

# **EPC** FIELD TEST

# BOARD OF OVERSEERS MEETING 13, 14 NOVEMBER 2002 CAMBRIDGE, MA

**SILVIO ALBANO** 



# PAST 4 MONTHS HIGHLIGHTS

- Three new sponsors added
- Project is on budget
- Phase I complete
- Phase II completely installed and operational
- Home Depot added to Phase II
- Phase III implementation in progress
- Japan Field Test operational
- No additional test planned



# **PARTICIPATING SPONSORS**

END USER		TECHNOLOGY	
Kimberly Clark	Kraft Foods	Rafsec	Invensys
International Paper	YFY	Savi	NCR
Johnson & Johnson	Coca Cola	Checkpoint	SAP
Procter & Gamble	<b>Home Depot</b>	Philips	Matrics
The Gillette Co.	Wal-Mart	RF Saw	Sun
Kimberly Clark	Westvaco	Sensormatic	Alien
Dai Nippon	Unilever	Markem	
Chep	iep Siemens/Dei		tics
<b>Toppan Printing</b>			
<b>Target Corporation</b>			
	UCC/FAN consul	ting ONLY (NON PAYING)	



## **FINANCIALS**

• RECEIVED \$ 1,703,000

• SPONSOR COMMITMENTS \$ 161,000

TOTAL \$ 1,864,000

• SPENT \$ 818,000

• COMMITTED \$ 449,000

TOTAL \$ 1,267,000



# FIELD TEST GUIDE LINES

 No new members as of the end of November

 Field Test to be completed by the end of June 2003



## FIELD TEST RECAP

- Phase I highly successful in proving functionality of Savant and ONS
- Phase II
  - Successful in proving out aggregation
  - Pointed out the need for 100% proof of reads
  - Highlighted the difficulties in the real world with interference
  - Highlighted the need for process changes
  - The infrastructure in phase II was needed as a foundation for Phase III
  - Phase II must be completely debugged and functioning for Phase III to work
- All learning to date will be instrumental in future installations



## PHASE II INSTALLATIONS

- Gillette (Romeoveille, IL):
  - 1 exit door and manual case aggregation
- Unilever (Baltimore, MD):
  - 1 exit door and automatic case aggreagtion
- Johnson & Johnson:
  - 1 exit door and manual aggregation
- Procter and Gamble (Cape Girardeau, MO)
  - 1 exit door
- Sam's Club (Tulsa, OK):
  - 5 entry doors
- Wal-Mart (Broken Arrow, OK):
  - Entry doors, back to front portals and compactor door



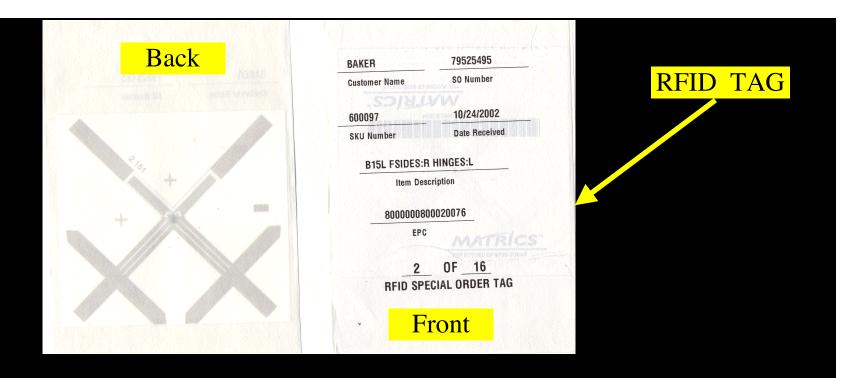
#### PHASE II INSTALLATIONS

- Sam's DC (Kansas City, MO)
  - 2 exit doors
- Wal-Mart DC (Bentonville, AK)
  - 1 exit conveyor
- Pilot Facility
  - 1 exit door and aggregation conveyor
- Coca Cola (Cleveland, TN)
  - 1 exit door, and automtic aggregation
- Home Depot
  - 1 cage door, shelf reads and printing lableler

**NEW** 



## HOME DEPOT SPECIAL ORDERS APPLICATION



Special orders will be *EPC* coded and tags will be printed and placed on the product Special Orders will be read going through the special orders cage door Time delay alerts associate if order has not been placed in cage within a time segment Special Orders will be read on the shelf in cage



## **HOME DEPOT SUMMARY**

- 200 special orders tagged as of November
   150 pre existing orders
   50 new arrival orders
- All new arrivals read going through cage door
- All orders 100% reads on shelf
- 40 items read exiting cage door and going to customer



## PHASE II HARDWARE

• INTERMEC Gillette, P&G, Unilever, Sam's Club and Sam's DC

• MATRICS J&J, Pilot Facility, Home Depot Wal-Mart Store and Wal-Mart DC

• THINGMAGIC/MARKEM -- ALIEN/RAFSEC Coca Cola



# PHASE II SUMMARY

- Gillette (Romeoveille, IL):
  - 100% reads at door and manual aggregation
- Unilever (Baltimore, MD):
  - **100%** reads at door and automatic aggregation
- Johnson & Johnson (Olive Branch, TN):
  - 100% reads at door and manual aggregation Feed back loop system working
- Pilot Facility (Bentonville, AK)
  - **100%** manual aggregation (one product)
- Coca Cola (Cleveland TN)
  - **100%** aggregation (test only)
    - System to be reconfigured for ease of process
- Home Depot (Boston, MA)
  - 100% reads at cage door and on storage shelf



#### PHASE II SUMMARY CONTINUED

- Procter and Gamble (Cape Girardeau, MO)
   Less than 100% Interference problem.
- Sam's Club (Tulsa, OK): Less than 100% - Interference problems
- Wal-Mart (Broken Arrow, OK):
   System installed and working in play next week
- Sam's DC (Kansas City, MO)
   Less than 100% Process problems
- Wal-Mart DC (Bentonville, MO)
   System installed and working in play next week



## PHASE II SUMMARY

- The Field Test to date has proven that Auto-ID technology works as expected.
- All difficulties encountered are related to:

Hardware: Defective tags

Vendor evaluating cause

Process: people reliability in following procedures

100% feed back loop helping but will not be in all installations

Interference: Auto-ID playing in the same frequency as

existing systems

Fix not easy and determined not worth effort for field test

Installation robustness: antenna damage

Requires costlier installations



## PHASE II NEXT STEPS

• Run Phase II through the end of 2002 with the emphasis of optimizing the supply chain for phase III start for:

Read accuracy

Aggregation efficiency

Process efficiency



#### PHASE II - NOVEMBER-DECEMBER

Sam's Club Supply Chain

Complete 6 or so shipments of Bounty Paper Towels ex Cape Girardeau

Conduct several aggregation at Gillette

Continue routine shipments of Liquid All ex Unilever's Baltimore DC

Evaluate data gathering at Sam's Club and DC

Sam's Club Supply Chain will be shut down at the end of December



# PHASE II - NOVEMBER-DECEMBER

Coca Cola Supply Chain

Retrofit Coke shell with first shipment of Phase III Alien/Rafsec tags

Reconfigure process installation

Focus on effectiveness of low cost technology

Accuracy

Speed of reads

Robustness

Use learning as base for other Phase III installations



#### PHASE II - NOVEMBER-DECEMBER

Wal-Mart Supply Chain

Perform more aggregation at pilot facility

Activate complete supply chain

Obtain continuous reading through supply chain

Generate meaningful data needed to understand system efficiency.



# JAPAN FIELD TEST (DNP)

- Started reading EPC on September 6
   Read 187 pallets as of September 16
- Data gathering
   Continuous reading without the use of a trigger
   Data filtering to one read per one pallet
- Challenge
  - System modifications
    - Distance to readers
    - Parameters of software
    - Interval of filtering and readings



#### PHASE III STATUS

- Product selection has been finalized except for J&J
- Three key areas of development

Tags

Readers

Shelf antenna desing

Target Stores new retailer in Phase III



# **PHASE III PRODUCTS**

	Right Guard 10oz Aerosol		Unit/case aggregate, shelf read
Gillette	Mach 3, 4 and 8, 12 packs		Unit/case aggregate use Gillette Smart Shelf
	Mach 3 Turbo, 4 and 8 packs		omit case aggregate use officite official official
Unilever	Caress Soap, 6 pack	<b>\</b>	Unit/case aggregate, shelf read
P&G	Pantene Shampoo, 750 ml bottle	a	Unit/case aggregate, shelf read
Johnson & Johnson	TBD	Š	Unit/case aggregate, shelf read
Coca Cola	2 liter bottle, 8 recycle tray		Unit/recycle tray aggregate, shelf and floor read
Kraft Foods	TBD		Unit/case aggregate, shelf read
Kimberly Clark	mberly Clark Huggies Baby Wipes		Unit/case aggregate, shelf read



 Tags and readers must meet AUTO-ID specifications and be standards compliant

 All new hardware must be tested in the pilot facility in Bentonville prior to implementation in the field



#### PHASE III TAGS

- 300,000 on order from Alien/Rafsec
   Several configurations. Specially designed for products in Phase III
- 1000 received to be used for Auto-ID shelf antenna design Thingmagic reader evaluation Replacement for Coke emulator tag
- Philips to supply 5000 Auto-ID compliant tags by January 2003



#### PHASE III READERS AND ANTENNAS

Readers

100 ordered and 50 received and 50 ready for shipment from Markem FCC approved

Shelf Antennas

Consultant contracted for design Initial submission required rework. New submission mid November







# PHASE III TECHNOLOGY SUMMARY

PRODUCT	TECHNOLOGY	FREQUENCY	
CARESS SOAP			
RIGHT GUARD AEROSOL		9.15 MHz	
PANTENE SHAMPOO	ALIEN/RAFSEC		
BABY HUGGIES	NEW LOW COST TECHNOLOGY		
COCA COLA	I ECHNOLOGY		
GILLETTE SHELF			
	PHILIPS EXISTING TECHNOLOGY	13.56 MHz	

Note: some product may be substituted with Philips

Auto-ID compliant tags



# **PHASE III TIMING**

OCT 1, 2001	FEB 1, 2002	JAN 2003	
Phase I	Phase II	PHASE III	
PALLET OF BOUNTY FIRST READ AT P&G FACTORY CAPE GIRARDEAU	CASES TO PALLET AGGREGATION FIRST READ AT GILLETTE DC, ROMEOVILLE	UNIT TO CASE AGGREGATION FIRST READ	
	Note: Phase III case aggregation at Coke November 2002		



#### **TARGET STORES**

• A proposal is being reviewed with Target for participation in Phase III to track inventory of DVD players in one of their stores.

Tag DVD upon receipt

Track on shelf

Track in back room secured cage



## FIELD TEST APPLICATIONS

- Consumer availability
- Theft prediction and apprehension
- Freshness and OOD monitoring
- Accurate in stock and replenishment at unit level
- Safe and secure supply chain



#### PHASE III NEXT STEPS

- Complete development of shelf antennas
- Prepare implementation plan for installation of equipment at all the needed sites
- Develop plan for evaluating effectiveness of technology relating to 5 specific initiatives
- Complete proposal for Target installation
- Test PML use cases within the supply chain
   Partner with end user sponsors on their specific application
- Begin implementation of Phase III in early January 2003



#### **EUROPE**

 After detailed evaluations it was decided that a field test in Europe would not be conducted