



CEPLAS

Cluster of Excellence on Plant Sciences

Start Your ARC Workshop Series

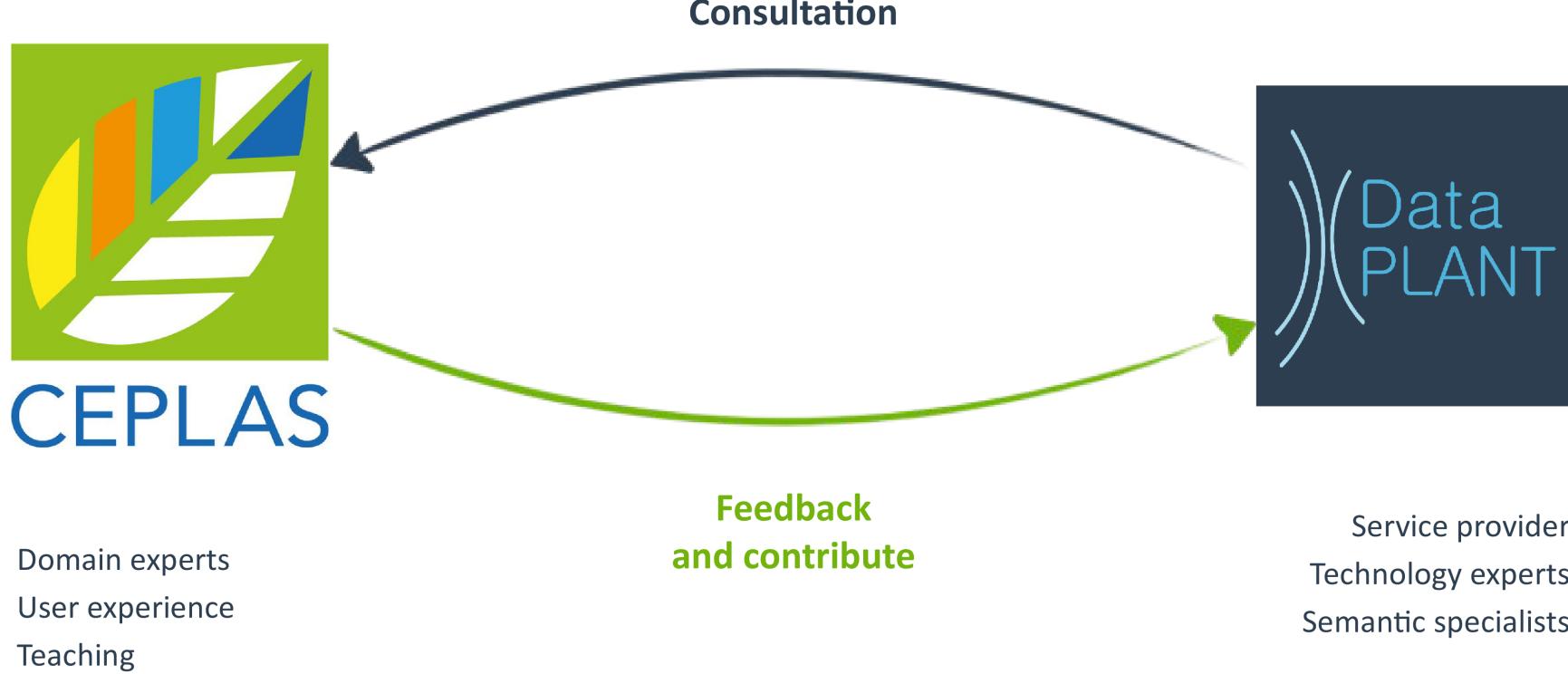
Session 01 - Introduction to the ARC (demo)

May 9th, 2023

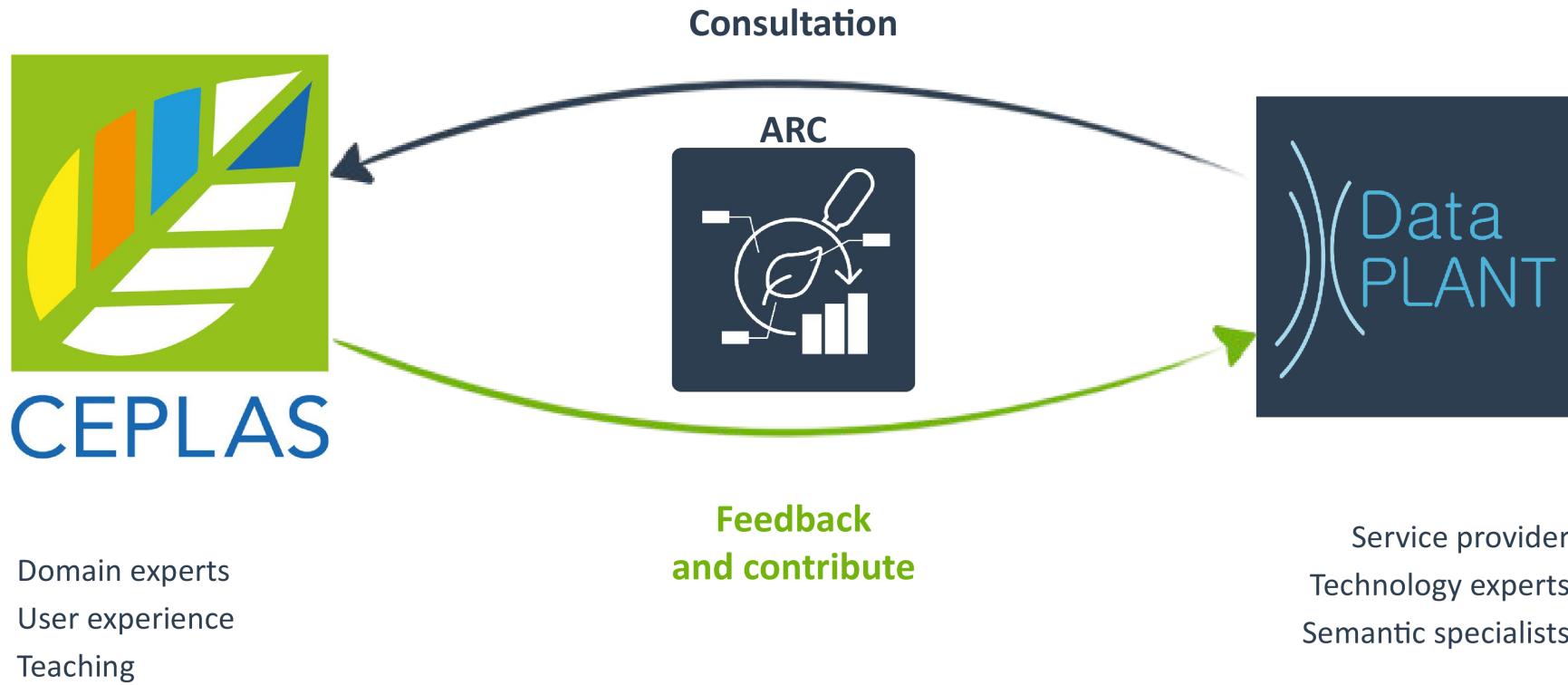
Dominik Brilhaus - CEPLAS Data Science



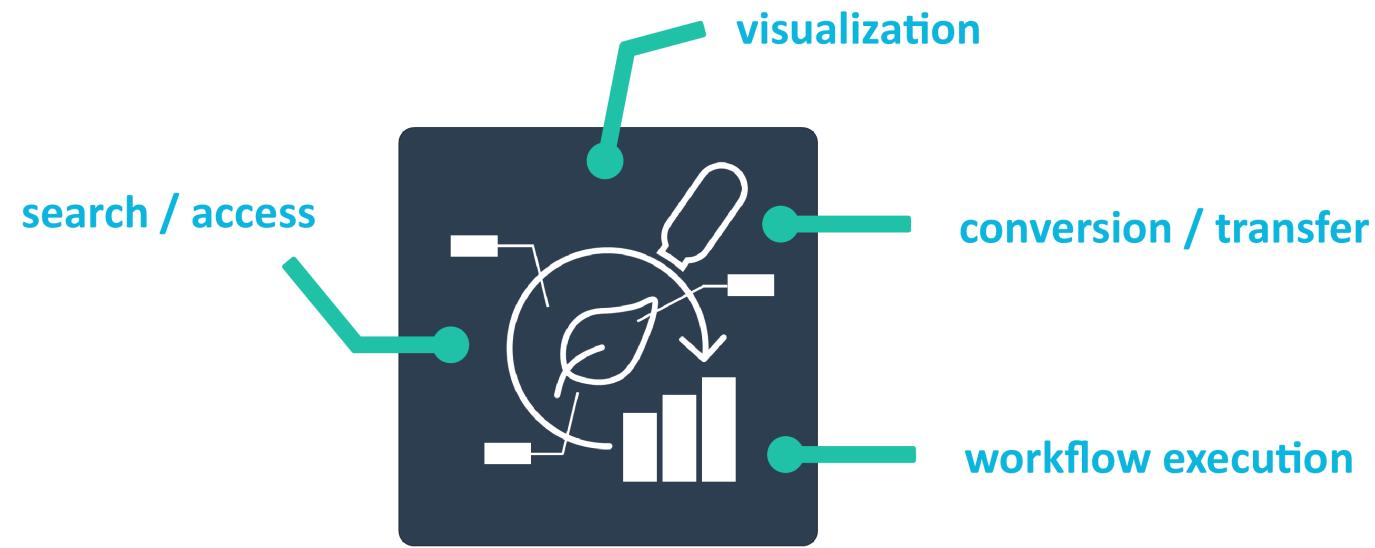
CEPLAS collaborates with DataPLANT



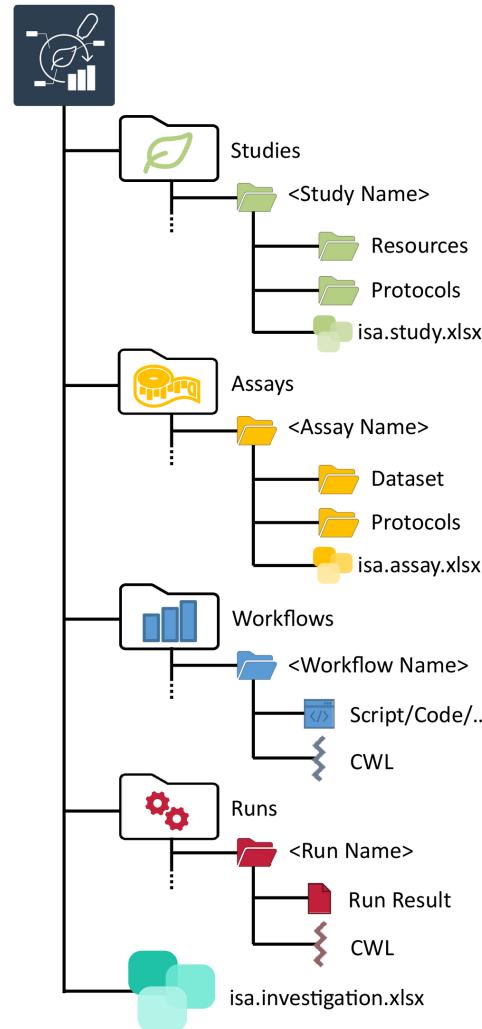
CEPLAS collaborates with DataPLANT



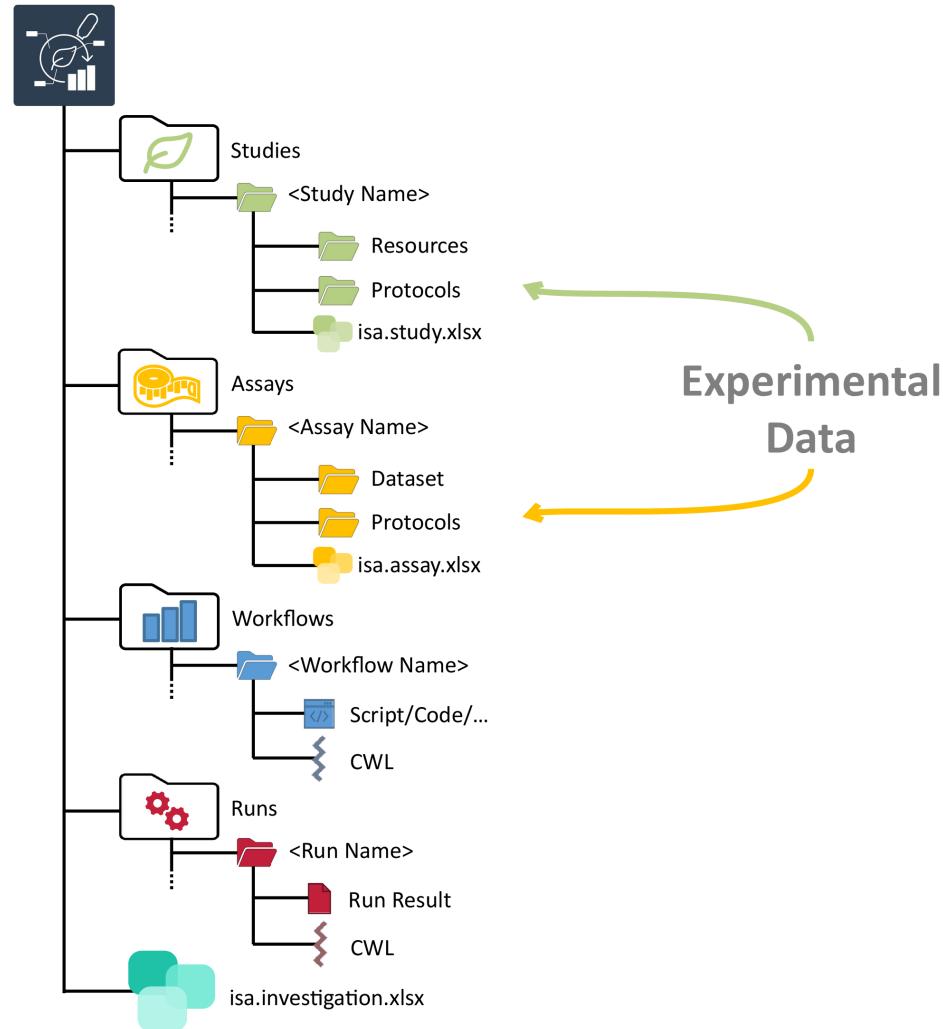
Annotated Research Context (ARC)



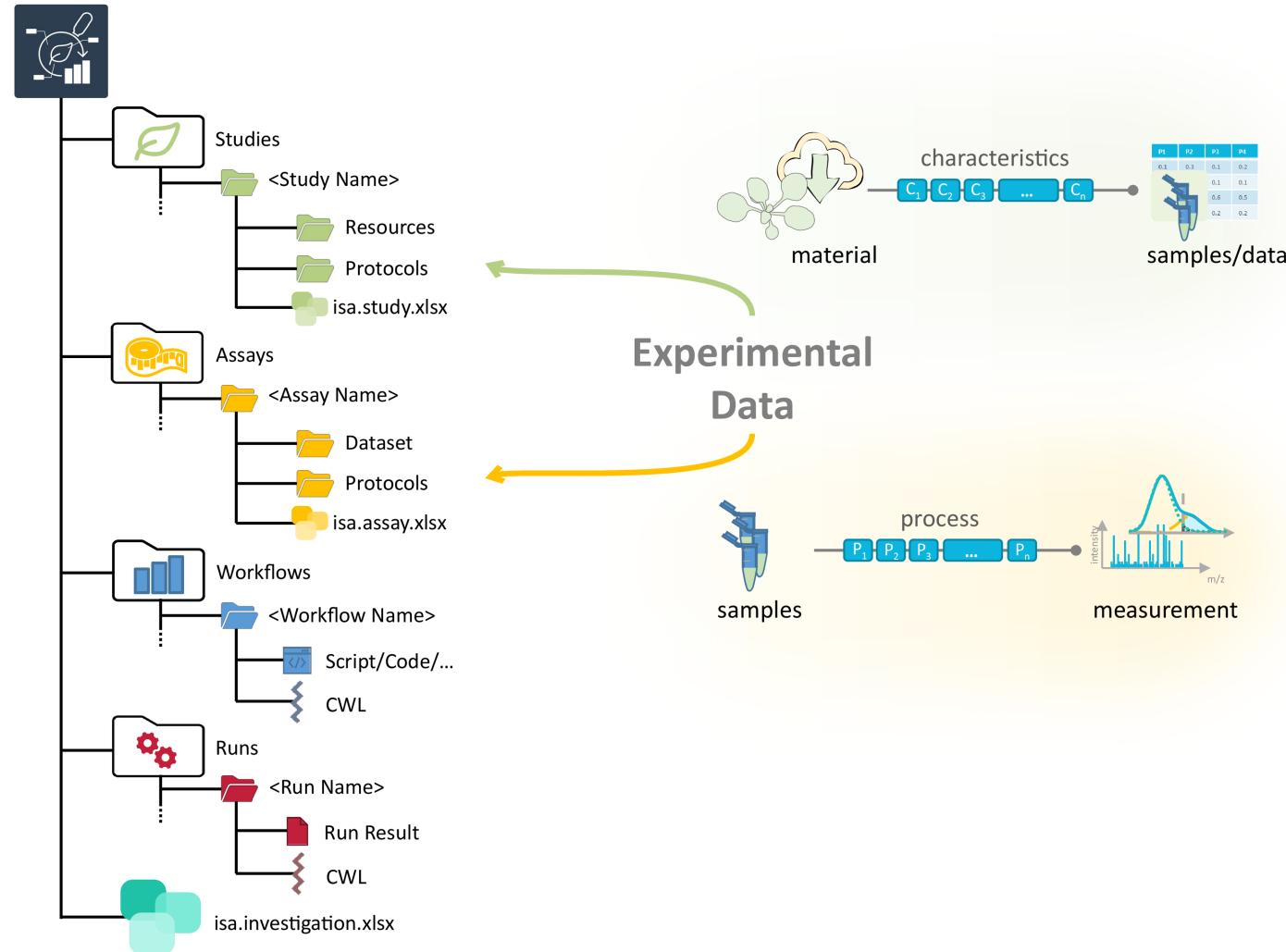
What does an ARC look like?



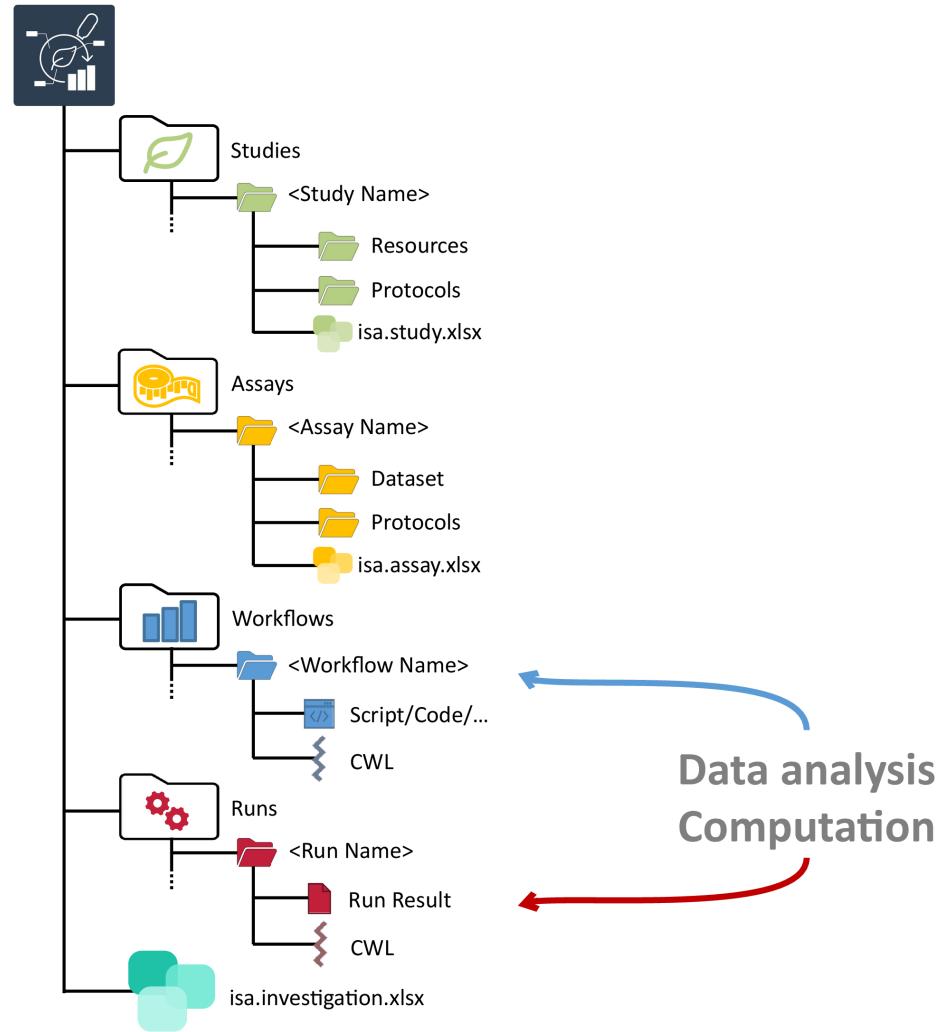
What does an ARC look like?



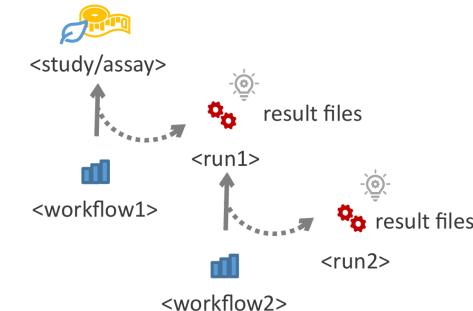
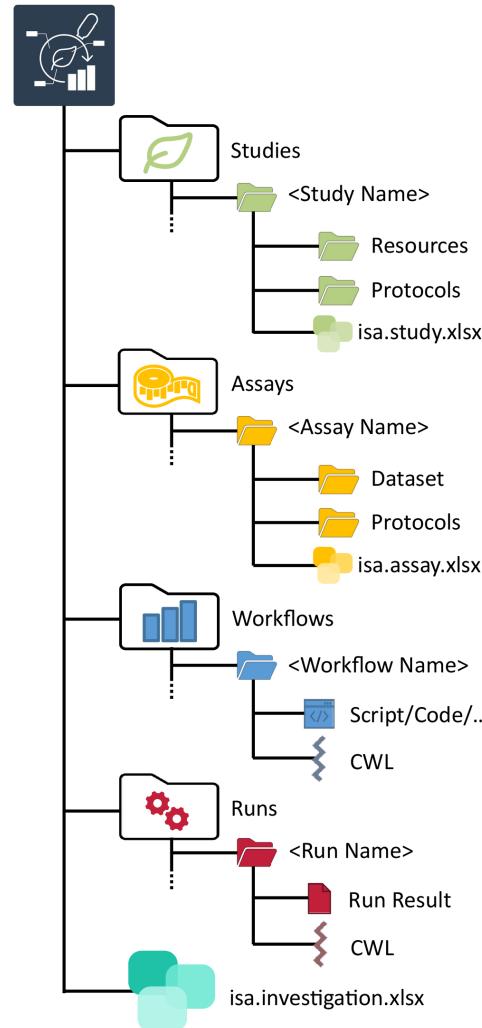
What does an ARC look like?



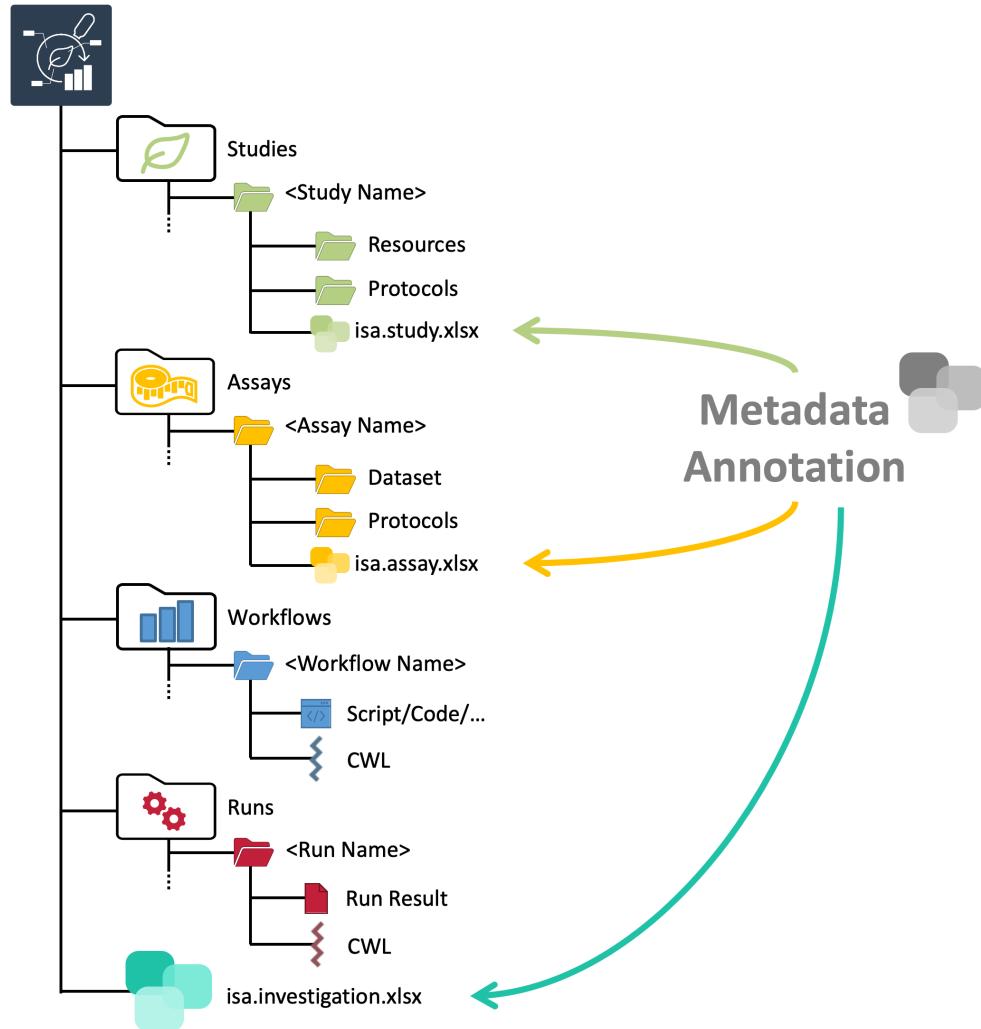
What does an ARC look like?



What does an ARC look like?



What does an ARC look like?





FINDABLE

ACCESSIBLE

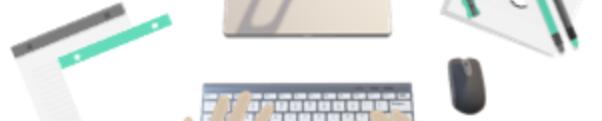
INTEROPERABLE

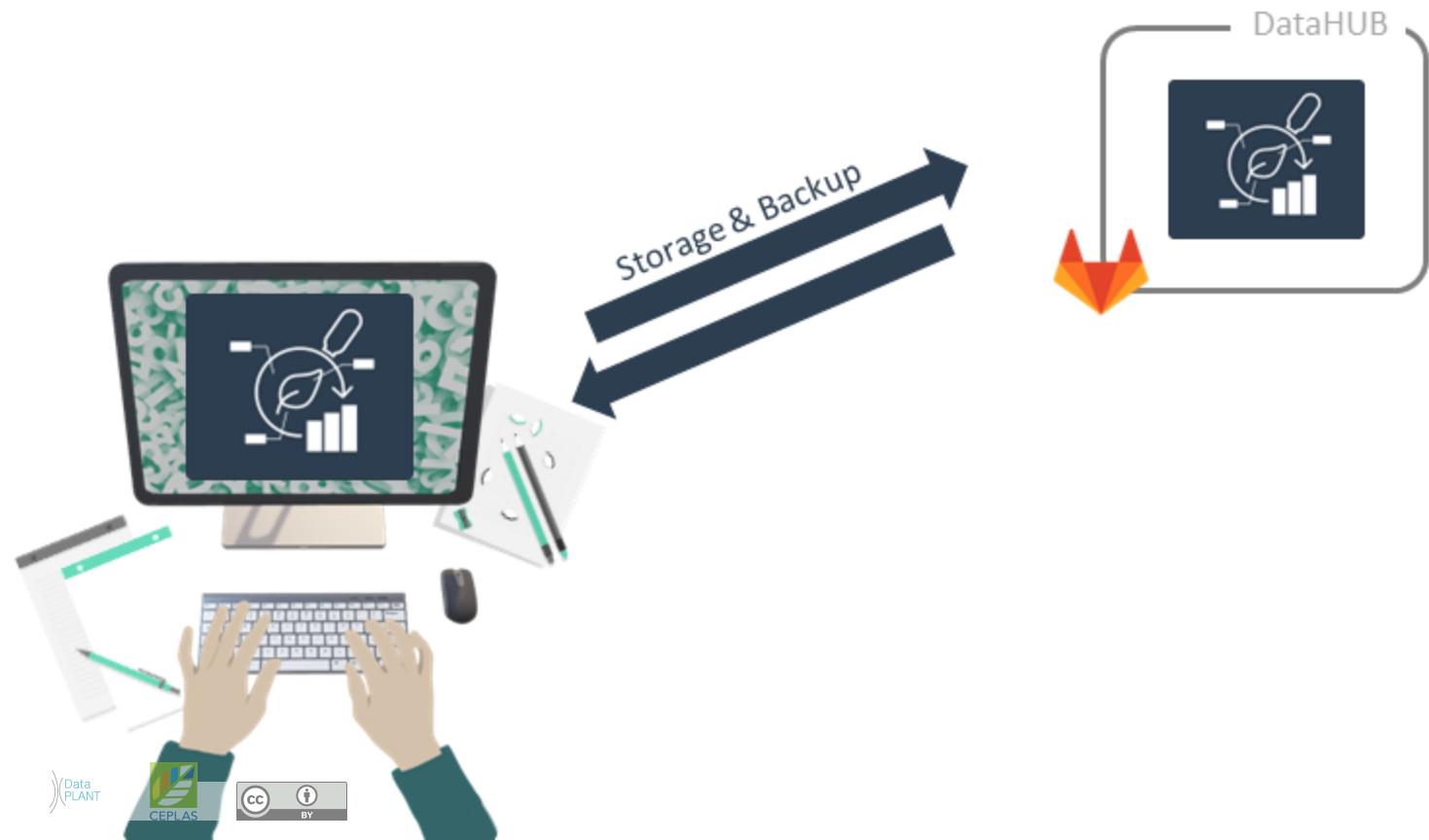
REUSABLE

Metadata
Templates

Controlled
Vocabularies

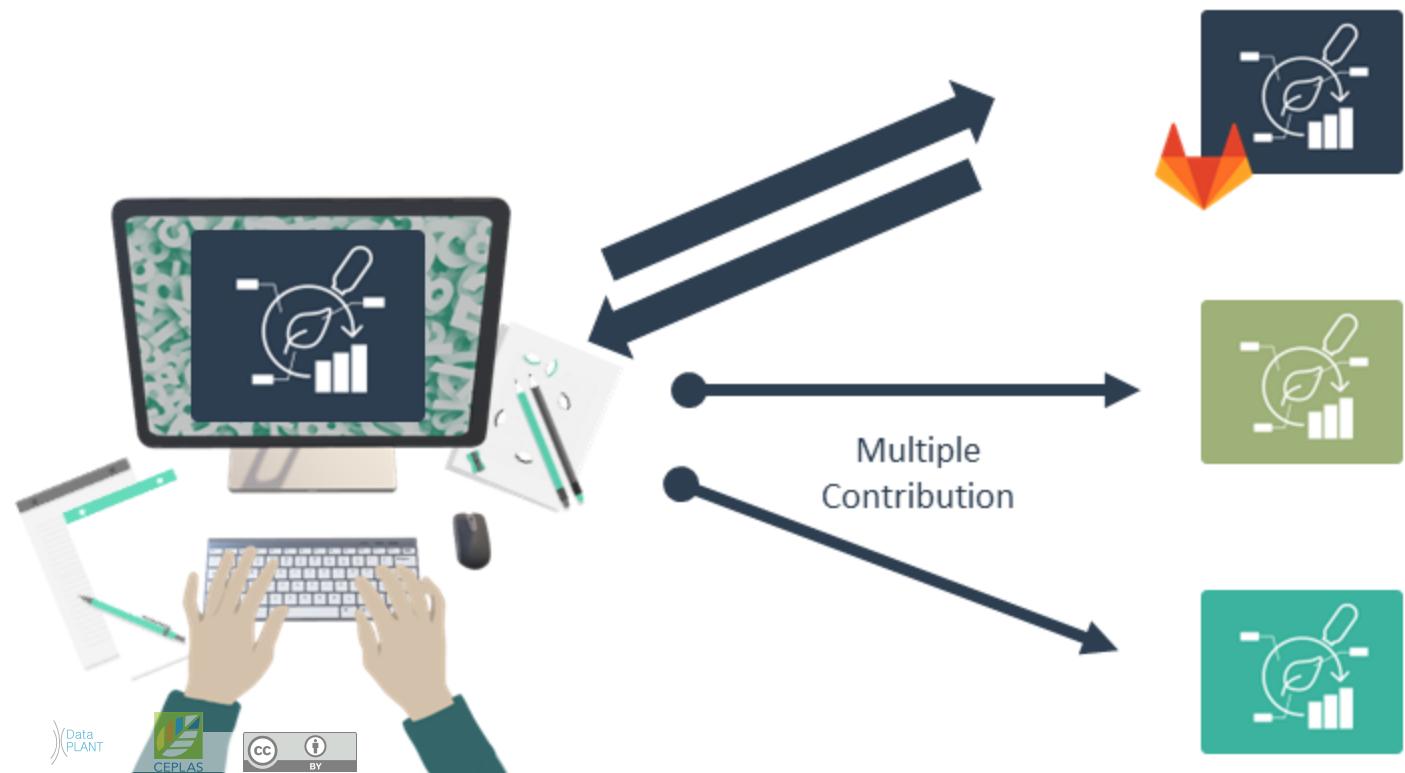
Standards

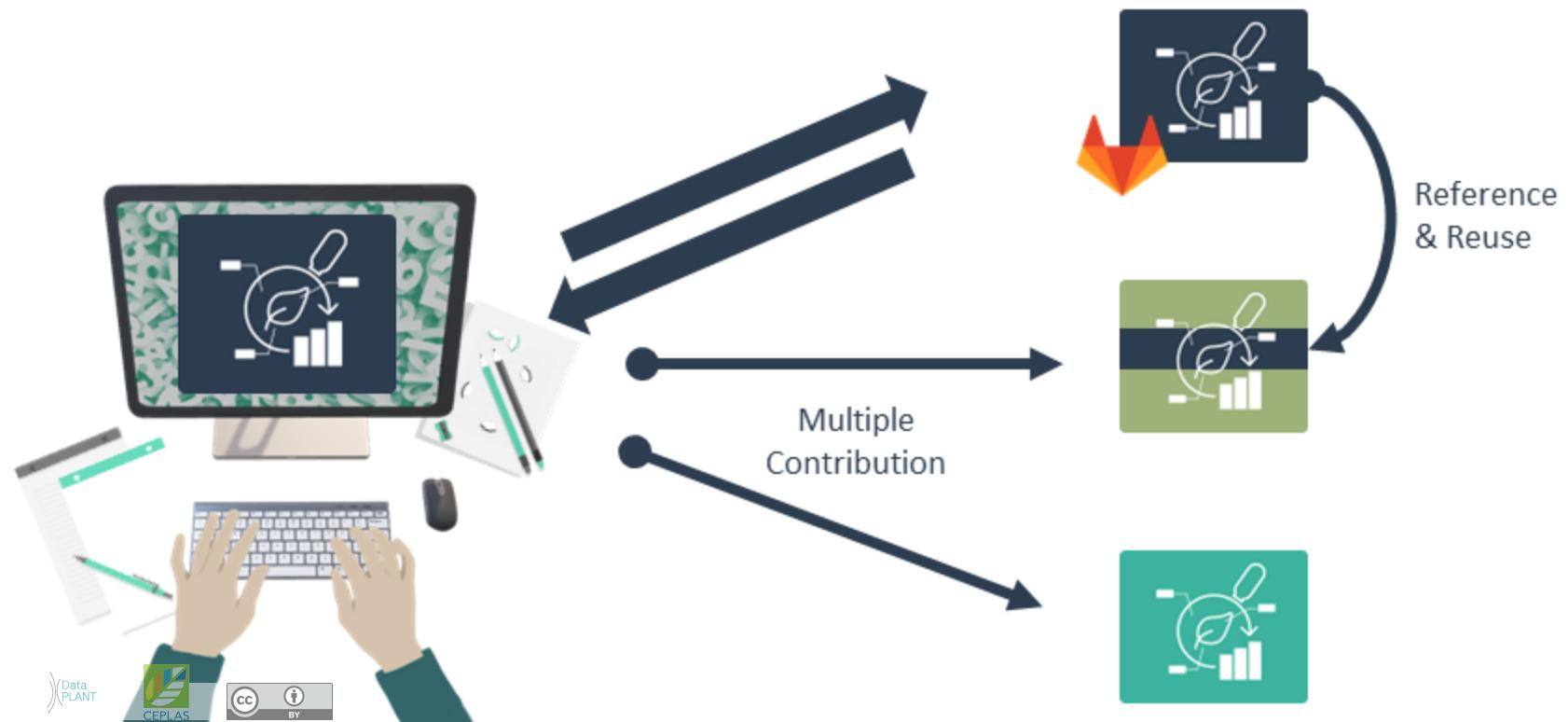


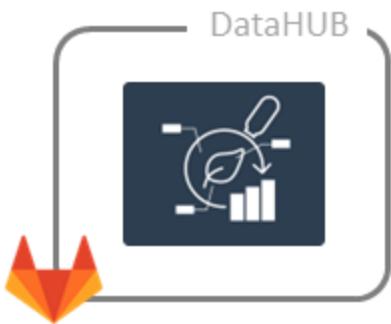
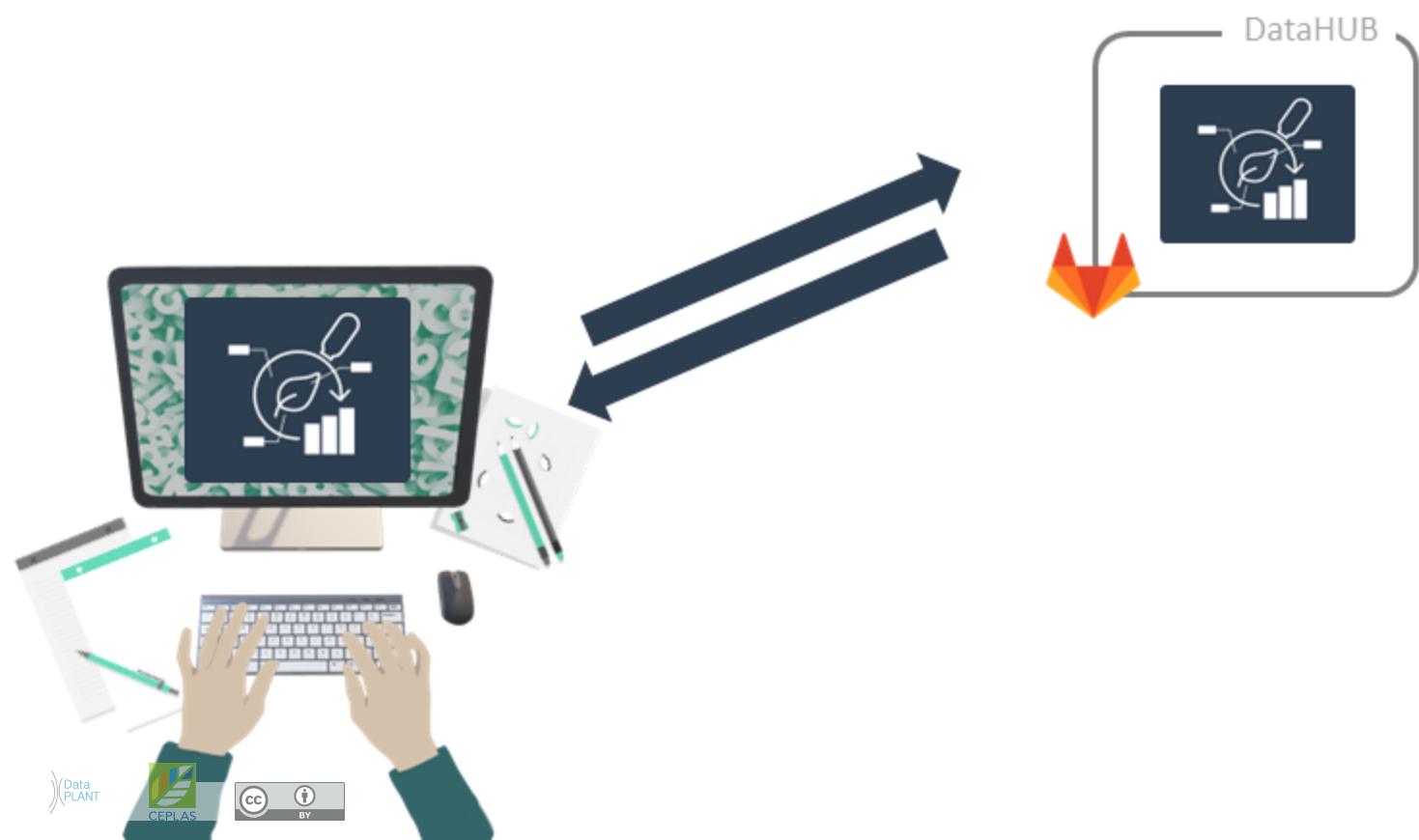






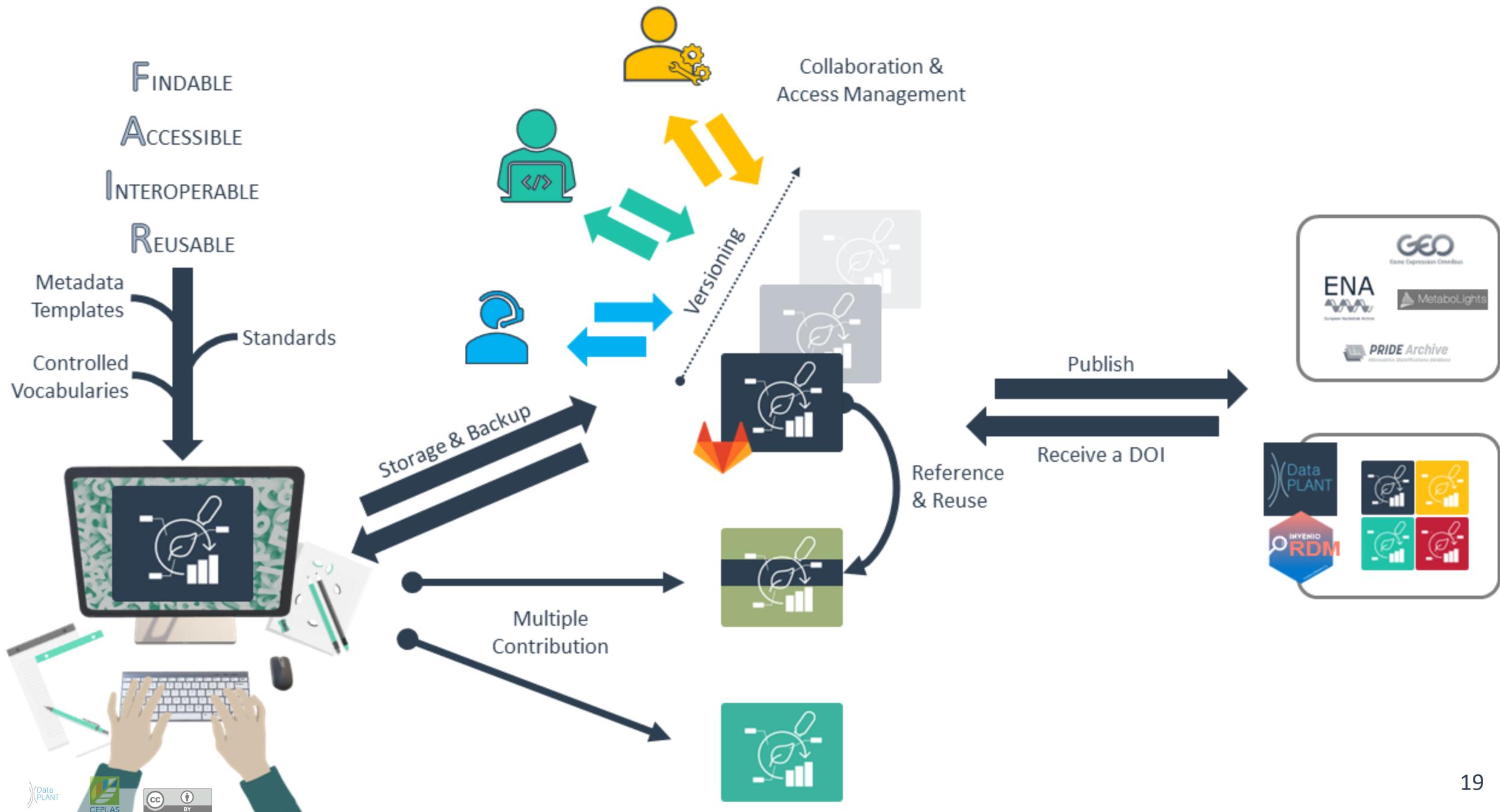






Publish
Receive a DOI





First steps towards your ARC

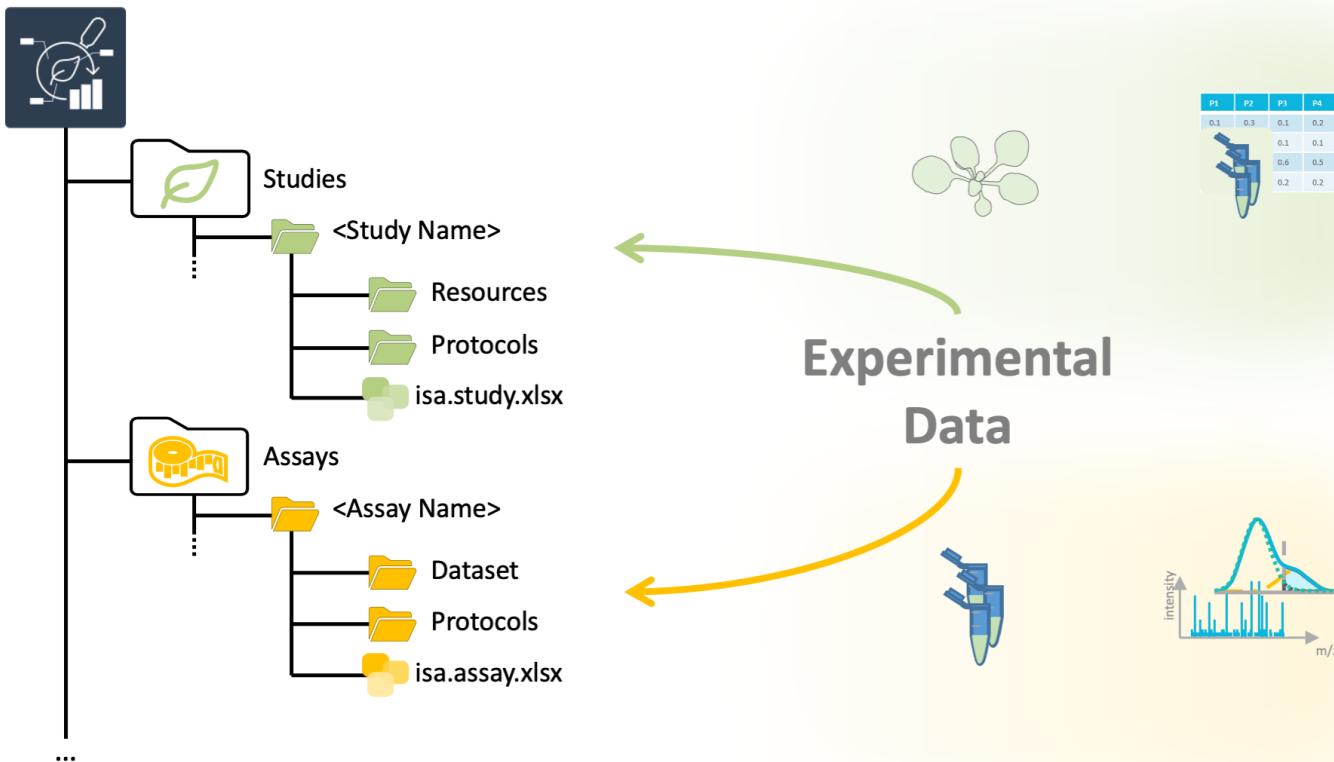
You just received your data

metabolomics_data
150112_56.D
150112_62.D
150112_66.D
150115_12.D
150115_14.D
150115_16.D
gcms_samplelist.tsv
method_gcms.txt
sample_submission_gcms.csv
methods
Illumina_libraries.txt
metabolite_extraction.txt
plant_material.txt
RNA_extraction.txt
rnaseq_data
DB_097_CAGATC_L001_R1_001.fastq.gz
DB_099_CTTGTA_L001_R1_001.fastq.gz
DB_103_AGTCAA_L001_R1_001.fastq.gz
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NGS_SampleSheet.xlsx

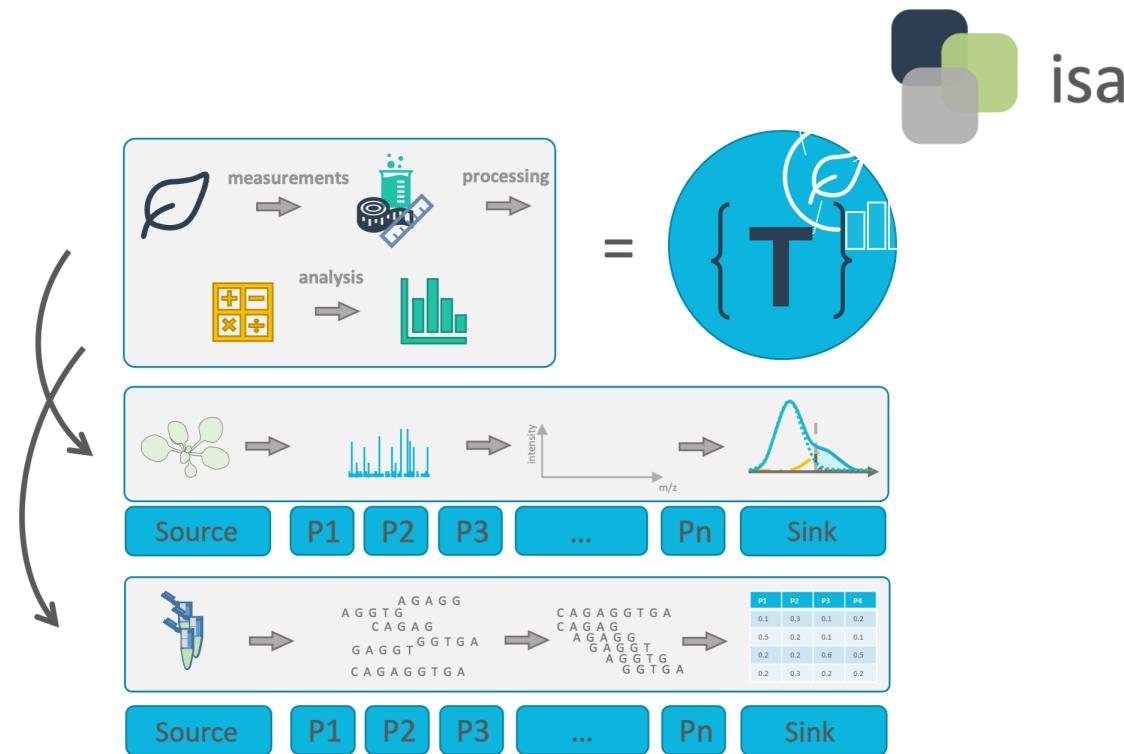
Goal

- Structure,
- Annotate, and
- Share **your experimental data.**

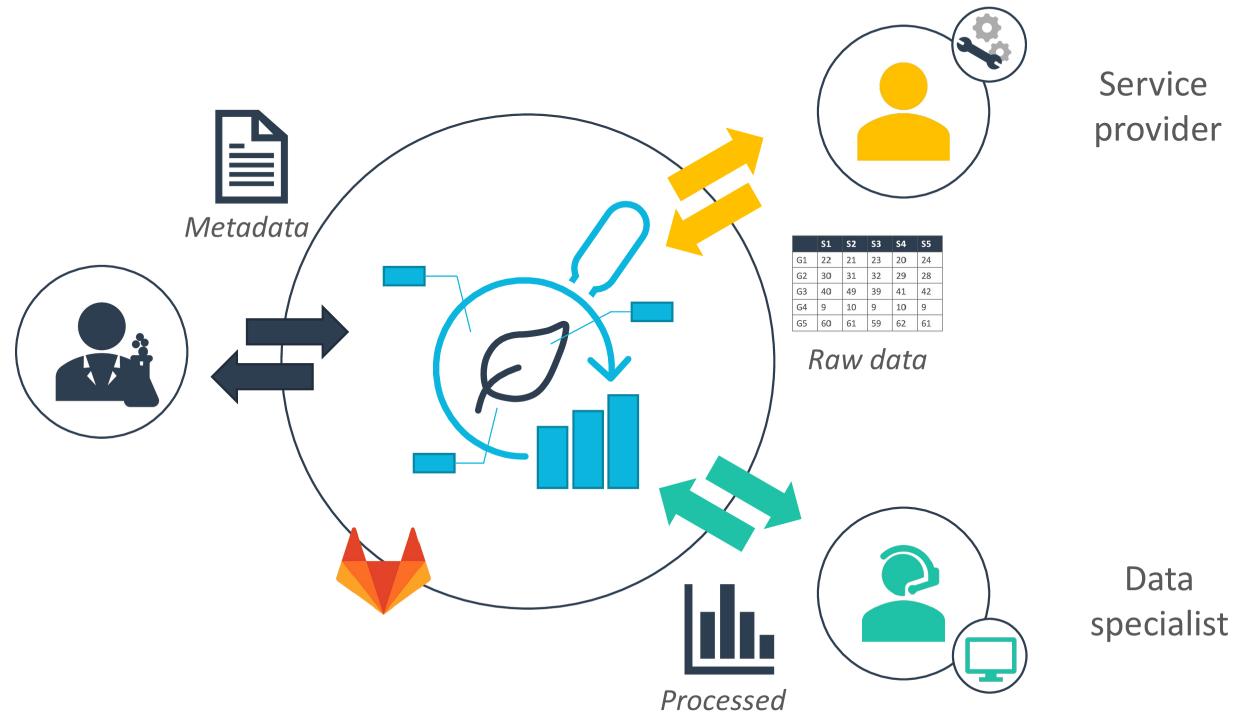
Structure your data



Annotate your data



Collaborate and share



Sync your ARC to the DataHUB

```
arc sync -f -r https://git.nfdi4plants.org/brilator/demo-arc
```

Invite collaborators to your ARC

<https://git.nfdi4plants.org/brilator/demo-arc>

Using the ARC Commander to setup an ARC

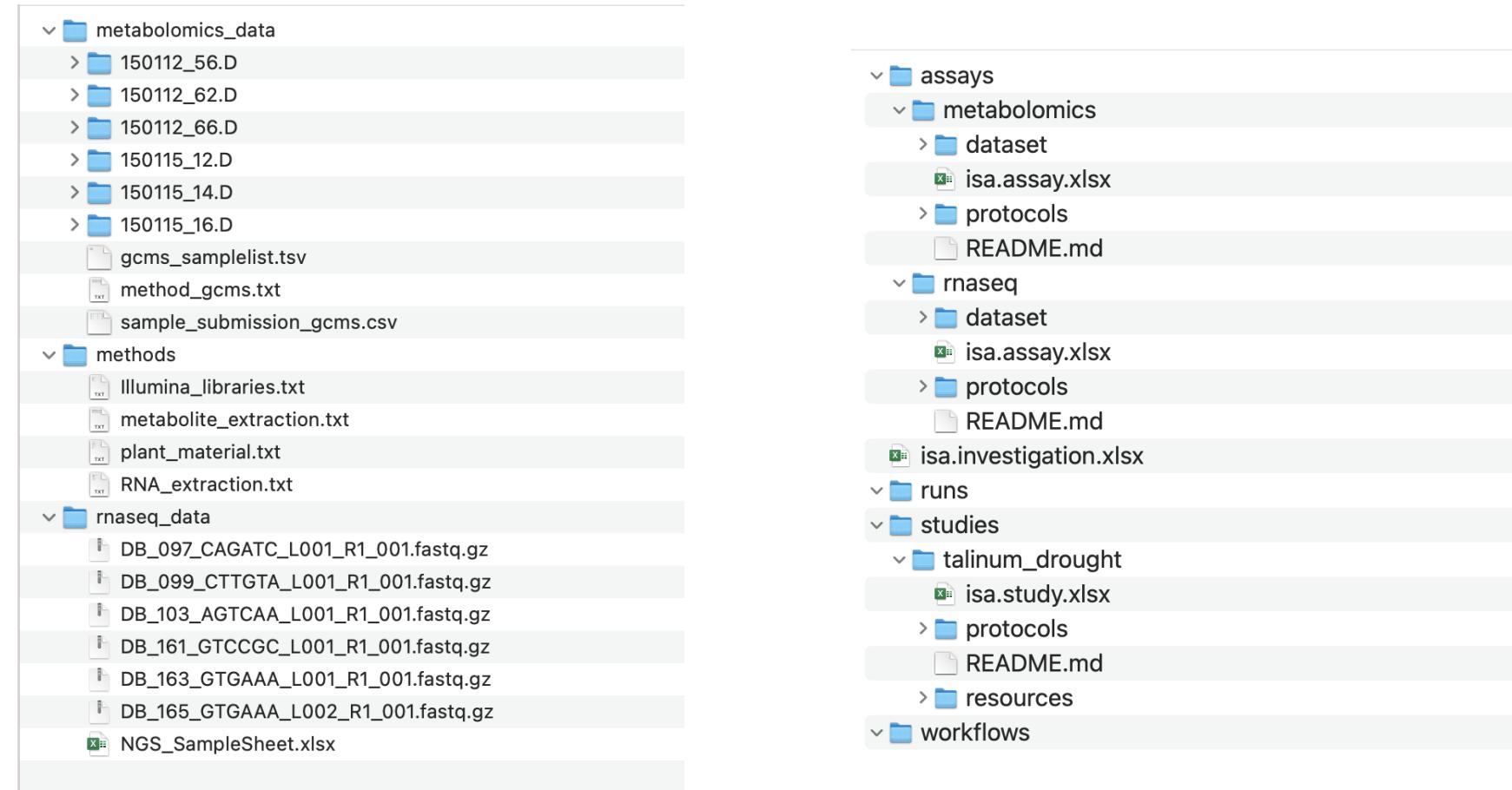
Initiate the ARC folder structure

```
arc init
```

Add metadata structure

```
arc i create -i TalinumPhotosynthesis  
arc s add -s talinum_drought  
arc a add -s talinum_drought -a rnaseq  
arc a add -s talinum_drought -a metabolomics
```

Your ARC is ready



Your ARC is ready

 Initiated an ARC

 Structured and ...

 ... annotated experimental data

 Shared with collaborators



Resources



CEPLAS Data Science

Website: <https://www.ceplas.eu/en/research/data-science-and-data-management/>



DataPLANT (nfdi4plants)

Website: <https://nfdi4plants.org/>

Knowledge Base: <https://nfdi4plants.org/nfdi4plants.knowledgebase/>

DataHUB: <https://git.nfdi4plants.org>

GitHub: <https://github.com/nfdi4plants>

Acknowledgements

CEPLAS

- Björn Usadel, Andrea Schrader, Hajira Jabeen (until 2021)

DataPLANT

- Timo Mühlhaus & Group
- Cristina Martins Rodrigues, Martin Kuhl



3rd DataPLANT Hackathon – Sept. 2022

Five-Finger-Feedback

