Austria Country Profile

Q4/2022

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This report was drafted within the initiative of the EOSC Support Office Austria (eosc-austria.at). It is a deliverable of the Working Group (WG) "Austria Country Profile". Task of this WG is the regular monitoring of EOSC building processes in Austria, i.e., open science and FAIR related policies, projects, activities as well as research data (management) and computing infrastructures.

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Please note: The WG does not claim that the projects, activities, and infrastructures listed below are complete. This report represents a status quo. It is, however, updated on a regular basis and thus strives for the most accurate monitoring possible.

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Current policy on open and FAIR science

1. Is there a current policy on open and FAIR science in place?		
Yes	No	In planning
X		

Open Science Policy Austria

In February 2022, the Open Science Policy Austria was adopted during a joint presentation to the Council of Ministers by the BMBWF, BMDW and BMK. With this presentation to the Council of Ministers and this Open Science Policy Austria, Austria is committed to the Open Science movement and the European Open Science Cloud (EOSC). The vision of Open Science is to make scientific processes more open and effective and to use both scientific excellence and open innovative and applied research to address current challenges, which are very comprehensively presented in the Policies of the EU Commission and in the framework of the Global Sustainability Goals (UN SDGs).

- More information and link to the document (currently only available in German): https://www.bmbwf.gv.at/Themen/HS-Uni/Hochschulgovernance/Leitthemen/Digitalisierung/Open-Science/Open-Science-Policy-Austria.html

Prior to the Policy, a working group of the Open Science Network Austria (OANA) developed
- "Recommendations for a national open science strategy" (October 2020). Zenodo. http://doi.org/10.5281/zenodo.4109242

Directive on the re-use of public sector information (PSI), now called Open Data Directive

The European Open Data and PSI Directive provides the legal basis for the re-use of public sector data and sets a minimum set of rules. Focus is on non-personal data that are made freely available in the public interest.

Some services supporting the Directive:
- Austrian Open Data Portal: Open Data Österreich – https://www.data.gv.at/
- AMDC - Austrian Micro Data Center: https://www.statistik.at/services/tools/services/amdc-mikrodaten-fuer-die-wissenschaft. The Austrian Microdata Center of Statistik Austria offers data protection-compliant access to microdata. The data remain at Statistik Austria, and only a virtual desktop infrastructure is provided for research projects. Not only data of Statistik Austria can be researched via the AMDC, but also other administrative and register data - provided that these are released for use in the AMDC by the respective department
- ZAMG Data Hub: https://data.hub.zamg.ac.at/
- Mobilitydata.gv.at platform: https://mobilitaetsdaten.gv.at/. Serves as national access point of Austria for mobility data and is an implementation of the national ITS- law . It's a centralised one-stop-shop to significantly simplify the connection of local data providers and international service providers by granting access to information on existing data and use conditions (metadata)

Open Science policies by funding organizations

The largest national funding agency for basic research, the Austrian Science Fund (FWF), is committed to support open and FAIR science through its open access policy to publications and to research data (https://www.fwf.ac.at/en/research-funding/open-access-policy/). 82% of all publications resulting from FWF projects are openly accessible. See also: Compliance Monitoring 2021 report. Since 2019, the FWF requires a data management plan (DMP) supplemental to all approved grant proposals. The FWF has defined a minimum set of questions that comprise the

DMP and that are to be addressed in the DMP template. The FWF DMP is in line with Science Europe's "Core Requirements for Data Management Plans".

The WWTF, the Vienna Science and Technology Fund, released an Open Science Policy in March 2022: https://wwtf.at/funding/our-principles/downloads/open-access-and-open-science-policy

Research data management policies in Austrian universities
Nine universities in Austria have policies for research data management in place, encouraging in these policies open science practices and the adoption of the FAIR principles:
- Medical University Graz
- Medical University Vienna
- Graz University of Technology
- TU Wien
- University of Graz
- University of Innsbruck
- University of Music and Performing Arts Vienna
- University of Vienna
- WU (Vienna University of Economies and Business)

Active projects funded by the BMBWF
In June 2022, the BMBWF released the call "(Digitale) Forschungsinfrastrukturen". Submission deadline was 15 September.

In 2019, a national call "Digital and social transformation" was launched by the BMBWF with selected digitization projects at public universities for the period 2020 to 2024, including activities connected to FAIR and EOSC. (NB: This is an excerpt out of 34 projects in total - selection according to open science relevance)**:**
- FAIR Data Austria: https://forschungsdaten.at/en/fair-data-austria/. The FAIR Data Austria project contributes to the strengthening of knowledge transfer between universities, industry and society and supports the sustainable implementation of the European Open Science Cloud (EOSC). In this context, the implementation of the FAIR principles ("Findable", "Accessible", "Interoperable" and "Reusable") plays a significant role. Their compliance is ensured through 1) integrated research data management (RDM) tailored to generic and discipline-specific needs of researchers, (2) development of Next Generation repositories for research data, code, and databases, and (3) development of training and support services for efficient RDM.
- Austrian Data Lab and Services (ADSL): https://forschungsdaten.at/en/austrian-datalab-and-services/. The ADLS project was set up to promote and facilitate collaborative work between universities, especially in the fields of data science and high performance computing (HPC). It aims to provide easy access to a nationwide network of applications in a federal opt-in model. In particular, the focus lies on increasing user-friendliness and saving time for researchers, teachers and students in the course of using computing resources.
- RIS Synergy: https://forschungsdaten.at/en/ris/. In order to digitise administrative processes, the IT systems of funding organisations and research institutions need to be connected, which would make it possible to improve data quality and conserve resources on all sides. New developments in the digital systems of the FWF (elane, PROFI, final project reports) offer an excellent opportunity.
- Open Education Austria Advanced: https://www.openeducation.at/. Open Education Austria Advanced is a project of Austrian universities for the joint development of a national infrastructure for Open Educational Resources (OER) (project duration 01.03.2020-28.02.2024). It is an attempt to link services of e-learning centers, central IT

services and libraries of the partner universities in order to support teachers in the creation of OER materials for self-study and teaching. The project aims at a gradual increase in the quality of teaching and learning, as well as the visibility of good-practice materials within the respective discipline.

- Austrian Transition to Open Access II (AT2OA2): https://at2oa.at/en/home.html. The measures from AT2OA will be continued with the aim of concluding further Open Access agreements with publishers and setting up a data hub to process publication data from various sources. This can be used for Austria-wide OA monitoring and to support negotiations with scientific publishers and support the reporting system of the universities by making the data reusable for statistical verification systems, annual reports and the like. The use of alternative metrics will help answer the question of whether OA increases the visibility of scientific publications.

- Digitize! Computational Social Sciences in the digital and social Transformation": https://digitize-transformation.at/en/. Digitize! is a cooperative digitalisation project in which various social sciences collaborate with data scientists, legal scholars and experts in research ethics.

- DiTAH - Digitale Transformation der Österreichischen Geisteswissenschaften: https://www.ditah.at/. The aim of this project is to establish and prepare the methods and approaches developed in the Digital Humanities in such a way that they can be transferred into the everyday use of research and education in the humanities.

- Image+: https://www.angewandtekunstgeschichte.net/forschung/image-platform-for-open-art-education. Image+ Platform for Open Art Education" is an Austrian image and image research platform to improve the quality of teaching

- LEFO - Lehr- und Forschungsinfrastruktur für Digitale Künste an Hochschulen (Infrastructures for Digital Arts Teaching and Research in Higher Education: https://www.donau-uni.ac.at/de/forschung/projekt/U7_PROJEKT_4294970090. This project focuses on new interactive interfaces and displays, which enable multimodal access to databases and multisensory analysis of the archived works. Within the concept of a living archive, students, researchers and teaching staff will be able to actively work on the database.

- TransIT: https://www.tunnellinghub.at/#project. In the TransIT project (Platform for Digital Transformation in Civil Engineering and Tunneling), research groups are working in a multidisciplinary manner with complementary expertise on the implementation of digitization topics in civil engineering and tunneling. For this purpose, a virtual research platform, the Digital Tunneling Hub, is being created at the University of Leoben.

- Austrian Neuro Cloud: https://uni-salzburg.elsevierpure.com/de/projects/austrian-neuro-cloud. Austria has an internationally competitive large-scale equipment infrastructure in the field of cognitive neuroscience, the potential of which is to be fully exploited through Austria-wide networking. The Austrian NeuroCloud will create a cross-location, open environment for the storage, management, and evaluation of neuro-cognitive data. The Austrian NeuroCloud thus creates a use case in the area of an extremely data-intensive research field that fulfils the vision of the European Open Science Cloud.

- Digitale Landwirtschaft - Interuniversitäres PhD-Kolleg und digitale Versuchsfarmen (more info to follow).

- codeAbility: https://codeability.uibk.ac.at/index-en.html. CodeAbility Austria creates teaching and learning environments in order to enable students of all subjects ot receive high-quality and individual programming training.

- GEOCLIM: https://wegcenter.uni-graz.at/en/research/arsclisys-research-group/projects/geoclim/. Goal: Existing Earth Observation Data Centre (www.eodc.eu) and Climate Change Centre Austria-Data Centre (CCCA-DZ at ZAMG Hohe Warte; www.ccca.at) will be furthered by federated integration of high-performance computers of the Vienna Scientific Cluster (VSC; www.vsc.ac.at and ZAMG CIRRUS). This creates

internationally competitive computing and storage capacity for monitoring and modelling (e.g. of climate, atmosphere, land surface, water balance, ecosystems) and promotes the intensification of cooperation in scientific research and applications regarding FAIR and TRUST principles, as well as GEO (Group on Earth Observation) Data Sharing and Data Management Principles. Timeframe: 2017 - 2022.

Completed projects funded by the BMBWF (formerly HRSM projects)
- Integriertes Datenmanagement: https://biotechmedgraz.at/en/programs/shared-infrastructure/infrastructure-call-2016/.
- IDE@S: Innovative Data Environments: https://www.tugraz.at/projekte/ideas/home/
- CCCA Data Centre, CCCA: https://data.ccca.ac.at, https://ccca.ac.at.
- e-Infrastructures Austria: https://e-infrastructures.univie.ac.at/
- e-Infrastructures Austria Plus: https://www.e-infrastructures.at/en
- Austrian Transition to Open Access: https://at2oa.at/en/home.html

Active EU projects fostering Open Science, FAIR and the EOSC
- EOSC Focus: https://eosc.eu/eosc-focus-project. The project will support the co-programmed EOSC Partnership in delivering its mission of establishing Open Science as the "new normal" and achieving the key objectives, which are outlined in the Memorandum of Understanding between the European Union and the EOSC Association (EOSC-A).
- Skills4EOSC: https://www.skills4eosc.eu/. Goal is to unify the current training landscape into a common and trusted pan-European ecosystem, in order to accelerate the upskilling of European researchers and data professionals in the field of FAIR and Open Data, intensive-data science and Scientific Data Management.
- FAIRiCUBE: https://fairicube.nilu.no/. The project will pave the way for a crosscutting platform and framework for data ingestion, provision, analysis, processing, and dissemination, to unleash the potential of environmental, biodiversity and climate data through dedicated European data spaces. Focus will be on the development of tools that enable users who are not intimately familiar with the worlds of Earth Oberservation and machine learning to scope the requirements and costs of their desired analyses.
- DISSCo: https://www.dissco.eu/. A distributed system for natural science collections.
- https://sshopencloud.eu/EuroCC: https://www.eurocc-access.eu/. Goal: to develop in European countries National Competence Centers (NCC) in High Performance Computing (HPC), Big Data and Artificial Intelligence. This NCC will be the contact point for academia, industry and public organisations for collaborations in HPC, Big Data and AI projects, and the NCC will document, map and coordinate activities in these areas. Within the project, the tasks are (i) training and skills development, (ii) technology transfer/business development, (iii) academia-industry collaborations, (iv) mapping of HPC/Big Data/AI competences and (v) facilitation of access to expertise and resources.
RDA/EOSC Future Cross-disciplinary Science Adoption: GIGAR-V "Guiding Infrastructure Governance and Controlled Vocabularies requirement".
The core objective is to create a holistic framework of recommendations enabling harmonization and alignment between different concept vocabularies, including also the taxonomy approach as reference codes, allowing for greater interoperability of related data resources. https://eoscfuture-grants.eu/provider/research-data-alliance/rda-open-call-cross-disciplinary-science-adoption-grants-2

Completed EU projects
- EOSC-Pillar: https://www.eosc-pillar.eu/
- SSHOC: https://sshopencloud.eu/
- ON MERRIT: https://on-merrit.eu/

- EOSC Secretariat: https://www.eoscsecretariat.eu/
- RDA Europe Adoption Grant: CCCA Subset & Dynamic Data Citation - A Design Concept for OpenEO interface for climate projection data. Cooperation CCCA & TU Wien, 2019-2020

Networks fostering Open Science, Citizen Science, FAIR, EOSC, and PSI activities
- EOSC Support Office Austria: https://eosc-austria.at/
- Open Science Austria - OSA: https://www.osa-openscienceaustria.at
- ABOL – Austrian Barcode of Life - ein Netzwerk für Biodiversität: https://www.abol.ac.at/
- FAIR Office Austria: https://www.fair-office.at
- GO FAIR Austria office - National Support and Coordination Office: https://www.go-fair.org/go-fair-initiative/go-fair-offices/go-fair-austria-office/
- OANA – Open Science Network Austria: https://www.oana.at (2012-2021; comment: restructured under the umbrella of uniko and under the title of "Open Science Austria (OSA)")
- Open Science - Lebenswissenschaften im Dialog: https://www.openscience.or.at/de/
- dha – digital humanities Austria: https://digital-humanities.at/de
- Kulturpool: http://www.kulturpool.at/display/kupo/Home
- Plattform Registerforschung: https://www.registerforschung.at/
- RDA Austria: https://www.rd-alliance.org/groups/rda-austria
- Citizen Science Network Austria: https://www.citizen-science.at/netzwerk Österreich forscht: Citizen Science Projekte - Österreich forscht (citizen-science.at)
- European Citizen Science Association (ECSA): https://ecsa.citizen-science.net/
- DOI-Service Austria: https://www.tuwien.at/bibliothek/doi-service-austria-orcid-austria moved to the new website: https://orcid-austria.org/
- ORCID Austria: https://www.tuwien.at/kooperationen/orcid/en/home/
- GEO (Group on Earth Observation) – GEO Data Working Group: Review on Data Sharing and Data Management Principles and crosswalk towards FAIR and Trust Principles. https://www.earthobservations.org/data_wg.php
- KEMÖ - Kooperation E-Medien Österreich: Austrian Academic Library Consortium (KEMÖ)

Open Science, RDM and Data Stewardship trainings
Certificate Course "Data Steward" at the University of Vienna:
In order to build skills and competences for the EOSC as well as research institutions in Austria, the Vienna University Library developed a formal part-time further education program – the certificate course "Data Steward". The contents are based on a previous certificate course "Data Librarian", the results of the FAIR Data Austria project and similar programs such as DataTrain and Zertifikatskurs FDM in Germany. The course supports both existing staff and new hires in generic and domain-specific data stewardship roles in acquiring knowledge and key competences to perform the tasks of data stewards at research institutions. The course was designed following three guiding principles – competence acquisition (1), peer-to-peer learning (2) and community building (3). The first round began with 25 emerging data stewards from 10 countries in October 2022. The next round will start in October 2023. More information at:
https://www.postgraduatecenter.at/en/programs/communication-media/data-steward/

Certificate Course "Data Steward" in a nutshell:
- Academic degree: Certificate of the University of Vienna
- Language: English
- Duration and scope: 2 semesters/15 ECTS
- Target groups: Researchers and research support staff
- Costs: 2950 €
Modules:

- Module 1 (2 ECTS): Basics of Research Data Management (RDM) and Open Science
- Module 2 (3 ECTS): Basics of IT and Data Science
- Module 3 (6 ECTS): FAIR Data in the Research Data Lifecycle
- Module 4 (2 ECTS): RDM Support
- Module 5 (2 ECTS): Data Stewardship in Practice: Project Work

Open Science, RDM, and FAIR related publications
- FTI-Strategie 2030, Gesamtöst. Universitätsentwicklungsplan 2022–2027, UniNEtZ– Optionenbericht
- Community-driven Governance of FAIRness Assessment" is one output of the TF FAIR Metrics & Data Quality that is being submitted to Open Research Europe, https://doi.org/10.5281/zenodo.7390482
- Data Stewardship at Austrian Universities (2022): This report, in the form of a toolbox, presents data steward models, together with the required competences and training. It allows universities to choose the appropriate implementation strategy based on their characteristics needs. It is available for download under this link.
- Mayer, Katja (2022) Open Access im Wandel. Infrastrukturen, Monitoring und Governance als zentrale Elemente einer erfolgreichen Transformation. Baseline Report zur Open Access Transformation in der Wissenschaft. Technischer Bericht. Wien. https://repository.fteval.at/596/
- National survey of researchers and their data: In 2015, 36.000 researchers at Austrian universities were asked about their practices and requirements for research data management. Results:
  - Researchers and Their Data. Results of an Austrian Survey (PDF Full Report/en): https://phaidra.univie.ac.at/detail_object/o:409318
  - Executive Summary: Researchers and Their Data. Results of an Austria-wide survey (en): http://phaidra.univie.ac.at/detail_object/o:408001
- The Project EOSC-Pillar conducted a complementary survey for research infrastructures and their FAIRness level. It addressed Austrian RI organisations, universities, and policy makers (2019/2020). The report was published and is available at: https://doi.org/10.5281/zenodo.3937318
  - The data of the study is available at: https://data.aussda.at/dataset.xhtml?persistentId=doi:10.11587/VOSVGK

1.1. Is there a current policy regarding **publications** in place?		
Yes	No	In planning
x		

According to the Open Science Policy Austria, open scholarly publishing must become the standard approach as soon as possible. To drive this momentum, research publications resulting from calls for projects that are publicly funded must be disseminated via open access platforms, be it in journals, books or via an open public repository. Austrian universities are encouraged to ensure that publications by researchers working there are also under open licenses. To maintain these practices over time, the evaluation system for researchers and research institutions needs to be updated to reflect the principles and practices of open science. Changes in the way researchers are evaluated aim to give more weight to quality over quantity, as outlined in the proposals of the San Francisco Declaration on Research Assessment (DORA) and the principles of the Leiden Manifesto. The scientific community must regain control over the publishing process in general, in accordance with the principles that govern open science and bibliodiversity are required. It must focus its efforts on those stakeholders who are working to develop a less concentrated publishing

environment that is consistent with the principles of open and ethical access. *[Excerpt translated from the Open Science Policy Austria (page 10)]*

Open access policies in Austrian research institutions
- At this point, there are several institutional OA policies in place (see https://www.oana.at/ueber-open-science/open-access-ressourcen/#c236283).
- Several Austrian institutions support alternative publication formats and platforms such as Open library of humanities, SciPost, DOAJ, OAPEN, Open Knowledge Maps: https://oana.at/nationale-aktivitaeten/support-von-infrastrukturen/; https://oapen.org/funders/7589935-fwf-austrian-science-fund
- Implementation of institutional publication servers: An overview (from 2018) is available in the following publication: Bauer, B., & Ferus, A. (2018). Österreichische Repositorien in OpenDOAR und re3data.org: Entwicklung und Status von Infrastrukturen für Green Open Access und Forschungsdaten. Mitteilungen der Vereinigung Österreichischer Bibliothekarinnen und Bibliothekare, 71(1), 70–86. https://doi.org/10.31263/voebm.v71i1.2037

Strategy towards Plan S
- Since 2021, the Open Access Policy of the Austrian Science Fund (FWF), which is one of thefirstmembers of cOAlition S, is in line with Plan S. The BMBWF supports Plan S (see e.g. Anfragebeantwortung durch den Bundesminister für Bildung, Wissenschaft und Forschung Dr. Heinz Faßmann zu der schriftlichen Anfrage (933/J) der Abgeordneten Dr. Helmut Brandstätter, Kolleginnen und Kollegen an den Bundesminister für Bildung, Wissenschaft und Forschung betreffend Plan S: https://www.parlament.gv.at/PAKT/VHG/XXVII/AB/AB_00935/imfname_791658.pdf).
- Furthermore, a working group in the framework of the Forum of Austrian University Libraries (ubifo) is currently developing guidelines for an institutional implementation of Plan S at the Austrian universities.

Other successful initiatives and projects promoting open access to publications in Austria
- The national funding agency FWF was one of the first funding agencies worldwide to establish an open access policy to publications in 2004: https://www.fwf.ac.at/en/research-funding/open-access-policy/open-access-to-peer-reviewed-publications/open-access-publication-models/. Today, almost all publications resulting from FWF grants see Austrian Science Fund (FWF) Open Access Compliance Monitoring) are open access.
- The Austrian Academic library consortium (KEMÖ) together with the FWF was the first consortium worldwide to negotiate a transformative open access agreement in 2014 and since then several open access agreements have been concluded so that Austrian researchers can publish their research results open access and free of costs. https://www.konsortien.at/
- In March 2022, the Action Plan for Diamond Open Access was published. The action plan proposes to develop and expand a sustainable, community-driven Diamond OA scholarly communication ecosystem. It is endorsed by the Austrian Science Fund (FWF).
- In 2016, a working group of the Open Science Network Austria (OANA) published the "Recommendations for the Transition to Open Access in Austria" which helped to further Open Access to publications in Austria.
- Ministry-funded project Austrian Transition to Open Access II (AT2OA2): The measures from AT2OA will be continued with the aim of concluding further Open Access agreements with publishers and setting up a data hub to process publication data from various sources. This can be used for Austria-wide OA monitoring and to support negotiations with

scientific publishers and support the reporting system of the universities by making the data reusable for statistical verification systems, annual reports and the like.

1.1.1. If yes, does it include **open access to publications**?		
Yes	No	In planning
X		
See above, 1.1. Is there a current policy regarding **publications** in place?		

1.2. Is there a current policy regarding **data / services** in place?		
Yes	No	In planning
X		
1.2.1. If yes, does it include open access to data?		
Yes	No	In planning
X		

According to the Open Science Policy Austria, the aim is to ensure that data generated by publicly funded research in Austria have to comply with the FAIR principles (findable, accessible, interoperable and reusable), that they have to be preserved and, whenever possible, made openly accessible to the public.

The goal is also to implement a mandatory open-access dissemination mandate for all data that has already been made available as part of publicly funded projects. Certain exceptions to this obligation will be allowed in accordance with the law, e.g., if the data in question are professional secrets, statistical secrets, labor and trade secrets, personal data, or content subject to copyright, as well as if the data are considered sensitive due to national security, defense, or public safety and health.

Considering the European Data Strategy, several European legal provisions regulate the reuse of research data, in particular the European Commission Recommendation on Access to and Preservation of Scientific Information (revised 2018), the revised Directive on Open Data and the Reuse of Public Sector Information (Open Data and PSI RL 1024/2019), and the EU Copyright Directive, which applies to publicly funded research data and to which Austria subscribes. The aim is that research data can be re-used for commercial and non-commercial purposes, as long as it has been publicly funded and if it has been made publicly available by researchers, research institutions or research funding bodies via an institutional or thematic archive.

Furthermore, the European Data Strategy published in 2020 is intended to drive forward the creation of a single market for data. The aim is to increase the exchange and use of data within the EU and across sectors for the benefit of researchers, companies, and public administrations. This approach also forms the basis of the new European Research Area (ERA) to build a common science and technology space for the EU. Open Science and Open Data are essential tools for improving collaboration between researchers and innovators to enhance Austria's attractiveness as a location for the world's best talents. *[Excerpt translated from the Open Science Policy Austria (page 8)]*

Open Data as funders' requirement
The Austrian Science Fund (FWF) expects open access to research data collected and/or analyzed using FWF funds for projects approved from 1 January 2019 onward: https://www.fwf.ac.at/en/research-funding/open-access-policy/open-access-to-research-data/. Open access is mandatory for research data on which the research publications of the project are

based. Further, since 2019, the FWF has a mandatory policy on research data management in place: https://www.fwf.ac.at/en/research-funding/open-access-policy/research-data-management/

The WWTF states in its policy that it "does not require that all research data be made available. However, WWTF strongly encourages grantees to provide shareable research data according to each calls' specifications and requirement". More information see: https://wwtf.at/upload/wwtf_open-science-policy_09032022.pdf

1.3. Is there a current policy regarding **research evaluation** in place?		
Yes	No	In planning
X		

According to the Open Science Policy Austria, new ways of evaluating research will be explored, especially to accommodate open science practices. Publish-or-perish environments will be broken up and avoided. Open peer review practices are to be implemented in order to make the evaluation of scientific output more transparent. Despite years of intense criticism of so-called journal-based metrics, the impact factor of prominent journals still plays a significant role in the scientific community, especially when it comes to career planning. Increased transparency of evaluation processes of researchers and their applications should be ensured. Austria respects the goals of the San Francisco Declaration on Research Assessment (DORA), an international initiative that aims to establish metrics for evaluating scientific work. On the European level, the Leiden Manifesto should be mentioned in this context, which formulates similar intentions in the European context. *[Excerpt translated from the Open Science Policy Austria (page 4)]*

DORA - San Francisco Declaration on Research Assessment
In 2012, a set of recommendations that addresses the need to change the way of how output of scientific research is evaluated by funding agencies, academic institutions, and other parties, was published and is referred to as the San Francisco Declaration on Research Assessment (DORA Declaration). The Austrian Science Fund (FWF) and several Austrian research institutions signed the San Francisco Declaration on Research Assessment (DORA): See: Austrian signatories.

Hongkong Principles for assessing researchers
The Hongkong Principles were formulated and endorsed at the 6th World Conference on Research Integrity in June 2019. The principles aim to help research institutions to minimise incentives that invite to engage in questionable research practices or worse. The Austrian Science Fund (FWF), WIFO and the Austrian Agency for Research Integrity endorsed the principles.

COARA - Coalition for Advancing Research Assessment
In July 2022, the agreement on reforming research assessement was published after a Stakeholder Assembly bringing together the 350+ organisations from 40+ countries having expressed interest in being involved in advancing research assessment. The Austrian Science Fund (FWF) and several Austrian research institutions commit to COARA and to working on the advancement of the current scholarly assessment system. See: Austrian signatories

FTEVAL
Note: The Austrian Platform for Research and Technology Policy Evaluation (FTEVAL) is concerned with issues of research evaluation in Austria:
- https://www.fteval.at/content/home/plattform/about/index.jsp?langId=2
- https://repository.fteval.at
- Code of conduct: https://repository.fteval.at/387/ and principles: https://www.fteval.at/content/home/standards/fteval_prinzipien/index.jsp?langId=2

FTEVAL is an association whose members are institutions from the fields of research, technology and innovation (RTI). It includes government ministries, agencies, research funding organisations, research institutes and consulting firms. Membership is open to all those involved in commissioning or carrying out evaluations in the field of RTI. The aim of the association is to further develop the culture and practice of evaluation in Austria in the field of RTI. The fteval platform regards evaluation as central to ongoing improvement and strategic focus in RTI policy. A "good" culture of evaluation is both a prerequisite for and a result of "good" – i.e., efficient, transparent, and fair – policies. As declared in the mission statement: *"The mission of the Austrian Platform for Research and Technology Policy Evaluation is to promote the quality, transparency and adequate coverage of evaluations, to improve strategic planning of research, technology and innovation (RTI) policy in Austria. The existing evaluation culture is evolving continuously, in consultation with decision makers in Austrian RTI policy."*

Related Publication
- [available in German only] Janger, J. and T. König (2020). Forschungspolitik in Österreich. Zentrale Ansatzpunkte für eine Leistungssteigerung in der Grundlagenforschung

1.4. Is there a current policy regarding **open learning** in place?		
Yes	No	In planning
X		

According to the Open Science Policy Austria, the aspect of how knowledge is taught is also inseparably linked to an open society and an open science. The dissemination of knowledge is closely linked to the concept of open data.

Measurements:
- Austria would like to make its contribution to making the learning materials created in Austria publicly accessible in open formats in whatever form, for example on the basis of established open data standards. In a first step, the relevant repositories will be linked and thus made publicly accessible. In this way, Austria would like to make learning content available to the scientific community on the one hand, and on the other hand make learning more flexible and adapt it to individual needs.
- Universities and other extramural research institutions are therefore called upon both to create infrastructures to be able to deposit OER and to share them with others. Staff working at universities and universities of applied sciences should be encouraged to post and share their content in open formats where possible and appropriate.

The Forum New Media Austria (FNMA) has already prepared "Recommendations for the Integration of Open Educational Resources at Universities in Austria". The currently running project "Open Education Austria Advanced", in which several universities are involved, deals with the implementation of a corresponding infrastructure. Website: https://fnma.at/
[Excerpt translated from the Open Science Policy Austria (page 11)]

Active projects funded by the BMBWF
In 2019, a national call "Digital and social transformation" was launched by the BMBWF with selected digitization projects at public universities for the period 2020 to 2024, including activities connected to digitalizaton in teaching and learning. (NB: This is an excerpt - selection according to learning reference)**:**
- iMooX: https://imoox.at/mooc/?lang=en. iMooX is currently operated by the TU Graz and is to be expanded both technically and organisationally. At present, cooperation is taking place by offering individual MOOCs. In the future, all participating universities are to offer any number of MOOCs to the Austrian educational landscape. Through a central Austria-wide platform, all universities can universities can participate equally and the costs for

- maintenance and and operation can be minimised. "iMooX as a Service" is the declared goal.
- Open Education Austria Advanced: https://www.openeducation.at/. Goals: Solutions for Open Education Resources (OER) in the Austrian higher education sector: OERHub as a central meta-search engine for OER from the the higher education area; creation of local infrastructures at the partner universities; freely accessible qualification offers for OER certification for universities & teachers; knowledge transfer & dissemination between participating and interested universities.
- Learning Analytics: https://learning-analytics.at/home/. The project provides the first holistic and comprehensive view of the topic of Learning Analytics at Austrian universities and makes an important contribution to the development of functioning Learning Analytics methods in the university context. The development of appropriate tools in an interdisciplinary team ensures the innovation potential of the project results. The uniqueness of the project results primarily from the fact that the students themselves are at the center and benefit directly from the results.
- PASSt - Predictive Analytics Services für Studienerfolgsmanagement: The project aims to make academic success measurable and predictable. The modelling implemented by means of supervised machine learning procedures modelling allows the prediction of academic success on an individual and and aggregated level. In a further step, an agent-based simulation system to experiment with measures in simulation scenarios. The results help universities to better understand the mechanisms of success in higher education and to predict success at a future point in time.

2. Are there references to EOSC in the current policies?		
Yes	No	In planning
X		
2.1. Is funding or criteria for funding mentioned (with regards to EOSC)?		
Yes	No	In planning
X		
In the June 2022 call" (Digitale) Forschungsinfrastrukturen" released by the BMBWF there were clear references to EOSC.		
2.2. Is there a national contact point for open science?		
Yes	No	In planning
X		
Austrian Federal Ministry of Education (BMBWF) - Contact at administrative level (Open Science Policy, EOSC at ministry level): Stefan Hanslik, Austrian Federal Ministry of Education, Science and Research, Head of Unit, Department V/3a; contact: stefan.hanslik@bmbwf.gv.at "Open Science Austria" (OSA) - Contact person: Lola Karner, Officer for Open Science Austria (OSA), at the Austrian University Conference (Uniko); lola.karner@uniko.ac.at - Website: https://www.osa-openscienceaustria.at		
2.3. Is there a national contact point for EOSC?		
Yes	No	In planning

X		

National structure/Mandated Organisation/Key coordination structure of EOSC in Austria

The ACONET Association[1] is the signatory of the Memorandum of Understanding with the EOSC Association and thus the Austrian EOSC Mandated Organisation. To carry out the work this entails towards the implementation of EOSC, however, ACONET Association has created a dedicated body, the EOSC Support Office Austria (EOSC SOA). ACONET Association's role can therefore be understood as legal representative with no operational plans or executive power over the EOSC-related tasks in Austria. This is done by the EOSC SOA, whose members include Austrian research performing organisations. Founded in 2021, EOSC SOA thus acts as the coordinator of EOSC activities in the country and as closest link to the EOSC Association. Its operational goals translate those of the EOSC Association into the national context. Contact: Paolo Budroni, paolo.budroni@tuwien.ac.at

[1] Not to be confused with the National Research and Education Network (ACOnet), originally funded by the Austrian Ministry of Science within the framework of the ACONET Association and was established in 1990 under the responsibility of TU Wien. Since 1992 ACOnet has been operated by the University of Vienna.

EOSC Support Office Austria (SOA)
EOSC SOA is managed by the Management Board, chaired each year by a member of the organisation on a rotational basis. For 2022, Dr Ilire Hasani-Mavriqi from Graz University of Technology (ilire.hasani-mavriqi@tugraz.at) was the Board's chair, with Dr Heimo Rainer (heimo.rainer@nhm-wien.ac.at) from Natural History Museum in Vienna (NHMW) foreseen as new chair in 2023.

- Contact EOSC SOA: contact@eosc-austria.at
- Website: https://eosc-austria.at/

EOSC Association Steering Board representative: Stefan Hanslik, Head of Unit of Technical Science at the Federal Ministry of Education, Science and Research (BMBWF)
Email: stefan.hanslik@bmbwf.gv.at

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3. Current e-infrastructure that has the potential to be federated / accessible to the EOSC

General remarks
Austria has several organizations that offer national generic and discipline-specific e-infrastructure services.

A large number of Austrian research institutions offer institutional publication servers for open access to research publications. In addition, there is a growing number of public institutions providing institutional data repositories. Access to content is generally open and free of charge. Use of the systems is subject to the applicable policies and terms of use of each system. There is currently no central access point (central entry point) to Austrian research results. The infrastructure landscape is based on distributed systems. For an overview, see Annex A (data repositories) and Annex B (publication repositories).

3.1. Data and computing infrastructures	**Aggregating portal of services** • BMBWF research infrastructure database: The public database of the BMBWF provides an overview of national research infrastructures. It serves as an information platform and may be

used to find and offer research infrastructures for new cooperation projects: https://forschungsinfrastruktur.bmbwf.gv.at/en

Infrastructures providing domain specific (data) services

- AUSSDA (The Austrian Social Science Data Archive) is a data infrastructure for the social science community in Austria and offers a variety of research support services, primarily data archiving and help with data re-use. Ref.: https://aussda.at/en/. AUSSDA is the national Service Provider within CESSDA ERIC.
- BBMRI ERIC - https://www.bbmri-eric.eu/. BBMRI-ERIC is a distributed research infrastructure of biobanks and biomolecular resources. For its Member States, it provides expertise and services on a non-economic basis and facilitates access to collections of partner biobanks and biomolecular resources. BBMRI-ERIC is established for an unlimited period of time. The Central Executive Management Office is located in Graz, Austria.
- CCCA-DC (www.data.ccca.ac.at): Storage connected to the EODC cloud and VSC
- GEOCLIM Long Term Archive: EODC & CCCA-DC implemented a tape-based long-term archive on two locations at TU Wien and VSC
- CLARIN. The Austrian Academy of Science is participating in CLARIN (ACDH-OEAW): Digital Humanities Austria (dha) is an open network of institutional partners in Austria joining efforts to realize a new understanding of humanities research in a digital environment. These efforts are an integral part of the Austrian commitment to the research infrastructure consortia CLARIN-ERIC and DARIAH-EU, pan-European communities of practice organized as networks of centres sharing resources, tools and knowledge. Ref. http://digital-humanities.at/en
- CyVerse Austria. Provides life scientists with powerful computational infrastructure to handle huge datasets and complex analyses, thus enabling data-driven discovery. The extensible platforms provide data storage, bioinformatics tools, image analyses, APIs, and more. CyVerse Austria uses open source code from CyVerse US (University of Arizona). https://www.tugraz.at/sites/cat/home/
- EODC. www.eodc.eu Operates a virtualised, distributed earth observation (EO) data centre, providing collaborative IT infrastructure for archiving, processing, and distributing EO data. Together with its multi-national partners from science, the public and private sectors EODC fosters the use of satellite-derived geoinformation. Its focus ranges from scientific research to operational services in the areas of water resources and land monitoring, agricultural applications, and humanitarian aid and civil security. Infrastructures characteristics: Multi-Petabyte-scale storage (discs and tape) connected to the EODC cloud and to EODC

Network Infrastructures

- ACOnet – the Austrian NREN (www.ACO.net)
  - high performance network infrastructure
  - member of GÉANT

	• Identity Federation (member of eduGAIN)ACOnet (NREN) has finished a call for tender for a new fibre optic backbone contract (from mid 2022)
	 • EGI - With beginning of 2022, ACONET Association joined the EGI Foundation
	     o The EGI is a European federation of e-Infrastructures, providing services, data, processing capabilities and knowledge from its partners to the scientific community. Its decentralised federated cloud architecture has been created as an 'Infrastructure as a Service' (IaaS), was built around open standards and is driven by the requirements of a scientific community. Scopes are to facilitate the (joint) access to general/specialised ICT resources for interested users at pan-European scale, to offer related training and thus to promote collaborative science and to increase the effectiveness of existing resources. While the first steps of this upcoming collaboration between EGI and Austrian entities will have to be discussed in 2022, several Austrian partners already participate together with EGI in the H2020 project EGI-ACE (coordinated by the EODC Earth Observation Data Centre, Vienna), developing an EOSC Compute platform and contributing to the implementation of the EOSC Data Commons. In this context, PaaS' will be provided to the EOSC, including data spaces with analytics tools and federated access services.
	 • Austrian Quantum Fiber Network (AQUnet)
	     o FFG R&D infrastructure funding project coordinated by the ACONET Association
	     o intended to complement and enable the (new) ACOnet backbone infrastructure for CLONETS and EuroQCI-related research

3.2. HPC infrastructures	• **MACH-2** – The massively parallel shared memory supercomputer "MACH-2" is operated in the frame of a project by the Johannes Kepler University (JKU) Linz on behalf of a consortium of several Austrian universities and research institutions. • **VSC** – The Vienna Scientific Cluster is a collaboration of several Austrian universities that provides supercomputer resources and corresponding services to their users, it is operated by TU Wien. • The Austrian e-infrastructures became part of the **EuroHPC** JU via assembly of an AT HPC Competence Centre and membership to the CINECA Consortium implementing LEONARDO

3.3. Repositories and main components of the e-Infrastructure in Austria	• Data and computing infrastructures, data repositories, and publication servers, please refer to **Annexes A** and **B**.
	 • PID-Services
	     o **DOI-Service Austri**a: https://www.tuwien.at/bibliothek/doi-service-austria-orcid-austria
	     o **ORCID Austria**: https://orcid-austria.org/ https://www.tuwien.at/kooperationen/orcid/en/home/

Infographic EOSC Austria -- EOSC process-relevant infrastructures (created by Torsten Barth, BMBWF): https://forschungsinfrastruktur.bmbwf.gv.at/img/cluster/EOSC-2022_AT_FI-DB.png

Annex A

Data repositories/data centers

At the moment, 50 "Austrian" repositories are registered by OpenDOAR (https://v2.sherpa.ac.uk/view/repository_by_country/Austria.html) and 41 data repositories by re3data (https://www.re3data.org/search?query=&countries[]=AUT).

Below there is an excerpt of available data repositories and/or data centres in Austria (NB: not all listed on the re3data platform).

Name of repository	Type (repository/ data centre)	Link	Comment
Cross-disciplinary/Institutional			
Data Repository of the International Institute of Applied Systems Analysis (IIASA-DARE)	Repository	http://dare.iiasa.ac.at/	
Digital Repository KUG-PHAIDRA (University of Music and Performing Arts Graz – KUG)	Repository	https://phaidra.kug.ac.at/	
Institutional Repository of the University of Art and Design Linz	Repository	https://phaidra.ufg.at/	
Institutional Repository of the University of Applied Arts	Repository	https://phaidra.bibliothek.uni-ak.ac.at/	
IST Austria Research Explorer	Repository	https://research-explorer.app.ist.ac.at	
PHAIDRA @ FH St Pölten	Repository	https://phaidra.fhstp.ac.at/	
mdw Repository	Repository	https://repo.mdw.ac.at	
Phaidra - Repository of the University of Veterinary Medicine, Vienna	Repository	https://phaidra.vetmeduni.ac.at	
TU Graz Repository	Repository	https://repository.tugraz.at/	
TU Wien Research Data	Repository	https://researchdata.tuwien.at/	
Universität Innsbruck - Data Repository	Repository	https://researchdata.uibk.ac.at/	
University of Vienna PHAIDRA	Repository	https://phaidra.univie.ac.at	
Discipline specific			
ARCHE - A Resource Centre for the HumanitiEs	Repository	https://arche.acdh.oeaw.ac.at	Core Trust Seal (CTS)
AUSSDA Dataverse	Repository	https://data.aussda.at/	Core Trust Seal (CTS)
CCCA - Climate Change Center Austria	Repository	https://data.ccca.ac.at	
EODC - Earth Observation Data Centre	Data centre	https://www.eodc.eu/	

Geisteswissenschaftliches Asset Management System (GAMS)	Repository	https://gams.uni-graz.at	Core Trust Seal (CTS)
Tethys - Geologische Bundesanstalt (GBA), Data Publisher for Geoscience Austria	Repository	https://www.tethys.at/	
Topic specific			
Thanados - The Anthropological and Archaeological Database of Sepultures	Repository	https://thanados.net/	
Public Sector Information - PSI related			
ZAMG Data Hub	Repository	https://data.hub.zamg.ac.at/	Metadata exchanged with the portal Open Data Austria (data.gv.at)
AMDC - Austrian Micro Data Center	Data centre	https://www.statistik.at/services/tools/services/amdc-mikrodaten-fuer-die-wissenschaft	Data only available via Remote Research Environment of Statistik Austria for a limited period of time
Other			
Austrian State Archives	Data centre	http://www.oesta.gv.at/	
BRZ - Austrian Federal Computing Center	Data centre	https://en.brz.gv.at/	
Statistik Austria	Data centre	https://www.statistik.at/	
Vorarlberger Landesbibliothek - Volare	Repository	https://pid.volare.vorarlberg.at/	

Annex B

Publication/document servers

At the moment, 50 "Austrian" repositories are registered by OpenDOAR (https://v2.sherpa.ac.uk/view/repository_by_country/Austria.html) and 41 data repositories by re3data (https://www.re3data.org/search?query=&countries[]=AUT).

NB: Not all existing repositories are registered in a directory.

Name of repository	Link	Comment
Institutional publication/document servers		
]a[repository	https://repository.akbild.ac.at	
BOKU:epub	http://epub.boku.ac.at/	
DOOR	https://door.donau-uni.ac.at/	
Austrian Institute for Health Technology Assessment Repository for Publications	https://eprints.aihta.at/	Former known as LBI HTA
Elektronisches Publikationsportal der Österreichischen Akademie der Wissenschaften	http://epub.oeaw.ac.at/	
ePLUS (Open Access Publikationsserver der Universität Salzburg)	http://eplus.uni-salzburg.at	
ePubWU Institutional Repository (ePubWU)	http://epub.wu.ac.at/	
FHpub	https://fhpub.fh-vie.ac.at	
FWF-E-Book-Library	https://e-book.fwf.ac.at/	
IIASA PURE	http://pure.iiasa.ac.at/	
INIS Repository	http://inis.iaea.org/search	
IRIHS - Institutional Repository at IHS	https://irihs.ihs.ac.at	
IST Austria Research Explorer	https://research-explorer.app.ist.ac.at	
Institutional Repository of the Mozarteum University	http://repository.moz.ac.at	
JKU ePub	http://epub.jku.at/	
Kirchlicher DokumentenServer der AKThB und des VkwB (KiDokS)	https://kidoks.bsz-bw.de/home	
MedUni Wien ePub	https://repositorium.meduniwien.ac.at/	
Online Publikationsserver der FH Vorarlberg	https://opus.fhv.at	
People @ FH Burgenland	https://people.fh-burgenland.at/	
Publication Database of the Vienna University of Technology	https://publik.tuwien.ac.at/start.php?lang=2	
Publikationsserver der Universität Klagenfurt (netlibrary)	https://netlibrary.aau.at/	

pub.mdw - Open Access Publication Server	https://pub.mdw.ac.at	
reposiTUm (TU Wien Open Access Platform)	https://repositum.tuwien.at	
TUGraz OPEN Library	http://openlib.tugraz.at/	
University of Innsbruck Digital Library	http://diglib.uibk.ac.at/	
u:scholar	http://uscholar.univie.ac.at/	
uni≡pub (unipub)	http://unipub.uni-graz.at/	
Phaidra (@University of Vienna)	https://phaidra.univie.ac.at/	
State and county library servers		
Digitale Landesbibliothek Oberösterreich	http://digi.landesbibliothek.at/	
Discipline specific publication/document servers		
Architektur-Informatik	http://architektur-informatik.scix.net/cgi-bin/works/Home	
CumInCAD Digital Archive	http://cumincad.architexturez.net/	
Elektronisch archivierte Theorie - Sammelpunkt	http://sammelpunkt.philo.at:8080/	
Fluorophores.org	http://www.fluorophores.tugraz.at/	
PiezoMat.org	http://www.PiezoMat.org/	
RISC Publications	https://risc.jku.at/publications/	
Other		
Austrian Platform for Research and Technology Policy Evaluation (fteval)	https://repository.fteval.at	
European Research Papers Archive (ERPA)	http://eiop.or.at/erpa/	