University policy for storage and management of research data
(Executive Board decision dated 25-11-2013)

Preamble
Research data generated at Radboud University are stored, managed and made accessible in accordance with legal, academic, and ethical requirements and the requirements of financial providers. The university policy reflects national and European developments in data management and storage.

Explanatory notes
Paragraph 3.4 of the final report of the University Workgroup for Academic Integrity states that ‘validation of results and/or the data/sources on which they were based is an academic principle’.
A relationship exists between the careful handling of research data and honest academic practice. Radboud University reflects this principle in their formulated policy with the ambition that all published research is reproducible.

Furthermore, this policy elaborates on the principle of “validation” in the ‘Nederlandse Gedragscode Wetenschapsbeoefening’ (Netherlands Code of Conduct for Scientific Practice). The connection to legal requirements has to do with database right, copyright, and the Data Protection Act.

Research in seven European countries shows that 48% of financial providers implement policy regarding data management and storage, while another 20% have plans to develop a policy within two years. The Netherlands Organisation for Scientific Research requires ‘good and accessible documentation and storage of data’. The European Research Council (ERC) requires data storage to take place preferably directly after publication or at most within six months after publication.
The connection to national and European developments has to do with the organisation of data storage, technological developments in digital media and cost effectiveness. The principles of validation and reproducibility imply that storage on a PC/laptop or a mobile device is not an option.

1. Data are stored at the time of publication of the research (including dissertations) at the latest, together with at least all the information necessary for potential reuse of data (metadata).

Explanatory notes
It is essential when storing data that metadata are also provided, so that data sets can be found, distinguished from related data sets and reused. Examples of metadata are: identification of the project and researcher, methods of data collection, type of data, and storage location. The policy formulated here is a first step. Eventually, data will have to be stored during research for protection against loss and distortion, among other things. A plan for managing data should be drafted prior to the commencement of data collection. This Data Management Plan (DMP) helps establish beforehand what facilities will be necessary and where possible pitfalls might occur in handling research data. The DMP describes what types of data will be collected along with the size and format, how and where the data will be stored, what form of metadata will be used and who can access the data.
The Netherlands Organisation for Scientific Research (NWO) is considering the possibility to request researchers to pay specific attention to a data management plan in all project requests. Approval of the Data Management Plan could be a condition for the eventual awarding of subsidies. The EU is also expected to set that condition (Horizon 2020).

2. The data of approved Bachelor’s and Master’s theses are stored.

Explanatory notes:
The final report of the university workgroup for academic integrity states the following:
“The thesis phase of the Bachelor’s and Master’s and that of the dissertation is a test to assess if the student truly possesses the previously learned skills. This is why every thesis and every dissertation should contain the chapter ‘justification of the method used’. This chapter should incorporate at least why the method used was chosen, how test subjects/data were acquired, how data were processed and analysed, and where they were stored. This is also true when the end product is an article.

3. The retention period for research data is a minimum of ten years.

Explanatory notes
The minimum retention period for Radboud University is longer than the code of academic practice suggests. A longer minimum period can be applied by each discipline. A maximum period cannot be defined, because it is dependent on the discipline (see art. 7). The European research mentioned above shows that 74% of financial providers do not suggest a set retention period.

4. The primary responsibility for data storage and proper data management lies with the researcher/project leader. The director of the research institute is ultimately responsible for data storage by contributors to research that falls under their responsibility. The director of education is ultimately responsible for data storage for approved Bachelor’s and Master’s theses.

5. The university is mindful of the required conditions for proper data management:
   a) To provide knowledge, advice, and guidance for the purpose of data management and provide a data management plan.
   b) To provide an adequate infrastructure for data storage and management, during and after research, insofar as the researchers have not organised adequate alternative facilities for data storage themselves.

Explanatory notes
The University Library offers support in setting up metadata and in drafting a DMP. A number of disciplines and research themes are already using national and international repositories and data archives (DANS, MPI, 3TUdatacentrum, SARA, CLARIN). Local data infrastructure will be necessary whenever this is not yet an option.

An adequate infrastructure offers guarantees to protect against loss and unsolicited access. National and European developments indicate a certain division of tasks: national and international systems for long-term storage, and local systems for data sets during and immediately following research for the purpose of replication, for example. Previous research suggests that a centralised service for data management at Radboud University would be more cost effective than management at an institutional level. The Research Data Management project offers the opportunity to conduct more in-depth research into a data management and storage method that is optimal for Radboud University.

6. A list of stored data sets will be included in the self-evaluation of the Standard Evaluation Protocol.

Explanatory notes
The research institute can elaborate on its policy regarding data storage and management in the mid-term review as well as in the self-evaluation that precedes the external evaluation. The Royal Netherlands Academy of Arts and Sciences has recently recommended an amendment to the Standard Evaluation Protocol that should ‘aim to have visitation committees check whether regulations and procedures are in order, whether the required infrastructure of people and facilities are available and whether independent academic practice is the norm’. In response to this recommendation, the Minister of Education, Culture and Science emphasises that the topic of integrity should be included in evaluating quality.
Data sets are regularly referred to in academic publications. Several countries use the amount of
times a data set is consulted as an indicator for the quality of the data set.

7. The university policy regarding the storage and management of research data will be
supplemented by each research institute;

   Explanatory notes
   The policy of the research institute should include agreements on at least the following:
   - the responsibilities within the institute for data management and storage;
   - what data are included;
   - how metadata are established, linking as much as possible to the standard and best practices
     that apply to the field;
   - where data are stored for the long term as well as the short term;
   - how the data are protected in the event of technical problems (or a reference to the
     guarantees made by the supplier of the infrastructure);
   - a possible longer minimum retention period than the ten years suggested in Article 3;
   - which maximum retention periods will apply;
   - accessibility and reuse of data sets (defining for each data set or research project how, under
     which conditions, when, and by whom the data can be reused);
   - privacy of sensitive data (processing, storage, access, security);
   - support and training for researchers;

   The Data Management Plan for each research project is in accordance with the agreements made by
   the research institute.