



nano-tera.ch

The Swiss Initiative in

Engineering and information technology for health and
security of the human being, and the environment

Call for NTF and ED Proposals
2010

Call for Proposals for Projects within the Framework of *Nano-Tera.ch*

This call for proposals, issued within the *nano-tera.ch* initiative, deals with nano-tera focused (NTF) projects and educational activities (ED) only. This call replaces the previous calls.

1. What are the broad objectives of *nano-tera.ch* ?

Nano-tera.ch is centered on the research, development and application of micro, nano and information technologies to embedded systems, networks and software to support health, security and environmental monitoring. The broad objectives of the program are both to improve quality of life and security of people across different levels of education, wealth and age and to create innovative products, technologies and manufacturing methods, thus resulting in job and revenue creation.

The intrinsic value of the underlying research is to bridge traditional disciplines, including but not limited to electrical engineering, micro/nano-mechanical systems engineering, biomedical sciences and computer/communication sciences, with the objective of (i) deepening the understanding of enabling technologies and reducing scientific concepts to practice, and (ii) mastering the novel challenges of engineering tera-scale complex systems.

Nano-tera.ch has been established as an “ordinary partnership”. This legal form enables Universities and Research Centers to meet the aforementioned synergetic objectives. Indeed, nano-tera.ch provides a neutral platform for collaboration and development of correlated unique competitive technology platforms. The members of the partnership, i.e. the partner institutions¹, as well as future joining members, intend to position Switzerland among the world leaders in these merging fields for Health-Security-Environment Systems Engineering. Nano-tera.ch will enhance and extend interdisciplinary research and education at the highest level to meet these challenges. www.nano-tera.ch for further details and documents.

2. What are the specific goals of this call within *nano-tera.ch* ?

The *nano-tera.ch* program has several specific goals, such as pursuing excellence in collaborative scientific research in the aforementioned disciplines, creating and expanding educational programs, constructing demonstrators of the technologies being studied and transferring the results to Swiss industry. Broad and specific objectives on nano-tera.ch are described in the website www.nano-tera.ch.

¹ Presently EPF Lausanne, ETH Zürich, University of Neuchâtel, University of Basel, University of Svizzera Italiana, CSEM

To achieve its research objectives, the nano-tera.ch program addresses two axes:

- Research and development of advanced technologies, such as i) micro/nano-electronics, -electromechanical systems (MEMS/NEMS) and -manufacturing processes; ii) (bio)-sensors, actuators and their system-level integration; iii) information and communication sciences as well as systems and software engineering.
- Integration of these technologies into application fields, such as wearable systems (e.g., for monitoring of patients, sportsmen, and the elderly), ambient systems (e.g., for environmental intelligence, building monitoring and virtual worlds) and remote systems (e.g., space applications, remote sensing).

The *nano-tera.ch* program is organized in the matrix-like structure depicted below in Figure 1. The five vertical technology axes intersect the three horizontal application fields. This space defines areas of cross-disciplinary research targeted towards the overall program objectives, which are systems for health, security and the environment.

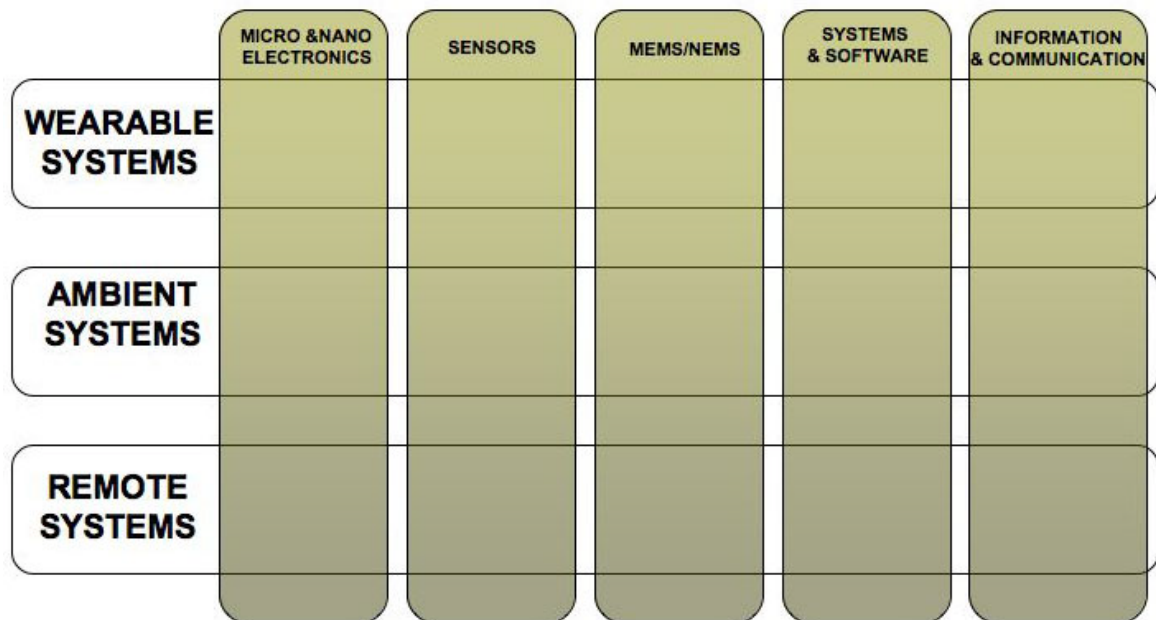


Figure 1. *nano-tera.ch* program structure

3. Nano-Tera.ch Focused projects (NTF)

NTF projects embody activities that the Executive Committee (EXCOM) deems important. The EXCOM will fund them based on simplified review procedure. These projects are small-scale focused projects to address specific scientific/technical issues and needs. Examples include, but are not limited to, activities collateral to RTDs, activities that are in-between the scope of two RTDs (glue projects) and activities that promote technology transfer. A limited percentage of the grant can be used for lab materials and supplies.

3.1 Size and duration of NTF grants

Nano-tera.ch funding is up to 150 kCHF/year. Financial support from *nano-tera.ch* to a given NTF project will be no greater than 47% of the total cost of that project. See Section 5 for details.

Projects are expected to last one or two years. Deadline for the NTF project proposal is the last day of even months. The nano-tera.ch EXCOM will review NTF projects directly, possibly with the help of external experts. The last deadline is the end of August, 2010.

3.2 Who May propose NTF Projects?

Applications can be submitted by faculty members and senior scientists of Swiss Universities, of both Polytechnics and the institutions of the ETH-Domain, of Swiss Universities of applied sciences as well as of public and private research institutions outside the academia. In the case of private research institutions eligibility for *nano-tera.ch* funding is regulated by Article 7 Paragraph 4 of the revised Research Law (see Message for Education, Research and Innovation 2008-2011, German version p. 1448).

3.3 Information to be submitted

The NTF proposals are to be submitted using the official form (cf. NTF Proposal Form: <http://www.nano-tera.ch/proposals.html>) containing the following information:

Part 1: General Information

Part 2: Scientific Information

1. Summary (1 page).
2. International standing of the applicant in her/his field of research (1 page).
3. Research plan: state of the art, questions, methods, milestones (3-4 pages).
4. Expected impact (1 page).
5. Justification of the proposal within the context of other RTDs, significance of the planned research for the scientific community and eventual users (private industry, economy, health and public sector, etc.) (1page).

Annex:

- Curriculum and list of the 10 most relevant publications of all applicants.

3.4 Selection criteria

The EXCOM of *nano-tera.ch* will evaluate the proposals according to the following criteria:

- Formal criteria (completeness of the proposal, eligibility of the applicants).
- Focus on clearly defined scientific and technological problems.
- Does the proposal catalyze novel interactions between groups in different fields?
- Does the proposal generate new data and knowledge that could not be obtained by RTD projects – what is the added value?
- Does the proposal support technology transfer to industry and to enhance the impact of nano-tera.ch.

- What is the standing of the principal scientists in their respective fields?
- Does the project have a realistic budget and a clear leadership structure?

3.5 Reporting

After completion of the NTF project, a scientific report is to be submitted to the *nano-tera.ch* Management Office. Financial reporting including own contributions from the institutions, third parties will be according to defined directives (cf. *nano-tera.ch* Ordinary Partnership Contract, Article 37.4).

4. Education and Dissemination activities (ED)

Education and Dissemination of results is an integral part of *nano-tera.ch*. Proposals may be submitted to support short courses, workshops, mini-conferences, as well as developing new curricula. The focus on educational activities is to fill the gap of programs that are not currently provided by Swiss Universities and Polytechnics. Proposals may address the in-depth study of a vertical technology and/or interdisciplinary horizontal activities as shown in Fig. 1.

Financial support from *nano-tera.ch* to a given ED project will be no greater than 47% of the total cost of that project. See Section 5 for details.

Deadline for the ED project proposal is the last day of even months. The *nano-tera.ch* EXCOM will review ED projects directly, possibly with the help of external experts.

4.1 Who may apply for ED activities?

Applications can be submitted by faculty members and senior scientists of Swiss Universities, of both Polytechnics and of institutions of the ETH-Domain, of Swiss Universities of applied sciences as well as of public and private research institutions outside the academia. In the case of private research institutions eligibility for *nano-tera.ch* funding is regulated by Article 7 Paragraph 4 of the revised Research Law (see Message for Education, Research and Innovation 2008-2011, German version p. 1448). In the case of proposals for developing new curricula, public and private research institutions are only eligible as co-applicants.

4.2 Documentation to be submitted

The ED proposals are to be submitted using the official form (cf. ED Proposal Form: <http://www.nano-tera.ch/proposals.html>) that consists of two parts:

Part 1: General Information

Part 2: Scientific Information

1. Summary (1 page).
2. International standing of applicant in her/his field of research (1 page).
3. Education plan: state of the art, added value (3-4 pages).
4. Expected impact (1 page).

Annex:

- Curriculum and list of the 10 most relevant publications of all applicants.

4.3 Selection criteria

The EXCOM of *nano-tera.ch* will evaluate the proposals according to the following criteria:

- Formal criteria (deadline, completeness of the proposal, eligibility of the applicants).
- Focus on clearly defined scientific and technological problems in the Nano-Tera.ch scope (See Figure 1).
- Sound education and/or dissemination plan.
- Novelty and possibly uniqueness of the ED plan.
- What is the standing of the principal scientists in their respective fields?

- Does the project have a realistic budget and a clear leadership structure?

4.4 Reporting

After completion of the ED project, a scientific report is to be submitted to the *nano-tera.ch* Management Office. Financial reporting including contributions from the institutions and from third parties will be according to defined directives (cf. *nano-tera.ch* Ordinary Partnership contract, Article 37.4).

5 Matching funds

Four sources of finance are expected to support *nano-tera.ch* projects:

A) *nano-tera.ch* funds.

B) in-kind contributions of the participating institutions.

C) in-kind contributions obtained from third parties

D) cash contributions obtained from third parties.

A) *nano-tera.ch* funds

Financial support from *nano-tera.ch* to a given project will be no greater than 47% of the total cost of that project. Matching funds from sources like B, C and/or D are required. Namely: $A/(A+B+C+D) < 47\%$.

B) Matching funds in the form of personnel time

Direct cost attributed to personnel paid from the institution's operating budget is counted as in-kind contribution of that institution. Maximum reference values – for both matching and funding - are summarized below (salaries and social charges):

- Full/associate professor 250 kF/year (max. 20%)
- Assistant professor 180 kF/year
- Senior researcher 150 kF/year
- PostDoc 120 kF/year
- Technician 120 kF/year
- PhD-Student 61 kF/year

C) In-kind contributions obtained from third parties

In-kind contributions include all financial support obtained from third-party sources different from *nano-tera.ch* with the sole purpose to support *nano-tera.ch* projects. It typically includes industrial participation in terms of equipment and materials. In-kind donations secured to support accepted *nano-tera.ch* projects are to be reported in the annual accounting statements of the corresponding institutions.

D) Matching funds in the form of cash contributions

Cash contributions include all financial support obtained from third-party sources different from *nano-tera.ch* with the sole purpose to support *nano-tera.ch* projects. It typically includes industrial participation in cash. Cash funds secured to support accepted *nano-tera.ch* projects are to be reported in the annual accounting statements of the corresponding institutions.

Applying institutions have full responsibility towards overall claimed matching funds including third parties.