



FIZnews

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Interview on the occasion of the Digital Preservation Day: „Our entire culture is based on data.“

Karlsruhe, November 7, 2024 — Today is World Digital Preservation Day. It has been organized by the Digital Preservation Coalition (DPC) for several years and always takes place on the first Thursday in November. The aim of this day of action is to raise awareness of the challenges of digital preservation and to share best practices and innovations in this field. To mark the occasion, we spoke to Dr. Felix Bach, who heads the Research Data department at FIZ Karlsruhe and is an expert in the field of research data management.

FK: Dear Felix, my first question is perhaps a little unoriginal, but let's start with the basics: What actually is digital preservation?

FB: Digital preservation is about storing data over a longer period of time, and as the word “digital” suggests, it involves digitized data. This data can take very different forms. Data from cultural heritage, for example, should be preserved for posterity. In my department, we mainly work on projects to preserve research data, i.e., data that is generated during the research process - at some stage of the research data cycle. The cycle includes the collection of data, for example measurements that are carried out in experiments or surveys of user groups and the like. Then there are further phases in which this data is analyzed. The analysis software that is developed during this process should also be stored together with the research data. So the aim is to archive as much of the research context as possible. Ideally, the majority of the research results should ultimately be made publicly accessible.



FK: And not only for scientists who are currently working specifically on this project, but ideally also for other researchers who can also benefit from this data, right?

FB: Exactly. Ideally, the data is accessible to everyone. However, there are sometimes restrictions, e.g. with patents, that limit public accessibility. But even then, there is often a limited group of users who can access the data and work with it.

FK: This makes it clear that the digital preservation discourse is actually relevant for everyone who conducts research in any form, because research data is generated in every discipline and in every research project. This actually brings us to the second question: Why is digital preservation so important?

It makes sense to choose open format that have proven successful

FB: Research is very resource-consuming and expensive. A great deal of effort is often put into projects such as the particle accelerator at CERN, which are projects worth billions. Smaller projects also require considerable resources and should be worthwhile. If the project is planned carefully, the results can be used beyond the project itself, even to answer completely different research questions. Digital preservation aims to preserve valuable data over long periods of time. Various requirements must be taken into account, e.g., the format in which the data is made available. Over a period of 25 or 50 years, it could be that a viewer or editor for the original file format no longer exists. It therefore makes sense to choose open formats that have proven successful.

FK: Why?

FB: In many cases, proprietary formats do not disclose their specification. If the format changes, you do not know how to interpret the data. It is also important to capture the entire context of research data, i.e., not only the data itself, but also the conditions under which it was created - such as room temperature or the equipment used to conduct the experiment. This context can be described as metadata, which are divided into organizational, administrative, technical and descriptive metadata.



RADAR offers digital preservation as a service

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FK: How is digital preservation implemented in practice? What do we do at FIZ Karlsruhe, for example, in this respect?

FB: There are only a few services that offer digital preservation as a service. FIZ Karlsruhe offers just such a service with its RADAR research data repository. Digital preservation comprises many levels; you can imagine it as a layered model. At the bottom is data storage over a long period of time, and that's exactly what we do in RADAR - we call it "long-term bit preservation". We store data together with metadata redundantly at three different locations on tape technology, which only incurs costs when data is read.

FK: But RADAR can do much more than this, right?

FB: Absolutely correct. RADAR is a complex software with a user interface in which different access rights can be managed. There are roles for people who upload, annotate, curate or reuse data. On the one hand, there is an option to just archive data with RADAR, which means that these data can only be viewed and accessed by the data providers themselves. On the other hand, datasets can also be published. Each published dataset is assigned a DOI, a digital identifier that permanently refers to the dataset, including a website with metadata and the option to download it.

FK: So that means I can use RADAR for my research project, but can also access data that interests me as an external user?

FB: Exactly. Anyone can access data that have been published. Subsequent use is regulated by licenses that specify what may be done with the data.

FK: Who is currently using RADAR?

FB: We offer RADAR in different versions: as a cloud service for smaller universities and research institutions that do not want to or cannot operate their own infrastructure, and as a local option for institutions with their own data storage facilities. There are also subject-specific offerings, e.g., RADAR₄Chem for chemistry, RADAR₄Culture for art and cultural studies and soon RADAR₄Memory for history.



FK: Is there anything about this big, complex topic that we haven't mentioned yet?

FB: I would like to emphasize the social relevance of digital preservation. Our entire culture is based on data, and museums and archives have always preserved knowledge - also for posterity. Deciding which data is relevant and should be preserved is not easy, because even supposedly unimportant data can become important later on. That's why I generally advocate archiving more rather than less.

FK: Thank you for this plea. In this case, "more is more", because we ourselves don't know what will be relevant in the future.

Learn more about RADAR at: <https://www.fiz-karlsruhe.de/de/produkte-und-dienstleistungen/radar>

Find information on more World Digital Preservation Day events at: <https://www.dpconline.org/events/world-digital-preservation-day#:~:text=Save%20the%20date%20for%207,celebrate%20all%20things%20digital%20preservation>

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