



Univerza v Mariboru

Fakulteta za logistiko

Mariborska cesta 7
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Celje, 21. 4. 2022

The Senate of the Faculty of Logistics of the University of Maribor adopted resolution no. 2, with which it approved the Policy of open access to the FL UM research infrastructure.

OPEN ACCESS POLICY TO THE RESEARCH INFRASTRUCTURE OF THE FACULTY OF LOGISTICS OF THE UNIVERSITY OF MARIBOR

Following the principles of Open Science

Scientific research activity is based on the principles of open science, which includes in particular open access according to the principle of open as much as possible, closed as much as necessary... (Act on Scientific Research and Innovation Activity (ZZrID), December 2021). Scientific-research activity is based on the principles of open science, which primarily includes open access to research results, evaluation of the quality and impact of scientific-research work using responsible metrics and connecting and involving the interested public in the research process. The Faculty of Logistics, as a member of the University of Maribor, respects the principles of Open Science and the related open access to research infrastructure, and as a publicly funded educational and research institution, it is obliged to fully implement the provisions of the Act on Scientific Research and Innovation Activities (ZzrID). When creating the Open Access to Research Infrastructure Policy, the Faculty of Logistics of the University of Maribor relies on the general provisions of PODRIUM, i.e., the Policy of Access to Research Infrastructure, which was adopted by the University of Maribor with the decision of the Senate of the University of Maribor no. 030/2020/78/515-MP of 24 November 2020. The policy of open access to the research infrastructure of the Faculty of Logistics of the University of Maribor defines the research infrastructure, its users, access, costs and fees, education and training, restrictions, ethical conduct, research integrity and non-discrimination, quality assurance, management of research data and transparency.

Research infrastructure of the University of Maribor

The research infrastructure of the University of Maribor refers to the set of multifunctional and multidimensional facilities, laboratory environments, research equipment, complex digital research systems and databases, and research groups that are used or operate for research purposes. Research infrastructure is a prerequisite for research work, but at the same time it is key to achieving excellence in research and broader social development.

Research infrastructure includes basic infrastructure (buildings, equipment, etc.) and/or research infrastructure for knowledge transfer (researchers, laboratories, collections, etc.). In certain cases, it can also be defined as a virtual infrastructure or a virtual research environment where the service is provided electronically. The University of Maribor manages RI UM as a single legal entity, consisting of entities.



Research infrastructure of the Faculty of Logistics, University of Maribor

1. Research Entities

In accordance with paragraph 3 of point 1 of PODRIUM, the Faculty of Logistics of the University of Maribor enters the policy of open access to the research infrastructure of the University of Maribor by specifying the entities that dispose of the research infrastructure and the contained research data. At the level of the Faculty of Logistics of the University of Maribor, these are individual laboratories, namely: Laboratory for Cognitive Systems in Logistics, Laboratory for Quantitative Modeling in Logistics, Laboratory for Sustainable Mobility and Transport, Laboratory for Management in Logistics and Supply Chains and Laboratory for Green Technologies.

Laboratory for cognitive systems in logistics

- head of the entity: prof. Tone Lerher, PhD.; tone.lerher@um.si

Laboratory for Quantitative Modeling in Logistics

- head of the entity: prof. Tomaž Kramberger, PhD.; tomaz.kramberger@um.si

Laboratory for Sustainable Mobility and Transport

- head of the entity: prof. Darja Topolšek, PhD.; darja.topolsek@um.si

Laboratory for Management in Logistics and Supply Chains

- head of the entity: assoc. prof. Matevž Obrecht, PhD.; matevz.obrecht@um.si

Laboratory for green technologies

- head of the entity: assoc. prof. Matjaž Knez, PhD.; matjaz.knez@um.si

2. Contact person

Contact person of the member for information related to the open access research infrastructure of the Faculty of Logistics of the University of Maribor:

assist. Mateja Forte, PhD.; mateja.forte@um.si, +386 3 428 53 18

3. Types of available research infrastructure

Through its entities, the Faculty of Logistics of the University of Maribor has various types of research infrastructure at its disposal. The current range of types of research infrastructure represents the disposal of:

- research equipment (basic research infrastructure),
- research data (knowledge transfer infrastructure),
- researchers (knowledge transfer infrastructure).

4. Research infrastructure in open access

The research entities of the Faculty of Logistics of the University of Maribor offer open access to their available research infrastructure; basic research infrastructure and knowledge transfer research infrastructure, in accordance with the restrictions defined in Annex 1 to the Open Access to Research Infrastructure Policy of the Faculty of Logistics of the University of Maribor.

The basic research infrastructure available is research equipment, which the Faculty of Logistics of the University of Maribor rents out for open access and therefore the possibility of renting; is classified research equipment with a purchase value of EUR 5,000 or more. The remaining classified research equipment of the Faculty of Logistics, namely classified research equipment with a purchase value of up to EUR 5,000 is not subject to open access and therefore the possibility of renting, except in the case of a prior written agreement with the head of an individual research entity at the university member level.

The available basic research infrastructure of the Faculty of Logistics of the University of Maribor is presented in Annex 1 to the Policy of open access to the research infrastructure of the Faculty of Logistics of the University of Maribor. Annex 1 specifies: the administrator of the equipment, the name of the equipment, the purpose of the equipment, the year of purchase, the purchase value, the monthly rate of utilization, users, conditions of access, the possibility of access, forms of access, restrictions, units of access, costs, and fees per unit of access, education options or training.

All available research equipment listed in the list of basic assets of the faculty as of 12/31/2021 is presented in open access. Data on available equipment in open access will be updated twice a year, namely in an interval period of 6 months.

The available research infrastructure of knowledge transfer is the research data that is created as a protocol or result of the research work of researchers or technical collaborators. Research data are data derived from professional or scientific publications by researchers.

5. Users of research infrastructure in open access

The open access research infrastructure of the Faculty of Logistics of the University of Maribor is publicly accessible to employees of the University of Maribor as part of the University of Maribor's research activities or to other public educational or research organizations. It is available to employees, including researchers of various levels, postdoctoral researchers, technicians, research groups and institutes.

Except in the case of a different prior written agreement with the head of the research entity, the basic research infrastructure of the Faculty of Logistics of the University of Maribor is not available independently or without the accompaniment of a researcher of the research entity in whose management the research equipment is., external users, i.e., researchers from business and other users. The knowledge transfer research infrastructure of the Faculty of Logistics is available to these users, represented by research data or expertise of the researcher(s) of the individual research entity. The Faculty of Logistics thus offers a comprehensive service to external users, as part of which a qualified employee performs the work using the fundamental research infrastructure.

The research infrastructure of the Faculty of Logistics of the University of Maribor, both fundamental and knowledge transfer infrastructure, can only be used to create new knowledge, products, procedures, methods, and systems. When participating in and using the research infrastructure of the Faculty of Logistics, users must observe the relevant principles, strategies, directives, and other regulatory documents of the University of Maribor.

6. Access to open access research infrastructure

Access to the research infrastructure means a legitimate and authorized way of participating in and using the research infrastructure of the Faculty of Logistics and service to users. Access to the research infrastructure provided by the Faculty of Logistics or its research entities is physical, remote, or virtual (it enables access to the research infrastructure via communication channels or means of online networks), and it depends on the type or type of research infrastructure, according to which the need is expressed by the potential user. Access to the research infrastructure of the Faculty of Logistics of the University of Maribor includes a form of access based on the excellence of the research work and based on the general orientation of the research. The form of excellence-based access depends on the scientific excellence, originality, quality, and technical and ethical feasibility of the work. The form of generally oriented access is possible in the case of an agreement between the user and the entity that disposes of the research infrastructure and provides for the payment of an access fee. This form is also possible when there is a need on the market that requires technical or scientific solutions achieved through access to research infrastructure. Both methods are approved or rejected based on an internal assessment or expert review of the application.

The research entities of the Faculty of Logistics offer users a certain amount of access to the research infrastructure, which is measured by access units defined by individual entities. The access units differ depending on the different types of research infrastructure requested by potential users and are precisely identifiable, such as e.g., hours of use, gigabytes users create and store while running complex experiments, and more.

The research entities of the Faculty of Logistics allow free units to access the research infrastructure if the desired research infrastructure is not in use by the employees of the Faculty of Logistics and its research entities at the desired time. Free units of access to the research infrastructure of the research entity of the Faculty of Logistics can only be provided considering the correct use of the individual type of research infrastructure or the use of the basic research infrastructure in the laboratory environment, to the extent that this is specified for individual research equipment.

Procedures and collaborations related to access to the research infrastructure of the Faculty of Logistics differ depending on the different types of basic research infrastructure within individual entities, but decisions on the request for access to users must be clear and justified.

7. Costs and Fees

Access to the research infrastructure of the Faculty of Logistics of the University of Maribor can be free, or it can be paid for. Fees for access to different types of research infrastructure vary, but follow the listed principles:

- verifiability,
- traceability of work performed, including maintaining adequate records of access requests (successful and unsuccessful),
- reasons for denying access,
- usage data,
- bans on double financing,
- compliance with all relevant state funding conditions, EU funding conditions and competition legislation.

Access to basic research infrastructure; in this case of research equipment, it is free if the need for basic research infrastructure for justified reasons (scientific excellence of the research, general nature of the research) is expressed by a researcher, research group or research institute of the University of

Maribor or other public educational research/research organizations in Republic of Slovenia. The user's interest in the rental must be expressed in writing, and the access and any assigned access units are determined by the research entity of the Faculty of Logistics, which disposes of the research equipment that is the subject of the rental.

The Faculty of Logistics of the University of Maribor provides open access to basic research infrastructure or research equipment only in the case of the presence of a researcher from the Faculty of Logistics of the University of Maribor in addition to the research equipment during the use of the research equipment by the user or in the case of providing a comprehensive service for the user. Access to the basic research infrastructure is thus only possible by renting the research infrastructure of knowledge transfer (researcher) in addition to the basic research infrastructure, which in all cases is chargeable. The Faculty of Logistics and its research entities do not rent out the basic research infrastructure for the purposes of market research only.

The basic research infrastructure of the Faculty of Logistics is in open access from the purchase to the removal of each piece of classified research equipment from the list of basic assets of the faculty, whereby all conditions related to the use of the basic research infrastructure must be transparent and publicly available. In the case of paid access, the user is charged a fee related to the actual use of the research infrastructure.

7.1 Agreement on cooperation - agreement on the use of research equipment

A sample of the Cooperation Agreement or Agreement on the use of research equipment is Annex 2 to the Policy of Open Access to the Research Infrastructure of the Faculty of Logistics of the University of Maribor, and the equivalent English version in terms of content is Annex 3 to the Policy of Open Access to the Research Infrastructure of the Faculty of Logistics of the University of Maribor.

It contains minimum provisions that must not be deleted. The sample will be supplemented according to the selected infrastructure in open access. Instructions that precisely define the conditions of use are attached to the agreement. The user must be familiar with all instructions/stipulations/forms for handling the equipment in advance, under clear, transparent, and fair conditions. The instructions for use are Annex 4 to the Open Access Policy to the Research Infrastructure of the Faculty of Logistics of the University of Maribor.

7.2 Securing equipment in open access

The insurance of the basic research infrastructure of the Faculty of Logistics is arranged in accordance with the current practice of the university member within the framework of the insurance policies concluded. By signing the Cooperation Agreement, users of the basic research infrastructure of the Faculty of Logistics in open access are obliged to comply with the instructions for the safe and correct use of the basic research infrastructure, and when returning the rented infrastructure to the university member, they are obliged to sign the Form for the return of the basic research infrastructure, with which both the tenant and the manager of the research entities of the Faculty of Logistics, whose research infrastructure was leased, guarantee that the infrastructure was returned to the faculty in its entirety, undamaged and within the agreed terms of the lease. The form for the reverse of the fundamental research infrastructure is Annex 4 to the Policy of open access to the research infrastructure of the Faculty of Logistics of the University of Maribor.

7.3 Management of infrastructure costs and revenues in open access

The Faculty of Logistics of the University of Maribor will bear all costs and revenues related to the research infrastructure; both the basic and the knowledge transfer infrastructure were managed in a

separate cost center called "Research infrastructure in open access". The costs of submitting the research infrastructure of the Faculty of Logistics of the University of Maribor to open access are defined in Costs and fees per unit of access to research infrastructure in open access and are an integral part of Annex 1 to the Policy of open access to the research infrastructure of the Faculty of Logistics of the University of Maribor.

8. Education and training

Within the policy of open access to the research infrastructure of the Faculty of Logistics of the University of Maribor, we encourage cooperation with other institutions and organizations that benefit from the research infrastructure of the Faculty of Logistics for their research, education, and training. Access to the research infrastructure of the Faculty of Logistics is limited to certain users and conditions.

9. Limits

Restrictions on access to the research infrastructure of the Faculty of Logistics are proportionate and justified, and consist of protection of human rights, national security, and defense, right to privacy and respect for persons participating in research, protection of intellectual property rights, personal data, rare and endangered species and ethical aspect in accordance with relevant laws and regulations. Access to the research infrastructure of the Faculty of Logistics is also potentially limited by the occupancy of the research infrastructure or the insufficient availability of access units during the desired rental period.

10. Ethical conduct, research integrity and non-discrimination

The policy of open access to the research infrastructure of the Faculty of Logistics follows the Code of Ethical Conduct of the University of Maribor and other principles defined in the European Code of Conduct for Research Integrity of the European Science Foundation (ESF) and the Association of European Academies (ALLEA): <https://www.allea.org>.

The eight principles by which researchers should act include:

- honesty in communication,
- reliability in conducting research,
- objectivity,
- impartiality and independence,
- openness and accessibility,
- duty of care,
- honesty in citing references and merits,
- responsibility towards future scientists and researchers.

When deciding on granting access to the research infrastructure to the user, the latter must not be discriminated against based on personal reasons.

11. Quality Assurance

In the context of ensuring the quality of open access to the research infrastructure of the Faculty of Logistics of the University of Maribor, mechanisms have been established to assess the quality of access to the research infrastructure within individual entities. The mechanisms consider the general principles defined by the European Commission. These principles are denoted in English by the acronym "RACER" (Relevant, Accepted, Credible, Easy, Robust):

- relevance and close connection with the set goals,
- acceptance by stakeholders,
- credibility for non-experts, unambiguity, and easy explanation,
- simplicity of monitoring, with low costs and little effort,
- stability in cases of attempted manipulations.

The established mechanisms include the following parameters:

- user metrics (e.g., user access, user base and relevance to users),
- RI operational metrics (e.g., provision of access, service, central management, reliability, visibility, size, and development of the user community),
- strategic indicators (eg publications and other products, cross-disciplinarity, economic impact) and
- financial metrics (eg service, resources, costs, yield).

The basic mechanism for evaluating the quality of open access to the research infrastructure of the Faculty of Logistics of the University of Maribor is represented by the document Questionnaire on quality assurance of open access to the Research Infrastructure of the University of Maribor, which is Annex 5 to the Policy of Open Access to the Research Infrastructure of the Faculty of Logistics of the University of Maribor.

12. Control over research infrastructure in open access

The supervision of the research infrastructure of the Faculty of Logistics of the University of Maribor envisages the introduction of appropriate mechanisms for monitoring and evaluating the effectiveness and usefulness of the open access policy and initiatives within the goals of open science, including the determination of unintended consequences and possible negative effects (especially for researchers at the beginning of their careers).

The established mechanisms will include the following parameters:

- collecting and disseminating reports on progress, good practices, innovations and research on open science and its consequences,
- development of strategies for monitoring the effectiveness and long-term usefulness of open science with the aim of strengthening the ties between science, politics, and society,
- greater transparency and responsibility for those involved,
- equal and high-quality research that brings an effective response to global challenges.

13. Research data management

Research data generated within the framework of open access to the research infrastructure of the Faculty of Logistics of the University of Maribor are stored in both written and electronic form by research entities, i.e., individual laboratories. The management of research data according to the principles of FAIR (findability, accessibility, interoperability, and suitability for reuse) is the responsibility of the heads of research entities or laboratories. The management of research data is defined in a separate regulatory document.

Research data generated within the framework of open access to the research infrastructure, in written and electronic form, must be kept for a period of five (5) years, namely in the entity that disposes of the research infrastructure in the context of the use of which the data was generated. In case of re-use of data created in open access, the heads of individual entities can provide research data to the contact person of the member, who forwards them on in accordance with the regulatory documents.

If the data created in open access cannot be open access, we must use tools and protocols for pseudonymizing and anonymizing data and systems for establishing mediated access with the goal of as much data exchange as possible.

13.1 FAIR principles

Findability

- metadata is assigned a globally unique permanent identifier (PID, e.g., research data is described with rich metadata (at least creation date, title, authors, keywords, license, funding, etc.)
- metadata clearly and explicitly state the identifier of the research data they describe, e.g., DOI
- metadata are registered or indexed in a search source, e.g., search engines, bibliographic collections, indexes).

Accessibility

- metadata can be accessed with the help of an identifier via a standardized communication protocol that is open, free and universal (e.g., http)
- the communication protocol enables authentication and authorization procedures where necessary, about which the user must be informed (e.g., login with an institutional account or digital certificate)
- metadata are accessible, even when the research data itself is no longer available
- metadata is accessible, even if there are valid reasons that the data itself is not (e.g., due to the protection of personal data) --"as open as possible and as closed as necessary" FAIR data is not necessarily OPEN data.

Interoperability

- metadata are prepared in a formal, accessible, general, and widely applicable language for presenting knowledge
- metadata follows a controlled vocabulary that follows FAIR principles, e.g., MeSH in Medicine
- metadata contains qualified references to other metadata
- data is compatible with other data sets and applications or work processes for analysis, storage, and processing (we tend to use non-proprietary, open data formats).

Reusability

- metadata are richly described and list a multitude of precise and relevant properties,
- metadata is provided with a clear and accessible license on the use of research data, e.g., Creative Commons,
- metadata provide details about the origin of the research data,
- in the additional documentation, we describe everything that is necessary for understanding and reuse (methodology, variables, procedures, definitions, units of measurement, program code, format...),
- metadata meet the standards of the individual scientific field.

14. Transparency

At the level of the University of Maribor, the Department for Research and Artistic Activities of the University of Maribor (ORUD UM) takes care of the transparency and transparency of operations with the research infrastructure and provides information on the Open Access Policy, general information on the research infrastructure and contact details of the entities.

At the level of the Faculty of Logistics of the University of Maribor, transparency, and transparency of operations with research infrastructure is ensured by the contact person of the university member together with the Service for accounting affairs of the member and the heads of individual research entities.

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