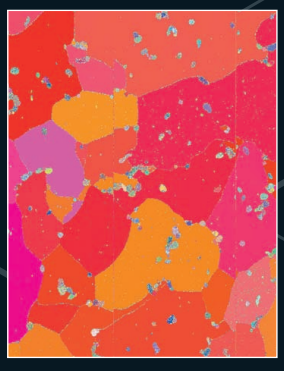
National Institute of Metrology, Standardization and Industrial Quality

2004–2008

Report on Activities

INMETRO



Cover image: OIM (Orientation Imaging Microscopy) of a 7.5 Sm(Co68Fe24Cu6Zr2) magnet obtained in a TSL Backscatter Electron Diffraction system integrated with an FEI Quanta-200 electronic scanning microscope

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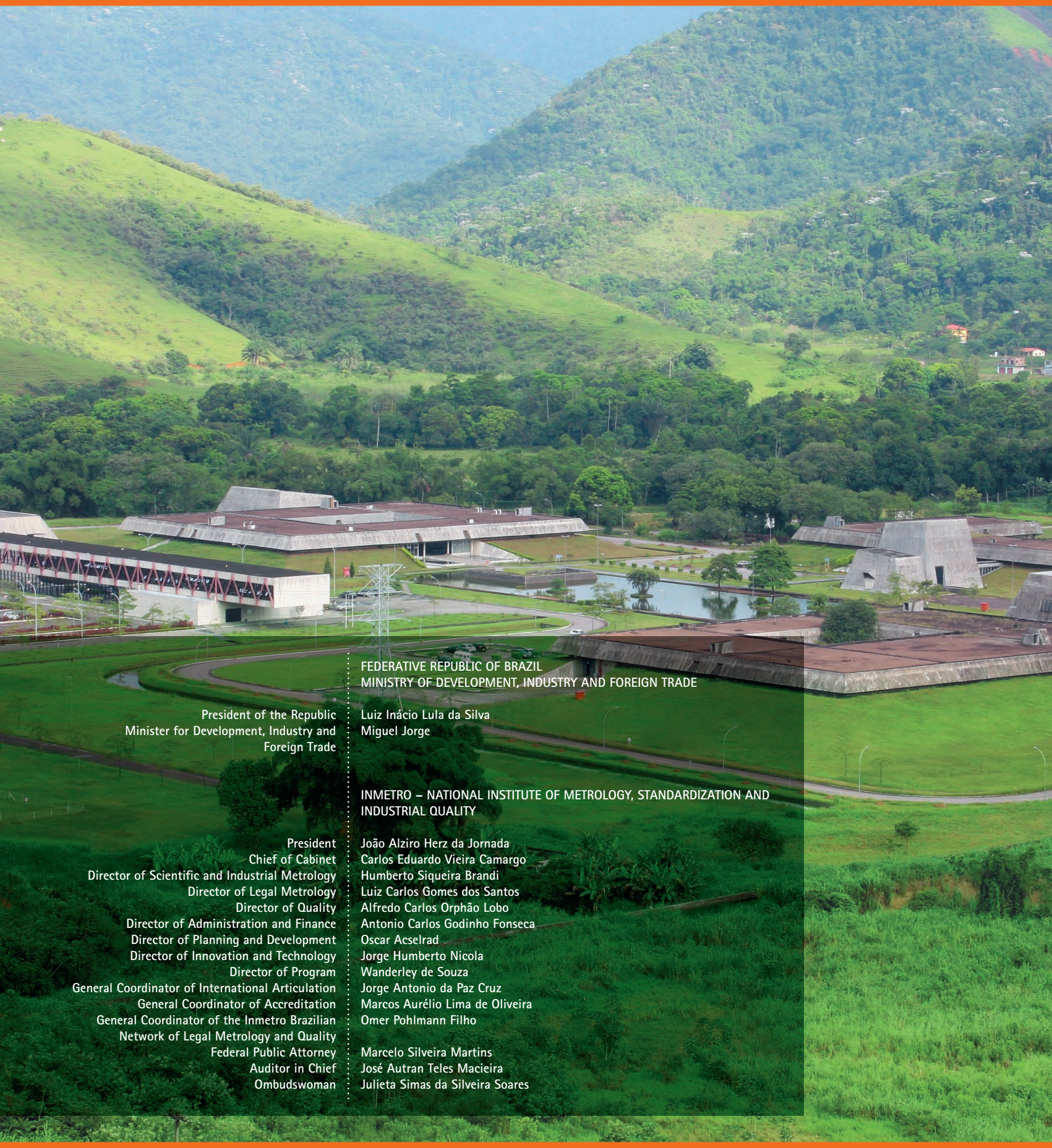

FEDERATIVE REPUBLIC OF BRAZIL
MINISTRY OF DEVELOPMENT, INDUSTRY AND FOREIGN TRADE

President of the Republic	Luiz Inácio Lula da Silva
Minister for Development, Industry and Foreign Trade	Miguel Jorge

INMETRO – NATIONAL INSTITUTE OF METROLOGY, STANDARDIZATION AND INDUSTRIAL QUALITY

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Director of Program	Wanderley de Souza
General Coordinator of International Articulation	Jorge Antonio da Paz Cruz
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General Coordinator of the Inmetro Brazilian Network of Legal Metrology and Quality	Omer Pohlmann Filho
Federal Public Attorney	Marcelo Silveira Martins
Auditor in Chief	José Autran Teles Macieira
Ombudswoman	Julieta Simas da Silveira Soares

Inmetro's laboratory
campus in Xerém, RJ

Corridor of States
Inmetro's laboratory campus in Xerém, RJ

President Lula visiting Inmetro's booth at the 1st International Biofuel Conference in Sao Paulo

21st Century Brazil and South America's Century

...After having assumed the presidency of a country like Brazil, and after getting to know about the things Brazil has the capability of producing ... I defend a thesis that the 21st Century is the century of Brazil and South America. I believe that in this century we shall be able to earn the right to be considered a "first world country".

...I want to tell you that it is a matter of pride that at some point in time somebody thought of setting up an organization with the magnitude of Inmetro. Unfortunately, after Inmetro was thought out and put together, they stopped making the necessary investments in this organization, which is so very important for Brazilian society today.

In this context, Inmetro's importance increases greatly. The international market has become increasingly demanding because there are many people offering the same products we do. Therefore, Inmetro is going to have to expand.

Luiz Inácio Lula da Silva
President of the Republic

Passages from the President's speech on the occasion of the first visit by a President of the Republic to Inmetro's campus on January 20, 2006.

Inmetro, innovation and PDP

Minister Miguel Jorge visiting Inmetro's laboratory campus

Innovation is at the heart of economic change.
Oslo Manual

During the two final decades of last century, the expression 'Industrial Policy' was absent from the plans and actions of Brazilian governments. In March 2004, on President Luis Inácio Lula da Silva's orders, Brazil once again set up Industrial Policy. This time in tune with new times and oriented to 'equating the development of key activities, so as to generate skills that will allow Brazil to become more competitive on the international stage', as set down in PITCE ("Directives for Industrial, Technological and Foreign Trade Policy").

Four years after PITCE was put in place, its directives were deepened and the PDP ("Productive Development Policy") launched in May 2008 has led to recovery of the State's capacity to coordinate actions and instruments to foster development. PDP has vastly extended the scope of the first phase of industrial policy and, in what has been key to its success, it has recovered the capacity to set up comprehensive and coordinated policies for the different spheres of Government and the private sector.

Between 2004 and 2008, Brazil grew an average 4.5% per annum, a rate unseen during such a long period of time for at least 20 years.

Unlike other times, the country grew and distributed wealth simultaneously. It has become possible to discern spectacular increases in the credit and income of the poorest amongst the population. The government and all Brazilians want this positive performance to continue for a long time. Only thus can we build up a more developed and equalitarian country.

We know that the continuity and sustainability of the recent process of growth depend on different factors and that we are not immune from the crisis affecting national economies worldwide.

Economic and social development require a complex technical infrastructure to effectively lead to more competitive and innovative products, services and processes, together with effective protection of the citizen, the environment and the organic working itself of society.

Now more than ever we must make greater and better investments, in order for our economy to continue gaining competitiveness at home and abroad.

Competent infrastructure for quality is essential for efficient and harmonious functioning of different agents in the economy as well as integration into the global market for products and services, fostering the removal of the so-called technical barriers.

Greater investment means an increase in the economy's productive capacity in order to continue growing and overcome uncertainty about the future. Better investment implies a technological and quality leap forward in our productive structure, fostering greater and more dynamic penetration of world markets and higher income growth rates. This will only come about with more investment in technology and innovation.

It has been known for some time that innovation and investment in technology have enormously important effects on competitiveness and on the growth of companies. PDP places considerable emphasis on innovation and technological development.

I have known Inmetro from up close since the late 1980s and 90s when I was working in the automobile industry, and even before joining the Ministry I continued observing its central role in Basic Industrial Technology infrastructure, by means of metrological standards and systems for evaluating conformity.

Readers of this Report will be able to discern the change in Inmetro's institutional profile over the last four years, upon extending its profile as a service provider and becoming an Institute for scientific reference, a pole of attraction in the fields of innovation and technological development.

Today Inmetro is a partner completely in tune with PDP objectives.

Miguel Jorge
Minister for Development, Industry and Foreign Trade

Yesterday, today and the day after tomorrow

Four years ago I said the verb change was going to rule this Administration. And Brazil has changed. Today I say that the verbs accelerate, grow and include are going to rule Brazil for the next four years. The effects of change must be felt both quickly and widely.

From President Lula's inauguration speech, January 1st, 2007.

This 2004/08 Report shows that Inmetro has contributed qualifiers to the verbs in the President's speech – change continuously, accelerate responsibly, grow with orientation. And the effects of continuous change, responsible acceleration and orientated growth in the recent past are described in the next pages. But, to parody my fellow countryman Mario Quintana: 'The past does not recognize its place – it is always present', I dare state that the references of our present and future are also in the programs and proposals developed over the last four years.

Today we are prepared to attend to Society's growing and increasingly complex demands for reliability in technical matters basic to its functioning, in measures and in the characteristics of products and services.

Metrology and the Evaluation of Conformity are fundamental instruments in modern society, both for competitive production of increasingly complex goods and services and for new demands for the protection of collective values such as citizenship, health and the environment – in a word, sustainability in its widest sense.

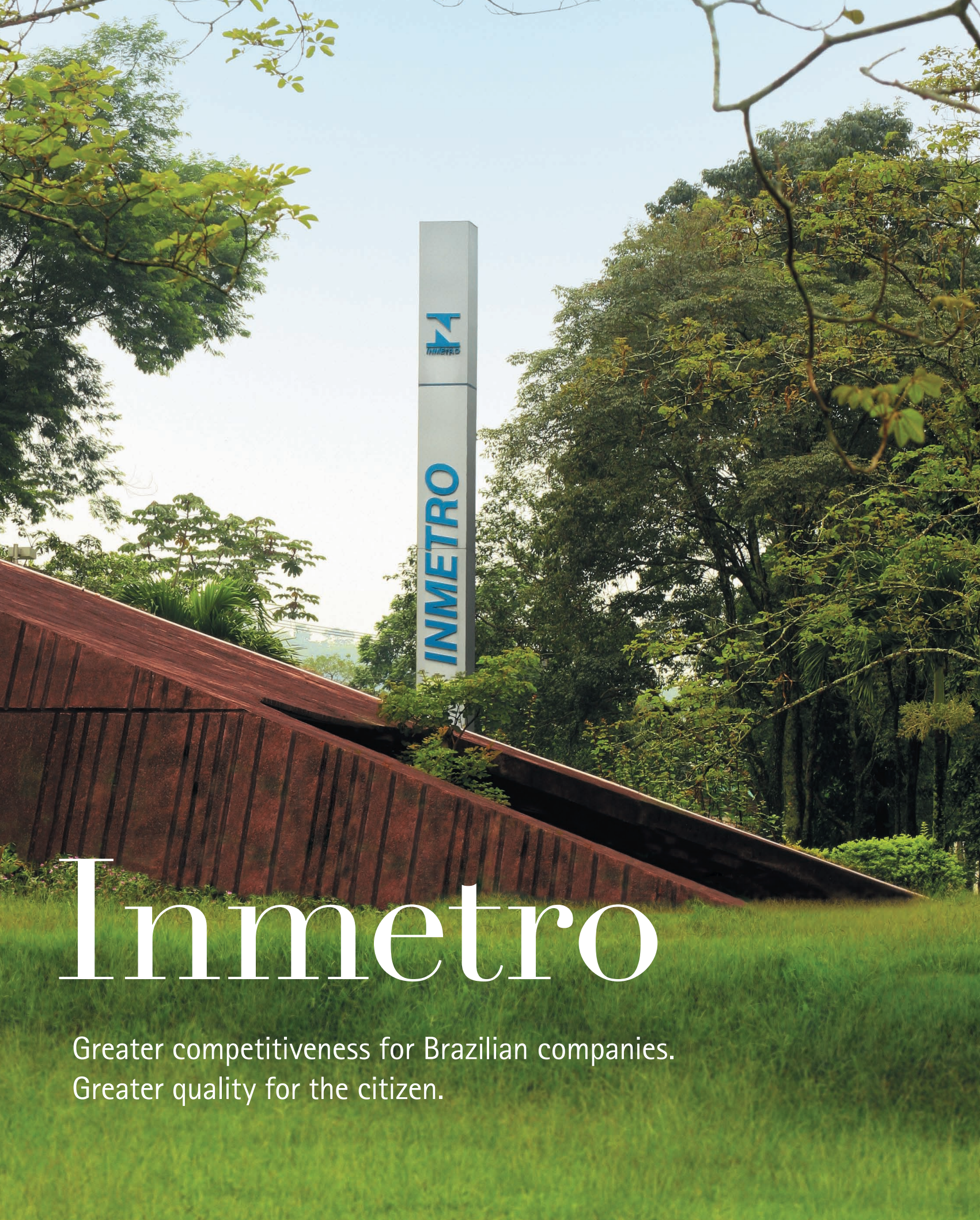
Our confidence in the future lies in our commitment to innovation. It is important to differentiate between creativity and innovation. The former is the capacity to generate new ideas, while the latter is associated with improvement. As a rule, generating ideas is an individual act. Implementation is collective. An idea impacts whereas innovation transforms. Innovation is a systematic, organized and rigorous discipline.

Our commitment to innovation is materialized in the creation of a specific Directorship – Innovation and Technology – for the specific evaluation of the entire staff in borderline areas such as nanotechnology and biosciences. And it is definitely in complete tune with PDP which, in the words of Minister Miguel Jorge, 'places great emphasis on innovation and on technological development'.

Production of the first Certified Reference Materials (MRCs in Portuguese) for biofuels, in partnership with the United States' metrologic entity NIST, constitutes the decisive step in their becoming commodities and reaffirming capacity for innovation in an Organization oriented to building the Brazil of the day after tomorrow.

Rest assured, President Lula, that as far as Inmetro is concerned, the effects of change will be quickly and widely felt.

João Jornada
President



Inmetro

Greater competitiveness for Brazilian companies.
Greater quality for the citizen.

Law 5966 dated December 11, 1973, established Sinmetro (National System of Metrology, Standardization and Industrial Quality) whose normative entity is Conmetro (National Metrology Council) and whose executor is Inmetro (National Institute of Metrology, Standardization and Industrial Quality).

The new law has brought about a radical change in policies developed until that time in the fields of metrology and quality. The transformation of the old National Institute of Weights and Measures (INPM) into Inmetro went far beyond a mere change of name. The list of reasons set forth in Law 5996 indicates the new path the country was to follow, inspired by proposals set out in Germany in 1887 by PTB (Physikalisch-Technische Bundesanstalt). Established by initiative of industrialist Werner von Siemens and scientist Hermann von Helmhetz, the German technological Institute – a milestone in the process of blending science and industry – contributed decisively to the construction of Inmetro's laboratory campus in Xerém, Rio de Janeiro State.

Areas of action

Inmetro's major spheres of action are Scientific and Industrial Metrology, Legal Metrology, Accreditation of Laboratories and other Entities, Evaluation of Conformity and the Focal Point of Technical Barriers to Trade, and more recently, support of innovation within enterprises.

This diverse spectrum of activities is based on scientific and technological knowledge, in turn based on international research and exchange, which give the Institute credentials as a decisive agent for innovation and a kind of bridge between Academy and Enterprise. This model of action is in line with those of kindred entities in major industrialized countries where national metrology institutes are fundamental instruments for decisive support of industry, and whose objectives are practically the same: to ensure reliability in measures, set up technical regulations and develop technology with the aim of increasing productivity, fostering trade and improving citizens' quality of life.

64-kilo mass comparison scales, resolution 0.1 mg

Confidence in the entire productive chain

Inmetro's activities center on basic technical tools to foster confidence in the productive chain in its entirety – from raw material to final consumer – whether in the Brazilian market or foreign markets where Brazilian products are competing for a share. Confidence in measures and in offers of products and services, both in the relationship between companies and in the relationship between companies and the citizen-consumer. Confidence in management procedures, in the protection of the environment and in organizations' social responsibility.

Innovation and competitiveness

As the central entity for coordination, technical support, control and rendering services in related areas, Inmetro plays a relevant role in the country's competitive integration in an increasingly global economy. Thus, Inmetro collaborates technically and methodologically with technological innovation in the Brazilian productive sector, with governmental and entrepreneurs' export drives and with the improvement of Brazilian enterprises' product and service quality.

Digital TV high frequency tests

National partnerships

Through its two superintendence offices and 24 delegate organs, which comprise the Inmetro Brazilian Network of Legal Metrology and Quality (RBMLQ-I), it is present in all of Brazil's states, examining and verifying in both industry and the retail trade, the conformity of measuring instruments (scales, fuel pumps, clinical thermometers, blood pressure apparatuses, speed controls, etc.) and products with mandatory certification (toys, tires, condoms, etc.). Legal metrological action protects the citizen-consumer and fosters fair competition among companies.

Greater competitiveness for Brazilian companies

Inmetro was an important instrument in setting up PITCE (Industrial, Technological and Foreign Trade Policy) in force since March 2004, and has been playing a central role in improving PDP (Productive Development Policy) since May 2008.

Inmetro's laboratory campus in Xerém, Rio de Janeiro State, ensures the credibility of Brazil's metrological system and comprises the following Technical Divisions:

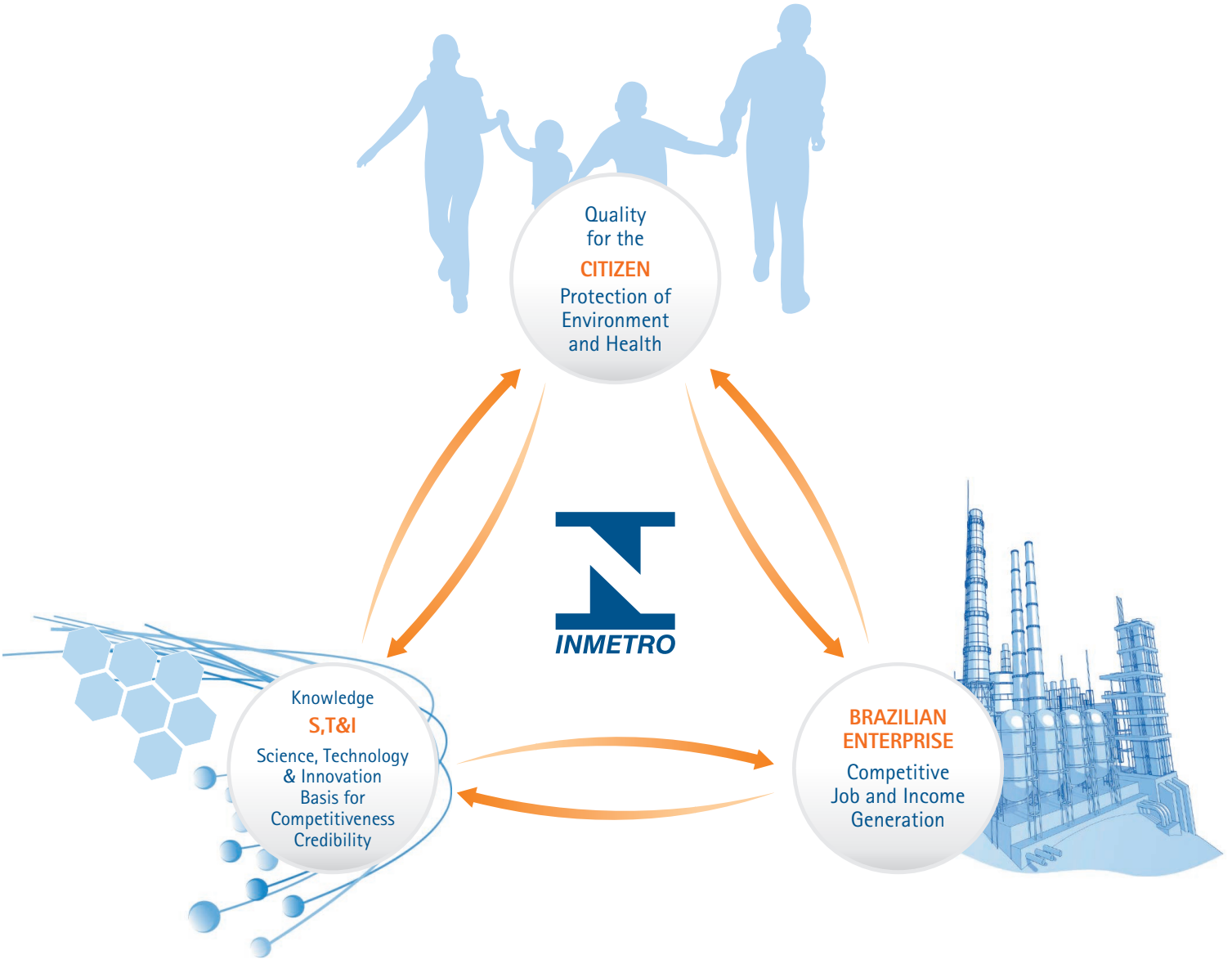
- Mechanical Metrology Division
- Chemical Metrology Division
- Optics Metrology Division
- Thermal Metrology Division
- Electric Metrology Division
- Acoustic and Vibration Metrology Division
- Material Metrology Division

Metrology is the physical basis for quality. Countries with no reliable unit standards traceable to international standards have no way to develop quality policy. The product and service certification program coordinated by Inmetro and carried out by accredited entities is another element in the expanding competitiveness of Brazilian enterprises. Today there are 112 products with mandatory certification – including tires, condoms, motorcyclists' helmets and voltage regulators – and a growing number of voluntary certifications.

As a rule, competitive products are produced by companies with quality management. In Brazil over ten thousand companies have ISO 9001/2000 certification, and nearly 700 have ISO 14001, granted by certifying entities accredited by Inmetro. The first certification of social responsibility was issued in April 2007.

Greater quality for the citizen

Inmetro considers the consumer an inducer of the quality process for products and services made available on the market for national consumption. However, one tool is vital for consumers to play the role well: information. When possessing information, consumers develop critical awareness as to what product to buy or what service to contract, for taking into account other considerations besides price. They no longer buy the cheapest product, and choose whichever best meets their needs. In addition to making a better purchase, consumers foster the process of improving the quality of national products and thus contribute to increasing competitiveness of Brazilian industry. The world's most competitive countries are those with the most aware consumers. Inmetro has developed a process called Education for Metrology and Quality, which is present in all the entity's activities. Some examples of highly successful projects are: Consumer Portal, Product Analysis Program, courses for training Multipliers for Education for Consumption and educational booklets.


Quality
for the
CITIZEN
Protection of
Environment
and Health
INMETRO
Knowledge
S,T&I
Science, Technology
& Innovation
Basis for
Competitiveness
Credibility
BRAZILIAN
ENTERPRISE
Competitive
Job and Income
Generation

Soy grains

Support of national competitiveness

Inmetro has dedicated itself to Research, Development and Innovation in the field of Scientific and Industrial Metrology for the last five years

The Chemical Metrology and Materials Metrology laboratories were consolidated and, in 2007, the structure was started for the areas of Telecommunications Metrology, Fluid Dynamics (a broad program in collaboration with Petrobras) and Metrology for Biology. The Mechanic, Electric, Vibration & Acoustics, Thermal and Optics labs were modernized. The objective of this substantial restructuring is to strengthen the Inmetro's support of the competitiveness of national industry – thus complying with its institutional mission as an agent for the country's socio-economic development.

Within this strategy, one line of action deserves special highlighting: the production of Certified Reference Materials (MRCs). In 2008, Inmetro took a decisive step in this direction: in partnership with the National Institute of Standards and Technology (NIST), the US metrological organ, the Institute produced the first MRCs for biofuels. This means setting up standards, non-existent until then for this strategic area. In this pioneering project Inmetro and NIST defined standards to be adopted by the two countries – materials of common reference, incorporating parameters discussed in an international milieu by Brazil, the United States and the European Union.

These standards will also be made available to European laboratories (through a project called Biorema) to verify those labs' capacity to make measurements in biofuels, both bio-ethanol and soybean bio-diesel. Samples of bio-ethanol produced by Inmetro were sent to the US for validation – from where bio-diesel samples were sent to Brazil to the same end. Validation was completed in December 2008, establishing standards common to both countries. In the economic dimension, setting up these standards and attuning international norms is vital for biofuels to become commodities.

Strategic guidelines

From 2004 to 2008 Inmetro advanced substantially in its mission of supporting national industry in terms of competitiveness.

However, it is only fair to remember that this began to take shape in 2003, when different actors linked to the production sector and the field of Metrology (government, research entities, Inmetro and industries, and others) met, held discussions and produced a document with the title of Strategic Guidelines for Metrology in Brazil 2003–2007.

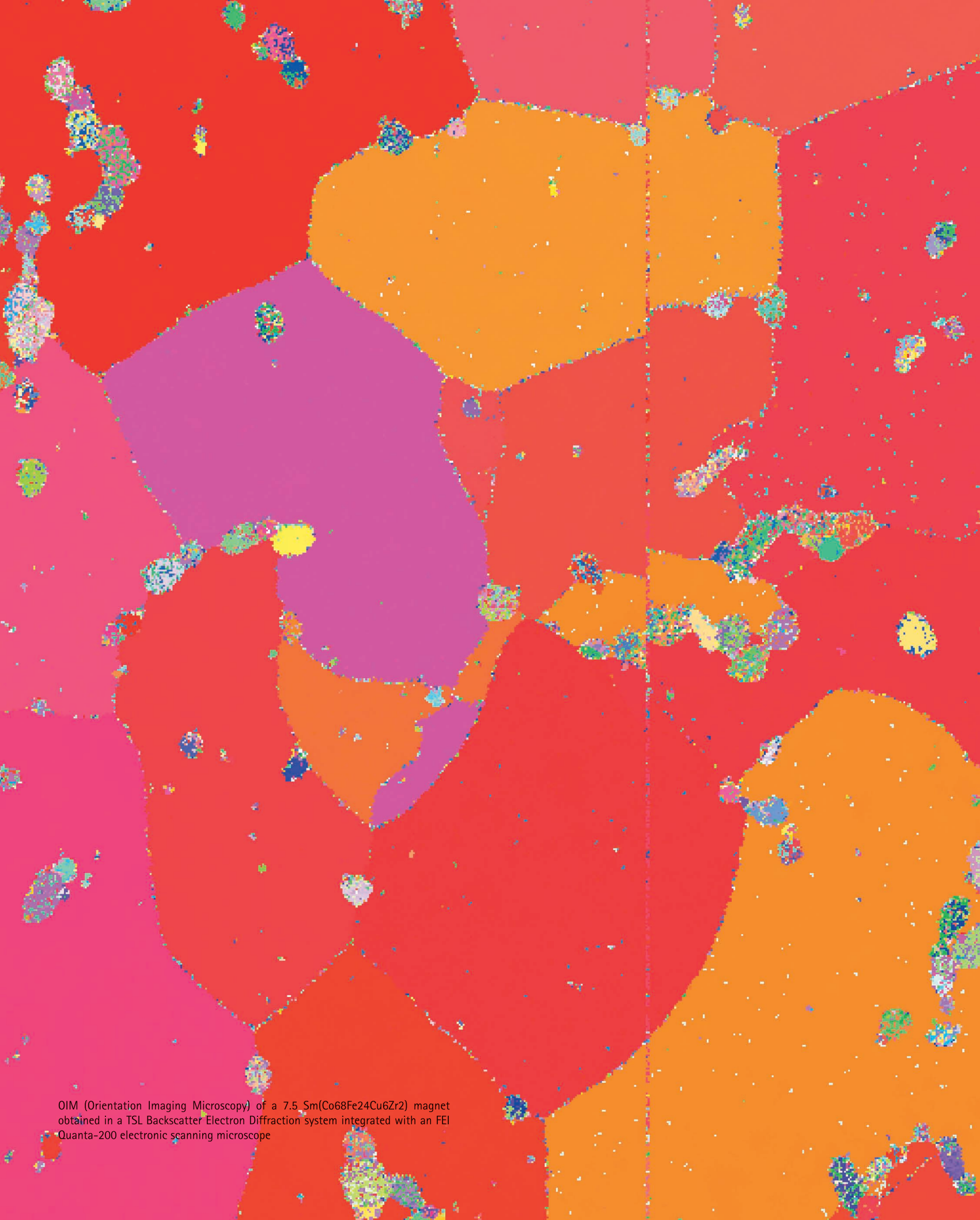
Once approved by Conmetro (the National Metrology, Standardization and Industrial Quality Council), this document became a term of reference for the Federal Government in connection with action in the field of Metrology. Additionally, the Policy for Industry, Technology & Foreign Trade (PITCE) – which was later absorbed and widened by the Productive Development Policy (PDP) – treated Metrology as an instrument for supporting competitiveness. Inmetro was thus able to submit projects in line with this strategy and obtain funding, not only for setting up laboratories and purchasing equipment, but also to attract qualified human resources.

Conmetro Resolution nº 08 dated September 16th, 2008, lent continuity to this line of action with the approval of Strategic Guidelines for Brazilian Metrology 2008–2012, which covers the incorporation of new areas, such as nanometrology and biofuels, into the metrological system. The Resolution delegates coordination of necessary action and implementation of strategic guidelines to Inmetro.

Welcome, doctor!

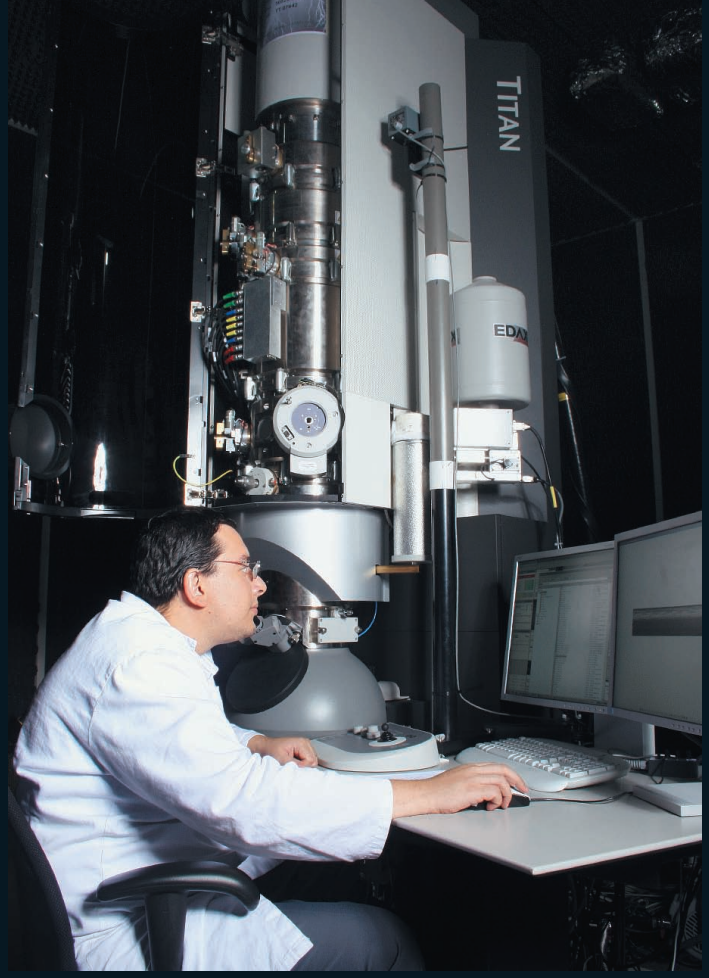
In 2004, Inmetro set up a grant program to attract top researchers, in partnership with the National Council for Scientific and Technological Development (CNPq): the Scientific & Industrial Metrology Training Program (Prometro), by which Inmetro forwards funds from its own budget to CNPq, which administrates the grants. The goal is to attract 200 researchers with PhDs to the Institute by 2009. To give an idea of the success of the program, in August 2008 the Directorship of Scientific & Industrial Metrology had 96 PhDs participating in its projects – as opposed to only six in 2001.

X-Ray Photoelectron Spectroscopy



OIM (Orientation Imaging Microscopy) of a 7.5 Sm(Co68Fe24Cu6Zr2) magnet obtained in a TSL Backscatter Electron Diffraction system integrated with an FEI Quanta-200 electronic scanning microscope

Observing the "invisible"



Titan Microscope

Scanning Tunneling Microscope

To back the strategy of lending increasing support to national industry, Inmetro has extended its laboratory campus in Xerém, in the Baixada Fluminense region of Rio de Janeiro State. A good example is the complex of Electronic Microscopy labs, which is equipped with a scanning microscope with extremely sophisticated transmission: the Titan. It is capable of sub-atomic measurement and is able to observe, for instance, an atom moving in the interface between two atomic surfaces – which is quite invisible to traditional electronic microscopes. This makes sub-nano scale studies possible, which is vital for the advance of research in Nanotechnology.

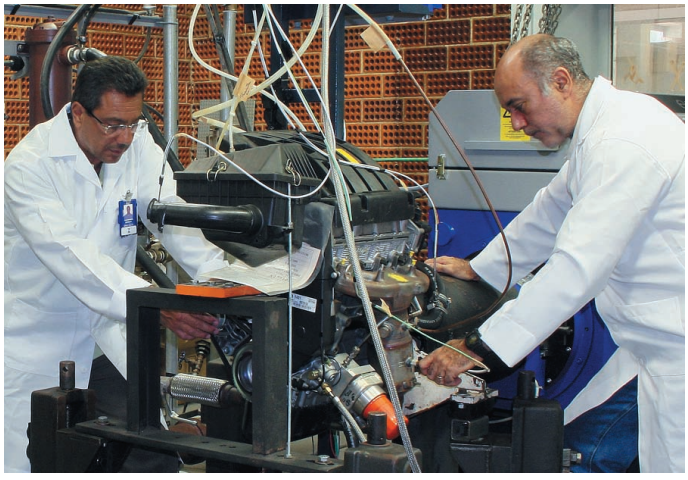
The only item of equipment of its kind in operation in Latin America, the Titan reads the Angström scale (an angström is one tenth of a nanometer). The measure's name is a tribute to the Swedish physicist Anders Jöns Angström (1814–1874), a pioneer in Spectroscopy. One nanometer is worth one millionth of a millimeter. To get an idea of the reading power of this microscope, a strand of hair measures between 30 thousand and 100 thousand nanometers across... With increasing applications for nanotechnology in industry – from films protecting vehicle windscreens to fabrics that will not absorb humidity or can incorporate weather detectors – research in nanotechnology has become strategic for the study of uncertainties related to measuring at such scales.

> Only operating equipment of its kind in Latin America, Titan is capable of sub-atomic measurement – which is quite invisible to traditional electronic microscopes

New Holland Tractors (Fiat Group)

Partnership with Fiat

In March 2008, Inmetro and Fiat of Brazil set up an Agreement for Technical-Scientific Cooperation in the areas of automotive innovation and technology with a wide array of initiatives:



Dynamometer

Joint realization of programs supporting research and development, working out technical and trial procedures, exchange of technical and scientific information and dynamometric trials on engines in connection with fuel consumption, in addition to training human resources.

Activity planned will continue until November 2010 and will mostly be concentrated at Inmetro's Motor, Fuel & Lubricant Laboratory. The focus is the development of components and adapting diesel engine for the direct use of vegetable oil as a fuel, above all for communities far away from large urban centers: farmers will be able to produce their own fuel – for tractors and other vehicles – from raw material grown locally.

For talking, listening and advancing

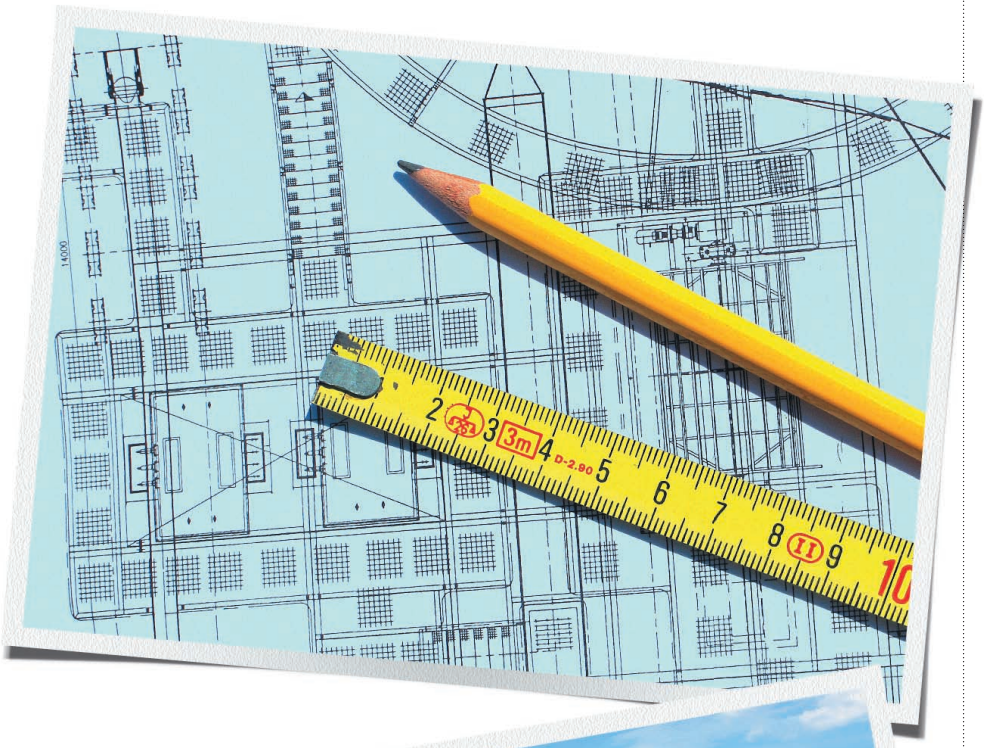
Sector Panels set up by Inmetro with different sectors of Brazilian industry have proved immensely important to identify priorities and opportunities for action for the Institute to support different productive segments. For instance, in 2004 the Sector Panel for Pharmaceutical Products and Medicines was central in the development at Inmetro of a production line for reference materials for sector industry.

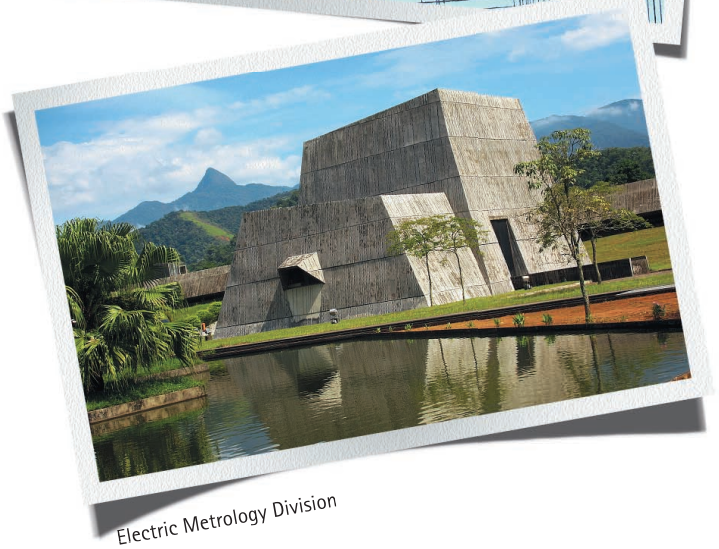
The same can be said for the Bio-diesel Sector Panel, which was carried out in 2004 in partnership with the National Agency for Petroleum, Natural Gas & Biofuels (ANP). In 2007, two panels on biofuels took place. Inmetro has organized meetings on specific subjects, such as the Sector Panel on Electrical Equipment in Explosive Atmosphere in June 2008, and others required by different areas of national industry.

System for Measurement by Cinematic Viscosity (biodiesel measuring)

For transferring knowledge

Since it was established in 2006, the Innovation & Technology Directorship has been opening doors to expand Inmetro's role as a scientific and technological entity



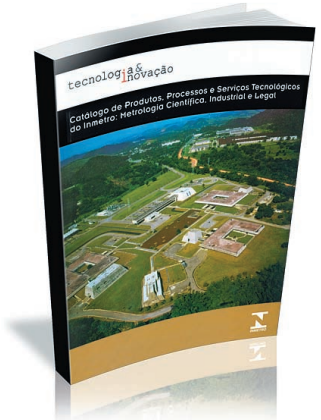


Electric Metrology Division

One of the most symbolic milestones was the April 2008 inauguration of the Technological Innovation Nucleus (NIT) at the Institute's headquarters in Rio Comprido, in the North Zone of Rio de Janeiro. The creation of NIT was preceded by a rich process of group discussion which led to a project accepted by Finep (Studies and Projects Funding Body).

NIT not only complied with the Innovation Law, which calls for setting up these nuclei in scientific and technological entities (ICTs), but also lent visibility to a body of action intended to transfer knowledge produced by Inmetro to society. A part of this effort is the preparation of the Intellectual Property and Technology Transfer Policy which have been in force since March 2008.

The Directorship of Innovation & Technology also took on certain projects that were ripening in Inmetro, such as creating a technology pole in the Xerém region, Municipality of Duque de Caxias, in the Baixada Fluminense region of Rio de Janeiro State, where the Institute has its laboratory campus. Originally known as PTX (Xerém Technological Park), this project took on new life with initiatives aimed at attracting enterprises, such as negotiations for setting up a lodging structure in Xerém and a technical school. The latter project is under discussion with private partners.



Catalogue of products, processes and services

Source for consultation

2008 saw the launch of Inmetro's Catalogue of Products, Processes & Technological Services, gathering in a single publication everything the Institute has to offer entrepreneurs in the fields of Scientific, Industrial and Legal Metrology. This publication is available in print and in Inmetro's website, with a search engine to make consultation easier.

General Files

General Files

Inmetro's Reception Center of Material for filing was opened in 2008 in the Xerém laboratory campus. The Center is responsible for selecting, cleaning and recuperating material and was set up in compliance with the orientation of technicians from the National Archive. The project calls for the construction of a new building in Xerém to house the General Files.

Nice to meet you

Inmetro contracted the services of the Federal Fluminense University (UFF) to carry out an economic survey of enterprises in the Municipality of Duque de Caxias (RJ), where the Institute's laboratory complex is located. The objective is to identify possible affinities between Inmetro and such companies, and approach them with a view to establishing partnerships. The survey started with 34 enterprises in segments relatively akin to Inmetro's field of action, such as chemicals and materials.

A company in Inmetro's Incubator for Companies

Project incubator

The "incubation" concept as applied to enterprises was innovated upon at Inmetro with the creation of an incubator for projects, operating side-by-side with the already existing Incubator for Companies located in the Xerém laboratory campus. In this case, focus is on development of projects in partnership with companies already in the market. A good example is a project of CEG's (the Rio de Janeiro Gas Distributing Company) to develop new metering equipment. It is logical that when the project concludes – as in the case of Rio Gas's which ended in 2008 – the enterprise itself should develop the product, or outsource this task. At the end of 2008 the incubator had four projects in development.


PEOPLE
THE BEST
CAPITAL
METROLOGIA
C. E. CÍRCULO OPERÁRIO

Human Resources

In 2008 Inmetro set up a structure for the development of strategic programs directly linked to the Presidency with two initial objectives: to implement the Biology and Health segment, and put together multidisciplinary projects integrating different areas in the Institute, with a more transversal vision of the task. In order to search for means to meet these objectives, Inmetro opened new fronts. One, with a wide spectrum of initiatives, is related to training human resources.

With the support of the State Government of Rio de Janeiro, Inmetro strengthened the partnership with the Círculo Operário State School in Xerém, to improve the course on Metrology for Secondary School students. The project calls for extension of facilities, including new classrooms and Physics, Chemistry and Biology labs. The objective is to turn the course into an experimental model to be followed on a national scale, eventually extending the original scope, Metrology, to the areas of Biotechnology and Nanotechnology.

At the Graduate level, a significant milestone is the establishment of a pole of the Federal University of Rio de Janeiro (UFRJ) in Xerém, in the areas of Biotechnology and Biocomputing. The resolution passed in 2008 by the UFRJ University Council led to an agreement between the university, the Municipality of Duque de Caxias and Inmetro. Courses are already being taught in temporary premises, and the executive project for the definitive premises was approved in late 2008. The idea is for these Graduation students to serve out their curricular internships in Xerém laboratory campus.

Students at "Círculo Operário" State School

Top mark

In 2008, CAPES (Coordination of Upper Education Personnel Training) approved the creation of a professional course for Master's degree in Metrology and Quality at Inmetro.

CAPES

The proposal was submitted to CAPES in March, and an assessment commission from the entity visited the Xerém laboratory campus, where the course is to take place, in August. In October, CAPES' Technical-Scientific Council for Upper Education announced that Inmetro's initiative had been awarded a 4, the top mark for approval of implementation of Master's degree professional courses.

Pioneering Biotechnology

Clusters of stem cells found in human bone marrow

In 2008, Inmetro took a pioneering step in Biotechnological Metrology for the country by setting up its Structural Biotechnological Laboratory. With the participation of a number of PhDs and senior researchers, and having reached agreements with different entities, three projects are initially under course.

The first, which enjoys the support of Petrobras, studies the use of sugar cane bagasse for the production of ethanol with the participation of specialists from entities such as Embrapa (Juiz de Fora, Minas Gerais unit), Fiocruz and North Fluminense State University (Uenf).

The second project is for research on cell walls in sugar cane by a research network coordinated by Inmetro, with the participation of the Cane Technology Center in Piracicaba (Sao Paulo State), the National Institute of Technology in Rio de Janeiro, and the Federal University of Rio de Janeiro (UFRJ).

The third project, in collaboration with UFRJ, aims at production of bio-diesel using micro-algae isolated from different environments. Some are genetically modified to super-produce enzymes involved in the biosynthesis of lipids.

Research for life

In 2008, Inmetro opened a front in the Bioengineering field: research on the production of cells – such as stem cells, of increasing importance in the medical field. The intention is to use live systems to reproduce material the body produces, in the laboratory – such as skin, cartilage, bones – for use in surgery and clinics.

The Quanta 200 electronic scanning microscope set up in Inmetro's Material Metrology Division, which has been modernized to meet requirements for Forensic Metrology. In the photo, gunshot residues are being analyzed.

Assistance with investigations

Inmetro pays special attention to the field of Forensic Metrology due to demand from the Public Security sector, especially in view of scarcity of reference material and weak control of the quality of analysis processes.

By order of the Ministry of Justice, the Autarchy participates in the establishment of the National Program for Forensic Metrology. In the area of Scientific Metrology, Inmetro is already working in the validation of methodologies applied to the analysis of micro-vestiges, ballistics, and production of reference material for addictive drugs.

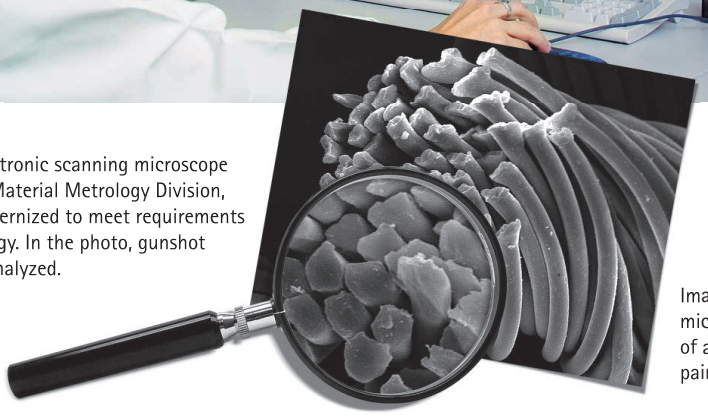


Image of electronic scanning microscopy showing the appearance of a cut in muslin fabric made with a pair of scissors. Enlargement: 600×

Greater quality in health

In 2008, structuring of Inmetro's Medical Metrology area started, on two tracks: clinical analysis laboratories and medical equipment. In the first case, the objective is to gauge the reliability of exams, from a simple glucose test to early diagnosis of breast cancer using molecular biology. The possibility of creating a seal of quality for clinical analysis laboratories is being considered. In the second case, the project envisions metrological controls of medical equipment – such as apparatuses for renal dialysis, for example, checking the efficiency of filters and other components. These two areas are being evaluated as per formal request from the Ministry of Health.

INPI INSTITUTO NACIONAL DA PROPRIEDADE INDUSTRIAL

A patent bank

The first step towards cooperation with the National Institute of Industrial Property (INPI), an autarchy also linked to the Ministry of Development, Industry & Foreign Trade, was taken in 2008, for the installation of the Biological Material Center at Inmetro. This center is where biological patents from Brazil and other countries in the region are stored and researched. This reference archive serves industries, laboratories and research entities. It is a complex undertaking, and the executive project was concluded in October 2008.

Set of working weight standards

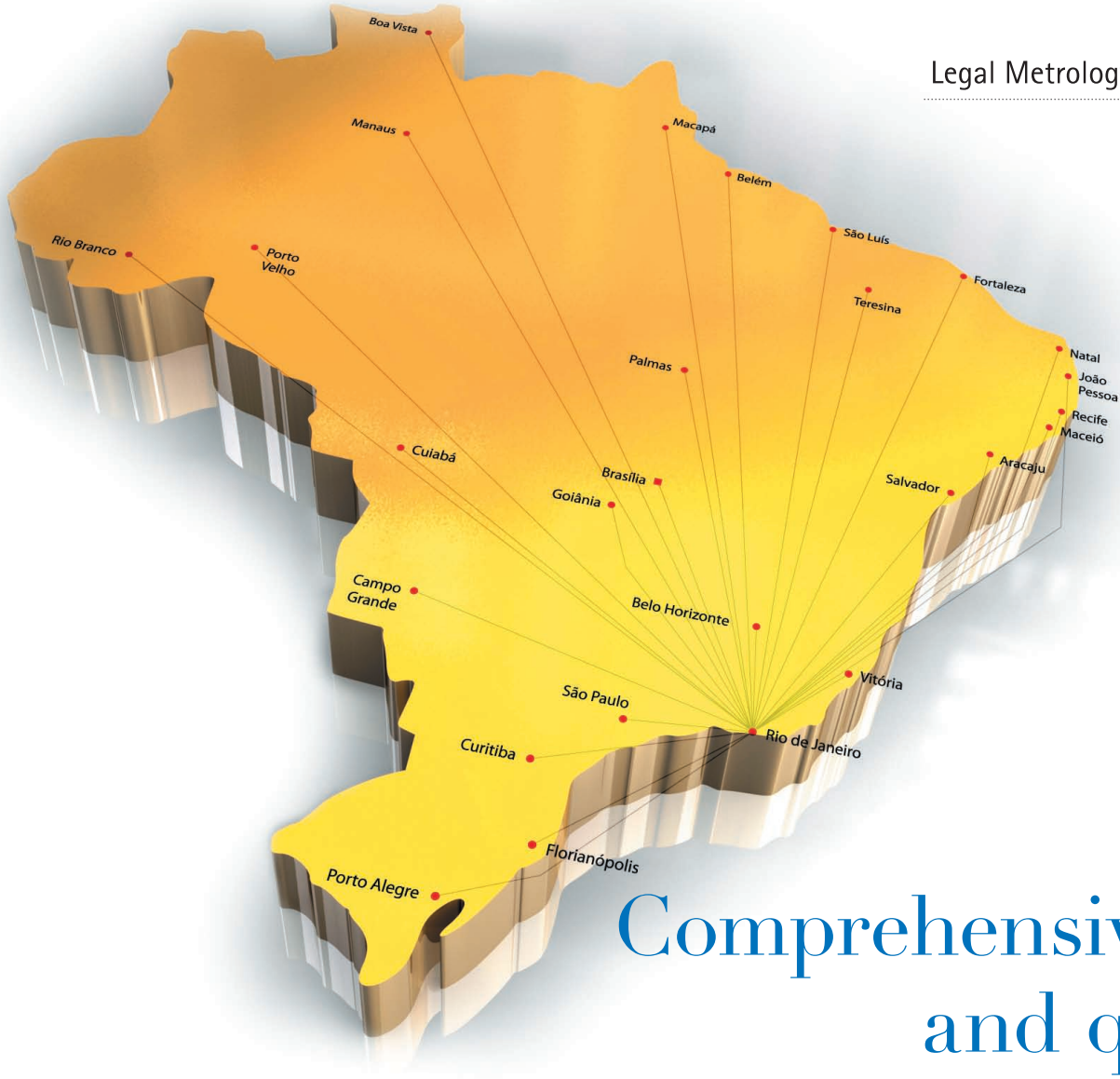
Public-private partnerships

From 2004 to 2008, two instances of partnership with private initiative in the field of Legal Metrology were consolidated. One is the authorization for manufacturers of electric energy, water and gas meters to carry out tests linked to initial verification called for in specific regulations, under supervision of the Institute. It is not a compulsory procedure. Authorization is granted by Inmetro at the request of interested companies. In the case of electromechanical electric energy, water and gas meters, 100% of manufacturers can qualify. As of January 2009 an initial check of electronic electric energy meters will be obligatory, carried out either by the manufacturer itself if authorized or by an organ of the Inmetro Brazilian Network of Legal Metrology and Quality (RBMLQ-I).

Measurement of tanks

The second instance is connected to electric energy, water and gas concessionaires authorized to perform tests for checking meters that have been repaired, in all cases under Inmetro supervision. These are authorized testing posts (PEAs). Testing after repairs will be compulsory – performed by the concessionaire itself or by an organ of the Brazilian Network of Legal Metrology & Quality-Inmetro. It can be seen that there have been substantial advances in metrological control of meters used in the public services sector. Before this, control was basically limited to technical assessment of the model on the basis of a sample of the model to be manufactured.

These controls must increase: in 2008 Inmetro set up a task force to study safety requirements for measuring software applied to instruments used in the public service sector. All this is to ensure strict control and utter reliability of results of measuring. Initial checking has also become possible for the manufacturers of sphygmomanometers (apparatuses for measuring blood pressure) and chronotachographs (a piece of equipment used in road transport to register speed) in accordance with Conmetro's Resolution nº 04 dated September 6, 2007.



Comprehensiveness and quality

Cored (General Coordination of the Inmetro Brazilian Network of Legal Metrology and Quality – RBMLQ-I) was set up in 2006 and is directly linked to the Inmetro's Presidency. Formerly, operational management came under the aegis of the Directorship of Legal Metrology. The objective of the change was to cause the Institute to grow even closer to the Brazilian Network of Legal Metrology & Quality-Inmetro, to learn more about actuality in each and every state and enhance this joint project. Greater efficiency, efficacy and effectiveness.

Meetings were set up with each and every Inmetro's delegate-organ to disclose the new structure, and this mobilized every state. One aspect of this new management strategy based on ongoing dialogue consists of identifying the best regional experiences (good practices) to propagate them throughout the Network. A good example comes from Tocantins State (Ipem-TO), which developed a highly successful system for collecting debts and prepared a manual that was distributed to all the delegate-organs.

RBMLQ-I acquired an intense and specific communications channel fostering better integration of delegate-organs and Inmetro. One of the cornerstones of Cored's action is to make sure the Network performs its classic supervision duties as comprehensively and efficaciously as possible before introducing new services. Another is to set up mechanisms to standardize the execution of delegated activities, especially those related to computing and implementing a quality management system for RBMLQ-I that will reach every corner of Brazil, focused on protecting the citizen.

CONTROL OF PRE-MEASURED PRODUCTS 2004–2008

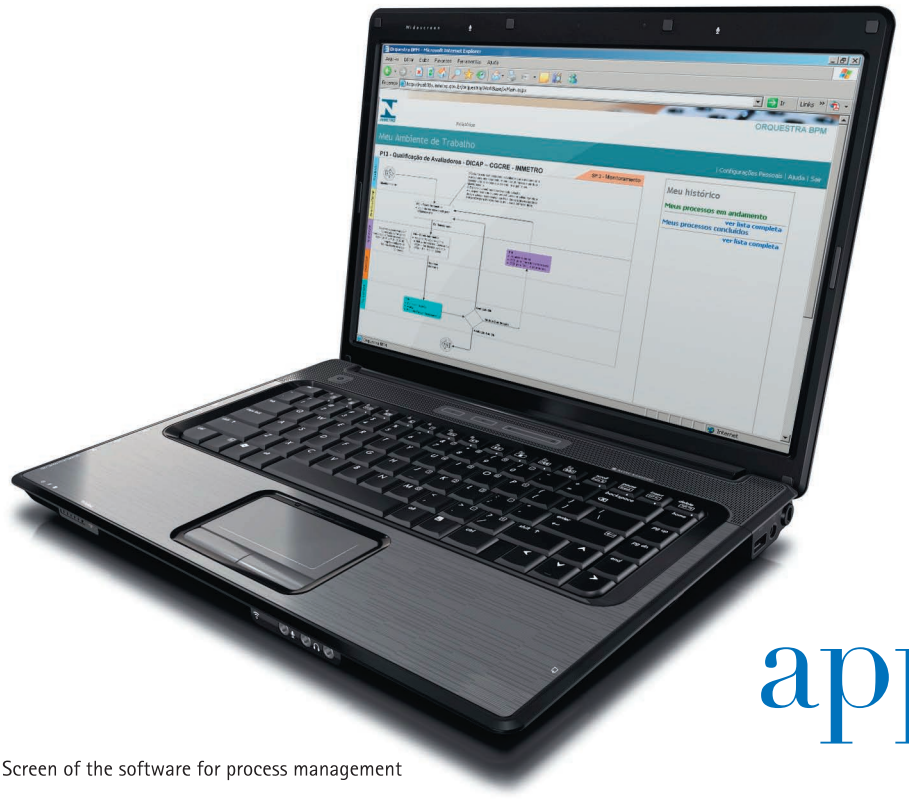
YEAR	2004	2005	2006	2007	2008
Number of tests	926,834	866,450	1,310,137	1,617,101	1,971,204
Number of products reported on	20,207	20,874	28,196	31,033	41,575
Irregularity index	2.18%	2.41%	2.15%	1.92%	2.11%

It's the good stuff!

In 2007, Engenho Bahia sugar cane spirit was awarded the first quality certificate issued by Ibametro (Bahia Institute of Metrology & Quality). The spirit, whose process of certification was approved by the Bahia organ, started bearing the seal of quality accepted in over 70 countries. The company is part of a group that participated in the initiative of obtaining certification of sugar cane spirits produced in Bahia State. Brazil currently produces 3 billion liters of spirit per year, but only exports 30 million. Exports in this sector are expected to grow enormously with Inmetro's certification program.

Good use for seized wood

As of February 2008, all illegally felled timber apprehended in Mato Grosso State has been contributing to the common good, thanks to a cooperation agreement signed between the State Government, the Mato Grosso Institute of Metrology & Quality, the Justice Court and the State Public Attorney's Office. The agreement calls for rational and controlled use of apprehended wood, from the time the infraction reports are processed until eventual donation for use in public works and social projects, such as one involving inmates of Carumbé Prison Re-socialization Center, in Cuiabá.



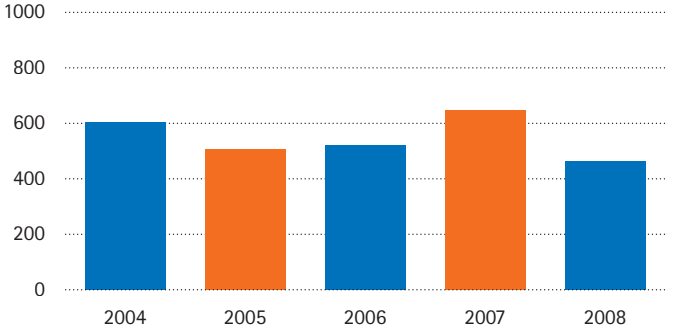
Screen of the software for process management

Timely approval of models

The process for approval of models became faster in 2008 with the application of software for process management which was tested successfully in the pilot-project of General Accreditation Coordination.*

This software made possible the implementation of certain actions, such as eliminating a good portion of documentation produced, disengagement of payment for technical services rendered from the publication of the directive approving the model, and direct setup of tests at executing laboratories, which made the process faster, more adroit and less bureaucratic.

MODELS APPROVED



In the period from 2004 to 2008, 2,745 models were approved

Source:
Legal Metrology Directorship

*See further details on page 44.

INSPECTIONS 2005–2008

PERIOD	Nº of inspections	Nº of products inspected	Nº of irregular products	% of irregularity
Jan/Dec 2005	302,692	91,786,151	1,068,869	1.16
Jan/Dec 2006	287,253	94,742,878	920,620	0.97
Jan/Dec 2007	250,176	61,816,595	1,048,022	1.70
Jan/Dec 2008	435,898	92,788,732	1,057,103	1.14

Consultation Source: Portal/Planfisc – January 6, 2009. Dqual/Divec

All for harmony in consumer relations

Activity related to Conformity Assessment has been much in demand in the last few years, mostly because of the strategic nature it has acquired in the global market. Today, certification of a product makes a difference, not only in the internal market, but above all, abroad. Until the early 2000s, demand for Conformity Assessment programs was basically for citizen and environmental protection purposes. But since the middle of the decade there has been a change of profile. Society strongly demands access to foreign markets and strengthening the internal one – in this case in search of protection afforded by fair competition.

In the case of the internal market, the change of profile can be explained partly by very substantial imports of Asian products into Brazil. Prices are lower than those of similar Brazilian products, but it is not unusual to encounter serious problems related to conformity with technical safety requirements. Nevertheless, such products have had a serious impact on certain sectors, such as motor vehicle parts (brakes, suspension, ball-bearings, steering rods, etc), motorcyclists' helmets, ceramics (floor and wall tiles) and toys. Inmetro has endeavored to regulate these markets so that imported products compete with local ones in equal conditions, thus fostering balanced competition and full harmony in consumer relations.

Society strongly demands access to foreign markets and strengthening the internal one – in this case in search of protection afforded by fair competition

In terms of access to foreign markets, Inmetro has been supporting certain sectors, such as foods and wooden products, so that they can get through technical barriers for exports. For example, in 2008 the Conformity Assessment Program for Sugar Cane Spirit was set up. This product is widely accepted internationally, but foreign importers demand certification as evidence that the product has been submitted to tests and it complies with minimum requirements for consumer safety.

The increasing sophistication of Conformity Assessment programs is also apparent in another change in the last few years: the need to adhere to these programs does not concern only the physical and chemical properties of the product, but also the assessment of the socio-environmental impact of production processes. Quoting the case of sugar cane spirits, the program evaluates not only the composition of the product, but also whether the sugar cane was grown with due planning for the reduction of scorched land methods, whether land was degraded or water reserves were diverted, whether slave or child labor was used, whether conditions for the transport, hygiene and lodging of workers in the sugar cane fields was adequate, in addition to other matters. At this time, if a certification program does not cover such aspects, the product will hardly enjoy international recognition.

SERASA Certificates

Pioneer in social responsibility

Inmetro developed a Program for Assessment of Conformity to Social Responsibility Management, created under strong demand from local companies. Brazil was the first country in the world to establish an official Government program along these lines. Assessors take into consideration all aspects that a company must observe to qualify as socially responsible: policies for relationship with the community where it acts, labor relations with its employees, social programs it carries forward, environmental action it promotes, forms of relationship with shareholders and competitors, among others. In recognition of Brazil's and Sweden's advances in this area, the two countries were invited by ISO to co-preside over a committee for the preparation of an international standard for Social Responsibility Management. The first certificate based on the new program that Inmetro issued went to Serasa in April 2007.

Brazilian fruit? You can trust it!

A voluntary Conformity Assessment Program which is the result of a partnership between Inmetro and the Ministry of Agriculture and Supply, the Integrated Fruit Production (PIF) has become in practice a requirement in international markets.

Increasingly demanding agribusiness standards over the last few years now require an extension to the concept of Integrated Production (IP) to other segments in the food sector. In use in Europe since the 1970s, IP arrived in Brazil in 1996 in connection with apples. Currently 21 kinds of Brazilian fruit production require IP, of which 14 have Specific Technical Standards. In addition, there are 46 projects in the pipeline, including products such as rice, beans, soybean, coffee, potatoes, tomatoes, meat, milk, honey and peanuts.

The main objective is to replace conventional practices with processes helping to reduce production costs, improve quality, reduce environmental damage, and increase consumers' degree of credibility. In the case of fruit – of which Brazil is the third largest producer in the world –, cultures adopting IP are: pineapple, prune, banana, cashew, persimmon, coconut, fig, guava, orange, Tahiti sour lime, passionfruit, apple, melon, papaya, mangaba, mango, strawberry, nectarine, peach, table and wine-producing grape.

Organic food on the table

Increasingly popular in Brazil, organic products took on greater impulse in 2007 when presidential decree nº 6323 came out, which regulates Law nº 10831 and, among other regulatory measures, established the Brazilian System of Organic Conformity Assessment, which is coordinated by the Ministry of Agriculture and Supply (MAPA). Inmetro acts as an accreditation organ of certifying entities, a precondition for the MAPA to authorize them to take part in the program.

Products evaluated by this Conformity Assessment Program will receive the Organic Seal – evidence that these products complied with a number of requirements in their process of production. Among items considered during assessment are sustainable management of natural resources, crop diversification, energetic efficiency, and a guarantee that the product was conceived without use of agricultural defensive products – which reduces negative impacts on the environment and consumers' health.

Seal of approval for helmets for motorcyclists and passengers, and those of similar vehicles

Safety in the traffic

Inmetro made another important contribution in 2007 to the improvement of safety in the country's traffic. Together with the National Traffic Council's Resolution nº 2030, Inmetro's Directive nº 392 established new rules and regulations for the use of helmets by drivers and passengers of motorcycles and similar vehicles. Use of Seal of Certification on helmets was made compulsory – a guarantee that the product complies with indispensable safety standards for drivers and passengers.

More light

In December 2007, Inmetro's Directive nº 289 came into effect, whereby all compact fluorescent light bulbs sold in the country joined the ranks of products with compulsory labeling. The measure lends consumers assurance that the product – which has been submitted to laboratory tests carried out by Inmetro – complies with minimum requirements for energetic performance, which increases the quality and efficiency of this kind of light bulb as opposed to incandescent ones.

Hardwood

Santa Fé Gardens in Brotas – SP

In 2005, the Brazilian Program of Forest Certification (Cerflor) was assessed by the Council of the Programme for the Endorsement of Forest Certification (PEFC). Thus, Brazil became the first producer of tropical hardwoods (native and planted) to be internationally recognized by the largest world forum of national programs for certification of forestry management. It was an important conquest for Brazilian enterprises, which started to enjoy a number of advantages for insertion of their products in international markets, continuously overcoming technical barriers.

Cerflor was launched in 2002 with Inmetro acting as official accreditation organ responsible for management of conformity assessment programs, and the Brazilian Association of Technical Standards (ABNT) taking responsibility for preparing and revising norms.

> Brazil became the first producer of tropical hardwoods to be internationally recognized by the largest world forum of national programs for certification of forestry management

New seals

In 2007, Inmetro introduced new seals of conformity with the objective of facilitating the identification and specificity of new products and services. These new seals identify the focus of the program by color – Health/blue, Safety/yellow, Environment/green, Performance/orange – as well as indicating what kind of assessment the product and/or service has undergone (compulsory or voluntary).

On the way to school

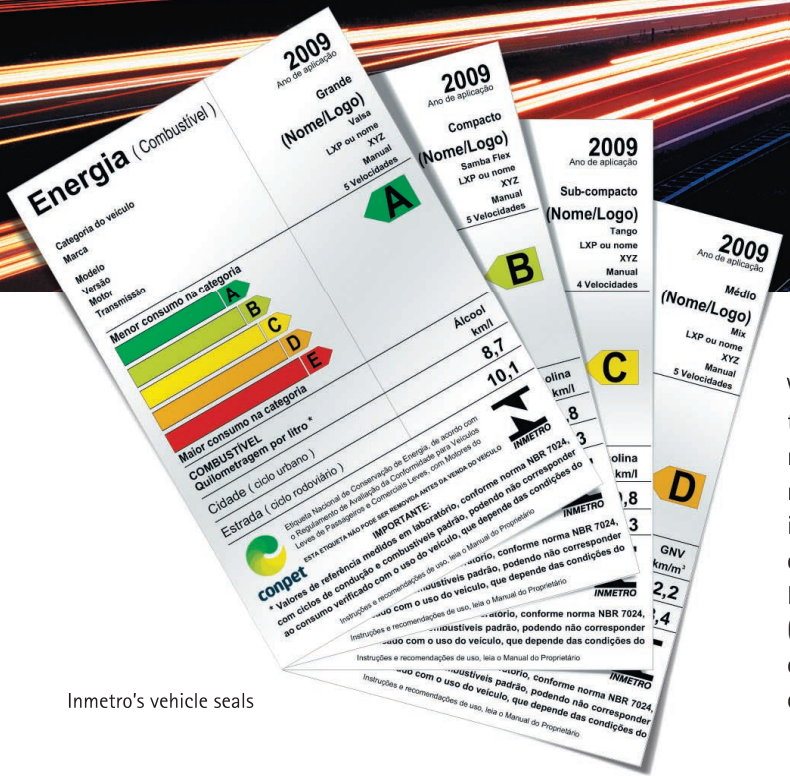
In November 2007, Inmetro and the Ministry of Education signed a technical cooperation agreement to implement a body of action called for in the milieu of the Federal Government's Educational Development Program (PDE).

One such action, called the "Getting to School Project" calls for purchasing and making available new school buses for transportation of students in rural regions of the country. Inmetro has established requirements for these vehicles, especially aspects involving accessibility, safety of children and sturdiness of the buses – which means durability and capability to operate on bad roads.

Certified school buses

With the objectives of promoting energy efficiency of light vehicles and extending consumers' right to information, in November 2008 the Brazilian Program of Vehicle Labeling was launched at the International Automobile Show in Sao Paulo. Taking as an example precedents in measuring energy consumption of certain household items such as cookers and refrigerators, Inmetro's vehicle seal will show average fuel consumption for every model, classifying them on a scale of A to D (the former being the most economical).

Keeping an eye on fuel consumption



Inmetro's vehicle seals

Vehicle producers' adhesion to the program is optional, but the initiative has been widely accepted in the sector. Should consumers not find the label on vehicles, they can check information on the model in charts brought out annually by Inmetro. This program is in partnership with Conpet (National Program for Rationalization of Use of Petroleum & Natural Gas Derivatives), belonging to the Ministry of Mines & Energy, and enjoys the support of Petrobras (which acts as Conpet's secretary), Anfavea (National Association of Motor Vehicle Manufacturers) and Abeiva (Brazilian Association of Motor Vehicle Importing Companies).

Accreditation

The Accreditation Area has gone through substantial change over the last few years. In addition to Divisions for Laboratory and Certification & Inspection Organ Accreditation, Inmetro now has Divisions for Training & Qualification and Development. This restructuring was key to meeting growing demand for new accreditation certificates – there are more and more companies seeking accreditation to render services involving certification of product quality, inspection, testing and calibration in the national market.

Inmetro currently has records of organizations accredited: 540 laboratories, 300 inspection organs and 70 certification organs. As some of these organizations may be active on more than one accreditation front, the number of accreditation certificates issued by Inmetro is now in the region of 1,200.

In the last few years alone, the Institute has registered an increase in the number of accredited entities to the tune of 50%. Figures become even more relevant if voluntary accreditation is taken into account. In some cases, obligation is indirect: when, for example, legislation established that certain products – such as condoms or vehicle tires – could only be commercialized if certified by entities accredited by Inmetro.

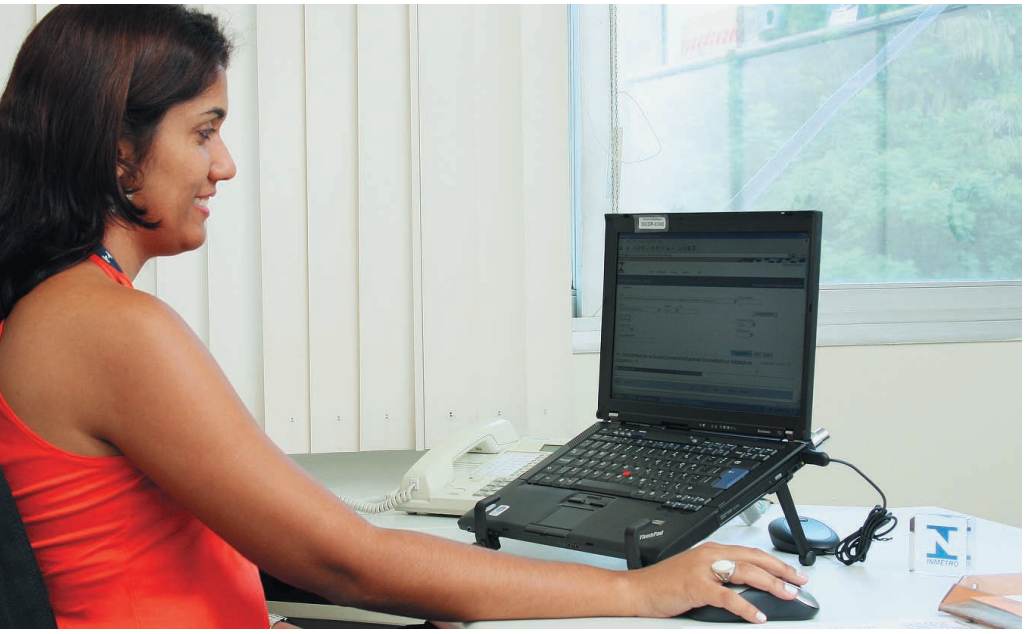
Inmetro's
Accreditation Logo

The strength of external evaluators

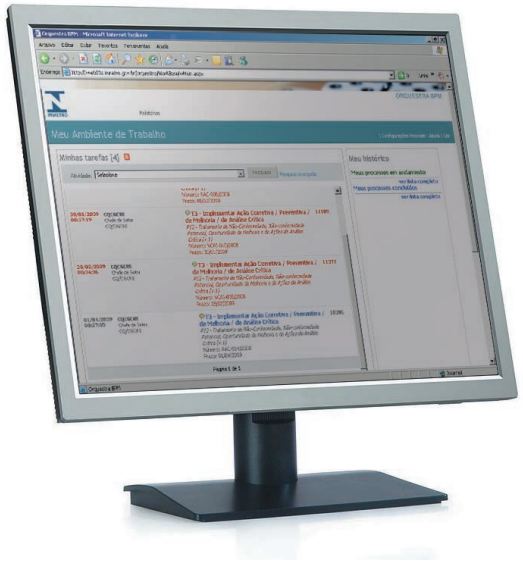
In October 2007, Inmetro's regulation nº 374 authorized external assessors and specialists to register, issuing bodies of edicts in accordance with the Institute's needs.

Every edict establishes requirements for a professional to apply for Inmetro registration as an external assessor. The body of edicts came out in 2007, just after the resolution, and awoke the interest of 500 candidates from all regions of the country.

Besides rendering the process of registration public and transparent all over the country, Resolution nº 374/2007 provided legal grounding for payment of external assessors and specialists for their evaluation work. Inmetro now has some 300 professionals registered, but its goal is to reach the 600 mark in 2010.



Inmetro technician operating process management software



Global Excellence in Workflow Awards

A four-month reduction in accreditation process time earned Inmetro the Global Word for Excellence award in BPM & Workflow

Successful pilot-project

The Accreditation Area was chosen for the pilot project of process management software which is being extended to other areas of the Institute. This project started in March 2007 with accreditation of certification and inspection organs and concluded in October of the same year. In 2008, the Laboratory Area also adopted this tool. Access is not restricted to Inmetro's management team; external clients taking part in the process can also gain access on the internet by means of passwords.

Two years ago, mean accreditation time for calibration labs was 30 months, a situation deemed critical. In the case of a testing lab, it was 20 months, and 14 for a certification organ. The quickest were inspection organs, 6 months. With the implementation of the software, mean accreditation time was reduced to 8 months, be it a calibration or test lab. In the area of certification organs, mean time dropped from 14 to between eight and nine months.

With the implementation of the software for process management, the average accreditation time for a laboratory or a certification organ came from 30 to eight months

Automation of accreditation processes with this software allowed revision of existing process flow charts; mapping and surveying business rules, actors, times and information. This revision produced substantial improvement to the process, with the reduction of stages that can be adjusted to actual needs.

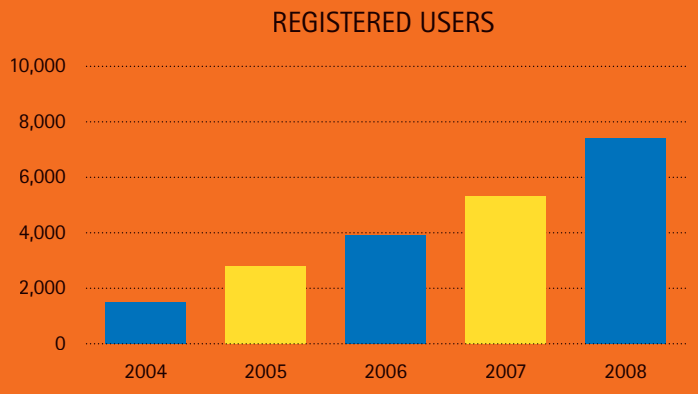
Card partnership with BNDES

Inmetro and BNDES (National Bank for Economic and Social Development) launched BNDES Card in October 2008 with finance terms for the purchase of certification, inspection, testing and calibration services rendered by entities accredited by the Institute. The goal of this partnership is to stimulate the competitiveness of micro, small and medium-sized businesses in Brazil.

Certain compulsory-certification sectors have benefited considerably from the partnership, such as electric equipment manufacturers, who are legally required to certify products before commercializing them, and micro and small exporters for whom certification often means recognition of compliance with international standards. At present, BNDES Card has nine thousand registered suppliers and providers offering over 90 thousand items on www.cartaobndes.gov.br. The main advantages for BNDES cardholders are: pre-approved rollover credit, credit limits of up to R$ 250,000.00, payments in up to 36 fixed monthly installments at low interest rates.

alerta exportador

WORLD TRADE ORGANIZATION



Far beyond borders

According to information from MDIC (Ministry of Development, Industry & Foreign Trade), Brazilian exports have been growing progressively since 2004. That year exports reached the US$ 96.5 billion mark; US$ 118.3 billion in 2005; US$ 137.5 billion in 2006; and in 2007 they reached the US$ 160.6 billion mark. The record was broken in 2008: consolidated data to October show Brazilian exports at US$ 169.4 billion. Through its General Coordination for International Articulation, Inmetro plays a decisive role in supporting Brazilian exporters, whether as a reference center for overcoming technical barriers or as an articulator of regional and international negotiations linked to the competitiveness of the productive sector.

Inmetro's presence in the most important world organs in the areas of metrology, conformity assessment and accreditation, and the ensuing international recognition of its activities, has helped open up international markets to Brazilian enterprises. A good example of Inmetro's role as articulator of regional negotiations: since 1991 it has been coordinating Mercosur's Task Subgroup nº 3 (Technical Regulations & Conformity Assessment) which is of vital importance in the prevention of technical barriers to intra-block and extra-zone trade.

In January 2008, in order to better meet growing demand for services, General Coordination of International Articulation added four new organizational units to its structure: International Articulation Monitoring Service, and the divisions: Regional Negotiations, International Technical Cooperation and Overriding Technical Barriers.

Partner to exporters

As a Focal Point in the WTO's Agreement on Technical Barriers, Inmetro manages an electronic system with free information about technical requirements for exports. It is called Alerta Exportador, and it is available on the Institute's internet website (www.inmetro.gov.br/barreirastecnicas/pontofocal) for Brazilian and Mercosur (Argentina, Paraguay and Uruguay) companies. With this instrument, exporters can identify difficulties in gaining access to foreign markets and adapt their products to the requirements of importing countries or blocks.

Among services offered by Alerta Exportador to registered users are free e-mails with up to date information about proposals for technical regulations notified to WTO. Upon registering, entrepreneurs give information about products produced and target-countries, so specific information can be furnished. The system also has a space for reports and complaints about technical barriers to exports. Inmetro analyzes these items and gives the exporter orientation about procedures to adopt. Angola, Chile and Mozambique have already formally requested access to Alerta Exportador.

In the four corners of the world

Between 2004 and 2008, Inmetro signed a number of international technical cooperation instruments. Chief among them were:

2004

JAPAN

Technical Cooperation Agreement between Inmetro and JICA (Japan International Cooperation Agency) for transfer of Japanese technology to Mercosur countries with a view to adjusting packaging of industrial products to minimize loss during transport.

CUBA

Technical Cooperation Agreement with the National Normalization Office for development of primary and secondary standards of pH.

2005

BOLIVIA

Technical Cooperation Agreement with the Bolivian Metrology Institute in the fields of Scientific, Industrial and Legal Metrology with the objective of setting up a Fluid Dynamics Laboratory.

PARAGUAY

Technical Cooperation Agreement with the National Technology & Normalization Institute in the fields of Metrology and Conformity Assessment for implementation of the Agreement on Technical Trade Barriers.

2006

COSTA RICA

Technical Cooperation Agreement with Costa Rican Metrology Laboratory for implementation of metrological control of clinical thermometers, sphygmomanometers and vehicle emission gas analyzers.

GERMANY

Scientific & Technological Cooperation Agreement with the Fritz Harber Institute of the Max Planck Society for exchanges in the area of Materials, especially in nanotechnology research.

A Reference for the world

Considered a benchmark by other WTO Focal Points for Technical Barriers, Alerta Exportador has received a number of requests for cooperation and technical assistance.

Manual on Technical Barriers to Exports

In 2006–2007, the USA, Cuba, China, India, Paraguay, Bolivia, Mozambique, Sri-Lanka, Kyrgyzstan, Cape Verde, Ecuador and Venezuela sent in requests for information and, in some cases, for development of programs along the same lines.

In recent years, it has also received other requests for technical assistance from countries in Latin America, the Caribbean and Africa (especially African nations where Portuguese is spoken) in connection with providing infrastructure in metrology and subsidies for the preparation of bills of law. Many of these countries do not have their own metrological organs. Such requests for technical cooperation in the modality of assistance are responded to in partnership with the Brazilian Cooperation Agency, an organ in the Ministry of Foreign Relations.

INDIA	MOZAMBIQUE	FRANCE	UNITED STATES	UNITED KINGDOM	UKRAINE
Scientific & Technological Cooperation Agreement with National Physical Laboratory of India in the areas of Physics, Chemistry and Engineering of Measuring.	Technical Cooperation Agreement with the National Normalization and Quality Institute in the fields of Legal and Industrial Metrology, Conformity Assessment, and for implementation of the Agreement on Technical Trade Barriers.	Adjustment of the Memorandum of Understanding with the National Metrology & Testing Laboratory, with the objective of promoting a metrological mechanism for scientific and technological cooperation and stimulating exchange of experience between the two countries.	Memorandum of Understanding with ANSI – ASQ National Accreditation Board – ANAB, to add thrust to action necessary to put into effect mutual recognition of accreditation granted by Conformity Assessment Organs of Quality and Environmental management systems.	Memorandum of Understanding with the United Kingdom Accreditation Service – UKAS, to add thrust to action necessary to put into effect mutual recognition of accreditation granted by Conformity Assessment organs of Quality and Environmental management systems, as well as the Accreditation Program for Calibration and Testing Laboratories.	Memorandum of Understanding with the State Committee for Technical Regulation & Consumption Policies to carry out activities related to scientific and technological cooperation in the field of Metrology.
	2007		2008		

Two examples of exporter support

In 2005 Inmetro participated in a seminar in Berlin, set up by the Organization for Economic Cooperation and Development (OECD) where research was presented on identification of technical barriers to exports of developing countries such as Brazil. A case-study involving Brazil (furniture exports) showed how technical requirements, the compliance with which has to be verified with an assessment, can become technical barriers to Brazilian exporters' access to foreign markets. It was shown how lack of infrastructure for testing emissions from formaldehyde – used in the resin of plywood and wood agglomerates as raw material for furniture – was identified as a potential technical barrier.

In 2006, as an interlocutor in international negotiations, it drafted remarks about a European proposal for regulations covering azoic dyes in textiles and leather, suggesting that organs supervising compliance with obligatory technical requirements should accept an assessment procedure that was less restrictive for Brazilian foreign trade. The European response to the Brazilian remarks was forwarded to national industry for study and analysis.

A map of laboratories

By order of the Ministry of Science & Technology and Finep (Studies and Projects Funding Body), in 2007 Inmetro commenced mapping out Supply and Demand of Testing and Calibration Laboratory Services (ODSLEC), together with the Brazilian Metrology Society. The result of this task will be a complete schedule of the offer of these services in the country, and will lead to expansion of the Alerta Exportador system, which will include a "Laboratories × State" chart on the lines of "Countries × Products" Technical Requirements service.

Newly approved in Inmetro's civil service exams

Strategy for growth

In 2006 Inmetro went through reformulation of its regimented structure, which was approved in 2007. The objective was a change in the institutional profile that had been designed since 2004.

The Institute will expand its classical role of service provider to become a center of scientific reference, a pole of attraction in the fields of research and development, research and innovation. Two new boards were set up, for Innovation and Technology (see chapter 2) and for Planning and Development. The latter was made responsible for strategic planning of the institute, whose activities grew during the 2004–2008 period as never before in its history.

On expanding its activities as a service provider and as an outlet for its vocation as a scientific entity, it had to review its concept of administration, with the objective of also becoming a reference for excellence of management in the ranks of federal public service. On these lines, the Planning and Development Board housed in its structure Coordination of Human Resources Development, with concern about dimensioning the workforce for immediate and future demands.

Results started to become noticeable. With authorization from the Ministry of Planning, in 2007 it initiated a recruitment drive with competitive examination, with the objective of filling 638 new openings by 2009: 167 in 2007; 208 in 2008; and 263 in 2009.

A plan extending to 2014

The Institutional Strategic Plan (PEI) for 2007–2014 was approved on December 19th, 2006. Its highlight is the implementation of the Balanced Scorecard (BSC) methodology for measuring and evaluating organizational performance, which besides considering traditional accounting and financial procedures, also observes so-called intangible assets such as human capital, knowledge, brand, credibility and capacity for innovation. Preparation of the 2007–2014 Institutional Strategic Plan involved Inmetro's servants and collaborators, as well as members of governmental organs, public and private enterprises and organs representing different sectors of society. This new vision of planning and management is causing Boards to work in a more horizontal and integrated fashion. Projects now go through the entire organization; they are no longer vertical within different Boards.

mission

To provide Brazilian Society with confidence in measurements and products by means of metrology and evaluation of conformity, providing harmonization of consumer relations, innovation and the country's competitiveness.

vision

A State organ recognized as key to the country's socioeconomic development due to the relevance and quality of its services, its technical, scientific and managerial excellence in support of technological innovation, widely recognized internationally.

Administration and Finance technicians operating process management software

For more dynamic management

Inmetro has been enhancing the management of purchasing procedures in its Administration and Finance area, with increasing use of computing tools.

The objective is to reduce the time such processes take, so as to spring bureaucratic shackles in the acquisition of equipment and services vital to the Institute's activities. One such tool is software for process management. In the Administration and Finance Directorship, where it was nearing completion of implementation in late 2008, this software is capable of tracing processes, from publication of the edict for public tender until the conclusion of the purchase. This software was tested in a pilot project in General Accreditation Coordination (as seen in chapter 6) with most satisfactory results, and later applied in the Legal Metrology Directorship. The objective is to extend it to all the Institute's areas.

The dizzy rate of growth of activities during the 2004–2008 period demanded of the Administration and Finance Directorship not only zeal in speeding up purchasing procedures, but also in the exercise of planning. Thus, all areas had prepared their 2009 budgets by April 2008.

Such discipline is key to ensuring budgetary funds from the Federal Government, necessary for execution of services rendered by the Institute and development of new projects. The immense challenge involved in administering the Xerém laboratory campus as of 2009 must be borne in mind at all times. This challenge includes the installation of infrastructure more suited to a profile of scientific research, with the construction of new laboratories and the expansion of existing ones.

Workplace gym

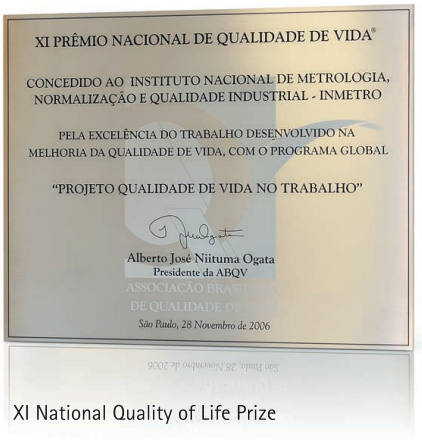
Dental attention

Open doors to health

Set up in 2005, the Health & Social Responsibility Project is building up closer ties to the community surrounding the laboratory campus in Xerém, a district in the Municipality of Duque de Caxias, in the Baixada Fluminense region of Rio de Janeiro State. Activities for employees included in the Worklife Quality Program were opened up to the local population. Examples are: MovInmetro, for physical exercise and workplace gym; BrincaInmetro, which was originally open to employees' children only, but now accepts enrolment of students at local schools aged 5 to 12; and the Healthy Adolescence Project for 13–17 year-old youngsters, offering leisure activities and health promotion. The community can also attend lectures on health-related matters, organized every three months.

All activities included in the Worklife Quality Program for Inmetro employees were opened up to the local population

Inmetro was awarded the 2006 XI National Quality of Life Prize, in the Public Organ category, for its action in the field of Occupational Health. These prizes are awarded by the Brazilian Quality of Life Association (ABQV).



XI National Quality of Life Prize

Approval of a scale model

The value of every individual

In line with its strategy of creating innovative management tools, Inmetro implemented Evaluation of Individual Performance. It is a completely new system in Brazil because external assessors participate in evaluation, which is closely linked to the employee's remuneration. The first cycle went from December 2007 to May 2008, and the second started in June 2008 and is to continue until May 2009, when cycles will be annual, always June to May. The process calls for gathering certain information, not also about the individual employee, but also about teams, work processes, and each directorship as a body. With this information it can be determined, for instance, whether a given employee will show higher yield if transferred to a different area, what stages of work processes need reviewing and enhancing, among other advantages. Each employee is expected to make out a work plan at the beginning of the cycle, with activities and projects to be carried forward during the period. This plan must integrate individual activity and team work with the team that particular employee belongs to, and final results must be in line with the Institute's strategic objectives. In this way absolutely all employees are stimulated to appreciate the importance of their work in the institution, and to dialogue as team-members. The Performance Evaluation was established by Law nº 11355, October 19, 2006, which created the Inmetro's Career Development Plan and, with new salary standards, allowed for retaining qualified personnel and attract new talents.

Incentives for employees

2008 saw the development of the Management Development Program in partnership with ENAP (National School of Public Administration), with the support of the Ministry of Planning's Human Resources Secretariat. At first this program will involve 125 people in a 36-month qualification course divided into modules. The program's innovative character is in the fact that the plan was developed within Inmetro, and it is the outcome of demands stemming from the organization itself. It is also in line with the strategic objective of valuing management by expertise.

Also fitting in with this strategic plan is Project Profile, which has begun mapping out employees with their resumes and areas of professional interest. This project will also add information from existing databases, such as the Lattes Platform (CNPq), the Federal Government's Organizational Information System (SIORG) and others. Profile is particularly important for identifying employees qualified to work on some new front that the Institution might open in the near future. The concern is that human resources also pass through the great transformation Inmetro has gone through in recent years.

The population as thermometer

Inmetro has been using public opinion polls as an instrument for improving institutional management since 1996. In 2007, the Institute reformulated its survey model, so as to enhance the quality of information and thus obtain better grounding for making decisions. One of the innovations introduced consists of being more painstaking about identification of the Institute's brand. Now, when interviewees claim to know Inmetro, they must also show they know the brand. In a 2007 survey, 73% of interviewees stated that they knew Inmetro, but only 65% of that number were able to identify the Institute's brand.

In these past 11 years of surveys, the level of public awareness of Inmetro rose from 46% in 1996 to 73% in 2007, a 59% increase. Another relevant piece of information obtained from the 2007 poll is that 50% of interviewees state that they prefer to buy products bearing the Inmetro seal, even if they are not familiar with the product brand, as opposed to 30% who prefer well-known product brands even if they lack the Inmetro seal. A new slant to the poll was introduced in 2008, gathering the opinions of publics that had never before been approached, such as the industrial sector, the press and Senate and Congress members.

Information technology

The use of IT (information technology) has leapt forward since 2004. Coordination for the area was set up in the Planning & Development Directorship, to consider methodology, systems development and common solutions for the entire institute, as well as providing Inmetro with better physical structure. To give an idea, until 2008 the Institute's internet connection consisted of two 4 Mbps links. Physical restructuring of the network will provide the Institute with a 100 Mbps connection.

At the same time, to ensure quality IT service, Inmetro has purchased new computers, network servers and other components with suitable configuration for the new operational conditions.

Integrated Center for Training in Metrology and Conformity Assessment (Cicma)

Distance teaching

In the area of diffusion of the culture of metrology in society, which is a legal mission of Inmetro's, the Institute enhanced training, especially for people from delegate organs of the Brazilian Legal Metrology and Quality Network (RBMLQ-I), with the 2006 decision to set up a structure for distance teaching, which is being implemented gradually. This structure is being set up at CICMA (Integrated Center for Training in Metrology & Conformity Assessment), which is responsible not only for distance training of technicians, but also for spreading basic concepts related to metrology and conformity assessment to universities and technical schools all over the country, as well as to public and private organizations where such knowledge is relevant.

Awards, National Prize for Public Management

An award for excellence

In 2008 Inmetro was awarded the Silver Stripe Trophy of the 10th National Prize for Public Management – 2007 Cycle. The Institute earned 620 points – 65 more than the previous year. This award is recognition of the commitment of Inmetro's management, employees and collaborators in the quest for excellence of management. It was the fifth prize won: the Institute had previously been awarded the Gold Stripe in the 2000 cycle, and the Silver Stripe in the 1998, 2004 and 2005 cycles.

Superbrands books volumes II & III

Valuable brand

The only federal autarchy to have its brand recognized as one of the country's most important by Superbrands, in its 2006 issue (Volume II) and 2007 issue (volume III).

Additionally to an evaluation performed by a group of specialists known as the Brand Council, the publication had available the results of a survey of 5,000 consumers to validate the finalist brands. Inmetro figures beside multinational giants such as 3M, Coca-Cola, Fiat and Basf and Brazilian brands such as Correios (Post Office), Banco do Brasil, Bradesco and Casas Bahia.

In the chapter about Inmetro, Superbrands 2007 highlights the Institute's triumph: "Since 1998 it has been the only autarchy qualifying as an Executive Agency. To obtain this qualification, the entity and the Ministry of Development, Industry and Foreign Trade signed a management contract establishing indicators and goals. The execution of the contract, which has the Ministries of Finance and of Planning, Budget & Management as participants, is periodically examined by an external assessment committee."

ATTENTION BY ACCESS CHANNEL

1nd HALF 2008

Telephone	Internet	Post/Fax	Personal Contact	TOTAL
20,132	5,953	50	103	26,238

2nd HALF 2008

Telephone	Internet	Post/Fax	Personal Contact	TOTAL
18,263	4,718	32	110	23,123

Total instances of attention in 2008

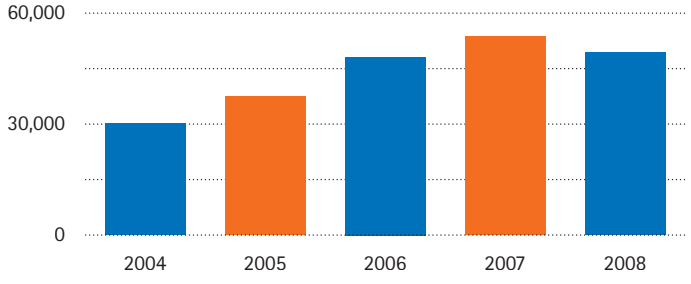
49,361

Call Center, Inmetro's Ombudsmanship

At your disposal

Besides consolidating External and Internal Ombudsmanship, in the period from 2004–2008, it extended the service throughout the country, with the creation of the Integrated Ombudsmanship System in the Inmetro Brazilian Network of Legal Metrology and Quality (RBMLQ-I – Sior).

INSTANCES OF ATTENTION BY EXTERNAL OMBUDSMANSHIP



These three fronts complement each other in paying more and more quality attention to the citizen. All information reaching the Ombudsmanship on its three fronts of action are processed by the same software, the Citizen Attention System (SAC), where public complaints and the responses of Inmetro's technicians converge.

The Ombudsmanship Call Center has 12 operators who work in shifts from 8 a.m. to 6 p.m., and are highly trained in citizen attention. The Call Center's database has 900 Frequently Asked Questions, which means that 93% of all complaints are attended to immediately. Calls are recorded and audited, so possible mistakes made by operators are identified so that they can be retrained.

A fact that deserves highlighting is that the Ombudsmanship produces periodic reports about attention, endeavoring to detect possible failure in services rendered to the population. These assessments are forwarded to the technical areas mentioned so that failures can be corrected. In a report issued in the 1st half 2008, External Ombudsmanship gauged demand and determined that it remained stable with relation to the same period of 2007, with a total 26,238 instances of attention, of which most (20,132) were on the telephone, a monthly average of 4,373.

1

2


000
SAMPLE WASH
SOLVENT WASH
NUMBER OF INJECTIONS
SAMPLE SIZE
MONITOR
FUNCTION
ENTER
RESET
RUN
STOP

4

5

8

9


INMETRO

Inmetro Panel

3

6

10

7

11

From left to right, up to down:

1 Linnik Interference Microscope
2 MRC – Chemistry Division
3 Tests with electric energy meters
4 Goniophotometer
5 Gas Chromatograph with Flame Ionization Detection (GCFID)
6 Inmetro's Administrative Building – Xerém, RJ
7 Material analysis
8 Ethylmeter initial verification
9 Inmetro's Building in Rio Comprido – Rio de Janeiro, RJ
10 Anechoic Chamber
11 Thermohydrometer

INMETRO

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INMETRO

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Report on Activities

Ministry of
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