Template

for Preparing a Final Report for a Cluster of Excellence

This template provides assistance in preparing final reports for Clusters of Excellence – hereinafter referred to as "Cluster".

1 General Information

The information contained in the final report should provide a comprehensive outline of the achievements of both the research programme and structural aspects; explanations should be concise but given in sufficient detail. The report should critically reflect the state of the art in the research fields, the Cluster's specific contribution to international advancements in the respective fields and the structural impact at its university/location. The report should encompass the total funding duration, including, to the extent possible, the period of bridge funding. The report's data should be consistent with the data given in the annual financial reports and monitoring.

The larger part of the final report (as presented by the Cluster) will be made accessible to the general public: sections 1–6 as well as Appendix A will be published via TIB (Leibniz Information Centre for Science and Technology University Library). See also section 8.3.

2 Technical Instructions and Submission

The reports must be submitted in English. Upon request reports may additionally be submitted in German. In this case please contact the DFG Head Office in advance.

Please use the template provided below. The title page may be designed in your preferred style. Please note, however, that pages 2 and 3 must not be altered as these contain keywords in English and German that are relevant for cataloguing the finals reports in the TIB. The structure may be modified if necessary, for instance to differentiate between funding periods. Please complete all tables in this template. The numbering and headings of the tables may be amended and further tables may be added.

The most important publications of the Cluster's researchers should be listed in Appendix A in

section 7.1. The final report should be intelligible, coherent and assessable without the need to

refer to additional documents. However, for a more comprehensive description of the current state

of the art, additional publications (by the participating researchers and/or others) may be cited.

Please note that only published or accepted manuscripts may be cited within the report.

Final reports must be submitted electronically on a CD-ROM / USB memory stick as well as printed

and bound in A4 format. Final reports should not exceed 100 pages (including sections 1–6).

Electronic version: Sections 1–6 and Appendix A should be contained in one PDF file. Appendix

B, which includes personalised data, should be submitted as a second, separate PDF file. Please

include tables of contents with bookmarks in both PDF files to allow for easy navigation. The PDF

documents should not include password protection or access restrictions and should allow the

documents to be read, copied and printed. Please apply PDF file size-reduction tools according to

your requirements.

Printed version: The report and both its appendices should form one volume. Please send 3 printed

and bound copies of the final report to the DFG Head Office.

You may also send copies of the electronic and/or printed version to the relevant state ministry/min-

istries, if requested.

Upon receipt by the DFG, you will receive further information on how to transfer the electronic

version of the final report to the TIB.

Submission Deadline: 31 October 2019

Submission Address:

Dr. Klaus Wehrberger

DFG

53170 Bonn

DFG contacts

Dr. Klaus Wehrberger, +49 228 885-2355, klaus.wehrberger@dfg.de (for general inquiries on Clus-

ters of Excellence)

Dr. Heike Bock, +49 228 885-2713, heike.bock@dfg.de (for the final report template)

<Template>

Final Report

Cluster of Excellence

Title <in English>

Title <in German>

EXC < number >

<Text outside of tables marked in grey should be adapted by the Cluster. The text included in angular brackets "< >" provides additional information to help complete the template. It should be removed from the final report.>

Excellence Initiative / Exzellenzinitiative

Final Report / Abschlussbericht

Cluster of Excellence / Exzellenzcluster

Title <in English>

Title <in German>

EXC < number >

Host University/Universities

DFG Project Number: <number>

Funding Periods:

<Please enter the funding period(s) of the Cluster, e.g.:>

1: 2006/2007 - 2012

2: 2012 – 2019

Final Report for Cluster of Excellence

| Title <in en<="" th=""><th>glish></th></in> | glish> |
|---|----------------------------|
| Title <in ge<="" th=""><th>rman></th></in> | rman> |
| EXC <num< th=""><th>nber></th></num<> | nber> |
| | |
| Host university/ | universities: |
| Rector/President of the host university/universities: | Coordinator of the Cluster |
| Title first name surname | Title first name surname |
| Signature | Signature |
| Rector/President | Coordinator |
| Speaker university/universities | |
| Please highlight the speaker university/universities | s with an asterisk (*).> |

Contents

| 1 | General Information | 6 |
|------|---|----|
| 1.1 | Summary | 6 |
| 1.2 | Key data | 6 |
| 1.2. | .1 Host, speaker and other participating institutions | 6 |
| 1.2. | 2 Overview of the Cluster's structure | 7 |
| 2 | Research | 7 |
| 3 | People | 7 |
| 3.1 | Impact of the Cluster on academic positions | 7 |
| 3.2 | Promotion of early career researchers | 8 |
| 3.3 | Promotion of gender equality | 8 |
| 4 | Structures | 8 |
| 4.1 | Organisation and management of the Cluster | 8 |
| 4.2 | Relationship between the Cluster, the host university/universities and the partici partners | |
| 4.3 | Sustainability | 9 |
| 5 | Overview of the Cluster's Resources | 9 |
| 5.1 | Resources | 9 |
| 5.1. | .1 Staff | 9 |
| 5.1. | 2 Infrastructure | 10 |
| 5.2 | Expenditures | 11 |
| 6 | Comments to the DFG | 11 |
| 7 | Appendix A (Non-Confidential) | 12 |
| 7.1 | Most important publications of the Cluster | 12 |
| 7.2 | Additional achievements | 12 |
| 7.3 | Pls and other participating researchers | 12 |
| 7.4 | Participating institutions and cooperation partners | 12 |
| 7.5 | Doctoral researchers | 13 |
| В | Appendix B (Confidential) | 14 |
| 8.1 | Recruitments | 15 |
| 8.2 | Advisory board | 17 |
| 8.3 | TIB / GEPRIS | 17 |

List of Abbreviations

<Please include here a list of the abbreviations used in the final report (if applicable).>

1 General Information

1.1 Summary

<Please provide a concise and comprehensive summary of no more than 3000 characters (including spaces) covering the Cluster's main achievements during the total funding duration with respect to research, people, and structures. Please also include a German translation of this summary of no more than 3000 characters (including spaces). These summaries will be used to provide general information about the Cluster in GEPRIS, the DFG's online project database (compare section 8.3).>

1.2 Key data

1.2.1 Host, speaker and other participating institutions

Table 1: Participating institutions (last funding period)

| Host university/universities | Location |
|--|----------|
| University A* | |
| University B | |
| Participating universities 1) (if applicable) | Location |
| | |
| | |
| Participating non-university research institutions ¹⁾ (if applicable) | Location |
| | |
| | |

^{*} Speaker university/universities are highlighted with an asterisk (*)

<Please do not include the participating departments, institutes or other organisational subunits within each institution. A detailed list of the participating institutions as of the first funding period, their subunits and further cooperation partners should be included in Appendix A, section 7.4, Table 8. A complete list of all PIs and other participating researchers should be included in Table 7 of Appendix A.>

¹⁾ Institutions that were funded by the Cluster. Cooperation partners that were not funded by the Cluster but contributed their own funds to the Cluster (e.g. industrial cooperation partners, service providers, museums, cultural institutions, etc.) are listed in Table 8 in Appendix A.

1.2.2 Overview of the Cluster's structure

Table 2: Structure of the Cluster

| ` | Title | Research discipline and direction |
|-----------------|--------------------|-----------------------------------|
| area, platform, | | (if applicable) |
| etc.) | | |
| Α | Research XY | |
| В | | |
| | | |
| | | |
| Z | Central Management | |

2 Research

<Please describe the Cluster's major research achievements/accomplishments taking into account the aims, planned measures and problems addressed with respect to the total funding duration. The following aspects may be included:

- · research highlights, major achievements
- a list of groundbreaking publications should be included in Appendix A, section 7.1
- research areas investigated and their interconnections
- position and impact of the Cluster within the wider research field, international visibility, unique features, differentiation from similar project consortia, international competitors
- interdisciplinary cooperation and collaboration with international research partners
- · important national and international partnerships
- cooperative ventures with application partners, transfer of results from basic research to applied research and application, commercial and/or social significance (if applicable)
- sustainability (section 4.3)>

3 People

<Due to data protection rules, please do not provide other personalised data in section 3 beyond those contained in Table 7.>

3.1 Impact of the Cluster on academic positions

<Please describe the impact of the Cluster on academic positions, taking into account the current staffing situation in the Cluster and how it has developed: Please list and explain which Clusterfunded measures and academic and non-academic staff have been or will be taken over by the host institutions making reference to the proposal(s) where applicable. Please report on the recruitment process as well: e.g. strategies, procedures, successes and failures, planned and achieved improvements at all levels of recruitment ranging from doctoral researchers to professors. Please describe measures implemented to ensure sustainability (see section 4.3).

A detailed list of recruitments should be included in Appendix B, Table 10.>

3.2 Promotion of early career researchers

<Please describe the Cluster's achievements in promoting early career researchers (including undergraduate students/doctoral researchers, postdocs, junior group leaders) also taking into account the aims, measures, and problems addressed during the total funding duration with special emphasis on the last funding period, e.g.</p>

- graduate programmes
- improvements in career prospects (both within and outside the host university/universities and research institutes)
- · networking, alumni
- sustainability>

Statistical data on the Cluster's doctoral researchers are summarised in Appendix A, Table 9.

3.3 Promotion of gender equality

<Please describe the gender equality situation within the participating departments using quantitative indicators. Please describe what measures were undertaken by the Cluster to promote gender equality. To what extent did the Cluster reach its objectives? How did the Cluster contribute to improving gender equality at the host university/universities and its partners?>

4 Structures

4.1 Organisation and management of the Cluster

<Please describe the organisation and management of the Cluster and its integration into the university/universities with regard to structures and administration. Take into account the aims, measures, and problems addressed by the Cluster during the total funding duration, giving special consideration to the last funding period. Topics here might include the legal status of the Cluster, management of the Cluster, the role of the advisory board, international activities, public outreach, transfer activities, data management, etc.>

4.2 Relationship between the Cluster, the host university/universities and the participating partners

<Please describe the impact of the Cluster with respect to intra-university cooperation, cooperation with partner universities and with non-university partners. To what degree did the Cluster initiate and contribute to formalised joint agreements with academic and non-academic partners?</p>

If several universities submitted a joint proposal for a Cluster of Excellence, please explain how synergy and structural added value were generated at each university due to the cooperation. Please describe any institutional long-term effects of this strategic cooperation (if applicable).>

4.3 Sustainability

<Please describe measures implemented to guarantee sustainability of the Cluster and its further development following completion of funding. Please take into account the aims, measures, and problems addressed during the total funding duration. Please describe the impact of the Cluster on the research profile of the host university/universities. What role does the Cluster play within the current research profile; what are the long-term prospects and future priorities?>

5 Overview of the Cluster's Resources

5.1 Resources

5.1.1 Staff

<Please list staff who have worked in the Cluster. Please distinguish between personnel financed (at least partially ≥ 50 % and at least 1 month) by the Cluster's resources and by other means, see Table 3. The data of the monitoring "Stammdatenerhebung" may be used.>

Table 3: Staff

| Staff | Funded by the Cluster | | Funded by other sources | | | |
|------------------------|-----------------------|---|-------------------------|---|---|-------|
| | Number of persons | | | | | |
| Academic staff | f | m | total | f | m | total |
| Professors (W2-W3) | | | | | | |
| Professors (W1) | | | | | | |
| (Junior) group leaders | | | | | | |

| Postdocs (including temporary | | | |
|---------------------------------|--|--|--|
| substitute positions for clini- | | | |
| cians) | | | |
| Doctoral researchers | | | |
| Research associates/other ac- | | | |
| ademic staff | | | |
| Guest researchers | | | |
| Non-academic staff | | | |

<Please provide additional information on positions that were initially funded by the Cluster but that were or will subsequently be funded by the host university/universities and other participating institutions, see also sections 3, 4.3, and Appendix B, section 8.1.>

5.1.2 Infrastructure

- <Please describe the Cluster's (new) infrastructure (listed in Table 4) and its future integration into the university/universities (if applicable).>
- <Please list major infrastructure measures undertaken by the university/universities, state, foundation or other sources since the Cluster's initiation and the approximate instrumentation sums including instruments > €150,000 per item).>

Table 4: Major infrastructure measures since the Cluster's set-up

| Infrastructure measure <include approx.="" construction="" of="" time=""></include> | Costs (in €K) | Funded by |
|---|------------------|-----------------------------|
| e.g. Lab building (2009-2012) | 45,130 | University/State/Foundation |
| | | |

Items included in Table 5 are not listed here.

<Please list (Table 5) all major research equipment exceeding €150,000 per item that was acquired with the Cluster's funds during the total funding time.>

Table 5: Major research equipment provided by the Cluster's set-up

| | Year of purchase | Amount [€k] |
|--|------------------|-------------|
| Major research equipment (exceeding €150,000 per item) | | |
| | | |
| | | |
| | | |
| Total [€k] | | |

Items included in Table 4 are not listed here.

5.2 Expenditures

<Please list the items for which DFG funding was used. All sums should be given in €k (rounded to the nearest thousand). For items not listed, please insert additional lines.>

Table 6: Cluster expenditures

| | Year | Year | Year | Year | Year | Year | Sum |
|-------------------------------------|------|------|------|------|------|------|-----|
| in €k | | | | | | | |
| Professors (W2-W3) | | | | | | | |
| Professors (W1) | | | | | | | |
| (Junior) group leaders and postdocs | | | | | | | |
| Doctoral researchers 1) | | | | | | | |
| Other staff | | | | | | | |
| Sum (staff) | | | | | | | |
| Research equipment 2) | | | | | | | |
| Other costs 3) | | | | | | | |
| Total [€k] | | | | | | | |

¹⁾ Including fellowships

6 Comments to the DFG

<Here you are welcome to make comments, suggestions and recommendations regarding the funding scheme and programme management as well as aims, implementation and administration of the Excellence Initiative.>

²⁾ > €10,000 per item

³⁾ Including minor research equipment (< €10,000 per item)

7 Appendix A (Non-Confidential)

7.1 Most important publications of the Cluster

<Please list up to 100 publications which were considered to be the most relevant to the Cluster (e.g. research highlights, major achievements) published by the researchers involved (PIs and other participating researchers). Publications should represent the research done with support from the Cluster (as indicated by the acknowledgement). Please state the DOI (digital object identifier) for each publication. For all publications: Only published or accepted manuscripts may be cited within the final report.>

7.2 Additional achievements

<Please list what is considered to be the most relevant achievements (up to 100) of the researchers in the Cluster (e.g. research prizes, patents, etc.). These should be related to research done with support from the Cluster.>

7.3 PIs and other participating researchers

Table 7: Pls and other participating researchers

| First name Surname | Position | Institute |
|--------------------|----------|-----------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

<Please list the PIs and other participating researchers from the participating universities and non-university research institutions who significantly contributed to the Cluster. New researchers hired as of the first or following funding periods should be marked with an asterisk (*). Researchers who have left the host university/universities or other participating institutions during the funding periods should be marked with (#). The Cluster may decide to include Table 7 in Appendix B.>

7.4 Participating institutions and cooperation partners

<Please list in Table 8 all institutions that participated in the Cluster as well as the most important partners (e.g. industry, service providers, cultural institutions, museums, schools, etc.) with which cooperation was established or continued.>

Table 8: Detailed list of the participating institutions and the most important cooperation partners

<In comparison to Table 1, please list here the participating departments, institutes or other organisational subunits within each institution.>

| Institutes of the host university/universities | Location |
|---|----------|
| | |
| | |
| Institutes of the participating universities 1) (if applicable) | Location |
| | |
| | |
| Non-university institutions 1) (if applicable) | Location |
| | |
| | |
| Most important cooperation partners ²⁾ (if applicable) | Location |
| | |
| | |
| | |

¹⁾ Institutions that were funded by the Cluster.

7.5 Doctoral researchers

Table 9: Doctoral researchers – completed and ongoing theses

| | Doctoral theses | Thereof: (partially | Ongoing doctoral |
|-----------------------------|------------------|---------------------|----------------------|
| | completed within | [≥ 50 %]) financed | theses after expiry |
| | the Cluster 1) | by the Cluster | of Cluster's funding |
| Total (number) | | | |
| Thereof: Female researchers | | | |
| (%) | | | |
| Origin ²⁾ | | | |
| Number and % | | | |
| Germany | | | |
| World region or country | | | |
| | | | |
| | | | |

¹⁾ Completed during the Cluster's total funding duration; completion is defined as the date of the final doctoral exam, e.g. "Disputatio" or "Rigorosum".

²⁾ Institutions that were not funded by the Cluster but contributed their own resources to the Cluster (e.g. research partners, industrial cooperation partners, or other service providers, museums, cultural institutions, applications partners, etc.)

²⁾ Refers to the location of the last position held prior to joining the Cluster.

8 Appendix B (Confidential)

8.1 Recruitments

<Due to data protection rules, this detailed list of recruitments should not be provided within the first part of the final report (sections 1–6 and Appendix A), since it will be made accessible to the general public.</p>

Please distinguish between recruitments mainly financed by the resources of the Cluster itself (see Table 10) and recruitments financed by other sources.

Please provide additional information on unsuccessful attempts to recruit members of the Cluster (Rufabwehren).>

Table 10: Cluster-specific recruitment: (junior) professors and (junior) group leaders appointed during the Cluster's total funding duration

| Surname, first name | Gen- der | Previous position & location 1) | Recruitment position | Institute (if applicable) | Start/end date ²⁾ | Tenure aspects 3) | Source of future funding 4) |
|---|-------------|------------------------------------|------------------------|------------------------------|------------------------------|-------------------|-----------------------------|
| Positions financed [≥ 50 %, ≥ 1 month] by the Cluster | | | | | | | |
| XY | f | | Professor | | | | |
| ZP | т | | Group leader | | | | |
| | | | Junior group leader | | | | |
| | | | Junior pro- fessor | | | | |
| | | | | | | | |
| Positions financed by other sources [> 50 %, ≥ 1 month] | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

¹⁾ Please indicate institution, city and country.

²⁾ Please indicate each individual's starting and end dates (if applicable).

³⁾ Tenure aspects: Please indicate whether the positions were temporary, permanent or had a (competitive/non-competitive) tenure option.

⁴⁾ If the person will stay within the Cluster/the university after funding expires, please indicate the source of funding for this specific position (e.g. university, endowment, third party funding, state, etc.).

8.2 Advisory board

<Please list the names and institutions of the members of the advisory board. Please also indicate their dates of membership.>

8.3 TIB / GEPRIS

<The non-confidential sections 1–6 and Appendix A of the final report will be published via TIB (Leibniz Information Centre for Science and Technology University Library). Upon receipt of the final report by the DFG, you will receive further information on how to transfer the electronic version to the TIB. In accordance with data protection guidelines, please avoid including personal data in sections 1–6 and in Appendix A. Where personal data are requested (especially Table 7), you must receive written consent from the individuals concerned in advance indicating their agreement to having their data published. The Cluster may decide to include Table 7 in Appendix B. Please note that in signing the final report, the rector/president and Cluster coordinator confirm that this consent has been received.>

The authors hereby <please tick the appropriate box>

agree
do not agree
to having their final report (sections 1–6, Appendix A) be made accessible to the general public via TIB (Leibniz Information Centre for Science and Technology University Library).

<The DFG will also publish the summary in English and German (1.1) as well as the list of the most important publications (7.1) via GEPRIS, the DFG's online project database (http://ge-pris.dfg.de/en). In accordance with data protection guidelines, please do not include personal data in these parts of the final report.>

The authors hereby <ple>please tick the appropriate box>

to having the summary and the list of the Cluster's most important publications be made accessible

to the general public via **GEPRIS**, the DFG's online project database (http://gepris.dfg.de/en).