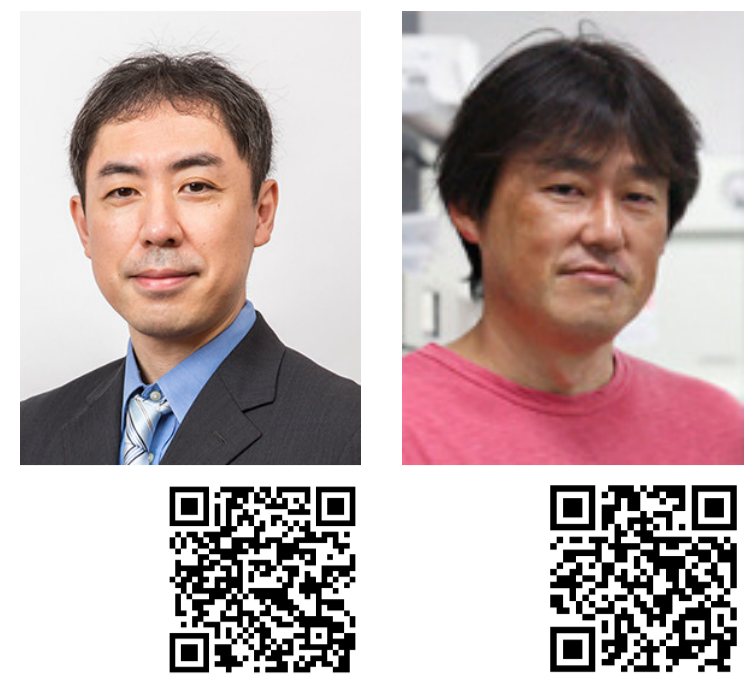


#12

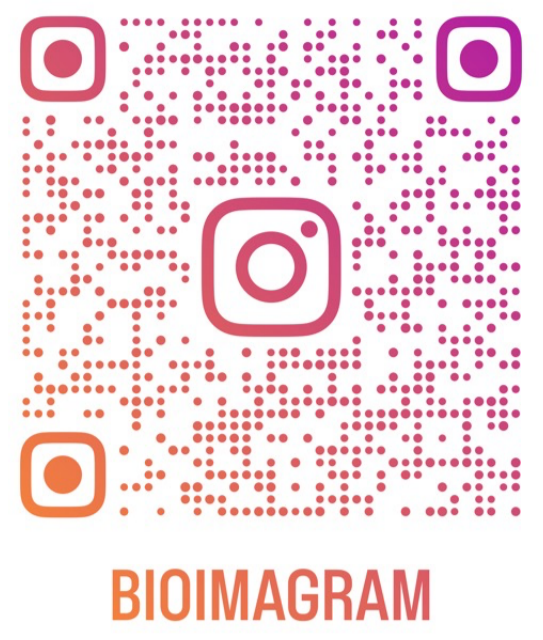
SSBD: Global sharing of bioimaging data SSBD: バイオイメージングデータのグローバルな共有



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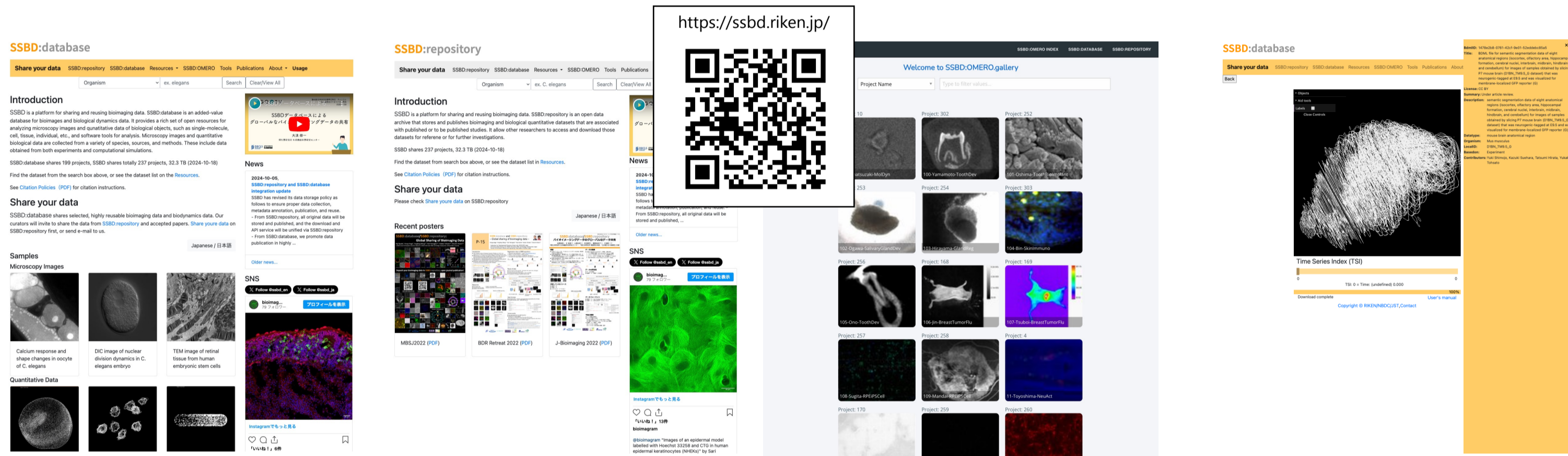
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- ³ Integrated Bioresource Information Division, RIKEN BioResource Research Center, Japan

Check and Follow
"Bioimagram" on
Instagram!

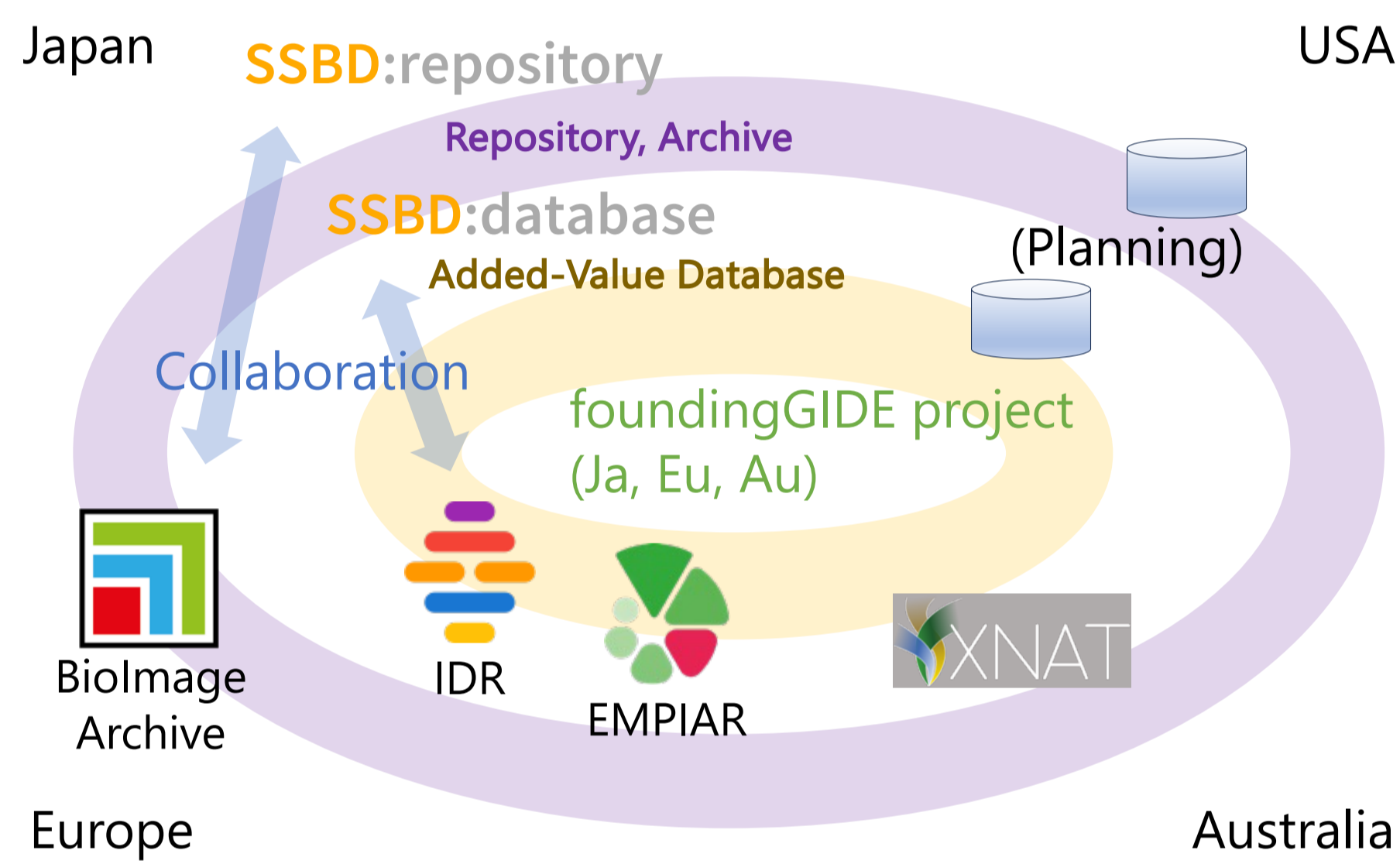


Summary

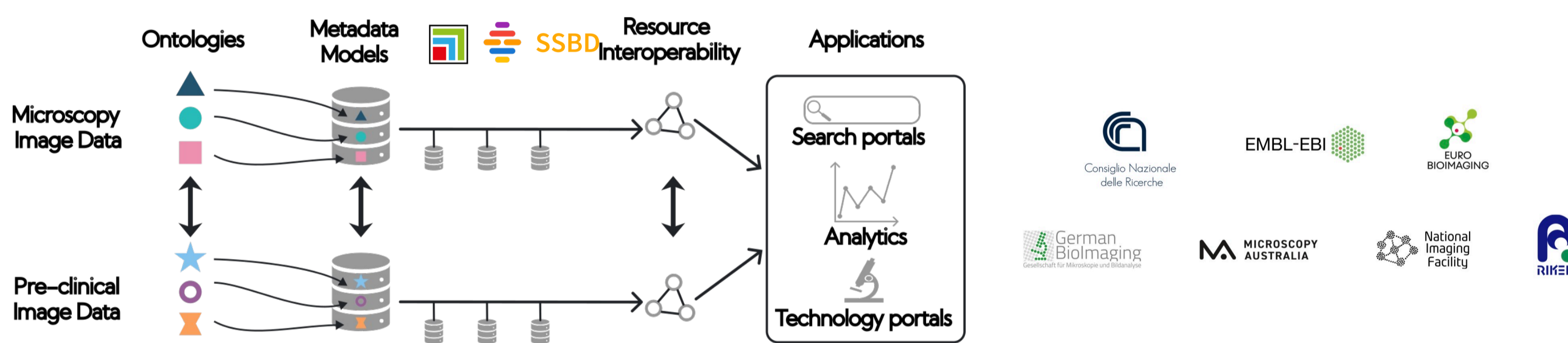
- SSBD (Kyoda et al. 2025, Tohsato et al. 2016) is a platform for sharing and reusing bioimages and biological dynamics data^{1,2}
- SSBD:repository is a quickly sharing archive⁵ for all kinds of bioimaging data for published or to-be-published papers, with essential metadata
- SSBD:database is an added-value database⁵ for bioimages and biological dynamics data that are highly reusable, taken by state-of-art microscopy or large-scale data through systematic experiments, with rich metadata
- Developing a global sharing system among Japan, Europe, Australia and North America for sharing and reusing bioimages and their metadata



Collaboration for global sharing



■ foundingGIDE – Laying the foundations of a Global Image Data Ecosystem

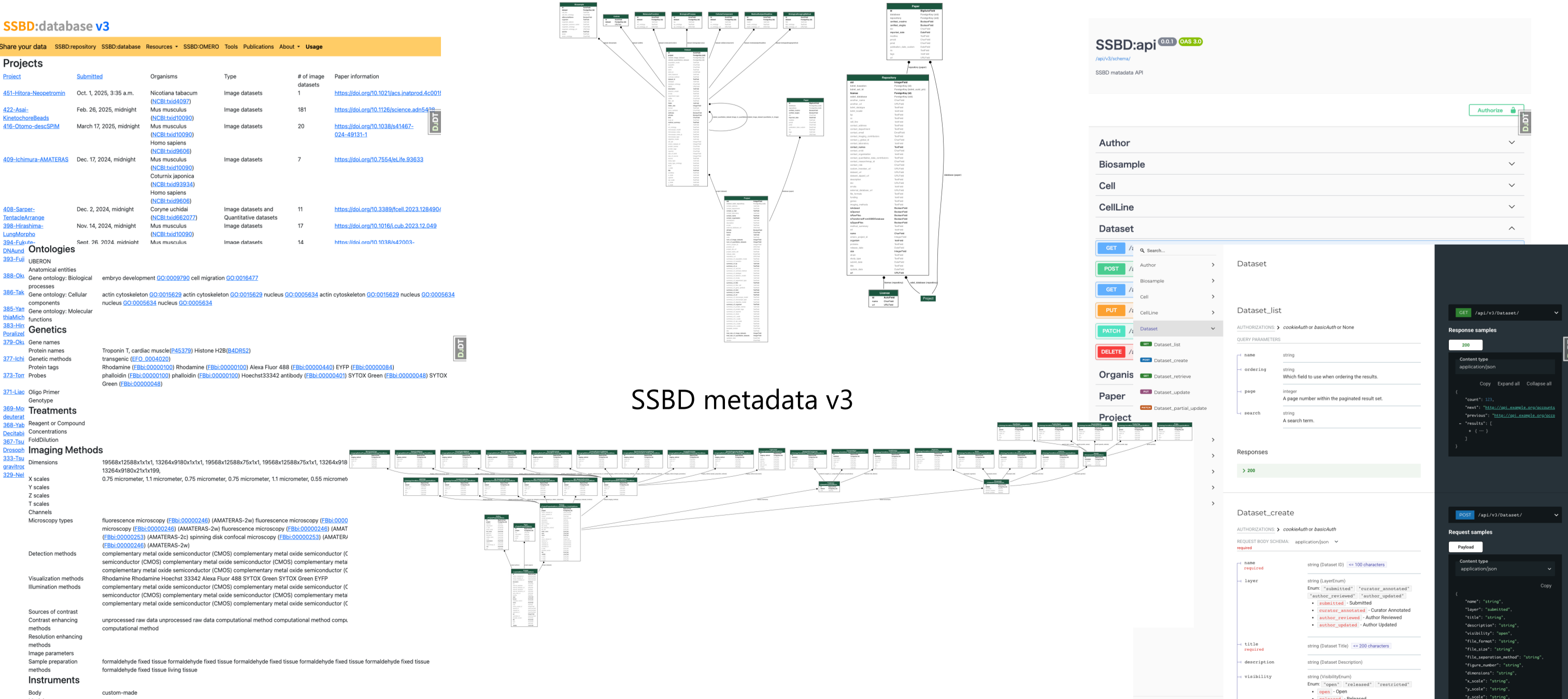


- Collaboration with BIA (Biolmage Archive) and IDR (Image Data Resource)
 - Finding bioimaging data with metadata using a unified system
 - Accessing bioimaging data and metadata using a unified API
 - Interoperating bioimaging data with a unified format – OME-Zarr
 - Reusing bioimaging data with recommendations and linking

Implementation of SSBD metadata v3

- Compared with metadata v2.x, SSBD metadata v3 provides more items and ontologies
- Compatibility with the standard repository metadata schema REMBI
- Provides SSBD metadata v3 API based on the OpenAPI specification
- Re-annotation of existing datasets (ongoing; 20% completed)

SSBD metadata v3 database SSBD metadata v2 API based on OpenAPI

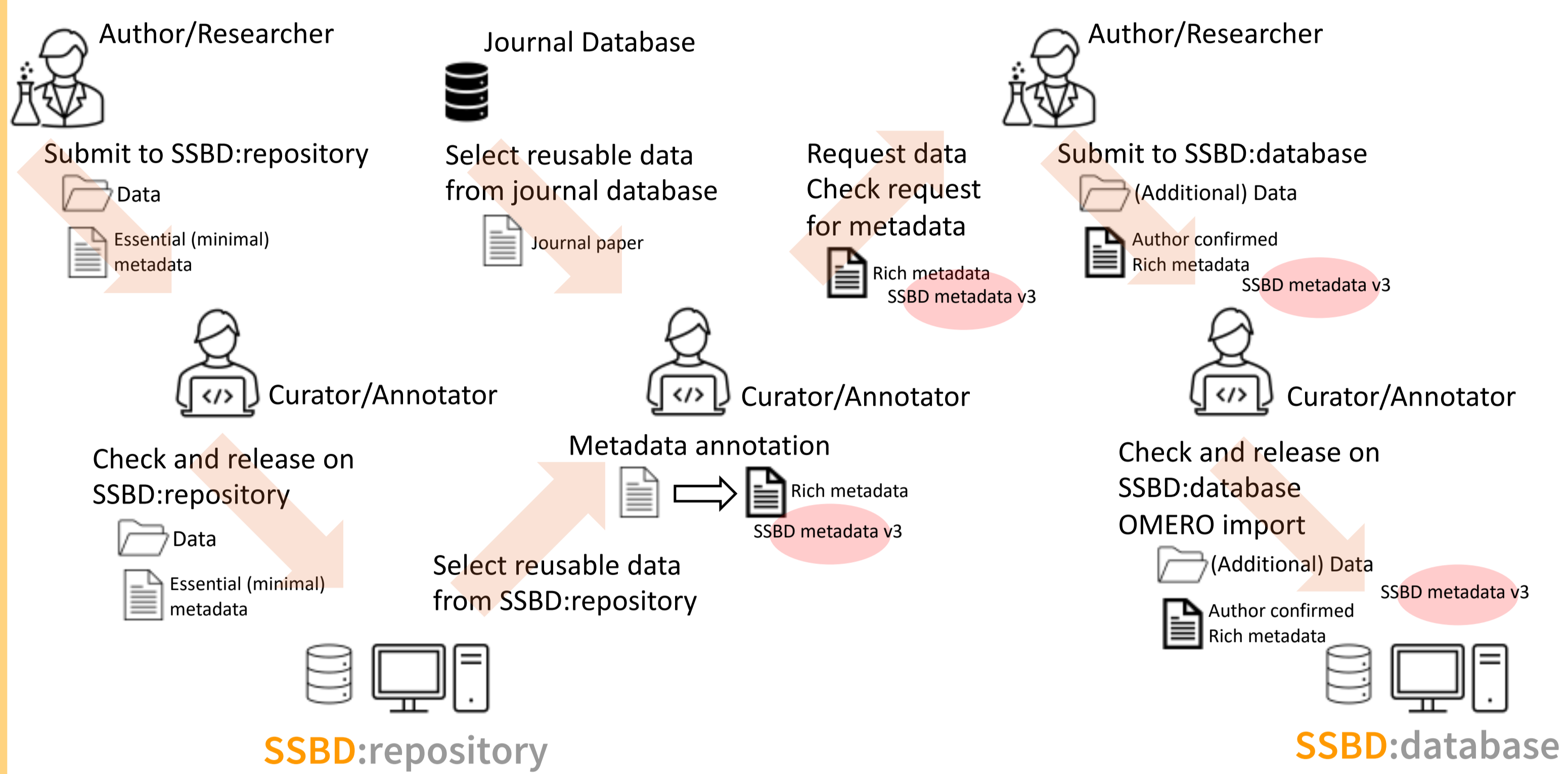


Share your data on SSBD:repository

- Visit SSBD:repository submitter <https://ssbd.riken.jp/submit>, and fill in the essential metadata
- Transfer of data and metadata via RIKEN Box, USB HDD, etc.
- Cite the issued DOI (Digital Objects Identifier) for the dataset in your paper.

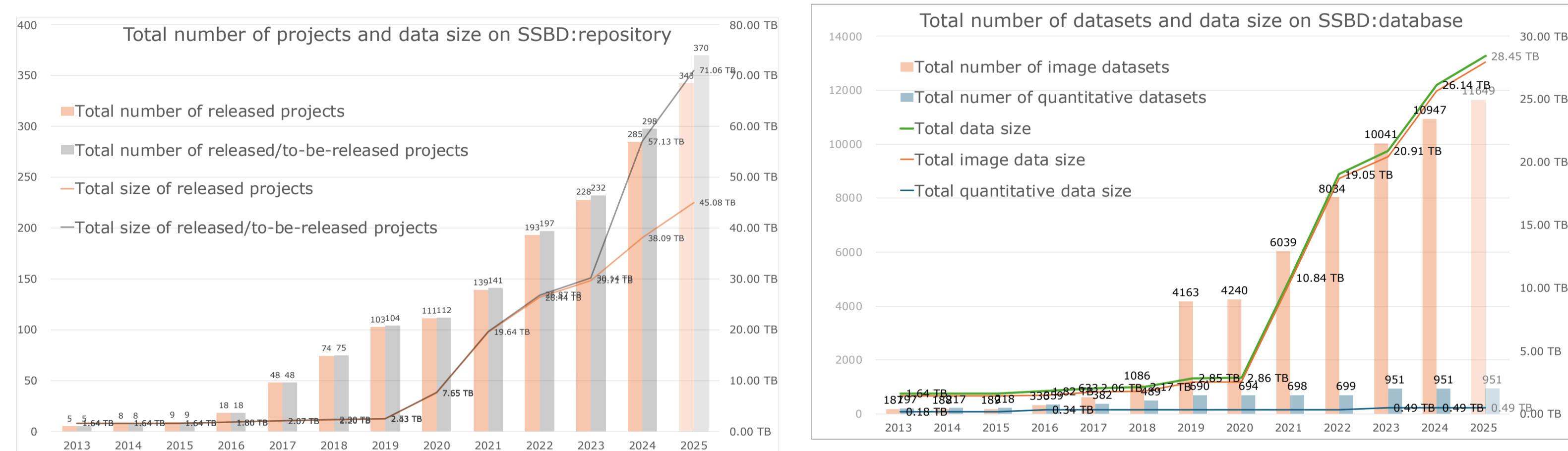


SSBD data registration process



Resources

- Bioimaging data – original, unprocessed data supported by OMERO/Bio-Formats
- Biological dynamics data – analyzed numerical (quantitative) data with BDML³/BD5⁴
- Software tools, Workflows



Reuse of data

- Search dataset with metadata – biosample, paper, microscopy info, ontologies
- Access data and metadata via API
- Preview and process of bioimages on web via OMERO
- Visualization of biological dynamics data on web



Future works

- Cross-search system with SSBD-IDR and SSBD-BIA
- Integration to cloud formats
 - Support for OME-Zarr⁶, cloud-optimized bioimaging file format
 - Development of BD-Zarr, cloud-optimized biological dynamics data format
- Integration to analysis tools, such as 3DeeCellTracker⁷ and ELEPHANT⁸
- Sharing workflows, Providing workflow engine

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