

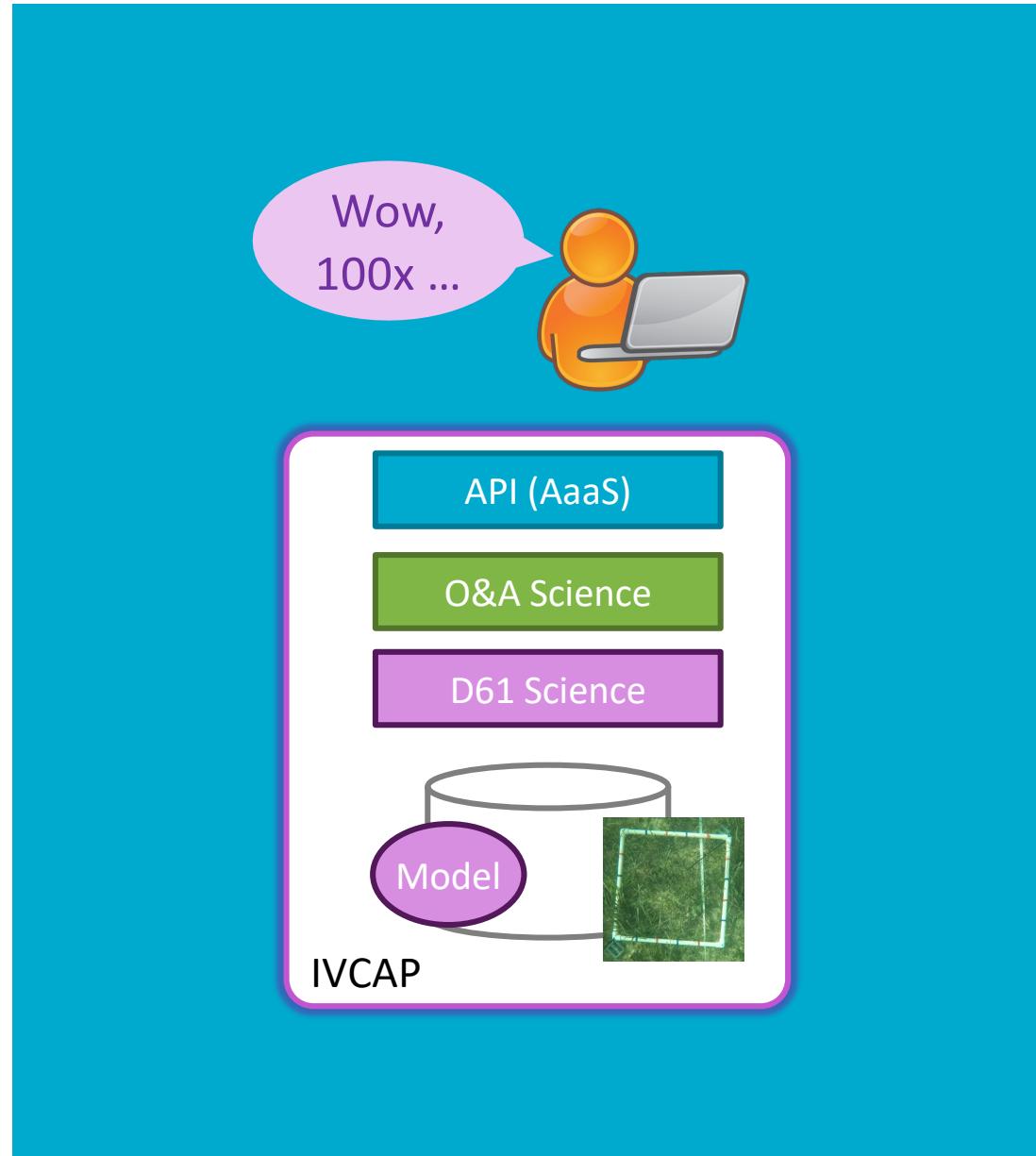


IVCAP

Platform for ...
... science
... collaboration
... rapid prototyping

Max Ott for the IVCAP Team

Australia's National Science Agency



What are you trying to do?

Enable researchers to tackle
100x more ambitious challenges
by enabling **collaboration**
across science domains and organisations.

IVCAP

Platform for rapid deployment of science services for:

- Science
- Analytics
- Information Management
- Collaboration
- ...

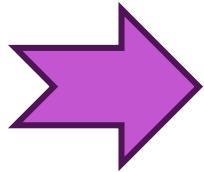
Exemplary Story - BlueCarbon



A16	Date	Quadrat	Bag_ID	% Seagrass	% Alga/% Coral	Sediment	% Species	SP1 (EA)	SP2 (Ho)	SP 3	SP4	SP5
1												
2												
3	2022.9.27	0 m		50	-/-			50				
4	2022.9.27	10 m	LB1_01	25	-/-			25				
5	2022.9.27	20 m	LB1_02	50	-/-			50				
6	2022.9.27	30 m		40	-/-			40				
7	2022.9.27	40 m	LB1_03	50	-/-			50				
8	2022.9.27	50 m		50	-/-			50				
9	2022.9.27	60 m		5	-/-			50				
10	2022.9.27	70 m		5	-/-			5				
11	2022.9.27	80 m		5	-/-			5				
12	2022.9.27	90 m		30	-/-			5				
13	2022.9.27	100 m										

~200 observations over 20m²

5 | IVCAP Overview - Jan '24



Million observations over many km²



Exemplary Story - BlueCarbon

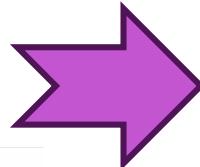


Batch Level

A16	A	B	C	D	E	F	G	H	I	J	K	
1	Date	Quadrat	Bag_ID	% Seagrass	% Alga/% Coral	Sediment	% Species	SP1 (EA)	SP2 (Ho)	SP 3	SP4	SP5
2												
3	2022.9.27	0 m		50	-/-			50				
4	2022.9.27	10 m	LB1_01	25	-/-			25				
5	2022.9.27	20 m	LB1_02	50	-/-			50				
6	2022.9.27	30 m		40	-/-			40				
7	2022.9.27	40 m	LB1_03	50	-/-			50				
8	2022.9.27	50 m		50	-/-			50				
9	2022.9.27	60 m		5	-/-			50				
10	2022.9.27	70 m		5	-/-			5				
11	2022.9.27	80 m		5	-/-			5				
12	2022.9.27	90 m		30	-/-			5				
13	2022.9.27	100 m						30				

~200 observations over 20m²

6 | IVCAP Overview - Jan '24



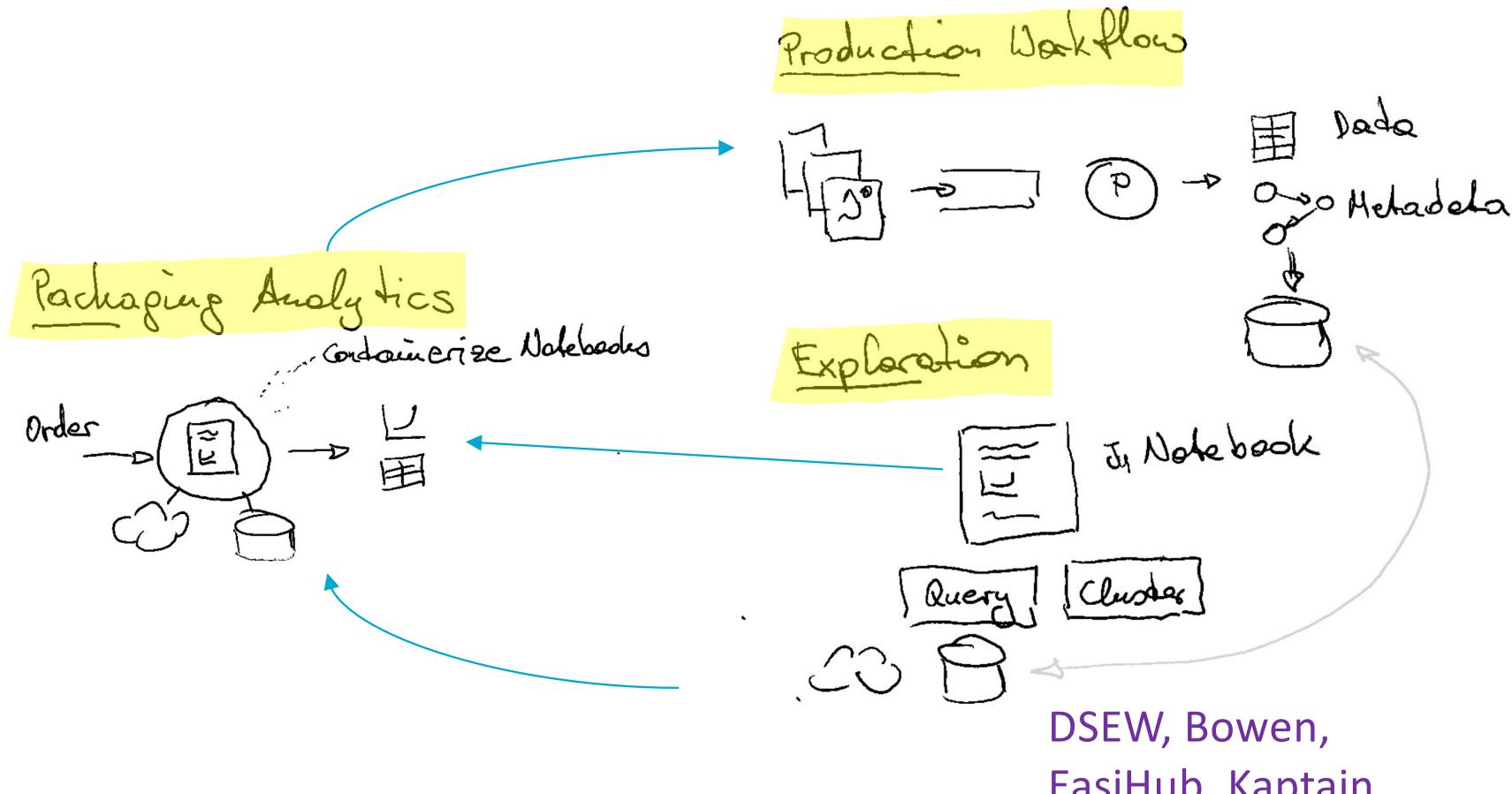
Eco-System Level



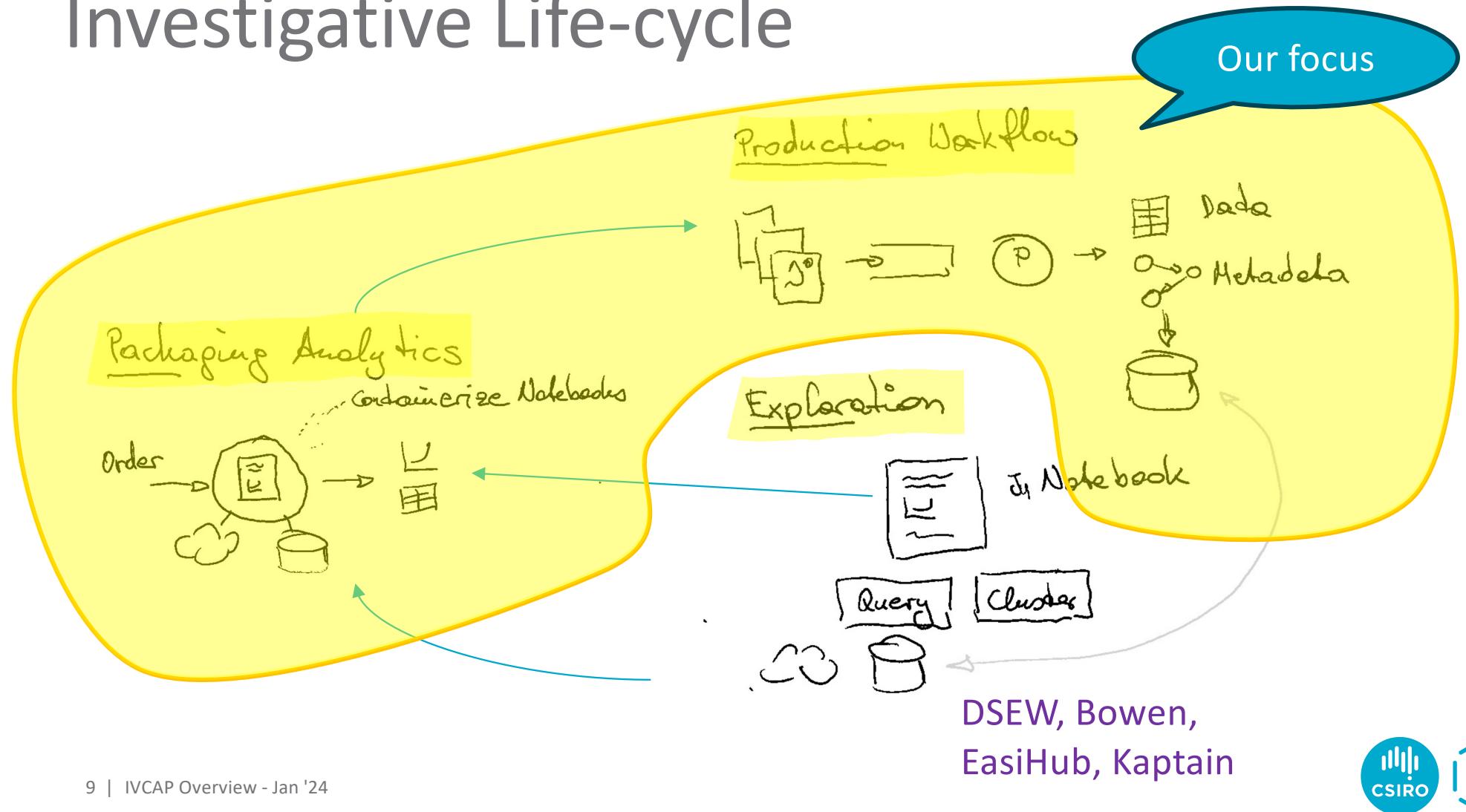
Million observations over many km²



Investigative Life-cycle



Investigative Life-cycle



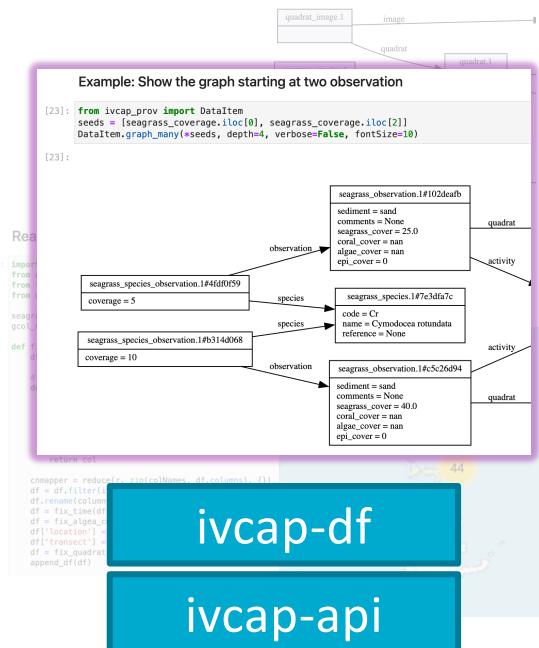
Support for Every Stage



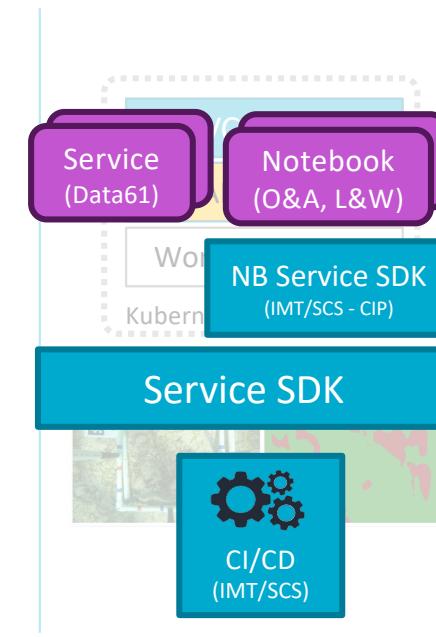
Field-deployable Unit with auto-sync



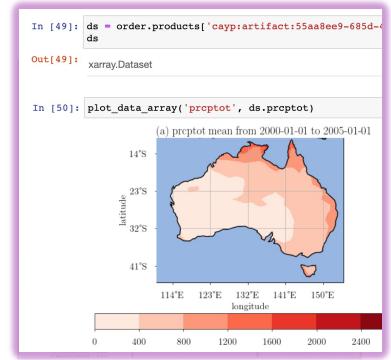
Field Collector



Data Cleaner

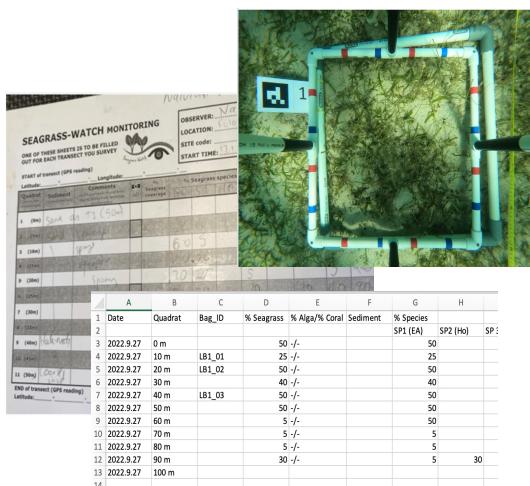


AI Helper

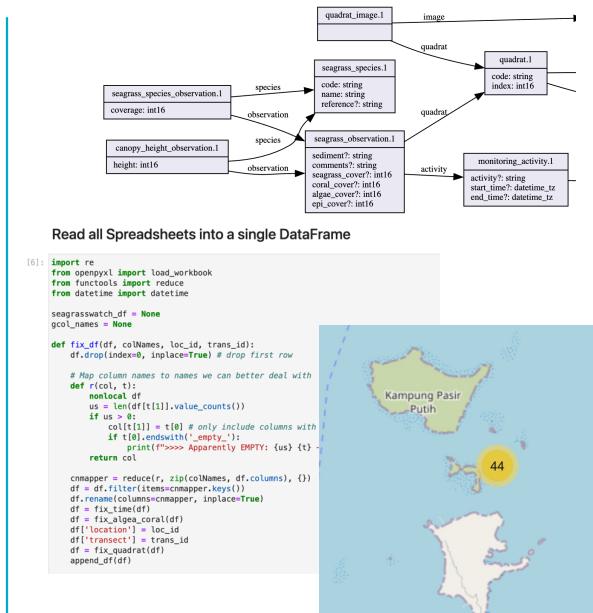


Researcher

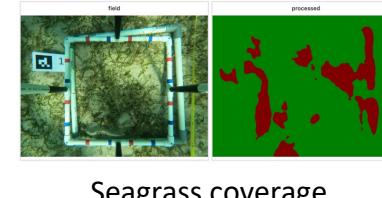
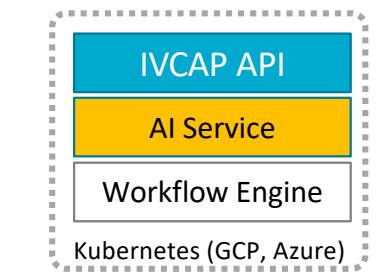
Example: iBenthos Project



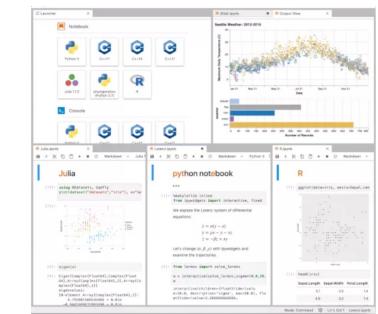
Field Collector



**Data Cleaner
Annotator**



Seagrass coverage estimation from images

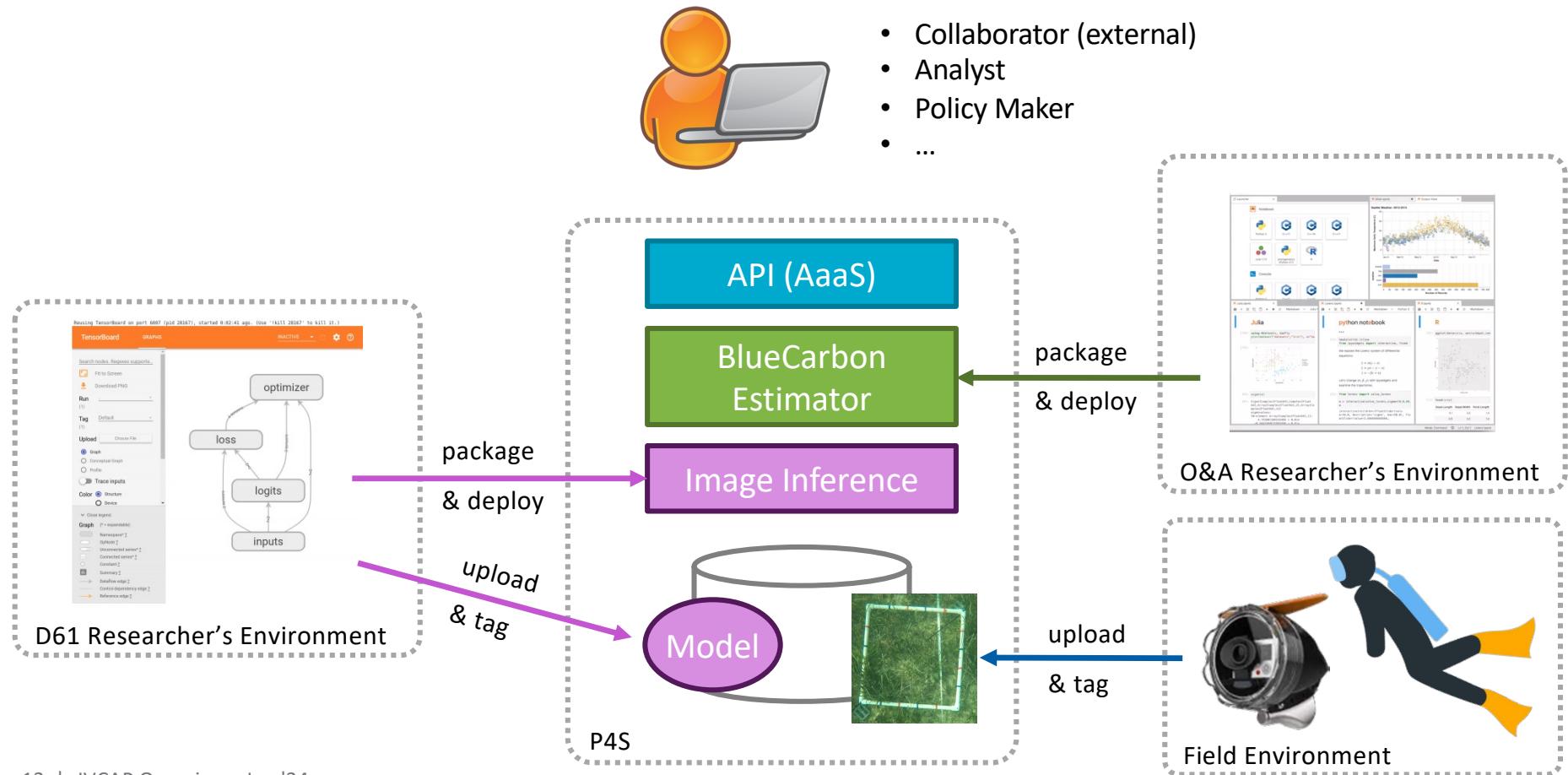


Blue carbon estimation from point measurements

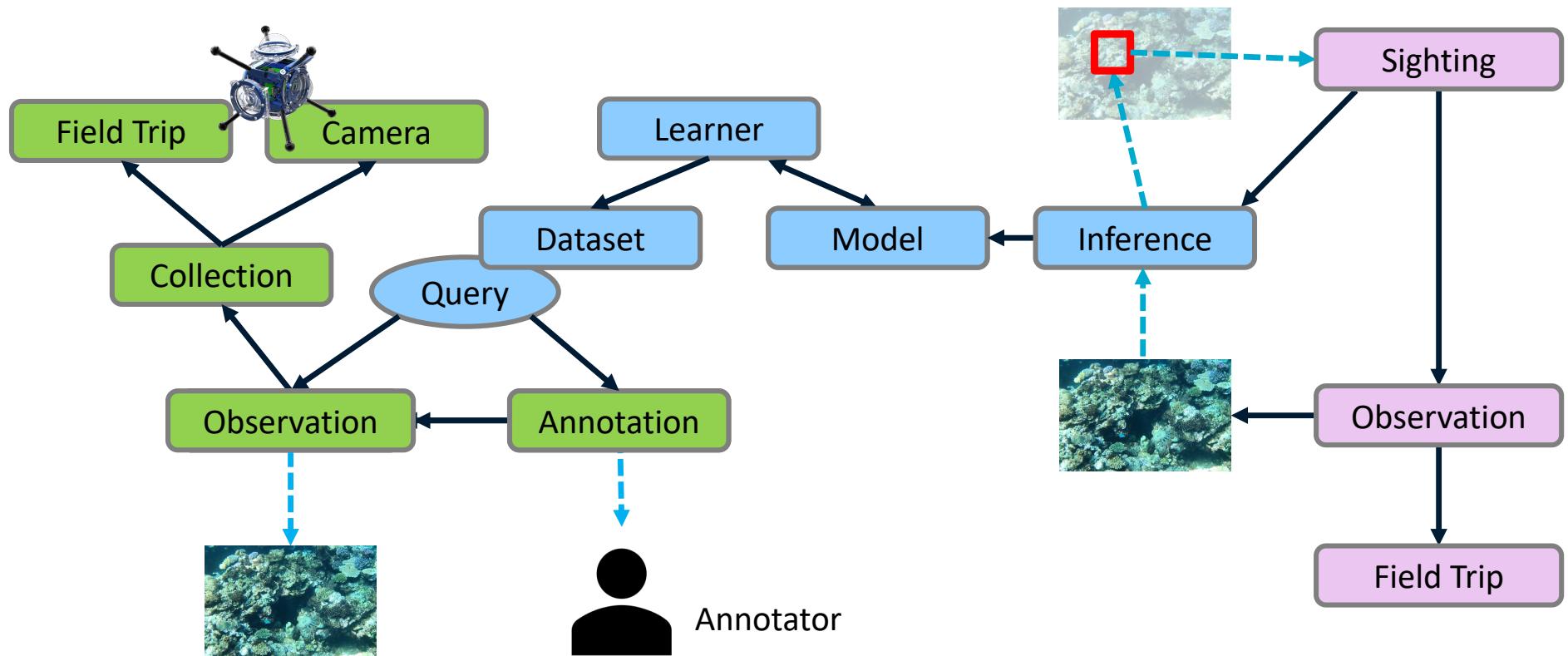
Researcher

Foundation

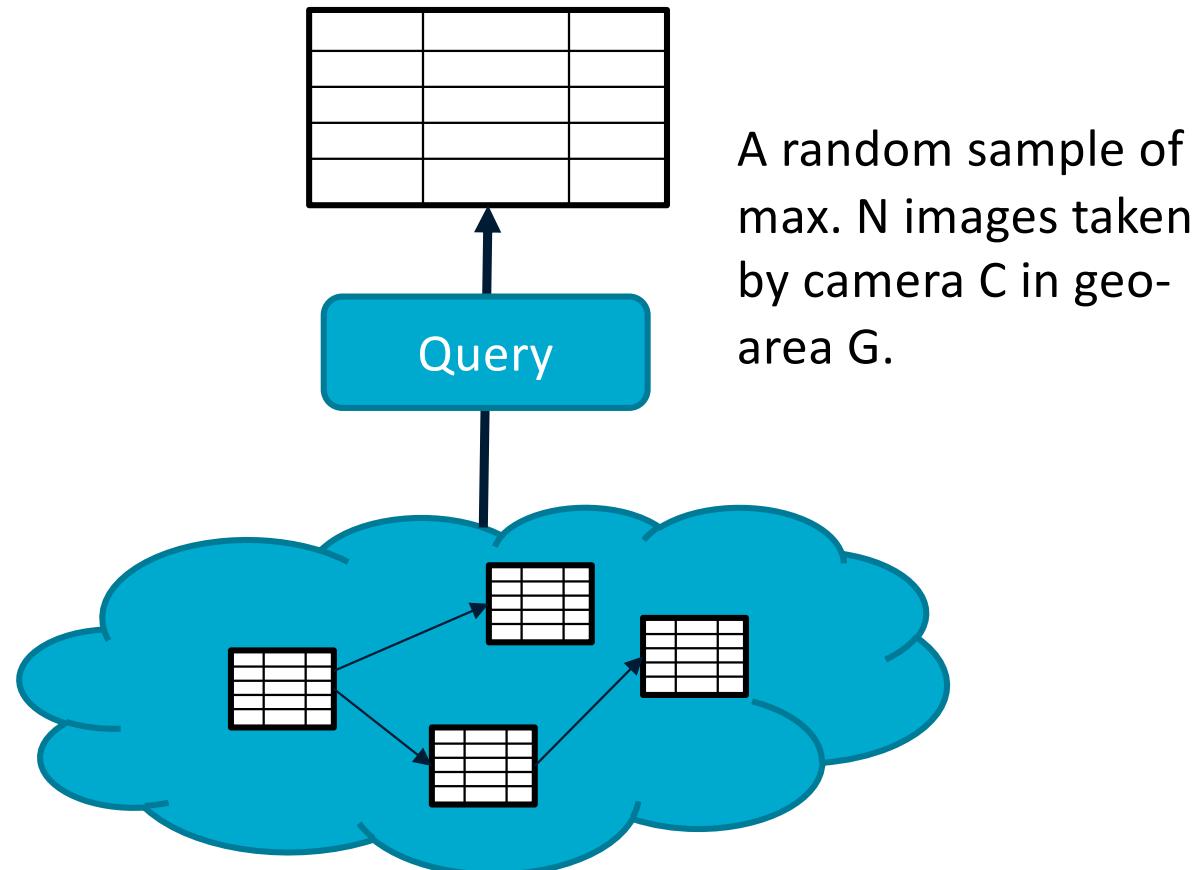
Foundation: Composable Workflows



Foundation: Data Fabric



Foundation: Dataset as Query



Design

Users



```
In [49]: ds = order.products['cayp:artifact:55aa8ee9-685d-4  
ds  
Out[49]:  
xarray.Dataset  
  
In [50]: plot_data_array('preptot', ds.preptot)  
  
(a) preptot mean from 2000-01-01 to 2005-01-01  

```

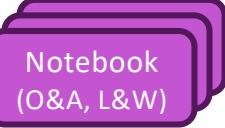
lvcap-cli

Client SDK

Web App

Pihanga

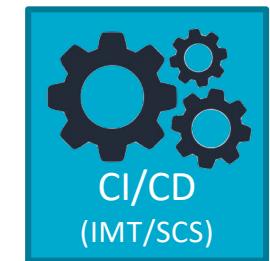
Providers



NB Service SDK
(IMT/SCS - CIP)

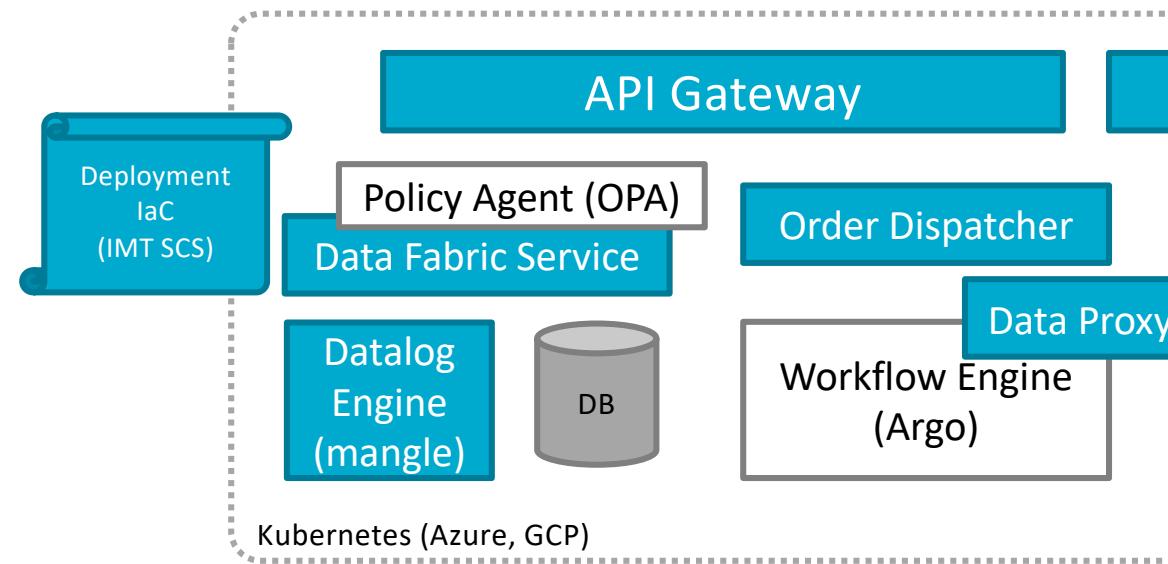
Python, Go Service SDK

OpenAPI



CI/CD
(IMT/SCS)

App Server



Current Status

Deployed on GCP

develop.ivcap.net

Typical Workflow
High-level Architecture
openapi
Download /public/openapi3.json
aspect
search

0.39 OAS 3.0.3
Intelligent Visual Collaboration & Analytics Platform (IVCAP)
Download OpenAPI Spec

Intelligent Visual Collaboration & Analytics Platform (IVCAP) is for service providers to offer analytics services and for consumers to order customised products from said services.

c4

Cluster basics

Name	c4
Location type	Regional
Region	australia-southeast1
Default node zones	australia-southeast1-b

Pods(all)[27] —

NAME	READY
ingress-nginx-ingress-admission-create-5qtvf	0/1
ingress-nginx-ingress-admission-patch-dv5sj	0/1
ingress-nginx-ingress-controller-756bbbb98b-5frss	1/1
api-gateway-7c977684f8-djz8r	1/1
wf-server-59688d95f6-f15r2	1/1
wf-workflow-controller-685c97d8d8-vvj4d	1/1
postgresl-dev-0	1/1
postgresl-dev-client	0/1
order-dispatcher-55cb5c6d4f-9bm2h	1/1
ivcap-s2-s2-687b9f8cc8-1ps7z	1/1
coredns-565d847f94-qssx8	1/1
etcd-minikube	1/1
kube-apiserver-minikube	1/1
kube-controller-manager-minikube	1/1
kube-ingress-dns-minikube	1/1
kube-proxy-9jmlq	1/1
kube-scheduler-minikube	1/1

20 | IVCAP Overview - Jan '24



Backend for the CIP (deployed on Azure)

The screenshot shows the homepage of the Climate Intelligence Platform. The URL in the browser bar is `climateintelligence.green-cirrus.com`. The page features a header with the platform's logo (a stylized globe icon) and name. A navigation bar includes links for HOME, GUIDED SEARCH, SEARCH CLIMATE DATA, SCENARIO ANALYSIS, SCENARIO BUILDER, RESOURCES, and SUPPLIERS. A prominent banner image depicts a dry, arid landscape with scattered trees. Overlaid on this image is a white callout box containing the text "Climate data and analysis tools" and a "VIEW PRODUCTS" button. Below the banner, a section titled "Transforming how climate change risk information is delivered to Australian industry" is described with the following text:

The Climate Intelligence Platform provides knowledge and decision-support tools to help businesses understand how climate change will affect them, their customers, their supply chains and the economy more generally. Climate change and its impacts are among the most significant risks to businesses. Action on climate change is a critical element of business resilience, productivity and profit. The Climate Intelligence Platform allows users to translate science-backed climate risk analytics into industry-relevant information, supporting climate vulnerability assessments, strategic asset management and investment decision-making and transition risk guidance.

Service Provider Support

ivcap_sdk_service GitHub Page (Left):

The page displays the following content:

- Developer Guide Overview:**

The Intelligent Visual Collaboration Analytics Platform IVCAP operates as a Software as a Service that enables researchers and analytics providers to use and implement services to collect, process, or analyse visual datasets using AI analytics.

The intended audience for this guide are the Researchers and Developers who intend to develop and publish services using IVCAP.

Use the API to build, and load services onto the IVCAP platform, which are then discovered and used by platform users for data analysis. You can build services using the API, a Python software development kit (SDK), and the command line interface (CLI).

Search Results Page (Right):

The page displays 20 results found for the search term. The results are categorized and include:

- Maximum number of consecutive dry days.**

File format: NC
Timespan: 1900-2100
Risk: Physical
Industry: Agriculture
Hazard: Fire
Spatial: State

[VIEW DETAILS](#) [ADD TO CART](#)
- Cooling degree days.**

File format: NC
Timespan: 1900-2100
Risk: Physical
Industry: Agriculture
Hazard: Fire
Spatial: State

[VIEW DETAILS](#) [ADD TO CART](#)
- Accumulated total precipitation (solid and liquid) during wet**

File format: NC
Timespan: 1900-2100
Risk: Physical
Industry: Agriculture
Hazard: Fire
Spatial: State

[VIEW DETAILS](#) [ADD TO CART](#)

Approx. 20 Service developed by O&A

User Support

Image Annotator Test

0-28
0-29
0-30
0-31
0-32
0-33
0-34
0-35
0-36
0-37
0-38
0-39



```
% ivcap
A command line tool to more conveniently interact with the
API exposed by a specific IVCAP deployment.

Usage:
ivcap [command]

Available Commands:
artifact      Create and manage artifacts
completion    Generate the autocompletion script for the specified shell
context       Manage and set access to various IVCAP deployments
help          Help about any command
login         Authenticate with a specific deployment/context
order         Create and manage orders
service       Create and manage services
```

ibenthos.develop.iv... ☆ Finish update :

☰ iBenthos Login

Seagrass mapping made easy with our artificial intelligence-assisted workflow. Upload, manage, annotate, and analyse geo-referenced survey datasets with a shared AI model that evolves with the collective knowledge of the community.



This notebook visualises a dataset generously provided by Vassili Kitsios which shows the Forest Fire Danger Index for Australia with a monthly datapoint for the period from 1/2000 to 12/2005.

This notebook is primarily an exploration of a specific way to visualise the data and still lacks features, like a legend and more, to make this a useful tool for anyone wanting to understand the data itself to a sufficient level.

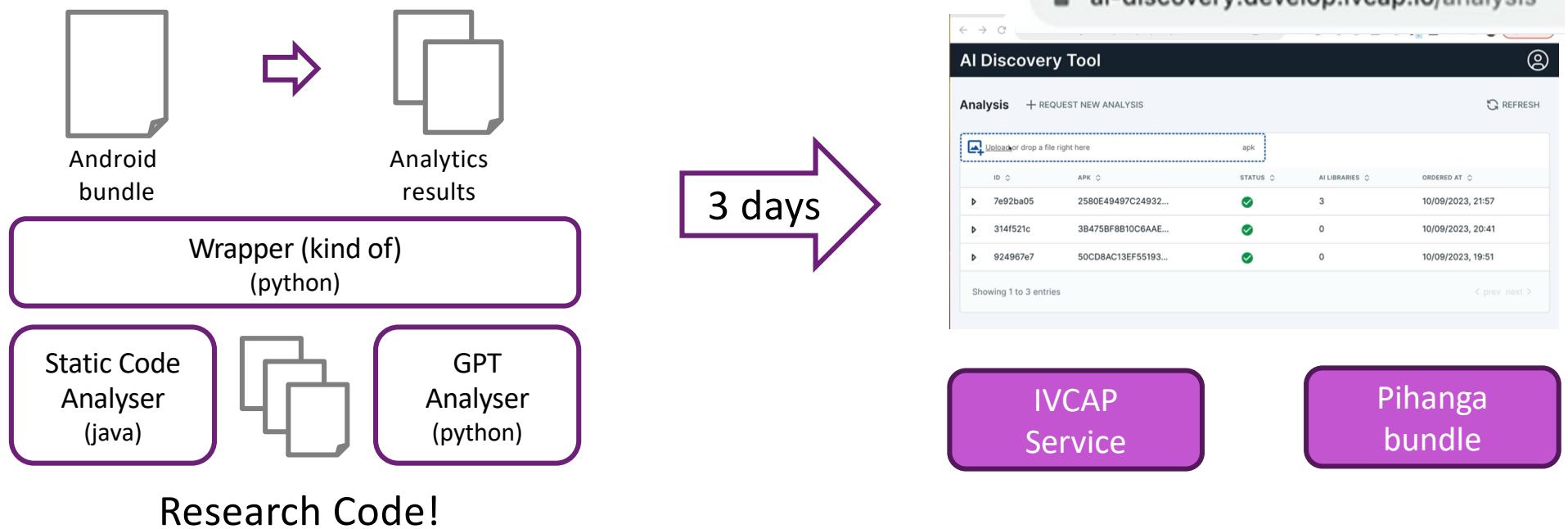


Published (Read-only)
Experimenting with visualising FFDI
...

Example Use Case AI Discovery Tool

AI Discovery Tool

- Create Report on AI usage of Android Apps



AI Discovery Service x +

ai-discovery.develop.ivcap.io/analysis

Upload or drop a file right here

apk

REFRESH

Analysis + REQUEST NEW ANALYSIS

ID	APK	STATUS	AI LIBRARIES	ORDERED AT
7e92ba05	2580E49497C24932...	✓	3	10/09/2023, 21:57
314f521c	3B475BF8B10C6AAE...	✓	0	10/09/2023, 20:41
924967e7	50CD8AC13EF55193...	✓	0	10/09/2023, 19:51

Showing 1 to 3 entries

< prev next >

???

Documentation · Source



IVCAP

Platform for ...
... science
... collaboration
... rapid prototyping

Max Ott for the IVCAP Team

Australia's National Science Agency

