



INTRODUCTION TO AIBILI DATAVERSE REPOSITORY

AIBILI-Data Centre
Research Data Management for Open Science
October 14, 2025



AGENDA

- Open Science & FAIR Principles
- AIBILI Dataverse Repository
- DICOM Standard



OPEN SCIENCE

“Open Science is an approach to research based on open cooperative work that emphasizes the sharing of knowledge, results and tools as early and widely as possible.”

European Commission

Encourages **collaboration across academia, industry, public authorities, and citizen groups.**

Open Access to publications and research data is a pillar of Open Science.



FAIR PRINCIPLES



Metadata and data should be **easy to find for both humans and computers.** Machine-readable metadata are essential for automatic discovery of datasets and services



Data should be able to integrate with other data and systems. This requires the **data** to be in a **formally defined, standard format that can be used by various common analysis and storage tools.**



Data should be retrievable, even if restrictions or permissions are required. This means having a **clear, transparent, and standardized protocol for accessing the data**



Data should be easy to reuse by others. This involves providing **clear conditions for use,** a domain-relevant data standard, and sufficiently detailed metadata to allow for meaningful reuse and replication.

EUROPEAN COMMISSION | HORIZON EUROPE

- [Horizon Europe: HE Programme Guide](#)
- [Horizon Europe: Data Management Plan Template](#)
- [How to comply with Horizon Europe mandate for Research Data Management](#)
- [How to comply with Horizon Europe mandate for publications](#)

FCT

- [Política sobre a Disponibilização de Dados e outros Resultados de Projetos de I&D Financiados Pela FCT \(2014\)](#)
- [Política sobre acesso aberto a publicações científicas resultantes de investigação financiada pela FCT \(2014\)](#)
- [Política sobre acesso aberto a publicações científicas resultantes de investigação financiada pela FCT \(2025\)](#)

REQUIREMENTS FOR OPEN DATA IN HORIZON EUROPE AND FCT

1. Data Management Plan
2. Deposit the Research Data in a trusted Repository
3. Document the data for validation
4. Adhere to the "As Open as Possible, As Closed as Necessary" Principle

CREATIVE COMMONS

CREATIVE COMMONS LICENSES		 COPY & PUBLISH	 ATTRIBUTION REQUIRED	 COMMERCIAL USE	 MODIFY & ADAPT	 CHANGE LICENSE
	PUBLIC DOMAIN	✓	✗	✓	✓	✓
	CC BY	✓	✓	✓	✓	✓
	CC BY-SA	✓	✓	✓	✓	✗
	CC BY-ND	✓	✓	✓	✗	✓
	CC BY-NC	✓	✓	✗	✓	✓
	CC BY-NC-SA	✓	✓	✗	✓	✗
	CC BY-NC-ND	✓	✓	✗	✗	✓



You can redistribute (copy, publish, display, communicate, etc.)



You have to attribute the original work



You can use the work commercially



You can modify and adapt the original work



You can choose license type for your adaptations of the work.

Adapted from:
[Foter.com_infographic_CC.jpg \(960x6363\)](https://foter.com/infographic_CC.jpg)

CONSTITUTION OF RESEARCH DATA MANAGEMENT CENTRES

Infrastructure for research data management ensuring accessibility, preservation, and compliance with national and European Open Science standards.

The project is part of the Programa Nacional de Ciência Aberta e Dados Abertos de Investigação (PNCADAI), an initiative under the investment measure RE-C05-i08 - Ciência Mais Digital , funded by Programa Recuperação e Resiliência (PRR).

MAIN ACTIVITIES

- Promote **training sessions** on best practices for research data management
- Implementing an **Institutional policy** for the management and sharing of research data.
- Establish an **Institutional Research Data Repository** - AIBILI Dataverse Repository
- Management and sharing of **Research Data in Open Science**.
- **Integration and collaboration** in a national network of **datastewards**

Software chosen for **AIBILI Dataverse Repository**

- Fair Principles
- Customizable
- Interoperable
- Use by other stakeholders, both national and international
- Long-term data preservation



Dataverse signup and basic functionality

Signup process

- To be able to access restricted data on AIBILI's Dataverse the user is required to sign up first .
- The user must access AIBILI's Dataverse URL (e.g.: **demo site** - <https://dvportal.interno.aibili.pt/>) and click the signup button.
- The user must fill in the shown form and click on the "Create Account" button. All starred fields are mandatory.

AIBILI DATA CENTRE

Search User Guide Support Sign Up Log In

AIBILI DC

Create Account – Why have a Dataverse account? To create your own dataverse and customize it, add datasets, or request access to restricted files.

Account - AIBILI Root Collection

Account Information

Username * Create a valid username of 2 to 60 characters in length containing letters (a-z), numbers (0-9), dashes (-), underscores (_), and periods (.).
testeUser

Password * Your password must contain:
• At least 10 characters (passwords of at least 20 characters are exempt from all other requirements)
• At least 1 character from each of the following types: uppercase, lowercase, numeral, special
It may not include:
• Dictionary words

Retype Password * *****

Given Name * User

Family Name * Teste

Email * mevet55190@foboxs.com

Affiliation * MyCo

Position * Data Manager

General Terms of Use *

TERMOS GERAIS DE USO DO REPOSITÓRIO DE DADOS DE INVESTIGAÇÃO DA ASSOCIAÇÃO PARA A INVESTIGAÇÃO BIOMÉDICA E INOVAÇÃO EM LUZ E IMAGEM - AIBILI

Aceitação dos Termos

Os seguintes termos e condições aplicam-se a todo o uso do Repositório de Dados de Investigação da AIBILI (plataforma, repositório) e a todos os serviços aí disponibilizados (à plataforma e os serviços considerados no seu conjunto) pelo utilizador e quaisquer terceiros que utilizem uma conta. O uso do presente serviço oferecido está sujeito à aceitação e conformidade com todos os termos e condições aqui contidos (os Termos Gerais de Uso) e com todas as outras regras aplicáveis, incluindo as procedimentos relativos ao Serviço de Acesso à Informação e à Proteção de Dados.

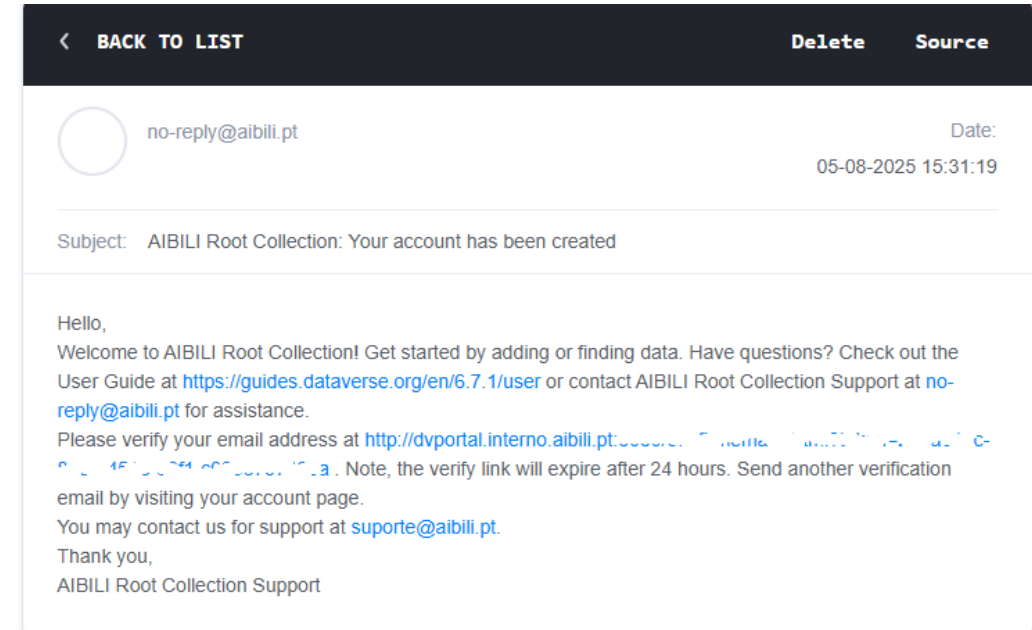
☒ I have read and accept the Dataverse General Terms of Use as outlined above.

Create Account Cancel

Dataverse signup and basic functionality

Signup process

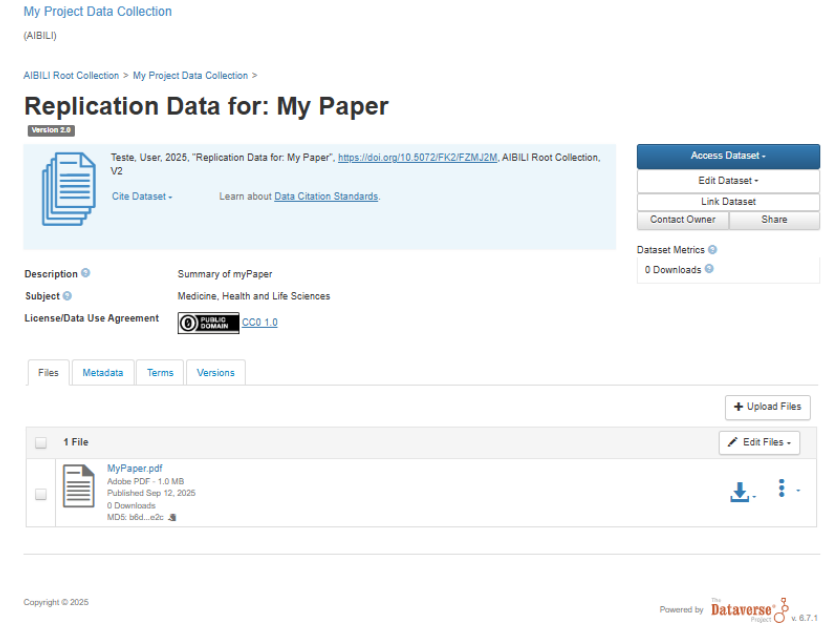
- An email will be sent to the provided email address for account verification.
- Upon clicking on the provided link, the user is redirected to AIBILI's Dataverse.



Dataverse signup and basic functionality

Content Access

- Available collections/dataverses and datasets will be shown in the main page.
- To download a dataset, the user should select the intended dataset and click on the download icon, selecting a way to access it.



Dataverse signup and basic functionality

Content Access

- If a dataset has restricted files an access request must be made before being able to access them.
- Only registered users can request access to restricted files.

AIBILI Root Collection > testePGB3 >

dataset+GB3

Version 1.3

Basile, Pier, teste, 2025, "dataset+GB3", <https://doi.org/10.5072/EK2/H8FN3R>, AIBILI Root Collection, V1

Cite Dataset ▾ Learn about [Data Citation Standards](#)

Link Dataset
Contact Owner Share

Dataset Metrics
2 Downloads

Description testePGB3
Subject Medicine, Health and Life Sciences
License/Data Use Agreement [Custom Dataset Terms](#)

Files Metadata Terms Versions

1 File

TAB_Dummy_export_2019-07-09-111058460.tsv
Tab-Separated Values - 357.3 KB
Published Oct 2, 2025
2 Downloads
MD5: 700...101

Request Access

File Access
Restricted
Request Access
Download Metadata
Data File Citation

Powered by v. 6.7.1

Dataverse signup and basic functionality

Content Access

- The license and terms of use for the specific file/dataset are shown on the request form and must be complied with in its use.

Dataset Terms

Please confirm and/or complete the information needed below in order to request access to files in this dataset.

This dataset is made available under the following terms. Please confirm and/or complete the information needed below in order to continue.

License/Data Use Agreement

Our [Community Norms](#) as well as good scientific practices expect that proper credit is given via citation. Please use the data citation shown on the dataset page.

[Custom Dataset Terms](#) - the following Custom Dataset Terms have been defined for this dataset.

Terms of Use teste

Confidentiality Declaration teste

Special Permissions teste

Restrictions teste

Citation Requirements teste

Depositor Requirements teste

Conditions teste

Disclaimer teste

Terms of Access for Restricted Files teste

Request Access

Cancel

Dataverse signup and basic functionality

Content Access

- From the dataset page, apart from downloading, it is also possible to view the dataset's metadata, its license and terms of use and its versioning.

The screenshot displays the Dataverse interface for a dataset. At the top, there are tabs for 'Files', 'Metadata', 'Terms', and 'Versions'. The 'Metadata' tab is active, showing citation metadata for a dataset with DOI 10.5072/FK2/FZMJ2M. Below this, the 'Terms' tab is active, showing the 'License/Data Use Agreement' which includes a CC0 1.0 license. At the bottom, the 'Versions' tab is active, displaying a table of dataset versions.

Citation Metadata

Persistent Identifier	doi:10.5072/FK2/FZMJ2M
Publication Date	2025-09-12
Title	Replication Data for: My Paper
Author	Teste, User (AIBILI)
Point of Contact	Use email button above to contact. Teste, User (AIBILI)
Description	Summary of myPaper
Subject	Medicine, Health and Life Sciences
Depositor	Teste, User
Deposit Date	2025-09-12

Dataset Terms

License/Data Use Agreement: Our [Community Norms](#) as well as good scientific practices expect that proper credit is given via citation. Please use the data citation shown on the dataset page.

CC0 1.0

Dataset Versions

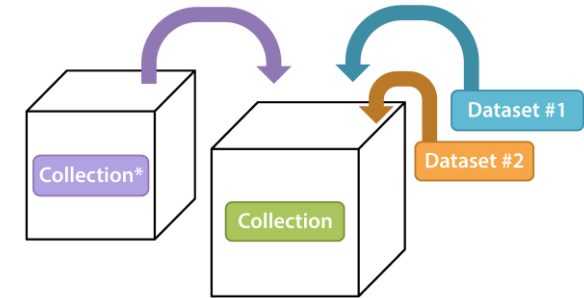
Dataset Version	Summary	Contributors	Published on
2.0	Files (Added: 1); View Details	User Teste	2025-09-12
1.0	This is the first published version.	User Teste	2025-09-12

Dataverse signup and basic functionality

Content Access

- A dataverse is a collection of data/datasets and can contain multiple (sub)dataverses and datasets (<https://guides.dataverse.org/en/5.11.1/user/dataverse-management.html>)
- A dataset is a "container" of files/documents/code and its metadata. (<https://guides.dataverse.org/en/5.11.1/user/dataset-management.html>)

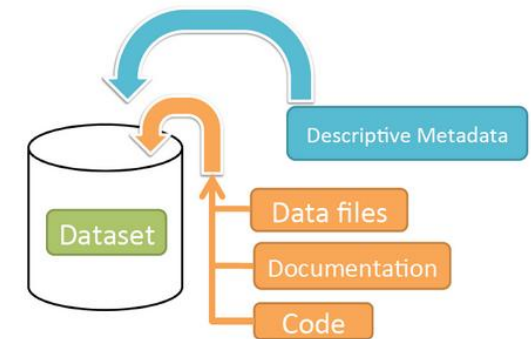
Schematic Diagram of a **Collection** in Dataverse Software 5.0



Container for your **Datasets** and/or **Collections***

* Collections can contain other Collections

Schematic Diagram of a **Dataset** in Dataverse 4.0



Container for your data, documentation, and code.

Introduction to DICOM Standard

- **DICOM**

DICOM stands for **D**igital **I**maging and **C**ommunication in **M**edicine.

<https://www.dicomstandard.org/>



- **Importance of DICOM Format**

The DICOM format ensures **standardized management, sharing, and interoperability** of medical imaging data.



- **EU (2023) and FDA (2018) - non-binding Guidance**

Listed among **core technological standards** for imaging data, referenced in **CDISC standards** (widely accepted by the FDA) to ensure interoperability with imaging systems.

<https://eclinicalforum.org/DesktopModules/EasyDNNNews/DocumentDownload.ashx?portalid=0&moduleid=454&articleid=216&documentid=159>

https://www.ema.europa.eu/en/documents/regulatory-procedural-guideline/guideline-computerised-systems-and-electronic-data-clinical-trials_en.pdf

<https://www.fda.gov/files/drugs/published/Clinical-Trial-Imaging-Endpoint-Process-Standards-Guidance-for-Industry.pdf>



The DICOM Standard

- **DICOM Standard Overview**

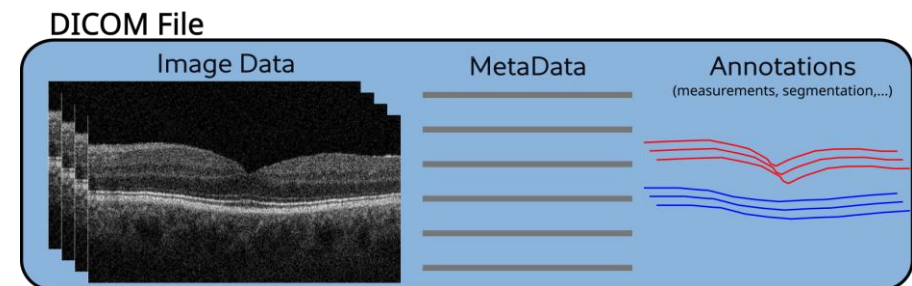
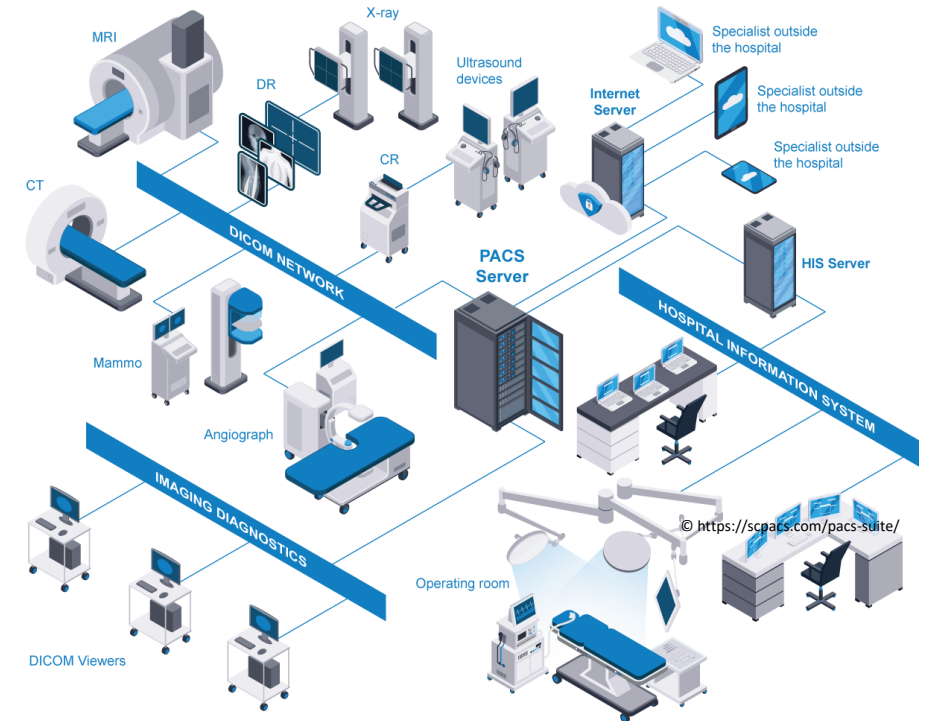
DICOM is **the global standard for storing and transmitting** medical images and related information **securely and efficiently**.

- **Anonymization for Privacy**

Includes **anonymization options** crucial for research **compliance** and protecting patient privacy.

- **DICOM File Components**

A typical DICOM file contains **image data and extensive metadata** including **patient demographics, imaging parameters and annotations**.



Why use DICOM in this project

- **Agnostic to Imaging Modalities**

Supports a **wide range of imaging modalities** (OCT, X-Ray, PET, ...)

- **DICOM in Ophthalmology**

DICOM standard **supports** imaging data from **SD-OCT** and **CFP modalities**.

- **DICOM Tags for Imaging**

Specific **DICOM tags** categorize **ophthalmic images by modality and image type** for efficient retrieval and management.

- **Clinical and Research Benefits**

Understanding DICOM nuances aids clinicians and researchers in **accurate data interpretation** and integration into records.

Free open source DICOM Viewers for SD-OCT and CFP

- **FIJI (FIJI Is Just ImageJ)** - <https://imagej.net/>
public domain software for processing and analysing scientific images.

Image pixel and metric dimensions

Structural OCT B-Scan (multi-frame images)

Metadata included in the image

Support for different cultural requirements

Date and time of exam acquisition

Imaging modality
OP: Ophthalmic Photography
OPT: Ophthalmic Tomography

Device Manufacturer

Device Model

CFP Image

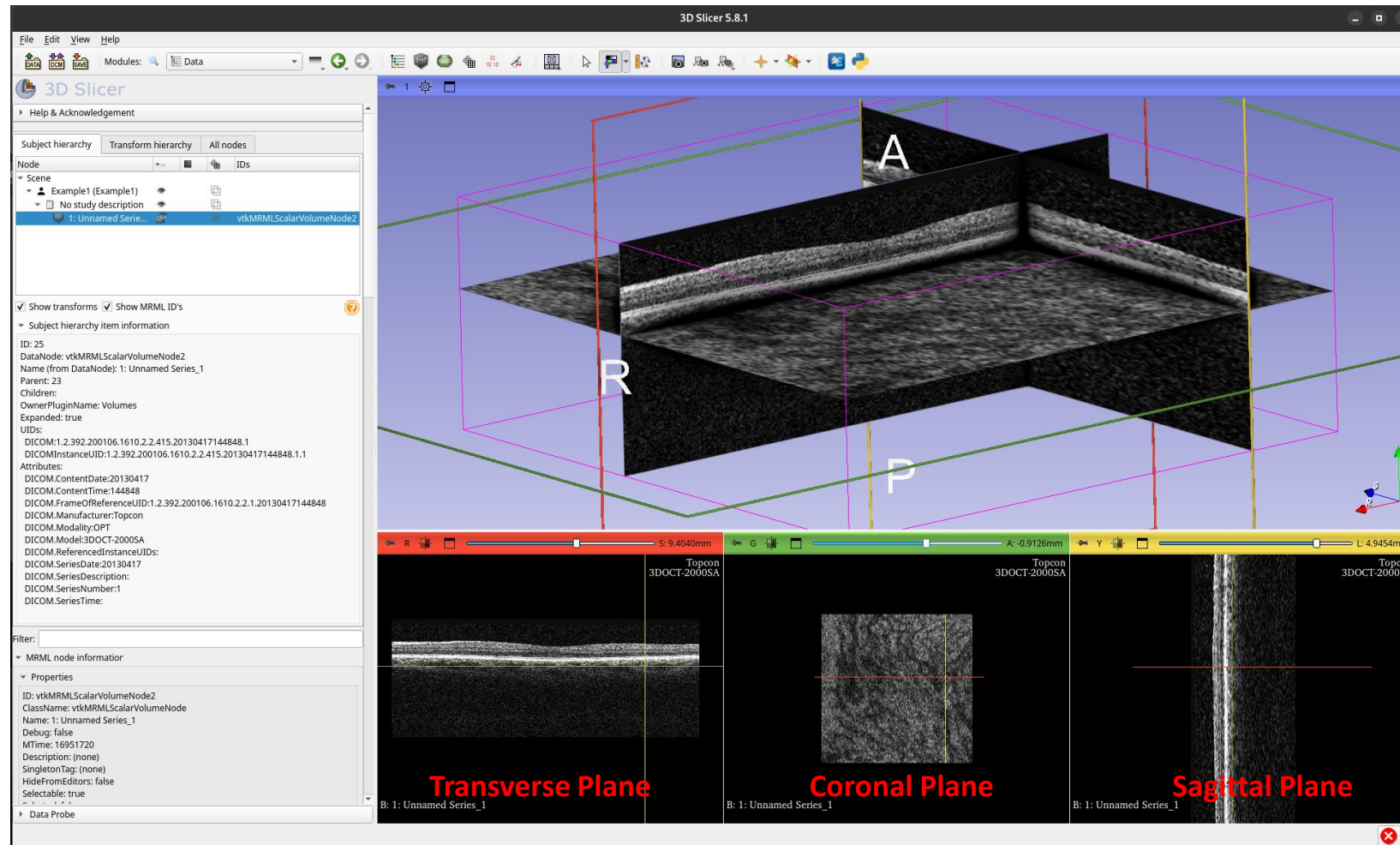
The screenshot shows the FIJI (ImageJ) interface. The left panel displays a Structural OCT B-Scan image. The right panel displays the DICOM metadata for the file 'Example1_20130417_144848_OPT_L_001.dcm'. The metadata includes fields such as File Meta Information Group Length, File Meta Information Version, Media Storage SOP Class UID, Media Storage SOP Instance UID, Transfer Syntax UID, Implementation Class UID, Implementation Version Name, Specific Character Set, Image Type, SOP Class UID, SOP Instance UID, Study Date, Series Date, Content Date, Acquisition DateTime, Study Time, Content Time, Accession Number, Modality, Manufacturer, Institution Name, Referring Physician's Name, Station Name, Manufacturer's Model Name, and Anatomic Region Sequence. The image dimensions are 19128x600x230 mm (512x885; 8-bit; 55MB). The CFP image dimensions are 1938x1287 mm (2144x1424); RGB; 12MB.

Free open source DICOM Viewers for SD-OCT and CFP

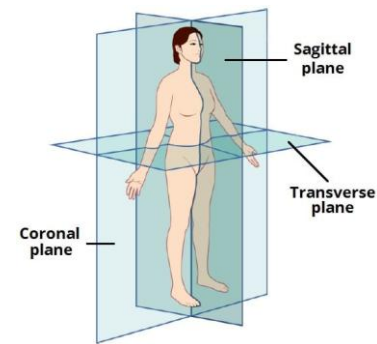
- **3D Slicer** - <https://www.slicer.org/>
Free open-source software for visualization, processing and analysis of 3D biomedical images

Hierarchical structure for data organization

Image metadata



3D volume rendering



- **FAIR Principles Support**

Dataverse supports FAIR principles with structured metadata, enhancing research data management and accessibility.

- **Dataverse API for file management**

Dataverse offers an API (**application programming interface**) for file and metadata management.

- **Integration Challenges**

Mapping **DICOM metadata to Dataverse** fields is complex due to **structural differences** and file format compatibility issues.

- **Solution Approaches**

Using **metadata extractors** and **linking DICOM** files with structured records improves **discoverability and sharing**.



MEET THE TEAM



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Coordinator**



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