

**EPC FIELD TEST**

**BOARD OF OVERSEERS MEETING**

**JUNE 2002**

**CAMBRIDGE, ENGLAND**

**SILVIO ALBANO**

CONFIDENTIAL - FOR AUTO-ID CENTER SPONSORS ONLY



## PAST 4 MONTHS HIGHLIGHTS

- Two new sponsors added
- Project is on budget
- Phase I complete
- Phase II in progress
- Phase III implementation concept prepared and approved by Field Test Team
- Japan Field Test added
- European Field Test planning in progress
- Gillette “Smart Shelf” demo complete and operational



## PARTICIPATING SPONSORS

### END USER

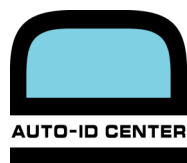
**Chep**  
**International Paper**  
**Johnson & Johnson**  
**Procter & Gamble**  
**The Gillette Co.**  
**Unilever**  
**Wal-Mart**  
**Westvaco**  
**YFY**  
**Coca Cola**  
**Dai Nippon Printing**  
**Kimberly Clark**  
**Kraft Foods**  
**Home Depot**

### TECHNOLOGY

**Invensys**  
**NCR**  
**SAP**  
**Sensormatic**  
**Sun**  
**Alien**  
**Markem**  
**Rafsec**  
**Savi**  
**Checkpoint**  
**Philips**  
**RF Saw**  
**Matrics**

CONFIDENTIAL - FOR AUTO-ID CENTER SPONSORS ONLY

**UCC/EAN consulting ONLY (NON PAYING)**



## FINANCIALS

• RECEIVED	\$1,429,000
• SPONSOR COMMITMENTS	\$ 173,000
	<hr/>
TOTAL	\$ 1,602,000
• SPENT	\$ 620,363
• COMMITTED	\$ 509,835
	<hr/>
TOTAL	\$ 1,130,198

CONFIDENTIAL - FOR AUTO-ID CENTER SPONSORS ONLY



## FINANCIALS

- Spending Breakdown by Phase

- Spent and Committed

- Phase I           \$   399,136

- Phase II           \$   407,752

- Phase III           \$   327,410

- TOTAL           \$ 1,134,298

- Note: Some of the software money spent pertained to all phases but was spent as part of phase I



## PHASE I

Evaluate effectiveness of the  
Auto-ID ONS and Savant  
development

**COMPLETE**

Pallet read to continue in ongoing phases



## PHASE I SUMMARY

- Phase I objective achieved:  
ONS and Savant, work as expected, are debugged and stressed
- Achieved 97% read efficiency
- 5 sites installed and operational  
Gillette, Unilever and Sam's DC, Sam's Club and P&G Factory
- Details available in Technical Report



## ***EPC*** FIELD TRIAL SUCCESS STORY

- Gillette learning

### Misplaced product

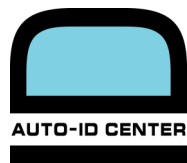
ePC confirmed at case aggregation and exit door in Gillette DC

ePC did not show product entering or leaving Sam's DC and Sam's Club

### Lost bill of lading

Product did not leave on time





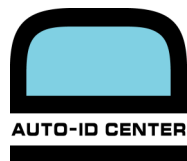
## PHASE II

Implement and test aggregation

Add additional technologies to stress the system

Read as many tags as possible

Make data available to Business Case Action Group



## PHASE II TIMING

**OCTOBER 1, 2001**

### PHASE I

**PALLET OF BOUNTY  
FIRST READ AT P&G  
FACTORY CAPE  
GIRARDEAU**

**FEBRUARY 1, 2002**

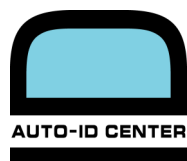
### PHASE II

**CASES TO PALLET  
AGGREGATION FIRST  
READ AT GILLETTE DC,  
ROMEDEVILLE, IL**



## PHASE II STATUS

- Several manual case to pallet aggregation have been completed at the Gillette Distribution Center, in Romeoville
- Unilever installation for automatic case to pallet aggregation was completed early May. First test run this week
- Coke installation complete this week
- Pilot facility, J&J and Wal-Mart installation delayed waiting for Matrics tags and readers.



## PHASE II SUMMARY DATA

Date	Gillette DC, Romeoville				Sam's Club DC, KC		Sam's Club, Tulsa	
	Pallet Reads		Case Reads		Pallet Reads		Pallet Reads	
	Actual/Expected	%	Actual/Expected	%	Actual/Expected	%	Actual/Expected	%
2/1/2002	1/1	100.00%	11/11	100.00%	0/1	0.00%	0/1	0.00%
2/5/2002	2/2	100.00%	19/19	100.00%	0/2	0.00%	0/2	0.00%
2/15/2002	4/4	100.00%	63/66	95.45%	2/4	50.00%	0/4	0.00%
3/15/2002	3/3	100.00%	56/56	100.00%	1/3	33.33%	0/3	0.00%
3/28/2002	Camera Filming Session							
5/3/2002	6/6	100.00%	68/68	100.00%	2/6	33.33%	1/6	16.67%
5/10/2002	3/3	100.00%	40/40	100.00%	0/3	0.00%	0/6	0.00%

1. IF PROCESS IS CORRECT SYSTEM IS 100% EFFICIENT
2. EVEN IF PROCESS IS CORRECT NEED TO GUARANTEE 100% READS AT AGGREGATION. CANNOT HAVE MISSED READS
3. IF PROCESS IS NOT FOLLOWED IT WILL BE IMPOSSIBLE TO DETERMINE WHAT THE SYSTEM IS DOING



## CASE/UNIT AGGREGATION

- Cannot have a missed read at aggregation.  
Aggregation must be 100% efficient
- Need to remove
  - human error
  - hardware deficiencies
  - hardware defects



## SYSTEM IMPROVEMENTS

- System verification

Request has been made to investigate system that would:

  - Identify an object (product)
  - Tell RFID reader to look for an ePC number on that object
  - If number is recorded aggregation is made
  - If number is not recorded product is discarded
- Awaiting costs and feasibility



## SCORE CARD

- Need to develop a reporting system (Score Card) that is:
  - Simple in format
  - Published on a regular basis
  - Shows patterns in:
    - Read rates (efficiency)
    - Identification rates (efficiency)
  - Identifies problems in the Field Test:
    - Process and/or System Capability

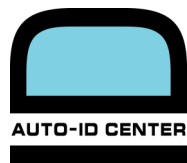


## PHASE II REMAINING WORK

- Johnson & Johnson DC, Olive Branch  
Case aggregation and exit door reads
- Wal-Mart DC , Bentonville  
Exit conveyor reads
- Wal-Mart Store, Broken Arrow  
Entry door reads and back to front reads
- Wal-Mart Store, Cleveland  
Entry door reads, retail floor pallet reads
- Coca Cola, Cleveland  
Case aggregation and exit door reads
- Pilot Facility, Bentonville  
Case aggregation, pigeon hole and exit door read
- Sam's Club, Tulsa  
Retail floor case read

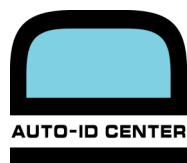
CONFIDENTIAL - FOR AUTO-ID CENTER SPONSORS ONLY





## PHASE II REMAINING WORK

- Home-Depot has joined the Field Test
- Plans are being investigated on how to include Home Depot in phase II of the field test
- Do not want to duplicate existing phase ii
- Several unique options are being reviewed for cost and feasibility



## PHASE II DATES SUMMARY

SPONSOR	SITE & LOCATION	INSTALLATION				COMMENTS
		DOORS	CASE AGGREGATION	WAREHOUSE & RETAIL STORE	DATES	
P&G	Factory CAPE GIRARDEAU, MO	EXIT DOOR			COMPLETE	
GILLETTE	DISTRIBUTION CENTER ROME OVILLE, IL	EXIT DOOR	MANUAL		COMPLETE	
UNILEVER	DISTRIBUTION CENTER BALTIMORE, MD	EXIT DOOR	AUTOMATIC PALLETIZER CONVEYOR		COMPLETE	
SAM'S CLUB	RETAIL STORE TULSA, OK	5 ENTRY DOORS 1 EXIT DOOR		SHELF READ	6/1/02	
P&G	PILOT FACILITY & WAREHOUSE BENTONVILLE, AK	EXIT DOOR	MANUAL	1 PIGEON HOLE	COMPLETE	
UNILEVER				1 PIGEON HOLE	6/15/02	Determine technology
KRAFT				1 PIGEON HOLE	6/15/02	
COCA COLA	FACTORY CLEVELAND, TN	EXIT/ENTRY DOOR	SEMI AUTOMATIC		5/20/02	Site survey complete
SAM'S CLUB	DISTRIBUTION CENTER KANSAS CITY, MO	EXIT DOORS			COMPLETE	
WAL-MART	DISTRIBUTION CENTER BENTONVILLE, AK	EXIT DOOR		WAREHOUSE & RETAIL STORE	W/O 6/15/02	Tentative
WAL-MART	RETAIL STORE BROKEN ARROW	ENTRY DOOR BACK TO FRONT DOOR			W/O 6/15/02	Tentative
WAL-MART	RETAIL STORE CLEVELAND TN	EXIT/ENTRY DOOR		STORE FLOOR PALLET READ	W/O 5/30/02	Must be completed prior to Memorial Day weekend
JOHNSON & JOHNSON	DISTRIBUTION CENTER OLIVE BRANCH	EXIT DOOR	TBD		W/O 6/15/02	Site survey 4/11/02





## PHASE III

Implement and evaluate low cost  
technology

Develop practical applications to  
prove technology



## 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



## TECHNOLOGY CRITERIA FOR PHASE III

- TAGS AND READERS MUST MEET AUTO-ID SPECIFICATION AND BE STANDARDS COMPLIANT
- ALL NEW HARDWARE MUST BE TESTED IN THE PILOT FACILITY PRIOR TO IMPLEMENTATION IN THE FIELD



## PHASE III STATUS

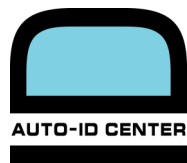
- A sub team meeting was held on May 9th to determine specifically apply to products.
- Requirements for phase III tags, Alien/Rafsec (V. Vega) prepared detail documentation as to the specifications required for product specific tags to include:
  - size, location, application method, printing and decoration method, material of construction
- End users will be responsible for determining how and where tag application and unit to case aggregation will be conducted.



## PHASE III STATUS CONTINUED

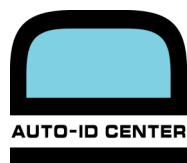
- 2000 test tags have been requested for pilot test facility evaluation by mid August
- First available tags for Field Testing will be September 30th
- Schedule for tag delivery to be as follows:
  - 30 September 20,000
  - 31 October 50,000
  - 30 November 80,000
  - 31 December 50,000
- 100 readers will be ordered. 50 to be paid by the Auto-ID Center and 50 by the Field Test
- Reader antenna design required for specific shelves at the unit level





## PHASE III EXECUTION PROPOSAL

- Three supply chains:  
Sam's Club, Wal-Mart Stores and Coca Cola  
Home Depot will become a fourth supply chain. Discussions and plans are in the initial stages
- Recommended approach:  
All new installations for to be with new technology (Auto-ID compliant readers and tags)  
Utilize very little of Phase I and Phase II installed technology (Intermec/Matrics)
- Introduce End User specific hardware initiatives into the test



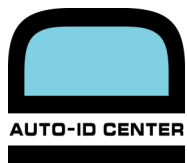
## PRODUCTS IN PHASE III

Gillette	Venus blades	Sam's	Do nothing. Case is Unit level Phase II
	Mach 3, 4 and 8 packs	Wal-Mart	Unit/case aggregate use Gillette Smart Shelf
Unilever	Liquid All	Sam's	Do nothing. Case is Unit level Phase II
	Caress Soap, 6 pack	Wal-Mart	Unit/case aggregate, shelf read
Procter and Gamble	Bounty 15 pack	Sam's	Unit/pallet aggregate, pigeon hole read in store
	Pantene Shampoo, 750 ml bottle	Wal-Mart	Unit/case aggregate, shelf read
	Cosmetic products	Wal-Mart	Unit/case aggregate use P&G shelf
Johnson & Johnson	Carefree 4 pack	Wal-Mart	Unit/case aggregate, shelf read
Coca Cola	2 liter bottle, 8 recycle tray	Wal-Mart	Unit/recycle tray aggregate, shelf and floor read
Kraft Foods	Maxwell House Coffee 1lb can	Wal-Mart	Unit/case aggregate, shelf read
Kimberly Clark	Huggies Baby Wipes	Wal-Mart	Unit/case aggregate, shelf read

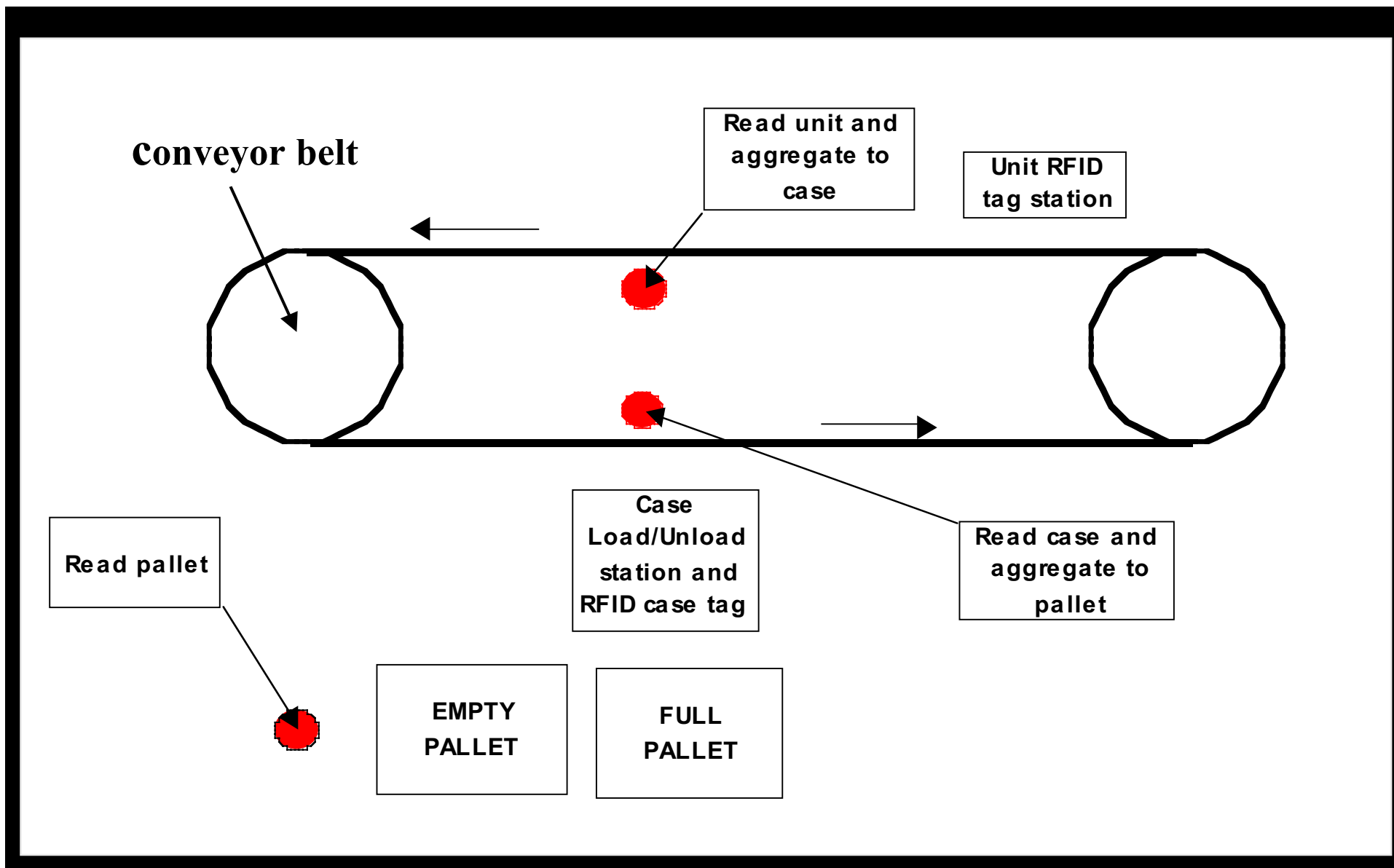


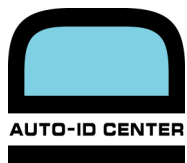
## TAG APPLICATION METHODS

- Inside the package  
Must be applied at manufacturing
- Outside the package  
Can be applied at pilot facility
- Hanging on the package  
must be applied at manufacturing or  
distribution center

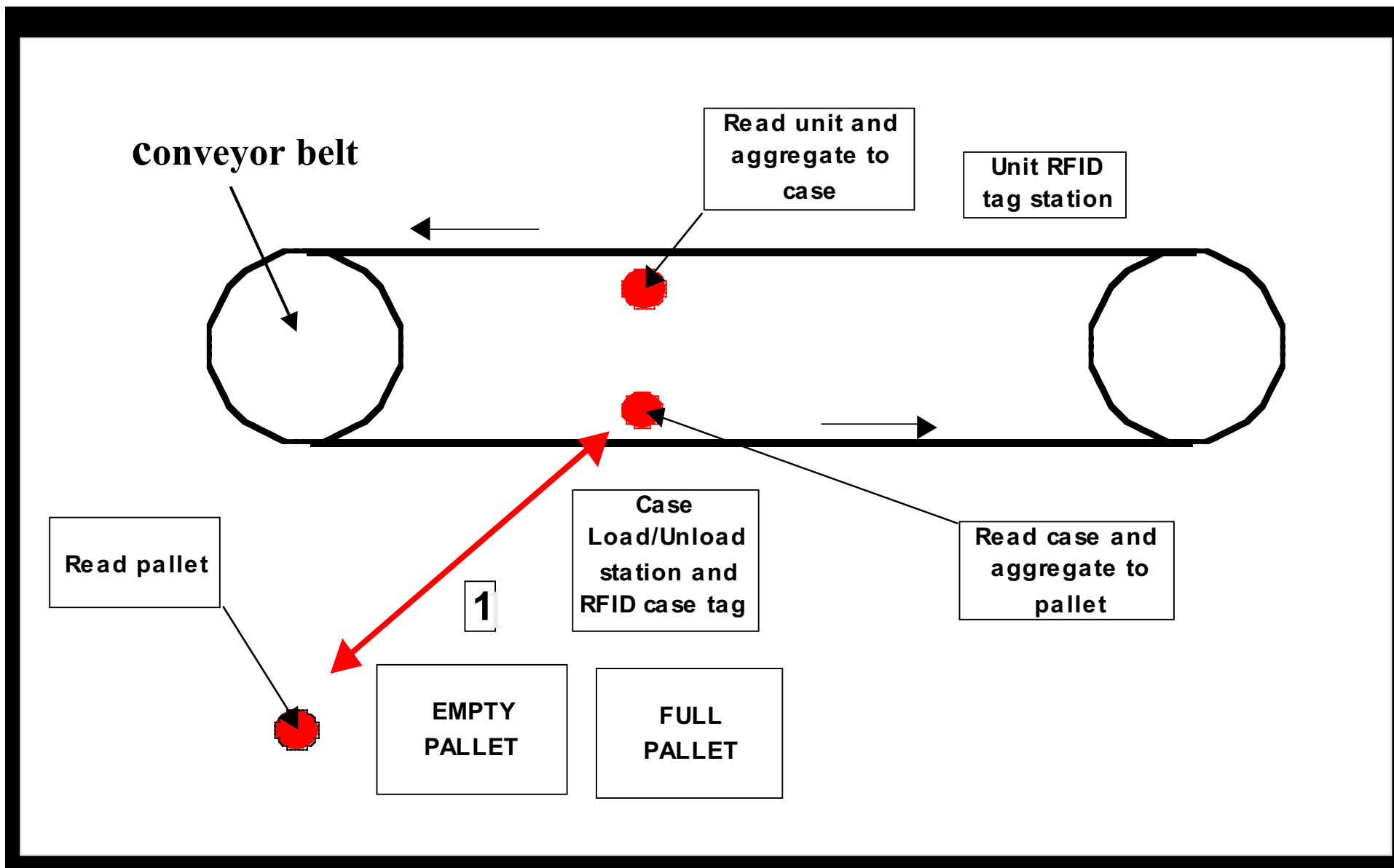


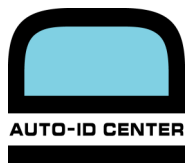
# PILOT FACILITY CONVEYOR SIMULATOR



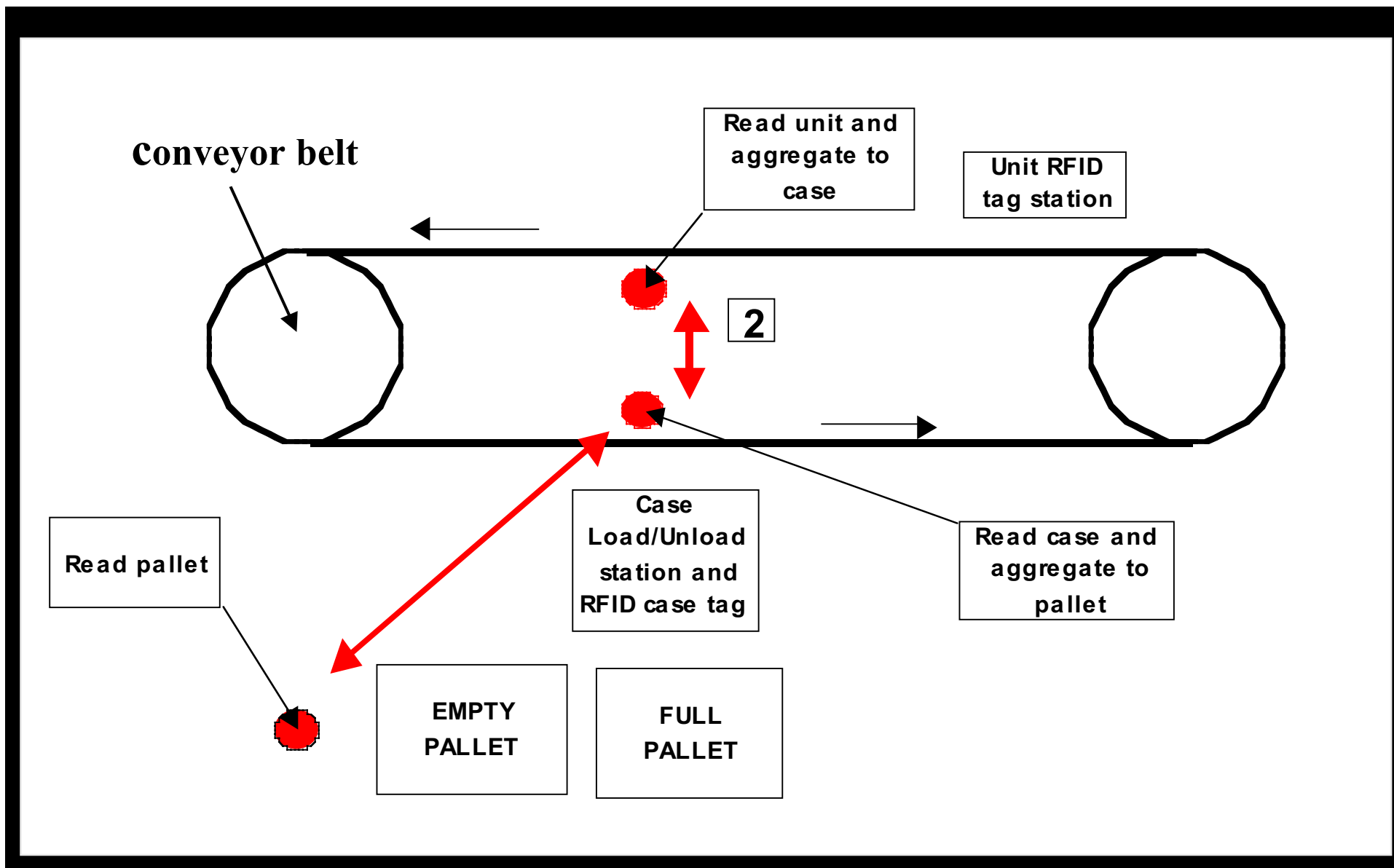


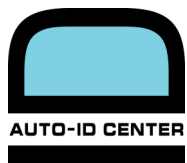
# PILOT FACILITY CONVEYOR SIMULATOR



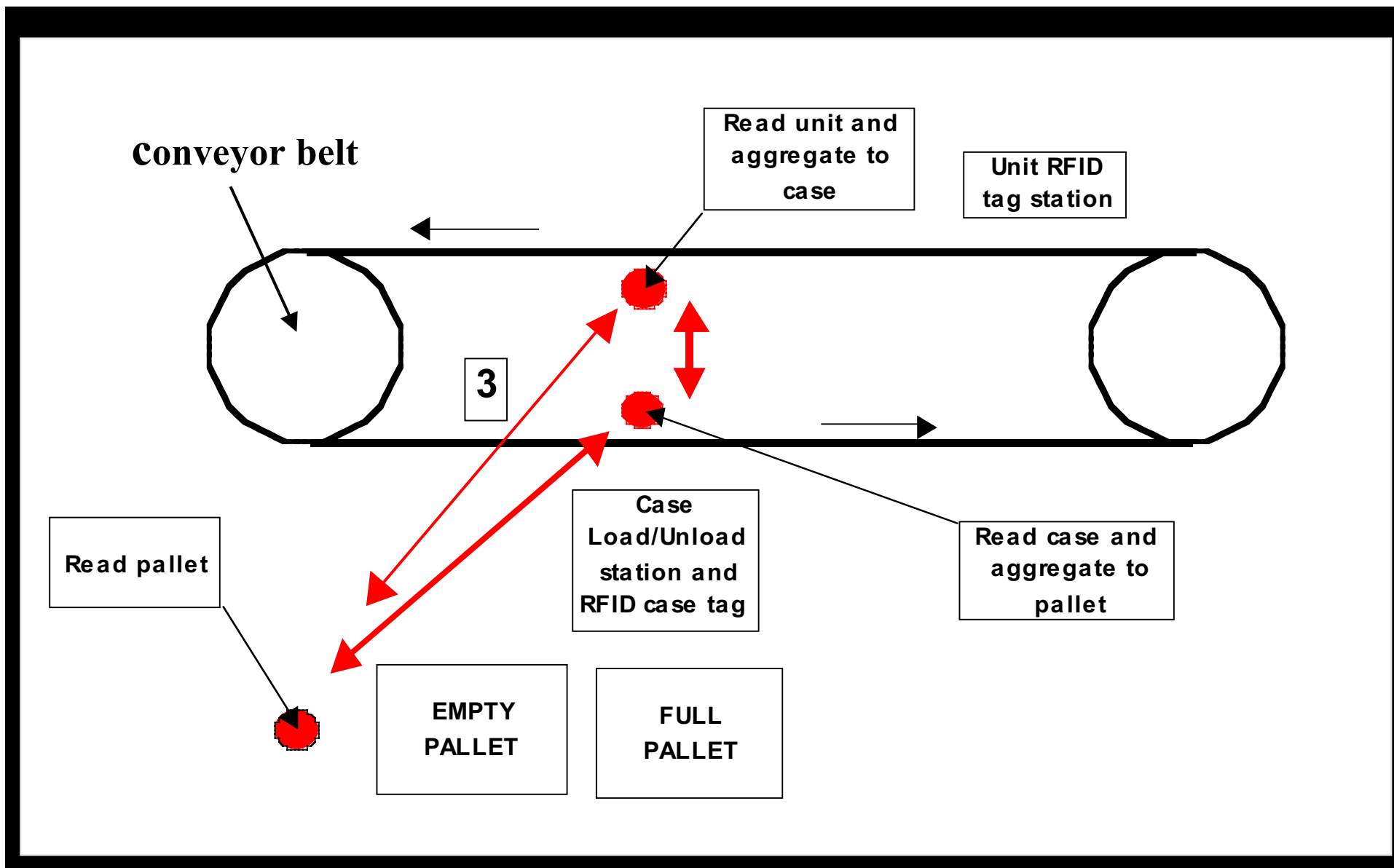


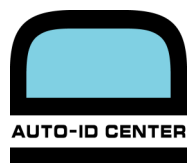
# PILOT FACILITY CONVEYOR SIMULATOR





# PILOT FACILITY CONVEYOR SIMULATOR





## PHASE III TIMING

**OCTOBER 1, 2001**

**PHASE I**

**PALLET OF BOUNTY  
FIRST READ AT P&G  
FACTORY CAPE  
GIRARDEAU**

**FEBRUARY 1, 2002**

**PHASE II**

**CASES TO PALLET  
AGGREGATION FIRST READ  
AT GILLETTE DC,  
ROMEDEVILLE**

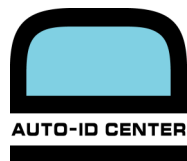
**OCTOBER 1, 2002**

**PHASE III**

**UNIT TO CASE  
AGGREGATION FIRST READ  
TBD**







## JAPAN FIELD TEST

- Dai Nippon Printing (DNP) and Sun Microsystems KK to conduct a field test to track plastic containers from DNP bottle blow molding factory to beverage filling manufacturer
- Test to run June to August using:  
ISO15693-2 tag (I-code) (13.56)

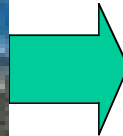


## JAPAN FIELD TEST -- GOALS

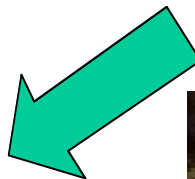
- Evaluate the Auto-ID technology  
Savant stability, connection with DNP intranet
- Verification of tag in Japanese environment  
Temperature, humidity, vibration, life.....
- Pallet management  
Rate of readings, shipment data
- Use learning to entice new Japanese sponsors to join the Auto-ID Center



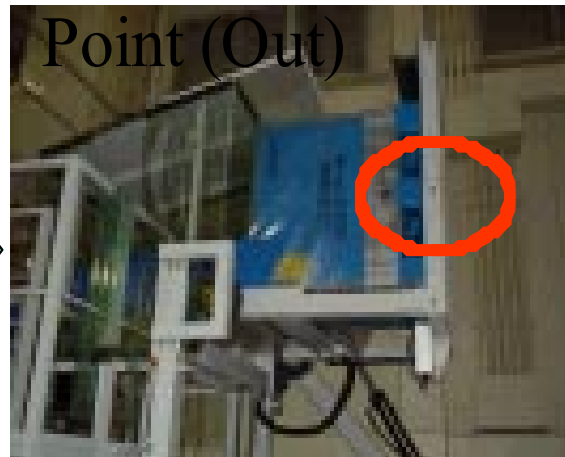
1, Pre-Form in Container



TAG :inside of Palette



3, Shipping

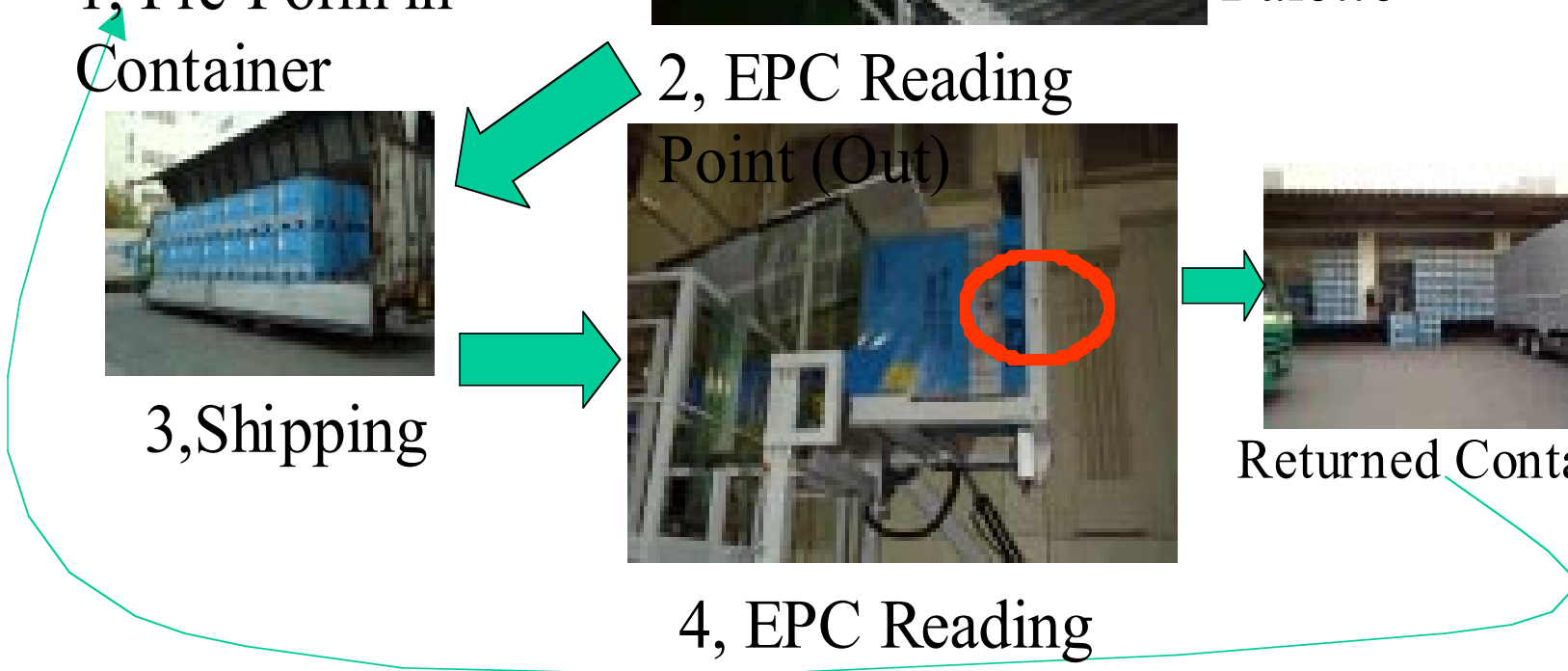


2, EPC Reading Point (Out)

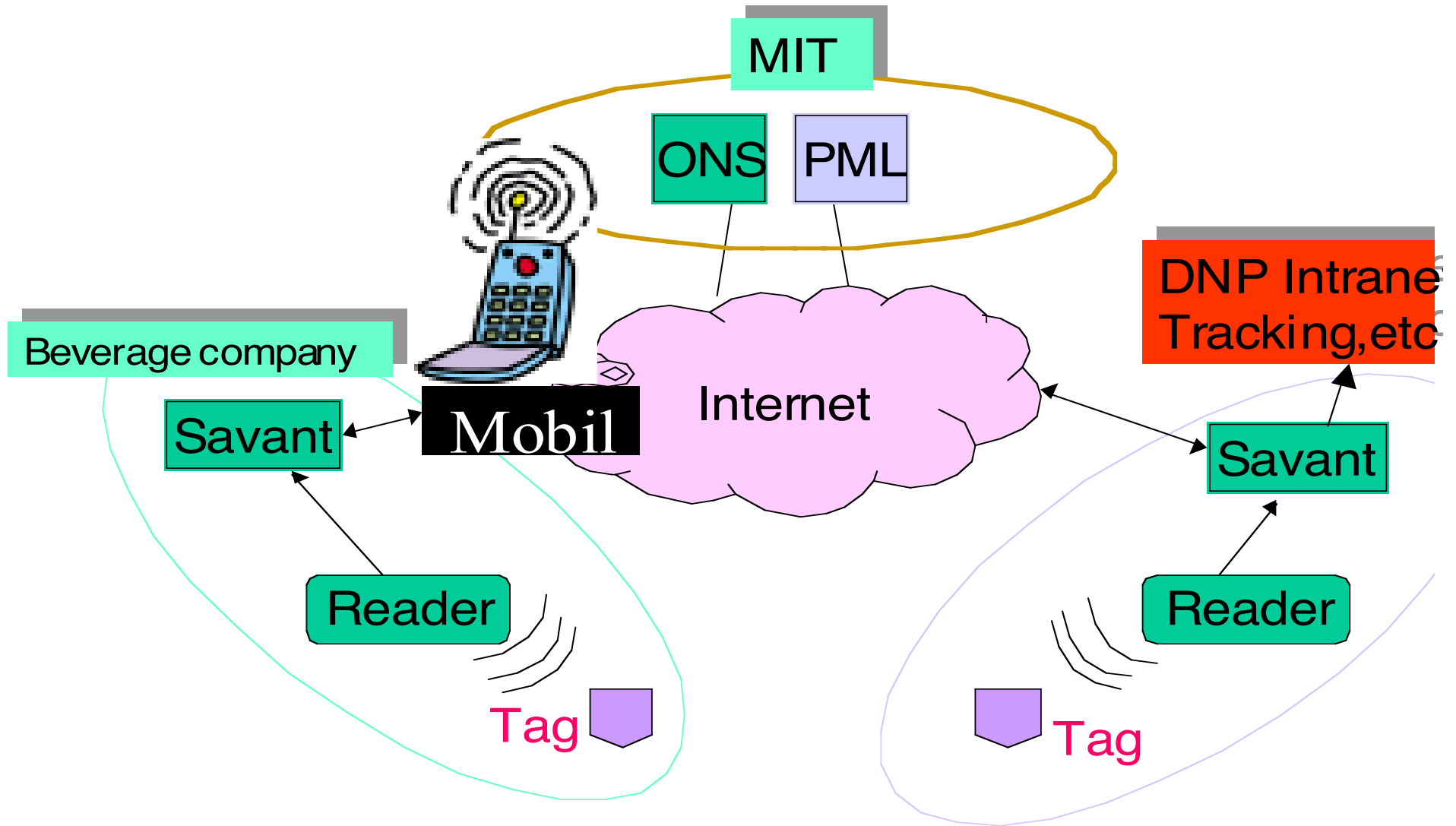


Returned Container

4, EPC Reading Point (Use)



## DNP /Beverage Company /MIT connection (July)





## GILLETTE INITIATIVE

- SMART SHELF

Deter, predict theft and apprehend

accurate stock replenishment at unit level



# **FIELD TEST - PHASE IV**

## **EUROPE**

**JAMES BUTLER**

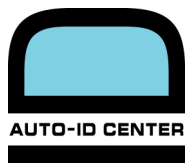
**JUNE 2002**



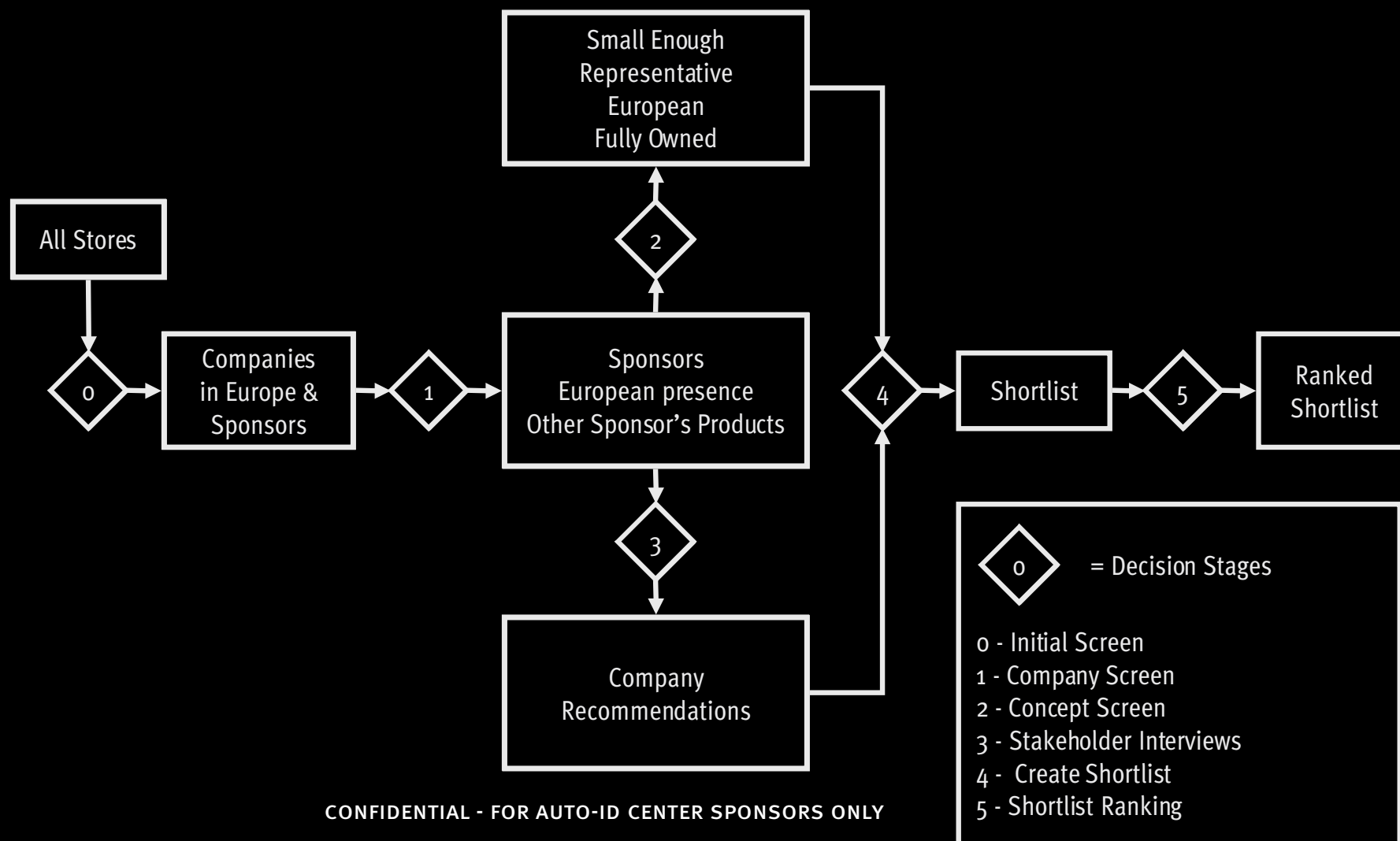
## BACKGROUND

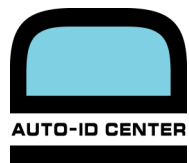
- Proposed at last meeting
  - Complete Store
  - In Europe
- Build on US tests
- Objectives
  - Clear the Path for Technology Roll-Out
  - Develop Global Awareness
  - Support the Business Cases





# STORE SELECTION PROCESS





## POSSIBLE CONCEPTS

- Metro Extra
- Tesco Express
- Tesco Metro
- Asda Small Town



## END USER INTERVIEWS

- Discussions with Metro, Tesco & Wal-Mart
  - Choosing Location
  - Applications
  - Required Learnings
  - Issues
- End User Perspective



## POTENTIAL ISSUES

- Tag Application
  - Every product with the right tag every time
  - Quickly
  - Accurately
  - Easily
- Verifying Accuracy
- Avoiding Store Disruption
- Ease of Use
- Technical
- Regulatory

CONFIDENTIAL - FOR AUTO-ID CENTER SPONSORS ONLY



## NEXT STEPS

- Start to Solve Issues Now
- Develop Costs
- Choose Location
- Work closely with all parties

End Users

Technology Vendors

Business Case Groups