

## Building a FAIR image data ecosystem for microscopy communities

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### Abstract

Bioimaging has now entered the era of big data with faster than ever development of complex microscopy technologies leading to increasingly complex datasets. This enormous increase in data size and informational complexity within those datasets has brought with it several difficulties in terms of common and harmonized data handling, analysis and management practices, which are currently hampering the full potential of image data being realized. Here we outline a wide range of efforts and solutions currently being developed by the microscopy community to address these challenges on the path towards FAIR bioimage data. We also highlight how different actors in the microscopy ecosystem are working together, creating synergies that develop new approaches, and how research infrastructures, such as Euro-BiolMaging, are fostering these interactions to shape the field.

Euro-BiolMaging ERIC is a distributed research infrastructure that offers open access to excellent biological and biomedical imaging technologies, training and data services. It provides access to over 100 imaging technologies that are offered through 35 Nodes comprising 173 renowned imaging facilities. Euro-BiolMaging ERIC - in addition to its imaging technology services - provides access to Image Data Services, which include coordinating user access for data services through Nodes, participation in European projects, community engagement, support for technical developments and image data stewardship.