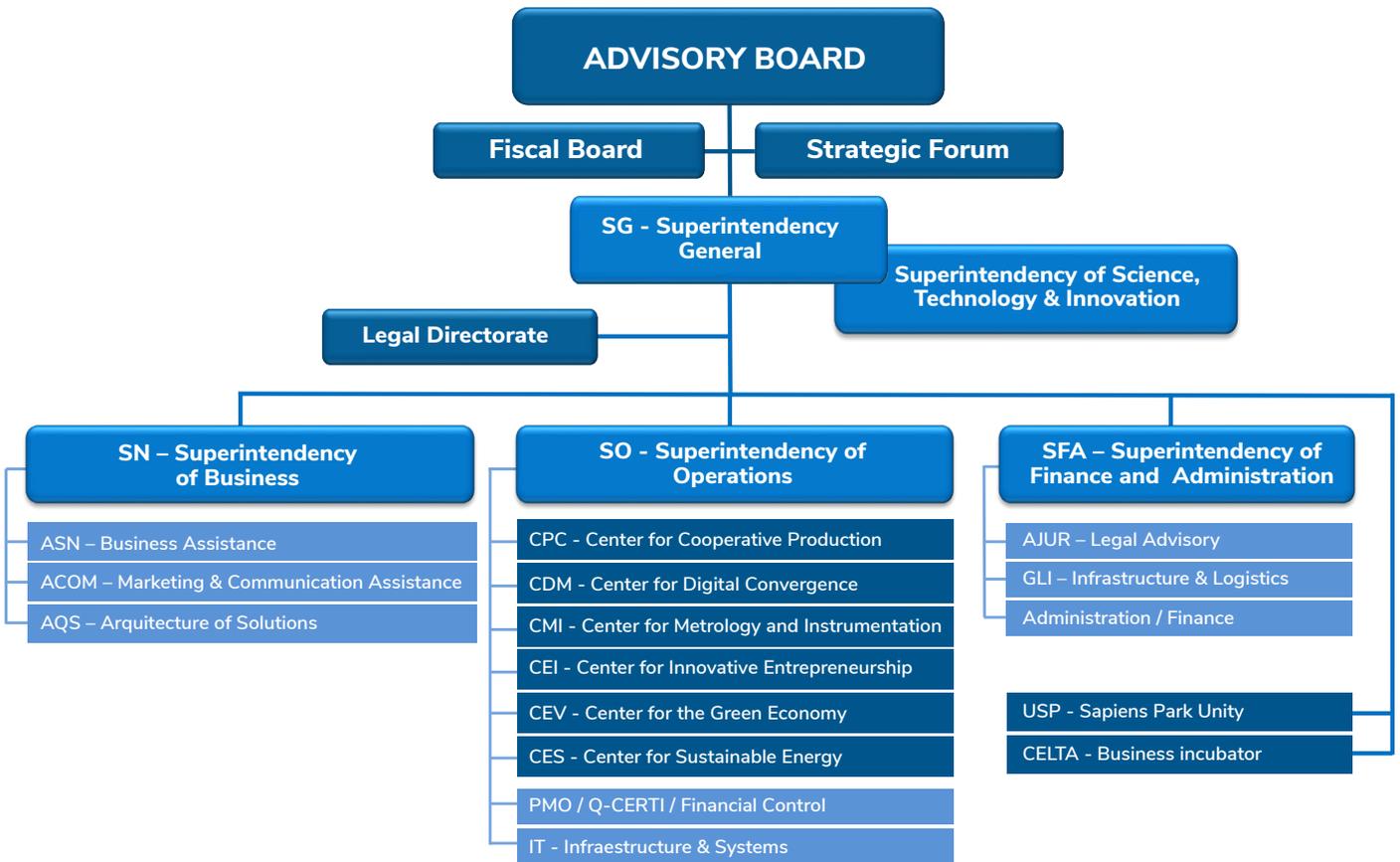


**Günther Pfeiffer**  
SUPERINTENDENT OF OPERATIONS,  
FINANCE AND ADMINISTRATION

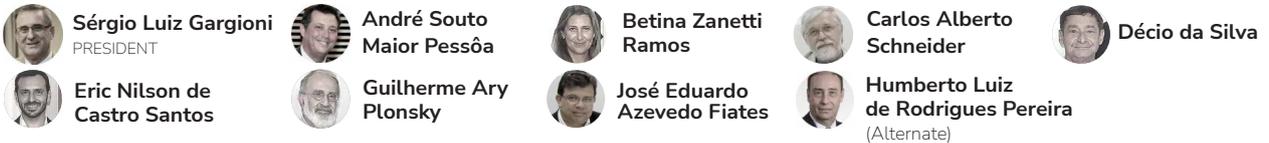


**Laercio Aniceto Silva**  
SUPERINTENDENT  
OF BUSINESS

# CERTI Administration in 2020



## BOARD OF ADVISORS



## FISCAL BOARD



## SUPERINTENDENTS



## EXECUTIVE DIRECTORS



# Fundamentals

## WHY WE EXIST

### PURPOSE/CAUSE:

Contribute in an important manner to the competitiveness of companies and the sustainable development of Brazil, by helping to develop a consistent and dynamic ecosystem of innovation, technology and entrepreneurship.

### MISSION:

Develop solutions in innovation and technology to promote the competitiveness and importance of clients

### FUTURE VISION:

1. To be the 1st or 2nd best ICTI in its field of operation to promote competitiveness and importance of leading companies, innovative agencies of society and government and high-growth startups;
2. CERTI as the 1st or 2nd among the 10 organizations considered references for their work, in the opinion of a highly motivated and compensated staff;
3. CERTI as an integrated, systemic, and robust and sustainable institutional model.

## HOW WE WORK

### BELIEFS AND VALUES

- Honesty and Loyalty
- Innovation and Courage
- Results for clients
- Competence and Agility
- Work committed to the team
- Continuous Learning
- Partnership and Cooperation
- Personal and Professional Prosperity

### STRATEGIC GUIDELINES

- Importance
- Sustainability
- Satisfaction
- Synergy
- Synchrony

### MACROSTRATEGIES

- Integrated operation of the units
- Scientific and technological excellence
- Distinctive market positioning
- Meritocracy and valorization for people
- Financial sustainability with
- Strengthening of assets

## WHAT WE DO

### COMPETENCIES OF CERTI'S NETWORK

- Engineering of Products and Processes
- Design and Management of Systems
- Digital Convergence and Mecaoptoelectronics
- Production Processes and Industry 4.0
- Dimensional Engineering
- Intelligent Instrumentation
- Sustainable Energy
- Green Economy
- Impact Businesses
- Environmental Monitoring
- Innovation Economy
- Ecosystems of Entrepreneurship
- Creation of Startups
- Venture Capital
- Business Acceleration
- Corporate Venture

### ESSENTIAL COMPETENCIES

- Engineering of products and processes
- Design and management of systems
- Digital and Information technologies
- Digital convergence and mecaoptoelectronics

### INNOVATIVE SOLUTIONS

- Development of innovative solutions
- Study and conceptualization and viability analysis solutions
- Consultancy, services, training

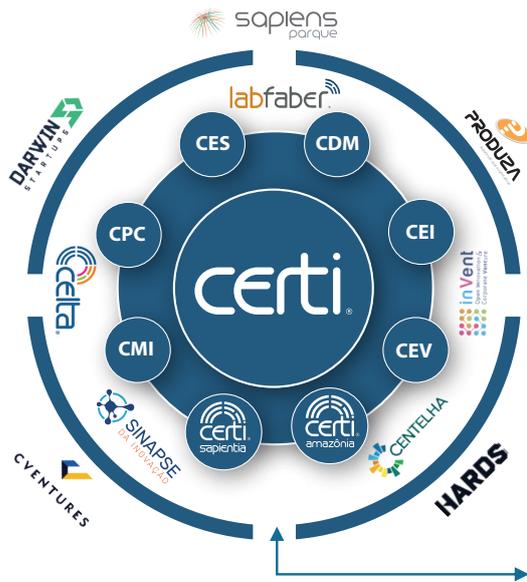
### AREAS OF OPERATION

- Industry 4.0
- Digital Transformation
- Energy
- Entrepreneurship
- Sustainable Development

### FUTURE FRONTIERS

- Digital Transformation
- Production processes and Industry 4.0
- Technological Convergence (NBIC)
- Sustainable world
- Intelligent infrasystems
- Ecosystemic entrepreneurship and Innovation
- Human Well-being

# CERTI Foundation Actions



PROJECTS  
CONSULTANCY  
SERVICES

INNOVATIVE  
SOLUTIONS

## CERTI'S COMPETENCIES

Product and process engineering, design and management of systems, digital convergence and mecaoptoelectronics, product on processes and industry 4.0, dimensional engineering, intelligent instrumentation, sustainable energy, green economy, impact business, environmental monitoring, innovation economy, ecosystems of entrepreneurship, startup creation, venture capital, business acceleration, corporate ventures.

SCIENCE

TECHNOLOGY



### INSTITUTO CERTI SAPIENTIA – IS

In 2020, Sapientia continued to expand its technical capacity and cooperated more closely with the CERTI FOUNDATION by executing joint projects for programs of entrepreneurship and private companies. The growth of the project portfolio allowed the Institute to improve its competencies in front-end and back-end web technologies, mobile technologies, compilers, communication protocols and embedded software. In addition, it began work that applies computer vision and artificial intelligence, enriching the Institute's portfolio. Also in 2020, the Institute led projects in the ANEEL (National Electrical Agency) R&D Program, executing its first three contracts with private companies in the electrical sector.



### INSTITUTO CERTI AMAZÔNIA – ICA

The work of ICA in conjunction with CERTI made viable the first initiative of the cooperative project between the Green Economy and Digital Solutions Centers in the theme of entrepreneurship and the bioeconomy. The "Amazon Journey" will bring new competencies in digital twins to ICA for application in the chain of value of products and services based in the Amazon forest, seeking to aggregate technology in processes to communicate the needs of companies on the supply chain. ICA focused on renovating contracts with clients in the electronics and two-wheel sectors, strengthening competencies in development of software and hardware applied to processes and products. During 2020, new clients were attained, highlighted by AVELL, HDL and HARLEY-DAVIDSON.



### CVENTURES

Cventures, the investment arm of the CERTI Foundation, is an administrator of capital and shareholdings and through the Fundo Cventures Primus (a venture capital fund with R\$ 83,4 million to invest in technology startups), made investments that have the objective of organizing a portfolio of 15 companies from the sectors of IT, telecommunications, digital media, and life sciences. In 2020, the fund accelerated a cycle of divestitures with the sale of Hiper to Linx and the sale of Zygo to PagSeguro, as well as divestitures of InTaxi and Hariken. The fund currently has 11 companies in its portfolio, highlighted by: Neoprospecta, Asaas, Exact Sales, Hi Platform, Wevo and uMov.me. At the end of 2020, Cventures began the process of capturing for the Fundo Cventures Primus II, with plans to capture R\$ 100 million during 2021 to give continuity to successful investments in the Santa Catarina ecosystem of innovation and technology. The strong distinction of Fundo Cventures Primus II is that it will be able to capture resources of investors, benefiting from Brazil's Computing Law.



### DARWIN STARTUPS

Darwin Startups is a startup accelerator with offices in Florianópolis and São Paulo that was conceived and conceptualized within the CERTI ecosystem. It invests seed capital and approximates to its network corporations such as B3, Grupo J. Safra, RTM, Sinqia and TransUnion. In 2020, Darwin was recognized for the third straight year as the best accelerator in Brazil by ABStartups, having invested a total of R\$15 million in 59 companies. In 2020, it realized its second "exit" with the sale of startup Mercadapp to Linx, a technology company focused on the development of management software. The focus of operations continues to be on early-stage startups throughout Brazil, preferably in the financial, data and telecommunications sectors.



### HARDS

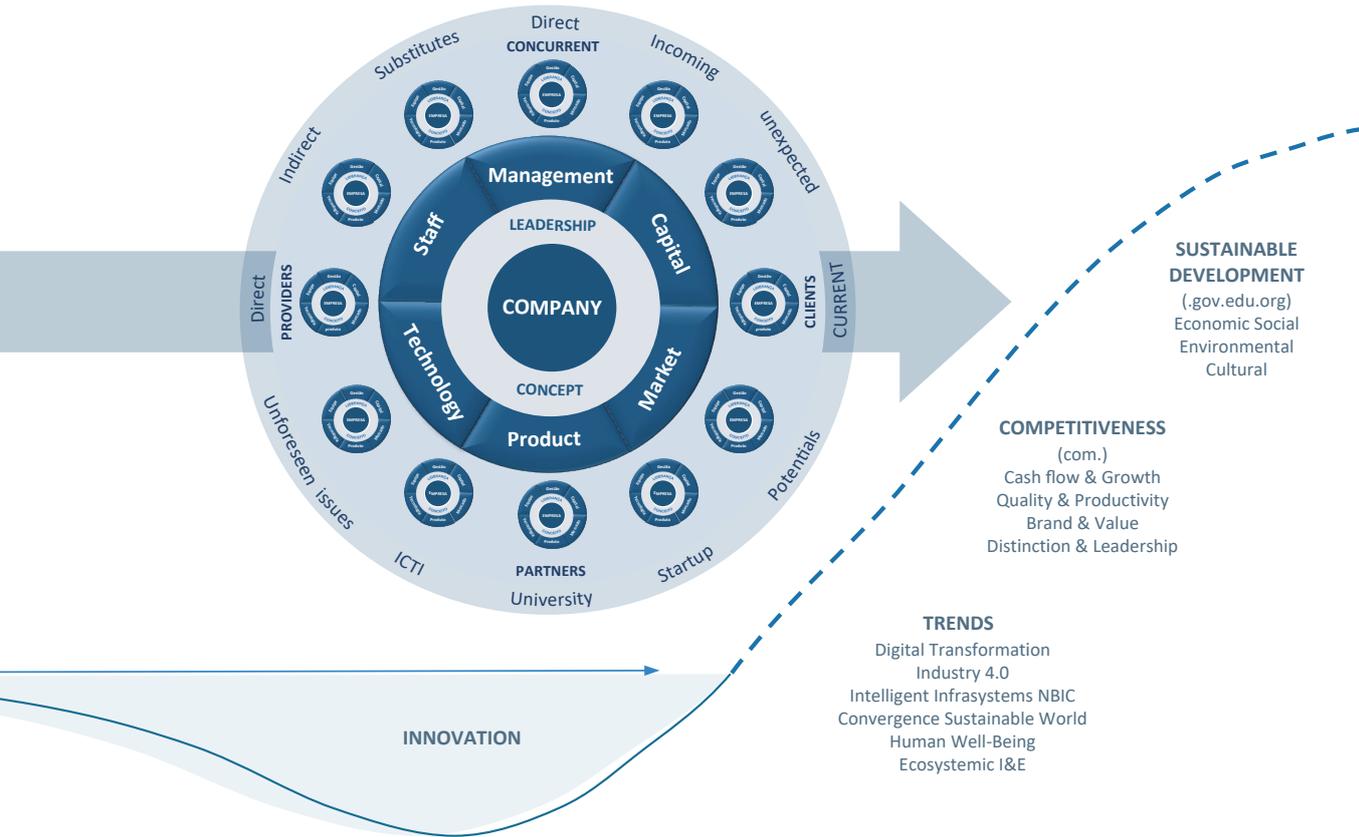
HARDS is the new accelerator of the CERTI system which, together with its partners, was created to be the top accelerator of startups with Software and Hardware solutions. It invests seed capital in the segments of IoT/Wearables, AGTech, Industry 4.0, Smart Cities, Energy, Logistics, HealthTech, and others. It is part of a program of the LABfaber Project — executed by the CERTI Foundation in partnership with PRODUA, FIESC and SENAI/SC — within infrastructure with capacity to prototype, test and manufacture pilot-lots at Sapiens Parque, in Florianópolis. It works with a proprietary methodology to support calls for projects and capture investments in future rounds, and operationalizes acceleration programs and relationships with startups for Industry 4.0 corporations like Rumo Logística (COSAN Group), ALGAR Telecom and Whirlpool.



### SAPIENS PARK

The CERTI Foundation has two buildings at Sapiens Parque, the Inovalab and the CERTI Innovation Center – Sapiens, which are spaces for receiving technology-based companies that are aligned with CERTI's fields of operation. The Inovalab has a built space of 3,000 m<sup>2</sup> and has seven modules of 280 m<sup>2</sup> to receive companies. It currently has four companies installed, highlighted by the company Nanovetores. The CERTI Innovation Center – Sapiens was inaugurated in January 2020, and has an area of 2,850 m<sup>2</sup> and 30 modules with space available for companies. The building houses two companies, one of them is BiomeHub, a partnership with CERTI in the Covid-19 Initiative project.

# CERTI ecosystem of organizations with operational and strategic partnerships



## SYNAPSE OF INNOVATION

In 2020, the Synapse of Innovation program of incentives for innovative entrepreneurship supported the creation of 94 companies in the state of Paraná, where a record total of 1,850 innovative ideas were submitted from participants in 70% of the municipalities in the state. The 94 companies created received support and technical accompaniment, as well as financial resources from the Fundação Araucária, for the development of their products and business models. The cycle of entrepreneurial training terminated at the end of 2020, with 89 active startups, which then entered the phase of analysis of evolution of the participating companies.



## INOVATIVA BRASIL

InovAtiva Brasil, which was executed by CERTI in 2020, was created by the Ministry of Economy and Sebrae, and is organized as a hub for connections, training and acceleration of Brazilian startups. During the year, considering the challenge of the Covid-19 pandemic, for the first time, it was necessary to conduct the cycles of acceleration of companies totally online. Two cycles of InovAtiva Brasil were conducted, which is a startup accelerator program for the entire country and in any sector, with a total of 1,168 companies registered and 232 companies accelerated in the phase of operation and traction. Impact InovAtiva, which is focused on innovative companies that have socioenvironmental impact, accelerated 20 startups and had 335 startups registered in 2020. For the second straight year, InovAtiva received the TOP 1 award in the ranking of the Ecosystem of the 100 Open Startups, and was recognized as the largest supporter of the ecosystem of startups in Brazil.



## CENTELHA

In 2020, the Centelha Program was operated in 19 states in all regions of Brazil. The program is dedicated to stimulating the creation of innovative companies and disseminating entrepreneurial culture in Brazil, by means of training, financial resources and support for the transformation of ideas into successful businesses. Inspired by the methodology of the Synapse of Innovation, the initiative is promoted by the Ministry of Science, Technology and Innovations (MCTI) and by the Financer of Studies and Projects (Finep), in partnership with the National Council for Scientific and Technological Development (CNPq) and the National Council of State Research Support Foundations (Confap), and operated by the CERTI Foundation. In 2020, the Centelha Program surpassed the mark of 15 thousand ideas submitted from participants in more than one thousand municipalities in all regions of the country, and until now has supported the creation of 313 innovative companies. In 2021, the other companies approved in the first edition of the program will be contracted and its second edition will be launched with 25 participating states.



## LABFABER

LABfaber operates as a Factory-Laboratory of reference in the development, command, use, and promotion of digital technologies in competitive manufacturing, supported by resources from the national computing law in the context of the Priority Hardware BR Program. Operating in conjunction with the Institute of Industry, by means of a partnership between the CERTI Foundation and FIESC, in 2020 LABfaber operated with nine partners, expanding its technological fronts, maintaining the focus on the promotion of innovation in conjunction with Brazilian industry, by means of integrated development of products and processes in platforms of simultaneous engineering; virtual planning of production and of costs in real time; sensing of production and digitalization of information; intelligent automation of factory processes; and integrated management of the production chain.



## PRODUZA

Produza is a contract manufacturer specialized in the assembly of circuit boards and electronic products. It has capacity to assemble medium and large series, as well as prototypes and pilot-lots to validate new products. It works mainly in the segments of electromedical equipment, energy, agriculture, defense, aerospace and aeronautics. Among its main services are supply in a turnkey regime, in which, upon receiving documentation for a project, operates in the entire process from the development of suppliers, to purchasing, importing, management of stock of raw materials, up to assembly of the circuit boards, functional testing and integration to the final product.



# CERTI in 2020 - Executive Summary

## Institutional Developments

After the difficulties in the Brazilian economy in 2019, it was expected that 2020 would be a year of growth and expansion. The Covid-19 pandemic, however, strongly impeded these plans, requiring the CERTI Foundation to adjust. Projects underway were cancelled and interrupted, decisions were put off about projects being negotiated, remote operations led to a drop in productivity and a suspension of access to work environments and laboratories. All of these factors forced intense adjustments to operations, particularly in the first semester. After a 10-day implementation period in early March 2020, the institution came to operate through remote work with 95% of staff, seeking to maintain operations and deliveries as much as possible, and stabilizing them along the year at 80%. In this context, Operating Income of R\$ 42 million was obtained. The Foundation executed 116 different projects, with 340 employees, and was able to maintain more than 95% of job positions, by remodeling processes and procedures to control limitations caused by the Covid-19 pandemic.

## Technology

Innovative entrepreneurship and digital transformation run transversally through the institution's operations in the development of products, processes, and systems for a wide variety of sectors such as ICT, energy, agriculture, oil and gas, healthcare, the environment and others. The demands for mechatronic solutions, which integrate mechanical hardware and electronics, firmware, software/applications, instrumentation, connectivity and artificial intelligence, have returned more strongly to the portfolio of demands in the development of prototypes and products. In the context of productive processes, with an emphasis on Industry 4.0, 2020 was highlighted by solutions in advanced manufacturing systems, MES software, simulation of real time processes and control systems, with integration to technologies such as computer vision, sensing systems, and integrity of systems and data exchange platforms by BIM. In the context of innovative entrepreneurship, there was an expansion in competencies in corporate innovation, environments of innovation, cooperation models and collaboration in entrepreneurship expanded, with consequences for entrepreneurship and innovation with impact.

## Market

2020 was marked as a year of many challenges by the complications caused by the pandemic, but also by many opportunities generated through the recognition of CERTI's competencies to make digital transformation more agile for companies. To guarantee the fidelity of existing clients, the institution intensified actions for prospecting and proposing projects in the fields of Industry 4.0, visual inspection IoT, artificial intelligence, energy efficiency, electrical mobility, intelligent cities, bioeconomy, and open innovation. Using resources of clients and or support from fiscal incentives and subsidies (ANEEL, ANP, the Computing Law, BNDES, FINEP, Rota 2030, Sebrae and EMBRAPPII), the foundation had outstanding commercial operations in the electrical energy sector, electronics, healthcare, oil & gas, aerospace and defense, automotive, agribusiness, environment and entrepreneurship.

## Capital

The continuity of the actions initiated in 2019, with the goal of monetization of the institution's assets, which are relevant in the model of institutional sustainability and robustness, especially in private, self-sustaining, not-for-profit ICTIs, such as the CERTI Foundation, were harmed in 2020, due to the macroeconomic situation of investments in the market and of uncertainties caused by the pandemic.

## Administration

The organizational restructuring implemented in 2020 was accompanied by the implementation of new administrative indicators at the level of projects, and reference centers and of the institution. The year of 2020 was characterized by a review of the administrative cost and expense structure; the implantation of the concept of margin of contribution and its control; the systems of binary deliveries and stage-gates in projects; with adjustments in the model for planning and budgeting projects, with proper adjustments in process and tools. Concomitantly, CERTI reviewed operating and accounting procedures to comply with accounting pronouncements CPC 23,28 and 47. It simultaneously instrumentalized greater agility to institutional management. with computing systems.

## Governance

The institution is guided by a Strategic Plan from which are derived guidelines, indicators, and goals for the year. The Profitable Business Guideline for 2020 was strongly surpassed with indicators that exceeded the goals. The strategy to "strengthen businesses" during the pandemic was successful. The goals associated to the Economic and Financial Sustainability Guideline and to administration of liabilities, were not attained. The review of the governance structure and organizational structure adequately met the Administrative and Governance Guideline. The efforts undertaken, while expressive, only partially met the goals associated to Administration and Development of People Guideline. Guidelines issued by the new General Superintendent led to a centralization of business actions to the Superintendency of Business and the strengthening of the operation of the Centers of Reference in Innovative Technologies (CRIT's) in production. The CRITs came to focus on the generation of solutions at higher Technology Readiness Levels (TRL); the productization of solutions; and higher return on investment of the solutions developed for clients (ROI).

## Staff

The CERTI's Foundation's most important asset is its intellectual capital, composed primarily of its staff of employees, its processes, procedures, and documental legacy. A group of new and urgent actions was needed to operate along with staff, particularly those working remotely during the pandemic, which was associated to an acceleration of digital transformation of operating processes, communications, interactions of people and collaborative work. New levels of delegation of responsibilities, expansion of levels of autonomy and trust on teams characterized experiences in management of people. Intense efforts were also made to provide assistance to physical health – by means of periodic RT-PCR testing, accompaniment of those who were positive and those who became ill, and their families, and through care for psycho-emotional health, by means of psychological support, motivational interactions, and actions for personal attention and valorization. Nevertheless, the remote work that expanded globally led to an expressive turnover of employees in the field of software, a number of whom were attracted by startups and large European, American and Chinese companies.

## Products and Solutions

CERTI's solutions for its clients include projects for technological development, entrepreneurship and innovation, technical assistance, short term training and highly specialized technological services. Actions in the form of projects represented 91% of income from production in 2020. The size of the projects executed maintained its percentage at the same level as 2019. The execution of projects in the field of health grew 100%, in the electronics sector by 50%, while the field of economic development and sustainability dropped 50% in relation to 2019. This behavior is strongly related to the impacts of the pandemic on the market.

## Infrastructure

Infrastructure for research, development, and innovation of the institution, which is concentrated in the consolidation of the complete operation of the "LABfaber 4.0" factory laboratory at the Instituto da Indústria, at Sapiens Parque in Florianópolis, in cooperation with FIESC/SENAI was a special highlight in 2020. This laboratory is a reference in Industry 4.0 technologies, with investments in infrastructure and technological development made possible by resources from the MCTI/Priority Program of the Computing Law HardwareBR, operated in partnership with the SENAI Institute of Innovation in Embedded Systems in Florianópolis. It is one of the most modern industrial plants in the country, whose operations were maintained throughout 2020, with rigid protocols of sanitary safety, and was the base for the production of Covid-19 test kits, as a result of the "Covid-19 Initiative" developed in the ecosystem of innovation of Florianópolis.



Employees **340**



Operating Revenues (R\$ millions) **42**



Specific rules for the use of resources **75%**



Revenue from cooperative projects among centers **23%**



Clients served **603**

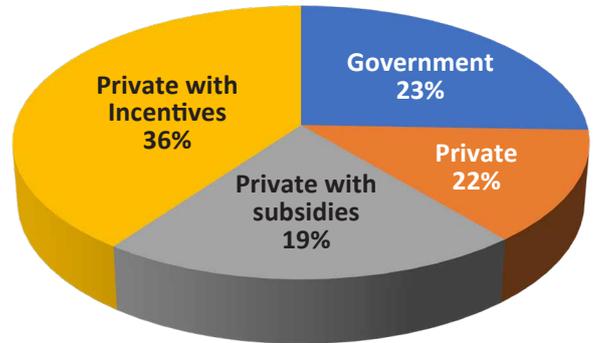


Projects executed during the year **116**

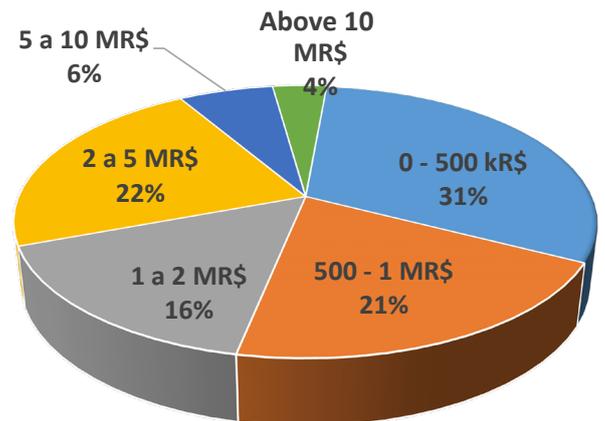


Market sectors served **15**

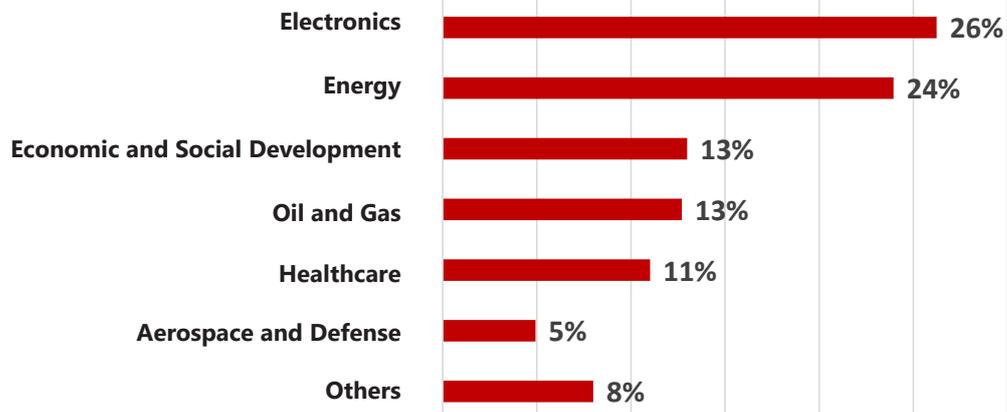
### Revenue by type of resource



### Projects Executed in 2020



### Sectoral Share of Annual Revenues



# CERTI – Operational Model, clients, partners in 2020



## CLIENTS IN THE PAST 5 YEARS



## PARTNERS



RESULTS FOR CLIENTS

MARKET

Competitiveness of the Companies

Sustainable Development of the Country/Regions

COMPANIES  
Organizations  
Governments

- Healthcare
- Aerospace
- Bioeconomy
- ICT
- Agribusiness
- Defense
- Energy
- Education
- Automotive
- Oil and Gas
- Electronics
- Economic Social Development

CLIENTS IN THE PAST 5 YEARS



PARTNERS



# CERTI Centers of Reference in Technological Innovation

## Cooperated Production

At the Center for Cooperated Production, 2020 was a year marked by significant developments in the LABfaber 4.0. Project. During the pandemic, thanks to the joint efforts of the entire project staff, as well as important local partners such as PRODUZA and BiomeHub, it was possible to implement a complete production process for PCR test kits for Covid-19. This allowed the realization of tests for 71,563 people in 2020. In addition, various Industry 4.0 technologies were inserted in a practical manner in the LABfaber environment: digital twin, sensing, autonomous movement, and others. In addition to typical R&D projects that involve technologies for industrial improvements, strategic management of costs and automation on the factory floor, the field of BIM and LEAN 4.0 deserve highlighting, in which new structural projects were initiated during 2020, reinforcing CERTI's actions in important economic sectors, such as aerospace and defense, electronics, electromedical, electrical energy, oil & gas, IT and telecommunications, food and beverages, construction and engineering, machinery, textiles, leathers and clothing.

### Competencies:

Engineering of costs and new industrial projects/ Factory intelligence/ Digital manufacturing/ Industry 4.0 / Quality assurance/ Conformity and reliability / BIM 4.0 and LEAN 4.0

### Solutions:

Implantation of solutions in 4.0 for companies/ Advanced materials / Innovative production environments/ Factory-laboratory



## Green Economy

It is difficult to speak of 2020 without at least alluding to the Covid-19 pandemic. The recent systemic crisis brought in a nearly instantaneous blow that was unprecedented in the memory of humanity. After all, for more than 4 billion years of life on Earth, nature has shown that at any moment, certainties can change, and that the key to life being able to handle this resides in diversity. Diversity and serendipity (which is symbolized in nature by the confluence of chance with the adaptive value of changes in uncertain situations) apply analogically both to evolution (in nature) and to innovation (in human society). The events of 2020 reinforced this view at the Center for the Green Economy at the CERTI Foundation, pointing to the Amazon and to biodiversity as containing enormous competitive potential that can allow our society to deal with the global uncertainties that are knocking on the doors of the planet. As the pandemic taught us, the time until the future is short!

### Competencies:

Modeling ecosystems of innovation for creation of shared value / Management of natural capital (capacity for dynamic support, carryover & trade, biodiversity offsets) / Management of ecosystemic services / Modeling of impact of business / Remote sensing, multicriteria analysis and environmental modeling / Management of water resources / Management of knowledge

### Solutions:

Models, systems and mechanisms to create shared value / Implantation and support to the operation of innovative experiences of sustainability



## Company incubation

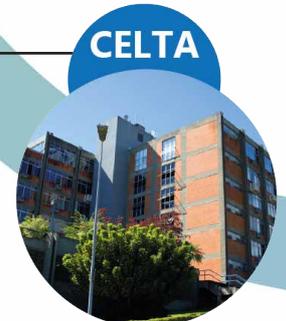
In 2020, with the liberation of another seven companies, CELTA — the Incubator of the CERTI Foundation — came to have 116 graduated companies, and a high success rate of 96%. The year 2020 was marked by important training and consultancies, guidance, and accompaniment, as well as intense involvement with the certification of products of incubated companies focused on Covid-19 and processes for the new home office model. These actions helped to have 80% of the companies incubated with revenues above those planned for the entire year of 2020. CELTA's success is directly linked to a management model that involves important representatives of society, highlighted by the Research and Innovation Support Foundation of Santa Catarina (FAPESC), the Florianópolis municipal government, the government of Santa Catarina state, the Federal University at Santa Catarina, and business associations. CELTA executed projects supported by Sebrae involving R&D activities and staff training in the fields of intermediation of business and investments, aimed at the staff of incubated companies and the CELTA staff itself.

### Competencies:

CERNE model of incubation of innovative companies / Business, academic, government and social network / Infrastructure, technological and business environment / Entrepreneurial culture

### Solutions:

Incubation of base technology companies / Virtual incubation of innovative companies



## Digital Convergence

In 2020, the Digital Convergence Center sought to become a reference in Brazilian and international markets as a large provider of solutions for digital transformation, through the development of embedded systems, software and complex electronics. Its activities have been aimed at projects such as development of digital systems for remote management and operation, solutions in intelligent systems, artificial intelligence (IA) allied to computer vision, natural language processing (NLP) and data science, web and cloud computing systems and mobile applications. In addition to the internet of things (IoT) and systems and electronics for critical systems. The main segments of activity were consumer electronics, healthcare, aerospace and defense, energy, telecommunications, digital TV, electrical appliances, oil & gas, agriculture, and government.

### Competencies:

Software development / Embedded systems / Mechatronics / IoT / Big data / Cloud computing / Intelligent systems

### Solutions:

Remote operations and management / Intelligent systems / Internet of things (IoT) / Image recognition / Artificial intelligence (IA) / Educational solutions / Electrical storage and mobility

CDM

## Metrology & Instrumentation

In 2020, the Center for Metrology and Instrumentation maintained the strategic orientation of support to companies in the consolidation of their technological advances. In this way, it operated actively in the digital transformation of processes related to improvement of the quality of products and the conservation of integrity of production assets. The participation in R&D projects at large companies stands out, mainly in the oil & gas and aerospace and defense sectors, and in providing technological services to various economic sectors. During the year, a new structure of competencies in the field was conceived and consolidated, to succinctly and cohesively express the activities undertaken. Its approval facilitates the visualization of new opportunities and increases the potential for synergy with other CERTI centers.

### Competencies:

Mechanical design / Dimensional engineering / Reverse engineering / 3D Metrology / Instrumentation and intelligent automation / Quality of product / Integrity of equipment / Technological networks / Technological infrastructure (TIB)

### Solutions:

Technological services for quality and innovation / R&D of dimensional engineering / R&D of mechanical systems / R&D of measuring, inspection and test systems / R&D of engineering of product quality / R&D of management of integrity / R&D of technological networks and management of R&D

CMI

## Sustainable Energy

In 2020, despite the adversities presented by the Covid-19 pandemic, the Center for Sustainable Energy had revenue growth of 30% over the previous year, highlighted by increased productivity, with a team of 40 engaged and highly competent professionals. The Center completed eight years of existence in 2020, having consolidated itself as a unit increasingly focused on bringing solutions to the market, encompassing product development, new services, and innovation in business models, aligned to the '4Ds' (Decentralization, Decarbonization, Digitalization and Democratization) in segments of energy generation, distribution and consumption.

### Competencies:

Distributed generation / Energy storage / Automation and control / Engineering for the electrical system of the future / Modeling of new business / Regulation and market

### Solutions:

Automation in intelligent networks / Energy generation systems / Microgrids and virtual energy generators / Digital solutions for the energy sector / Autonomous systems for isolated areas / Recharging infrastructure for electrical vehicles / Analysis of viability and modeling of new businesses in the energy market / Solutions for energy reliability and efficiency / Special projects and consulting

CES



CEI

## Innovative Entrepreneurship

In 2020, the Center for Innovative Entrepreneurship maintained its focus on its operations throughout Brazil, coordinating and operating organizational projects such as Innovative Brazil, in partnership with the Ministry of Economics and the Centelha Program, which was implemented in 19 Brazilian states in partnership with the Ministry of Science, Technology and Innovations and Finep. In addition, it developed ecosystems of innovation for important clients such as the Brazilian Navy, the government of the Federal District, Sebrae Minas Gerais, and others. In the business segment, the Invent solution was expanded: which is a methodology it developed that seeks to increase the innovative capacity of companies, accelerating the innovation process, reducing risk, and strengthening their relationship with ecosystems of innovation, working with important national companies such as Soprano and Renner. At the end of 2020, CERTI was selected once gain by the Ministry of Economics to act in the Inovativa Hub for the next four years and by the Ministry of Science, Technology and Innovations to coordinate the Centelha Program for the next two years.

### Competencies:

Economy of innovation and regional development / Management of innovation and technology / Culture of entrepreneurship / Conception and articulation of ecosystems and networks / Administration and promotion of innovation in the business environment

### Solutions:

Development of innovation environments / Programs for development of innovative companies / Systems of entrepreneurship and corporate innovation

# Outstanding Solutions for innovation 2020



## ARCA NATURAL – a Spin-Off of Araucária+

Arca is a business of impact created in 2020 to regenerate forests by means of original, healthy products of sustainable origin. As a spin-off of the Iniciativa Araucária+, a strategic partnership between the CERTI Foundation and Fundação Grupo Boticário, Arca has its initial focus on the Atlantic Forest but also has the ambition to expand its operations to other Brazilian territories, operating as a platform to catalyze sustainable products. The first line of products is juices from native Atlantic Forest species.

For more information:

[www.instagram.com/arca.natural/?hl=pt-br](https://www.instagram.com/arca.natural/?hl=pt-br)



## Automatic classification of images for managing vegetation along electrical grids

The objective of this project of the National Electrical Agency - ANEEL R&D with Copel Distribuição is to validate a methodology for the automatic classification and calculation of indicators related to vegetation close to or under distribution grids. The main innovation in the project is in the application of multispectral images collected by nanosatellites and machine learning algorithms for classification and extraction of attributes, as well as the development of specific indicators to support the planning of vegetation management teams of Copel Distribuição. The project's main product will be a protocol describing the methodology developed and a pilot application in four regions of the state of Paraná.



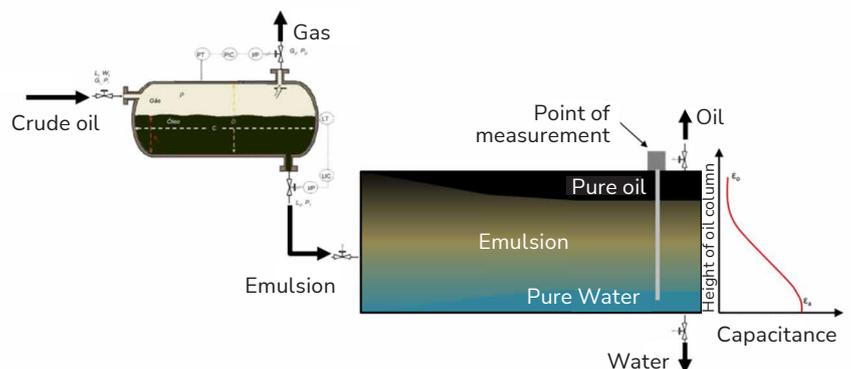
## Amazon Journey – Activation of the Ecosystem of Innovation with an Impact in the Amazon

In 2020 the CERTI Foundation began the implementation phase at the MVP level of a series of mechanisms to activate the Ecosystem of Innovation of Impact in the Amazon. The objective of the initiative is to generate value for extractive communities and conserve the forest through the development and competitiveness of sustainable Amazon forest production chains. This will be achieved through innovation, promotion of entrepreneurship in the bioeconomy, integration, and connection of actors along productive chains (from the production base to the market), development of the system of metrics of impact, and others. The Amazon Journey is the result of a previous phase (2019), in which CERTI mapped the actors, mechanisms, instruments and other stakeholders associated to the Ecosystem of Innovation in Amazon states.

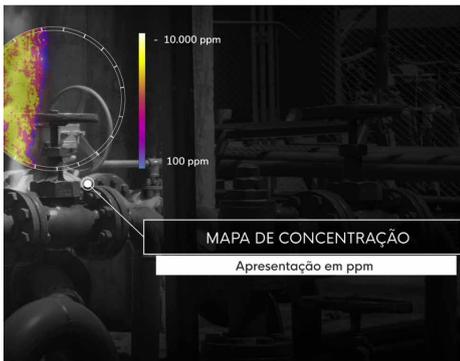
## Project MIAO

Project MIAO [the Portuguese initials for Water-Oil Interface Meter] is dedicated to the development of a system of measurement of the water-oil interface in oil tanks. After its extraction, oil forms an emulsion composed of water, oil and gas. Separation of the components takes place inside tanks or vessels known as separators. This process requires responding to variations in the volumes produced by the wells, and to the time needed for stabilization and maximum concentration of water in oil (>1%) for measurement of the oil for fiscal purposes, and to comply with environmental requirements, like the maximum concentration of oil in water, which is commonly discarded in the sea, of 29 ppm (CONAMA 393/2007).

Thus, knowing the interfaces inside the tank, and the amount of oil, water and emulsion that it holds, allows improving the control parameters, like the opening of the tanks entrance and exit valves, to obtain the maximum quantity of production while assuring compliance with technical and environmental requirements.



# Outstanding innovation solutions in 2020



## METROLEAK

The purpose of the MetroLeak Project is to develop a method to quantify fugitive emissions (gaseous leaks on petrochemical process lines) using computer vision techniques of images acquired with special infrared cameras for detection of volatile organic compounds (VOCs) and methane (CH<sub>4</sub>). Another objective of the project is the metrological validation of results obtained by means of laboratory tests and comparison with consolidated measurement methods. There is increasing demand to mitigate fugitive emissions in Brazil and worldwide, motivated by the environmental impacts of VOCs and methane, and increased operational security and reduced product loss.



## Cris-ABB

The CRIS – Conveyor Roller Inspection Services project sought to develop an automatic system for the inspection of rollers on conveyor belts for mineral transport. Conveyor belts are widely used in the mining industry in all climatic zones. The product developed functions as an automatic vehicle that transports sensors, allowing fast, safe, and repetitive inspections, which can substitute the currently common manual inspections that are considered expensive, inconsistent and dangerous. The inspection process allows the identification of rollers that need to be cleaned, lubricated or substituted during the next planned stop.



## Technological Services

Designed to attend to reference metrology and updated measurement technologies, CERTI offers a wide range of calibration services for measurement instruments and reference standards, and provides services in the field of reverse engineering, training, and assistance. In 2020, the challenges imposed by the pandemic led CERTI to restructure some fields so that it could continue to provide reliable technological services, and personnel training with quality. During the year, the client portfolio was expanded to various industrial sectors, reaching more than 3,300 certificates issued in the dimensional field and more than 250 students in training courses in metrology and quality. In particular, the field of training and assistance

received investments in human resources and infrastructure, allowing remodeling the scope of training offered. In addition to classroom training, it was possible to provide digital training, online and live, using a dedicated platform, to allow reaching a national and international public.



## Open BIM

The purpose of this project is to diagnose the current situation of processes in underwater systems and analyze the technical viability of neutral international formats for proposing a digital, interoperable and unequivocal management process for underwater systems. Above all, it aims to implant the methodologies and technologies in real environments of management and control of the value chain of underwater systems, and to make potential contributions to the standards existing for international consortiums, inherent to norms ISO 15926 and ISO 29481. It is expected that at the end of the project, a procedural methodology will be developed with associated technologies to improve and provide technical-economic liberty to workflows in underwater systems, proposing a new digital process of management of projects and of the lifecycle of assets with the use of interoperable technologies that are open in these systems.

# Outstanding innovation solutions in 2020



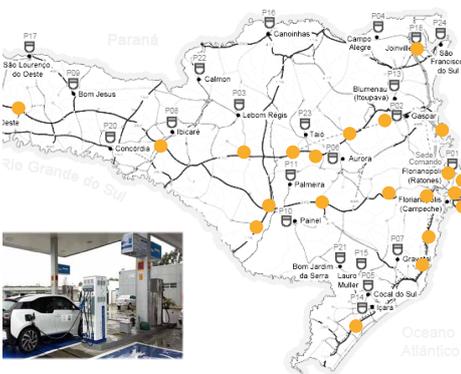
## Intelligent Micronetwork

This is an energy generation system, composed of software and hardware for control and connectivity, which groups the following principal functionalities: measurements and analyses of data, control of demand and local generation, integration of renewable sources, improvement of energy resources, capacity for islanding and automatic analyses of energy contracting. The product was developed with a focus on applications in industry and commerce, with its main proposal of value being cost savings for clients and reliability in energy consumption. A distinction of this solution is the embedded algorithm of intelligence and the microgrid-as-a-service operational model, to be offered in the market.



## Urban Futurability

This is a pioneer project in Brazil with a high degree of innovation in relation to similar initiatives in the world. It encompasses development and integration of the most advanced solutions for the future of the electrical energy distribution system. The project includes solutions in digitalization, automation, artificial intelligence, engineering of new products, services and innovative business models for electrical energy companies. It also benefits companies in telecommunications services, water and gas suppliers and other stakeholders who are directly or indirectly involved in the innovation chain in these segments. The specific objective of this project is the implementation of a Living Lab in the Vila Olímpia neighborhood of São Paulo, as a demonstration and experimentation “cell” of solutions developed in this endeavor.



## Santa Catarina Electrical Corridor

This project involves the implantation of infrastructure for charging electrical vehicles in Santa Catarina, adding at least 30 charging stations – with fast and semi-fast charging – on highways and at urban locations, with market solutions and development realized by CERTI. The project should be Brazil's first large electrical corridor, encompassing installed infrastructure and implementation of a business model for the operation of the system. In addition, the project calls for the development of an Electrical Station of the Future, designed as a space that will integrate charging stations and related technologies (photovoltaic microgeneration, stationary storage systems and demand management), serving as an environment to promote and disseminate technologies for electrical mobility and contributing to the advance of this technology in Brazil.



## INVENT

InVent is a corporate innovation program that seeks to diminish the risks and accelerate the process of innovation, development and release in the market of new products, services, processes and business models, adopting a practice more aligned with the “startup form of innovation”. Of the companies participating in InVent, 29% released new innovative products or services, 18% innovated in current products and services, 24% implanted innovations in business models, and 29% realized innovations in processes. In addition, InVent stands out for the index of assertiveness of identification and interaction with startups and other partners in the ecosystem of innovation, reaching a success rate of 75%, meaning that for every four startups mapped, three serve the interests of the company. It is important to highlight that these results were obtained in a period of 16 weeks, which confers great agility in terms of systematic generation of innovations. The outstanding clients include: Soprano, Lojas Renner, Caixa Econômica Federal and 35 other companies that participated collectively.

# Outstanding innovation solutions in 2020



## Project for Research and Development of Software to Verify Medical reports Using Artificial Intelligence (AI)

This project involves development of software to verify medical examination reports, based on artificial intelligence (AI) as well as machine learning and natural language processing. The software is responsible for the textual analysis of medical reports and detection of errors and inconsistencies in the text of the reports and in the general data for a patient. It thus serves as a quality-assurance mechanism that can anticipate problems before a report is sent to the patient or to the responsible doctor, avoiding harm to the patient and negligence claims.



## Mobile Support Solutions

This project involves development of a system for diagnosis of computers using Android and iOS smartphones. It allows conducting a battery of tests of hardware on a cell phone, even when the operating system or components such as the keyboard and monitor are not functioning. With the test results, it is possible to request the opening of tickets and more assertive assistance, avoiding unnecessary logistics and support costs and increasing the degree of client satisfaction with technical support. The complete system consists in a customized BIOS, a multiplatform application and web system for management of available resources.



## INOVATIVA BRAZIL

InovAtiva Brasil is executed by CERTI and was created by the Ministry of Economics and Sebrae as a hub for connection, training, and acceleration of Brazilian startups in 2020. Given the challenge of the Covid-19 pandemic, it was necessary, for the first time, to conduct company acceleration cycles totally online. Two cycles of InovAtiva Brasil were conducted, a program of acceleration for startups from throughout the country and from any sector, with a total of 1,168 inscriptions and 232 companies accelerated in the stage of operation and traction. Meanwhile, the InovAtiva of Impact program focused on innovative companies with socioenvironmental impact, and accelerated 20 startups and had 335 companies registered in 2020. For the second consecutive year, InovAtiva received the TOP 1 award in the Ranking of Ecosystems of 100 Open Startups, and is recognized as the largest supporter of startup ecosystems in Brazil.

See here the new pillars of action of InovAtiva: Acceleration, Ecosystem and Academy. 

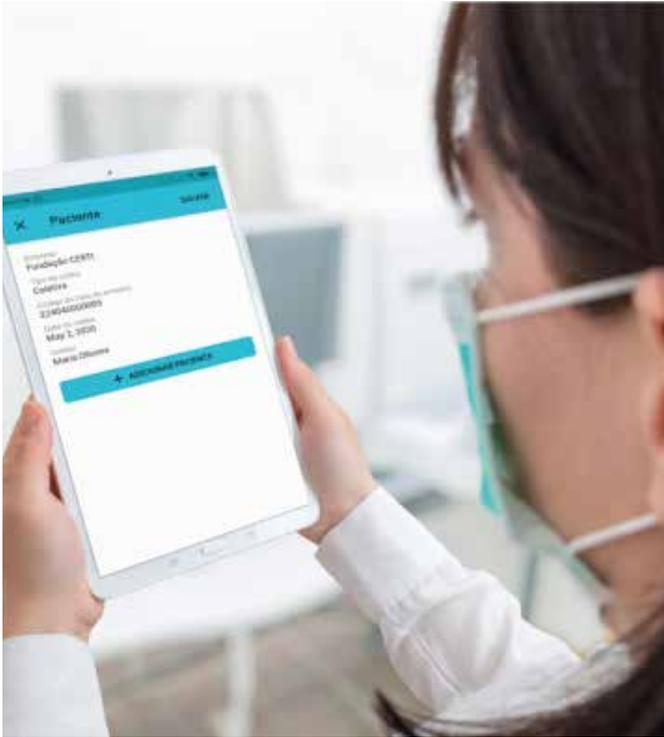


## CENTELHA

In 2020, the Centelha Program was operated in 19 states in all regions of Brazil. The program sought to encourage the creation of innovative companies and disseminate entrepreneurial culture in Brazil, by providing training, financial resources and support for transforming ideas into successful businesses. Inspired by the methodology of the Synapse of Innovation, the initiative is promoted by the Ministry of Science, Technology and Innovations (MCTI) and by the Financer of Studies and Projects (Finep), in partnership with the National Council of Scientific and Technological Development and the National Council of State Research Support Foundations (Confap), and is operated by the CERTI Foundation. In 2020, the Centelha program surpassed 15 thousand ideas submitted from more than one thousand municipalities from participants in all regions of Brazil. So far, the project has supported the creation of 313 innovative companies. In the coming year, other companies approved in the first edition of the program will be contracted and its second edition will be launched with 25 participating states.

Learn about the results of the program   
[br.programacentelha.com.br/](http://br.programacentelha.com.br/)

# Outstanding innovation solutions in 2020



## APP COVID

The CERTI Foundation developed an unprecedented system in Brazil, aimed especially at collectors of Covid-19 tests and patients who undergo testing. The objective is to make the process of collecting data about Covid-19 more agile. It can register five thousand exams in just one day, overcoming the difficulty in collecting tests of a large number of people. The applications integrated to the system developed by CERTI do away with the use of time-consuming forms. Each patient who downloads the app receives a QR Code that can be quickly scanned by the healthcare agent who conducts the collection. Use of the system offers security in diagnostics and keeps sensitive patient information classified, as determined by Brazil's General Law for Protection of Data (LGPD). Another advantage of the system is traceability: the app allows tracking geolocation and anonymously determining who had contact with people contaminated by Covid-19. The software stores a history of exams and can be integrated to a laboratory database, and can be used to collect other samples of biological materials and tests for other diseases.

For more information access:

<https://info.certi.org.br/sw-gestao-de-testes-laboratorio>



## LABFABER

The main objective of this project is to have the already consecrated model of LABelectron develop into a new concept, creating a national company for the development, application and demonstration of industry 4.0 technologies, in a real environment of discrete manufacturing, focused on Brazilian industrial competitiveness: LABfaber.

The development is focused on 4 Lines of Action:

**Line of Action 1** – Generation of Expertise and Command of Technologies and Essential Systems of Industry 4.0.

**Line of Action 2** – Consolidation of Strategic Partners and Modeling of mechanisms for technology transfer and internalization of LABfaber.

**Line of Action 3** – Updating of infrastructure and implementation of new equipment and systems.

**Line of Action 4** – Dissemination and application of technologies on LABfaber's factory floor.



In 2020, the project continued its phase 1, and developed 6 subprojects in Line of Action 1; Line of Action 2 involved structuring the base reference tool for LABfaber 4.0, the mental map of partnerships; Line of Action 3 involved consolidation of the systematic for acquisition of technological equipment to guarantee an assertive selection of machinery and systems to assure the excellence demanded by the project; Line of Action 4 involved creating product development methodology with electronic hardware, through integration and adaptation of the systematic for the development of circuit boards in (SDPE) methodology.

# CERTI – an EMBRAPII Unit

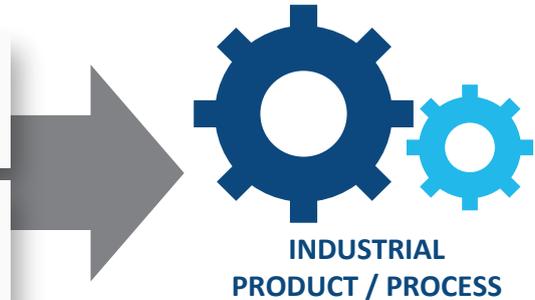


CERTI is an EMBRAPII Unit accredited to act in the field of competence of Intelligent Systems, which allows its RD&I projects to have 33% of their total value financially subsidized. There are three subfields of action in Intelligent Systems: Mechatronic Systems, Software for Intelligent Systems and Manufacturing Systems. In compliance with the strategic guidelines for 2020, CERTI strengthened and expanded its base of partner companies in strategic sectors for EMBRAPII projects.

## INTELLIGENT SYSTEMS AREAS AND SUB-AREAS

INTELLIGENT SYSTEMS

<b>SPECIALIST SYSTEM</b> Artificial intelligence, digital signal processing, algorithms, high-level applications etc.	<b>CONNECTIVITY</b> Authenticity, security, Internet, cloud computing, M2M etc.
<b>EMBEDDED SOFTWARE</b> Middleware, operating system, kernel, control algorithm.	<b>HUMAN MACHINE INTERFACE</b> Manipulators, monitors, cameras, registers, interactive displays, biometrics.
<b>ELECTRONIC HARDWARE</b> Electronics, microelectronics, Microsystems (MEMs) firmware, prototyping, etc.	<b>SENSORS AND ACTUATORS</b> GPS Operation, signal acquisition, electro-mechanical triggering etc.
<b>EQUIPMENT AND DEVICES</b> Encapsulating, interconnection, cabinets, mechanics, micromechanics, supply, design, optics and special materials, integration to physical system etc.	



The innovation projects approved in 2020 will directly benefit companies such as SIEMENS Healthcare, GL Eletro-Eletrônico, LENOVO, Biomehub, Qualirede Consultoria Empresarial, REUNIDAS Transportes, Bee2Bee Software e Treinamento, Tail Technology, Iana Tecnologia, Alfakit and Sabó Industria e Comércio de Autopeças.

FISCAL INCENTIVES



### The Computing Law (8.248/91)

Target Public: Companies that produce in Brazil computing equipment listed in Decree N° 5.906/06, of 26/09/2006. CERTI has been accompanying changes in industrial policy legislation for the ICT sector, which was revived by Law n° 13.969, of 26 December 2019 and by Decree n° 10.356 of 20 May 2020 which brought important changes in regulations and the use of benefits, creating a system of credits that affects the planning and execution of R&D investments by companies



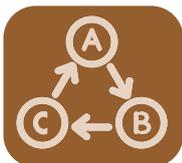
### Rouanet Law for Research (11.487)

Target Public: Companies of any sector that invest in research and development of technological innovation, use the regime of Real Profits and have Fiscal Profits in the year.



### Law for the Good (11.196/2005)

TARGET PUBLIC: Brazilian companies, from any sector, which invest in research and development of innovation technology, use the Real Profit regime and have Fiscal Profit in the year. The law aims to generate patents, decrease imports of computing equipment and components, encourage local training and to attract new companies to the country.



### EDICT 950

OBJECTIVE: The purpose of Edict 950 is to define the methodology for recognizing technology developed in Brazil for goods or products. The advantages to the company include: a) the right to preference in public bids to purchase goods and services b) a margin of preference can reach up to 25% of the foreign products.



CERTI is accredited to execute R&D & I projects and in the context of the Priority Hardware BR Program, it is administrator of the Labfaber 4.0 project ([www.LABfaber.org.br](http://www.LABfaber.org.br)). LABfaber is a reference project in the development of concepts, technologies and solutions in industry 4.0 and in the effective application of these technologies in a real environment of manufacturing and production Brazil's computing law allows that resources destined to FNDCT be deposited in the BR Priority Hardware Program to support the LABfaber project. Learn more: <https://info.certi.org.br/por-que-investir-no-labfaber>.

# CERTI Highlights 2020



## Cooperation CERTI – Brazilian Navy

Frigate Captain (IM) Antonio Augusto MURAT de S. Torres, Coordinator of the Regional Offices of Science, Technology and Innovation of the Directorate General of Nuclear and Technological Development of the Navy for Florianópolis, initiated the cooperation between the institutions, with the first project being the realization of specialized studies for planning the Navy Technology Park, on the Ilha do Governador-RJ. Due to this cooperation, various interactions took place in 2020 involving EMGEPRON, S, T & I institutions, and military organizations of the Brazilian Navy.



To expand this partnership, a committee from the CERTI Foundation received Vice Admiral Alexandre Rabello, Director of Management of Strategic Programs for the Navy – DgePEM, so he could learn about the technical capacities in R&D and electronic manufacturing at LABfaber.



In 2020, CERTI's representatives Laercio Aniceto Silva and Leandro Carioni presented to Rear Admiral Luiz Carlos Delgado the results of the Technology Park of the Center of Innovation and Technology of the Brazilian Navy project. The contract was established in the administration of Admiral Paulo Roberto, Assistant-Chief of Science, Technology and Innovation of the Brazilian Navy, based on a partnership between CERTI and the Navy, initiated in 2019 with the implantation of the Regional Office of Science and Technology at the CERTI offices, on the UFSC campus.



## Covid-19 Initiative

In April 2020, the CERTI Foundation launched the Covid-19 Initiative together with the companies Neoprosperta and BiomeHub, FIESC and SESI, seeking to significantly alter the trajectory of the evolution of the new Coronavirus in Santa Catarina state and in Brazil, and widely re-establish economic activities with security, by providing molecular testing of groups of people and individuals. With the objective of allowing a safe economic revival and to monitor the evolution of contamination by Covid-19, the project proposed to produce and apply molecular RT-PCR tests (which identify genetic material of the virus, indicating if the individual is infected at the time of the test) in large scale and at low cost. To allow mass testing, the strategy is to group samples of up to 16 people in one test.



## Visit to Florianópolis concludes ABIPTI mission in Southern Brazil

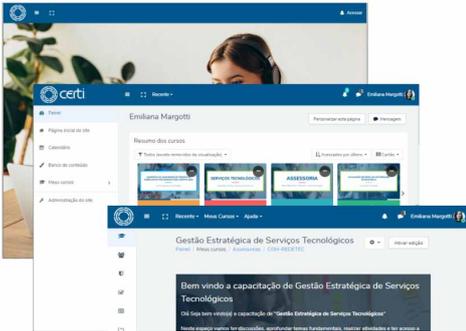
In November 2020, the Director of the CELTA Incubator received the president of the Brazilian Association of Technological Research and Innovation Institutions - ABIPTI, Paulo Foina, in Florianópolis, which was the final destination of the Abipti mission through Brazil's Southern region. The purpose of the visit was to learn about the main actors who compose the ecosystem of innovation in the city.



## CERTI conducts a Workshop at Itaipu Binacional

Invited by the Administrative Director of Itaipu Binacional, Admiral Paulo Roberto, in March 2020 CERTI conducted a workshop to present its competencies and discuss opportunities for cooperation in the development of innovative solutions, both specific to the energy field and in strategic management systems.

# CERTI Highlights 2020



## Virtual Learning Environment CERTI

To improve its training services, in 2020 the CERTI Foundation implemented its Virtual Learning Environment. The environment provides all the materials for the courses, including: texts, exercises, examples, links, recorded videos of activities, as well as thematic forums for general questions. Through this environment, students have a direct channel to the instructor in restricted forums, and locations to post completed exercises. The platform is installed on CERTI servers, which increases the operating safety, guaranteeing privacy in the exchange of information with clients.



## CELTA Incubator with updated logo

In September 2020, the CELTA Incubator revised its logo to make it more colorful and similar to the logo of CERTI, which conceived, promoted and is now the administrator of the incubator that is located in the building of FAPESC, which is a partner in the initiative. With the change of colors, CELTA communicates greater dynamism and innovation. Orange represents innovation and refers to incubators that house technology companies; magenta represents boldness; green indicates sustainability; while blue is the color of CERTI and refers to technology.

## CERTI participated as a guest in various online events in 2020

Adapting to the new reality imposed in 2020 by the Coronavirus pandemic, the CERTI Foundation was represented in online events in various sectors, upon the invitation of partners and institutions:



## Webseries Vertical Construtech Acate

CERTI Director Maurício Dobes participated in a round of discussions on the theme of "Point-to-Point digitalization", with a focus on assisting PropTechs and Construtechs in relation to the main trends, innovations, and reflections in the current and future scene in the construction and real estate markets.

See the webseries on Youtube:

[certi.org.br/blog/certi-participa-de-webserie-vertical-construtech-acate/](https://certi.org.br/blog/certi-participa-de-webserie-vertical-construtech-acate/)



## CERTI participates in panel discussion in the Start Amazônia event

The Director of the Center for the Green Economy, Marcos Da-Ré, participated as a guest in the event Start Amazônia, held by Sebrae. The issues were the potential of the Ecosystem of Innovation in the Amazon, using the Ecosystem of Florianópolis as a reference. He also participated on a panel about the opportunity to create a new R&D institution for the bioeconomy industry. The panel included the scientist Carlos Nobre; Adjunct Secretary of Science and Technology and Innovation of Amazonas, Tatiana Schor; Júlio Guiomar of BNDES/Fundo Amazônia; and the Coordinator of the Green Economy of the Ministry of the Economy Gustavo Fontenele; and was mediated by Agnaldo Dantas of Sebrae Nacional.

See the talk at:

[instagram.com/tv/CECx09Mgleb/?utm\\_source=ig\\_web\\_copy\\_link](https://instagram.com/tv/CECx09Mgleb/?utm_source=ig_web_copy_link)



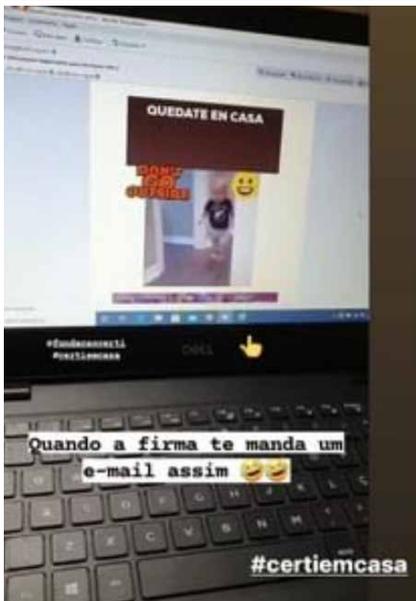
# CERTI Marketing and Communication

## EndoMarketing & Home Office #CERTIemCasa

2020 was a challenging year for business, but important and positive lessons can be gained by the experience of home office for 100% of the workforce. CERTI focused on maintaining engagement and interconnect teams beyond the context of the pandemic. During the year, CERTI adapted to the new reality, creating means to maintain all employees close in some manner.

A general chat channel was created for the entire staff of the CERTI System; a series of e-mails #certiemcasa [certi at home] provided important information, and tools for relaxation, agility and tips for home offices; e-mails with new hires were distributed so that staff could greet them, even if remotely; on-line meetings with the Superintendents were held and small gifts delivered to the homes of everyone on staff. The purpose of all these actions was to construct a solid relationship, in the new work reality experienced globally, to keep the staff happy, inserted and engaged in the organizational purpose, based on the values and beliefs that guide the daily work of the organization.

Interaction with the CERTI System staff on social media



Panetone and a Christmas greeting



Chocolate for our talents, and tea for a moment to relax

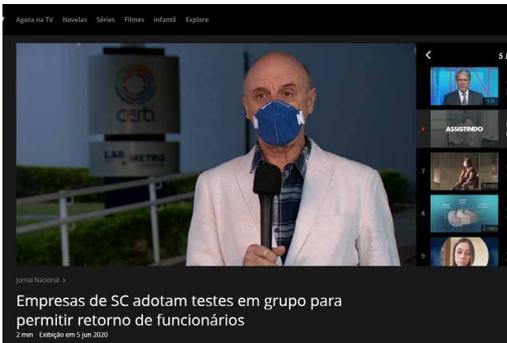


Lives Ss: aligning the Superintendency with the entire staff



# CERTI Marketing and Communication

## CERTI in the Midia



### Covid-19 Initiative on the Jornal Nacional [news program]

The CERTI Foundation developed a system unprecedented in Brazil, aimed especially at those who collect tests and for patients who undergo testing. The objective was to make Covid-19 data collection more agile, and the system can register five thousand exams in one day, overcoming the difficulty of collecting tests from a large number of people. The initiative included partnership of the companies Neoprospecta and BiomeHub, as well as FIESC and SESI/SC, to realize molecular type RT-PCR tests on a large scale at low cost and was highlighted on the leading news program Jornal Nacional.



### Fundo Primus II in the business magazine Exame

One of the leading managers of venture capital focused on startups beyond Rio de Janeiro and São Paulo, Cventures, of Florianópolis, is in a phase of capturing resources for its Primus II investment fund. Its objective is to reach R\$100 million in capital, and to give priority to companies in eight vertical lines of action: applications in telecommunications, smart cities, industry 4.0, smart devices, healthtech and agrotech solutions, applications in energy and logistics. Cventures is the investment arm of the CERTI Foundation and fortifies investors and entrepreneurs through its total integration to the CERTI System and its various mechanisms for innovation.

Link to article: 

[exame.com/pme/Cventures-de-sc-quer-captar-r-100-mi-para-startups-usando-a-lei-da-informatica/](https://exame.com/pme/Cventures-de-sc-quer-captar-r-100-mi-para-startups-usando-a-lei-da-informatica/)



### Companies incubated at CELTA overcome the crisis and grow with solutions to fight the pandemic

Even with an unprecedented global health crisis, the CERTI Foundation incubator CELTA was able to overcome economic uncertainties and pessimistic forecasts for companies in the technology sector. The incubator did not lose any of its companies in 2020. Seven of the 32 companies were graduated, that is, they left the space reserved for them at CELTA for other installations due to growth in sales, hiring of new employees and new opportunities created in the private and public sector, especially healthcare solutions. CELTA executive-director Tony Chierighini, reviewed the incubator's operations in 2020 positively. "They far exceeded our expectations. Even with the pandemic and home office,

it was a good year for the companies. Eighty percent of our companies grew more than planned. The pandemic created a scare, and it is still troubling, but the companies were able to overcome it and take advantage of the pandemic as a leverage for growth", he affirmed.

Link to article: 

[certi.org.br/blog/incubadas-no-celta-superam-crise-e-crescem-com-solucoes-de-combate-a-pandemia/](https://certi.org.br/blog/incubadas-no-celta-superam-crise-e-crescem-com-solucoes-de-combate-a-pandemia/)

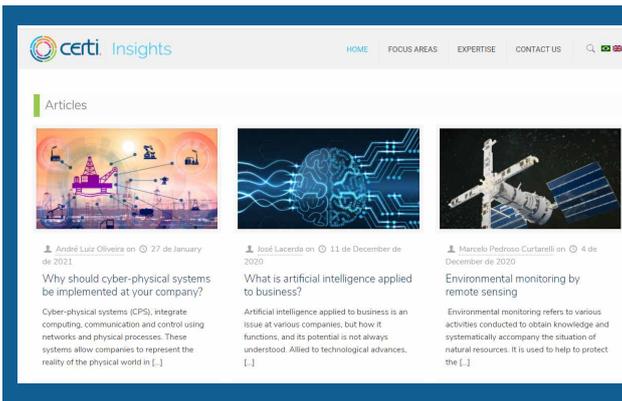


### Why it is important for Brazil to adhere to Industry 4.0

CERTI Superintendent General Erich Muschellack was interviewed in early 2020 by the Canal Inova.Jor about trends in technological development and innovation in Brazil. The current situation was discussed as well as Brazil's steps towards Industry 4.0, and the implantation of 5G, identifying challenges and opportunities of this new technology for the country, and even the national situation of support to innovative entrepreneurship, with mechanisms and environments that are propitious to this new reality.

Link to video: 

[www.inova.jor.br/2020/02/21/certi-industria-4-0/](https://www.inova.jor.br/2020/02/21/certi-industria-4-0/)



## CERTI international blog

To better communicate its various fields of expertise, in August 2020 CERTI launched an English version of the CERTI Insights blog. The blog presents the main competencies of the institution's operations in international projects such as artificial intelligence, intelligent systems, software development, integrity management, monitoring by remote sensing, and development of electromedical products.

[certi.org.br/blog/en/](https://certi.org.br/blog/en/)



## Artificial Intelligence to detect weeds with images

One of the main challenges in the development of artificial intelligence products is the difficulty of knowing beforehand the degree of assertiveness that will be reached by training algorithms. The case details how the CERTI Foundation worked in partnership with the companies Horus Aeronaves and BASF to explore the use of artificial intelligence in their products.



## Industrial modernization: how the crisis accelerated this process

The crisis of the new coronavirus pandemic accelerated industrial modernization. To survive situations like this so that the return to activities is well organized, Industry 4.0 offers great hope to companies in a post-pandemic situation. The article points to future obstacles and how to overcome them in the economic recovery.



## How digital twins make a difference for critical systems and complex operations

The application of the concept of digital twins allows companies to foresee problems and wear in parts, machines, and operations. It is applicable to a wide variety of sectors and is an important opportunity for cost reduction for sectors with large and costly assets, like the energy and oil & gas sector. The case points to opportunities that digital twins offer to companies with critical systems and intensive infrastructure..



## Technologies and trends in electrical mobility

Everything indicates that electrical mobility is here to stay. More than a concern for the environment, it involves understanding the limited reserves of fossil fuels and the benefits that this technology can provide in the short to long terms. The article describes this reality.

See these and more articles at the link:  
[insights.certi.org.br](https://insights.certi.org.br)



# Social Affairs Administration

During 2020, CERTI's Social Affairs Administration concentrated its actions on preventing spread of the coronavirus, principally to guarantee the health of staff and their families. It was a difficult year, and all efforts sought to manage the impacts of the Covid-19 pandemic and care for the health of staff. Even before the pandemic reached Brazil, CERTI anticipated it and created a coronavirus management committee, which defined guidelines for prevention, by drafting and promoting various security protocols to guide employees, partners, clients, and suppliers, to guarantee that decision making would be as fast as possible in different situations. A health monitoring system was established for staff, to identify when hospitalization was required, or even in less serious cases, in which there was only a need for accompaniment.

It sought to maintain rigorous safety in work environments, intensifying daily cleaning and introducing disinfection processes, sanitization and air purification of environments with ozone, and ultraviolet light. Another important factor that should be emphasized was the constant provision of masks that were distributed in all units of the CERTI system. Even during the pandemic, the vaccination for H1N1 flu was offered to all staff and provided at the units of Proteger Vacinas. In addition to keeping more than 70% of staff in remote modality, actions were taken to protect the physical and mental health of the CERTi staff, including free monthly RT-PCT testing for staff, and testing of their families at accessible cost, resulting in 958 tests during 2020.

h1n1 vaccines



Health plans



Health Monitoring



Disinfection of environments



Distribution of masks



Covid -19 tests



# Agenda 2030 - UN Brazil



## NAÇÕES UNIDAS BRASIL



In 2015, the United Nations Organization (UN) launched the Agenda 2030, an ambitious action plan that seeks to make the world in which we live sustainable. This agenda understands the importance of cooperation between governments, the private sector and civil society to establish partnerships and share responsibilities.

The 17 Sustainable Development Goals demonstrate the scale and ambition of this universal Agenda. Based on the UN's Millennium Development Goals,<sup>1</sup> the SDGs comprise 169 specific goals that stimulate actions in fields of crucial importance to humanity and the planet, with the year 2030 as the horizon. Integrated and inseparable, the Sustainable Development Goals seek to balance the three dimensions of sustainable development: the economy, the social and the environment.<sup>2</sup>

## SUSTAINABLE DEVELOPMENT GOALS



<sup>1</sup> The Millennium Development Goals (MDG) were a set of global goals for the period 2000-2015 that attained significant success mainly in developing countries, in fields such as poverty reduction and improving health and education.



<sup>2</sup>To learn more access:  
<https://odsbrasil.gov.br/>

# CERTI's Position in Relation to SDGs

For the CERTI Foundation, sustainable development is an attitude that considers the needs of all interested parties in the present and future in any activity. Society faces structural challenge when striving to evolve development practices and models that are currently out of alignment with sustainability. These strategic changes often confront technological barriers and require solutions in distinct economic fields.

CERTI understands that innovation is an element key to sustainable development. Questions such as increased urban and rural resilience to climate changes, the transition to a low carbon economy and the great humanitarian challenges will be overcome through innovative, sustainable and intelligent strategies. In addition, innovation is a critical factor of success for the strengthening of institutional capacities aimed at full implementation of the essence of our Federal Constitution and the basic rights it foresees. We accompany the evolution of Agenda 2030 and continually reinforce our strategies towards a prosperous and balanced future to support the progress and well-being of Brazilian society. In 2020, we undertook an important strengthening of our consistent and dynamic ecosystem of innovation, technology and entrepreneurship, reaffirming our commitment and contributing in an important manner to Brazil's sustainable development.



**Erich Muschellack**  
GENERAL SUPERINTENDENT  
& OF SCIENCE TECHNOLOGY  
AND INNOVATION



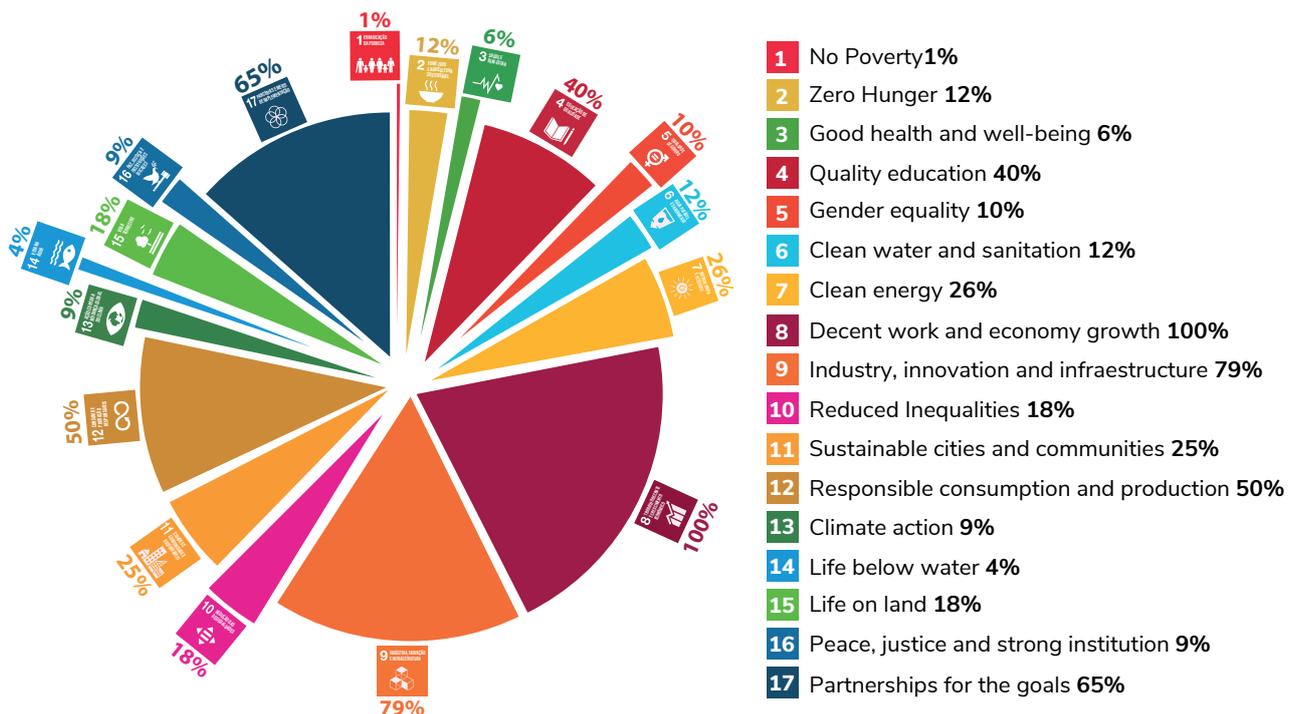
**Günther Pfeiffer**  
SUPERINTENDENT OF OPERATIONS,  
FINANCE AND ADMINISTRATION

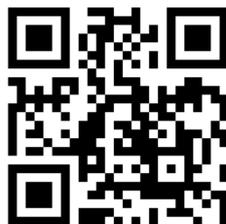


**Laercio Aniceto Silva**  
SUPERINTENDENT  
OF BUSINESS

## PROFILE OF SUSTAINABLE DEVELOPMENT GOALS

To understand how CERTI's actions relate to the Sustainable Development Goals, we examined how CERTI projects executed in 2020 contributed to the 169 objectives associated to the 17 UN Goals, tracing what we call the 2020 Sustainable Development Goals Profile. Eighty-six projects of CERTI clients were analyzed, which contributed to all of the 17 Goals. It is important to emphasize that various projects contribute to more than one Goal and with more than one element within a single Goal. This analysis is represented below, illustrating the percentage of the 86 projects analyzed that contributed to attaining the ambitious objectives of each Sustainable Development Goal.





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