

A guide for writing an application for CNRS openings "chargé de recherche classe normale" and "directeur de recherche de 2ieme classe"

Section 6 du comité national de la recherche scientifique (<http://cn6.fr>)

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This text is written by the section 6 of Comité National (CoNRS), during its term 2016-2021. The members of the section 6 of CoNRS constitute a committee in charge of evaluating applications for CRCN and DR2 positions and proposing an ordered list of selected candidates. This list serves as a basis for the "jury d'admission", who makes the final decision on which candidates from the list are awarded positions, and in which laboratories. Below we will use term "committee" to designate the members of section 6 of Comité National.

With this guide, the committee does not want to impose strict rules, but rather provide some suggestions as to how to present your application as clearly as possible, based on its experience since September 2016. The guide does not have any official status and does not bind CNRS nor the future terms of the section 6 of CoNRS.

The CNRS proposes the *guide du candidat* <http://www.dgdr.cnrs.fr/drhchercheurs/concoursch/pdf/guide-en.pdf>, Here we go deeper into some aspects of writing an application.

Section 6 of CoNRS has published a description of its evaluation criteria https://members.loria.fr/SPerdrix/files/cn6/doc/criteria_CN6_v3.pdf. The present document complements this description. It is not intended to present new evaluation criteria, but rather to help candidates present their activities and contributions in the light of these criteria.

We start with some general observations on writing an application. Then we review the structure of applications for CRCN and DR2 positions, before considering in more detail the different parts of the application.

1 General rules

For all types of applications, the golden rule is conciseness, provided it does not hinder precision and clarity. The second rule is to structure information so that key points of the application stand out clearly. During the selection period, each member of the committee handles typically 20 to 25 applications; all members of the committee have access to all the documents (with exceptions due to, for example, a conflict of interests) and look through them. This represents a significant volume of work. A clear and well-presented application allows the members of the committee to easily and fully appreciate the application.

When writing an application, it is important to keep in mind that the committee covers a large scientific spectrum (the list of scientific keywords, as well as the list of committee members can be found at <http://www.cnrs.fr/comitenational/sections/section.php?sec=06>). All members of the committee are researchers in computer science. Some may be specialists in your field, but you should not rely on this. Therefore, the scientific parts of your application should be written in an accessible and didactical way. The presentation should reflect the relative importance of your contributions and should put them into a larger context.

For factual parts of the application (such as CV, or description of your past activities), it is particularly important to present information in a hierarchical fashion. Avoid lengthy unstructured lists from which it is very difficult to extract valuable information. When it seems appropriate, it may be useful to add a URL indicating where information can be verified or complemented. In general, candidates should ensure that all presented facts are strictly correct at the date of writing. Members of the jury often try to substantiate the provided information. If they discover information that is not strictly correct, this can cast a doubt on the whole application.

2 Structure of an application

This section presents the structure of CRCN and DR2 applications together with pointers to later sections explaining the content in some detail.

2.1 CRCN application

The CNRS provides a guide for CRCN applications <http://www.dgdr.cnrs.fr/drhchercheurs/concoursch/pdf/guide-en.pdf>

For CRCN applications, the report on past activities («*rapport sur les travaux effectués*») normally covers only the description of scientific results, omitting other activities (program committees, invited talks, supervision, organization of events, awards, etc). Those other activities are presented in a CV.

The list below shows the various parts of the application, giving for each of them a pointer to a relevant section of this guide.

Required elements

Application form and résumé: Section 3.

Curriculum vitae: Section 4 (see also Section 7).

Diplomas.

Publication list: Section 5.

Report on past activities: Section 6.

Enclosed publications: Section 6.1.

Research project: Section 8.

PhD: title, résumé, members of the jury

Report of the jury of the PhD

Optional elements

Text of the PhD: recommended (a URL is enough).

Reports of the reviewers of the thesis: recommended. Section 10.

Recommendation letters: Section 9.

Supplementary documents: Section 10.

2.2 DR2 application

The CNRS provides a guide for DR2 applications <http://www.dgdr.cnrs.fr/drhchercheurs/concoursch/pdf/guide-en.pdf>

For DR2 applications, the report on past activities («*rapport sur vos activités antérieures*») contains not only a description of scientific results, but also of other activities. Applicants who are members of CNRS may reuse elements of their regular activity reports for preparing their DR2 application.

Required elements

Application form and résumé: : Section 3.

Curriculum vitæ : Section 4

Diplomas.

Publication list : Section 5.

Report on past activities: Sections 6 and 7

Enclosed publications : Section 6.1.

Research project : Section 8.

Optional elements

Recommendation letters : Section 9.

Habilitation reports: recommended. Section 10.

Supplementary documents : Section 10.

3 Application form and résumé

These elements provide a high-level overview of the rest of the application. The suggestions presented below apply also to the application form and résumé.

4 Curriculum vitæ

First of all, a CV contains the standard factual information: present status, past employments, education, diplomas, etc.

For CRCN applications, we recommend that the CV contains also a brief presentation of other scientific activities: prizes, program committees, invited lectures, supervision, projects/grants, etc (cf. Section 7).

For DR2 applications, due to the number and variety of scientific activities, it is often preferable to present them in more detail as well as to describe an appropriate context. This can be done in the report on past activities. In this case, in order to avoid redundancy, the CV can be very brief, describing simply past employments and education.

5 List of publications

In many applications, the presentation of the publication list is not completely satisfactory.

Different communities often have very different publication practices. Certain research communities publish predominantly in journals, while others publish almost exclusively in conferences. In certain communities, the order of authors depends on their contributions, while in others, it is strictly alphabetic. Consequently, it may be sometimes useful to preface your publication list with a paragraph explaining these, and possibly other, points, to aid in its interpretation.

It is essential to structure the publication list in order to make it easier to judge the quality of different publication venues. Sometimes one sees lists in which all publications are mixed together: highly selective conferences next to workshops, next to short publications, or even next to posters and demos without an associated publication. Things may get even more confusing

when the same conference has several tracks with different kinds of publications. During evaluation, different publication types are of course not considered to be of the same level, but this requires a classification effort from the committee and may be a source of confusion.

Finally, it is essential that all information in the list of publications is correct and up to date. Even an accidental error, like an article at a very good conference that, upon verification, turns out to be a poster or an article at an associated workshop, makes a very bad impression.

It is also recommended to keep your website up to date and to make all of your publications accessible. If it is not possible to post a published paper due to copyright issues, an alternative is to make available an author's version, preferably linked to arXiv or HAL.

6 Scientific results

The presentation of scientific results should aim at clarity and conciseness.

In general, the committee finds that 6-7 pages are often sufficient for this section, especially for CRCN applications. This limit is just a suggestion and not a requirement. In many cases, instead of presenting all scientific results, it may be advantageous to operate a selection.

The presentation of research activities should be adapted to all researchers of the committee (as far as is reasonable). By this we mean that every effort should be made to clarify the overall approach, and your contribution, in the context of your research domain. The originality, perceived importance, and technical difficulty of the results are important criteria for the evaluation. Unfortunately, candidates often fail to position their results within a larger context (important open questions, different approaches, main obstacles and tools, etc.). An insufficient presentation of the context makes the appreciation of the importance of the results more difficult.

The evolution of research interests should be projected onto the different phases of the career: PhD, postdoc, long-term visits, etc. Concerning scientific collaborations, if the personal contribution is mentioned, it is preferable to adopt an honest and direct approach: emphasize personal contributions without claiming more than is due.

The above remarks apply also to software development, and other scientific productions as discussed in the paragraph 6.2.

6.1 Enclosed publications

An application should be accompanied by publications, maximum 3 for CRCN candidates, and maximum 5 for DR2 candidates. The application should put these into a broader context, and explain their choice. It is these publications that will be most probably read, often in detail, by members of the committee (normally, each referee reads at least one article). The chosen publications are crucial towards the appreciation of the quality of the work of a candidate. Therefore they need to be chosen by taking into account their readability, but also the originality, creativity, and impact. Articles with a real, tangible and incontrovertible scientific content are preferable to "position" or "opinion" papers.

6.2 Software development and other artifacts

Software development as well as development of other artifacts, such as datasets, is also considered to be scientific output; see our document on evaluation criteria https://members.loria.fr/SPerdrix/files/cn6/doc/criteria_CN6_v3.pdf. These may be a result of autonomous activities or participation in existing projects. As it is the case for publications, presentation of these developments should allow to committee members to fully appreciate your contribution (originality, difficulty, impact and scope, applicability and user base, indices of use for software, volume of users for experimental platforms, etc.) Quite often, originality and difficulty behind such developments

is not sufficiently clearly addressed in applications. In some cases it may be useful to describe even modest developments, for example a prototype confirming the efficiency of a theoretical approach.

For more guidelines on presenting software development, section 6 recommends a document written by the scientific council of INS2I

<https://csins2i.irisa.fr/files/2016/09/FicheLogicielsCliquableCSI-INS2I.pdf>.

Testing is another way to evaluate software. It is recommended to make software development accessible online and to provide an installation guide.

Concerning patents, please refer to paragraph 7.6.

7 Report on past activities

A report on past activities contains a description of scientific results, cf. Section 6. In case of DR2 applications, it is followed by a detailed presentation of all other activities (we do not give any indication of a page limit for this part). For CRCN applications, there are not that many such activities, usually, or they are less substantial, so their presentation in a CV is often sufficient. CRCN candidates can nevertheless consult the present section to get an idea of what to put in a CV.

The variety of activities appearing in DR2 applications is extremely large. It is not required to "tick all the boxes". In your presentation it is essential to emphasize the most important activities, together with their context so that they can be adequately appreciated. Contextual elements allow a better understanding of your role and your investment: personal contribution, volume of work due to an administrative task or collective service, etc.

7.1 Supervision, teaching

All kinds of supervision can be reported (internships, post-docs, etc.), but it is particularly important to list PhD supervisions or co-supervisions. In the case of co-supervisions, a percentage of involvement should be indicated, and if necessary, clarifications on the co-supervision arrangements. Pertinent information to describe a supervised thesis include: the duration of the thesis, the subsequent employment of the student, indicators of the quality of work that has been done, and its recognition by the community.

For teaching, information should include its type, the number of hours, and any other information about the context that may be relevant. Evaluation concerns mostly teaching of novel subjects at a master level or above, presentations at summer schools, etc.

7.2 Visibility

Examples of information to be included in this section are: invited talks at conferences, international schools, seminars; participation in program committees of conferences and editorial boards of journals; participation in PhD or habilitation committees; prizes and distinctions; as well as high profile projects like, for example, ERC.

This section is often not well presented in applications: it takes a form of a long list without any structure. For invited talks, one should not mix plenary talks at major conferences, talks at small, invited-only workshops, and presentations at invited seminars. It may be useful to describe the context, for example a prestigious seminar that the committee may not know about. Similarly, for participation in program committees: one should not mix major conferences and modest workshops. The most important items can be emphasized and accompanied by a URL.

7.3 Contracts and collaborations

Participation in contracts and scientific projects should be listed here. Industrial contracts can be also presented in the section "Transfer" (Section 7.6). Make sure your role in the project (PI, local coordinator, participant) is stated precisely; if relevant, include the workload that it represents, and an impact on your scientific activities.

It may be interesting to also present informal collaborations with a substantial impact on your career (regular visits, exchanges of students, joint publications, etc.)

7.4 Organization

Describe all organizational activities of scientific character, for example: conferences, workshops, summer schools, etc. It is useful to provide URLs.

7.5 Administration

Describe your implication in collective duties, see our document with evaluation criteria for examples https://members.loria.fr/SPerdrix/files/cn6/doc/criteria_CN6_v3.pdf. The nature of collective duties can vary considerably; it is important to give enough information so that the committee can have an idea of the workload each duty represents.

7.6 Technological and industrial cooperation and transfer, industrial contracts, partnerships

Describe all of your activities bringing the results of research to the society. These include activities of cooperation and transfer to industry, contracts with industrial partners (including "CIFRE"-type PhDs), and more generally the use of your scientific expertise for society (for example consulting). For a committee to evaluate such activities, it is important to specify the nature of a contract (institutions involved), list of participants, topic of the contract, its results, if possible with pointers to reports. For example, when reporting participation in creating a start-up, give information that makes it possible to evaluate the investment it represents, and transfer of expertise, be it in the past or in the future.

Patents should appear in this section. If they are not commercially exploited, they will be considered as second-rate publications.

7.7 Dissemination and popularization of science

As in other sections, give if possible a URL to a site describing the event. Describe your responsibility or contribution, so that the committee can appreciate the nature of your involvement and the volume of work it represented. If possible, give a URL to a website describing the event/contribution.

7.8 Evolution of career and mobility

Describe the principal stages of your career, explaining (if applicable) such aspects as geographical or thematic mobility, and their consequences for your research. Long stays outside of your home department can be presented in this section.

8 Research project

As an estimate, in order to avoid to be too verbose or too laconic, the presentation of the project should take about 4 pages, not counting the bibliography and the integration plans with proposed teams (required only for CRCN applications, and in the case of mobility for DR2 applications).

A good research project states and motivates scientific objectives together with their challenges in a way that is understandable to all the members of the committee, without assuming their familiarity with the domain (you can, however, rely on the information you provided in the "report on past activities"). The committee should be able to evaluate a vision of the domain and positioning of the project in its context, presentation of ambitious and realistic research directions, and a division of the project into phases with shorter and longer perspectives. The project is usually supplemented, for example, with a methodology, a strategy, or research objectives, that should be sufficiently precise so that a more expert reader can judge their novelty, relevance, and feasibility.

For CRCN, a research project usually concerns only the applicant, and has a horizon of about 5 years. The scope and time horizon is longer for DR2 applications, where the project normally includes also present or planned PhD students, post-docs, and possibly other researchers.

8.1 CRCN integration

CRCN applicants must propose host laboratories: CNRS recommends at least three. These laboratories must be affiliated with section 6 of the INS2I institute at CNRS, at least as a secondary affiliation (except for calls concerning special multidisciplinary positions explicitly mentioning other disciplines than computer science). You should present an adaptation of your research program to the laboratories and teams you have indicated, thus motivating the compatibility and pertinence of your choice (connections with your previous activities, collaborators, complementarity of expertise, etc.).

A piece of advice: in some countries, academic work by tenured faculty is carried out by individual professors with a small group composed mostly of their own PhD students and postdocs. In France, all tenured faculty associated to a CNRS laboratory work within a research unit called "team", which is the smallest research unit explicitly recognized by CNRS. Writing a credible integration project requires actively getting in touch with the person responsible for the team well before the CNRS call deadline, and agreeing on a research project of mutual interest. The minimum token of a credible integration project is a support letter from the directors of all the proposed hosting laboratories (see Sect. 9).

8.2 DR2 integration

For DR2 applications, if the project contains a mobility plan, it should be presented and motivated in the same way as explained above for CRCN.

9 Recommendation letters

The committee prefers that recommendation letters be sent directly to the president by their authors (comon-cnrs@lsv.fr), ideally before the "instance d'équivalence" meeting (the next one is going to be on 19th of January 2021). Alternatively, they can be also transmitted through the form available at <http://www.cnrs-bellevue.fr/formulaires/scc-recommandation.php> before the application deadline, as proposed in CNRS guidelines. The committee prefers to limit the number of recommendation letters to 3 per candidate, not counting optional letters from proposed host laboratories and teams.

The main objective of recommendation letters is to provide an appreciation of the candidate in the French and international communities, give an opinion on the impact of her work, and on her visibility. To a lesser extent, they testify to the personal qualities of the candidate, or may bring to the attention of the committee some factual elements, present a context, or a perspective on the work of the candidate and her positioning in her research domain.

It is preferable to avoid redundancies in the choice of authors of recommendation letters. For example, it is often counterproductive to join letters from two close collaborators. Warm

letters from prominent scientific personalities (especially when not close collaborators) may have considerable weight, but an excellent letter from an expert is better than a lukewarm letter from an eminent researcher. It is preferable that the letters be as recent as possible, in order to most accurately reflect the activities of the candidate.

10 Supplementary documents

The submission platform allows applicants to upload documents of their choice to the application. It is recommended to use this possibility to provide reports from the reviewers of your thesis (for CRCN application, to accompany the report of the thesis defense) or habilitation reports (for DR2 applications). Aside from these two cases, the possibility to add documents is rarely used, it mostly happens when the committee should be informed about some important elements.
