



为客户创造价值

KSM Advance Track Development And Application

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Part 1

KSM introduction

■ Company Profile

No1 Native Track Supplier, Build up native supply chain for Track

Basic Information

- Found in 2002 ,started from Shenyang Institute of Automation, Chinese Academy of Sciences.

Star Market

- IPO on Sci-Tech innovation board on Dec-2019

Product

- spin coater/developer, spray coater, scrubber, wet etcher, single-wafer cleaner

Major Customer

- SMIC、TSMC、HLMC、JHICC、YMTC、CXMT、SIEN, Silan、YDME、JSJ、Hua Tian... Manufactory Fab

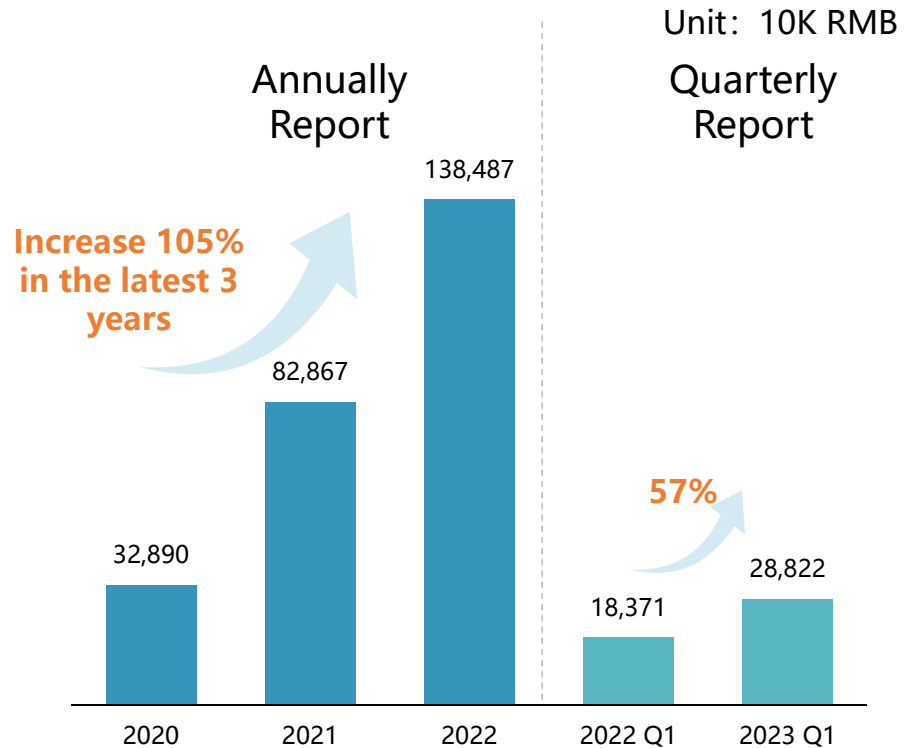
Industry Status

- Reward as Top-5/Top-10 National Semiconductor Suppliers in the latest years consistently.
- Only one native supplier which can provide advance model Track fitting for immersion Process.

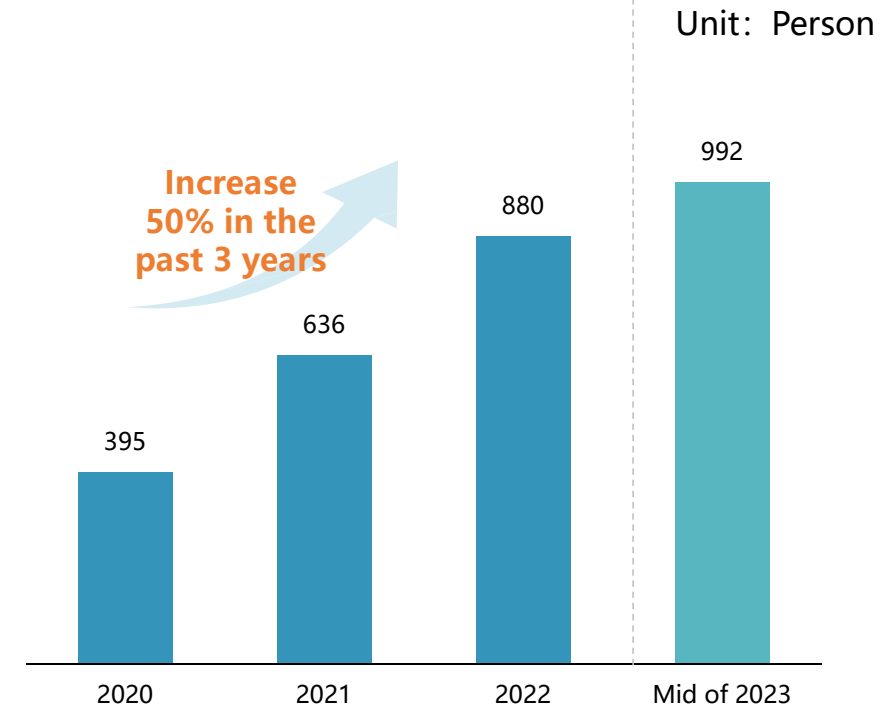


Company Revenue and Scale

Business income



Company Scale



- ◆ KSM growth consistently in 2022, annual income ~14 hundreds million RMB, year to year growth 67%, Net income: 2 hundred million RMB, Increasing 160%.
- ◆ In 2022, sales order reach to 22 hundreds million RMB, record high .
- ◆ Employees : Annual increasing 30%~50%, personal skills keep improvement , become more professional and



Part 2

Advance Track Development & Application

Track

Scanner

FOUP



Complex Mechanical Structure

- Complex Structure : **18+**function blocks /**8+** Robots
- Multiple Units : **150+**units
- Parts : **50000+**
- Fast Translation: **9000+**cycle per hour

Multiple subjects integration

- Material :Mechanical Movement ,less friction ,well partial control
- Physical : Heating, Air flow ,Pressure , liquid Control
- Electrical Signal and Software control
- Chemical reaction, Chemical storage and safety control

Cross subjects co-work

Design, material、physics、mechanics、optical、chemistry、Gas & liquid simulation、Testing and metrology、Program C++、PLC、electric technology .

Process Units

- Shorten Process time to catch up scanner exposure speed
- Long Process time in Track : increase the process units to shorten time
- Faster speed and high accuracy during robot translation.

KSM Product Evolution

◆ Product

2019
FT300-I



2021
FT300-II



2023
FT300-II+

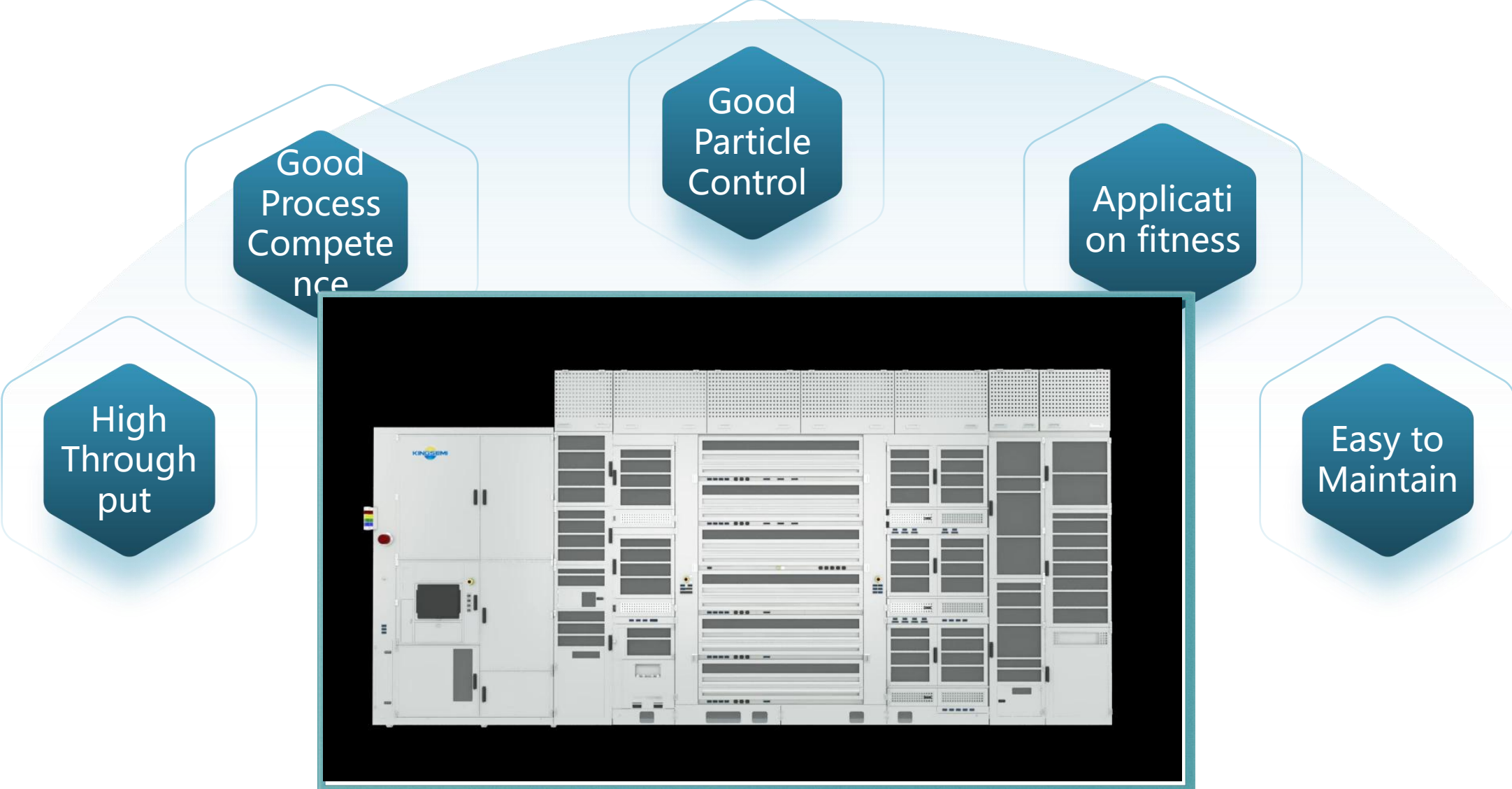


2023
FT300-III



Year	2019	2021	2023		2023.10		
Generation	Version1	Version 2	Version 2+		Version 3		
Model	KS-FT(I)300-XCXD	KS-FT(II)300-XCXD	KS-FT(II)300-XCXD	KS-FT(II)300-XCXD	KS-FT(III)300-XBXCXD	KS-FT(III)300-XCXB	KS-FT(III)300-XBXN
Process Capability	I-line	I-line	KrF/i-line	PI	ArF(ArF-i)	BARC	NTD
WPH	NA	150 WPH (future 180WPH)	250 WPH	140 WPH	275 WPH	315 WPH	380 WPH
Particle Control	NA	10@60nm	5@60nm & 10@40nm				
Stability	NA	Uptime ≥90% (future ≥95%, 2024Y)	Uptime ≥95% (future ≥98%, 2025Y)		Uptime ≥95% (future ≥98%, 2025Y)		

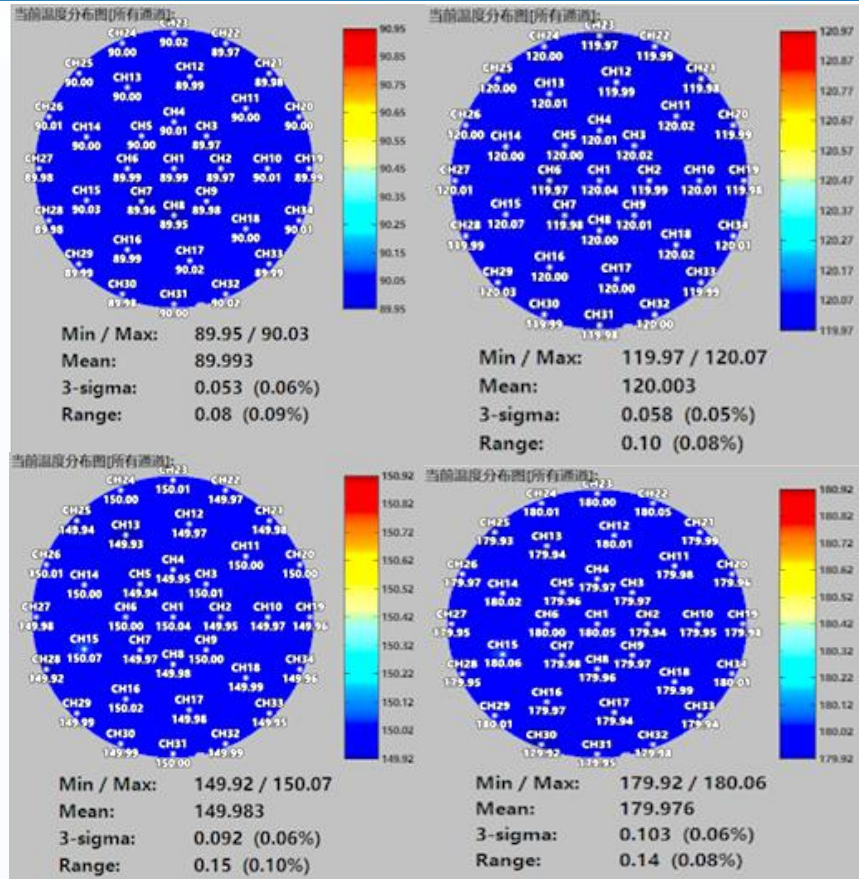
KSM Generation 3 Track Features



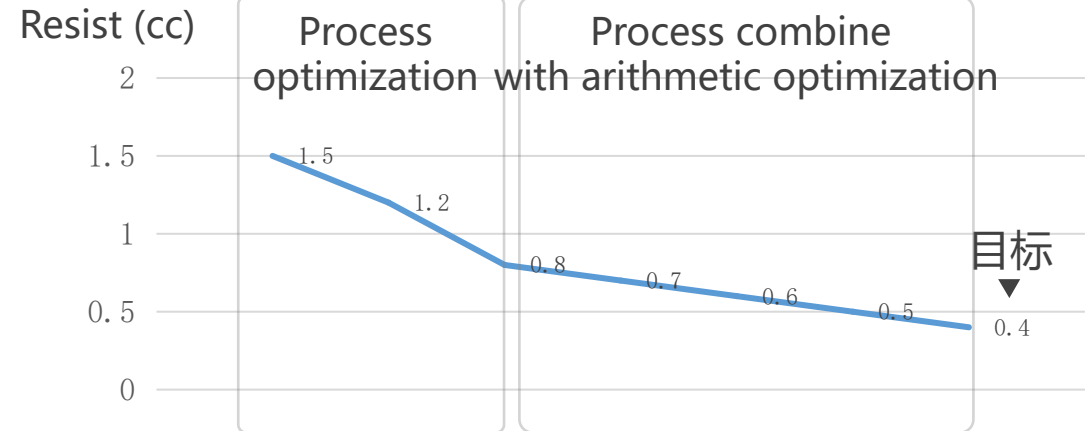
Advantage 2 : High Process Accuracy

Most uniform HP Temperature // Real time dispense volume monitor // Assistant system for defect inspection

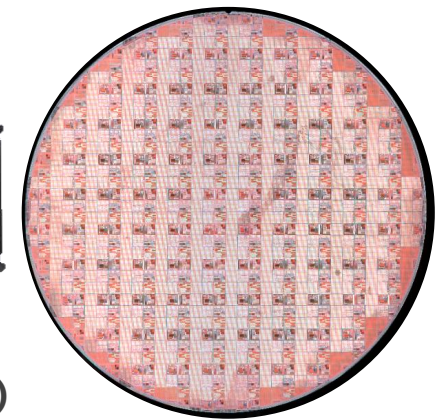
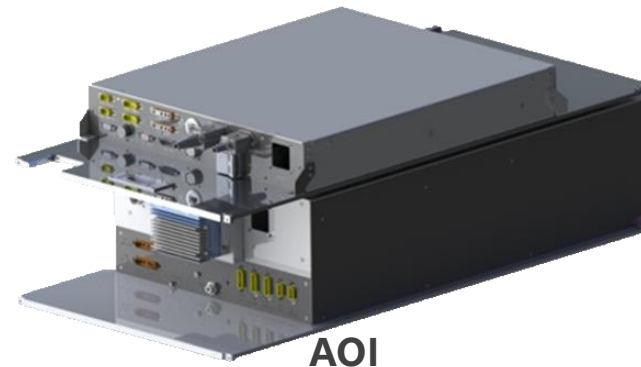
1. HP with PTM technology



2. Reduce Resist consumption Technology



3. Assistant system for defect inspection



Worldwide HP performance	KSM real performance	Comparing
70-150°C 3σ≤0.08%	70-150°C 3σ≤0.06%	Better

Advantage 3 : Easy to maintain

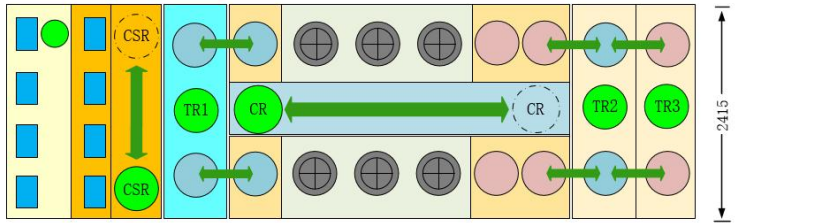
Tool flexible expansion ,WPH can reach to 360+ // Design depend on ergonomic、operation combining with AI tech

Process fitness

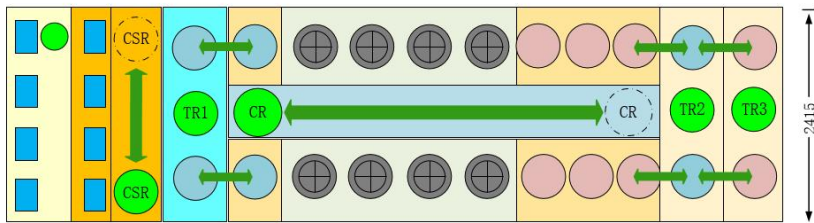
Application coverage

- Polyimide/I-line/KrF/ArF /ArFi
- NTD special DEV
- SOC、SOD、SOG

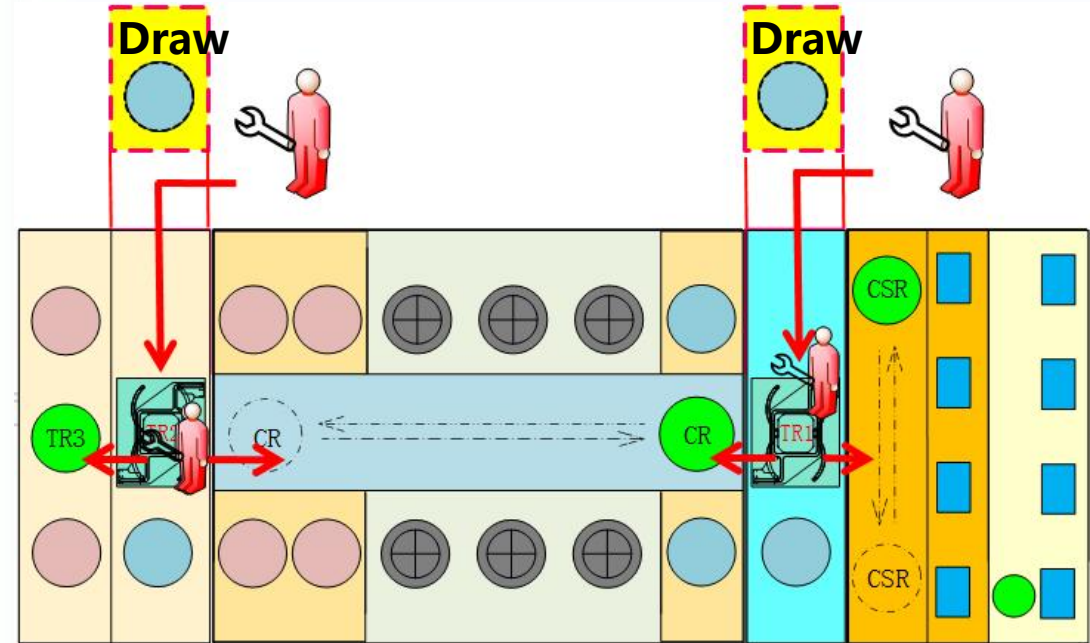
Flexible Structure for expansion



Tool expand ▼ WPH 360+WPH

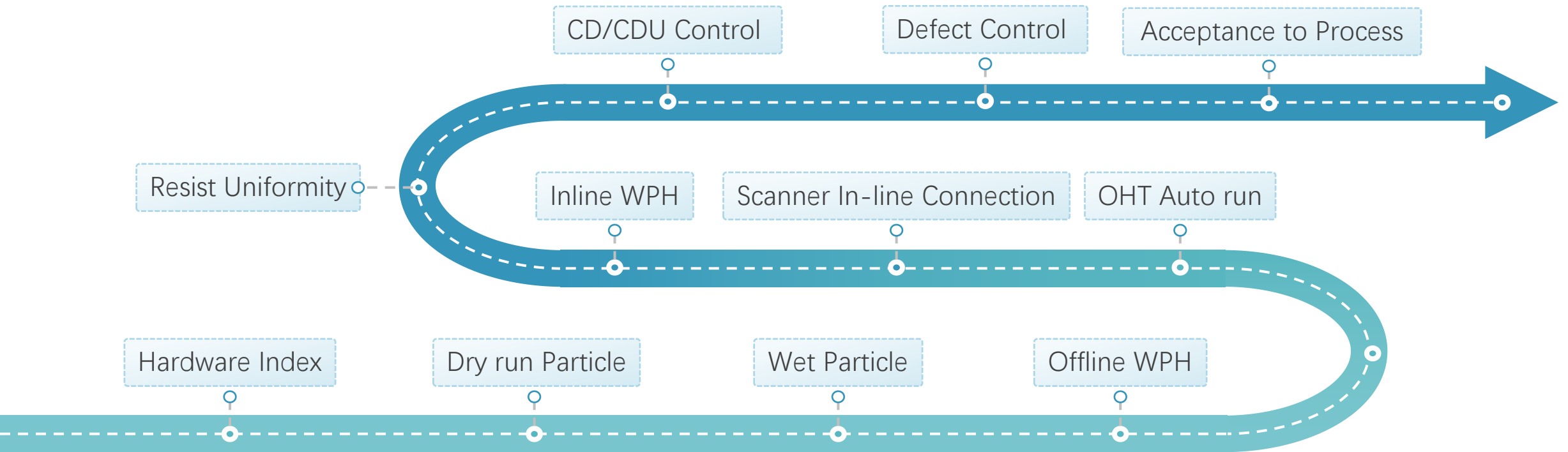


Two D Drawing system



- Advantages :
- Operation simply
 - Shorten maintenance path
 - Fast recovery

Customer Verification Flow



The above items including over 10 resists and at least 8 process layers .All of them passed customer verification ,start or prepared to production by layers .

Advance Track (Generation 3) already pass the in-line connection test with ASML immersion scanner , all process index meet customer requirement. It can fit for more advance and special process in the future , KSM breakthrough the monopoly, own the ability to build up native advance track for immersion process.

Fitness and Application

Items	Content	To ATP	To Competitor
Coating	Resist Thickness	Pass	√
	Edge clean width	Pass	√
Develop	CD	Pass	√
	Defect	Pass	√
Environment	Dry Particle	Pass	√
	Wet Particle	Pass	√
Throughput	WPH	Pass	√
	Occupation	Pass	√
Hot plate	Tem Uniformity	Pass	√

Gen	Process	Application
FT300III	28nm and beyond	Immersion
		ARF dry
		KRF with ARK
	28nm and below	Immersion
		ARF dry
		KRF with BS
		BARC tri-layer
		SOC & SOH
		NTD

FT300-III orders in 2023



➤ Until now , Total **8** set customer orders for FT300-III . One of customer start to production .

Category	Tool Type	Scanner	Customer	Set
Logic	FT300-III-BARC	NA	J***	2
	FT300-III-XCXD	ASML: NXT1980EI	J***	1
	FT300-III-BARC	NA	Y***	1
	FT300-III-BARC	NA	Y***	1
	FT300-III-XCXD	ASML: NXT2050I	Y***	1
Memory	FT300-III-XCXD	ASML: NXT1980DI	I***	1
	FT300-III-XCXD	ASML: NXT2000I	P***	1
Sum in 2023				8



Part 3

Further developing plan

Company Expansion Status

■ Shenyang FeiYun Site



Bumping、MEMS

Revenue: 10 hundreds Million

Area:18600m², Clean Room: 2100m²

Class 100K installation Room :720 m²

■ Shenyang CaiYun Site



Track、Scrubber、Bouding

Revenue: 15 hundreds Million

Area: 45576.95m²

Initial stage Clean Room:10000m²

■ Shanghai LinGang Site



Sub-Com, found in Feb-2021

Most advance Track

Single chemical clean

Customer service center



■ Shenyang ChuangXin Site

Area: 85333m²

Track, Scrubber

Predict Revenue : ~20 Hundred Mil RMB

Production capability :

1. Track > 60 sets/year
2. Scrubber > 100 sets/year

Thanks

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