

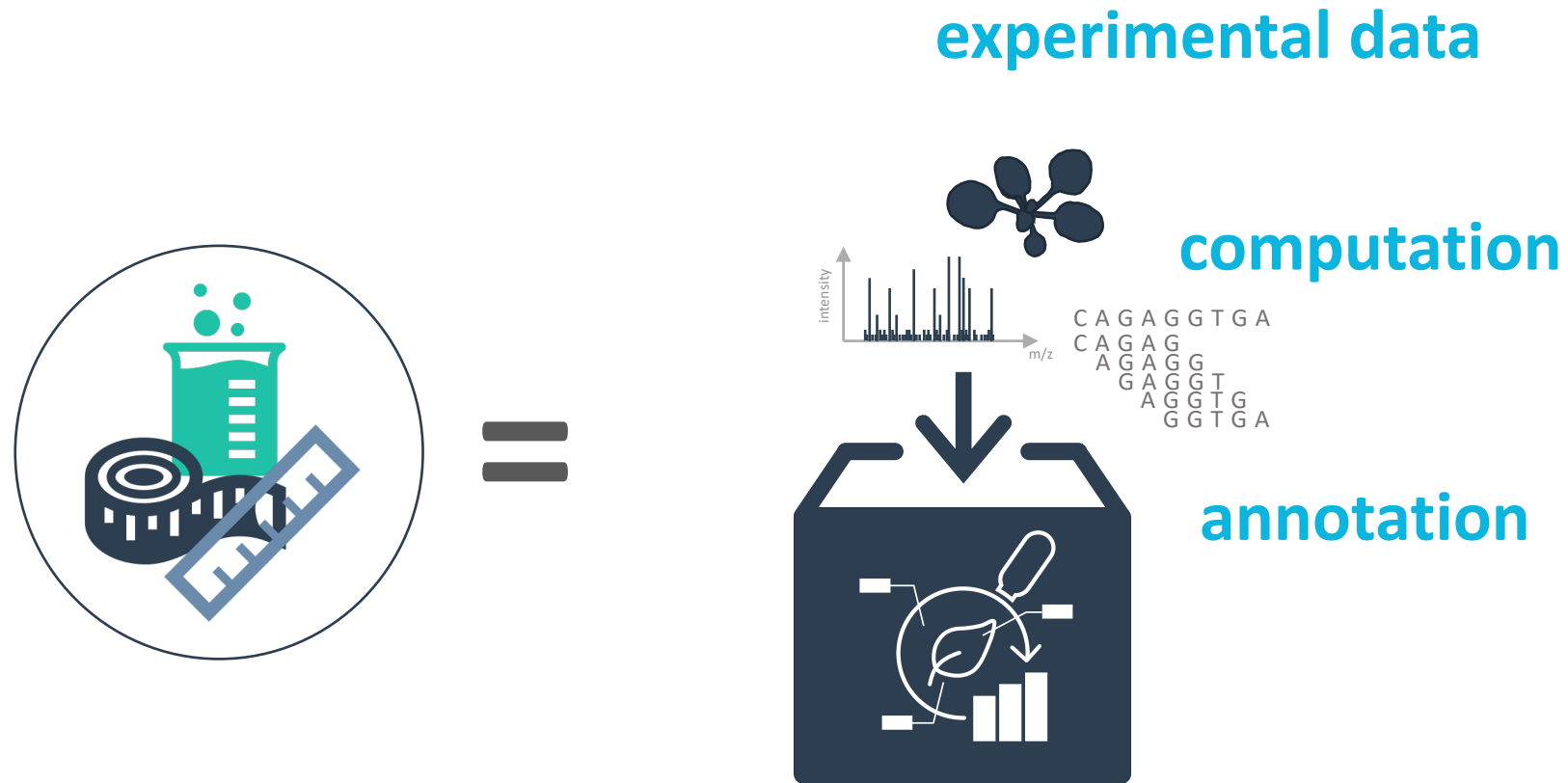


Annotated Research Context

Heinrich Lukas Weil

Bag your research in an ARC

(Annotated Research Context)



Your entire investigation in a single unified bag

<https://github.com/nfdi4plants/ARC-specification>

Bag your research in an ARC

(Annotated Research Context)



The content as diverse as your research



<https://github.com/nfdi4plants/ARC-specification>

What is an ARC?

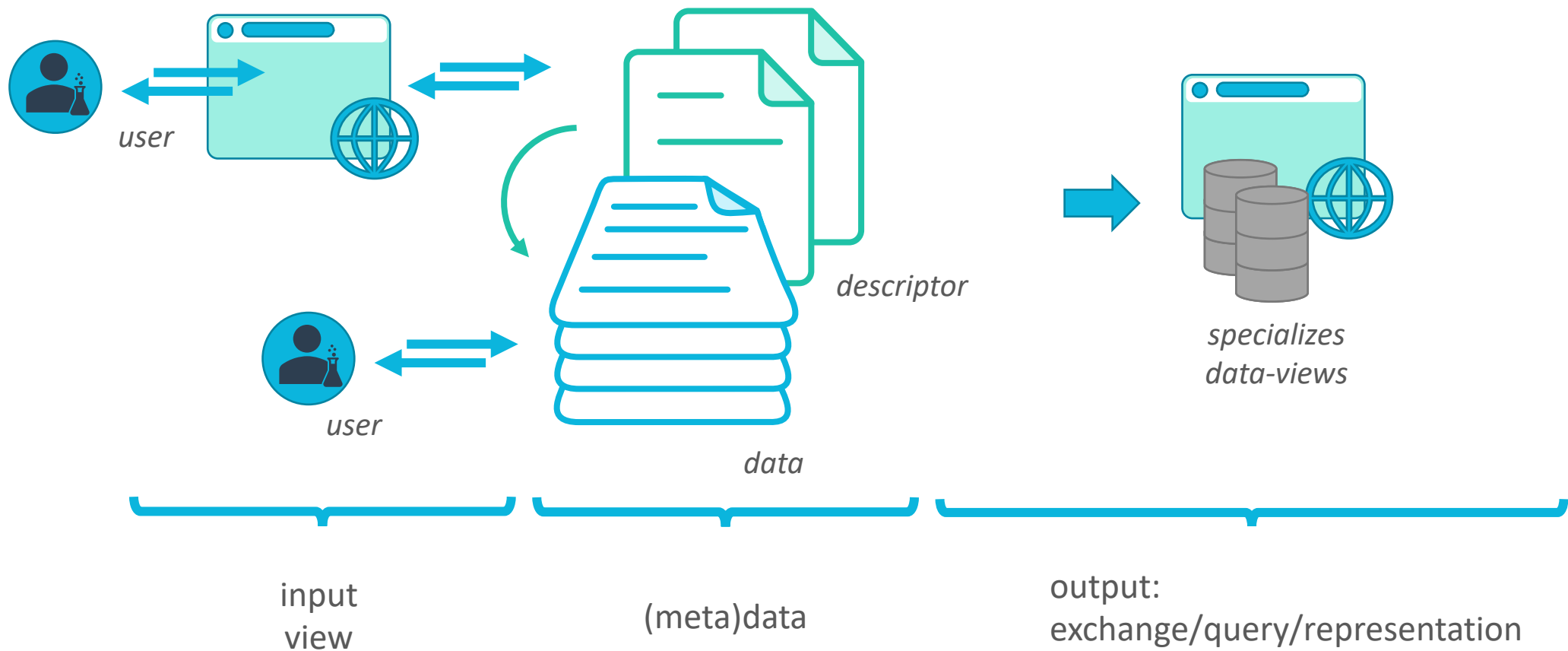


Everything is a file

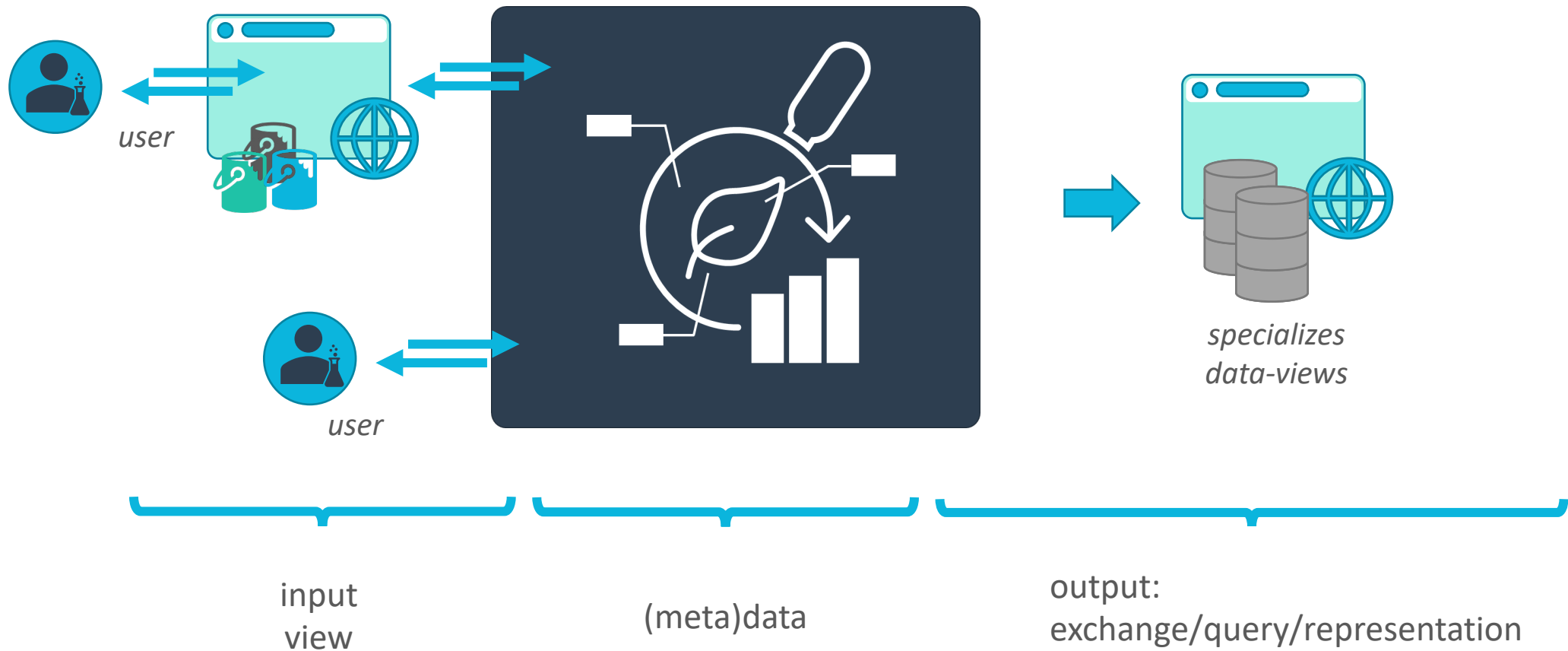


Descriptor files provide context for the data files and are simply layered on top

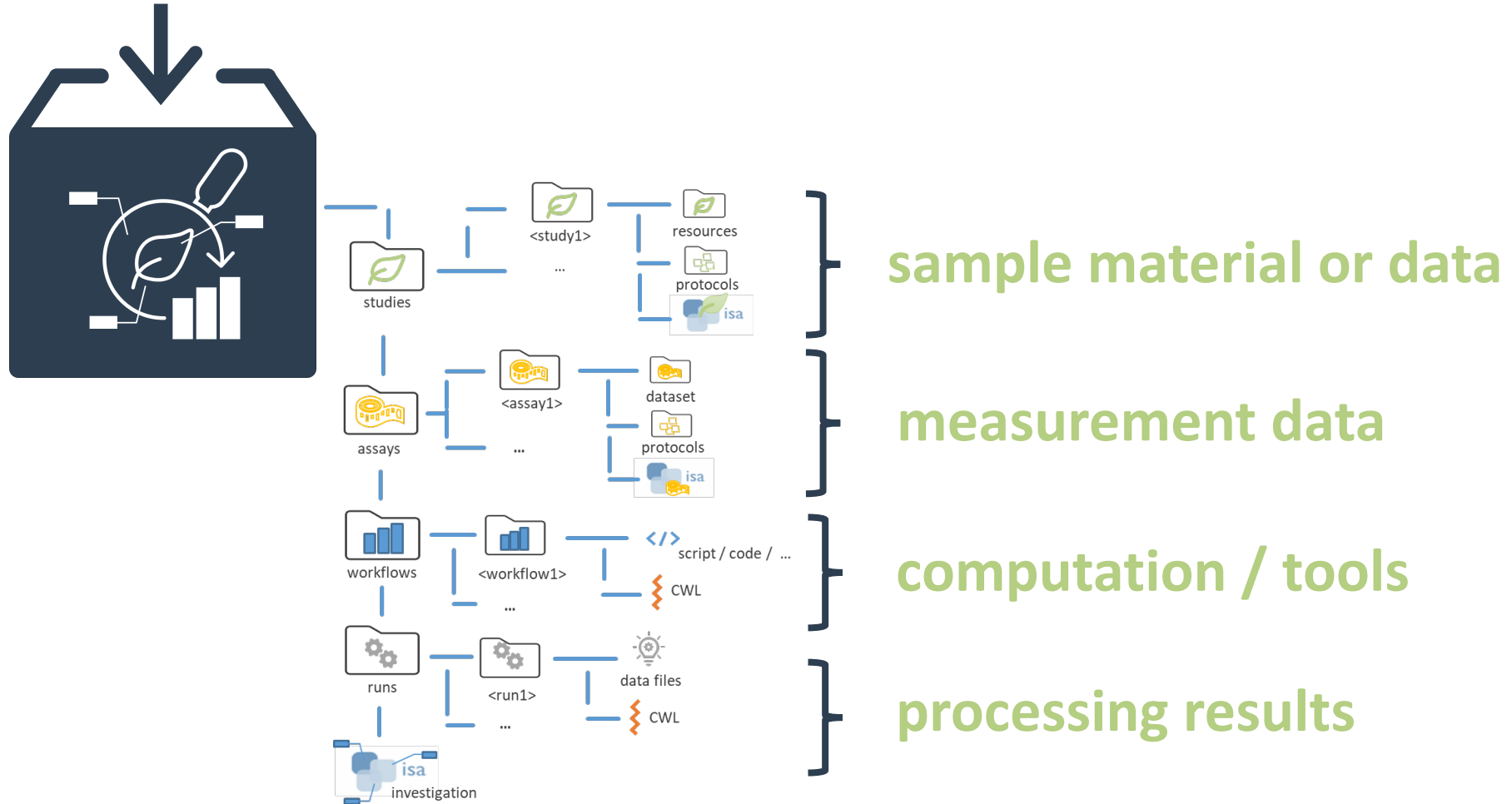
“Everything is a file” as single point of access



ARCs as single point of access



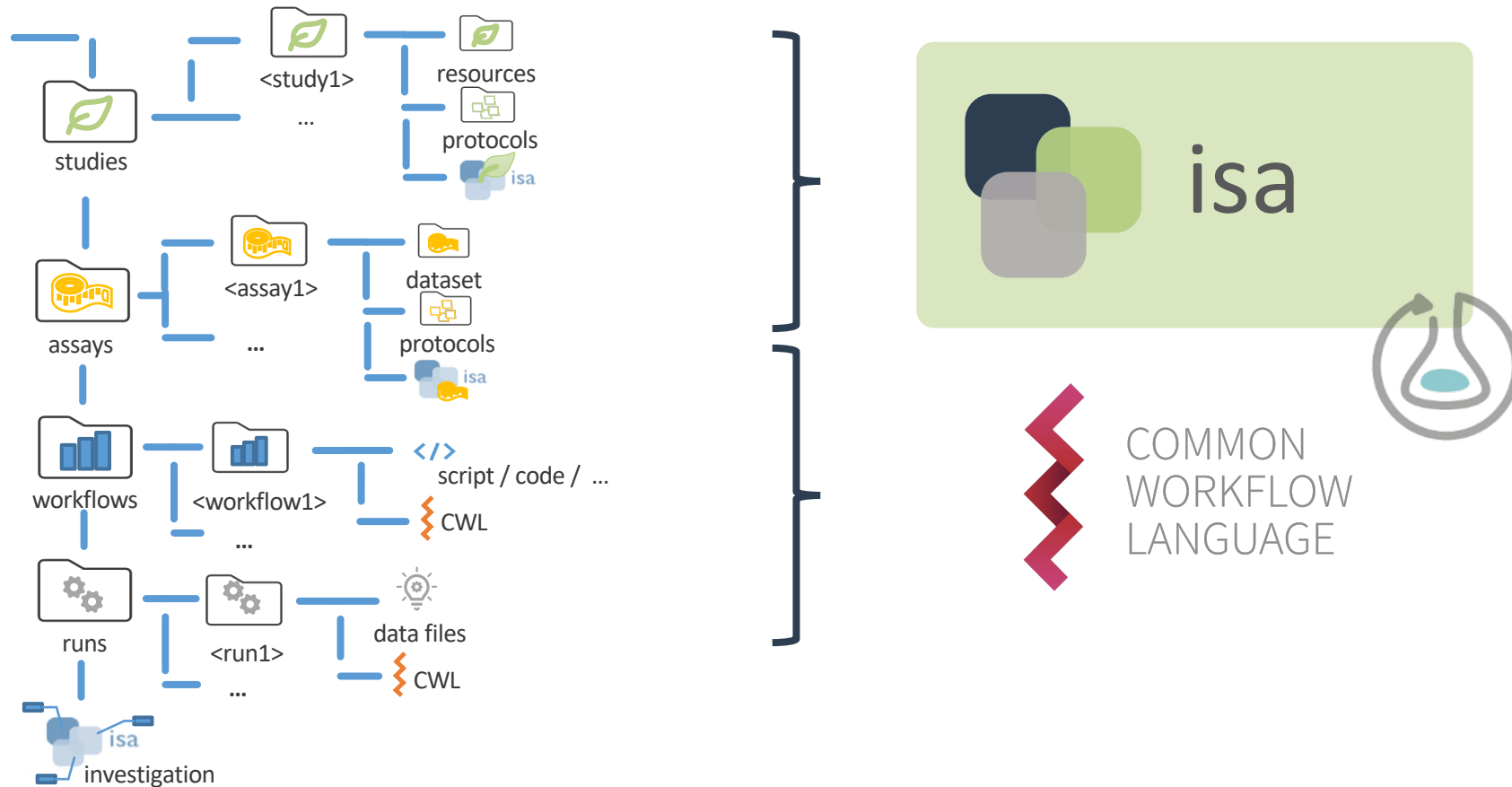
A real-world ARC is a folder structure



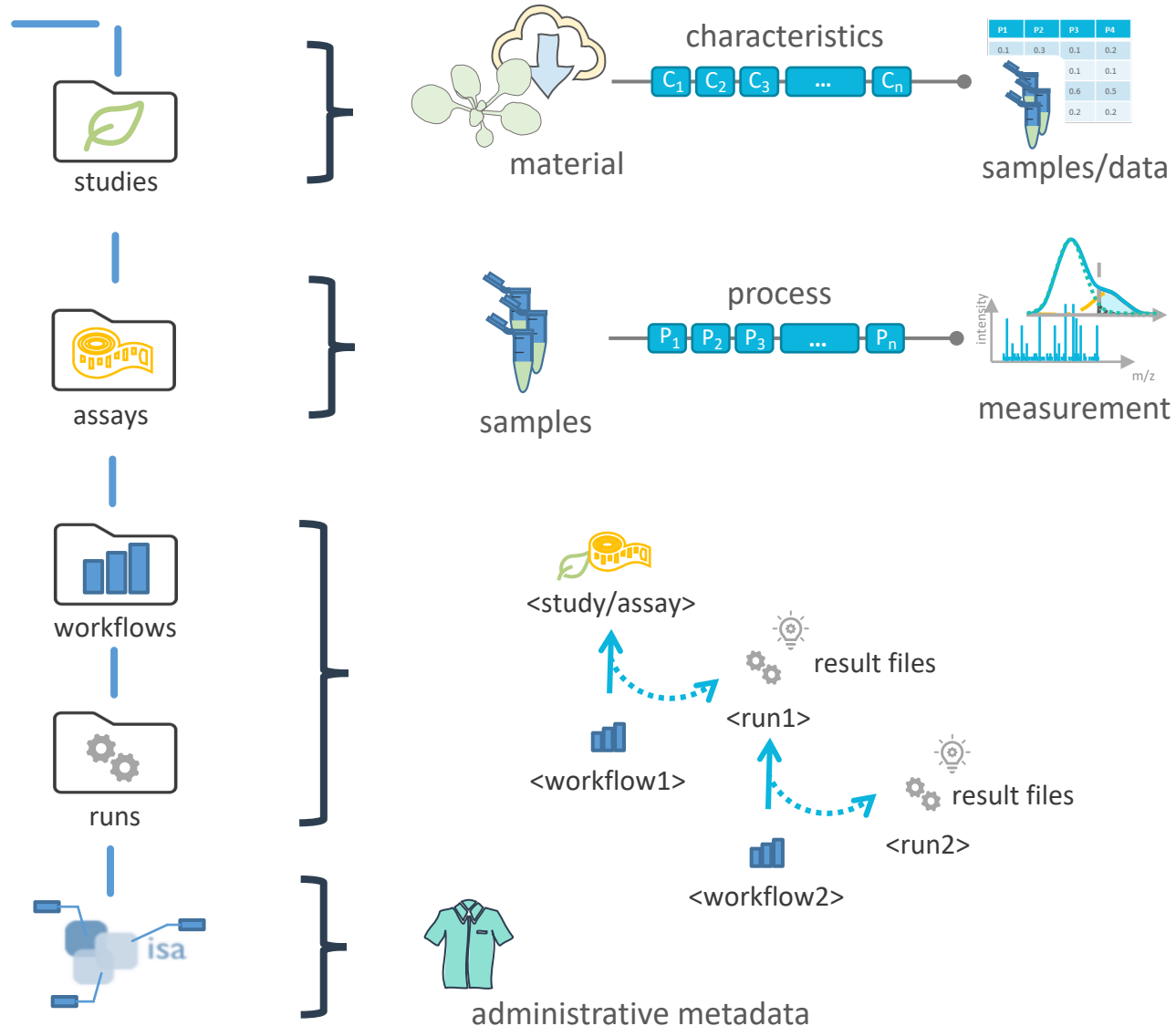
What is an ARC?



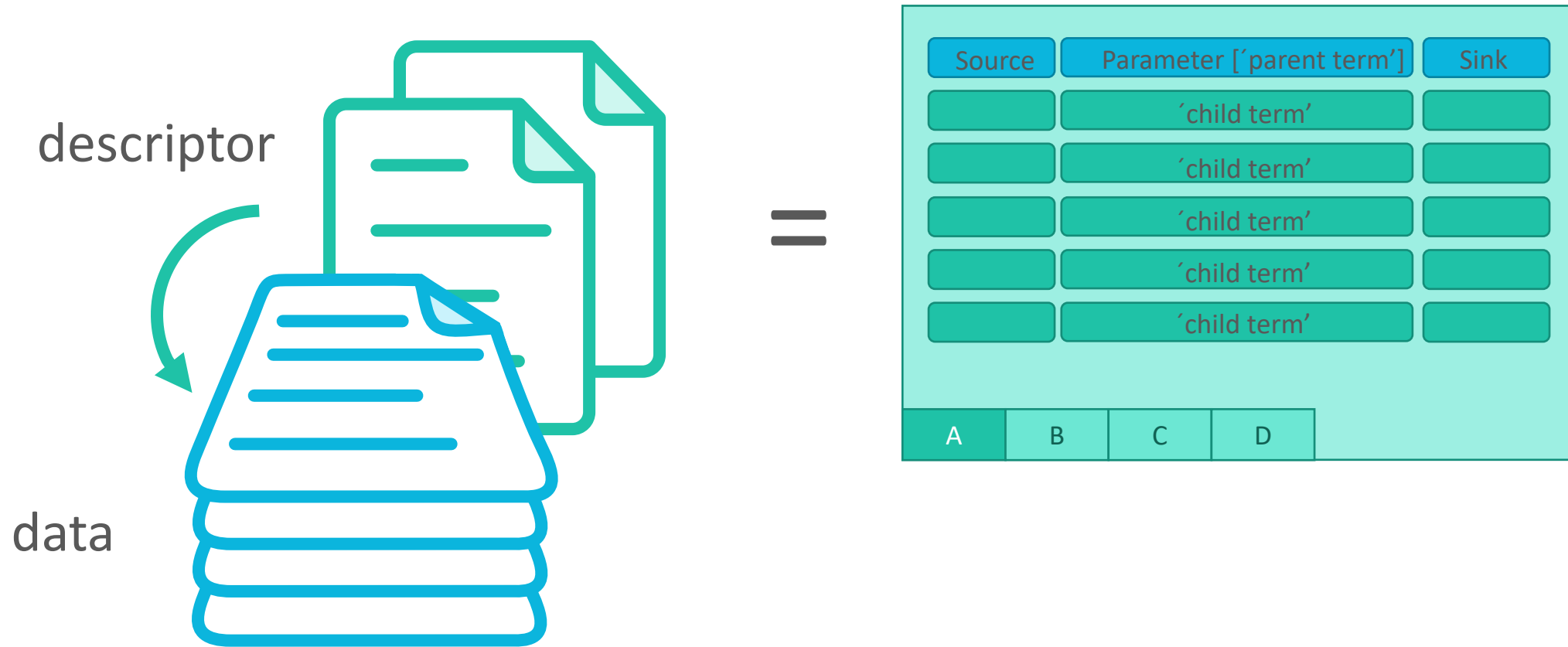
ARC is built on top of existing standards



ARC is built on top of existing standards

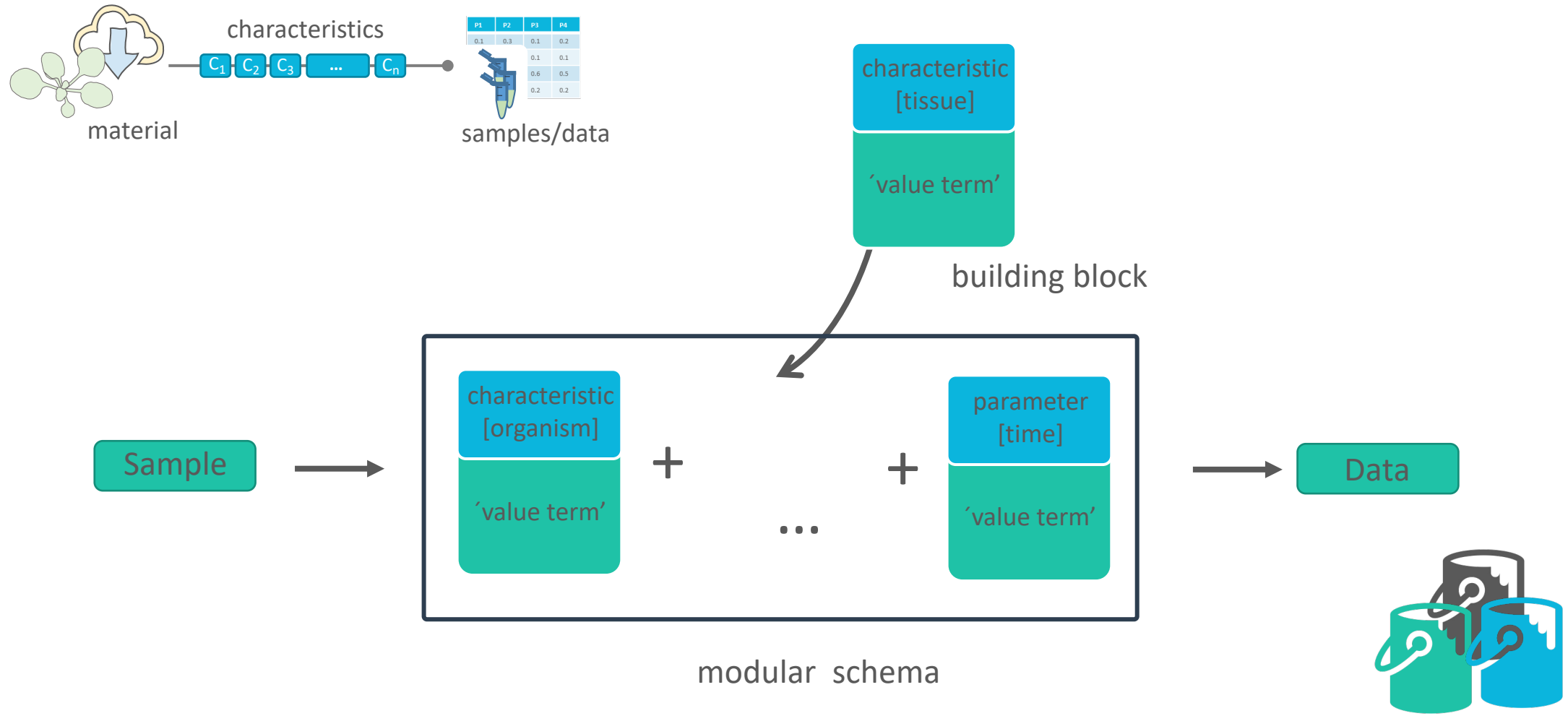


Everything is a file

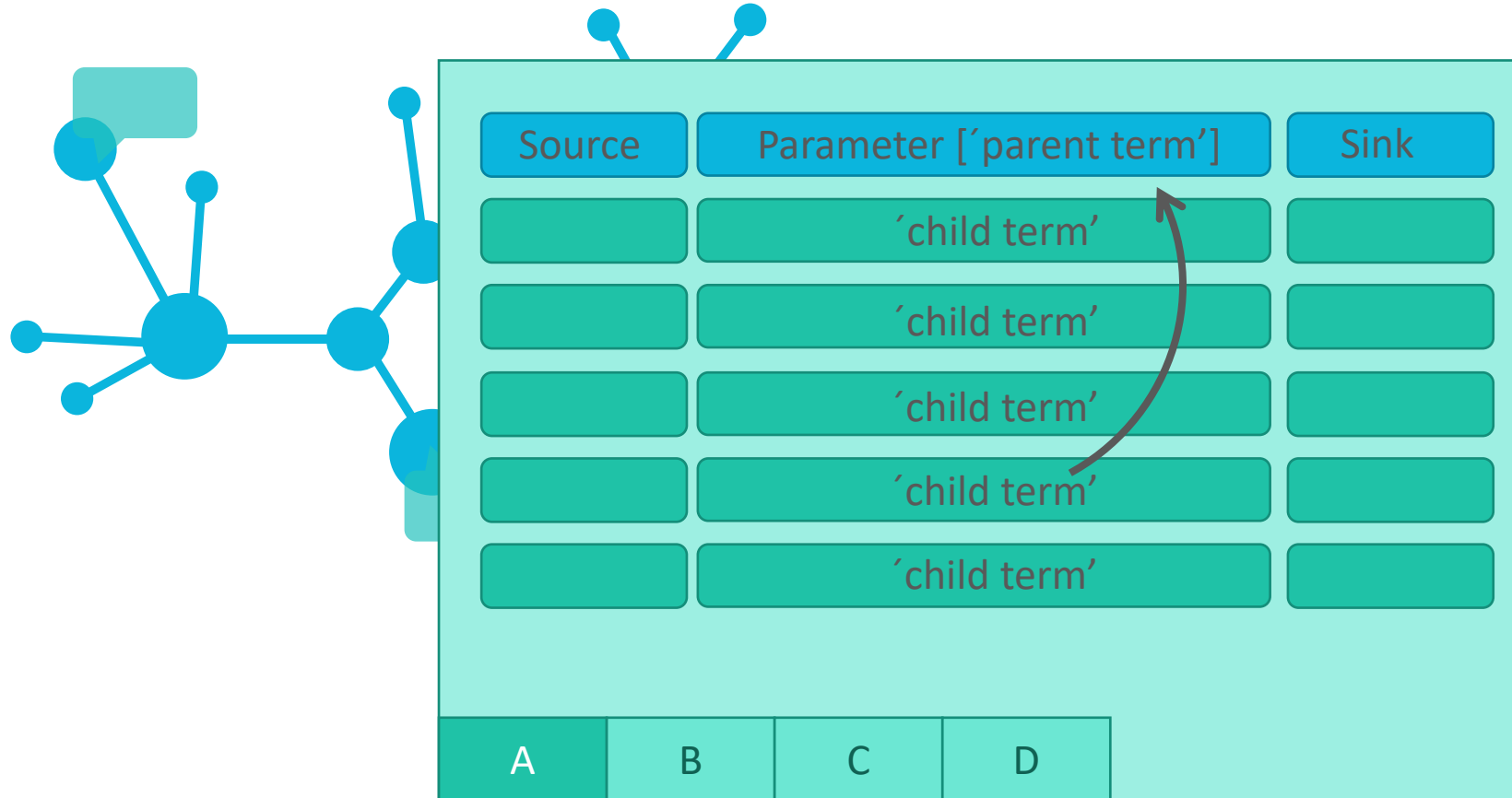


Descriptor files provide context for the data files and are simply layered on top

Combining annotation building blocks

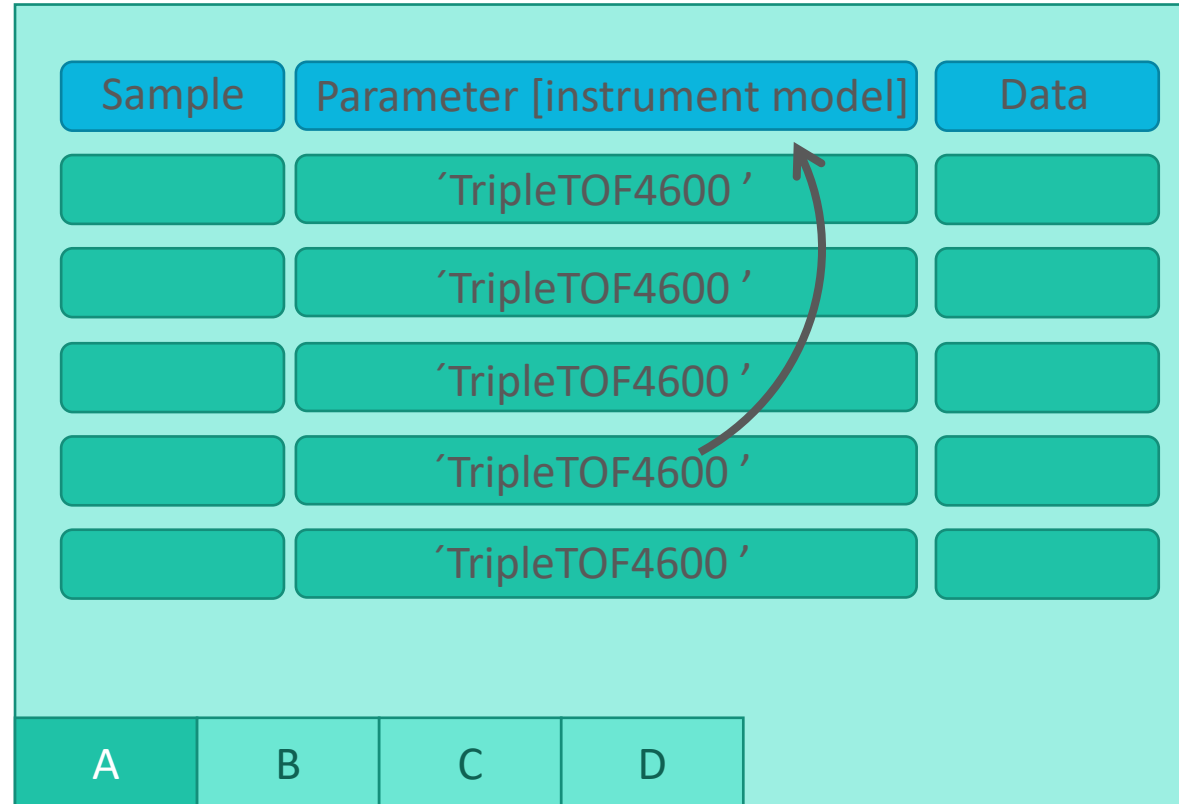


Annotation by flattening the process graph



- Low-friction metadata annotation
- Familiar spreadsheet, row/column-based environment

Annotation principle



Sample	Parameter [instrument model]	Data
	'TripleTOF4600 '	
	'TripleTOF4600 '	
	'TripleTOF4600 '	
	'TripleTOF4600 '	
	'TripleTOF4600 '	

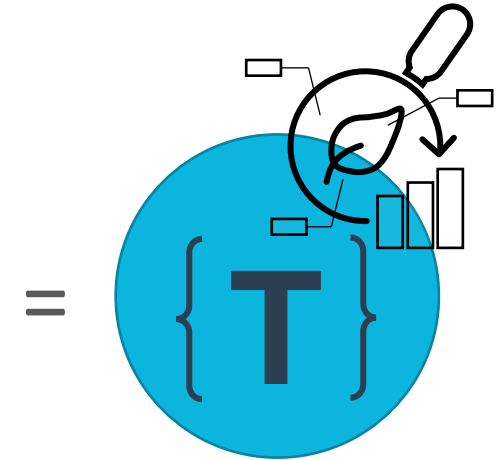
A	B	C	D
---	---	---	---

- Low-friction metadata annotation
- Familiar spreadsheet, row/column-based environment

Templates and checklists

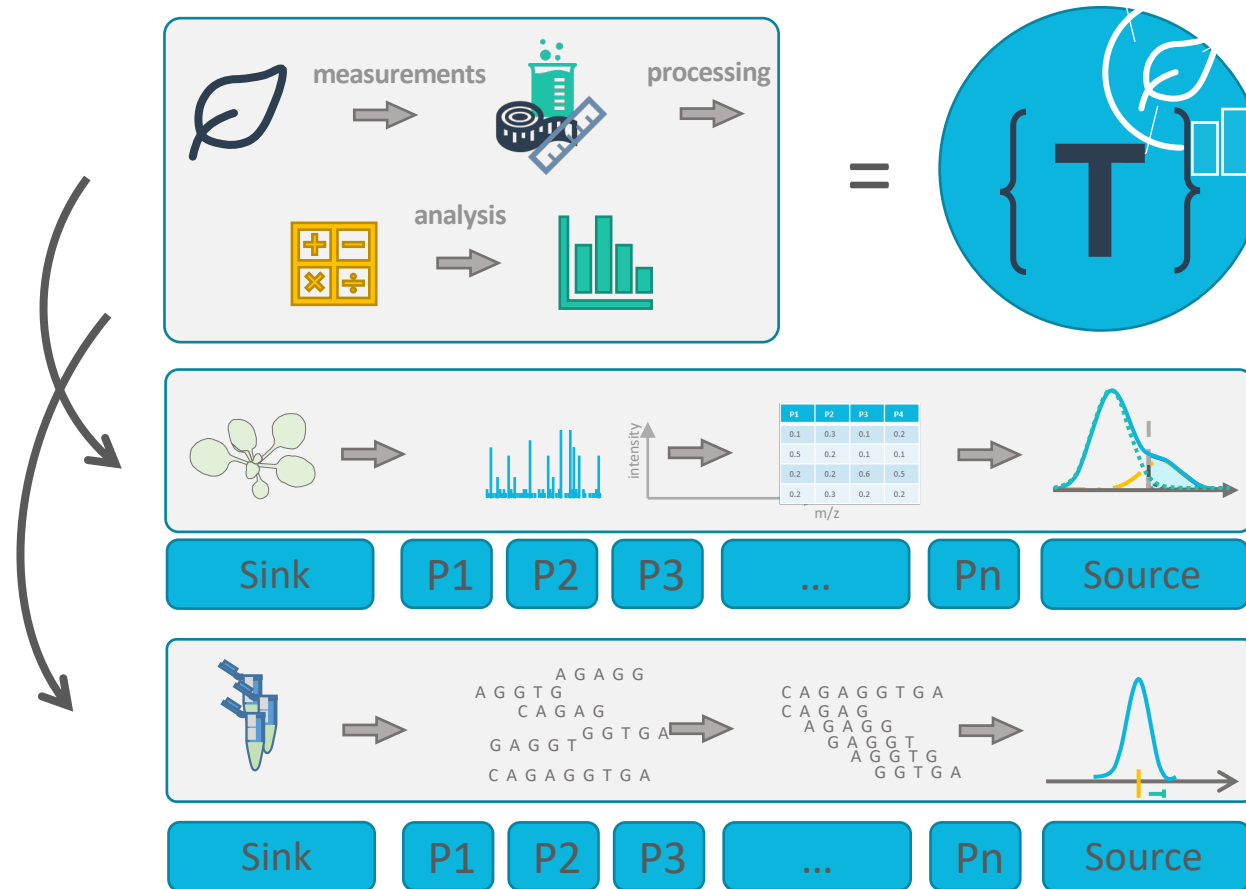
Input	Parameter ['parent term']	Output
	'child term'	
	'child term'	
	'child term'	
	'child term'	
	'child term'	
	'child term'	

A	B	C	D
---	---	---	---




Checklists and requirements can be displayed as templates

Realization of lab-specific metadata templates



Available templates


main

SWATE_templates / templates /

Go to file


Add file

...

















Martin-Kuhl minor edits

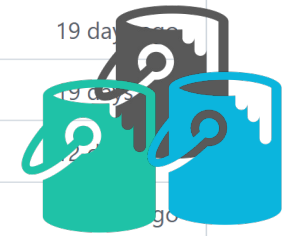
8694b77 12 days ago

History

..

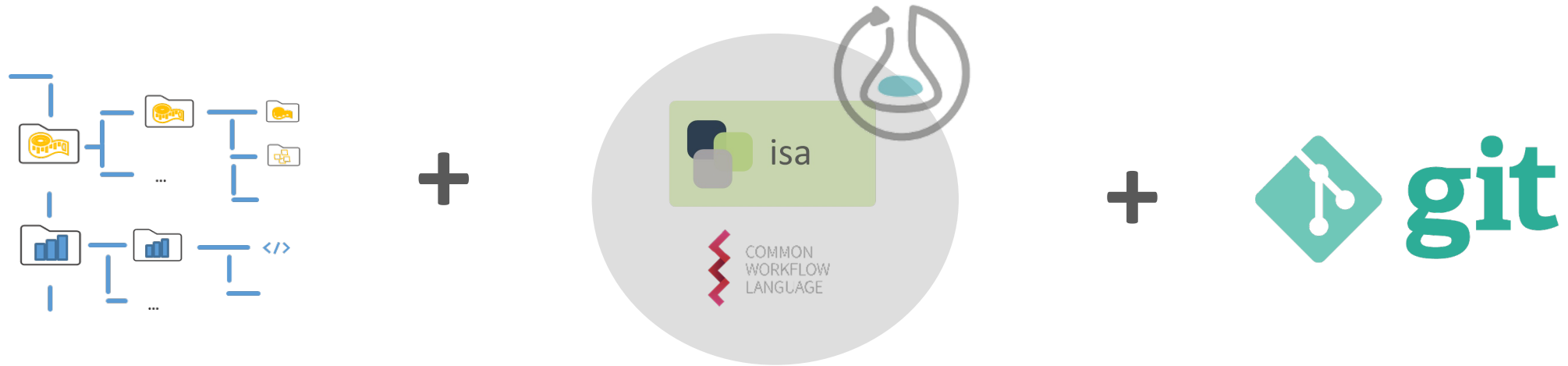
	1SPL01_plants	minor edits	12 days ago
	2EXT01_RNA	Unifying and cleaning all SWATE templates from semantic notes.	19 days ago
	2EXT02_Protein	Unifying and cleaning all SWATE templates from semantic notes.	19 days ago
	2EXT03_Metabolites	updated metabolights templates	12 days ago
	2EXT04_DNA	Unifying and cleaning all SWATE templates from semantic notes.	19 days ago
	3ASY01_RNASeq	Unifying and cleaning all SWATE templates from semantic notes.	19 days ago
	3ASY02_ProteomicsMassSpec	Unifying and cleaning all SWATE templates from semantic notes.	19 days ago
	3ASY03_MetabolomicsMassSpec	minor edits	12 days ago
	3ASY04_Genomics	Unifying and cleaning all SWATE templates from semantic notes.	19 days ago
	4COM01_RNASeq	Unifying and cleaning all SWATE templates from semantic notes.	19 days ago
	4COM02_ProteomicsDataProcessing	Unifying and cleaning all SWATE templates from semantic notes.	19 days ago
	4COM03_Metabolomics	minor edits	12 days ago
	4COM04_GenomeAssembly	Unifying and cleaning all SWATE templates from semantic notes.	12 days ago



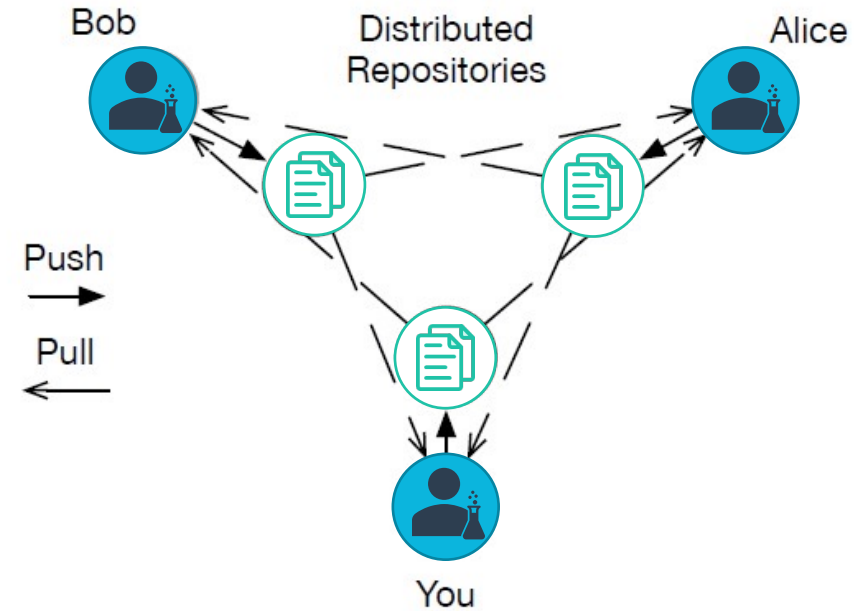
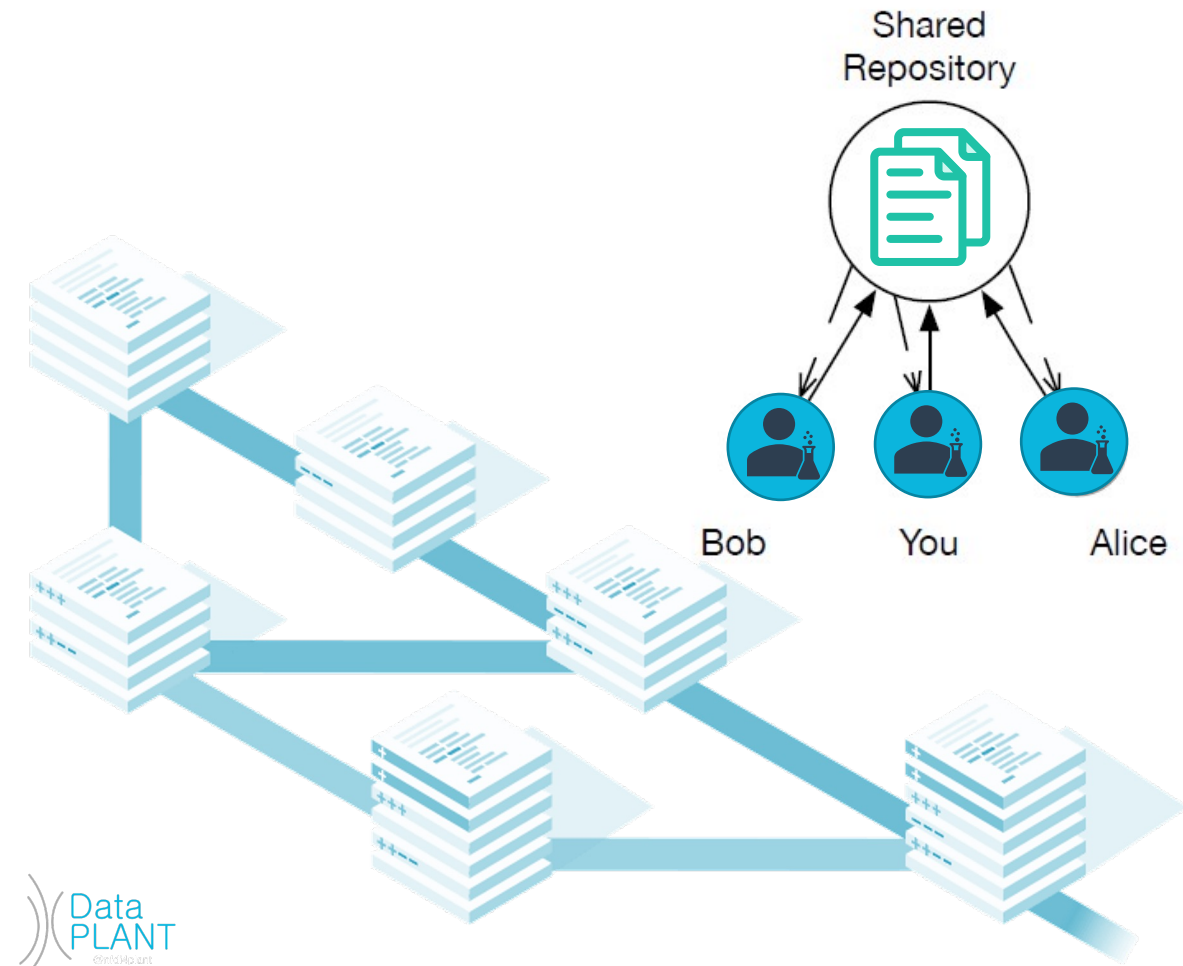


https://github.com/nfdi4plants/SWATE_templates/tree/main/templates

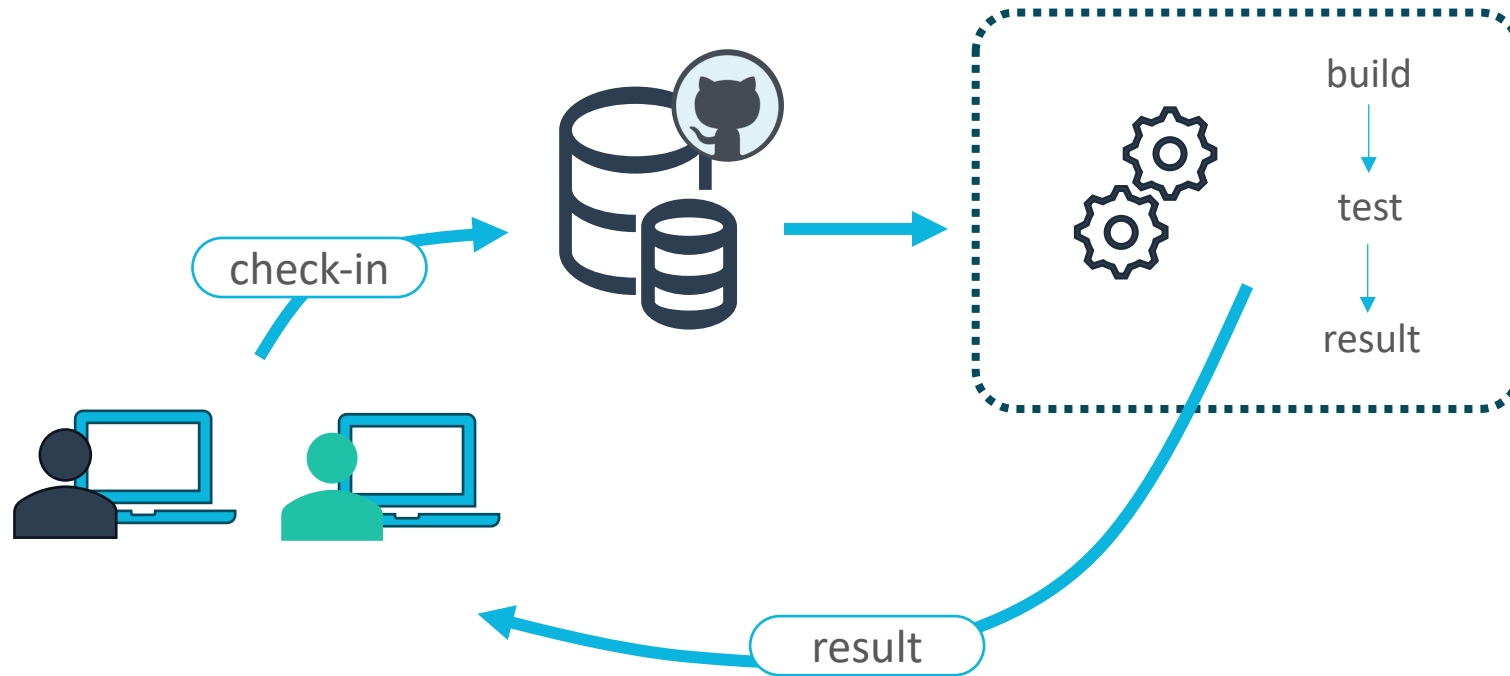
ARC integrative model





Data-centric collaboration using Git









Continuous integration




ARCs allow structured collaborative research *(even across disciplines)*





Q Search GitLab /



  1   1  





**Ru_ChlamyHeatstress**

- Project information
- Repository
- Issues 2
- Merge requests 0
- CI/CD
- Security & Compliance
- Deployments
- Packages and registries
- Infrastructure
- Monitor
- Analytics
- Wiki
- Snippets


Benedikt Venn > **Ru_ChlamyHeatstress**





Ru_ChlamyHeatstress 
Project ID: 122  [Leave project](#)





 27 Commits  2 Branches  2 Tags  306 KB Project Storage


Forked from [Heinrich Lukas Weil / InvenioTestArc](#)

pipeline **passed**  Publish ARC




arc quality 14/30

main  Ru_ChlamyHeatstress / 

 README

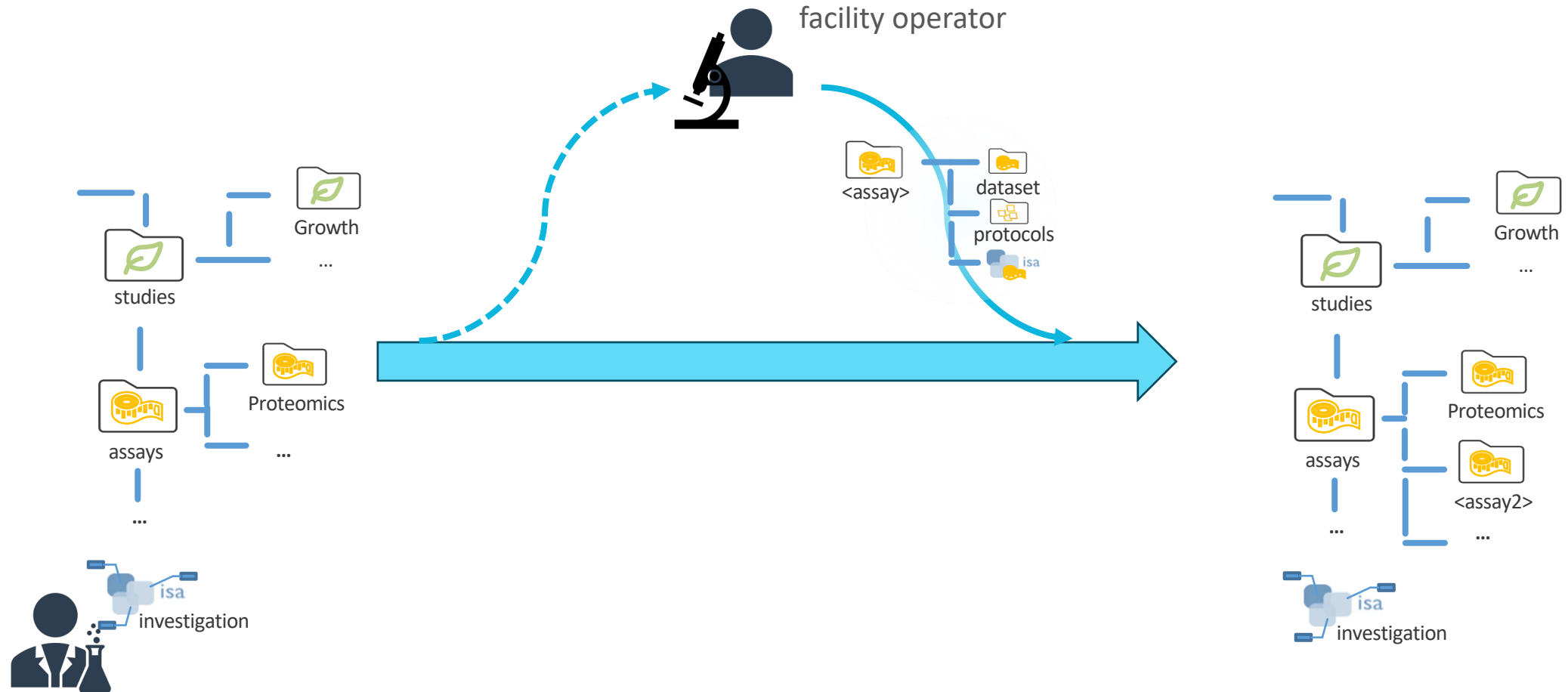
Auto DevOps enabled

Name	Last commit	Last update
 .arc	Update	11 months ago
 assays	update isa files	1 week ago
 publication	add publication, add zScores	10 months ago

What is an ARC?

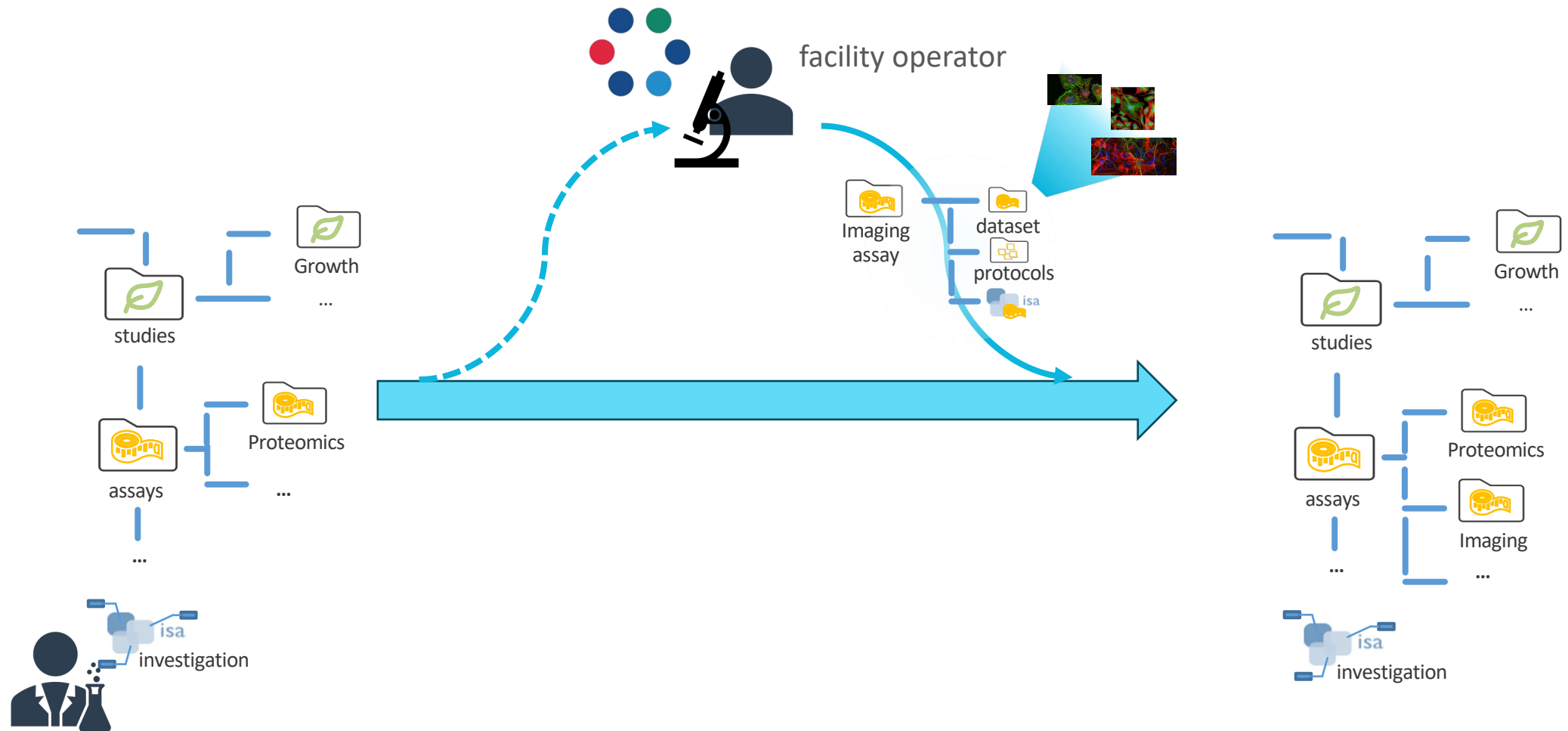


Facility operator workflow



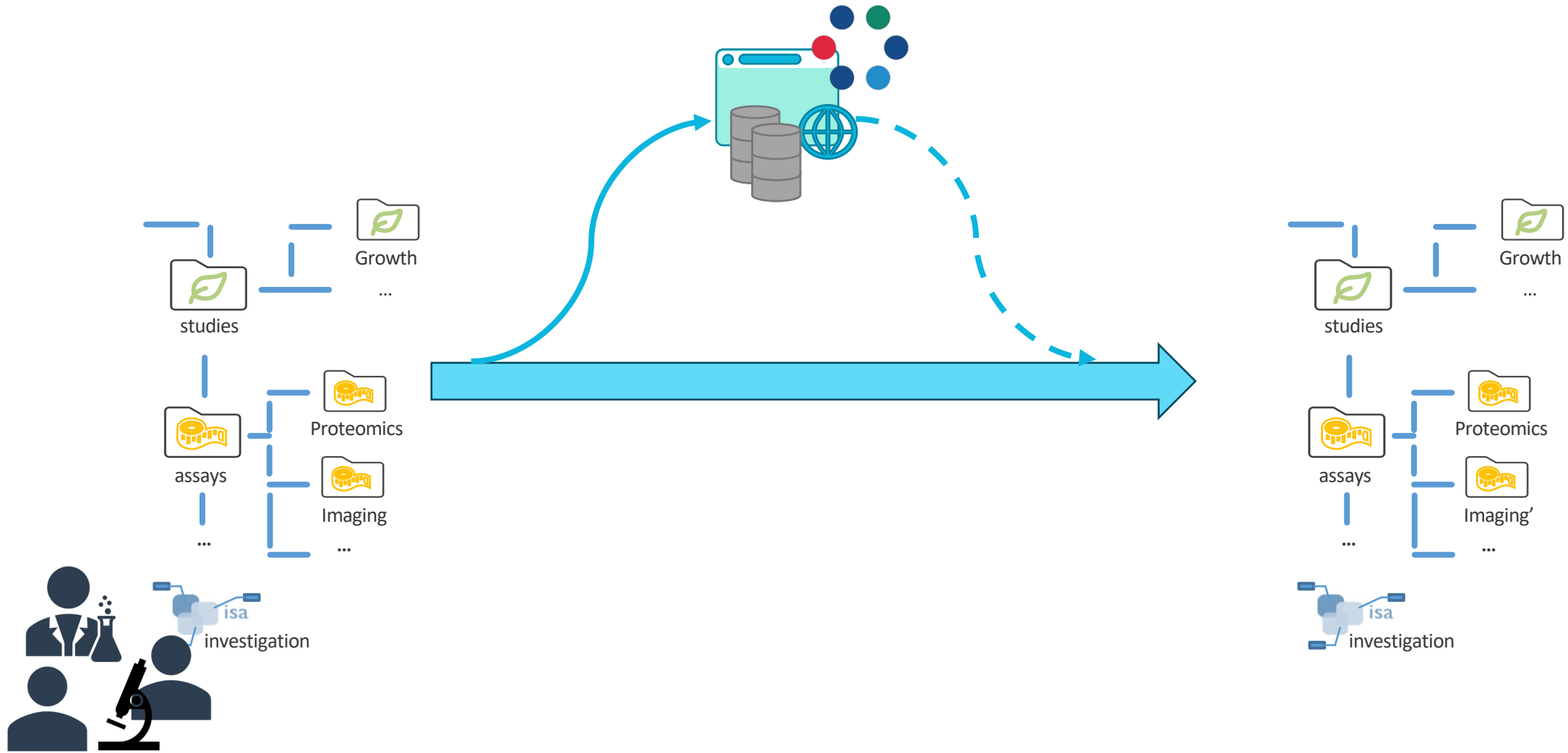
Persistence and identity is ensured by ARC – versioning system

Facility operator workflow



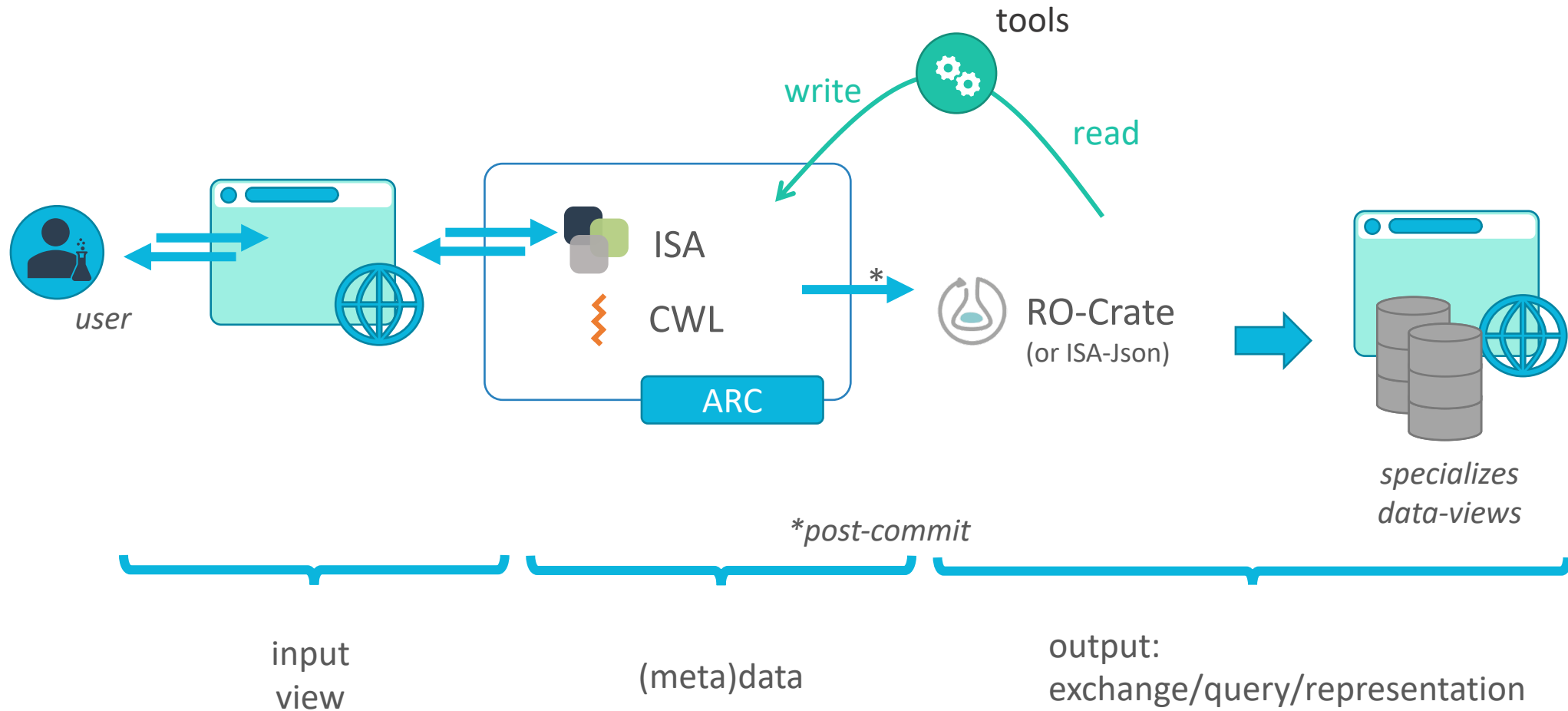
Persistence and identity is ensured by ARC – versioning system

Extended functionality workflow

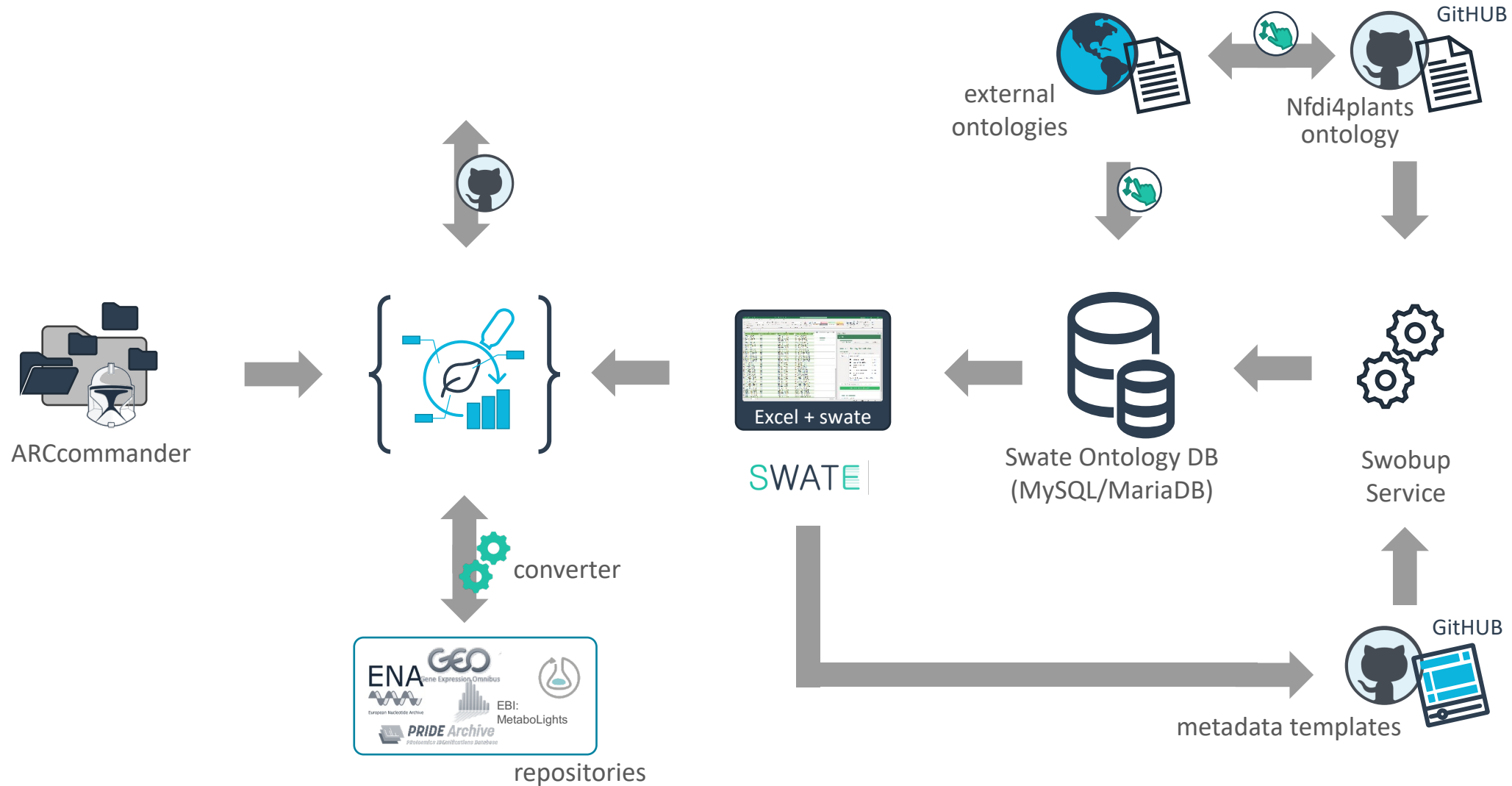


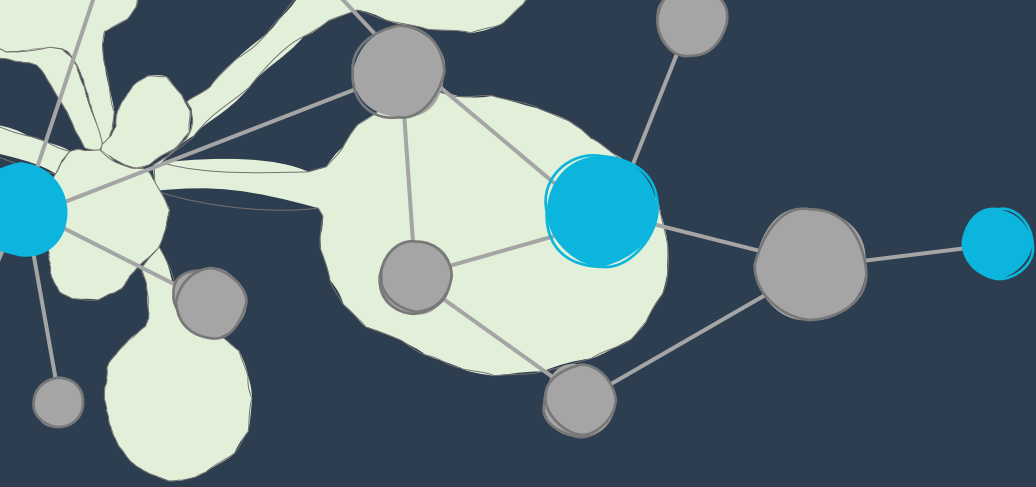
Persistence and identity is ensured by ARC – versioning system

RO-Crate: ARC interaction model



DataPLANT metadata tool chain





Thank you for your attention

.. and looking forward to the hacking