



SRC | Net

SKAO Regional Centre Network

Execution DataModel

Common data model for
execution services

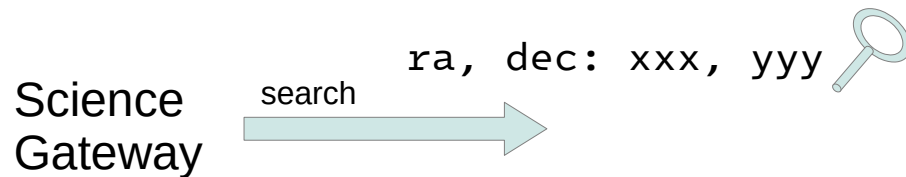
Dave Morris
Manchester
University



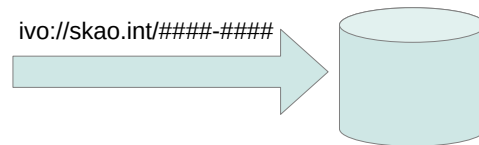
The round trip use case

User searches Data Discovery for data products

Data Discovery



Result is an IVOA identifier for a data product



SKAO data products identified by URI pattern

URI starts with 'ivo://skao.int/'

Resolves to object in SKA DataLake

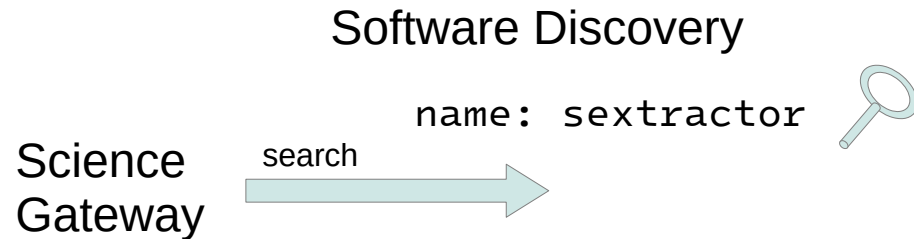
ivo://skao.int/data/namespace/objectid

See <https://confluence.skatelescope.org/pages/viewpage.action?pageId=319989873>



The round trip use case

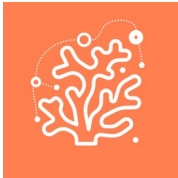
User searches Software Discovery for a template



Result is a (URL for) a workstep template

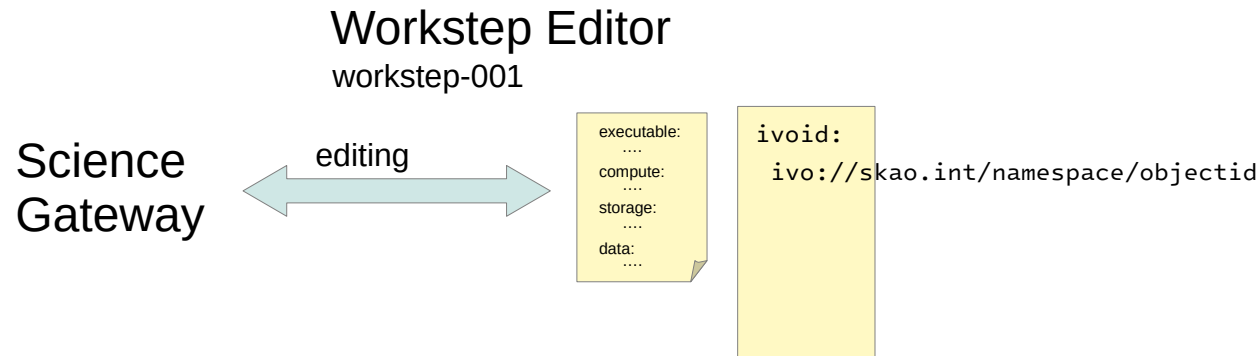
```
executable:
....
compute:
....
storage:
....
data:
....

executable:
....
compute:
....
storage:
....
data:
....
```

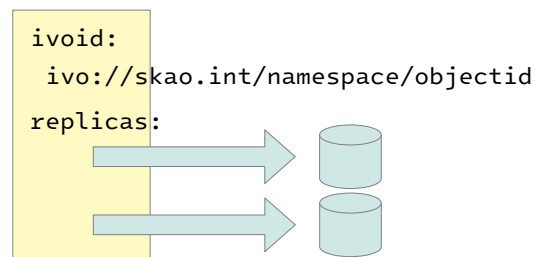


The round trip use case

Combine the workstep template and data resources



Workstep Editor resolves the SKAO data references via DataManagment API to locate DataLake replicas

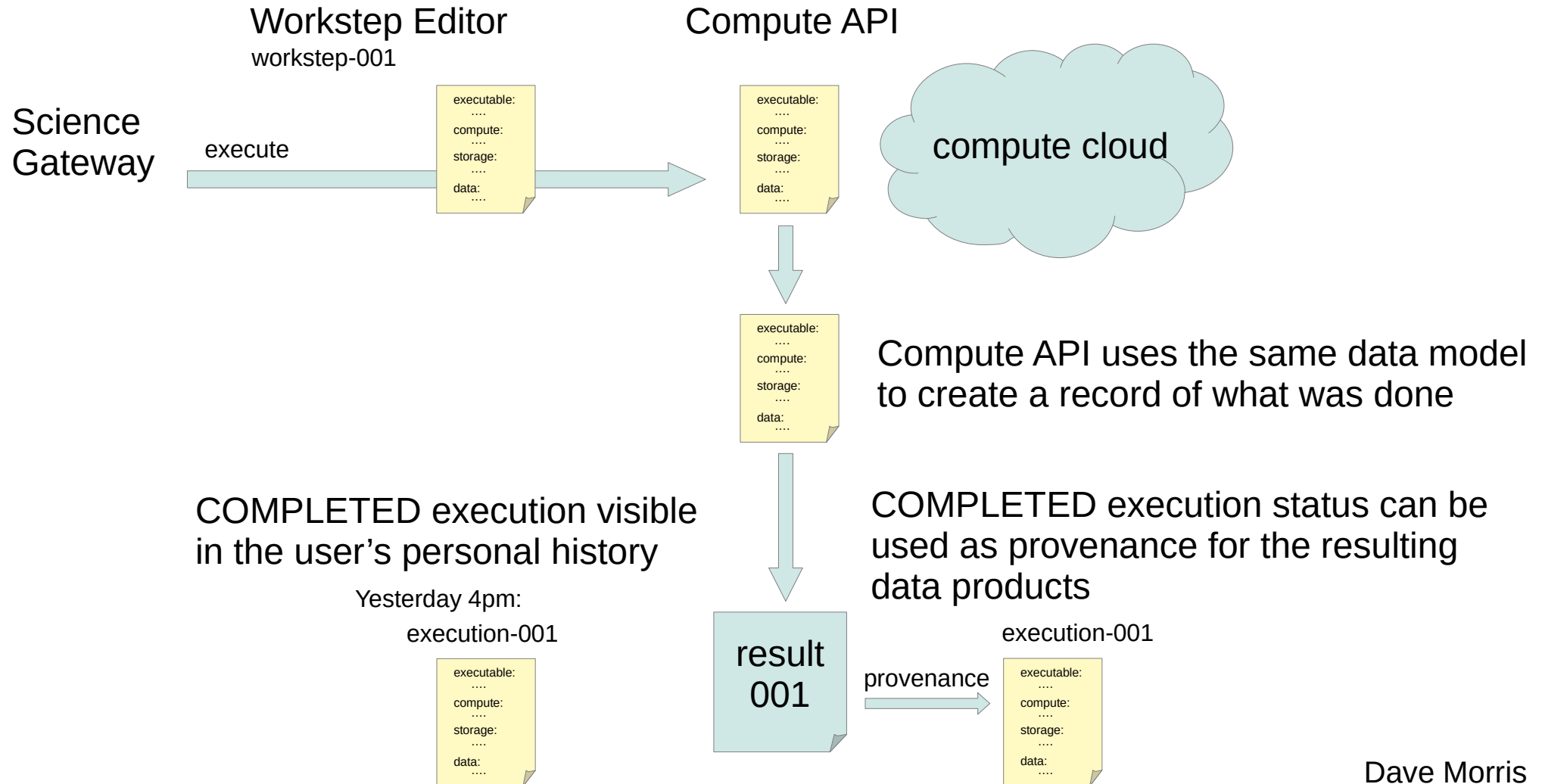


See <https://confluence.skatelescope.org/pages/viewpage.action?pageId=319989873>



The round trip use case

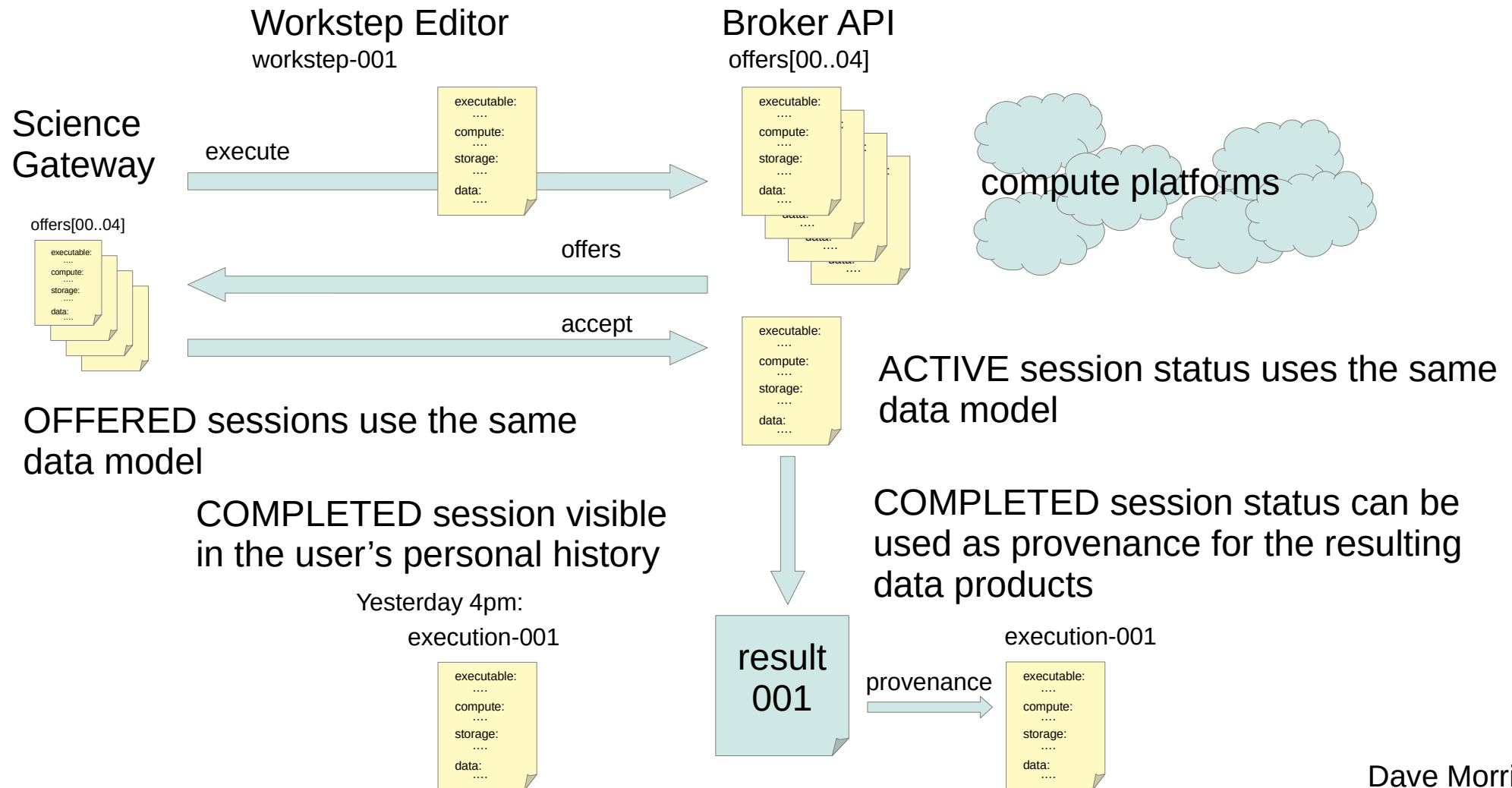
Send batch mode worksteps to the compute API





The round trip use case

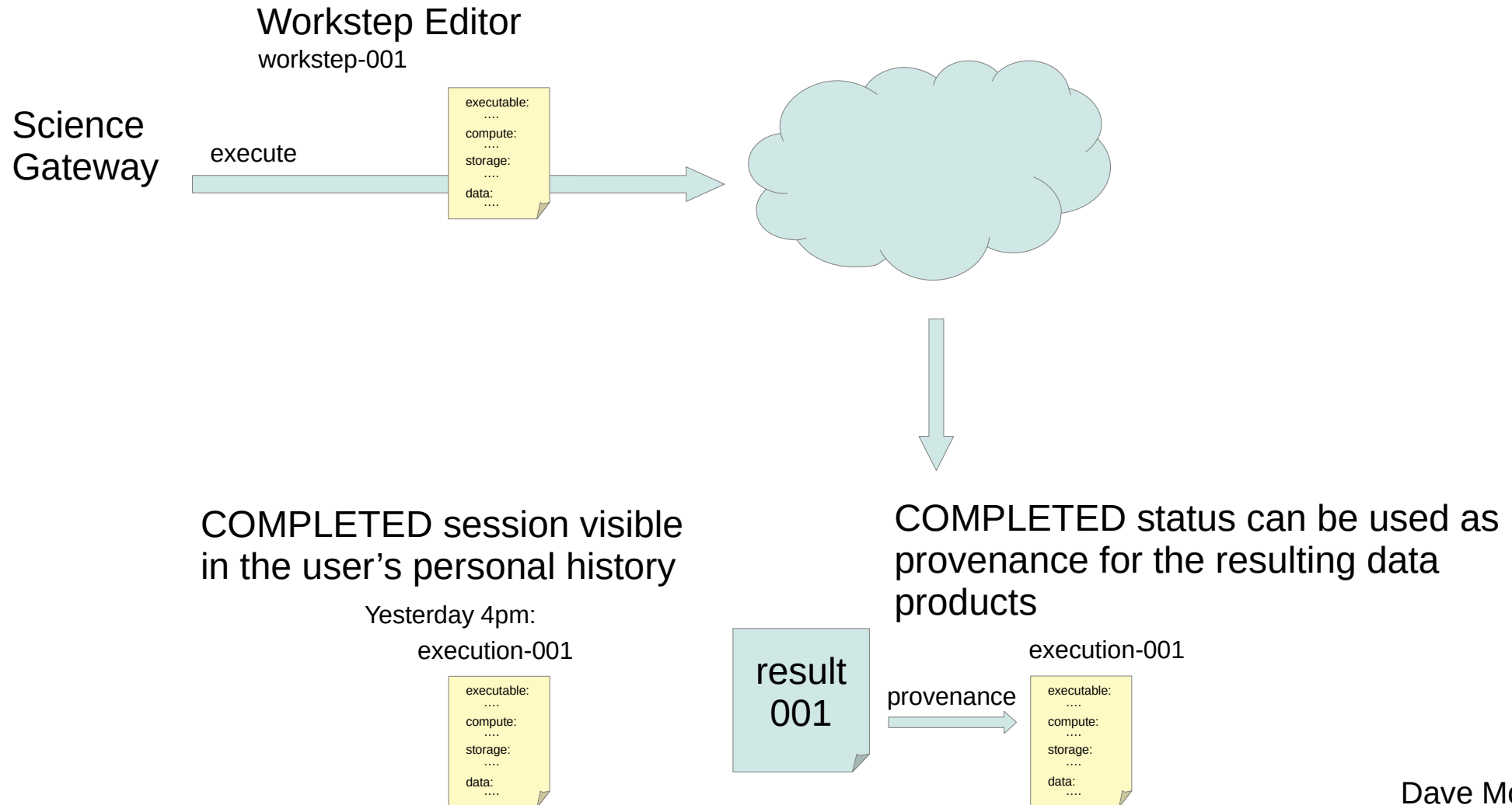
Send interactive worksteps to the broker API

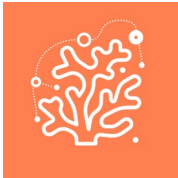




The round trip use case

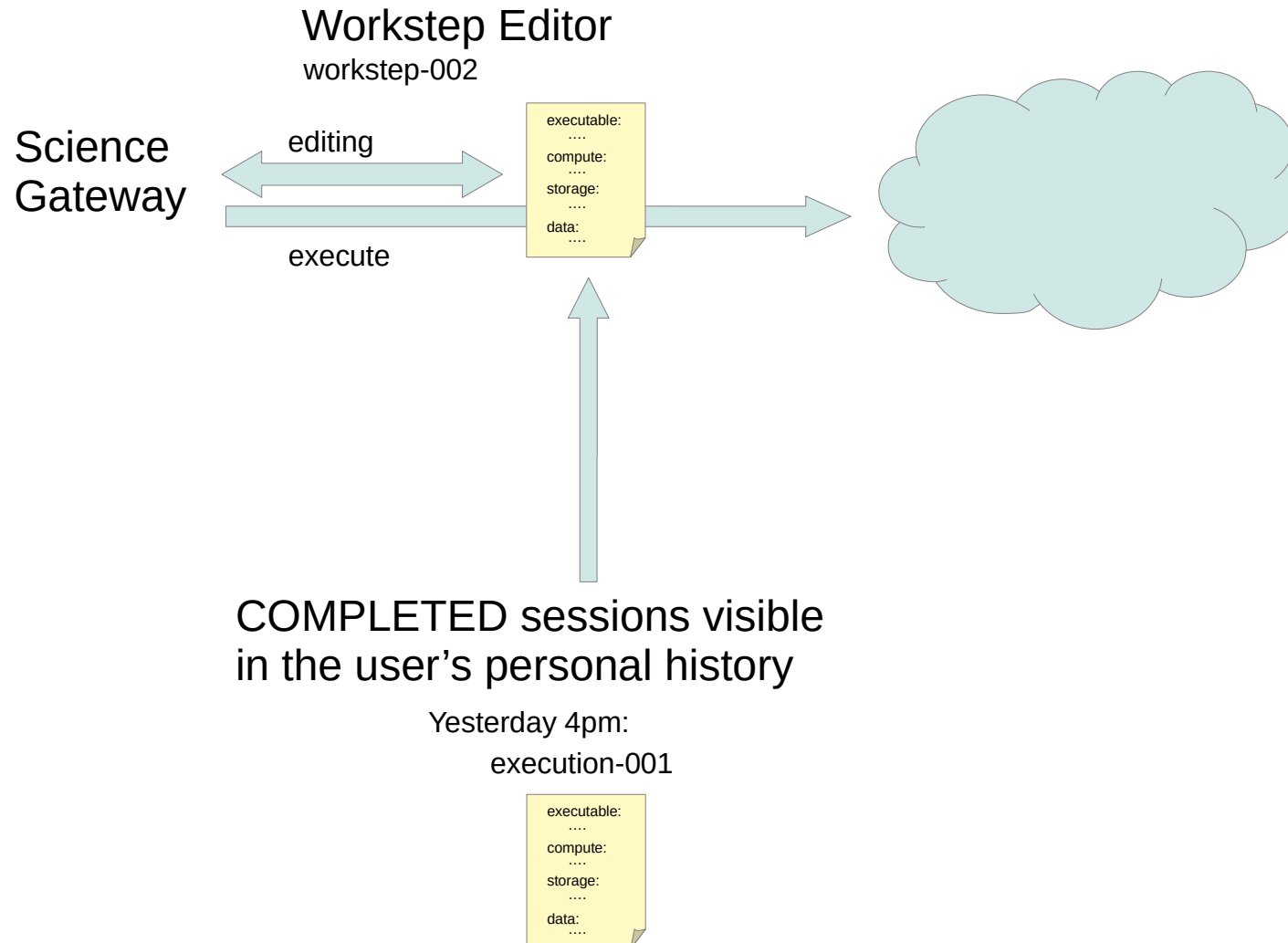
Both methods result in the same status result





The round trip use case

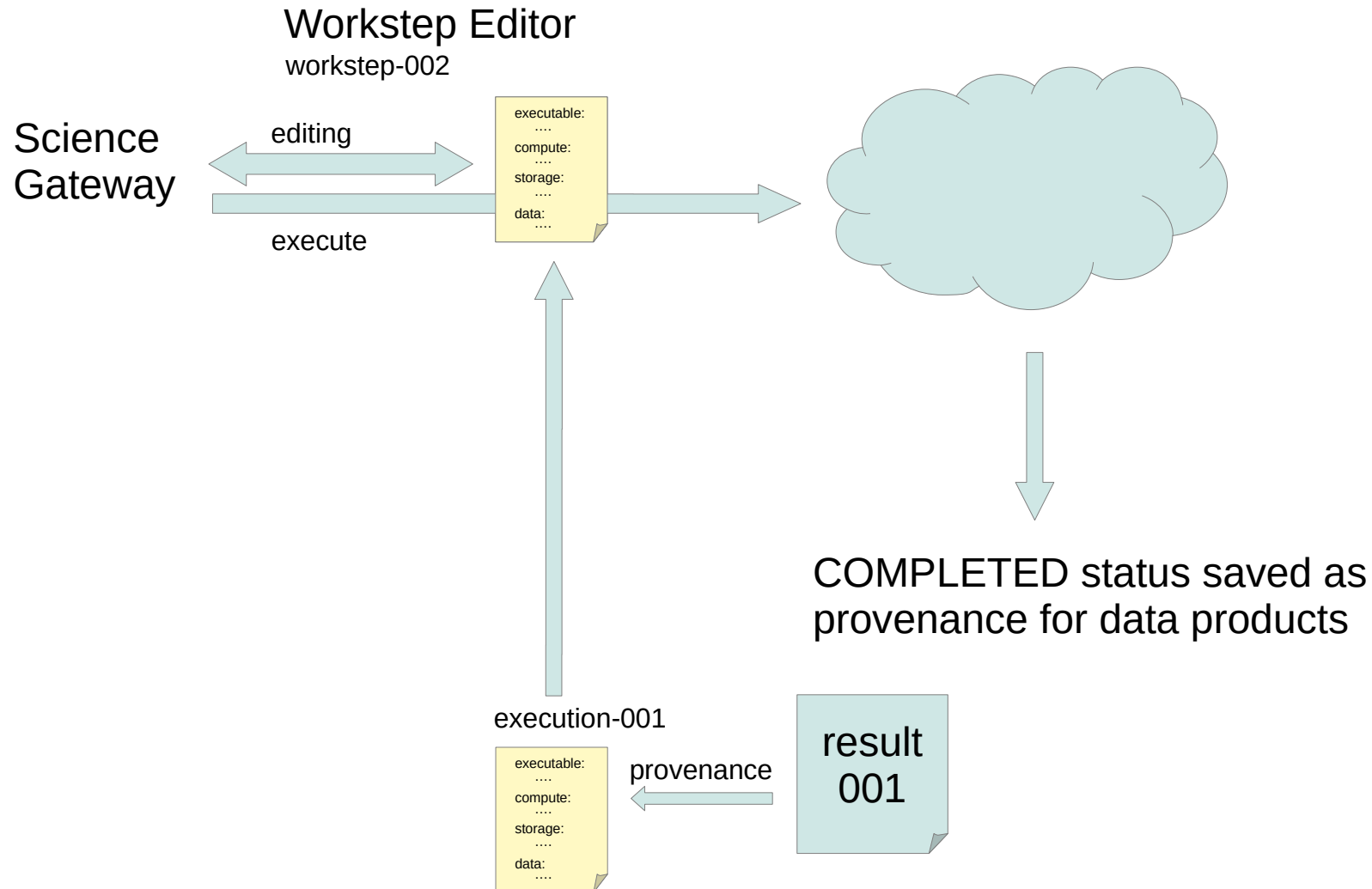
User can select something they did yesterday





The round trip use case

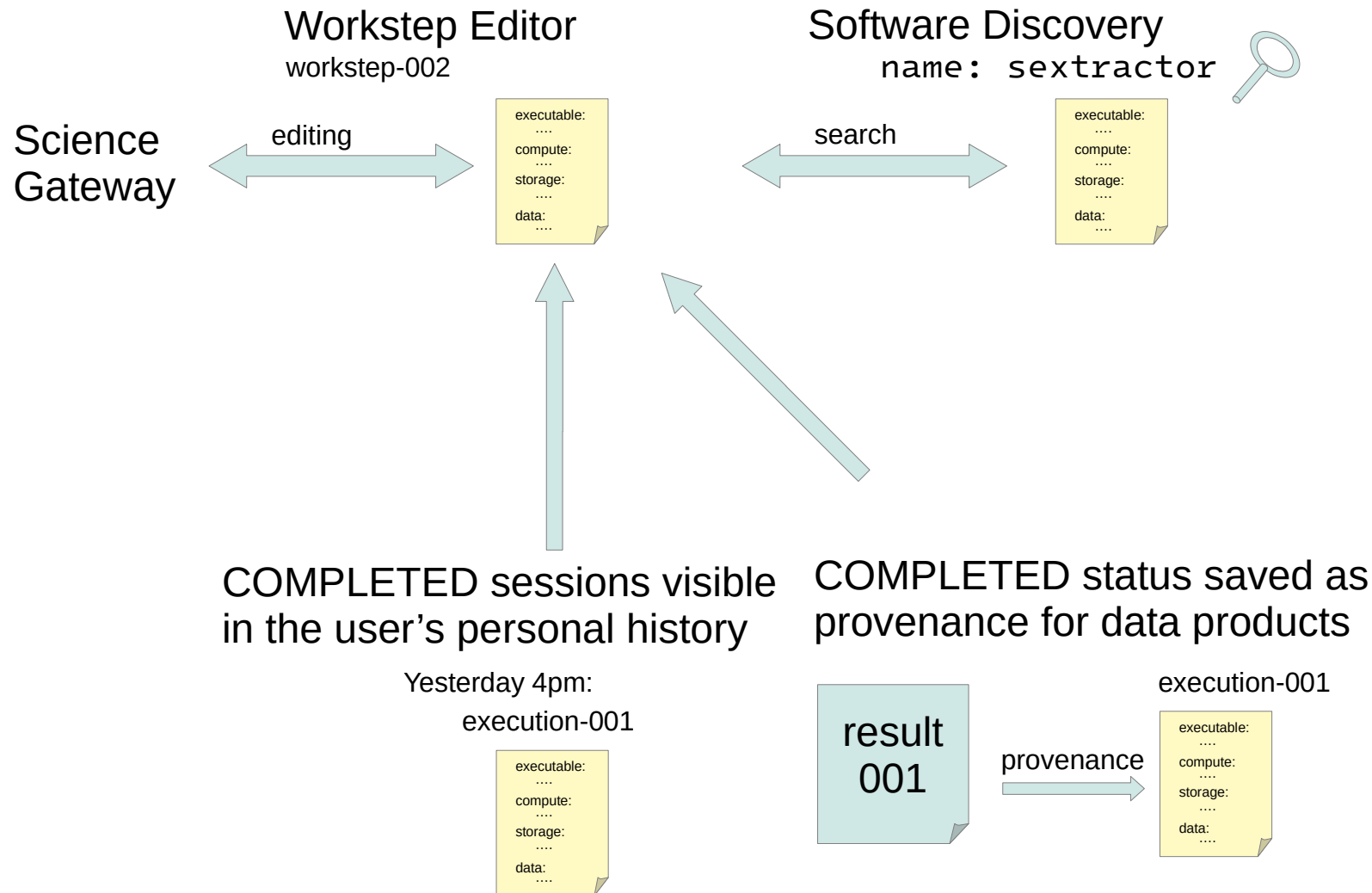
User can select data product from 2 years ago





The round trip use case

Old and new tasks use the same user interface

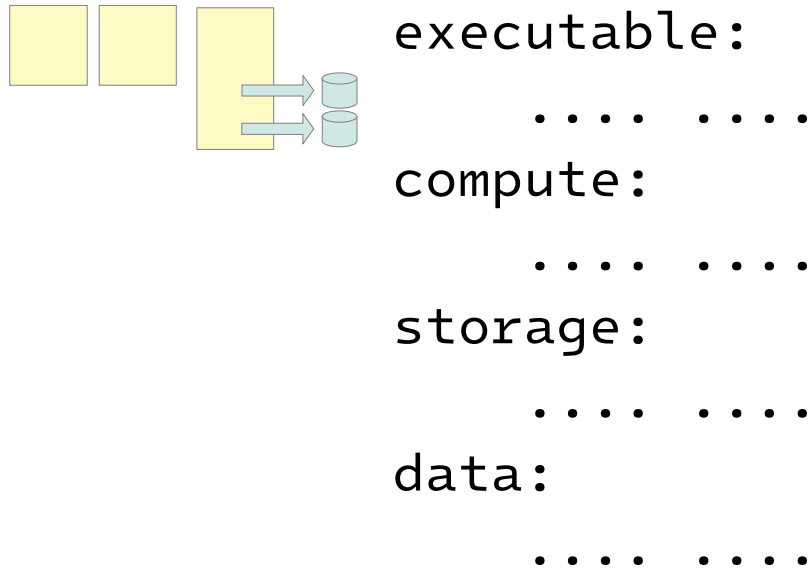




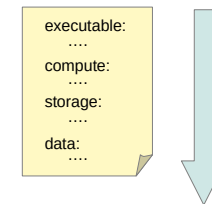
The round trip use case


Where we are now :

Data model composed of re-usable Lego™ bricks



OpenAPI code generator



Java client code 

Java web service 

Python client code  python™

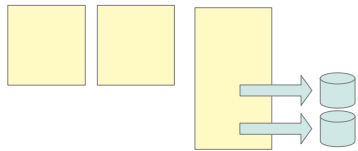
Python web service  FastAPI



The round trip use case

Where we are now :

Data model composed of re-usable Lego™ bricks



```
executable:
    . . . . .
compute:
    . . . . .
storage:
    . . . . .
data:
    . . . . .
```

OpenAPI schema in IVOA GitHub



Move to SKA GitLab in progress

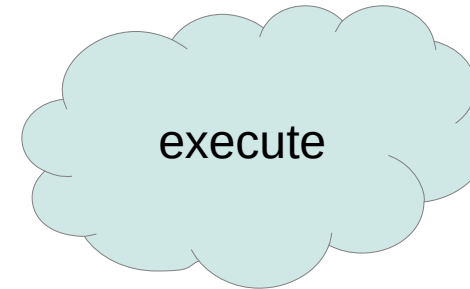
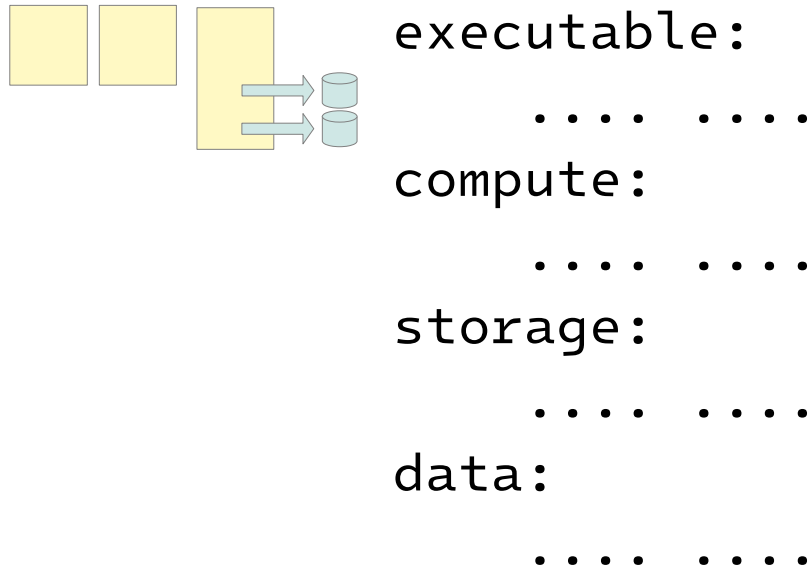




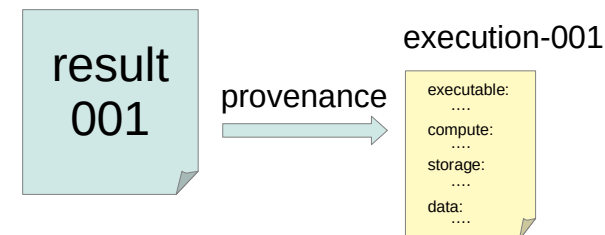
The round trip use case

Where next :

Working with the metadata team to include everything you need to (re)execute a workstep



COMPLETED execution status can be used as part of the provenance for the resulting data products



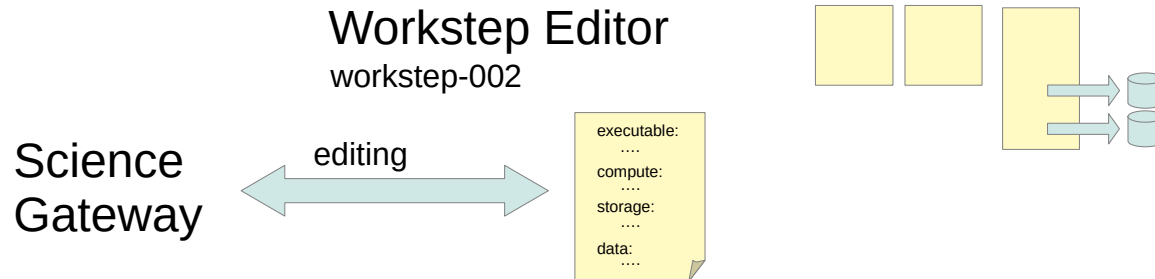


The round trip use case

Where next :

Working with the Science Gateway team
To create editable Lego™ bricks

Editing options embedded in the components



options:

- type: integer-update
path:
- type: enum-update
path:
values:

Easier for Science Gateway to develop
editing tools for the schema objects

Business logic for permissions is handled
server side, simplifying the UI code



The round trip use case

Where next :

Working with Coral to process a workstep into CANFAR API calls

