



## inSis.AI

**AI Product** to meet the deep-tech needs in  
Process Manufacturing Industry



# Challenges



## **Unavailability of real-time product quality information**

Ex: Prediction of current pH value of treated water even before it is measured in the Laboratory



## **Identifying the anomalies in assets**

Ex: Detection of breakdown of a pump much earlier before it occurs



## **Finding the optimum operating parameter in real-time**

Ex: Evaluate whether it is profitable to increase fuel to increase yield



## **Summarization of operations logs, comments and activities to pin-point the issues**

Ex: The hundreds of logs written by operators. Identify developing issues that will potentially hamper the operations

# Solution

 An **AI solution** that improves **Quality, Reliability and Profitability** of process manufacturing plants

 **Quality** – Improve Quality by providing real-time quality predictions to plant operators to take necessary actions before the product becomes off-spec.

 **Reliability** – Increase Uptime by providing early warning of developing anomalies in critical assets to take preventive action to avoid breakdowns

 **Profitability** – Improve Profitability by providing optimum operating parameters to operations team

# Product Overview



**inSis.AI** an AI product for deep-tech needs of **Process Manufacturing Industry**



- ✓ Cloud or On-prem
- ✓ Subscription based
- ✓ Self-service & Role-based
- ✓ Ready-made use cases for the Process Industry
- ✓ Built-in support for Data integration
- ✓ Supports Processing on GPUs
- ✓ Scalable to multi-sites
- ✓ Seamless Integration with inSis

- ✓ **Accurate Quality Predictions in Real-time**
- ✓ **Earliest detection of failures and optimal time to act**
- ✓ **Finds most economically optimum operating region**

# Product Overview



**inSis.AI** is one platform for diverse use cases of AI/ML

## Predit

Predict Anomalies and Qualities using deep learning models and Advanced Pattern Recognition

## OptimizeIT

Use AI/ML Models to identify relationships and use it for optimization of the process

## AskIT

A natural language interface for providing various information. Assist users in their activities to be carried out using Generative AI technologies. Use NLP to summarize information and provide context

\*Few use cases are under development

## ControlIT\*

User AI/ML models to predict the future trajectory and use it for control of the process plant without human intervention

\*This module is in roadmap for future add

# Industrial Use Cases

For **inSis.AI**

## Maintenance



- Estimate the time to clean **Heat Exchangers**
- Predict a pump **failure**
- Estimate **remaining life** of a catalyst
- Do RCA based on **pattern recognition** for a compressor

## Operations



- Soft Sensors to predict critical **quality parameters**
- Provide **optimal process conditions for an increased yield**

## Safety and Asset integrity



- Identify operational scenarios to **mitigate the risks in process safety**
- Analyse **leaking patterns** in a heat exchanger or reactor

## Sustainability

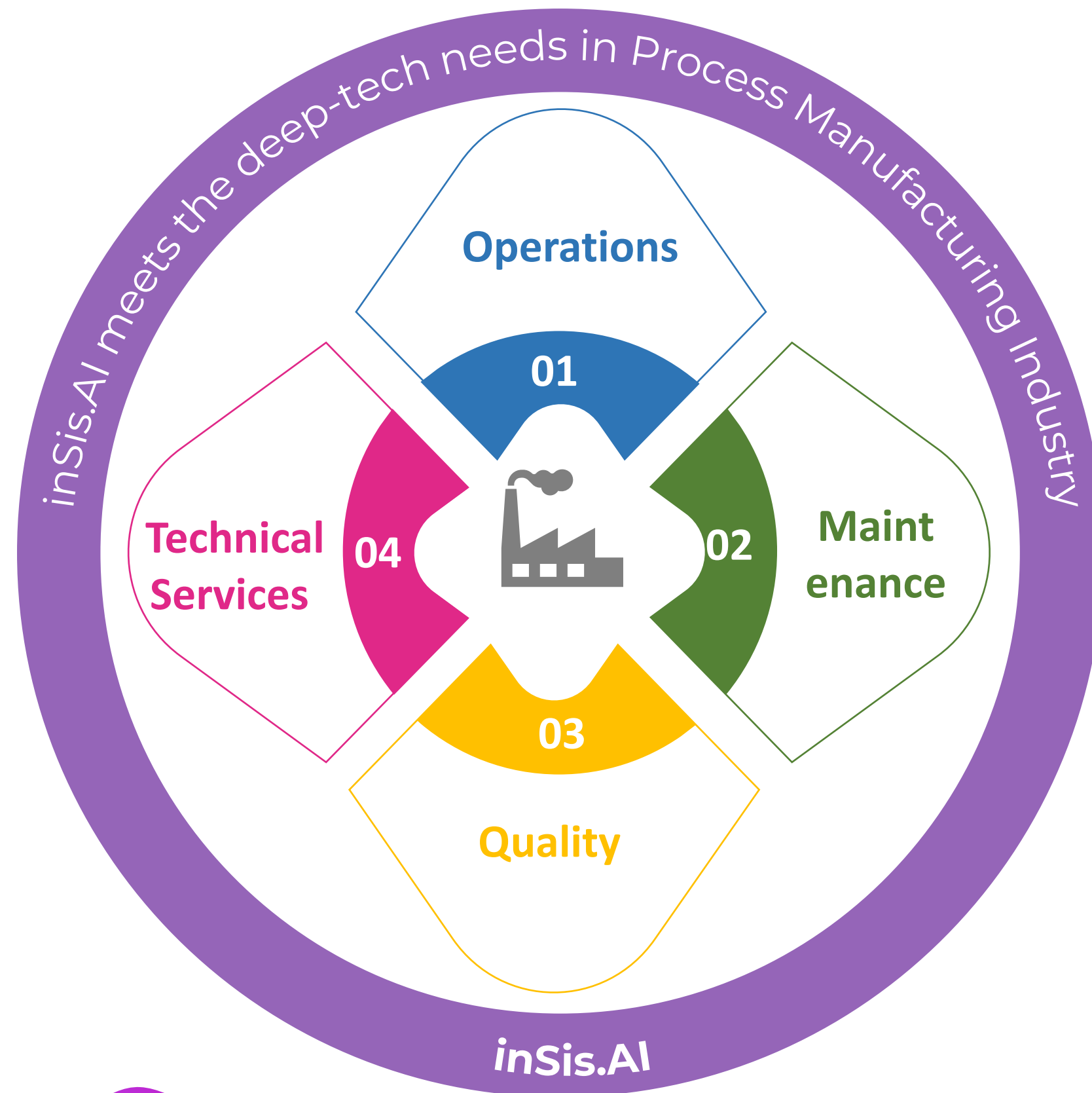


- Estimate impact on **environment** due to change in process conditions
- Minimize the energy costs and contribute to the **Net-Zero** emissions

# Integrated platform for Digital Transformation



Meets various needs across **Operations**, **Maintenance**, **Quality** & **Technical Services** in your Digital Transformation Journey



**Connected-worker Platform**  
**Digital Operations Logbook**  
**Safety Interlock Bypass Management System**

**Digital Maintenance Check-Lists**  
**Asset Performance 360**

**Laboratory Information Management System**  
**AMADAS – Analyzer Management**

**Performance Management System**  
**Data Analytics, Reports & Anomaly Notifications**  
**Native Mobile Apps**

**inSis.AI - platform for diverse use cases of AI**

# Product Overview

**inSis Suite** and **inSis.AI** are seamlessly integrated

## inSis.AI

Uses the power of AI to bring immense value from data, help optimize, enable easier and quicker operations etc.



## inSis Suite

Enables digitalization and digital maturity, Streamlines processes, Improve data availability and quality etc.

Artificial Intelligence

Digital Transformation

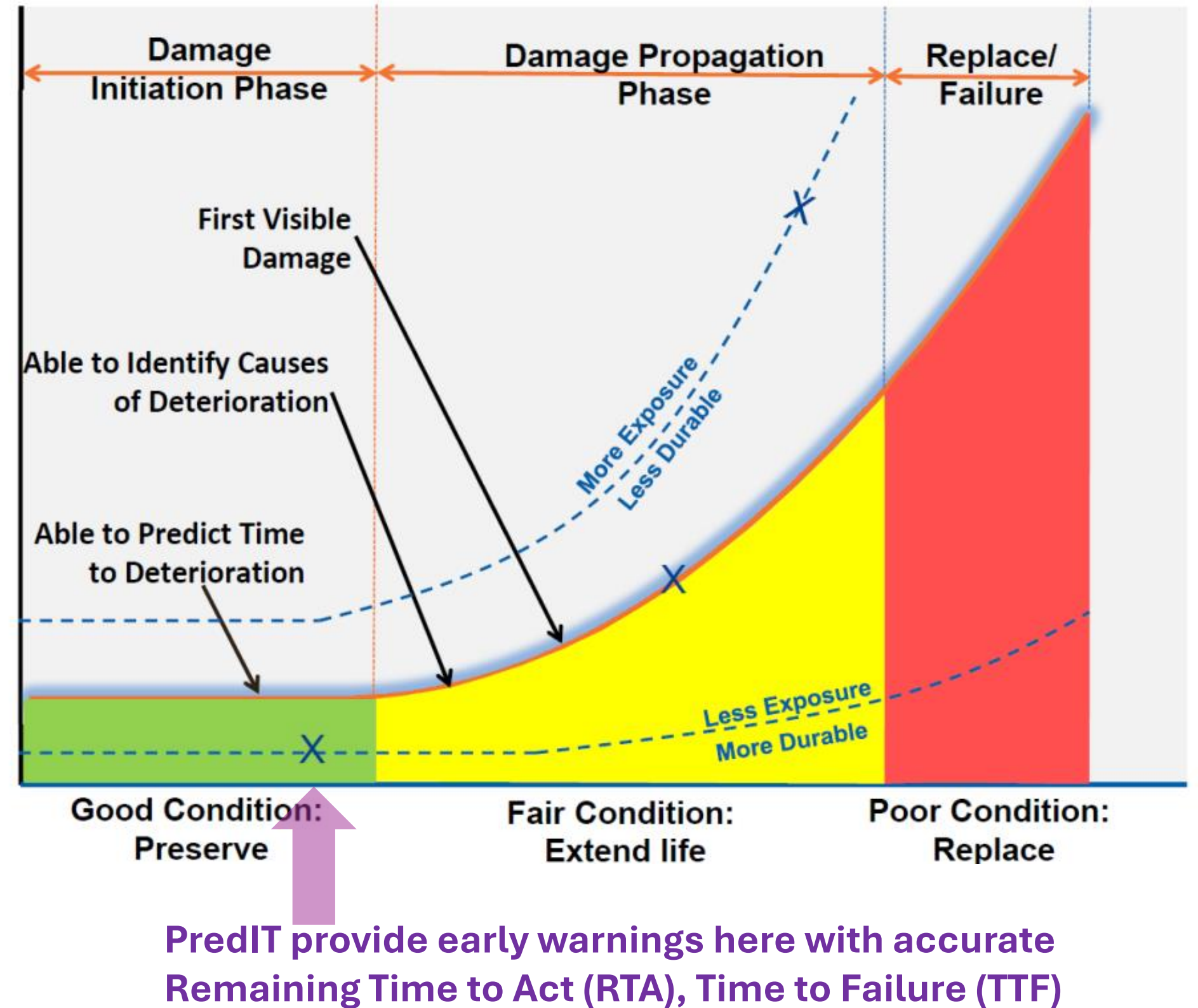
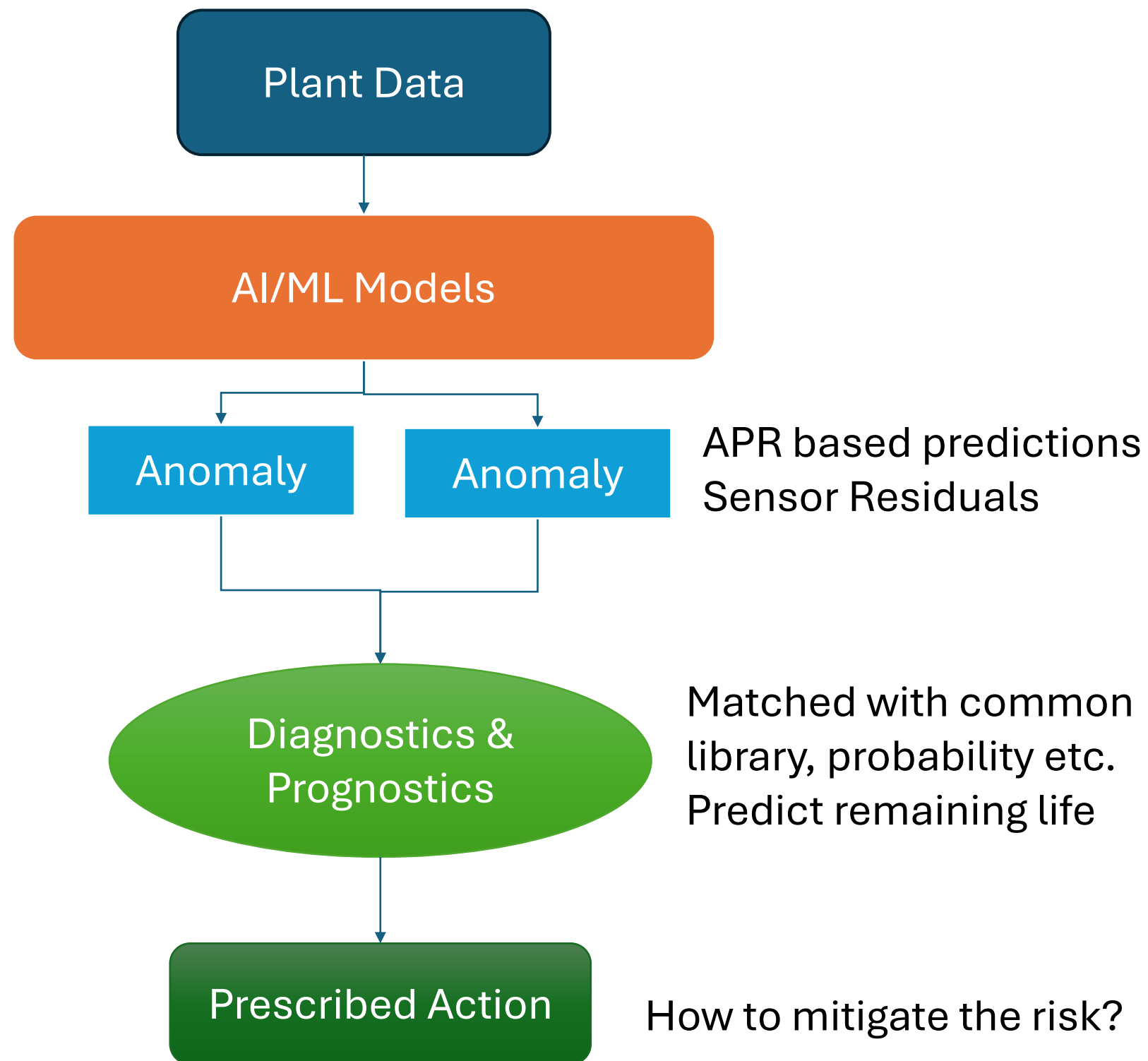


## Process Manufacturing Industry

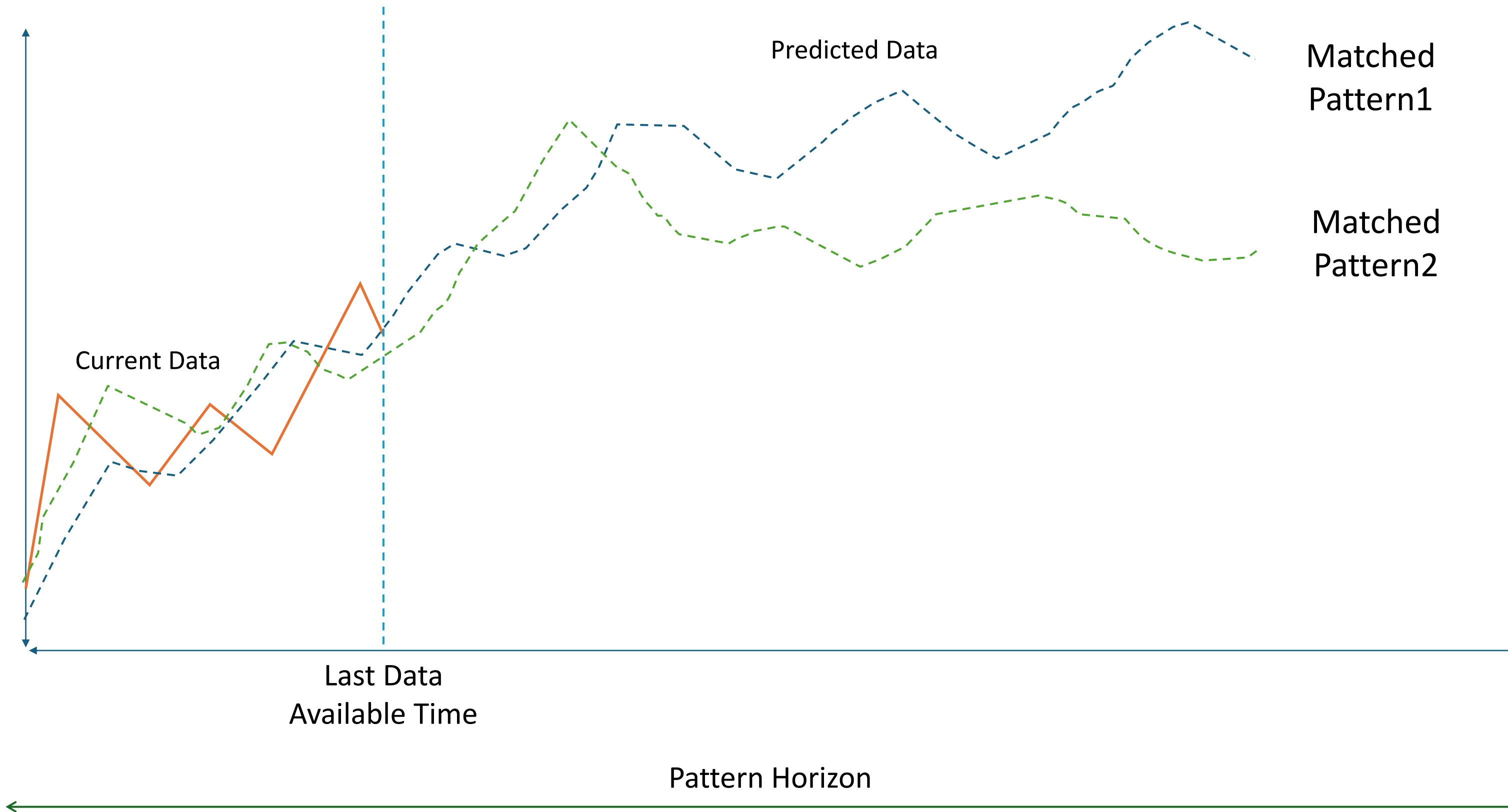




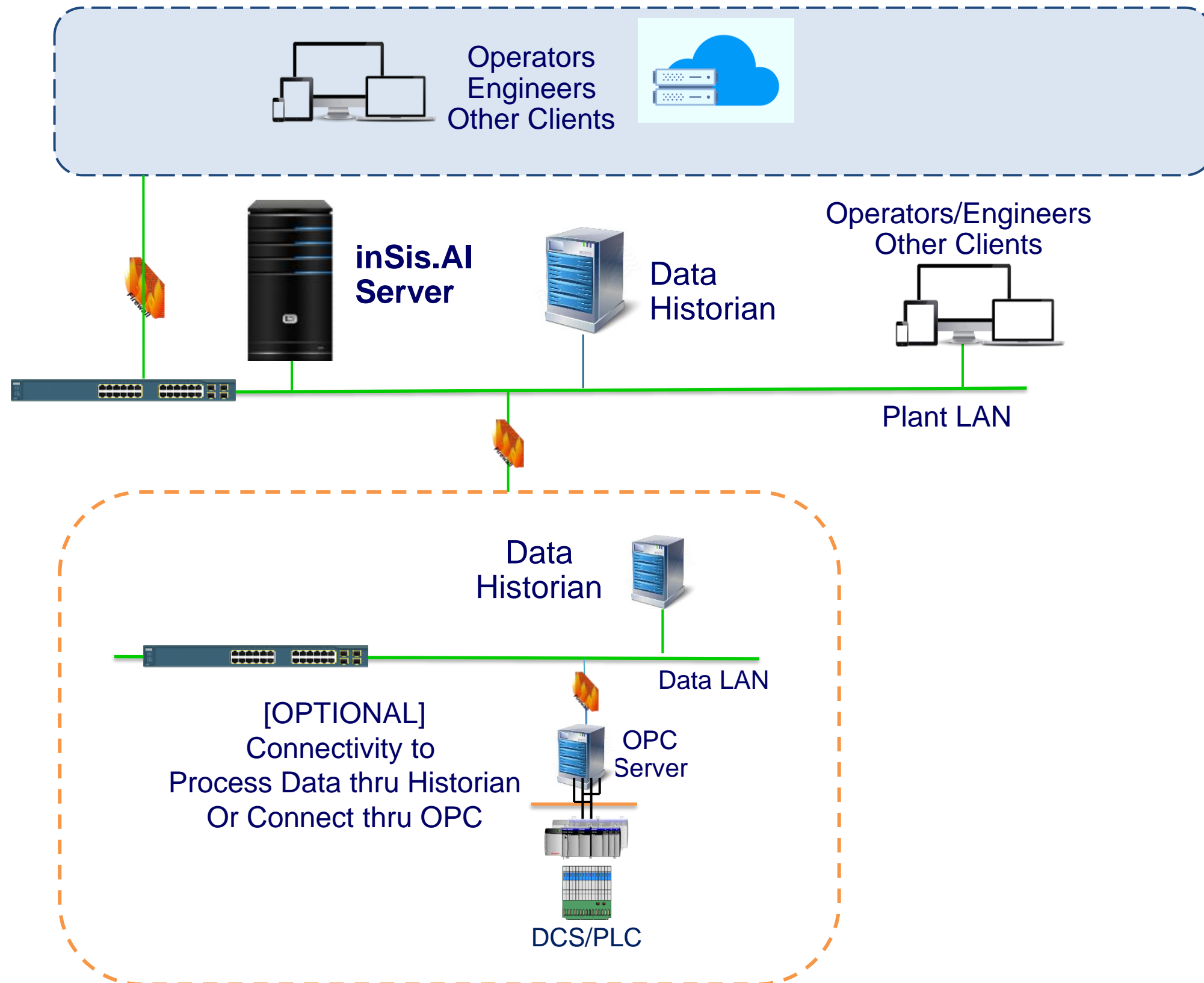
# How APR works?



# Prediction horizon



# System Architecture



- Real-time process data is collected from DCS/PLC/Historians
- inSis.AI reads data from Historians and used to build the models
- inSis.AI use APR Models (PredIT Module) to predict the Anomalies and generate early notifications
- Heat Exchanger Fouling is evaluated and used to identify the patterns using APR Models
- Use these APR Models to predict the failure horizons

# Thank You

Join hands to help industry get more  
**productive and profitable !**

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