

Abstract for Participation in the 2<sup>nd</sup> NFDI Conference

## Competencies for NFDI - Common Services for Education and Training in Data and Digital Literacy (CompeNDI)

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### ***Research area of the proposed consortium (according to the DFG classification system)***

This is a cross cutting NFDI Service in the area of education and training in Data and Digital Literacy. CompeNDI will offer tested and established services from basic education to advanced curricular elements for further developing the specific needs of NFDI initiatives, academic education and staff training. The initiative will concentrate on a community building process by initiating and furthering stakeholder groups in FDM teaching and training. CompeNDI aims to provide services to structure and further education activities of its members, existing NFDI consortia and other players like state initiatives or research institutions. Participants will make results and training infrastructures available to the whole science community including NFDI consortia, building on existing competencies and teaching expertise in Germany, Europe and international.

### ***Concise summary of the planned consortium's main objectives and task areas***

In general, technical innovations often precede acceptance of related needs for education and staff training. However, acceptance is necessary to ensure that positive effects of technological advance become common practice and exert their full potential in science. In order to overcome potential resistance, to build "social consent" to a digital data culture, and to consolidate sustainable research data management following the FAIR – principles, it is essential to establish schemes for data literacy training for students and early career scientists. Science education in this field is crucial for the long-term success of the NFDI. As a cross-cutting topic for future NFDI initiatives, academic education and staff training in data science has three main goals:

1. support basic education that is independent of specific disciplinary needs and provides a basic understanding and topical training, and
2. develop advanced curricula elements to further data literacy and research data management, recognizing the specific needs of each research field, from e.g. social sciences to climate change.

3. establish in-depth training opportunities for existing scientific and technical personnel to professionalize data handling and literacy. This may include course as well as train-the-trainer concepts, data- and software carpentries and other measures.

Consequently, each disciplinary consortium will benefit from synergies created by a cross-cutting education and training infrastructure as is proposed here. Our consortium "Competencies for NFDI" (CompeNDI) establishes these synergies by combining already existing RDM competence and teaching expertise. CompeNDI will build upon this expertise, will offer tested and established services and make results openly available to all disciplinary NFDI consortia to form a base for further developing disciplinary skills and applications.

The strength of this concept is the interlinking of existing research expertise and RDM service providers to create new occupational areas, thus opening exciting career paths to young scientists and professionals alike. Any measures can be implemented locally and be supported by local service personnel, (e.g. *data stewards*).

CompeNDI is a cross-cutting initiative consortium and thus cannot submit proposals in the first and second application round. We have concentrated our efforts on 1) a community building process within the science community, by initiating a multi-stakeholder dialogue in RDM teaching and training and cooperating with other potential NFDI consortia. We strive to support the NFDI by offering help, access to the infrastructures we develop and experience, we've gained through various projects and activities. Several members of CompeNDI are active in disciplinary consortia within the NFDI, funded and in the proposal stage. We are therefore networking with these consortia to establish outreach among these initiatives.

WE INVITE interested consortia to contact us at [info@compendi.org](mailto:info@compendi.org) to work on data literacy and training concepts for the future!

For more information see our extended abstract for the to the NFDI conference in Bonn, in May 13/14 2019:

[http://www.compendi.org/files/compendi\\_abstract-nfdi-workshop-2019.pdf](http://www.compendi.org/files/compendi_abstract-nfdi-workshop-2019.pdf)

### ***Cross-cutting topics***

The cross-cutting topic addressed by the CompeNDI consortium is **Data Literacy and Training** in the broader sense. While disciplinary consortia are well suited to establish discipline-specific courses and training on particular infrastructures, the broad community of students and early career scientists often need a much lower level, basic training in RDM practices, tools and workflows. CompeNDI strives to address EVERY student to provide such basic level of Data Literacy education. CompeNDI also strives to develop novel methods of teaching by implementing new concepts and additional training material, to address researchers, which are not yet data aware within their disciplines. In addition, CompeNDI aims to develop further training for established professionals, researchers, technical staff and others within and beyond the German educational system. The ultimate goal is, to improve the digital skill-levels of the scientific community as a whole, to open opportunities for a new level of research.

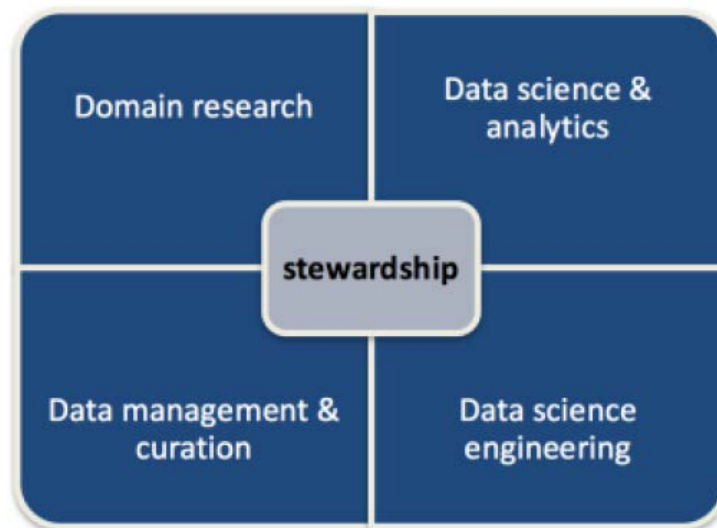


Figure 1: Skills Areas according to the digital landscape analysis and competence model  
(<https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5bae34b74&appId=PPGMS>).

We feel, that basic data literacy education is a fundamental prerequisite for the success of the NFDI. Data awareness will not JUST HAPPEN. It has to be coordinated within the science community at very early career stages. CompeNDI is getting ready to implement and support this task within the NFDI.

Concrete outcomes of CompeNDI may e.g. be

- Reference Frameworks for Data Management / Data Stewardship
- Skills and Competency Landscapes / Models (see Fig 1.)
- Training Modules Practical disciplinary use cases

and others.

### ***Expectations towards the 2<sup>nd</sup> NFDI Conference***

Our goal for the NFDI Conference is, to nurture an open dialogue within the NFDI community as a whole about the implementation of cross-cutting topics, in particular education and training. As outlined in the Leipzig-Berlin-declaration on cross cutting topics in the NFDI (<http://doi.org/10.5281/zenodo.3895208>), we are convinced, that the German Research Data Infrastructure would benefit of a multi-level approach, including disciplinary topics, cross-cutting topics and structures connecting intra- or trans-institutional activities (e.g. state initiatives). These approaches should be equally addressed and represented within the NFDI as a whole, in order to make it a fully integrated community effort. We hope to share our thoughts and inspire NFDI leaders with this vision beyond disciplines of the NFDI.

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