



6th Framework Programme
Anticipating scientific and technological needs

NEST

New and Emerging Science and Technology

REFERENCE DOCUMENT ON

ADVENTURE Projects

Implemented through:
Specific Targeted Research Projects (STREPs)
Co-ordination Actions (CAs)

17 December 2003

This is a reference document of DG Research. Before preparing proposals for NEST, the Guide for Proposers, and all other relevant documents which constitute the Information Package for the call, should be consulted.

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Please note that there is a National Contact Point (NCP) for NEST in your country who can offer personalized services. The mission of NEST NCPs is to inform, advice and support potential applicants in the preparation, submission and follow-up of NEST proposals.

For contact details: <http://www.cordis.lu/nest/ncp.htm>

Reference document on ADVENTURE projects

1 INTRODUCTION

The New and Emerging Science and Technology (NEST) activity falls within the FP6 specific programme “Integrating and Strengthening the European Research Area”.

ADVENTURE projects are intended to be one means of implementing this activity. They respond to the requirement in the specific programme that the NEST activity will conduct :

*... NEST mandate
for ADVENTURE
projects ...*

research in emerging areas of knowledge and on future technologies, outside or cutting across the Thematic Priority areas, in particular in trans-disciplinary fields, which is highly innovative and involves correspondingly high (technical) risk. It will be open to any new idea that has significant potential for major industrial and / or societal impact, or for the development of Europe’s research capabilities in the longer term.

ADVENTURE projects provide funding for research across a very wide spectrum of science and technology and with an orientation towards the long-term. However they must satisfy two conditions: firstly, that the research supported lies clearly outside the domains covered by the Thematic Priorities of FP6 or simple combinations of them: secondly, that the research supported is of a high novelty, is highly ambitious and has a high risk / high impact character. The expected impact of ADVENTURE project will be judged in the first instance on scientific and technical capability, but this must be in areas where societal or economic benefits may be expected in the long-term.

2 OBJECTIVES OF ADVENTURE PROJECTS AND EXPECTED BENEFITS

*... pioneering
function of
ADVENTURE
projects ...*

As the name implies, and following the mandate indicated above, ADVENTURE projects¹ are designed to support exciting, pioneering research with the aim of opening up new avenues for progress in science and technology. Their objectives and potential benefits, collectively defining the vision of the activity - “the spirit of ADVENTURE” - can be seen from a twofold perspective.

¹ Throughout the paper, “project” is used in the generic sense, without direct reference to a contractual instrument.

- ...high gain / high risk profile...*
- In the first place, because they have a distinct “high gain/high risk”² profile, and because they can address any area of science and technology, they provide a mechanism to seek out particularly interesting research ideas, which may not otherwise be funded. In this context, novel multi-disciplinarity is of particular interest. A good proportion of these ideas should result in the prospect of genuinely significant and productive advances in the long term.
 - Second, they give researchers an opportunity to develop their own ideas within very broad limits. Because they put a premium on novelty and on very ambitious objectives, they should encourage researchers to invest time and intellectual resources in activities they might otherwise regard as too risky. By providing an incentive for researchers to go beyond the “normal” frames of reference for research funding, they should thus help to inject a spirit of more creative thinking in research at European level.
- ... opportunity for researchers to develop own ideas*
- ..leading to strategic positions ..*
- ...and strengthened dialogue between academia and industry...*
- ADVENTURE projects should contribute to the establishment of strong strategic positions for European science and technology in new and emerging areas. They should help to reinforce research capabilities in these areas and may also lead to strengthened dialogue between academia and industry on long term opportunities. This should enable Europe better to exploit its research assets in the drive towards a knowledge-based society.

3 PROJECT CHARACTERISTICS

3.1 Possible areas of action

- ...What areas of research might be covered?*
- ADVENTURE projects may address topics in any field of science and technology that falls within the legitimate scope³ of Community research. However, , they must cut across or lie outside the Thematic Priority areas. This means, more specifically, that research in ADVENTURE projects must not lie in areas that are clearly covered by any of the Thematic Priorities, and / or by simple combinations of the Thematic Priorities.

Many project ideas would be expected in the area of the “natural” or “hard” sciences (physics, chemistry, biology, cognitive sciences...) and related technologies. However, research in mathematics, economics and in the social or cognitive sciences is also eligible. Research proposals in these areas, complying with the ADVENTURE mandate, would be welcome.

² Throughout the paper, “risk” is to be understood as technical risk, i.e. the possibility of not reaching research goals. It does not imply any sense of risk as “hazard” (to environment, health, etc.).

³ The EC Framework Programme excludes certain areas of research, notably research with military objectives, and research in nuclear energy. In addition, the Programme imposes certain restrictions on ethical grounds.

... opportunities for multi-disciplinary and multi-sectoral research ...

Advances that really open prospects for new fields of research often arise at the interfaces between disciplines or sectors. Novel forms of inter-disciplinarity or multi-sectorality are thus likely to be key features of most ADVENTURE projects. Indeed, because there are often institutional and other barriers to co-operation at the interface between disciplines and sectors, inter-disciplinarity will be facilitated, *inter alia* through the implementation of appropriate peer review and project selection procedures (see below). However it is not a condition sine-qua-non that projects should be inter-disciplinary or multi-sectoral.

3.2 Characteristics of ADVENTURE projects

.. scientific excellence ..

ADVENTURE projects are intended to have a “visionary” quality. Because of their high level of ambition, they will involve the highest levels of scientific excellence. They are defined by the characteristics of significant *novelty*, very high *ambition* and high *impact* :

... novelty ...

- **They will feature research with a significant and clearly identifiable “novel” element.** This could be, for example, research in genuinely new and unexplored fields, in particular in interdisciplinary areas; research using new approaches to investigation and analysis; or research using new, perhaps unconventional, ways of developing or exploiting knowledge. Projects should thus feature a high level of originality.

... ambitious, tangible objectives. ...

- **Their objectives will be tangible, highly ambitious and challenging.** This means either reaching a clearly defined scientific goal and/or creating a new basic technology, which in either case has the potential to open up new fields of enquiry and lies well beyond the international state of the art. Thus reaching the objectives should qualify as a scientific or technological breakthrough, or a “first” achievement.

..high impact ..

- **They will demonstrate a potential for very high impact.** In general, they should have an impact on Europe’s scientific and technological capabilities, in areas that may, in the long term, lead to societal or economic benefits at a European level.

... high-risk...

ADVENTURE projects may carry high technical risks; in other words, they may carry a substantial risk of failing to fully attain their declared objectives. For example an envisaged methodology or a technological development may work, or it may not

...highly motivated

To achieve their ambitious objectives, ADVENTURE projects will require consortia composed of talented, creative and highly motivated

⁴ INCO countries: 1) Russia and other New Independent State, 2) Mediterranean Countries, incl. Western Balkan, 3) Developing Countries. For details: ftp://ftpnl.cordis.lu/pub/fp6_wp/sp1/en/sp1_annexc_wp_200203_en.pdf

team... individuals. ADVENTURE projects provide opportunities for researchers to explore ideas that could have important implications for their future research directions and their career development. Therefore, strong personal commitment will be expected, appropriate to the high potential rewards.

...in partnership... Being EC-funded research, ADVENTURE projects will involve multinational partnerships, emphasising the European dimension of the research challenges undertaken. The work will be expected to have high European added value, particularly in view of the inter-disciplinary, transnational aspects. Subject to the minimum requirement of three partners (see below), the essential point is that the partnership is sufficiently strong to take on the ambitious challenge with credibility – multiple complementary competencies are often needed in modern research. ADVENTURE projects will often bring together teams with complementary competencies, often from different scientific disciplines and / or different technological sectors, in order to work across traditional boundaries. But there should be no “superfluous” partners, which will hinder effective management and research flexibility.

... funding of participants from third countries ... The participation of partners from third countries is welcome as long as the project keeps clearly a European dimension. Third-country-participants from EC target **countries, so-called INCO countries**⁴, may even receive EC funding. Participants from other third countries might receive funding if their participation to the project is essential.

3.3 What ADVENTURE projects are not

The following types of research will not be funded as ADVENTURE projects:

...examples of topics that will not be funded through ADVENTURE projects ..

- Research that substantially falls with the scientific / technological areas covered by the Thematic Priorities as set out in the Framework programme. This is regardless of the topics of focus and / or of the instruments specified in any particular Call for Proposals of the Thematic Priorities. Proposals will be assessed on this point as part of the evaluation.
- Any research that does not involve *significant and clearly identifiable novel aspects*, or which is not at the highest levels of scientific excellence.
- Any research that effectively constitutes a technology demonstration or that substantially consists of a combination of existing technologies.
- Research which is *open-ended*, without clearly-articulated tangible project objectives in the form of a highly challenging scientific objective, or the creation of a basic technology. As an example, the objective of “increased understanding” alone would not be considered sufficiently tangible.

- Research whose objective is to make technological advances of interest to a particular industrial sector (e.g. transport, energy, construction, food) without significant broader applicability.
- Research directed towards investigation of *hypothetical phenomena* or predictions, with no plausible or convincing evidence as to their real or potential existence, or research that is inconsistent with the most basic laws of science.

...implementation through STREPs or CAs...

3.4 Instruments

ADVENTURE projects can be carried out through two different contractual instruments, depending on the nature of the funding required and on the existence of other funding sources for the research activities. In either case, it is essential that the characteristics of ADVENTURE project are respected.

STREPs for research and co-ordination

The principal instrument for implementation of ADVENTURE projects is the **Specific Targeted Research Project (STREP)**.

ADVENTURE STREPs can provide funding both for the research activities themselves and for the necessary co-ordination and management of the project. It is anticipated that the Commission's financial contribution for ADVENTURE projects could in most cases be in the range of 800k€ to 2M€

CAs for co-ordination

Alternatively, ADVENTURE projects can be implemented through **Co-ordination Actions (CAs)**.

ADVENTURE CAs can provide funding for the co-ordination and management of the project, but not for the research activities themselves. It is here assumed that all partners are putting in place research activities relevant to the project, supported through their own or other means. It is anticipated that the Commission's financial contribution to an ADVENTURE CA will range up to approximately 10k€ per partner per year. Amongst the activities that can be supported by the general CA instrument, of particular interest to ADVENTURE CAs are the organisation and management of the project (as a joint or common initiative), the organisation of seminars or meeting, and the exchange of personnel.

...minimum three partners

These instruments are mutually exclusive: an ADVENTURE project is funded through a STREP or a CA, never through both.

For both instruments, FP6 Rules for Participation specify that the number of participants in a project shall not be less than three independent legal entities established in three different Member States or Associated States, of which at least two shall be Member States or Associated candidate countries.

The duration of ADVENTURE projects will typically be between 2 and 3 years, irrespective of the instrument.

4 PROPOSAL SUBMISSION AND EVALUATION MECHANISM

4.1 Submission and evaluation procedure

Proposal preparation and submission ...

Submission of ADVENTURE proposals, in response to the relevant Call for Proposals, follows the standard procedures of FP6. All relevant details are given in the Guide for Proposers. “Notification of intention to submit a proposal” (pre-registration) of proposals is strongly recommended, in order for the Commission to anticipate the required range of expertise for the evaluation.

Notification

The NEST evaluation procedures comply with the relevant official Guideline for Proposal Evaluation and selection Procedures.

The spirit of ADVENTURE

The objective of the evaluation is to select a portfolio of projects that best match the “spirit of ADVENTURE”, that demonstrate the highest levels of scientific excellence and that have a very high potential impact. Proposers must demonstrate, clearly and concisely, that the key requirements for ADVENTURE projects are present :

- significant novel elements in the research
- highly ambitious and challenging objectives, reaching a significant advance in science and/or new “basic technology”
- high impact/high risk nature: likely to open up new areas of scientific development and/or technology with broad application.

Evaluation by a senior scientific panel

The evaluation is carried out under the responsibility of a panel of senior scientists with a broad outlook and an open eye for novelty and multi-disciplinary opportunities. The panel bases its judgements on the individual assessments of a large number of experts who carry out independent individual assessments of the proposals. These experts may work remotely.

STREPs: a two-stage procedure

ADVENTURE STREP proposals follow a two-stage evaluation procedure. Proposals are submitted as OUTLINE STREP proposals, containing administrative information plus a scientific / technical part of 5 pages maximum. The technical part is anonymous, i.e. the names of the scientists and their institutions should not be revealed. They are assessed against three evaluation criteria, given in Annex 1.

Anonymity of OUTLINE stage

Successful OUTLINE STREP proposers will be invited to submit a FULL STREP proposal, which will be assessed against six evaluation criteria, again given in Annex 1. The technical part of FULL STREP proposals is not anonymous.

Proposals for ADVENTURE CAs follow a one-stage evaluation procedure. Proposals for CAs are submitted as complete CA proposals,

CAs: a one-stage procedure consisting of administrative information plus a scientific / technical part of 20 pages maximum. The technical part of proposals is not anonymous. CA proposals are assessed against six evaluation criteria, given in Annex 1.

Feedback to proposers All proposers are informed of the results of the evaluation by means of the Evaluation Summary Report (ESR). The NEST ESR faithfully reflects the views of the experts involved. It communicates the comments of the individual referees, the comment from the panel and a final set of marks.

4.2 Evaluation criteria

The precise evaluation criteria applicable to ADVENTURE STREPs and ADVENTURE CAs are reproduced in Annex 1. They derive from the standard blocks of evaluation criteria adopted by the Commission for FP6; and are largely self-explanatory.

The meaning of Relevance

The first criterion, “Relevance”, needs a specific interpretation both for ADVENTURE STREPs and ADVENTURE CAs. In the majority of FP6 activities, the “Relevance” can be considered largely a matter of whether the proposal is within the thematic scope of the call for proposals. In the case of ADVENTURE projects, relevance has an additional significance: does the proposal really demonstrate the “spirit of ADVENTURE” in an overall sense (high risk/high impact combined with excellent, creative science)?

The meaning of Impact

The ADVENTURE STREP criteria are an adaptation of the standard FP6 criteria, especially geared towards the wide scientific scope, the high risk / high impact nature, and the multi-disciplinary character of the projects. In particular the “Impact” criterion refers to the potential impact on Europe’s scientific or technological capability, while acknowledging that the societal or economic impacts may be of a long-term nature.

3 criteria for OUTLINE STREPs

Specifically, in the stage 1 evaluation of ADVENTURE STREPs the proposals will be assessed against three criteria: “Relevance”, “Excellence”; and “Impact”, while in stage 2 the proposals will be assessed against the complete set of criteria. This mechanism allows proposers to receive an early feedback on the scientific elements of their plans, before they invest significant resources into full proposals that would, ultimately, be unsuccessful.

The ADVENTURE CA criteria are the standard FP6 CA criteria. They will, however, be interpreted in the “spirit of ADVENTURE” sense, putting a due emphasis on the novelty, ambition and risk aspects of the scientific work to be co-ordinated.

5 MANAGEMENT OF ADVENTURE PROJECTS AND USE OF RESULTS

5.1 Management, review and monitoring

*...flexible
management
style...*

Management of high risk, inter-disciplinary research projects at European level poses a particular set of challenges and requires a flexible and responsive style. The work plan, and the resource allocations must be flexible, in order to respond to unforeseen circumstances, and to account for the possibility that certain intermediate development objectives may not be achieved. It must also accommodate the particular difficulties inherent in co-operation between teams with very different disciplinary backgrounds.

In view of their high risk profile commensurate with their ambitious objectives and high impact, it is natural, and accepted, that a certain number of ADVENTURE projects may fail to produce the desired results despite carrying out work of the best scientific or technical quality. It is assumed that the positive impact of the totality of ADVENTURE projects will more than compensate for this, in terms of the overall portfolio. Furthermore, also negative results provide important knowledge, for example by guiding new research.

*...Commission
monitoring...*

NEST will take account of the needs for such a flexible style of management in its monitoring of projects. The Commission has a duty to safeguard public interest. However, "micro-management" will be avoided. Monitoring of projects, including review of financial aspects and confidential work, will take place at certain times during the project lifetime. As far as practicable, reviews will coincide with the agreed scientific and cost reporting periods.

NEST intends to take a flexible approach as regards projects that, despite good work being performed, fail to reach their stated objectives. The aim is to encourage a realistic appraisal of risk versus impact, and good practice in risk related strategies.

*...continual risk
management...*

As a general guideline, NEST will be favourable to termination of projects that have failed to, or that have vanishing prospects to reach key objectives. However, NEST will show restraint in exercising this option. If alternative solutions are available, NEST will consider proposals to somewhat redirect the research work, within the overall envelope of the projects' objectives and retaining its ambition. NEST, where appropriate assisted by independent experts, may then agree to a suitable amendment of the contract.

5.2 Dissemination and use of results

*...results may not
transfer directly...*

As is anticipated that most ADVENTURE projects will have a long-term orientation. Their results will often contribute significantly to scientific capability, or to a generic technology. They may not be immediately transferable to industry or to other societal interest groups. In addition, one may expect that in new and emerging fields, the participation of industrial research / end-user partners will be limited. This raises the question of how

the impact of the results will be realised, and how the flow of results from academia to industry will take shape.

This is an issue at the level of the NEST activity as well as at the level of the individual ADVENTURE project. NEST will put in place facilitating support measures through its NEST SUPPORT activity⁵.

*... possible
dissemination
strategies ...*

At the level of the individual ADVENTURE project, the plan for the dissemination of knowledge and the use of the results will be considered in the evaluation. Publication of findings in scientific journals is an appropriate dissemination strategy for project results, in particular for those that may not have direct economic implications. For those results that are potentially commercially sensitive, ADVENTURE projects will be encouraged to formulate a specific strategy. Elements of this may for example be patenting / licensing, direct transfer to an interested industry, or transfer to wider industrial groupings.

6 CALLS FOR PROPOSALS AND CONTACTS

NEST Calls for Proposals can be consulted on the Cordis information website www.cordis.lu.

Contact information:

NEST web-site: <http://www.cordis.lu/nect>

6th framework programme: <http://www.cordis.lu/fp6>

...contact points...

Contact point for further information: rtd-nect@cec.eu.int

⁵ NEST SUPPORT

Annex 1: Evaluation criteria**ADVENTURE STREPs: Specific Targeted Research Projects****1. Relevance to the objectives of the programme**

Does the proposed project match the **spirit of ADVENTURE**:

- Does it open up **new or emerging areas of science and technology**, is it highly **novel**, does it have **tangible, ambitious and challenging objectives**, is it a **high impact/high risk project** ?
- Does the envisaged research **cut across or lie outside** the thematic priorities?

2. Scientific and technological excellence

- Are the objectives tangible and **challenging**, in the sense of a **clearly defined** scientific achievement or basic technology, and highly ambitious ?
- Do they represent **clear progress well beyond the current state-of-the-art**?
- Does the research feature **significant and clearly identifiable elements of novelty**? Is it **highly innovative**?

Outline proposals only

- Is the proposed scientific / technological approach **plausible**?

Full proposals only

- Is the proposed scientific approach **well thought out and scientifically sound**? Could it enable the project to achieve its objectives?

3. Potential impact

- If successful, will the project have a **large impact on Europe's scientific or technological capability**, in areas with a potential, perhaps **long-term, societal or economic impact**?
- Are the **potential benefits** sufficiently large to justify the level of **risk** of the project?
- Will the impact be best achieved if the project is carried out at **European level**?

4. Quality of the consortium**Full proposals only**

- **Do the participants collectively constitute a consortium of high quality**? Do the **key research personnel** have sufficient credibility for the task?
- Is all the necessary **expertise** available in the consortium? Are the participants **well-suited to the tasks** assigned to them? Are they **committed** to the project?
- Is there **good complementarity** between participants?

5. Quality of management**Full proposals only**

- Is the **project management** of demonstrably high quality?
- Are there satisfactory provisions to deal with the inter-disciplinary aspects and **important risk elements**?
- Is there a satisfactory plan for the **management of knowledge** (e.g. dissemination, use, intellectual property, etc.) and for promoting innovation, where relevant?

6. Mobilisation of resources**Outline proposals only**

- The evaluators will comment on, but not assess, whether the resources requested seem reasonable for achieving the project objectives.

Full proposals only

- Are the foreseen **resources** (personnel, equipment, financial, ...) **necessary and sufficient** for success?
- Are these **resources convincingly integrated** to form a coherent project?
- Is the **overall financial plan** for the project adequate?

Thresholds

Criterion	Outline proposals	Full proposals
1	4	4
2	4	4
3	3	3
4	Not applicable	3
5	Not applicable	3
6	Not applicable	3

Evaluation criteria ADVENTURE CAs: coordination actions

1. *Relevance*

- The extent to which the proposed project **addresses the objectives** of the work programme

2. *Quality of the coordination*

The extent to which:

- The research actions / programmes to be co-ordinated are **of demonstrably high quality**
- The **coordination mechanisms** proposed are sufficiently **robust** for ensuring the goals of the action

3. *Potential impact*

The extent to which:

- The proposal demonstrates a clear **added value** in carrying out the work at European level and takes account of research activities at national level and under European initiatives (e.g. Eureka)
- The Community support would have a real impact on the action and its scale, ambition and outcome
- The project mobilises a critical mass of resources in Europe
- Exploitation and / or dissemination plans are adequate to ensure **optimal use of the project results**, where possible beyond the participants in the project

4. *Quality of the consortium*

The extent to which:

- The participants collectively constitute a **consortium of high quality**
- The participants are **well-suited to the tasks** assigned to them
- The project combines the **complementary expertise** of the participants to generate added value with respect to the individual participants' programmes

5. *Quality of the management*

The extent to which:

- The **project management** is of demonstrably high quality
- There is a satisfactory plan for the **management of knowledge**, of intellectual property and of innovation-related activities

6. *Mobilisation of resources*

The extent to which:

- The project provides for the **resources** (personnel, equipment, financial ...) necessary for success
- The resources are **convincingly integrated** to form a coherent project
- The overall **financial plan** for the project **is adequate**

Thresholds

Criterion	Outline proposals
1	3
2	4
3	3
4	3
5	3
6	3
Total score	21