Guide for applicants for the post of Research Director, Grade 2 at Inria

Prepared[*] by Alain Girault (author), Patrick Gros, Nicolas Holzschuch, Philippe Nain (author),
Bruno Sericola and Paul Zimmermann

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1   Introduction

The purpose of this guide is twofold. Firstly, it suggests a number of points to be considered when deciding whether to apply or re-apply for a post of Research Director, Grade 2 (DR2) at Inria. Then, once that decision has been made, it offers advice on preparing an application and warns against a number of possible pitfalls. The objective is not to force all applications into the same mould, but rather to encourage applications that highlight the outstanding strengths of the applicant without simply "filling in all the boxes" regardless of their relevance in the belief that the selection panel will penalise any blanks.

With regard to terminology, we speak of "DR2 recruitment" rather than "DR2 promotion" because the process is a national public sector competition open to anyone holding a doctoral qualification (or equivalent), with at least eight years experience of working as a scientific researcher or in a scientific position considered to be equivalent. It is also open to current Inria Chargés de Recherche (CR) researchers who have held that category for at least three years[2].

The following guide is written with these Inria CR researchers in mind. However, the advice and the pitfalls to be avoided apply equally well to all other potential applicants.

2   Research Director, DR2

It is widely known that an Inria Research Director is a managerial position within Inria and, as such, their responsibilities include that of speaking on behalf of the Institute to the wider world outside it. Naturally, such a person will have the ability to set up and lead innovative research projects employing a range of more junior researchers including PhD students, CR researchers and lecturers. A Research Director may also have established a specific school of scientific thought, becoming a respected leader in their own particular field. And, of course, they will also be active in the administration of research and the Institution as a whole, through leadership of a research team and participation in the wider management of Inria via membership of committees and commissions. Finally, we must not forget all their other important tasks including technology transfer, obtaining national and international funding, leadership of their scientific community (membership of programme committees, organisation of conferences and publishing activities, etc.), teaching and scientific mediation. Surely enough to make any applicant's head spin!

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[*] The working group, consisting of the members of the Evaluation Committee (CE) listed above, was established during the course of a video conference held on the 21st July 2014. An initial version of this document was drafted and discussed in depth at a plenary session of the Evaluation Committee held on the 20th

[1] 2nd version, January 11, 2017 (Hugues Berry and Alain Girault); 3rd version, January 4, 2018 (Alain Girault).

[2] Since 2017, the CR2 and CR1 categories have been merged in a unique category CRCN.

3   Expectations of the Preliminary Selection Panel

While all the qualities listed in Section 2 are present to a high degree of excellence within the Inria DR2 community, it is rare to find them all present in a single person.

The Preliminary Selection Panel will not object to an applicant excelling in most of these activities. The Institute recruits enough brilliant researchers to ensure that some do approach this exalted level. But this is a long way from being the general case, which is probably a good thing from a diversity point of view.

The Panel expects that applicants for a DR2 post will present a clear and justified description of their strengths, in the knowledge that a few weaknesses will not debar them from success providing, of course, that their scientific record is a strong one. For example, there are many cases of Inria CR researchers being appointed to a DR2 post despite never having managed an Inria project team.

One important point to be borne in mind is that the recruitment process is a competition, not an examination. Unfortunately, since 2011, the number of Inria CR researchers appointed to DR2 posts remains low (around 10 each year since 2011) in comparison with the number of Inria CR researchers who apply (around 50 each year, see Figure 1). The figures are even worse if compared with the total number of Inria CR researchers. There are no indications that this situation will improve in future years.
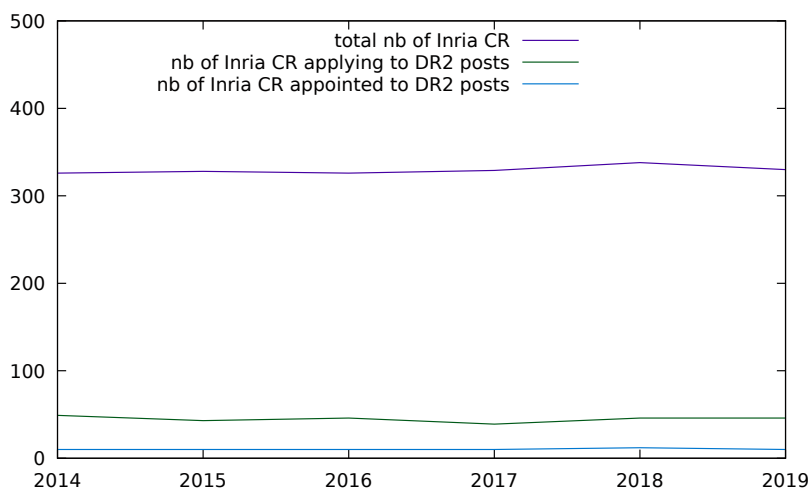

FIGURE 1 – Growth in the number of Inria CR researchers and the number successfully recruited DR2.

4   When to apply

4.1   Age

There is no age limit for Inria CR applicants, providing that they have spent at least three years at that grade. Even if this requirement is satisfied, applications should not be made simply to "go through the motions" if the applicant feels that she or he is not yet ready. Advice should be sought from your Project Team manager, Scientific Delegate or Centre Director.

4.2   PhD Supervisor Qualification (HDR)

While the official rules of the DR2 competition do not specify that applicants must be qualified to supervise PhD students by holding an *Habilitation à Diriger des Recherches* (HDR), this is normally required of all Inria

CR applicants, and all other applicants who have received a university education in France, unless there are special circumstances justifying an exception. Very few such exceptions have been granted since 2000.

If they have not obtained an HDR at the time of application, applicants may include reports with their application indicating that permission to supervise could be granted. In that case, the Preliminary Selection Panel will consider the application on the assumption that the applicant does, in fact, hold an HDR.

It should be noted, however, that an application including the date of application for an HDR and the names of the relevant assessors, but no reports, will have very little chance of being accepted by the Preliminary Selection Panel, all the more so if the applicant claims that "an HDR will be obtained before the end of the year", as happens regularly (yes, really!).

4.3   Refresh and enhance your application

The number of CR researchers with an HDR, i.e. the number of potential DR2 applicants, is significantly greater than the number of posts available in the competition, and the number of Inria CRCN applicants applying each year is over fifty. Applicants should not therefore expect to succeed at their first attempt (although this does happen in a few cases every year). There is also evidence that the average age of successful DR2 applicants is rising (currently over 40), as is the number of successive applications. It is therefore essential to be aware of this pressure and not to become discouraged in the event of failure, even if this is repeated (see Section 4.3).

In the face of a series of failures, it is natural for an applicant to question the value of applying yet again. It is true that, without significant changes to the application, failures can multiply. A series of applications with no indications of career progression can have a negative effect on selection panels. The composition of selection panels is never the same, but the panels for successive years do contain a significant overlap of members as they are mainly drawn from members of the Evaluation Committee.

5   A Project-Team Manager (REP) – Essential or not?[3]

Being an REP is neither a necessary nor a sufficient condition for appointment to the DR2 grade. There are many examples of CR researchers appointed to DR2 without having been an REP.

There are many ways of contributing to the life of the Institute and gaining a reputation outside the confines of one's own scientific field. Being an REP is certainly one – but there are others, both at a local level (leader of a committee or member of a Project Committee, etc.) and at national level (leader of an IPL[4], task manager, European project coordinator, member of the Evaluation Committee, member of the Scientific Council, etc.) – These lists are far from being exhaustive. It is also often the case that several research themes co-exist within a single project team. Acting as coordinator for one of these themes is another way of taking on additional responsibilities.

6   PhD supervision

A total lack of any experience as a PhD supervisor or co-supervisor may be problematic. An application will almost certainly be seen as weak if the applicant has not supervised or co-supervised a successful PhD student before the day of the competition.

Management of post-docs, research engineers and interns is advantageous, but it cannot compensate for the total absence of successful PhD supervision.

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3 REP = Project Team Manager (Responsable d'Equipe-Projet).
4 IPL = Inria Project Lab.

7 Establishment and management of projects and contracts

The establishment and management of research projects (ANR, European projects, ERC[5] projects, etc.) is a real advantage to an applicant as it demonstrates an ability to work independently, a degree of scientific maturity, visibility at a national or international level, and recognition. However, everyone appreciates that this is difficult to achieve in the face of intense competition. A virtuous circle tends to occur; applicants who have set up one or more research projects have greater recognition and their application tends to be better prepared, simply because they know how to prepare a good application.

A note regarding ERC projects; obtaining such a project is neither a sufficient nor a necessary condition for rapid appointment to DR2, but it certainly confers an advantage on the applicant (as does any similar prestigious success).

8 Geographic mobility and Research Topic Mobility

Geographic mobility has been rewarded some years by the availability of certain posts reserved for persons who have moved from one Inria Centre to another in the years prior to the competition, or who are in the advanced stages of a planned move. Rather than promoting geographic mobility in a systematic way, it seems preferable to reward those that bring added value for the candidates, for the Inria Centre and for Inria in general.

Research-topic mobility is another aspect of mobility. There are no hard and fast rules. Some DR2 applicants have built a research career in one single field, while others have moved regularly from one scientific subject to another. It is, however, certain that any change in scientific specialism takes time to bear fruit. The amount of added value to be achieved for the applicant, for their team and for Inria should be considered carefully. The arguments are similar to those relating to geographic mobility (and both often go together).

9 The application document

The first question to be considered is the target audience for the DR2 application. Primarily, this should be your assessors, members of the selection panel especially chosen for their expertise in your field of research (which does not necessarily imply that they are experts in *your* research topic). However, consideration should also be given to the selection panel as a whole who are unlikely to be experts in everything. A certain amount of explanation is therefore necessary! A poorly written application is a very effective way to have it rejected.

9.1 The detailed CV

This follows the traditional format (see Form 2). The final "Miscellaneous" section merits a comment. You should use this section to explain gaps in the publications record due to absence due to illness, moving due to spouse's employment, maternity leave etc. The selection panel will pay particular attention to equality of opportunity, especially with regard to female and male researchers.

9.2 Summary of activities

This is the first section of the application to require extra care in preparation (Form 3). Given that the following five sheets will be used to describe your major contributions in detail, this section should be used to give a perspective (e.g. by detailing the scientific coherence of your career path), explaining each geographic move or change of research subject if necessary. This section also provides an opportunity to mention any contributions that don't fit well in the five subsequent sheets.

9.3 Major contributions

These five sheets should be used to describe your main contributions (Form 4). The first sub-section "Description" is traditional, but it is here that an explanation for non-specialists is needed. The two following sub-sections, "Personal contribution" and "Originality and difficulty" are the most difficult to write. Scrupulous honesty is required, stressing your personal contribution, but not claiming all the credit for yourself. Where the contribution has been part of a team, collaboration, or joint development, the "Personal contribution" section

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5 ERC = European Research Council.

should make your part in the collaboration clear.

The five sheets should be used to **highlight your strengths**, the **originality** of your scientific path or your **creativity** explaining the reasons why you are recognised within your scientific community. If your strengths are all academic achievements, then write five "academic" sheets. However, if you have written a major piece of software, widely used within your scientific community, then you should write a sheet about this software. Other possibilities for these five sheets include your contribution to a research community as a Project Team manager, leader of an Inria Project Lab, holder of a European project, founder of a new series of conferences, or source of significant technology transfer, etc. Again, this list is not exhaustive.

Finally, the application pack includes five sheets giving a maximum of five pages. It is possible to write sheets that are longer than a single page or shorter than a page, or to write fewer than five sheets. However, it is essential that the overall total does not exceed five pages. The same goes for the application as a whole. You must comply with all limits on the maximum length of a section.

9.4 Research programme

One of the criticisms most frequently levelled at DR2 applicants relates to a lack of experience. It is recognised that it is very difficult to write a research proposal without sufficient research experience. Moving from CR to DR2 is a critical career step intended for researchers with more that ten years of post-doctoral experience in research. The proposed research programme is therefore expected to have been written by someone who knows how to do research, and who can put forward a long-term vision of their field of research with a set of targets that are both ambitious and realistic, together with corresponding mileposts to measure their attainment. This is a step change by comparison with applications for CR (or for CR2).

The **entire** application will be judged in the light of this increased expectation of experience, including all achievements, publications, letters of recommendation, editorial activities, collaborations, management and teaching activities, etc.

One final point relating to repeat applications; It is essential to **update** your research programme every year. Proposed avenues of research from a few years ago will by now be established results, effectively depriving your research programme of some of its content.

9.5 List of publications

Particular care must be taken when preparing your list of publications. It is important to indicate clearly the type of each publication (book, journal paper, peer-reviewed conference, book chapter, etc.), and to list each type of publication separately in chronological or reverse chronological order (2015, 2014, etc.). Specify the standard method of listing authors used in your research community (alphabetical order, largest contributor listed first, PhD student listed first, etc.). Finally, applicants are **strongly** advised to update their personal web pages so that all publications are perfectly visible and accessible.

Applicants are asked to list the three publications of which they are most proud, and which best characterise their research and their expertise. Your assessors will want to read these three publications so it is **essential** that they are accessible on your web pages. One can hardly give specific advices as to which publications to select, because each field comes with its own customs (in terms of technicality, length…), and the applicant profiles are very diverse (more or less theoretician, more or less in software development, technology transfer, or science mediation…). However, one can easily advise against publications that would be either too descriptive or too verbose (i.e., with not enough scientific content). On the opposite, publications that are too technical should be avoided (the goal is not to show off), just like publications that are too long (remember that your assessors have a limited amount of time to spend on your application). For instance, it may not be a good idea to include a 60 page-long review in your selection, even if it became a benchmark in your field.

9.6 Technological developments: Software and other systems

The Evaluation Committee considers that software and artifact development (software, hardware platforms, robotic...) can be vectors of dissemination of research as are traditional publications. Having developed (or

participated in the development of) ambitious, difficult or original software application (non-exhaustive list) must therefore to be considered by candidates as a strong point of their application file, as they would consider obtaining an important scientific result. Conversely, software development is not necessarily justified for all types of research and therefore no candidate will be penalized, *a priori*, because he or she did not participate in any artifact development.

Some software developments are a research activity and they must be presented as such. In this case, the candidate must explain the role played by these developments in her or his research. Other software developments are part of a transfer activity and their presentation should reflect this. For example, if a software application has been developed for specific users, providing at least one recommendation letter from its users attesting to the relevance of the development and its quality could be judicious.

In all cases, the jury will seek the elements allowing it evaluate software. This could be the source code or the development tree for research software. It could be a recommendation letter from users for transfer software applications not publicly available. Failing to provide any information allowing this evaluation will be perceived very negatively by the jury. Let us add that APP deposits or other purely administrative or accounting criteria alone will have little chance of impressing the jury.

To help applicants, the Evaluation Committee codified software evaluation by means of a note entitled "Criteria for Software Self-Assessment". A link to this is included in each Inria application pack[6]. While this note is specifically concerned with software, it may also be used as a guide to the assessment of all types of technological development. As with the research sheets, it is important to be scrupulously honest when describing the capabilities of your software, its user base, and your own contribution to its development. Above all, keep in mind that the "Criteria for Software Self-Assessment" is not a value ranking of your software. They just explain the category in which you would like your software to be evaluated by the jury.

9.7 Socio-economic impact and technology transfer

The title of this section of the application is intentionally wide ranging in order to cover all possible cases, including traditional technology transfer activities such as the provision of software to a commercial business, together with transfer of expertise, etc. However, it should also include transfers to society in its widest sense, including medical personnel, politicians, etc. Explain your contribution fully and, as in the case of software, be honest in regard to users and actual impact. Again, the Evaluation Committee proposes guidelines[7] to help you describe this part of your application file, also included in each Inria application pack.

9.8 Letters of recommendation

Letters of recommendation are useful as indicators of the recognition that the applicant has achieved in their particular field, especially on the international scale. They should be obtained from as wide a range of people as possible, not solely from co-authors, previous supervisors (PhD or post-doc), or collaborators in European projects. Wherever possible, they should come from international colleagues, recognised themselves as renowned leaders in their field. However, it is better to submit an excellent letter from France rather than faint praise from the USA.

The number of letters of recommendation is limited to a maximum of five. This is a maximum, not a requirement. Here too, three excellent letters are better than five bland ones. However, an application with only two letters will raise doubts unless they are from particularly eminent scientists.

Be especially careful with letters submitted as part of earlier applications. The theoretical rule at Inria is that letters submitted in years n and n+1 may be re-submitted in year n+2 (within the limit of a total of five letters). However, it is impossible to verify whether all the letters requested in year n have actually been received since this information remains confidential.

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[6] https://www.inria.fr/sites/default/files/2019-10/Criteria_software_self_assessment.pdf
[7] https://www.inria.fr/sites/default/files/2020-01/2018-06-GuideMethodologique-EvaluationTransfert_EN%281%29.pdf

10 Presentation and question and answer session

The presentation is an important part of the application for a DR2 post at Inria as it takes place one or two days before the Preliminary Selection Panel meets. The positive or negative impressions taken from the presentation are therefore uppermost in the minds of the panel members when they come to make their decisions. The first question to consider is the target audience for the presentation. The assessors will have a full understanding of the application, and the fact that the applicant has been invited to give a presentation will in itself be an indication that the assessors are supporting the application. It is therefore better to address your presentation primarily to the other members of the panel. The aim is to give a concise summary of your application and research proposal. It is impossible to over-stress the importance of keeping to the time limit. It is **essential** to keep within the time allowed and to balance the time allocated to each of the two sections (application and proposal). We see far too many applicants who either go over time or who fail to allocate sufficient time to their research proposal! To give an indication, if the total time allocated to the proposal is twenty minutes, then at least five minutes should be given to the research proposal. This is an absolute minimum.

- Summary of the application: Remember that the selection panel hear presentations from around fifteen applicants in a day. That's quite a workload! **Always** begin with your family name and first name, your research centre, and research team. This will help the panel identify your application immediately. Do not spend too long on your academic career because the panel would rather hear about your main scientific contributions. Be selective. For example, concentrate on the two or three most important contributions (among the five sheets), those that have had the most impact and best demonstrate your strengths, your originality and your creativity. Better present thoroughly two contributions rather than sketch all of them.

- Research proposal: This is more difficult, as you must use this section to show that you have the maturity to be a DR2. Avoid jumping straight into a mass of technical detail (although a degree of detail is required), and remember that most of the members of the panel are **not** experts in your particular field of research. The aim therefore is to outline the main targets and mileposts in your proposal and to show that your project is both ambitious and achievable. You also need to demonstrate to the panel that **you** are the right person to carry out this research by virtue of your expertise, your career, your contacts and your collaborations, etc.

You are strongly advised to **rehearse** your presentation in front of colleagues from within and outside your field of research, if only to ensure that the timing is in line with the limits imposed. Advice should be sought from the Scientific Delegate of your Inria Centre.

The proposal is followed by a time (usually ten minutes) for questions. This is a critical part of the presentation, and many applicants fail to prepare for it sufficiently. The performance of the applicant at this point gives the selection panel a clear idea of their maturity, their understanding of their particular scientific field, and their ability to teach and explain. Reply precisely and succinctly so that the panel have time to ask a number of questions. The greater the number of questions, the greater your opportunity to highlight different aspects of your application and to address topics beyond those included in your presentation. Don't be overly defensive. The members of the panel are colleagues. They are not out to trick you, they are simply trying to gain the best possible understanding of your past career and your plans for the future. Some of your answers may not be entirely convincing. But equally, some of the questions themselves may not be at all clear. In this case, do not hesitate to ask the questioner to reformulate the question.

11 Preliminary selection

The large number of applicants by comparison with the number of posts available means that it is possible for an applicant to be accepted by the Preliminary Selection Panel in year n, only to fail at the same stage in year n +1, a disappointment made worse by their expectations of success. There are a number of reasons why this may

occur. The pool of applicants varies from year to year, the applicant's career may not have progressed during the intervening year, and the judgements of the panel itself are subjective as the panel is, by nature, non-deterministic and its membership changes over time.

Remember that the application process is not a "pipeline"! In other words, being invited to give a presentation in year n is no guarantee of acceptance by the Preliminary Selection Panel in year n + 1 (or even of being invited to give another presentation that year), followed by automatic success in year n + 2.

12 Appointment

The final selection panel is chaired by the CEO of Inria or its representative. It consists of four members nominated by the Ministers of Research and Industry, together with four members of the Evaluation Committee, again nominated by the two Ministers but on the recommendation of the chairman of the Scientific Council. At least two of these latter four members must be elected members of the Evaluation Committee. All members of the Final Selection Panel must be of equivalent or higher grade than the posts being filled. Applicants themselves may not be members of the panel (source: Legifrance - http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=LEGITEXT000006065598&dateTexte=20120712)

Finally, applicants may only be appointed if they have previously been accepted by the Preliminary Selection Panel.

13 After the recruitment process

The debates within the juries are strictly confidential. Only the chair of the jury is allowed to communicate on these matters, at the request of the candidate, at the end of the competition. You can also contact the scientific delegate or the deputy scientific delegate. These persons will obviously be limited to general information about your case and to advice and they need to keep the opinions of the individual members of the panel confidential.