



# National Academy of Technologies of France (NATF) IDENTITY/STRATEGY

Document approved by vote in Plenary Session, June 11, 2014

The National Academy of Technologies of France (hereinafter the Academy or its widely accepted Anglo-Saxon acronym NATF) was first created as an Association, in December 2000, changing to the status of Public Administrative Establishment by law in 2007. As of 2013, the Academy benefits from the protection of the President of the French Republic, and thereby joins the ranks of the older academies with official recognition of its mission and its actions deemed in the public's interests.

The key distinguishing feature of the NATF is the professional diversity of its Fellow members: technologists, engineers and industrialists, research scientists, agronomists, architects, medical practitioners, sociologists, economists, with a strong representation of head of industrial R&D directorates.

The Academy has a mission, shared values and a vision.

It has also adopted a mid-term strategic plan. This plan - which the Academy aims at accomplishing over the coming 5 years, pursuing its mission and reinforcing its action - is in keeping with France's new industrial policy lines and hopefully enables the Academy to have a positive impact on Society.

The NATF Strategic Plan is the result of an ensemble of reflections and actions conducted not only within the Academy, but also in concertation with other institutions involved in governance of Research/Innovation in France, notably the Ministry for Higher Education and Research, the Ministry for Industry, the CESE (the national Economic, Social and Environmental Council), OPECST (French Parliamentary Office of Assessment of Scientific and Technology Policy decisions), plus other academies in France and elsewhere via NATF's active participation in organizations such as Euro-CASE.

The NATF Strategic Plan and this document "NATF IDENTITY/STRATEGY" were approved by vote at the Academy's June 11 Plenary Session.

## The NATF MISSION

The mission is defined in the April 18, 2006 French law<sup>1</sup>, as follows:

"The mission assigned to the National Academy of Technologies of France (NATF) is to undertake analyses, to frame proposals and issue advice on questions related to technology and its interactions with Society.

To this end, the Academy shall engage in expertise, prospective and public actions, calling on where deemed useful on skills of external, qualified persons.

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<sup>1</sup> (in French) [Loi n° 2006-450 du 18 avril 2006 de programme pour la recherche ...](#)

The Academy shall examine all questions addressed to it by members of the French Government. The Academy is empowered to self-commission itself to study any question or theme that relates to the above mission.”

The mission can be summarised also as “**developing technological intelligence**”, with three principal objectives:

- ✓ To issue proposals and recommendations to French public authorities and other socio-economic partners to ensure best use of technologies to serve Mankind;
- ✓ To inform Society in regard to the opportunities and risks associated with new technologies;
- ✓ To enhance its intellectual and social status through multiple interactions with actors engaged in research and innovation, both in France and abroad.

The Academy plays a benchmark role for all questions that touch on technology and its impact on Society, the environment and future growth, and also as a mediator between policy decision makers, public opinion, research and the socio-economic actors.

The Academy is a high level institution and actor in the industrial policies in France; it contributes to governance of technological issues, in particular by the personal commitment of some of its Fellow Members in (or on behalf of) reflection and decision taking bodies in France (National Research Strategy, the Commission for Innovation 2030, the CESE, OPECST, ANR ... ). It is developing strategic partnerships in Europe and else round the world, notably with sister engineering science and technological academies.

## **The NATF MOTTO**

To implement its mission, NATF relies on three fundamental pillars, summarized in its motto “*Sharing reasoned, chosen progress*”.

### ***REASONING***

NATF develops and implements an independent, free and original manner of thinking. It is resolutely modern and prefers reasoning to presuppositions, innovative approaches to the inertia of tradition and impartiality to partisan, vested interests. It proceeds in a totally independent manner, associating where deemed interesting representatives of the production sector, the scientific research milieus, politics and the socio-economic actors.

Activities and engagements of the NATF Fellows comply with an accepted Charter of Expertise

### ***MAKING CHOICES***

Through the diversity of approaches – technological, societal, environmental and ethical – the Academy is in a position to throw light on the main debates that trouble Society today and to issue proposals and recommendations. Subjects like mobile phone relay antennas, life expectancy for stored data, nanotechnologies, biotechnologies, re-industrialization, shale gas and oil, energy transition policies, carbon-free cities, GMPs, cars for the future ... have all been addressed and analysed; the Academy also seeks to take into account citizen expectations and to provide a reasoned balance between applying the precautionary principle and innovation.

The Academy’s publications identify points that our current level of knowledge do not allow us to analyse with sufficient certainty or which lead to controversy.

## ***SHARING PROGRESS***

NATF is convinced that the benefits of progress must be shared by all.

It endeavours to foster collective intelligence on technological issues.

NATF is convinced also that a better understanding by the public at large, of the advantages that accrue from technology and its uses calls for the teaching of technology at school, in its various forms. For this reason the Academy continues to invest in the area of France's national Education sector. And in like manner, why it co-produces the new 'science and techno-' oriented TV programme on Arte, "*FutureMag*", which may encourage scientific and technological vocation needed for the future economic development of in France.

Lastly, NATF can exercise a truly collective expert mission, should the questions, whether commissioned or self-commissioned, justify this approach.

## **NATF VALUES**

NATF frames its activities and actions in compliance with three fundamental values:

### ***Progress***

NATF is resolutely modern, and favours reasoned progress inasmuch as technology by essence is rapidly obsolescent, transitory, short-lived and constantly evolving. The Academy endeavours to promote technological progress to serve public interests and Mankind at large.

### ***Demanding criteria***

In organizing annual elections, NATF recruits its new Fellow Members, so as to extend or deepen its areas of reflection and action; the selection and election process is rigorous and takes into account the level of excellence of the chosen candidates, their reputation for work in France and abroad.

When NATF examines questions, there is a systematic search for a diversified approach, with technological, economic, societal and ethical angles as needed to exercise collective expertise.

Documents produced by the Academy are submitted for approval by the Members in Plenary Session, following a vetting procedure that guarantees their quality and impartiality.

### ***Open policies***

NATF analyses major trends and risks associated with progress, in France and elsewhere and contributes to the construction of a technology-intensive Europe. It takes into account citizen expectations in the framework of a balanced analysis of threats and opportunities. It advocates its approach to progress for French Government members and public authorities as well as in participating in relevant European and international bodies. NATF enjoys a strong regional anchorage and keeps itself fully informed as to local initiatives that relate to (use of) technologies.

## The NATF VISION

The studies undertaken by the Academy allow it to build a vision of the interaction and impact of technology with Society and also the interest of certain technologies for the benefit of Society. The vision takes the form of Academic Advice Notes, Academic Reports and self-Commissioned Reports. The vision is set out in a synthetic document “Horizons technologies”, which is updated annually. Three main features can be recalled here.

**Our vision will enable us to transcend our fears** in order to implement a collective, innovative approach that could lend hope to the future of France. The technological innovations, technical progress, do not preclude respect for Mankind and the Environment, on the contrary. So-called new technologies bring considerable progress in health, urbanism, energy issues, in education and training for everyone and allow us to entertain the idea of a better future for Humanity. The latter can be seen as advancing and they represent a universal cultural heritage being built before us and in which we all have a role to play.

**Our vision will allow us to accompany a new industrial revolution** and to facilitate, in France and in Europe a “systemic innovation model with high added value: developing new services and functions, to induce change, to modernize, to enrich or create large-scale societal systems (health, transportation, urbanism, manufacturing ...).

**Our vision will consist of preparing for jobs tomorrow.** If we wish to see France become a country conducive to creativity and development of new products and services, there is an urgency to reconcile the French people and especially the younger generations with technological advances and present them with what will be tomorrow’s jobs, viz., those that will ensure that France and Europe will be able to their rank in the global economic world of the 21<sup>st</sup> Century.

## The NATF STRATEGIC PLAN for 2014-2018

NATF has defined its strategic plan along a fourfold set of priority axes:

*First axis*

**To improve understanding by the public at large of the interests in technology and its uses**

*Second axis*

**To contribute to public policy decision making**

*Third axis*

**To promote teaching of technology in all its aspects in their education programmes of all French school pupils**

*Fourth axis*

**To valorise the contribution of technology to development of France’s economy**

For the period 2014-2018, the NATF strategic Plan will be focused more precisely on the following orientations:

### 1. To facilitate France’s industrial renaissance and future through technologies

Using the results and recommendations of the NATF Working Party on *Industrial Renaissance*, the aim is to accompany and promote initiatives to foster progress in ecosystems in technology, in finance, in training and in the process of catching up on delays in the development of new utilizations.

### 2. To encourage and enhance scientific and technical professional vocations

One priority action of NATF - to promote and encourage orientation of young people to choose industrial strategic sectors for their professions – will be to “*induce and encourage scientific and technological vocations*”. The objective here is to produce critical syntheses of the possible professional and sectorial developments, and also to identify the skills needed to exercise properly in these sectors –

14 are currently identified. This study will be completed by direct interventions with the Fellow members for the technological lycées and in collective initiatives such as EIST (integrated Science and Technology training experimented in French schools since 2006).

### **3. To prepare for a sustainable Society**

The focus here will focus specially on energy procurement and uses, whether it be in the major options in an energy transition phase, for physical needs, for associate operational costs and investments, change in demand and relevant time horizons.

### **4. To support France's National Research Strategy**

For the first time, France is now committed to engaging a rational, deep-reaching process to establish a National Research Strategy. In association with the Government agency, ANR and on demand by Public Authorities, NATF can offer its support and capacity for analysis to assess proposals of the various actors and in proposing priority themes to the *Conseil Supérieur de la Recherche*.

### **5. To engage and develop strategic partnerships**

Relevance of NATF positions also relies on its Members possessing an excellent knowledge of "best practices" round the world. For this purpose, partnerships have been signed with the main sister academies in Europe (members of Euro-CASE) but also with other major technology intensive countries. In France, the strategic partnerships aim at reinforcing entrepreneurial activities.

### **6. To catalyse and facilitate innovative experimentations**

In certain cases of multi-actor organizational innovation, NATF can play the role of a catalyst or federator in respect to expectations that a given actor may express. Initiatives like these – limited in number – will focus mainly on health and training questions.

### **7. To revive the attractiveness of (and for) technology**

The *external* priority will be to assure success and longevity for the TV programme "*FutureMag*", a radically new bi-media magazine in the audio-visual landscape, coproduced by the Academy and ARTE the aim of which is to relate the history of technological adventures and to place innovation and inventors in perspective. Internally, the aim is to associate the NATF Fellow Members in the reflections on "acquiring a positive awareness for technologies", either in the NATF work party studies launched in 2014 or at the NATF annual seminar (Autumn 2014) that will be devoted to this theme.

### **8. To launch and moderate a societal debate on the ethics of technological development**

Technology modifies Mankind. The changes will be very different, depending on which values are favoured in the policy choices. In order for technological development to prove to be a progress, NATF wishes to engage a public debate on these issues in France's engineering schools and with the public at large.