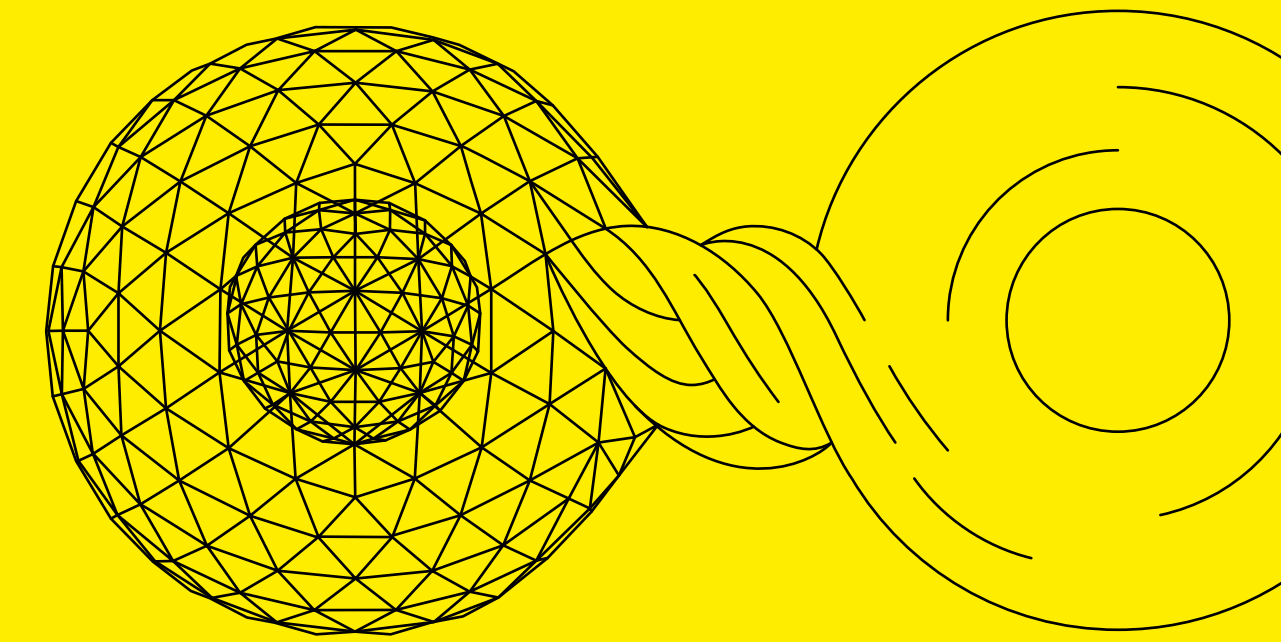


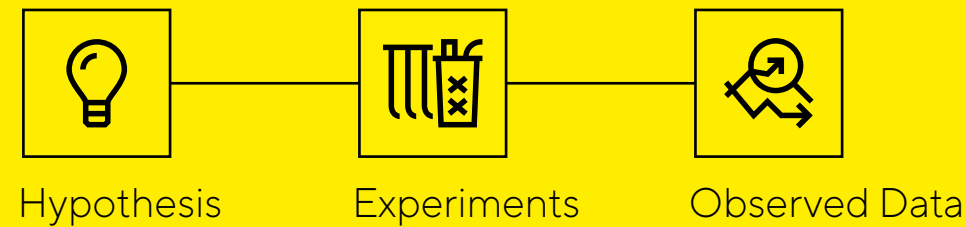
Condition Optimization for Perfusion Processes

Speed Up Your Development Process by Over 50%
With the Help of a Virtual Bioreactor

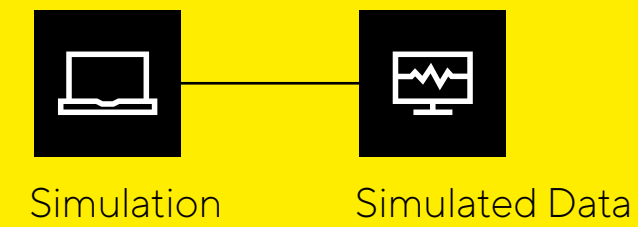


Virtual Perfusion Process: 90 – 180 Days

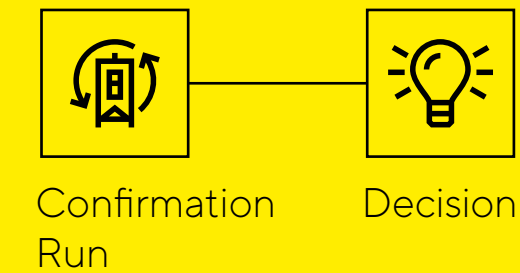
Initial Setup: 1 – 2 Months



Prediction and Analysis: 1 – 2 Months

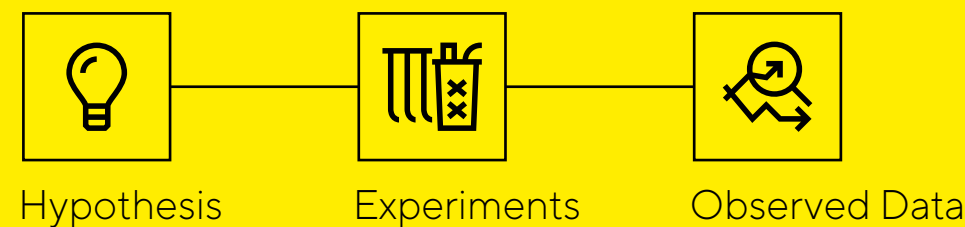


Final: 1 – 2 Months

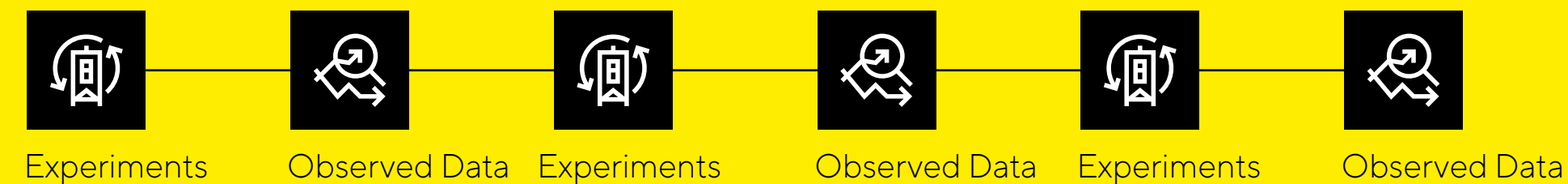


Traditional Perfusion Process: 240 – 390 Days

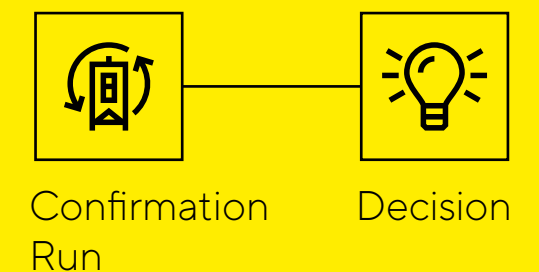
Initial Setup: 1 – 2 Months



Development Runs: 6 – 9 Months



Final: 1 – 2 Months



Illustrative Project Timeline: Theoretical project set up with the following assumptions. Initial fed-batch is 24 days from thawing first vial to harvest of first campaign. All following campaigns are 3 weeks assuming a rolling inoculum train. One week allocated for data analysis between each campaign.