Data Storage Platforms

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Data management coordinator
ELIXIR Norway/Digital Life Norway
10th December 2020

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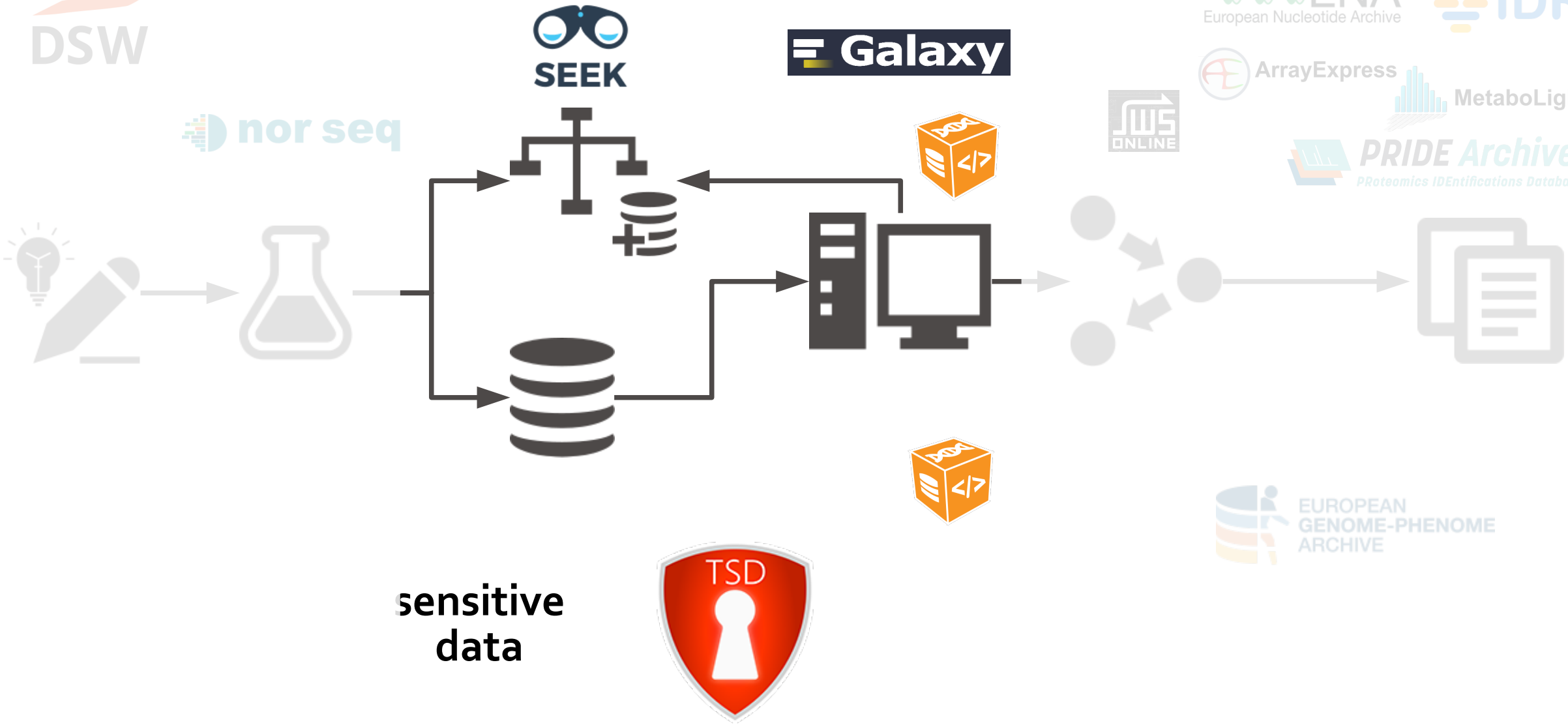
NeLS

Norwegian e-Infrastructure for Life Sciences



NeLS

nor seq

Feide ola@uib.no

My Projects

NeLS

Norwegian e-Infrastructure for Life Sciences

Data curation

Tekle, et al. (2018) F1000Res

github.com/elixir-no-nels/nels-core

https://nels.bioinfo.no/

NeLS

nor seq

Feide ola@uib.no

My Projects

NeLS

Norwegian e-Infrastructure for Life Sciences

Flexible work on active data

Data curation

Tekle, et al. (2018) F1000Res

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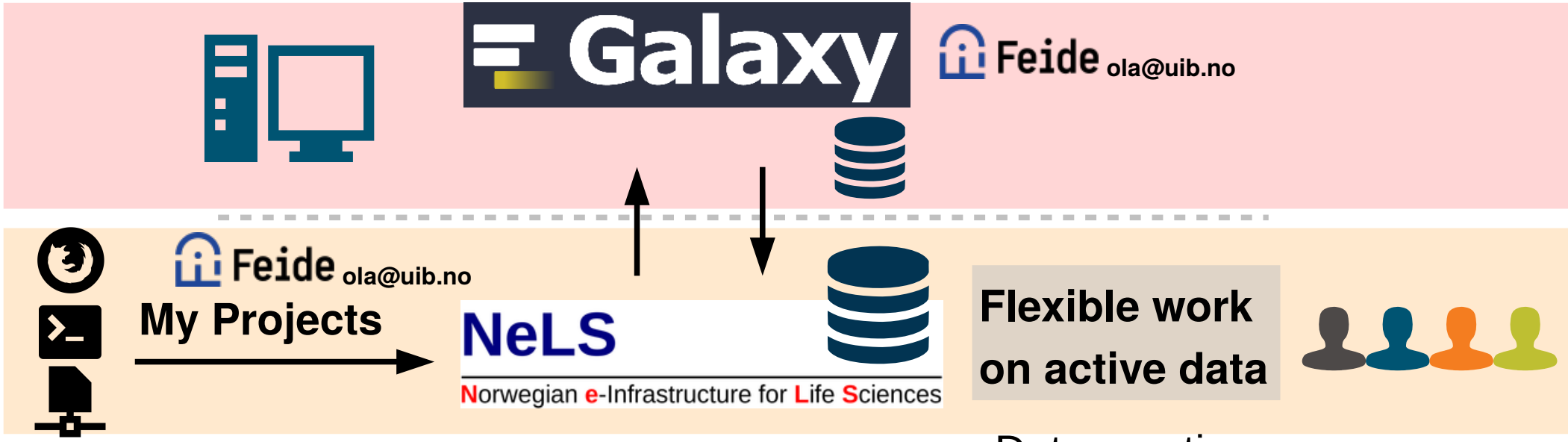

nor seq

Tekle, et al. (2018) F1000Res
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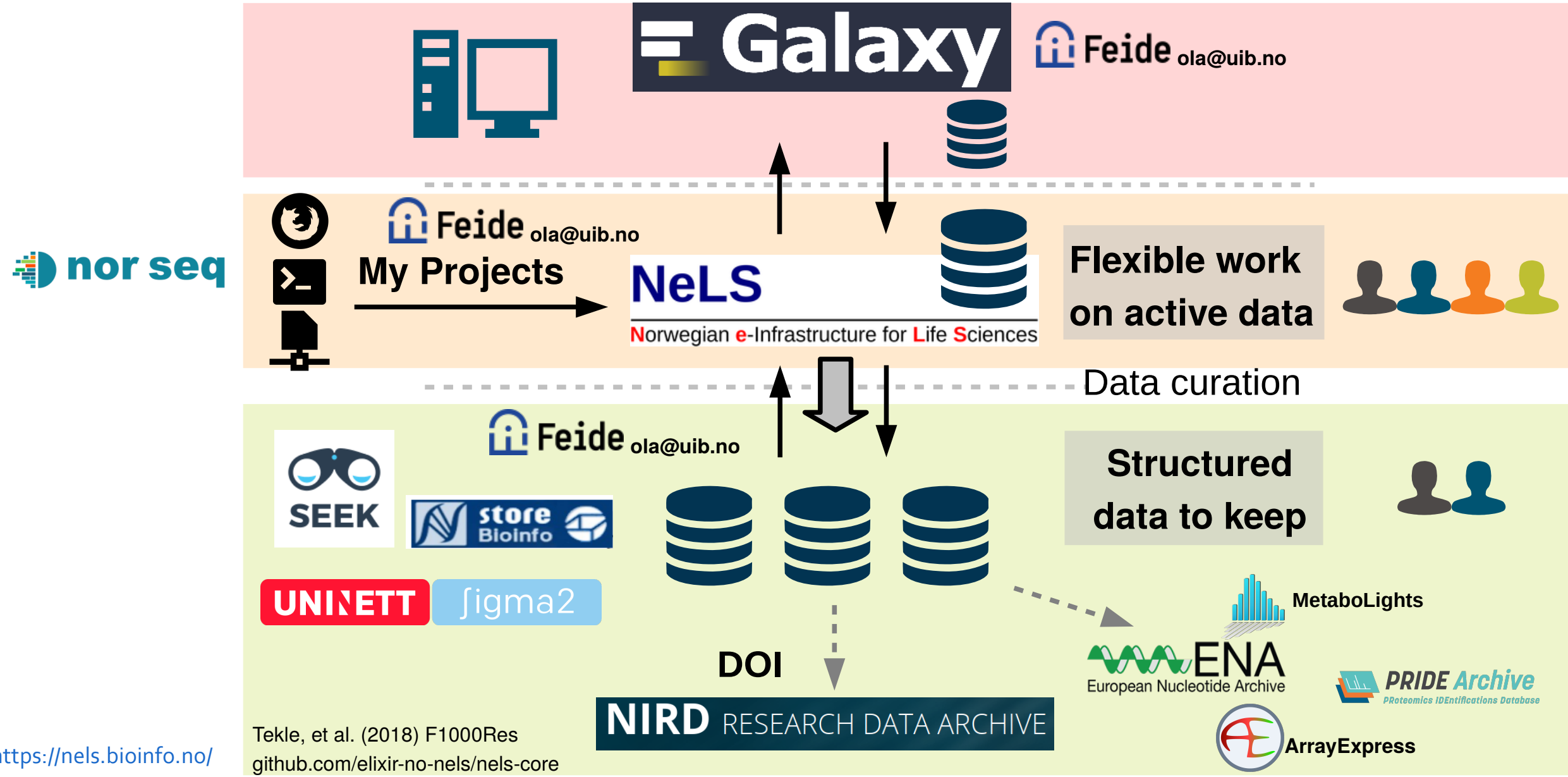

Tekle, et al. (2018) F1000Res
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https://nels.bioinfo.no/

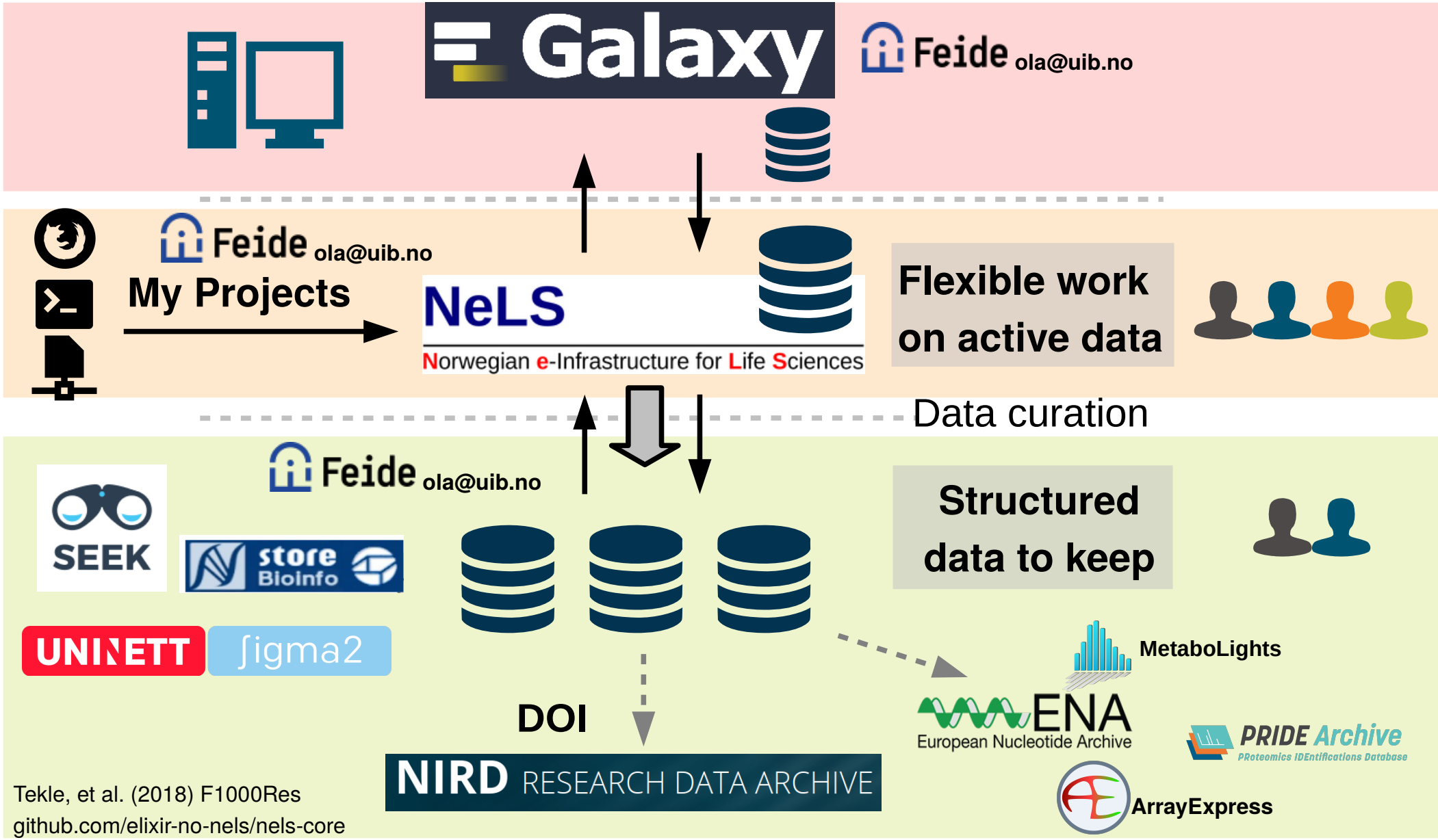
NeLS

Days - weeks

Months

Years

Decades



Tekle, et al. (2018) F1000Res

github.com/elixir-no-nels/nels-core

https://nels.bioinfo.no/

NeLS - Accessibility

small datasets

Feide

ola@uib.no

NeLS - Accessibility

small datasets

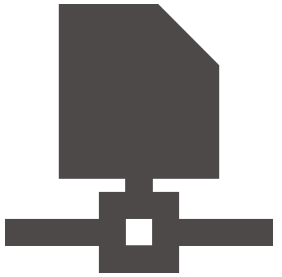
Feide

ola@uib.no

larger datasets

ssh-key

git



sFTP

https://nels.bioinfo.no/

Data Analysis in NeLS

Name	Annotation	Owner	Community Rating	Community Tags	Last Updated↓
16S Workflow with Mothur program		kjetil-klepper	☆☆☆☆☆		Oct 17, 2020
NGS Pipeline for Paired End Reads (R1 and R2)		kjetil-klepper	☆☆☆☆☆		Oct 17, 2020
miRNA differential expression (miRBase, hg38)		kjetil-klepper	☆☆☆☆☆	nels	Oct 15, 2020
miRNA differential expression (MirGeneDB, hg38)		kjetil-klepper	☆☆☆☆☆	nels	Oct 14, 2020
COVID-19: PE Variation		kjetil-klepper	☆☆☆☆☆	nels	Oct 13, 2020
Pre-process COVID-19 PE collections		kjetil-klepper	☆☆☆☆☆	nels	Oct 13, 2020
Pre-process COVID-19 PE single sample		kjetil-klepper	☆☆☆☆☆	nels	Oct 13, 2020

Data Analysis in NeLS

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Courses Q1 2021

usegalaxy.no

NeLS - Getting Access

NeLS

Norwegian e-Infrastructure for Life Sciences

Typically > 1TB data

Free < 10TB & <15 mill. NOK

Allocation through Helpdesk: contact@bioinfo.no

Direct upload through Norseq facilities

https://nels.bioinfo.no/pages/user-terms.xhtml

SEEK

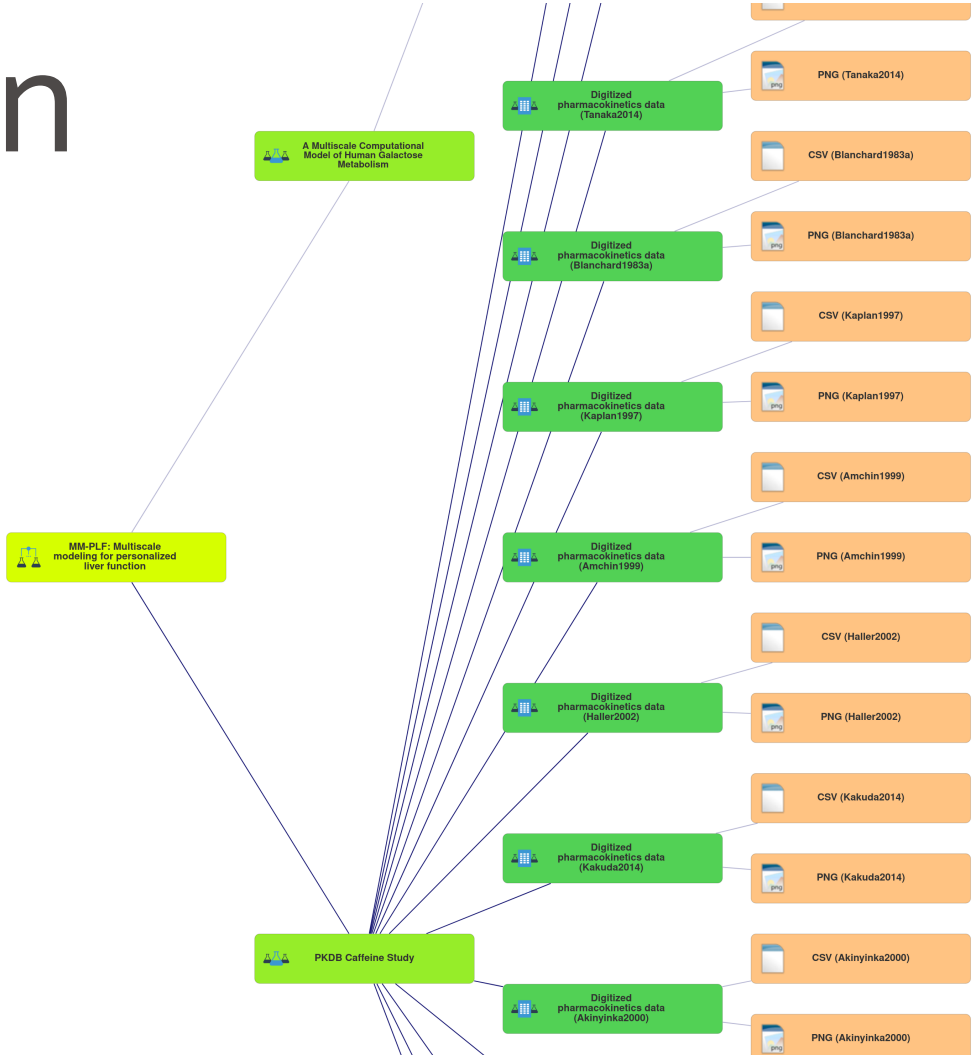
https://seek4science.org/
https://fairdomhub.org/

SEEK

Investigation

Study

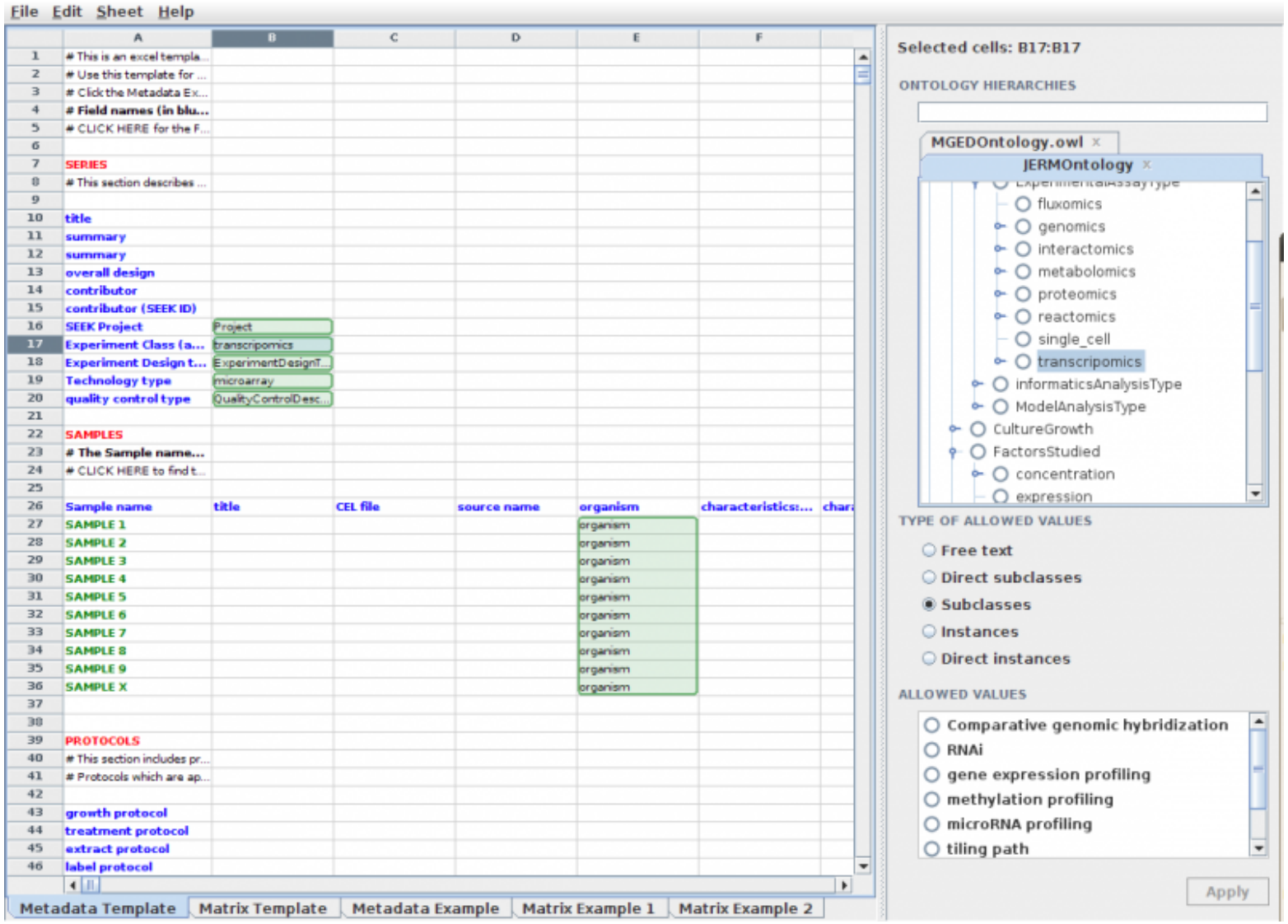
Assay



https://seek4science.org/
https://fairdomhub.org/

SEEK

RightField



https://seek4science.org/
https://rightfield.org.uk/

NeLS
Norwegian e-Infrastructure for Life Sciences

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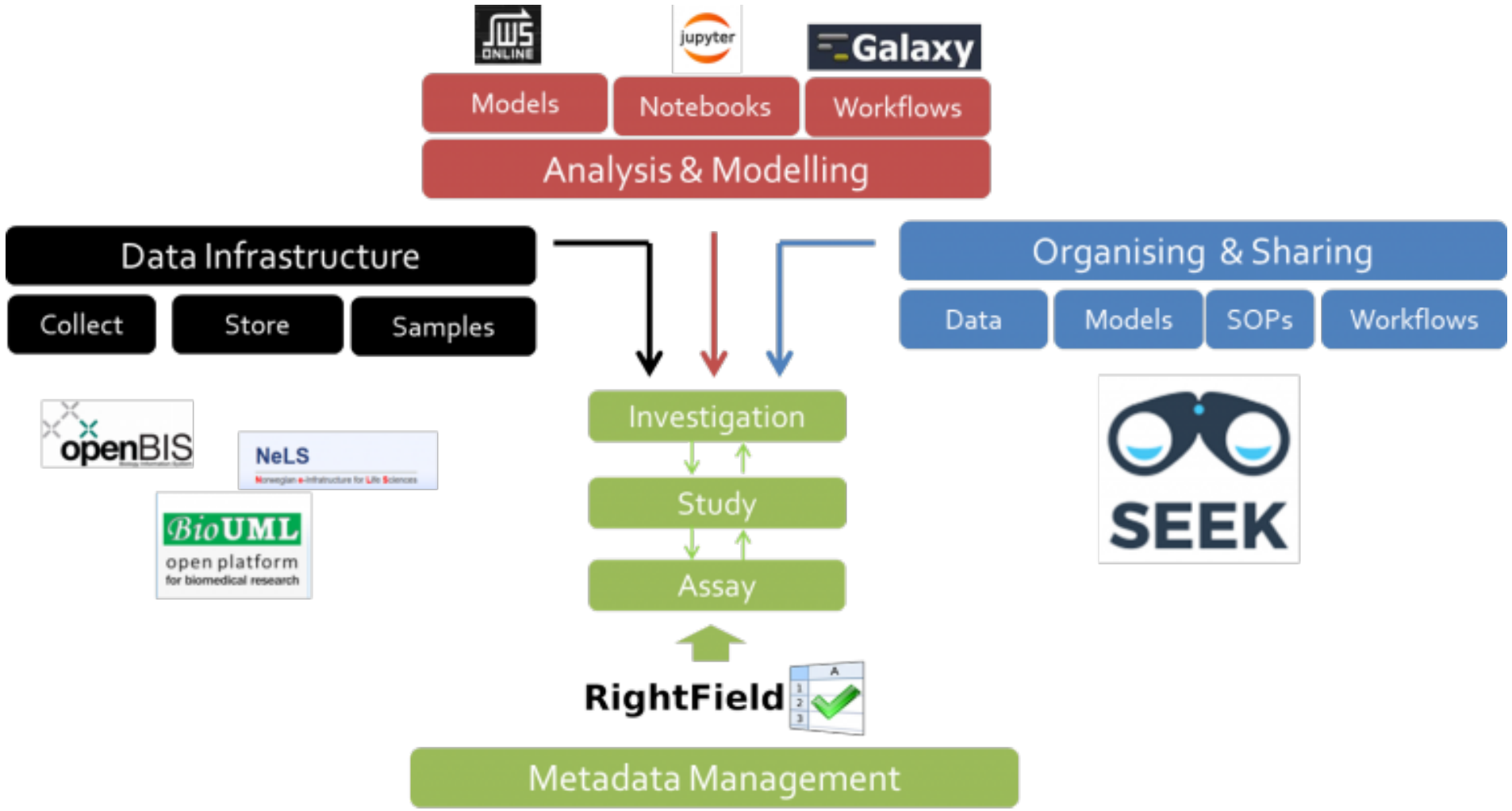
SEEK

Integration

Reference data in NeLS in SEEK

Access data in NeLS through SEEK

Save Metadata to SEEK through NeLS


JWS ONLINE
jupyter
Galaxy
Models
Notebooks
Workflows
Analysis & Modelling
Data Infrastructure
Collect
Store
Samples
openBIS
NeLS
Norwegian e-Infrastructure for Life Sciences
BioUML
open platform
for biomedical research
Investigation
Study
Assay
RightField
Metadata Management
Organising & Sharing
Data
Models
SOPs
Workflows
SEEK

National HPC infrastructure

UNINETT Sigma2

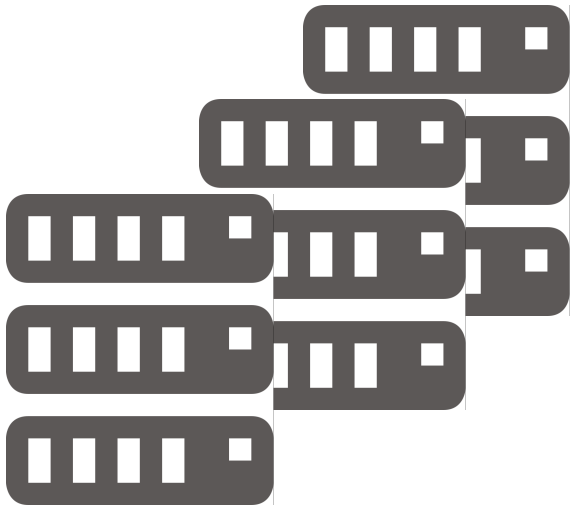
- Advanced Storage Needs
- Advanced Computing Resources
- Free Analysis Toolkit (Rstudio, Jupyternotebook)

https://www.sigma2.no/

National HPC infrastructure

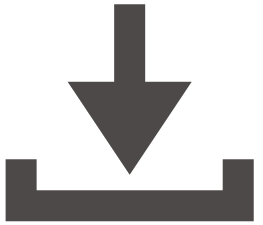
UNINETT Sigma2

NeLS
Norwegian e-Infrastructure for Life Sciences



jupyter RStudio

NIRD toolkit



NIRD archive

Saga

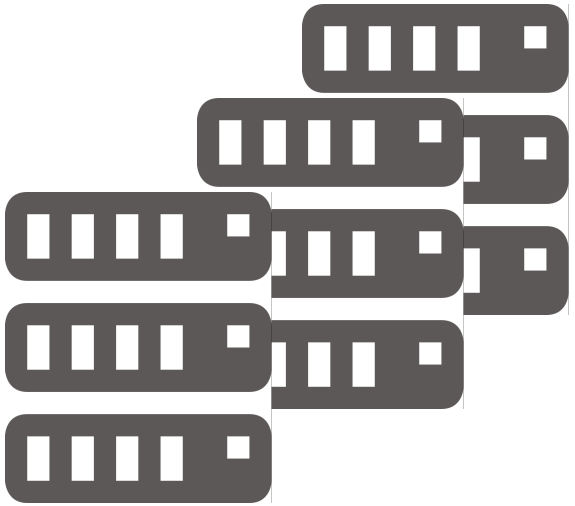
NIRD

https://www.sigma2.no/

HPC infrastructure

UNINETT Sigma2 Saga

244 nodes – 9824 cores – 32 GPUs



Total 75TB RAM – 186-3066GB/node

89TB + 60 TB NVMe+SSD

1PB file system

https://documentation.sigma2.no/quick/saga.html

Storage infrastructure - NIRD

UNINETT Sigma2

Geo replicated

Nightly snapshots

12 PB (→ 36 PB next 3 yrs)

https://documentation.sigma2.no/storage/nird.html

Sigma2 - Getting Access

UNINETT Sigma2

Bi-annual calls (January & July) – Reapplication (!)

User contribution model (projects > 15 mill. NOK)

Application for small grants continually

https://www.sigma2.no/how-apply-user-account
https://www.sigma2.no/data-storage#get-access