

Evaluation of INRIA Project-Teams

INRIA is a national research institute in applied mathematics and computer science. It fosters international-level scientific excellence and a high level of impact in technology transfer. The Institute plays a leading role in the international scientific community in its field; it is a major contributor in technology development. To achieve its mission, the institute ensures that its evaluation process remains demanding and of a very high quality. This brief document describes INRIA evaluation process and criteria.

1. INRIA Project-Teams

The basic research unit at INRIA is the project-team. It is a group of about 15 to 20 scientists, including INRIA researchers, faculty members, PhD students and post-doctoral fellows. A project-team is created for four years and renewable at most twice. It is a consistent group focused around a scientific project with clearly defined objectives and a research program. Therefore, it should be much more than the mere concatenation of the research topics of its members. The team leader is in charge of the scientific leadership and coordination of the work of the team towards its objective.

<i>Areas</i>	<i>Themes</i>
<i>Applied Mathematics, Computation & Simulation</i>	<ul style="list-style-type: none"> ▪ Computational models and Simulation ▪ Stochastic Methods and Models ▪ Optimization, Learning and Statistical Methods ▪ Modeling, Optimization, and Control of Dynamic Systems
<i>Algorithmics, Programming, Software & Architecture</i>	<ul style="list-style-type: none"> ▪ Programs, Verification and Proofs ▪ Algorithms, Certification, and Cryptography ▪ Embedded and Real Time Systems ▪ Architecture and Compiling
<i>Networks, Systems & Services, Distributed Computing</i>	<ul style="list-style-type: none"> ▪ Networks and Telecommunications ▪ Distributed Systems and Services ▪ Distributed and High Performance Computing
<i>Perception, Cognition & Interaction</i>	<ul style="list-style-type: none"> ▪ Vision, Perception and Multimedia Understanding ▪ Interaction and Visualization ▪ Knowledge and Data Representation and Management ▪ Audio, Speech, and Language Processing ▪ Robotics
<i>Computational Life & Environment Sciences</i>	<ul style="list-style-type: none"> ▪ Observation and Modeling for Environmental Sciences ▪ Observation, Modeling, and Control for Life Sciences ▪ Computational Biology and Bioinformatics ▪ Computational Medicine and Neurosciences

As of 2009, INRIA has about 170 project-teams in its 8 research centers. These project-teams are clustered into 20 *themes*, further organized in five areas (table 1). A theme is a scientifically homogeneous set of project-teams sharing similar objectives, methodology and scientific tools (about eight in average). A theme is not a department; it has no

budget and no administrative structure. Its main purpose is to structure and allow for the monitoring of INRIA project-teams, and to permit a scientific coordination of INRIA activities through a rigorous evaluation.

2. Evaluation seminars

All the project-teams in a theme and the theme itself are evaluated every four years within an evaluation seminar (which takes place in English). Individual evaluation of a project-team consists in assessing how creative and productive it is and how it compares to the other INRIA project-teams and to the best similar groups worldwide. The global theme evaluation consists in assessing INRIA activity in the theme: relevance, covered and missing activities, overlapping, coordination, and partnerships. Besides assessing the local quality of the project-teams and themes, the continued evaluation process makes it possible for INRIA to maintain a global vision of its activity and missions, and to define a global strategy and scientific policy.

A theme evaluation panel consists of about a dozen international experts, each well known in the evaluated theme. One of the reviewers is asked to chair the panel. In addition to the members of the evaluated project-teams and to the reviewers, members of the INRIA management and its Evaluation Commission attend part of the seminar.

The seminar is divided into two main sessions:

- *A plenary session*, which starts with a global scientific presentation of the evaluated theme at INRIA, and continues with a presentation of each project-team by its leader: overview of the goals and achievements, placement in the international context, relevance and impact, and proposed update of the objectives for the future.
- *Parallel sessions*: for each project-team, a subset of at least three reviewers proceeds with a detailed examination of the activities of the team in restricted parallel sessions attended only by members of the project-team and some members of the evaluation commission. The reviewers have complete freedom over the inquiries to be made at these sessions.

Before these technical sessions, the reviewers meet INRIA management for a general presentation of INRIA, its strategic plan, its evaluation objectives and criteria, and the composition of the theme to be evaluated.

3. Evaluation criteria

The evaluation panel assesses the scientific achievements, the technology transfer activities, the contributions to teaching and training through research, as well as the scientific dissemination activities of the evaluated groups. The evaluation criteria are the following:

- **Scientific achievements**, assessed in terms of contributions to
 - *the progress of knowledge* (publications);
 - *the advance of technology* (research software and other developments).Assessment is based on scientific creativity, originality and relevance of the contributions, results obtained and anticipated, difficulties overcome or predicted, successful and hoped-for innovations, and methods used. All these elements are assessed against the goals previously set in the project and the worldwide evolution

of the field. The updated objectives of the project-team for the future are also appreciated.

- **Adequacy to INRIA scientific strategy:** the purpose here is to evaluate the project-team contributions to the accomplishment of INRIA priorities and strategy. A major concern is the team's partnerships within INRIA or with other national and international teams. Particular attention is paid to involvement into multidisciplinary and integrative research and into topics that are not well-covered within existing project-teams.
- **Innovation and technology transfer:** this criterion assesses technology development activities towards applications and innovations. Grants from industry and their outcome, involvements into industrial partnership activities and their impact, transfer of research software, patents, contributions to industrial standards, and contributions to startup companies are appreciated.
- **Manpower and means:** the international reputation and attractiveness of the project-team are appreciated. Evolution of project-team personnel is considered: number of researchers appointed, ratio of senior researchers, number of PhD students, post-docs and engineers. Availability of equipment and involvement into research platforms is taken into account. Mobility of tenured researchers towards universities and industrial companies is viewed as of particular interest.

The evaluators are invited to comment on the individual project-team objectives for the next four years. They are asked to assess INRIA activities in the theme, particularly about the existence or the lack of collaboration between project-teams and about domains that receive too much or too little coverage.

4. Evaluation report and follow-up

Each reviewer is invited to comment on the project-teams assigned to him as well as on the other project-teams. The panel chair is responsible for collecting the reviewers' contributions and producing a comprehensive report. The report contains the panel's view on INRIA activities in the evaluated theme, plus a detailed assessment report on each project-team. It is expected to be delivered no later than two months after the seminar.

After delivery, the report is transmitted to the evaluated project-teams, to the INRIA Evaluation commission, and to the INRIA management. The project-team leaders are invited to react to the report. The INRIA Evaluation Commission then makes specific recommendations for each project-team based on the panel's report and on the responses from the team-leaders. These recommendations are presented to the INRIA Scientific Board, which further analyses the report and makes follow-up recommendations, globally for the theme, and individually for each project-team.

On the basis of the report and the Evaluation Commission and Scientific Board recommendations, INRIA management decides for each project-team a fixed-term extension, a halt, or any other decision to be implemented by the team in coordination with the Evaluation Commission. The final decision is generally in line with the report and recommendations, though, exceptionally, the President can decide on a different direction due to particular circumstances.