

Supporting Information

Structured data storage for data-driven process optimization in bioprinting

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1. Record Link Visualisation Tool

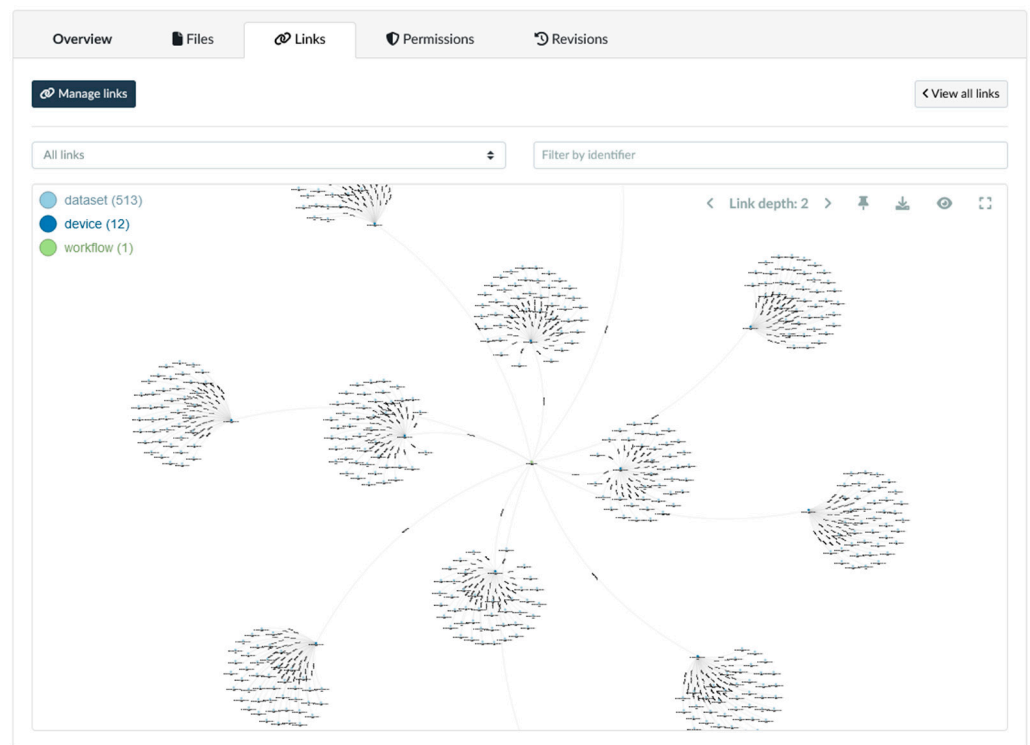


Figure S1 An interactive visualisation tool that displays all incoming and outgoing links of a given record is available in the graphical user interface (GUI) of Kadi4Mat. Each record is represented as a single node, colored according to its type, while the directed and annotated edges represent the actual record links. Several controls are available to filter the displayed records and links, vary the link depth or change the spatial orientation of the nodes. The supplemental video shows an example workflow of how the visualisation tool was used to check the progress of the round robin test.

2. Online Preview of Files Within Kadi4Mat

The online file preview tools of Kadi4Mat support the researcher during the execution of the round robin test while working in the laboratory. Standard operating procedures (SOPs) and necessary data can be displayed online to avoid paper lab journals. The following screenshots of Kadi4Mat display previews for the file formats .XLSX, .TIFF and .STL, which were additionally developed in the context of this work. Each screenshot shows some basic metadata of the file in question, including title, type and size, along with the actual file preview at the bottom.

2.1. Preview of .XLSX Files

ink-01_weighing.xlsx application/vnd.openxmlformats-officedocument.spreadsheetml.sheet Storage type: Local

15.9 kB md5:8e89ce

Created by [Project admin] Created at [Timestamp] Last modified at [Timestamp]

	A	B	C	D
1	Title	Ink-01_weighed components		
2	Changelog	Version 1.1 - Date - Sub-project admin		
3	Usage	Calculation of composition of ink-01 for target volume of ink		
4	Total volume ink		3	ml
5	Component 1	Initiator in buffer		
6	Target concentration		1	mg/ml
7	Target amount initiator		4	mg
8	Experimental weight		xxx	mg
9	Amount of buffer		xxx	ml
10	Transfer to bioink preparation		0.1	ml
11	Component 2	Polymer		

V = 1 ml V = 3 ml V = 5 ml

Note that preview data may be truncated.

Figure S2 Example preview of an Excel workbook using the .XLSX file format. Similar to the GUI of Excel, the individual sheets can be selected by clicking on the corresponding sheet name at the bottom of the preview.

2.2. Preview of .STL Files

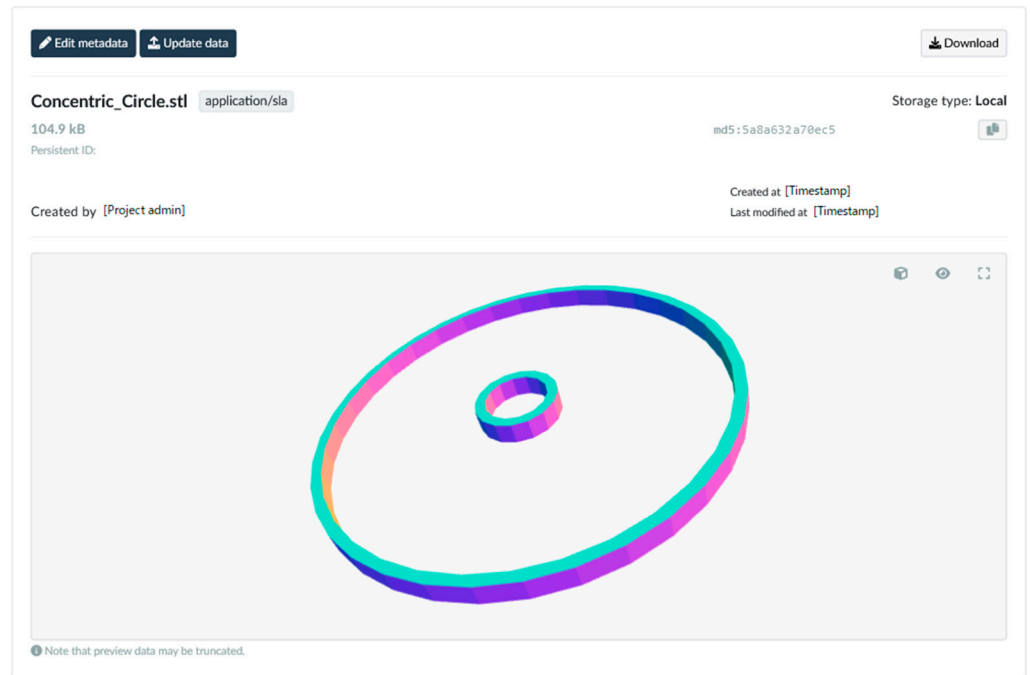


Figure S3 Example preview of a 3D model using the .STL file format. The surface representation of the model (two circles in a concentric arrangement) can be moved and rotated in the browser preview using mouse gestures, facilitating an intuitive visualisation for the user.

2.3. Preview of .TIFF Files

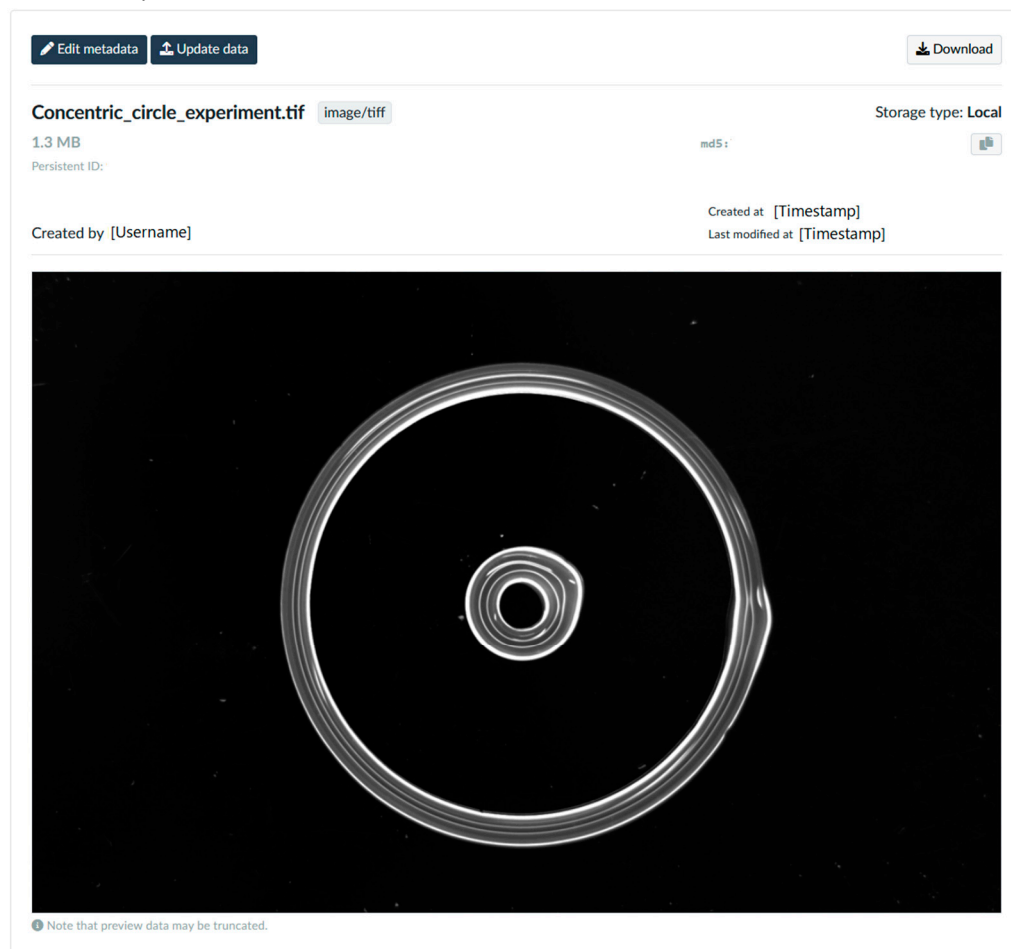


Figure S4 Example preview of an image using the .TIFF file format. A hydrogel object, 3D printed according to the .STL design shown in Figure S3, was imaged in top view.