USING A VIRTUAL RESEARCH ENVIRONMENT - Questionnaire

A. Context Definition

1. Characterisation of the scientific project environment
   a. Is the scientific environment a disciplinary community? (mathematics, classical philology, ...)
   b. Does the scientific environment include multiple disciplines? (life sciences; linguistics + computer science; ...)

2. Project integration
   a. How is the project positioned in relation to the scientific environment?
   b. Is the focus of the project topic-centred or infrastructure-oriented?
   c. Is the project a user or a developer of the existing IT infrastructure?

B. VRE Project Structure

3. What organisations exist in the scientific environment of the project that support and promote collaboration?
   a. Are there data centres?
   b. Are there shared, non-localised, IT-accessible services?
   c. Are there organisational bodies that discuss and regulate common research-related concerns?

4. Classification of data sources
   a. Are data sources dispersed or centralised?
   b. Do data originate from
      • major instruments (telescopes, satellites, accelerators)?
      • simulations?
      • laboratory experiments?
      • field surveys / studies?
      • literature (documents, archives, finds, museums)?
   c. Is data use restricted by
      • proprietary / commercial interests?
• privacy laws?
• protection of legitimate expectations?
• individual rights?

5. For accessing data, are there any standards or procedures generally accepted in the scientific project environment?
   a. Time-limited exclusive use by researcher (group) followed by open access?
   b. Limited or licensed use?

6. Standards for data and metadata
   a. Are there data formats and standards commonly used in the scientific environment of the project?
   b. Are there generally used / accepted methods for data collection or generation?
   c. What metadata are needed mainly (for technical and scientific reasons)?
   d. Are there any metadata standards in the scientific environment of the project?
   e. Who collects the metadata, or how can they be generated from processes?

7. Research processes and workflows
   a. What research processes should the project capture and support?
   b. Can the processes be represented in a workflow? Do such workflow analyses already exist? Is there a flow diagram of these workflows?
   c. What elements (steps) of the workflow are IT-supported? Are there steps using standard methods or programs?
   d. What changes in the research process are expected in the near and distant future?

8. Typical IT-supported steps
   a. To what extent is the work computer-aided?
   b. Are mainframe computers needed?
   c. What software is mainly used?
      i. Open source software (generic)
      ii. Licensed software (generic)
      iii. Special third-party developments (licensed / purchased)
      iv. In-house developments (open source?)

9. What technologies are used or implemented in the project?
a. Grid technology
b. Web 2.0
c. Cloud technology
d. Portal technology
e. Other

10. What security and/or usage regulations must be observed to comply with privacy laws?

11. How are research data managed in the environment of the project?
   a. What systems are used for research data management?
   b. What aspects — e.g. safekeeping periods, etc. — must be considered for research data management?
   c. To what extent has sustainable research-data management (long-term storage) already been implemented, and what are the requirements for it?
   d. Does the project have specific ideas for research data management?

12. What other policy aspects and regulatory frameworks must be considered in the development of a virtual research environment?

C. Project Description

13. What are the objectives of the project / VRE?
   a. Immediate project objectives
   b. Objectives beyond the project period
   c. Is there a time limit for the VRE?

14. Has the VRE been beneficial for your research?

15. Were there any obstacles in using the VRE?
   a) The technology is not reliable.
   b) The VRE is too complicated to use.
   c) The VRE is a poor fit for your research practice.
   d) The VRE does not provide enough technical support.
   e) The VRE does not provide enough training support.
   f) The user group is too small.
   g) There are security /confidentiality problems.
16. Is the project a joint venture
   a. between multiple institutions of the same subject community? How many are participating?
   b. between multiple institutions of several subject communities? How many are participating?
   c. Is there any involvement of high-performance computing, infrastructure facilities, or data centres?

17. Does the project require
   a. on-demand computing power?
   b. significant storage (> 100 TB)?
   c. collaboratively used instruments such as websites maintained by all participants?
   d. other infrastructure services?

18. Can the project meet these needs with its own resources?

19. How are any additional resources provided?
   a. Acquisition of new hardware and software?
   b. Requesting high-performance computing time; short-term rental of storage capacity?

20. Project funding and sustainability
   a. From which sources is the project funded?
   b. What are the project’s sustainability considerations?