PDF SOLUTIONS™

# Process Control™

## Reduce factory variability and excursions at the tool level

## Overview

Exensio® Process Control (E-PC) is one of the four primary modules of the Exensio® Analytics Platform. This industry-leading module enables Fault Detection and Classification (FDC) for IDMs, Foundries, Assembly, and Substrate Factories to identify, diagnose, and prevent tool problems at the tool and factory levels.

## Comprehensive Factory FDC Process Control

Exensio® Process Control provides a scalable, big data platform for tool FDC data collection, managing the large volumes of data generated from a high-volume factory in a semantic data model. By linking tool sensor and MES data, E-PC provides SPC (statistical process control) and OCAP (out-of-control action plans) early detection & alarm capabilities, advanced analytic capabilities for tool matching, predictive modeling, and preventative maintenance optimization to reduce process variability, yield excursions, and cost.

## Online Control Combined With Offline Analytics

Exensio Process Control has both online and offline capabilities. For online/on-prem needs, E-PC provides real time FDC data collection from tool sensors and enables SPC alarming and the automated detection of excursion events.

Exensio Process Control also provides offline analytics for sensor level diagnostics and drilldown, factory dashboard reporting, as well as advanced capabilities like AI/ML response modeling, virtual metrology, PM predictions, and linking upstream/downstream data to gain additional insights into critical operational KPIs.

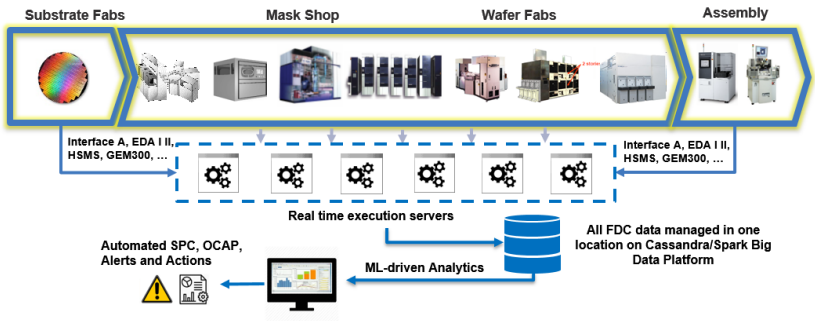
## Product Highlights

- Over 40,000 process tools currently under PDF Solutions online control
- Up to 40% reduction in tool and process excursions
- Up to 20% CPK improvement from FDC process control (tightened distribution)
- 6-month faster process transfer and fab ramp-up using trace-based tool matching
- Up to 10x engineering efficiency improvement in FDC & APC set-up and maintenance
- Online control & offline analytics (real-time, trace & summary FDC)
- Advanced analysis, AI, ML, SPC, OCAP, dashboards, automation
- Reduced maintenance resource costs and requirements with predictive PMs
- Link FDC data with upstream and downstream data to gain additional insights

# Exensio Process Control

## Superior Data Collection Quality

Exensio Process Control is built on decades of experience integrating 150, 200, and 300mm toolsets using OPC, HSMS, SECS/GEM, and EDA standard communication protocols. E-PC can handle data collection variations across industry tools and MES vendors at all technology nodes while providing stability, reliability and ease of use.




## Powerful Semantic Data Model

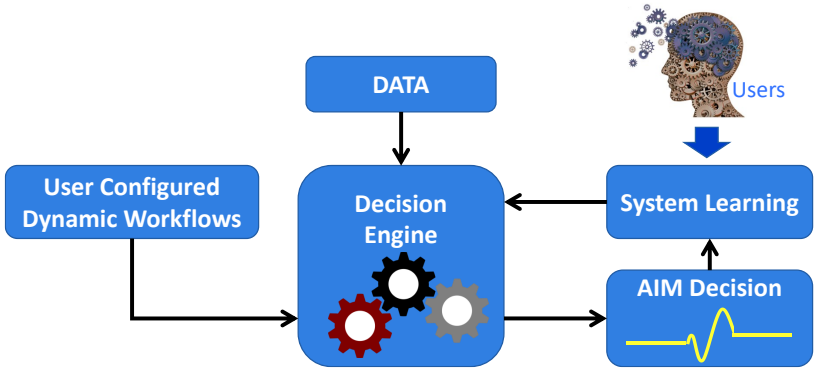
Exensio Process Control groups similar factory tools together (e.g. Equipment Type, Module Type, Recipe Alias, Sensor Alias) to achieve up to a 10x improvement in modeling and maintenance efforts. This enables straight-forward tool matching applications and the ability to link the data to other data types for response modeling.

## Reporting, Automation and Guided Analytics

The Exensio platform provides a flexible and interactive reporting and dashboarding environment. Workflow Automation Services and Webplayer allow for the automation and visualization of reports as well as viewing those dashboards/reports in a browser or mobile device.

## Advanced Insights for Manufacturing (AIM)

PDF Solutions also can provide an entire solutions infrastructure based around the Exensio platform; AIM is designed to deliver a complete solution that combines AI/ML and collaborative learning with the Exensio platform to drive specific targeted outcomes that are essential to every unique customer.




## Additional Modules for Process Control

- Manufacturing Analytics™
- Guided Analytics
- Advanced Control
- Real-time Control
- AIM Equipment Trouble Protection
- AIM Yield Aware FDC

**For more information about these modules or solutions, contact your local sales representative or visit pdf.com**

**Exensio visualizations Powered by TIBCO®**

PDF/SOLUTIONS™

**Corporate Headquarters:**
PDF Solutions, Inc.
2858 De La Cruz Blvd
Santa Clara, CA 95050 USA
+1-408-280-7900
https://www.pdf.com

Worldwide office locations