



Operations and Outsourced Manufacturing

SOLUTIONS FOR THE FABLESS INDUSTRY

Complete WIP and inventory management support for semiconductor operations, including yield and cycle time history, consolidated WIP status, complete forward and backward product genealogy, complete lot and product attribute tracking, all fully integrated with planning, customer service, and ERP.

WIP Report		Report Type		Product Production	
Product Family		Inventory		Item	
All Families		All Vendors		All Items	
All Rows					
		FAB	P&B	ASV	TST
		WIP	INV	WIP	INV
Chartered	MR0000-0	0	0	1700	0
Chartered	MR0002-0	0	10	0	0
Chartered	MR0002-3	0	0	1900	0
Chartered	MR0002-5	0	10	0	0
AMFOR	MR0000-00020	0	0	0	480
AMFOR	MR0000-00020-00000-P0	0	0	0	0
	(H) PRODD0000K28	0	0	0	0
AMFOR	MR0000-00020-00000-P0	0	0	0	0
Totals:		0	20	3600	480

**WIP Report –
Production Summary**

**WIP Report –
Production Summary**
*Consolidated Inventory
across vendors,
production stages,
and product families*

Yield Analysis		Report Type Yield by Attribute Set									
Report Date		Yld Date									
01/01/2008		12/31/2008									
				Run	Excel						
Attribute Set Name	Output Name	Completion OK	In Qty	Out Qty	Yld Loss	Yld Loss	Opp Yld	Att Yld	Varianc		
PRODUC-B000A10	AR-GUS-09A216		1600	1590	0	20	99.00%	98.75%	0.25%		
	AR-GUS-P		4000	3400	600	0	80.00%	85.00%	-5.00%		
CH00002	PR-0000000620	03/07/2004	2000	1400	400	0	80.00%	80.00%	0.00%		
CH000024	PR-0000000619	03/30/2004	2000	1800	200	0	80.00%	90.00%	-10.00%		
AR-GUS-W1	AR-GUS-W		30	30	0	0	100.00%	100.00%	0.00%		
AR-GUS02-S13	AR-GUS02-S		2000	1900	100	0	90.00%	95.00%	-5.00%		
AR-GUS03-W09	AR-GUS02-W		40	40	0	0	100.00%	100.00%	0.00%		
			6183	5688	472	23	96.23%	91.94%	-5.21%		
			20351	19759	491	101	97.00%	97.09%	-0.09%		
			4255	4004	112	119	99.00%	94.55%	4.45%		
	MOS-IRT		647	631	11	5	100.00%	97.53%	2.47%		
	MSE		4119	3433	278	308	98.00%	88.30%	8.80%		
	FB		23089	21133	1876	81	100.00%	91.92%	8.08%		

Yield Analysis by Product Family

Yield analysis by product, product family, part, vendor, lot, and production attribute

Genealogy Report							
Completion Date	Process/Rev	Attrib Set/Rev	Resulting Item No	Responsible Company	Company Location	Input Units	Output Units
07/26/2004	FAB-TSMC/1	R5000/1	R5000	TSMC	TSMC TW F1	25	25
Collected Attribute							
		Attribute Name		Attribute Value			
		Vnd Lot		T39B4901			
		Vnd Lot		T39B4901			
		Wafer Lot		12 inch			
		Wafer Size		MSK-R5000 ver A			
		Mask Set ID		PRC FB R5000 ver A			
		Proc Flow ID					
Completion Date	Process/Rev	Attrib Set/Rev	Resulting Item No	Responsible Company	Company Location	Input Units	Output Units
08/06/2004	SKY-ASE/1	R5000-P/1	R5000-P	ASE	ASE KS	5000	4396
Collected Attribute							
		Attribute Name		Attribute Value			
		Vnd Lot		ASA424423			
		Test Prog		TST PRB R5000 ver B			
		Test Temp		ROOM			
		Proc Flow ID		PRC PB R5000 ver A			
Completion Date	Process/Rev	Attrib Set/Rev	Resulting Item No	Responsible Company	Company Location	Input Units	Output Units
08/19/2004	ASY-ASE/1	R5000-BGA249/1	R5000-BGA249	ASE	ASE KS	2036	2013
Collected Attribute							
		Attribute Name		Attribute Value			
		Vnd Lot		ASA421607.2			
		Date/Trace Code		2004W33			
		BOM ID		BOM R5000 BGA249 ver B			
		MRB ID		ASY MB R5000.BGA249 ver C			
		Mask Spec ID		MRB BGA ver E			
		Num of I/O		249			
		Pkg Outline		23 x 23			
		Pkg Type		BGA			
		Proc Flow ID		PRC ASY R5000 BGA ver B			
		Sub-LF ID		BGA249 SUB ver C			
		Equipment**		Lead-Fire			

Product Genealogy
 Lot and unlimited
 production attribute
 tracking, forward

Product Genealogy
Lot and unlimited
production attribute
tracking, forward and
backwards traceability

Streamlines Business Processes

Lot routing, procurement, and inventory valuation are integrated into one transaction flow, eliminating unneeded steps and streamlining the overall outsourced manufacturing process.

Supports Semiconductor Manufacturing

Production models are based on an inverted BOM and many to one production model. Multiple production models, yield and cycle time requirements, binning and multiple package options, as well as downgrades and rework, are all fully supported.

Delivers Full Lot Genealogy

Wafer lot, internal lot, and vendor lot can be tracked for every step in the process. Unlimited production attributes can be tracked and used for detailed analysis. Every part has full genealogy associated with it at all times.

Tensoft™
**Fabless Semiconductor
 Management (FSM)**

Industry-Specific
 Manufacturing, Supply Chain,
 and Logistics Management

FEATURES OVERVIEW

Operation Cycle Time Management

Ability to track cycle time data by product, vendor, production step, and product variables for detailed sorting and analysis.

Streamlined Processes

Integrated procurement, production, and lot routing business processes, to streamline management of outsourced production.

Operations Yield Management

Ability to track yield data by product, vendor, production step, and product variables, for detailed sorting and analysis.

Vendor Integration

Automated updates from vendors and contract manufacturers to status WIP and inventory, and for real-time analysis of vendor data. Enables improved data quality and supports on-time delivery.

Lot Routing (Split/Merges,
Genealogy)

Track wafer lot, vendor lot, and internal lot at every step of the production process. Maintain and track complete lot history, product identification and process genealogy, for forward and backward tracking. Fully supports lot splits and merges.

Semiconductor Production Model

Support for multiple units of measure including input, output, and procurement. Built around the concept of the inverted bill of materials. Support for genealogy, and multiple packaging options.

Multi-Chip Module

Support for multiple die in one package. Includes indented genealogy and consigned material consumption management for tracking substrate lots or other production materials.

Re-work, Re-Screen, Re-Test

Supports test analysis and production enhancement, reclamation and bonus processes, as well as re-test and re-screen production processes. Captures detailed scrap and yield information, quarantine material, and variances.

Fully Auditable

Tracks and saves a complete process history of every vendor and production step, including detailed product and production information by step.

Easy Integration

Full integration with planning and forecasting modules. Flexible integration options for integration success, providing benefits such as a closed loop process for 3-way match of order to approved production completion, to vendor invoice, and production pay-points fully integrated with payables process.

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