

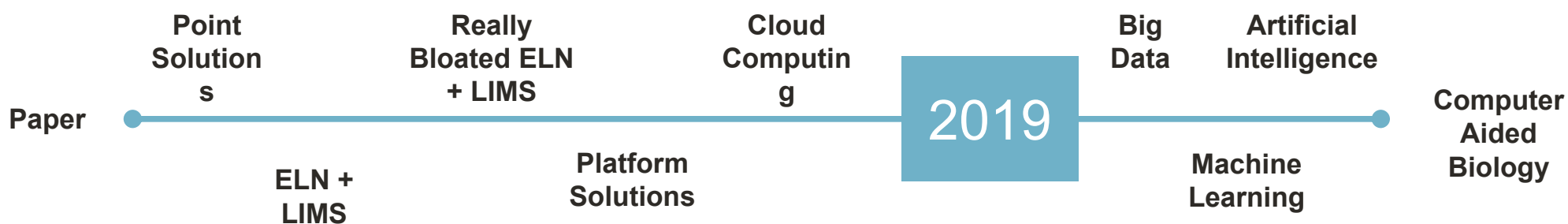


# ANTHA: A LABORATORY OPERATING SYSTEM FOR THE DIGITAL LAB OF THE FUTURE

Strategies for modernizing laboratory  
environments

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# THE DIGITAL LAB: A HISTORY



How do we overcome  
barriers to achieving true  
computer aided biology?



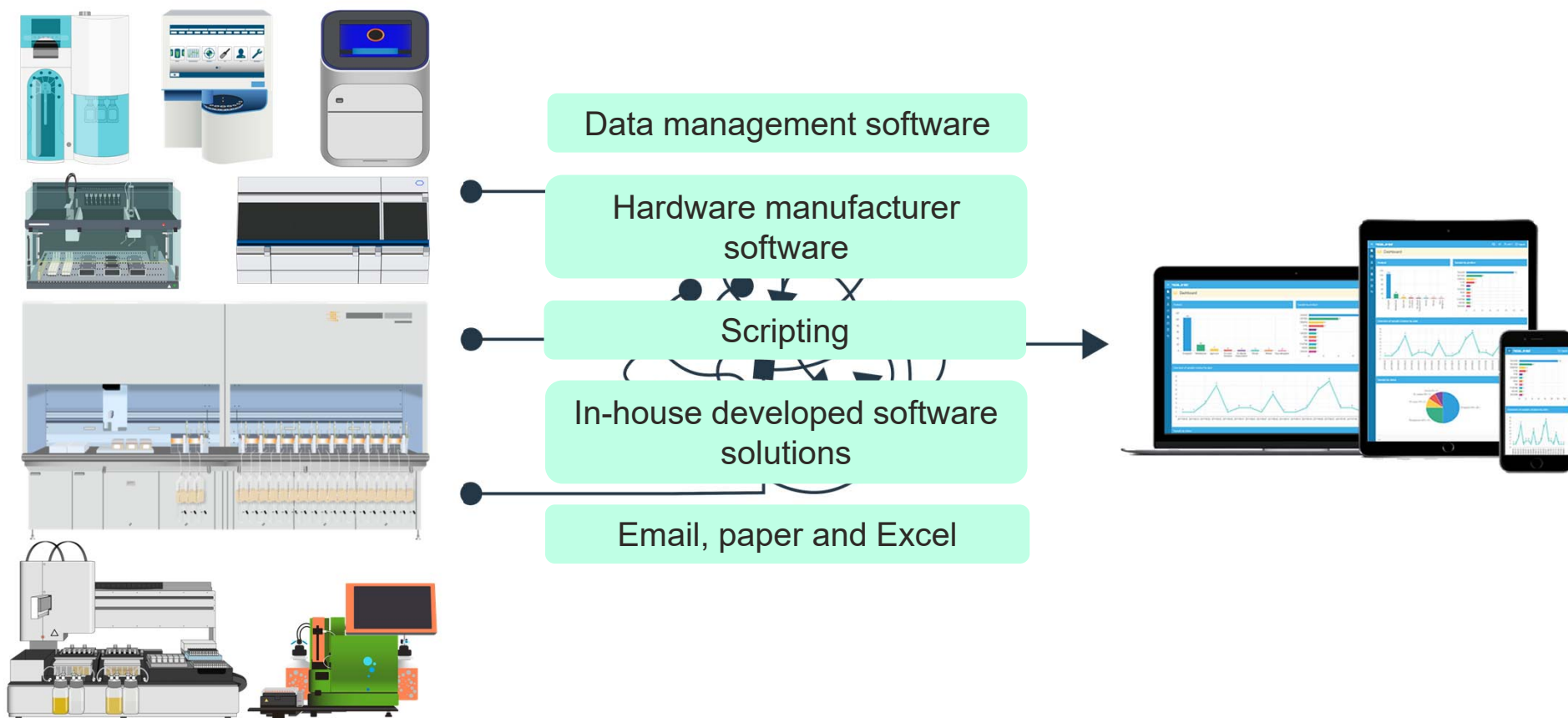


The first thing we've learned is the importance of having outstanding data to actually base your ML on...  
...people underestimate how little clean data there is out there, and how hard it is to clean and link the data.

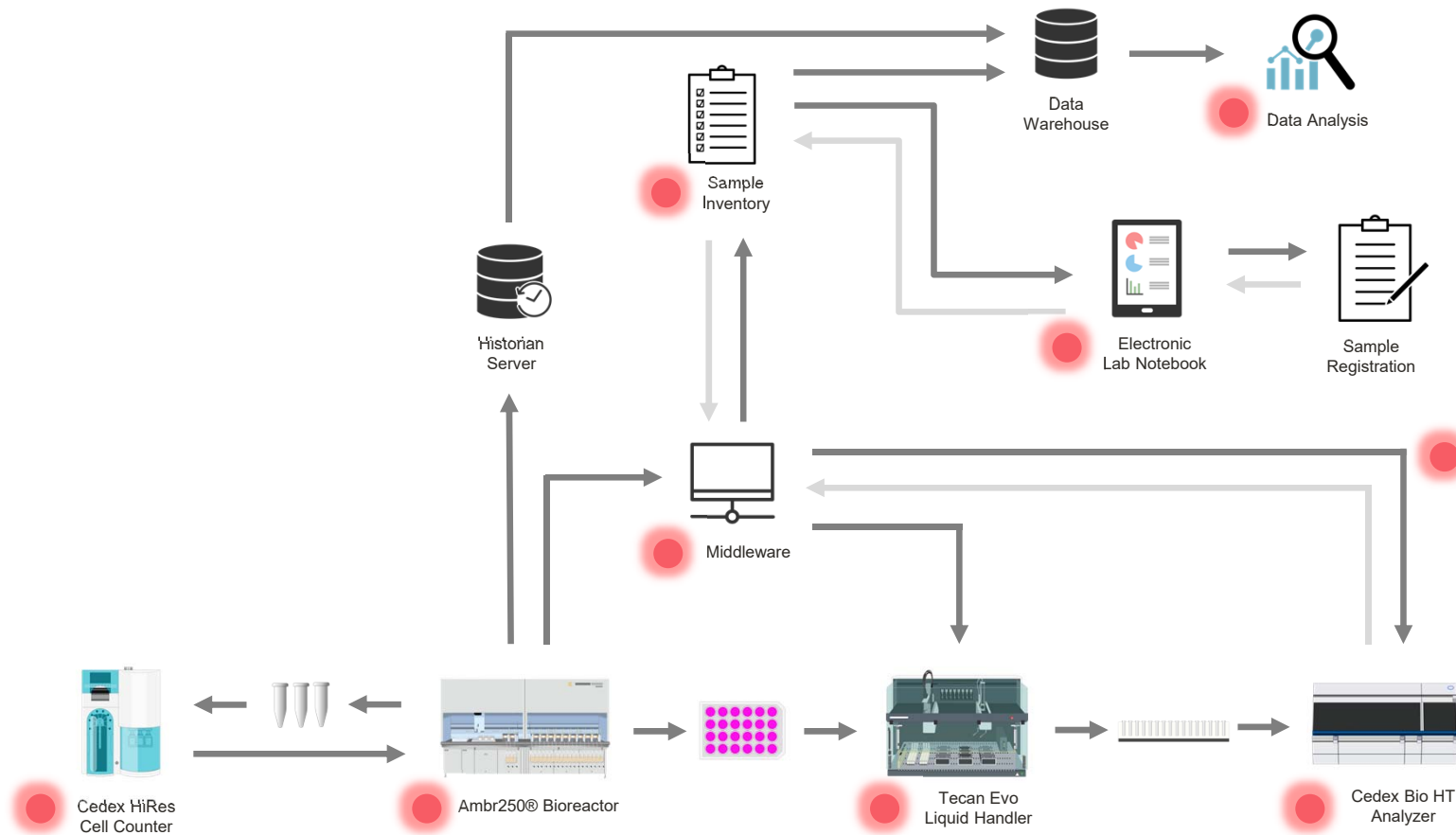
Vas Narasimhan, CEO of Novartis AG



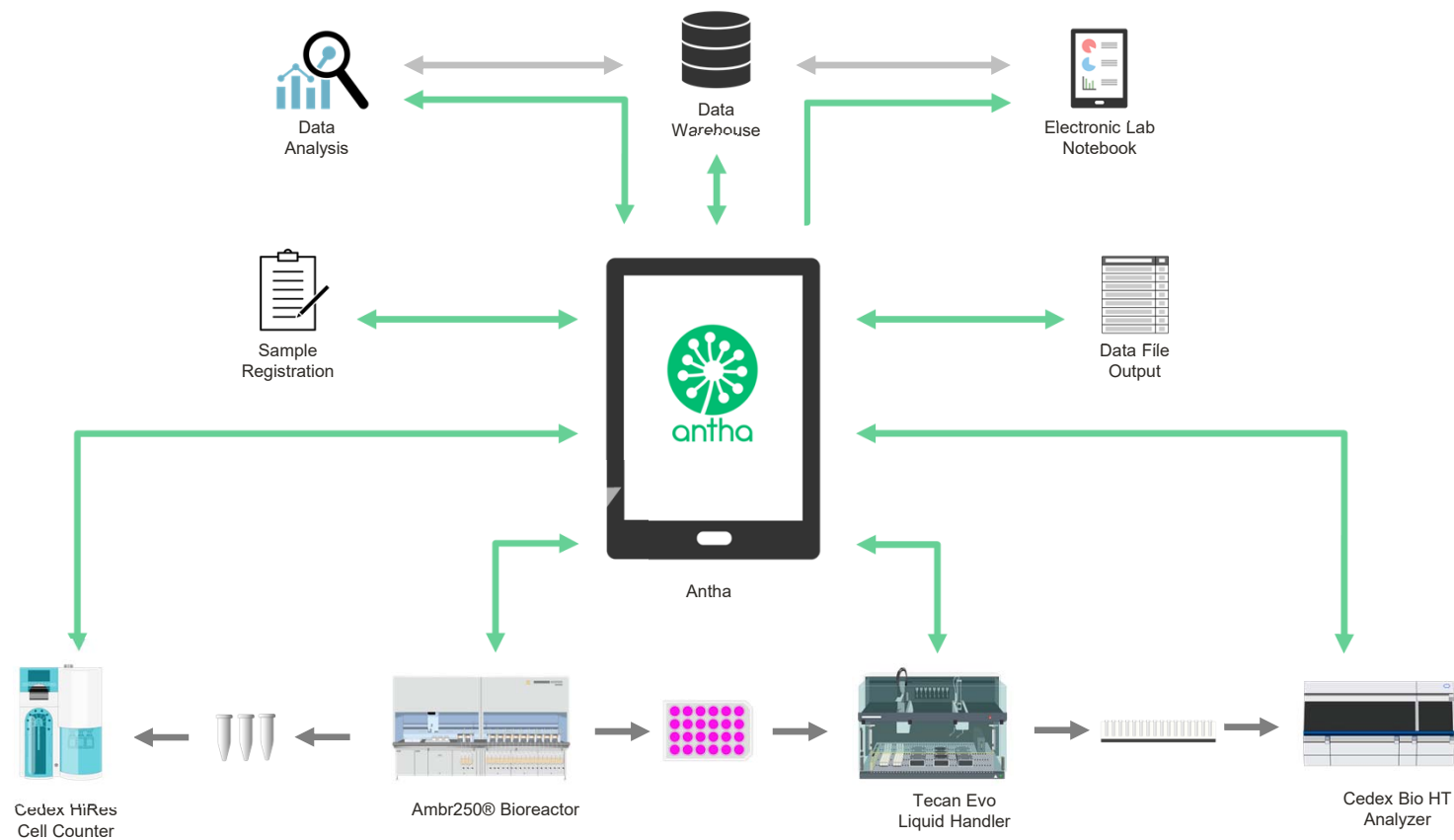
# SOLVING THE PROBLEM AT THE SOURCE



# UPSTREAM PROCESS DEVELOPMENT



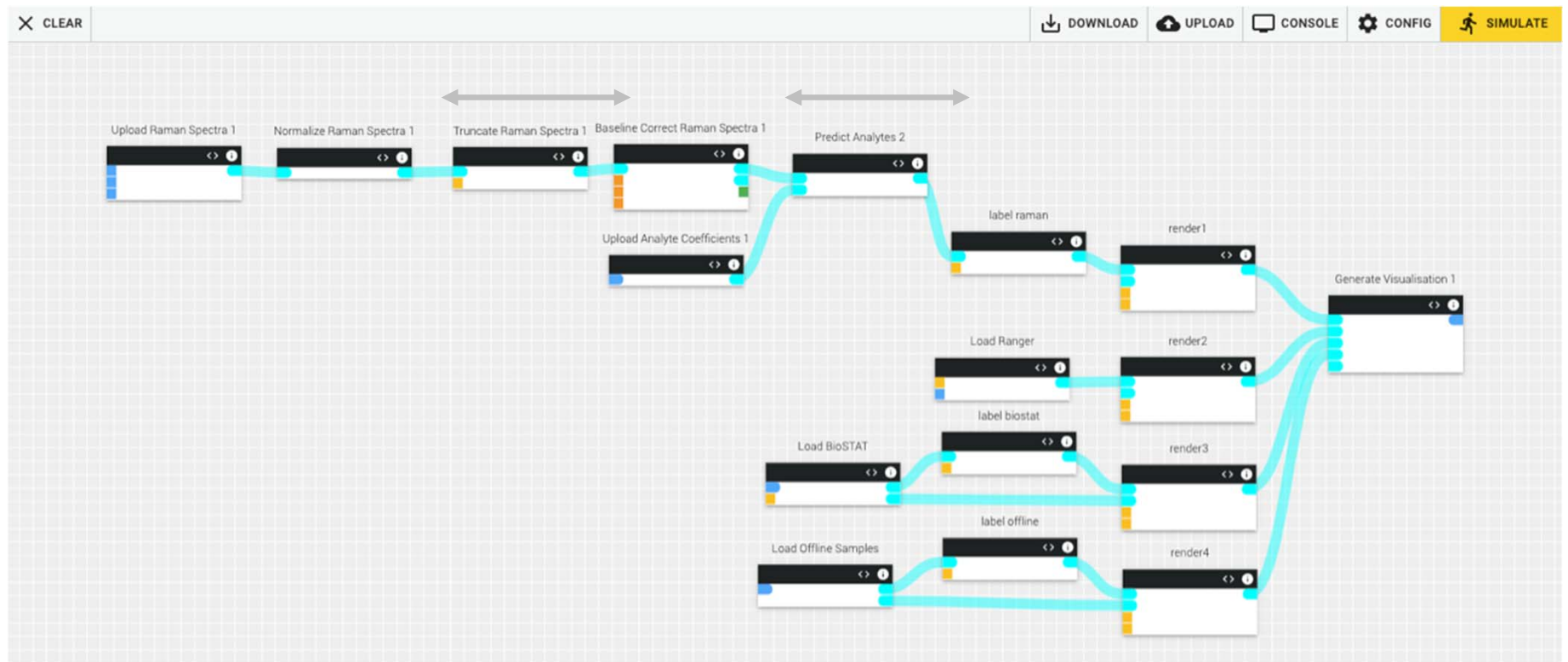
# UPSTREAM PROCESSING SOLVED







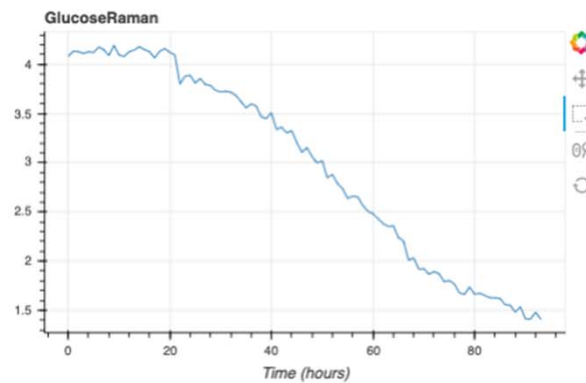
# CASE STUDY: IN LINE RAMAN



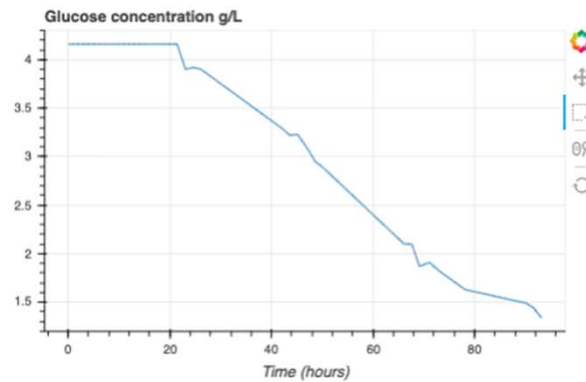
# CASE STUDY: IN LINE RAMAN

reactor17

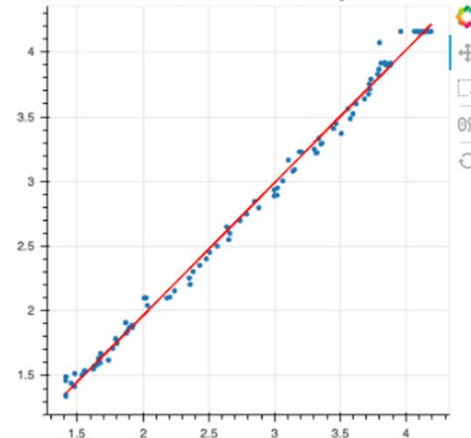
GlucoseRaman



Glucose concentration g/L



GlucoseRaman vs. Glucose concentration g/L



#	Statistic	Sensor 1	Sensor 2
0	count	114.00	114.00
1	mean	2.91	2.89
2	std	0.97	1.00
3	min	1.41	1.34
4	25%	1.88	1.87
5	50%	3.04	2.98
6	75%	3.83	3.90
7	max	4.19	4.16

#	Linear Regression Fit	Values
0	Regression Coefficient	1.0258
1	Intercept	-0.0877

But it's not enough.

# ANTHA: A LABORATORY OPERATING SYSTEM



OPEN



FLEXIBLE



EXTENSIBLE

# ALLOTROPE IN ANTHA

## Workflows

MEDIA  
OPTIMIZATION

## Elements

DOE  
CONFIGURATION

PLATE  
PREPARATI  
ON

ESTABLISH  
SET  
POINTS

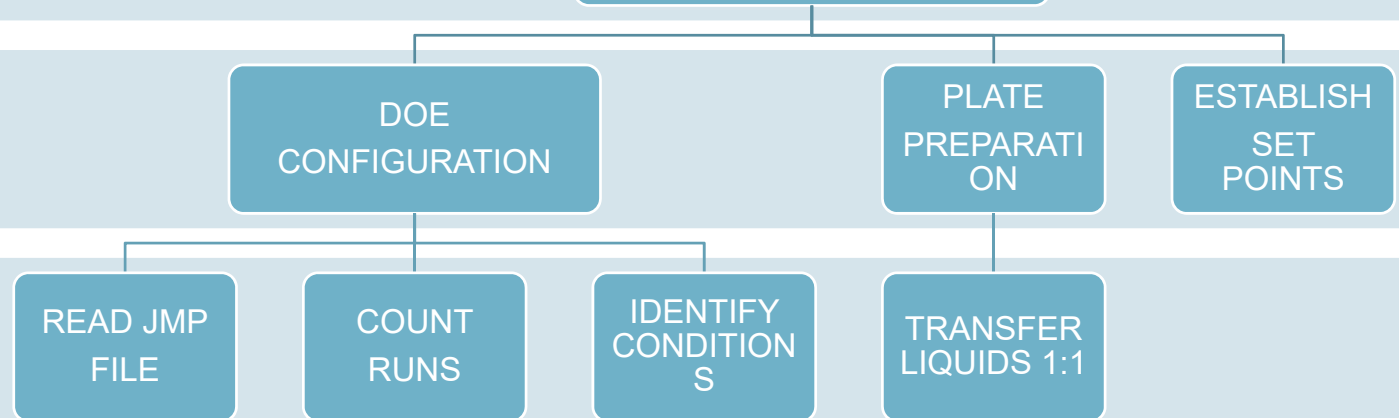
## Commands

READ JMP  
FILE









COUNT  
RUNS

IDENTIFY  
CONDITION  
S

TRANSFER  
LIQUIDS 1:1



# ALLOTROPE IN ANTHA



## Acquire Bioreactor Data

[Click to add description](#)



Element Set

Default element set ▾

Tags ▾



Search elements

file ✕



**File to Data** 

Import a **file** as a data table. Supports inputs such such as spreadsheets (XLSX **file** type) or processed analytical device data (Parquet **file** type).

data


**Data To Files** 


Makes output **files** in CSV or parquet format for a tabular view of multiple input datasets.


**Download File** 


Downloads a **file** from a specied URL.


Testing


 CLEAR

 DOWNLOAD

 UPLOAD

 CONSOLE

 CONFIG

 SIMULATE

Acquire Instrument Data Files

Parse with Ontology

Data to ADF

### Instance Parameters

[Details](#)

Element


File\_to\_Data

Instance name

Parse with Ontology

[Inputs](#)

DataFile ▾

 Acquire Instrument Data Files.FirstFile

FileType ▾

# ALLOTROPE IN ANTHA

Workflows

DATA  
ACQUISITION

Elements

ACQUIRE  
INSTRUMENT  
DATA FILES

PARSE  
WITH  
ONTOLOG  
Y

DATA TO  
ADF

Commands

SET  
POLLING  
INTERVAL

SET  
POLLING  
LOCATION

APPLY  
TRIGGER

CALL OLS

MAP  
TERMS

...



Synthace!