

## SmartFabs Corporation

# SmartSim™

SmartSim an event-driven fab simulator at lot-chamber level. It precisely models machines, wafer lots, work flows, etc., and produces detailed track-in-track-out logs. It is a digital twin of your fab, and allows you to predict inefficiency, analyze operations, and optimize performance. SmartSim is world's fastest fab simulator, thus enabling unlimited applications.



### Benefits

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- Predict fab operation for next day, next week, or next month.
- Forecast scenarios of machine up/down, wafer starts, product mix change, scheduling policy change, Q-zone Kanban settings, etc.
- Decide daily move targets to maximize equipment efficiency and on-time wafer outs.
- Give early warning of WIP build up, machine idle, or Q-time violation.
- Help in-house scheduling policy development.
- Assist equipment purchase and capacity expansion.
- Orders of magnitudes faster than all event-driven simulators in the industry. Enables many applications.



### Features

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- Event-driven simulation at lot and machine chamber level.
- Detailed simulation results in the form of track-in-track-out log.
- Large collection of scheduling policies, and allow customer's policy.
- Machines up, PM down or random down based on probability.
- Usability, WPH and setup time defined for machine×recipe×lot.
- Machines may have serial, pipelined or parallel chambers, and ports.
- Lots may split, merge, go through optional rework or metro steps.
- Possible to define complex product flows, and master-slice flows.
- Lots may have priorities, due date, waiting time, Q-time and hold time.
- AMHS is included to model delay and congestion between fabs.



### Interfaces

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- Safe interface with your MES.
- Easy to be called from customer's applications.
- Allow customer's scheduling policy.



### Risk-Free Adoption

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- Performance validated and ROI quantified before payment.
- Free demo and free trial.

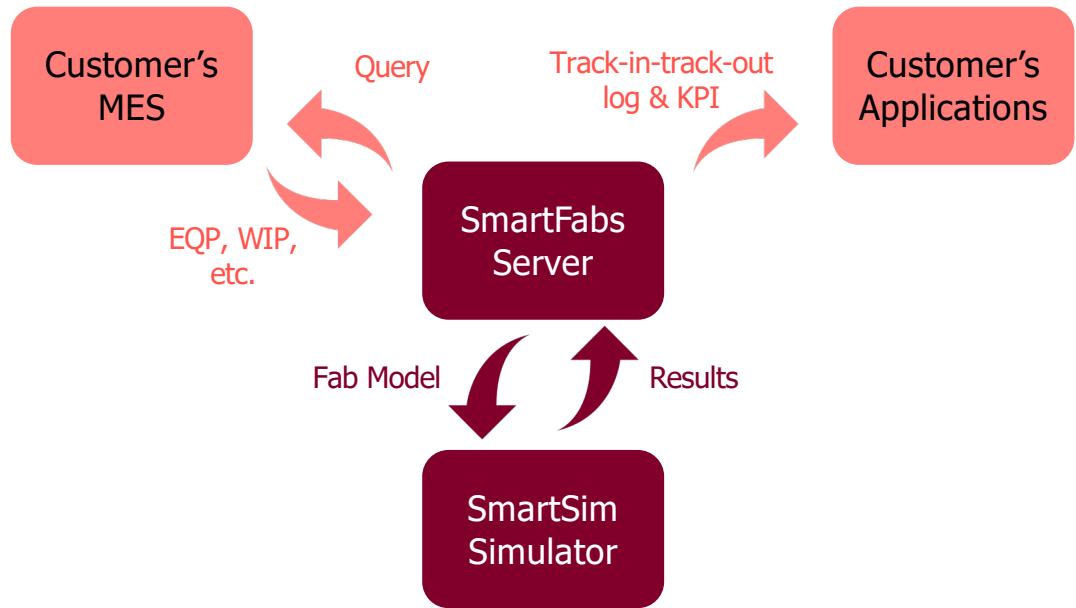


### Support & Service

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- Customer support hotline 24/7 world-wide.
- Customization available.

## System Architecture and Interface



### An IDM Case Study

- One of world's largest IDM fab at >300,000 WPM capacity.
- Thousands of machines organized in more than 100 groups.
- AMHS between buildings and floors.
- Each machine group has its own scheduling policy.
- Very tight Q-time control, flow control and wafer out target.
- The fab has been using SmartSim since 2016 for its daily operation, PM planning, capacity expansion, etc.

### A Foundry Case Study

- One of world's largest foundry fab at >100,000 WPM capacity.
- Fab model automatically generated and updated daily.
- Decide daily wafer starts, move targets, open/close usability, etc.
- In production use since 2018.

	Wafer out	Stage Move	Bottleneck Move	Key Group Move	WIP Profile
Accuracy	98.0%	99.9%	99.9%	98.5%	95.0%

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