



With MINATEC Nanolab™,
get an experienced partner to enable your nanotechnology laboratory projects



- Support an existing industry
- Develop and assist research
- Generate intellectual properties
- Develop an innovation-focused culture
- Industrial attractiveness
- Strategic independence
- Youth training
- Create start-ups
- Create jobs

REACH YOUR STRATEGIC GOALS IN A SHORT TIME WITH THE APPROPRIATE MEANS



MINATEC Nanolab™, the key enabling facility for research validation

Nanoscience: the key to technological & industrial development

Technological advancement is driven by incremental innovation

Today's engineers have successfully leveraged the semiconducting properties of silicon to fuel unprecedented technological advancements in the field of microelectronics – a perfect example of what can happen when science and technology come together to meet market needs.

However, some countries have missed the high-tech boat and are now facing prohibitively high market entry costs. New developments in nanoscience and nanotechnology can open the door to opportunities in promising new fields, helping these countries get back on track to technological prowess.

Nanotechnology is founded in part on innovations developed for the microelectronics industry, with complementary – and far less complex – input from materials science, chemistry, and biology.

Many countries possess a young, well-educated population eager for opportunities at home, as well as abundant natural resources – the prime ingredients for successful nanotechnology-driven growth.

We are now entering a decisive era that will shape the future of high-tech industries

Today, it is crucial for the governments of such countries to take decisive action. They must play an active role in this new industrial revolution – one whose potential is estimated at several billion dollars per year.

The future will bring virtually unlimited applications for nanotechnology

With the dizzying array of new nanotechnology fields being explored – nano-biotech, strategic nanomaterials, nanosystems, nanoenergy, nanoelectronics, and nanomedicine – there is a niche for every country, based on its resources, needs, and goals. Whether a country wants to set up new educational and training programmes, institute an innovation-focused culture, spur the creation of start-ups, enhance its economic attractiveness, or develop and transfer new technology to industry, the ingredients are there for long-term technological growth. Countries must now, urgently, align their resources and emerging high-potential market opportunities with nanoscience – and nanotechnology – based activities.

The MINATEC Nanolab™ consortium puts countries on the fast track to nanotechnology

Founded on an experimental public-private partnership, our consortium offers a proven method that lets countries rapidly establish the nanotech-oriented culture they need to spur technological and industrial development.

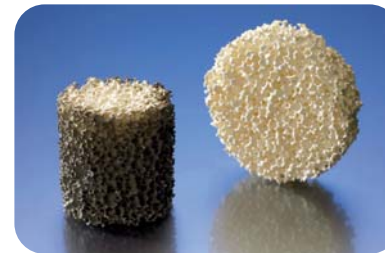
With the MINATEC Nanolab™ consortium countries can set up their own inter-university laboratories for education and research and open them up to partnerships with businesses – a strategy that has proven successful in Grenoble, France, with MINATEC founding partners CEA-Leti, a research lab, and Grenoble Institute of Technology, an engineering school.

Nanotechnologies market & fields of application

Nanotechnologies market is about to know an exponential growth in the next ten years.
Nanotechnology potential world market size by 2015 is around 3 trillion US dollars (NSF).
The challenge consists to be able to enter in this culture now, through setting-up efficient facilities in an appropriate timing.

Nanotechnologies are the enabler for multiple fields of application:

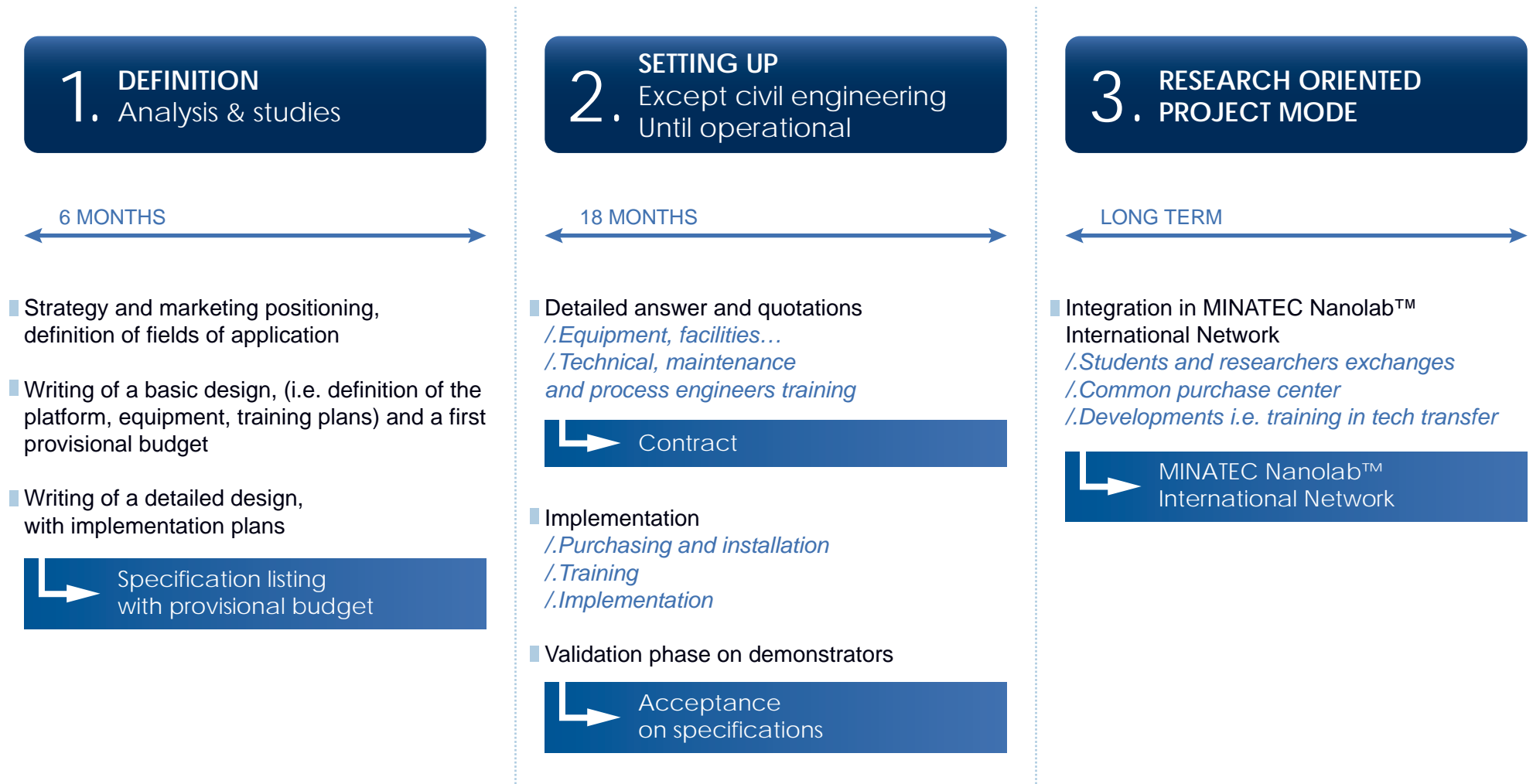
- /.Energy*
- /.Systems*
- /.Textile industry*
- /.Materials (i.e. rare ones)*
- /.Automotive*
- /.Electronics*
- /.Healthcare*



MINATEC Nanolab™ is the ENABLER to develop a research facility in nanotechnologies, with a complete full-packaged project-oriented approach, engineered by an experienced public-private consortium.



A 24 months 3 phases packaged procedure with well-defined deliverables



A 24 months 3 phases packaged procedure with well-defined deliverables

1. DEFINITION of the project bases & goals

- Strategic and marketing positioning to clearly define the need
- Definition of the fields of application
- Writing of a basic design
 - /.Definition of the facility and layout of the premises (i.e. research platform, grey or clean room, R&D, pilot line, facilities...)*
 - /.Equipment selection*
 - /.Definition of technical and maintenance training plan*
 - /.Definition of training plan for process and engineering*
 - /.Provisional budget and schedule*
- Writing of a detailed design
 - /.Execution and implementation plans*
 - /.Detailed budget and schedule*
 - /.Detailed specification documents*



2. SETTING UP: execution & implementation

- Support managing the Request For Proposals and selection process
- Construction of the facility in regard of the specifications
- Purchasing and installation of the equipment
- Training
 - Technical, maintenance and process skills*
- Executing the support services for the opening step
 - To avoid known problems normally associated in the early stages of a project, the consortium will deliver a six months basic starting kit covering gas, acids, gloves, suits, basic spare-parts...*



A 24 months 3 phases packaged procedure with well-defined deliverables

2. SETTING UP: execution & implementation

Validation phase on demonstrators

Depending on the project phase, prototypes developed will be tested to ensure that the facilities and training have been correctly implemented

nanoelectronics
↳ transistor



nanobio
↳ biochip



nanoenergy
↳ battery



nanosensor
↳ RFID

nanomaterials
↳ high performance
nano-coating



Acceptance on specifications

3. RESEARCH ORIENTED PROJECT MODE & integration to MINATEC Nanolab™ International Network

MINATEC Higher Education

*/.Exchange of researchers, phd, post-docs and students for collaborations and research experiences
/.Support for organization of schools with conferences, lectures, practical, social events*



MINATEC Entreprise™

*/.How to develop and work with industry, how to generate and licence intellectual property, how to create start-ups...
/.Expertise on cost efficient solution for hosting start-ups in post-incubation phase*



MINATEC Support

*/.Access to a best level nanocharacterization platform
/.Access to a common spare parts purchase center for an efficient maintenance process*



MINATEC Idea's Laboratory®

/.Thanks to social sciences and design experts, thinking the creation of new products and services at the crossroads of business, users, and technology, to combine advanced technology skills and a more people-oriented approach



MINATEC for Youth

*/.Development of actions for information and training on nanotechnologies toward the youth
(such as Nano@school™ program for middle and high schools)*



3 major actors, partners associated to enable your research facility projects



CEA is a large public research organization dedicated to applied research for multiple fields. The CEA Grenoble center hosts 4,000 staff and is hosting the MINATEC innovation campus.

Grenoble, France-based MINATEC micro and nanotechnologies innovation campus is unlike any other research center in Europe. The people who make technological innovation happen are all too rarely encouraged to cross the traditional boundaries of their respective fields. MINATEC brings these experts – 2,400 researchers, 1,200 students, and 600 industrial & technology transfer specialists – together on a single 20-hectare campus, and provides them with access to state-of-the-art equipment in a unique environment (70,000m² of workspace, including 10,000m² of clean rooms) that encourages them to invent the innovations of the future together.



The CIME Nanotech is an academic center for education and research in microelectronics and nanotechnology. Founded in 1981, it is operated jointly by the Joseph Fourier University, the science Grenoble University and by the Grenoble Institute of Technology (Grenoble INP). Based in the heart of MINATEC campus, the CIME Nanotech allows people from education and research to meet and work together on advanced equipment.

The new CIME Nanotech facilities has a total of 3,000m² of space, housing 8 technology platforms, including a 750m² clean room. New technology field platforms: microsystems and sensors, hyperfrequency and guided optics, smart devices, AFM microscopy, IC design, biotechnologies/BioMEMS.

History

- /.1981: Creation of CIME Nanotech, Education platform in microelectronics
- /.1982: CIME Nanotech starts operating a 250m² clean rooms facilities
- /.1992: CIME Nanotech is a major player in the National network of (12) Microelectronics Education centers
- /.2006: CIME Nanotech moves to the MINATEC innovation campus with new and extended facilities. Becomes the most important center in France with world class Education and Research facilities

Key figures and equipment 2012

- /.70 learning sessions per year
- /.About 1,800 students from across France each year
- /.More than 200 researchers, from 30 labs and industrial R&D professionals
- /.Over 136,000 hours-users yearly
- /.Annual operating budget: 3M€
- /.A permanent staff of 15 tasked with maintaining the equipment, providing technical support and training, and helping researchers with projects at all stages right up to functional demos.



For more than 25 years, 40-30 has focused its activities in high-tech equipment to carry out maintenance and repair. 40-30's scope of service and maintenance covers a wide range of technologies, electronics, vacuum, gas control, RF, calibration...
40-30 works for CEA-Leti, MINATEC & CIME Nanotech for many years.

High level of technical expertise

- /.25,000 workshop and consumer site-based operations each year
- /.Knowledge of technical needs and works environment
- /.Experience in creation and maintenance of workshops and clean rooms
- /.40-30's Engineering team provides the best solution to your technical issue

Full training Program

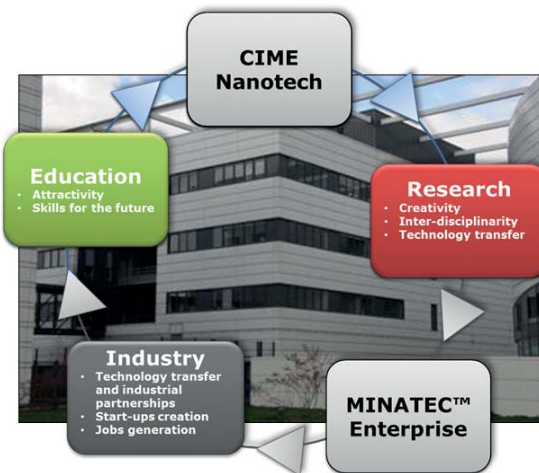
- Global approach on Maintenance Methodologies:
- /.Training on complex and etching and deposition, measurement wet process equipment
- /.Maintenance on facilities (DiWater, Dry air network, Vacuum,electrical)
- /.Coherence with others 40-30 expertise domains (Vacuum, RF, Plasma, Robots and Electronics)

Strong maintenance and training processes

- /.High level trainers English speaking for knowledge transfer
- /.220 permanent people
- /.Major fields of expertise: vacuum, electronics and ultra-clean refurbishment techniques, Leak test qualification, safety training...

Must of this program

- Proximity of the 40-30 experts, who can be involved directly in the training course on trainer demand, for deeper technical questions.



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