THE LIFE SCIENCE DATA PLATFORM

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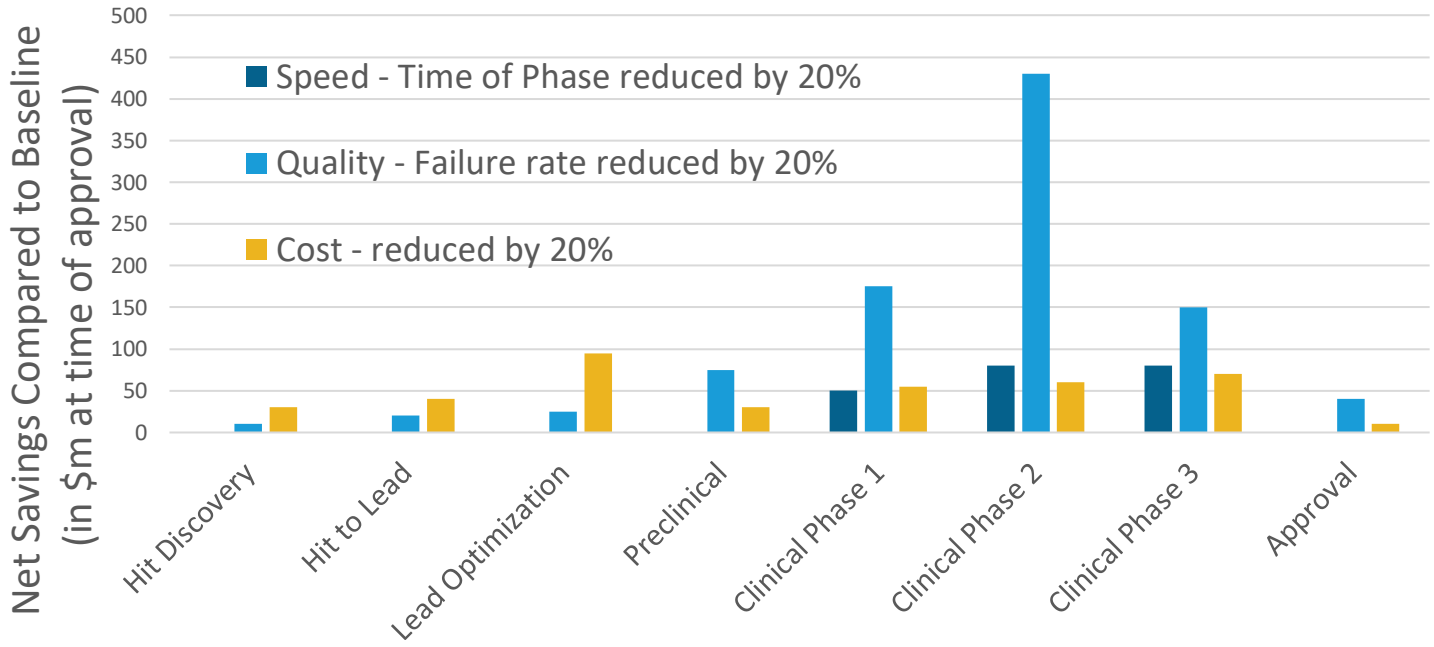
From Chaos to Clarity: ZONTAL's Digital Solutions for Biotech Wizards!

Prof. Dennis Della Corte
Allotrope Spring 2023

Within our scope of responsibility, we are all decision makers.



Phase of Drug Discovery and Development, adapted from Bender et al (https://doi.org/10.1016/j.drudis.2020.12.009)

What impedes us from making data driven decisions such as:

- Have we done this before?
- Can I trust this dataset?
- Do I need to repeat this experiment?
- Should this project be continued?

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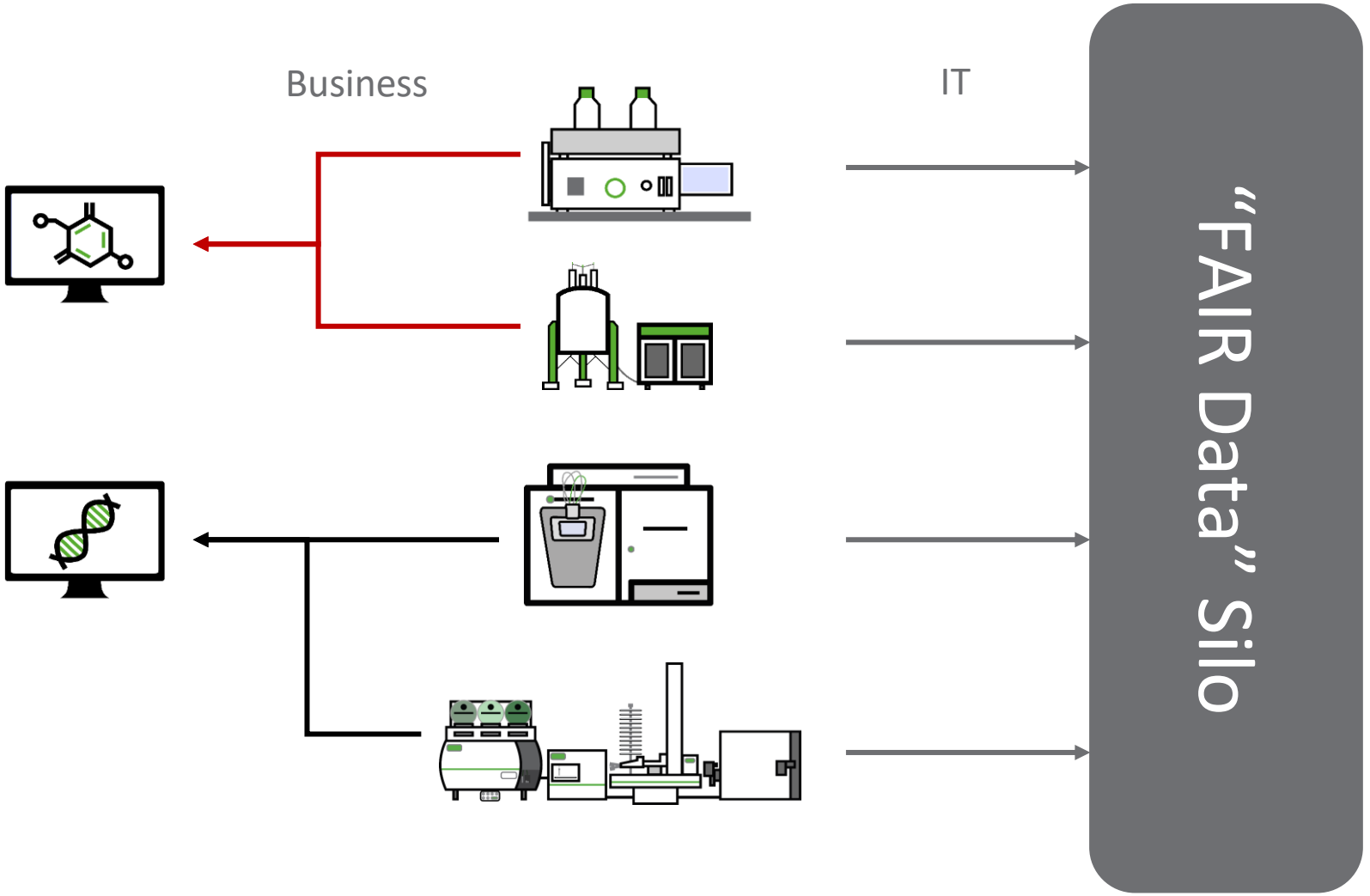
The FAIR Data Issue

IT FAIR Data Projects are too often Isolated from Business Reuse Projects



Bad KPI:
Petabytes in Silo

Good KPI:
Nr of successful requests from connected users/ applications

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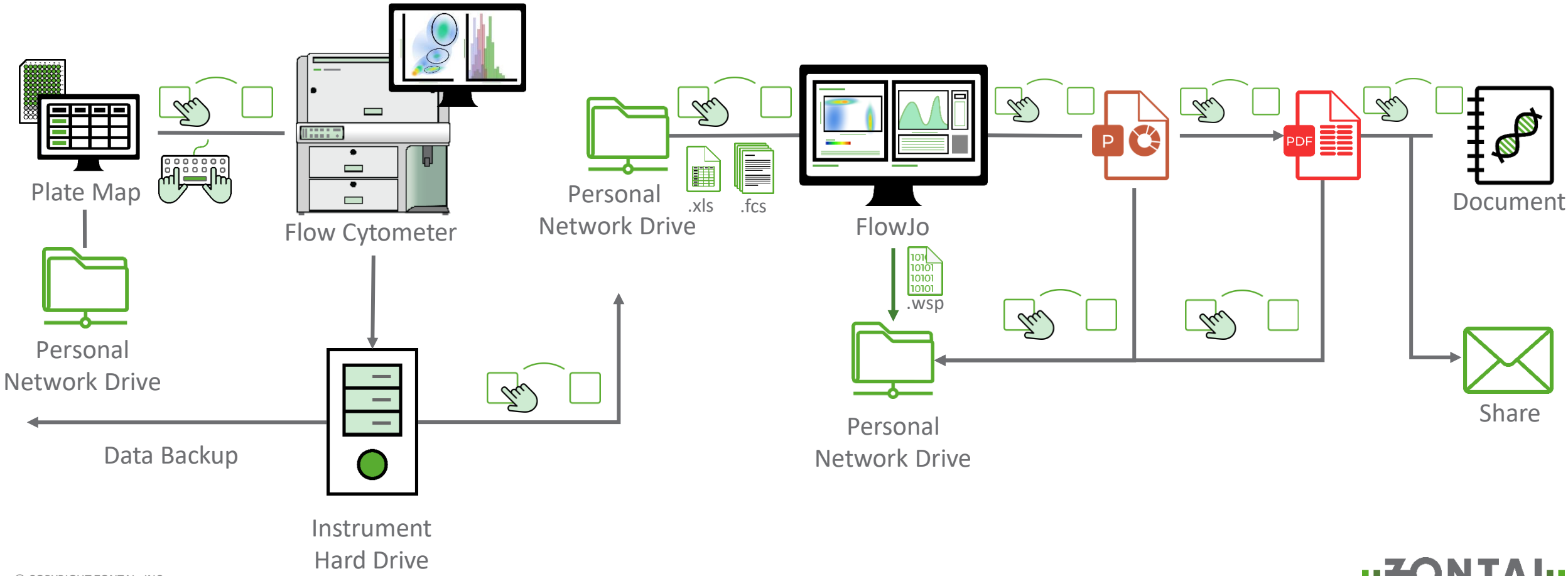
The Data Problem with Flow Cytometry

Simple Experiments often Result in Complex Manual Workflows



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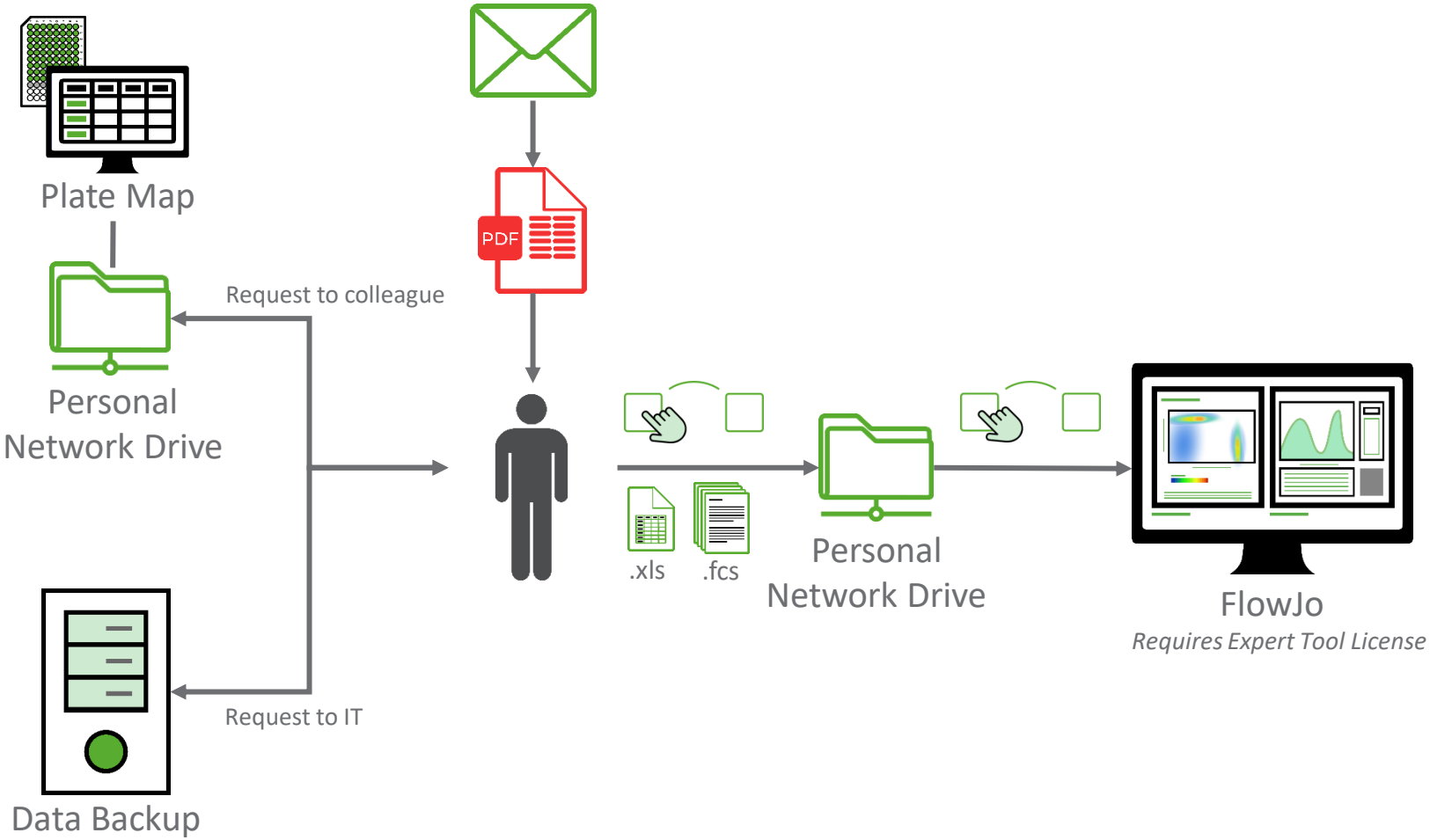
The Data Problem with Flow Cytometry

Issues in Finding, Confirming, and Reusing cause Repeated Experiments



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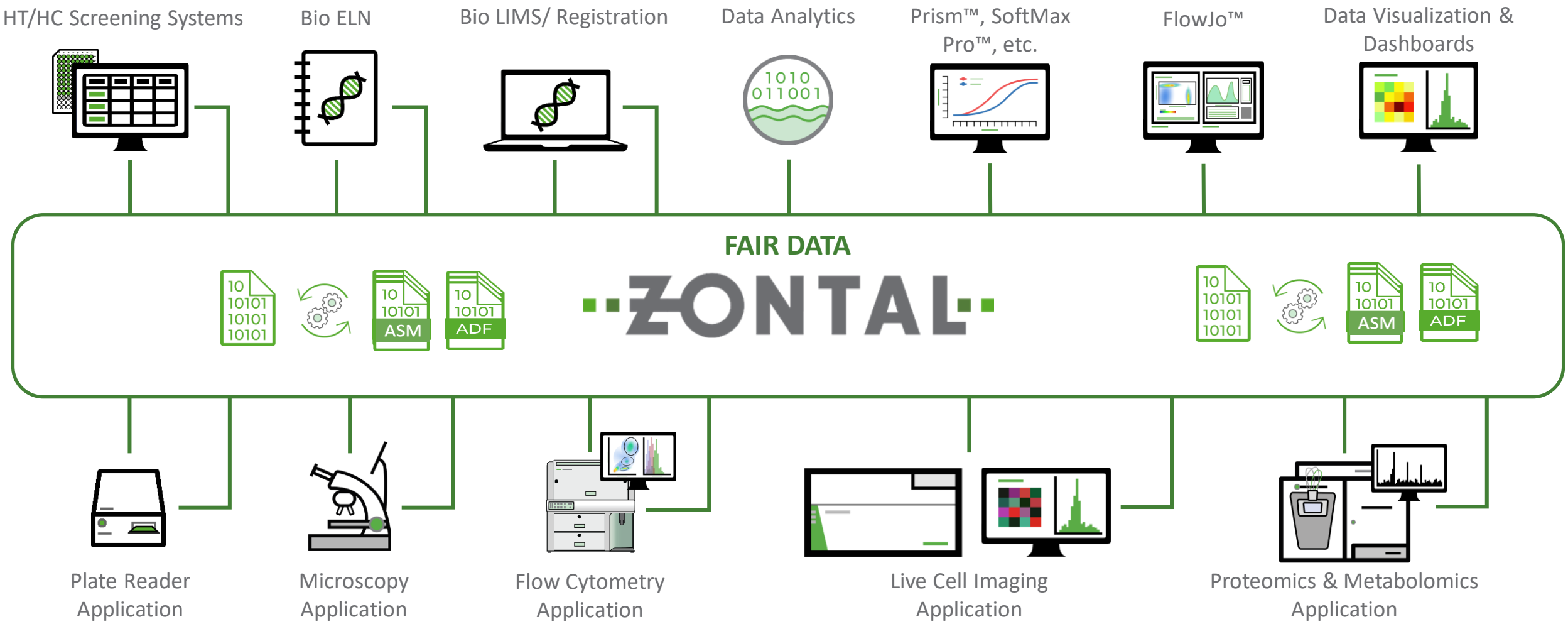
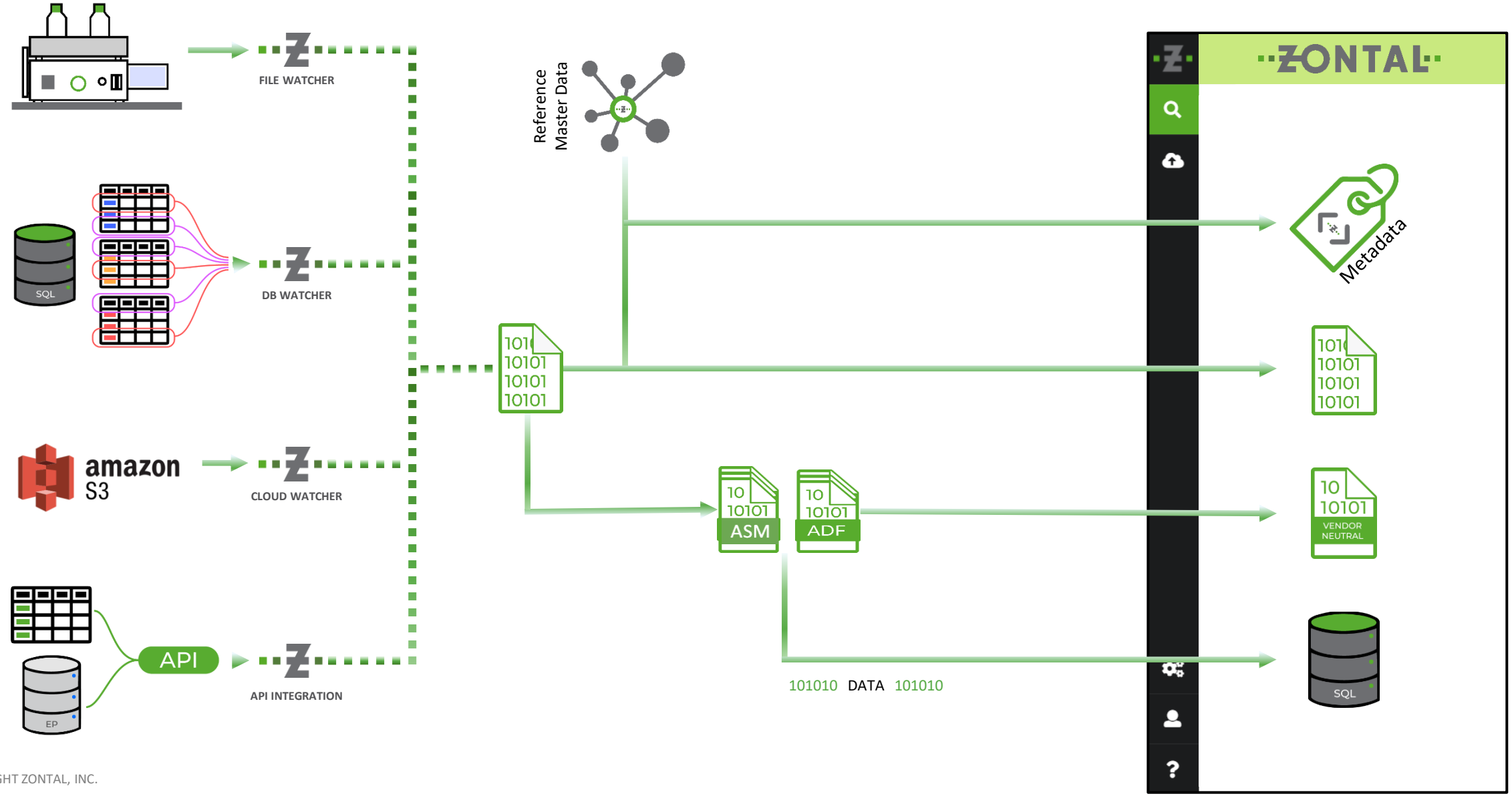
Our Solution

Discovery Biology Solution Architecture

Automation of Workflows Across the Needs of Biological Drug Discovery

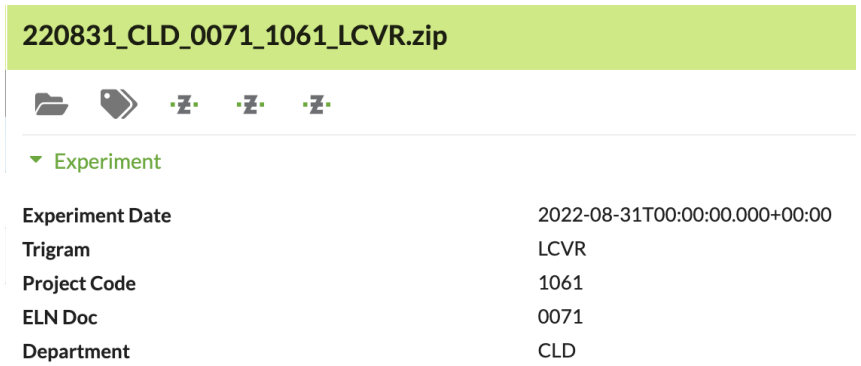


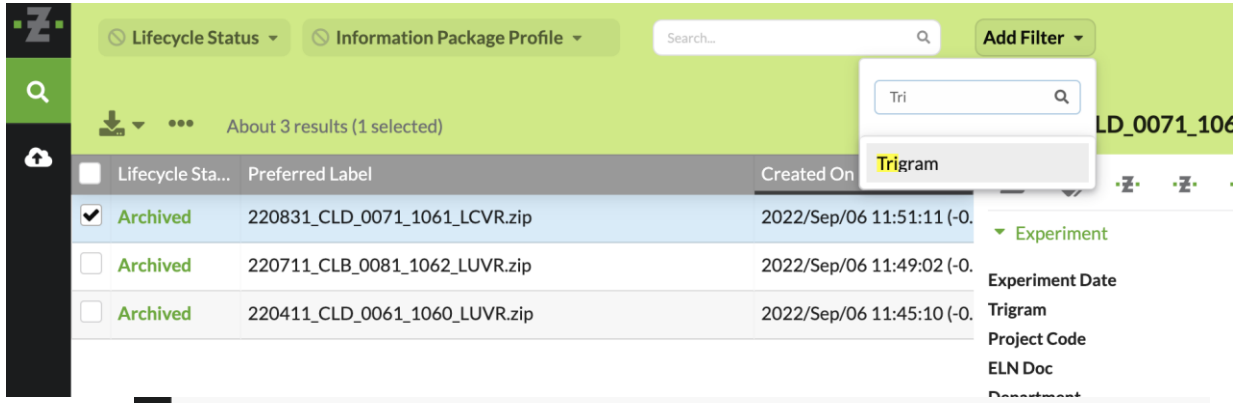
Data Flow Into ZONTAL – Leveraging ADF and ASM

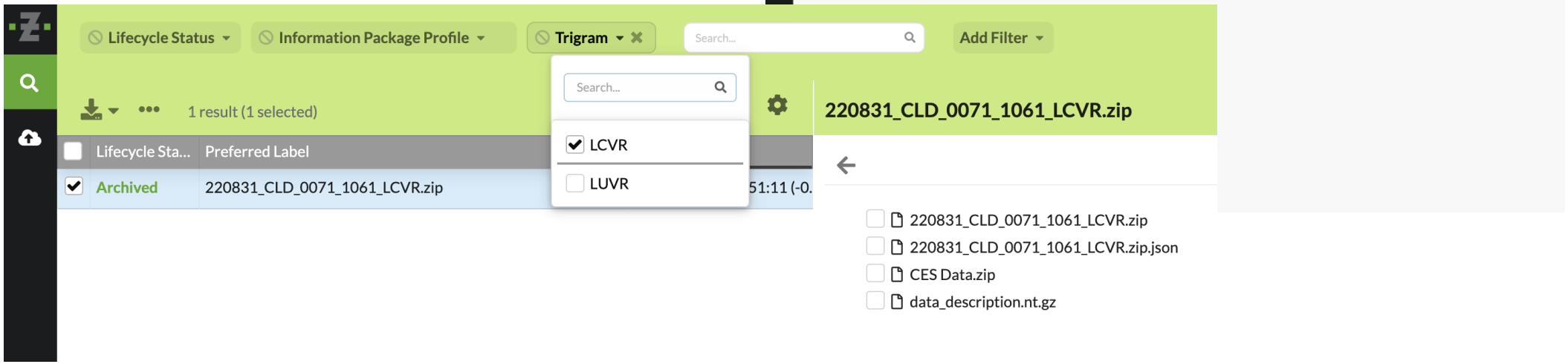


The ZONTAL Difference

Data is Findable, Accessible, Reusable, and Interoperable – Using AFO







The ZONTAL Difference

1. **We Bring the Application to the Data, and not the Data to the Application.**

2. **Visualization and Analysis are ONE click away From the Data.**

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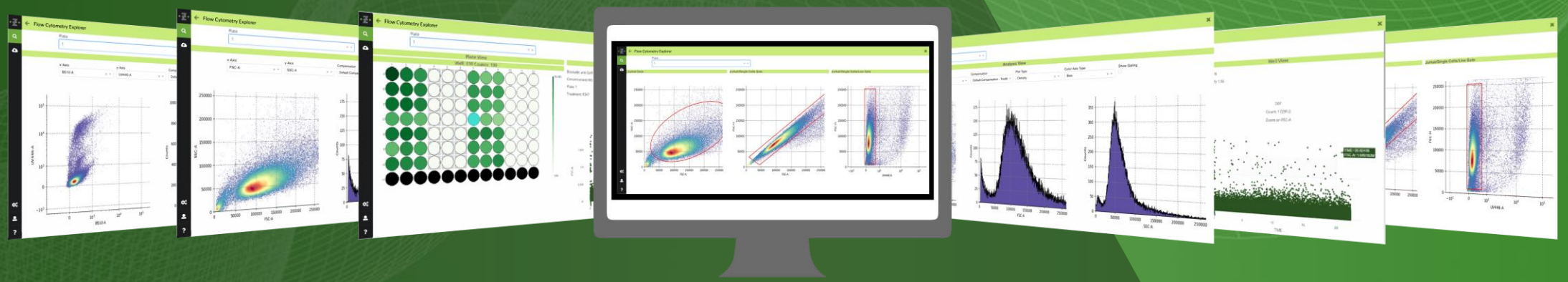
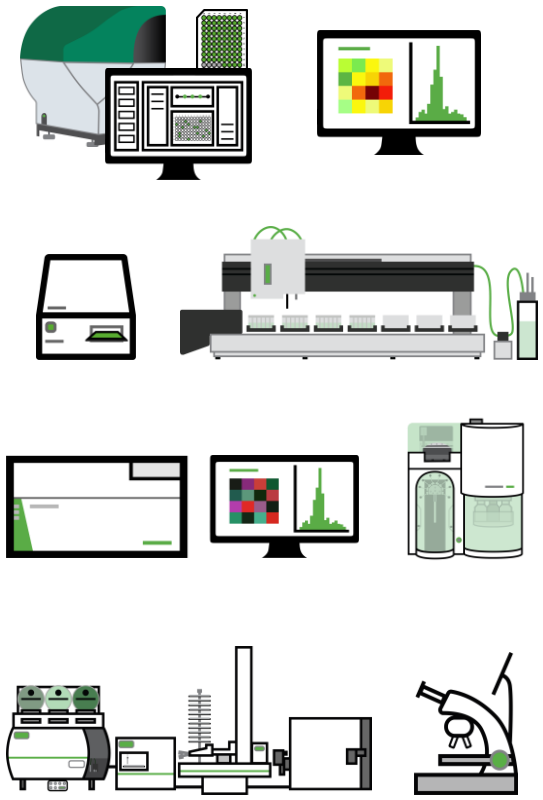
Discovery Biology Solution



Applications for Discovery Biology & Development

Integrated Planning, Execution, Analysis and Data Visualizations for Large Molecules



Benchling · SARTORIUS · FLOWJO · SignalsNotebook · nova biomedical

Spotfire TIBCO Software · BD FACSDiva · Beckman Coulter Life Sciences · Roche · Molecular Devices

dotmatics knowledge solutions · GraphPad · LabVantage · ThermoFisher Scientific · Cedex Bio HT Analyzer

Ambr® 15 Cell Culture

Data Flows

- Test Request
- Instrument Integration
- Flow Cytometry
- Cell Line Development
- Plate Reading
- Microscopy Data Management >1 TB Files.
- Image Visualization and Automated Annotation
- Plate Based Data Viewing

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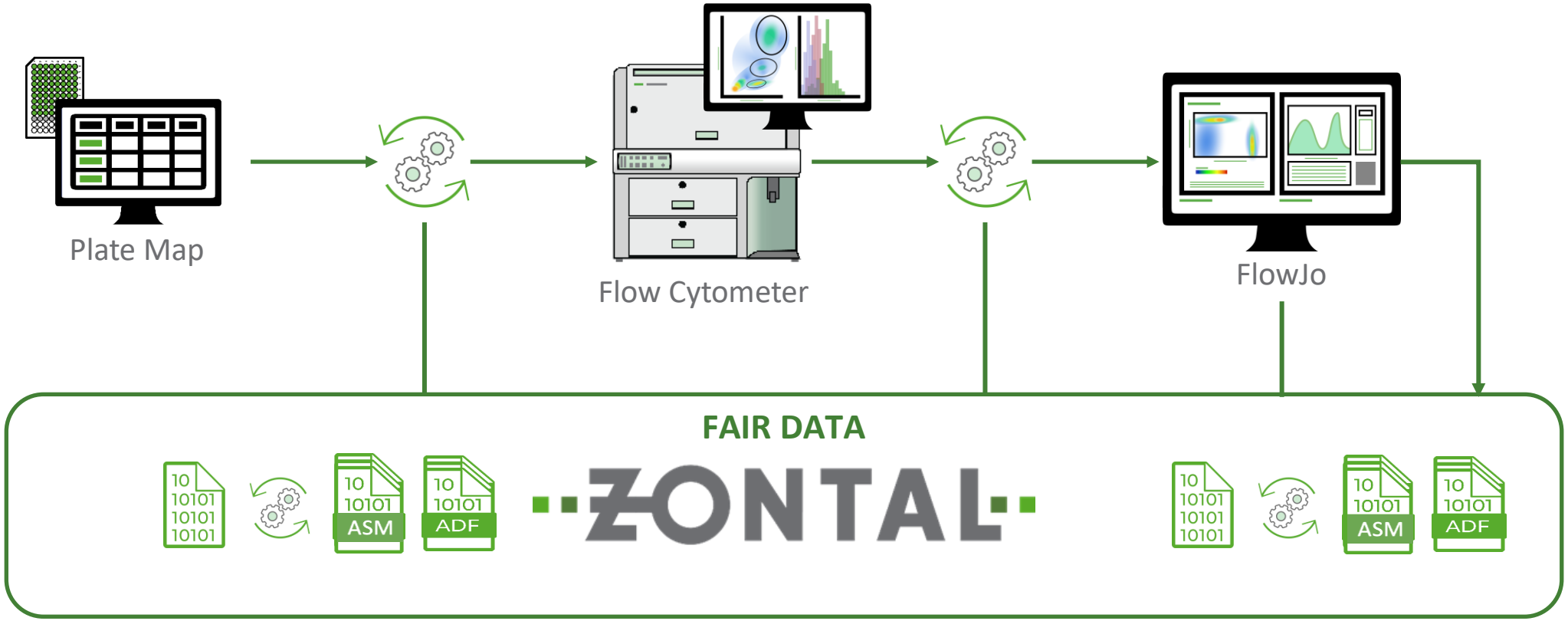
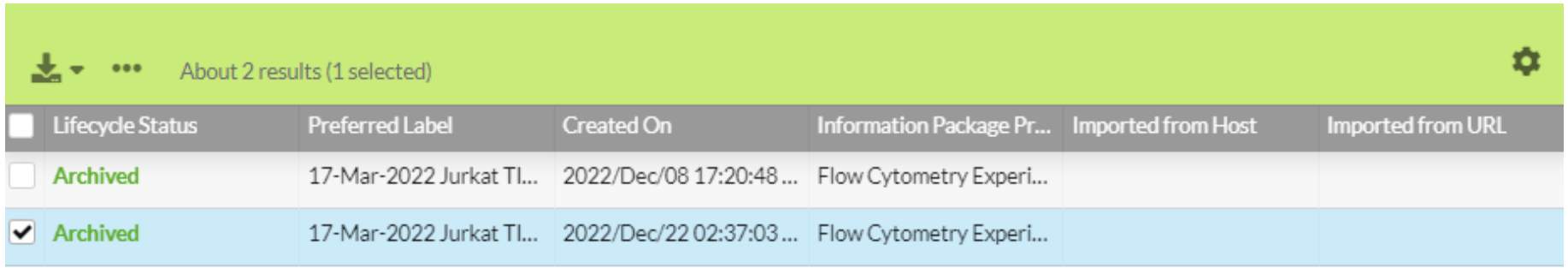
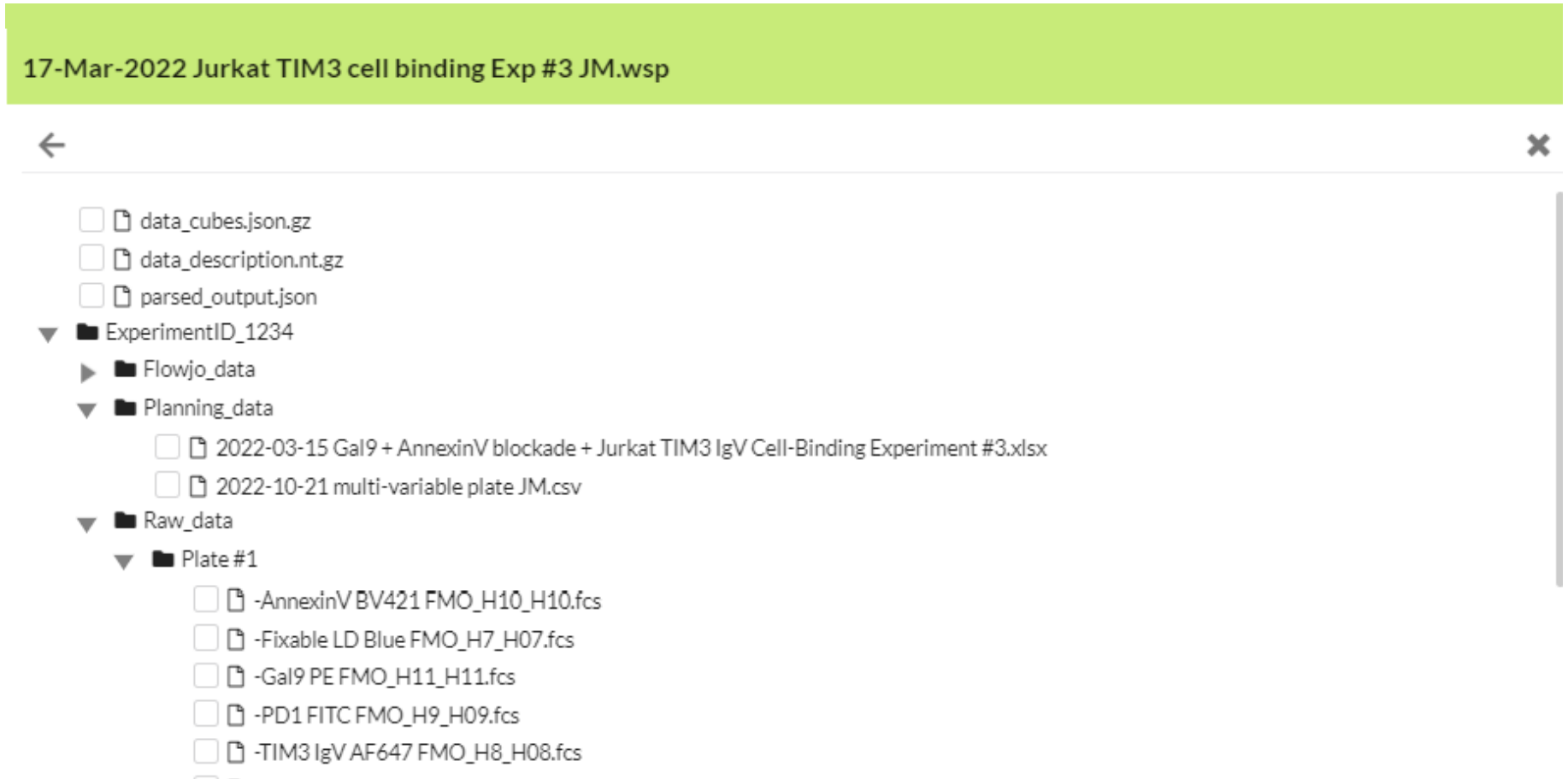
ZONTAL's Flow Cytometry Application

Experiment Execution – Relies on ZONTAL's Plate and Flow Data Models (potential candidates for Allotrope Governance)



Example of Extracted Data in ZONTAL





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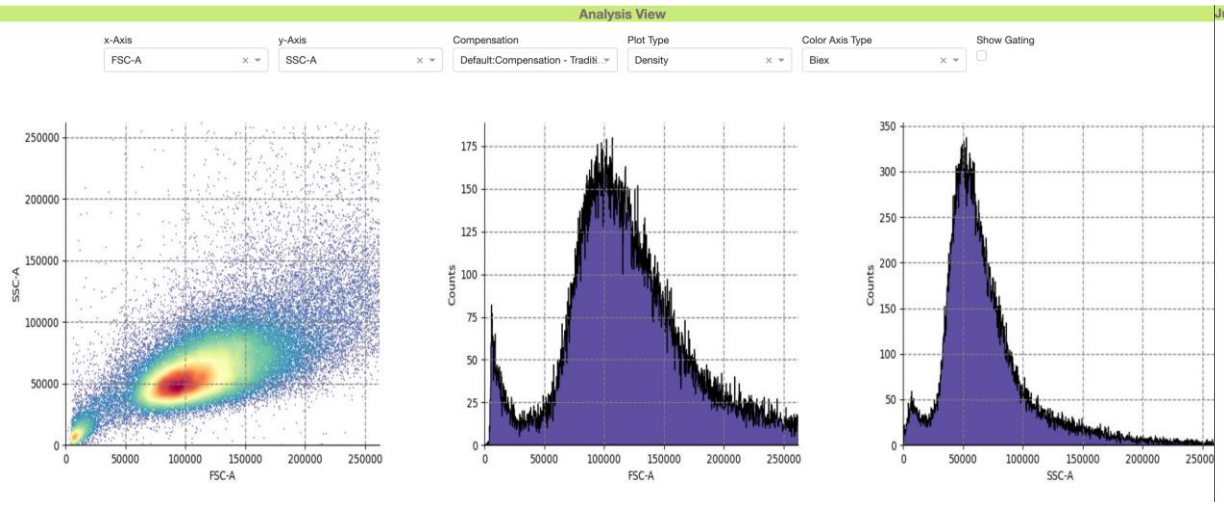
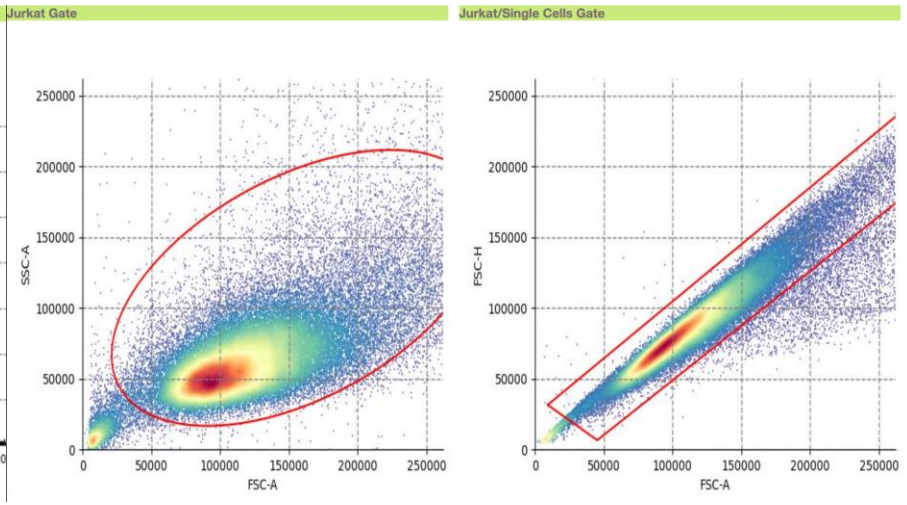
Discovery Biology Solution

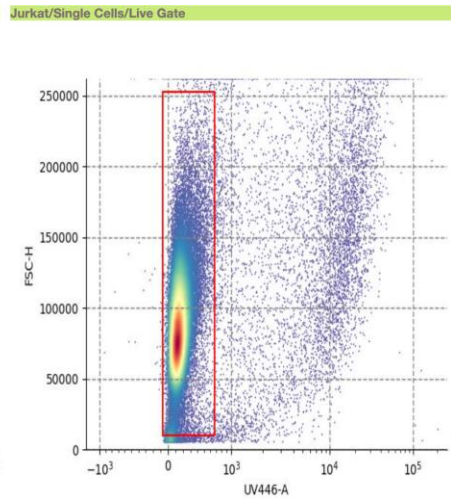
Turn Static PDF Reports into Interactive Dashboards

Pictured:
Flow Cytometry Application

Align in one view:
- planning data
- raw data
- analysis data







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Discovery Biology Solution

Flow Cytometry Dashboard - Interactive Visualizations with Faceted Browsing

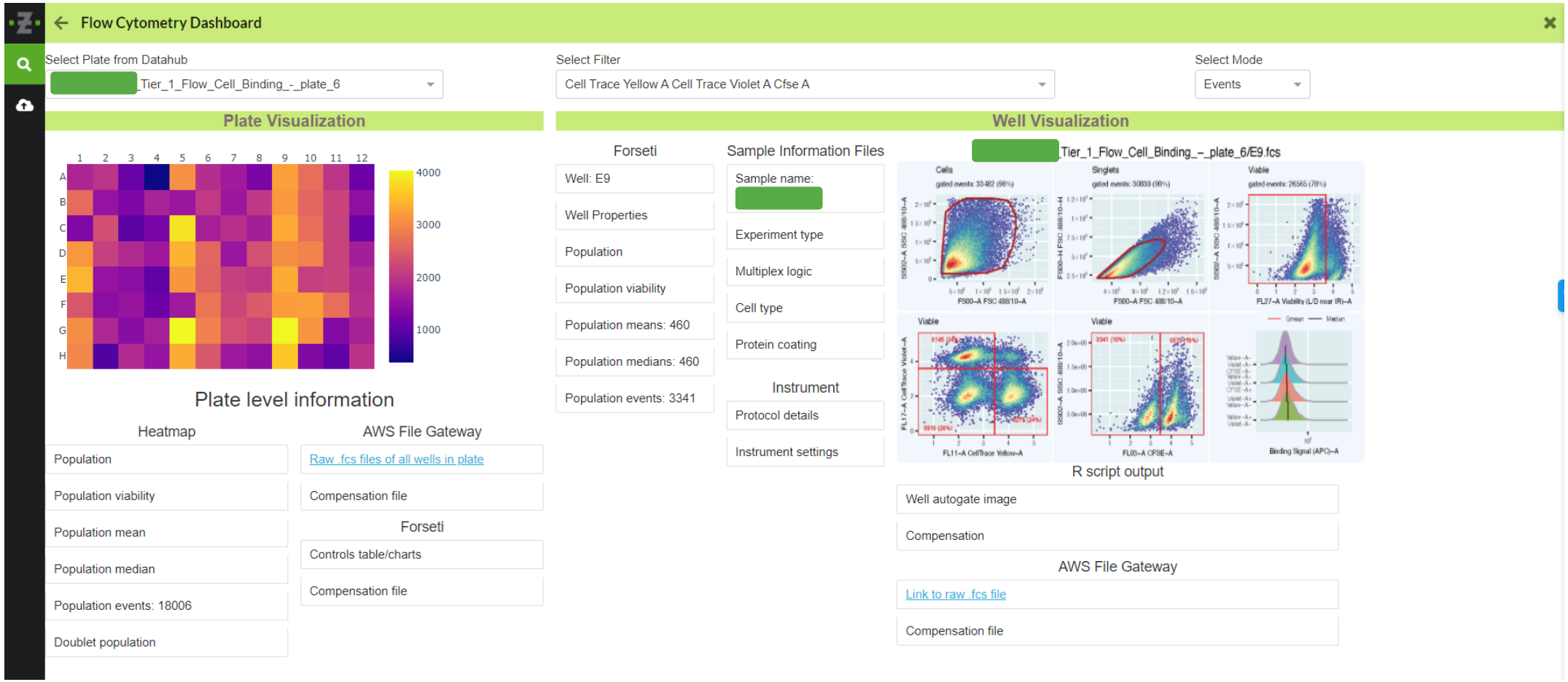
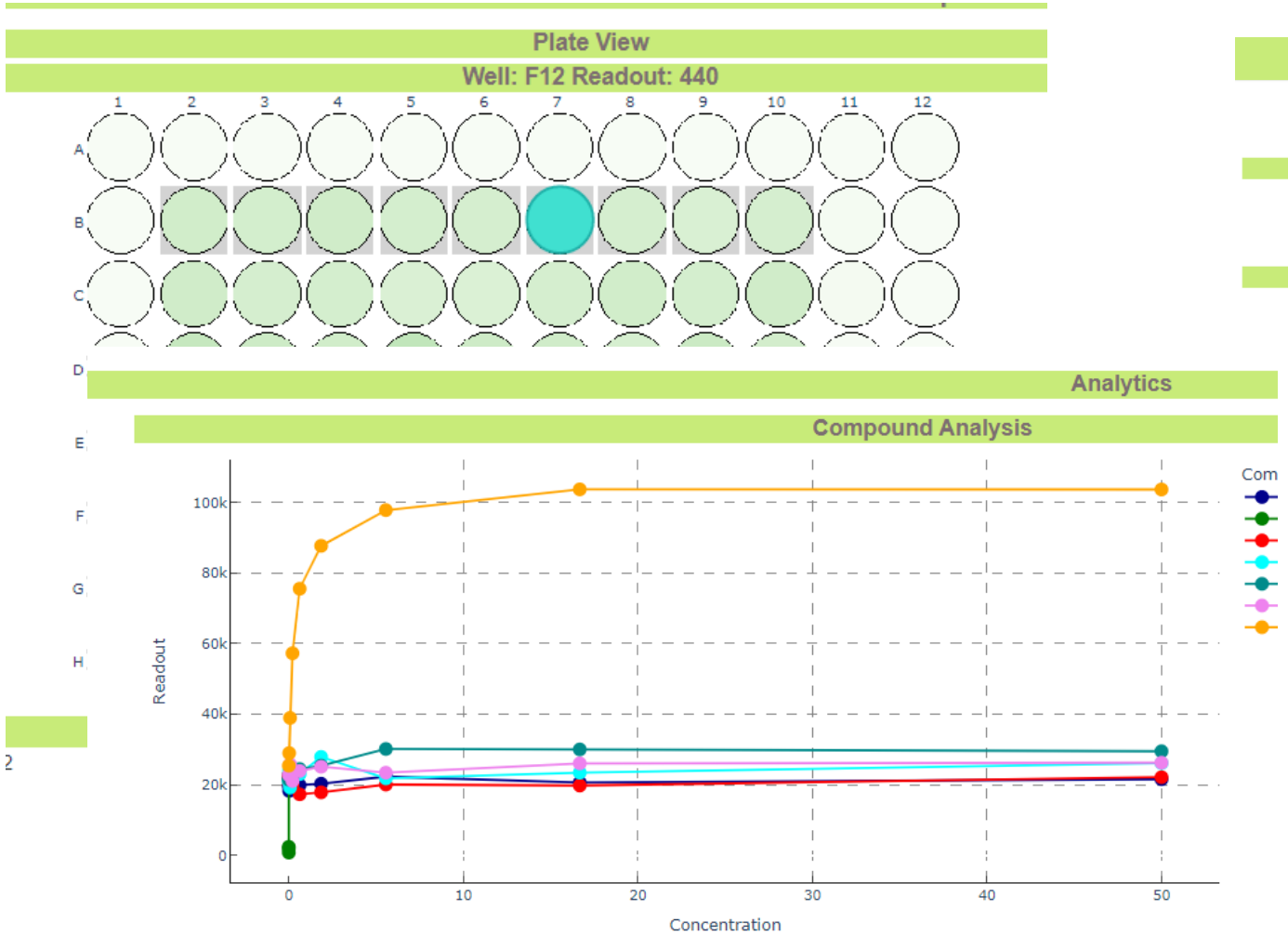


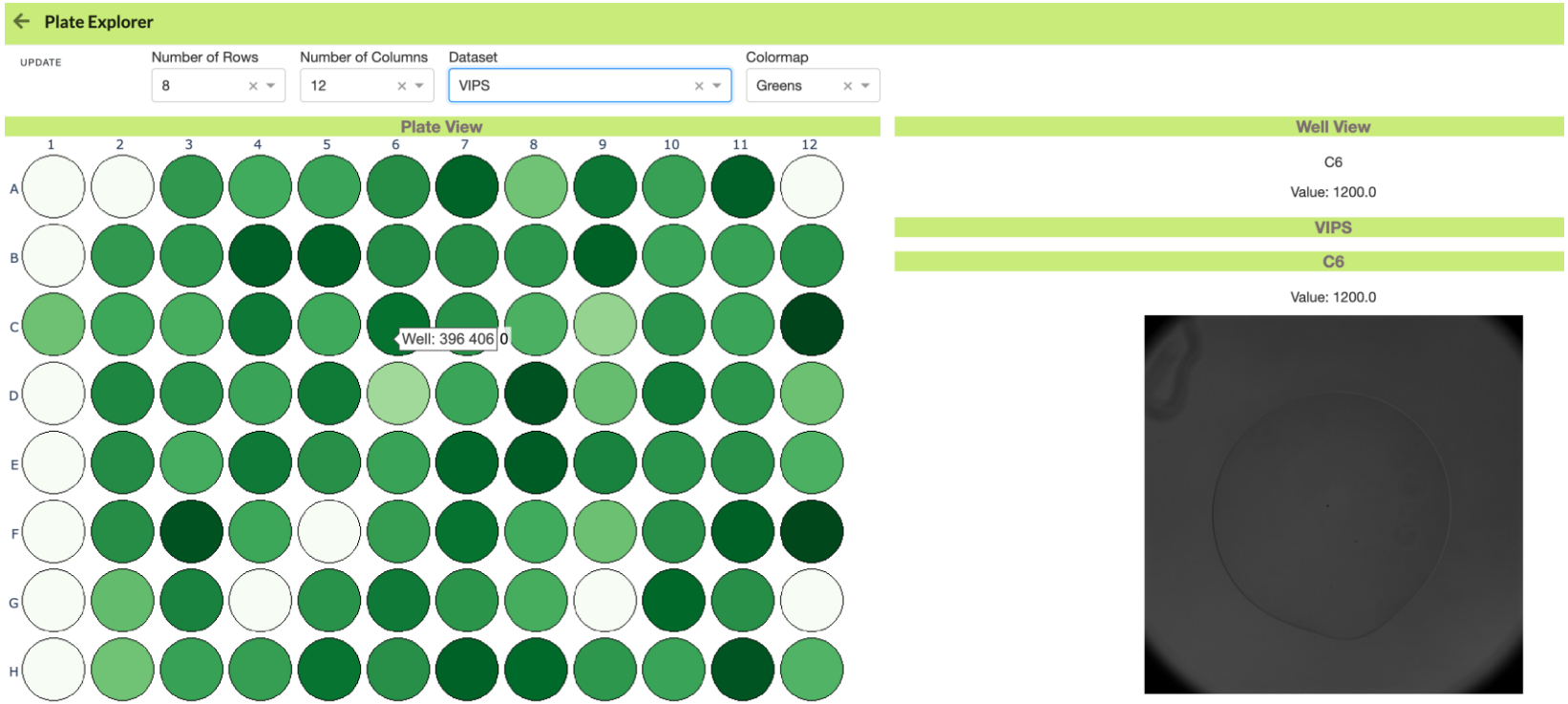
Plate Reader Application

Well View with Interactive Data Analysis and Visualization



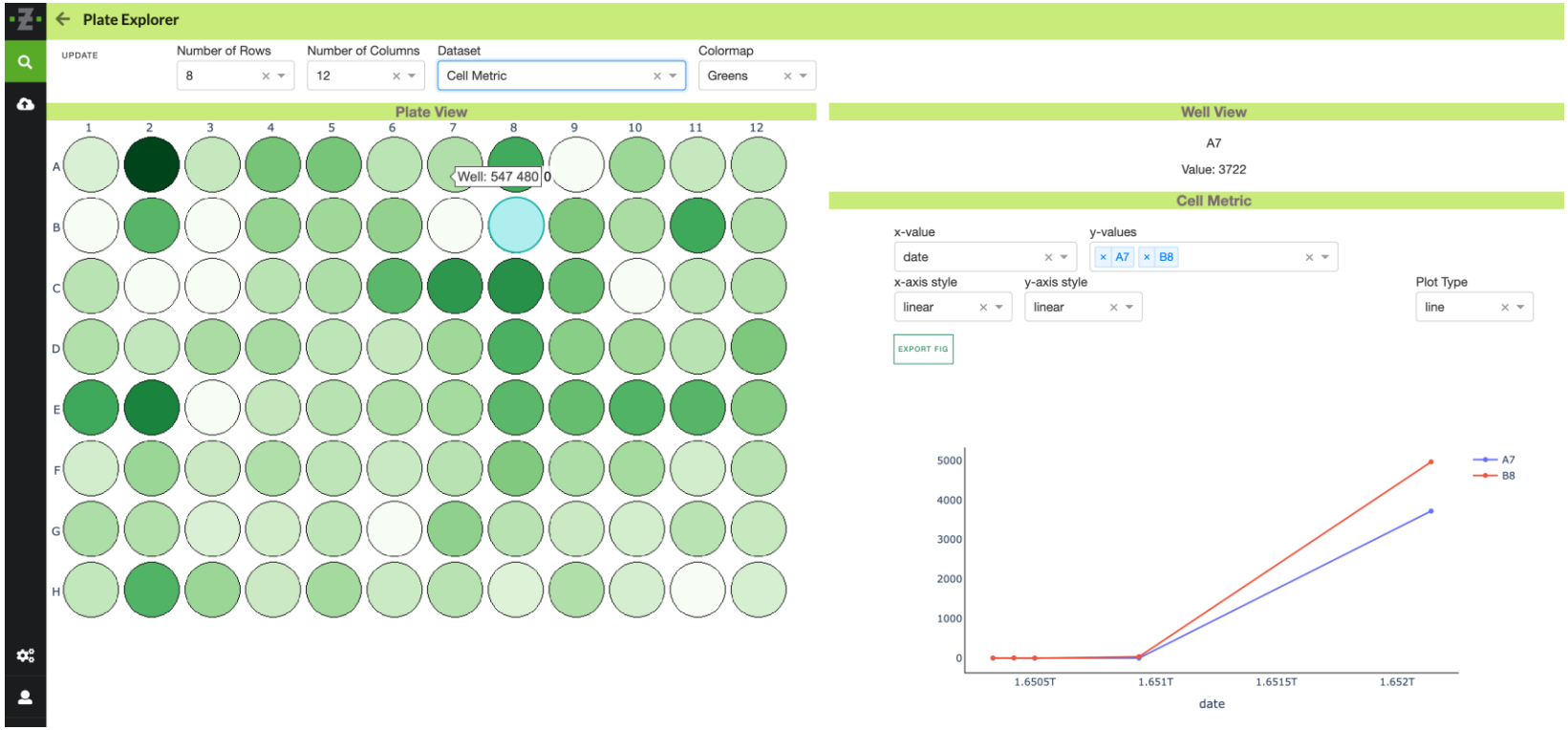
Upstream Bio-Processing

Graphical Exploration of VIPS Data



Upstream Bio-Processing

Graphically Explore Cell Metric Plate Level and Well Level Data



Upstream Bio-Processing

Interactive Exploration of ICON Plate and Well Data

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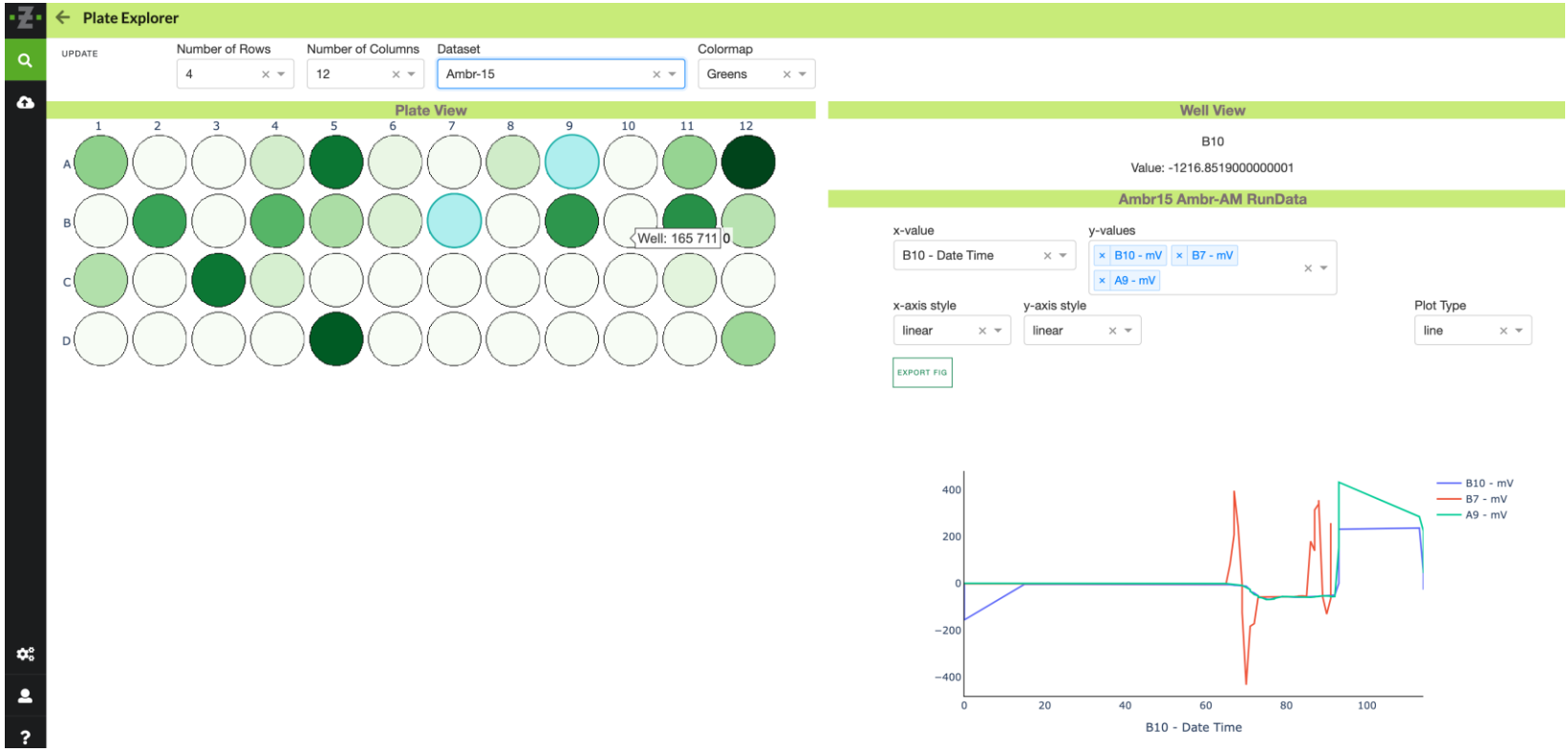
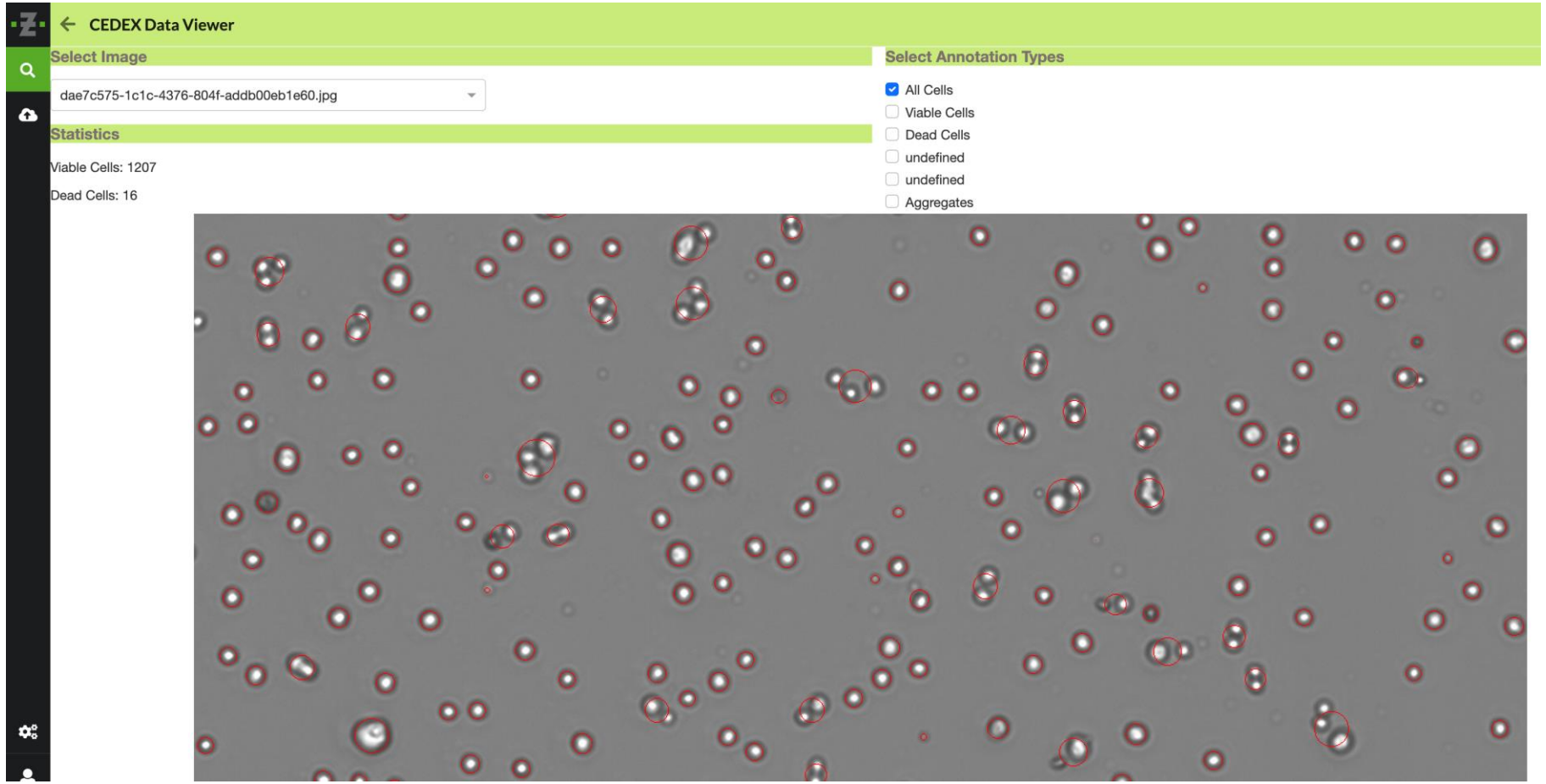
Upstream Bio-Processing

Ambr15 Data - Visual Exploration of Plate and Well Level Information



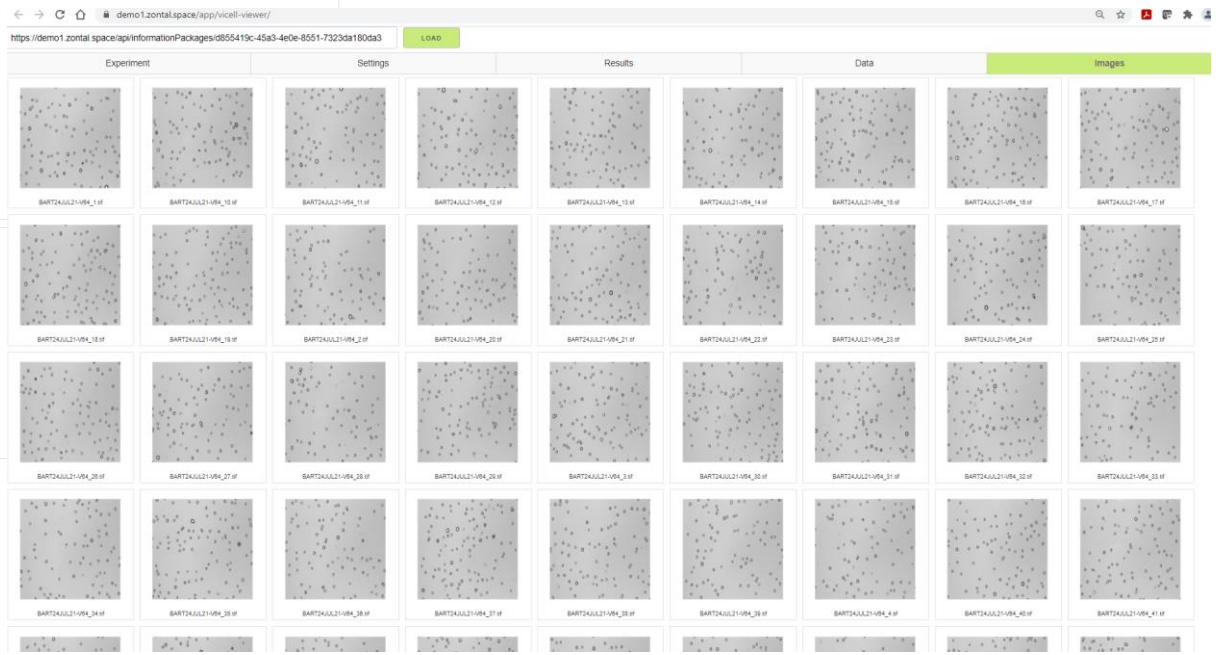
Upstream Bio-Processing

Visually Explore CEDEX Images and Annotations within ZONTAL



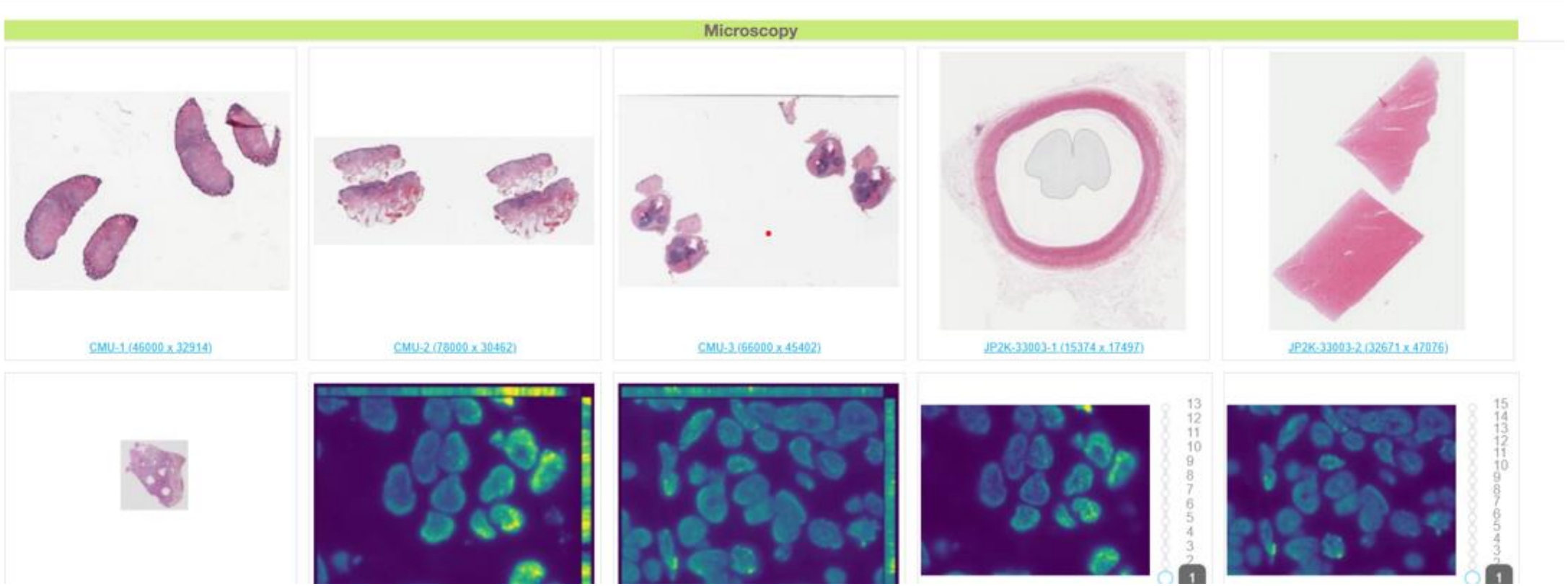
Upstream Bio-Processing

ViCell Data Managed in ZONTAL



Graphical Exploration of Image Data

Microscopy



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ZONTAL Integrations

Overview of ZONTAL's Integration Capabilities

Over 400 Integrations and Counting

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