Packaging to be traced and tracked

- Primary packaging
- Secondary packaging
- Transportation packaging
- Pallet
### Data and information, GS1 standard

**Human Readable interpreter (HRI)**

<table>
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<tr>
<th>Field</th>
<th>Code</th>
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OPTEL has solutions from END-TO-END

CONTROL TOWER

Government
Database

Raw Material
GeoTraceability
OPTEL TrackSafe

Distribution
OPTEL Kompano

Manufacturer
OPTEL TrackSafe

Wholesaler
OPTEL KOMPANO

Distribution
OPTEL Kompano

Retail
OPTEL Certa

Customer
OPTEL Investigator

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Technologies use for trace and track

- Coding and encoding software
- Digital printer with variable data
- Optical inspection
- Packaging automation
- Code reader equipment
- Mobile app
- Cloud computing
- Blockchain
- AI (Artificial intelligence)
- Chatbot
- Smart sensor (Temperature, GPS)
- BIG data (data analytic)
LabelTracker is a module to be retrofitted on any type of labeler for bottle serialization and quality inspection.

Key Features

- Includes a standard PharmaProof
- Serialized and non-serialized capability
- Print, Inspect, grade DataMatrix and other barcodes
- Correlates human readable with barcode
The Manual Print Station™ efficiently prints and verifies your cartons to ensure accurate serialization identification, and allows manual labeling and aggregation on up to 4 packaging levels.

**Key Features**

The Manual Coding table is used to print and inspect on cartons with a 2 print head thermal inkjet coder and a camera mounted on a single moveable assembly.

This setup insure easy changeover since the print and inspection area are moved together. This assembly is linked with an encoder to insure a proper print independently from the movement speed variation caused by manual operation.

The MPS is composed of an electronic enclosure with a Dual LineMaster & PharmaProof software.

2 desktop coders are available: 1 for bundle label, 1 for case and pallet label.

2 handheld scanners are with the LineMaster software to perform manual aggregation, rework and QA sampling.
CARTONTRACKER™

Click LINK to see CARTONTRACKER™ in action.

Data Sheet LINK

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Key Features

The Carton Tracker™ efficiently prints and verifies your cartons to insure accurate serialization identification, and allows manual labeling and aggregation on up to 4 packaging levels.

The Carton Tracker™ is composed of an electronic enclosure with a Dual LineMaster & PharmaProof software.

Prints data on cartons with a 2 print head thermal inkjet coder.

Inspects the accuracy of the information with a camera.

2 Handheld scanners are available with the LineMaster software to perform manual serial number status modification.
The CLTracker TE™ handles the printing and verification of each carton and insures accurate serialization identification. The CLTracker TE™ has been developed to be installed into any carton labeling tamper-evident unit. Select the unit that best fits your line requirement and we will integrate the CLTracker TE™ into it.

**Key Features**

The CLTracker TE™ is composed of an electronic enclosure with a Dual LineMaster & PharmaProof software.

The CLTracker TE™ could handle a production rate of up to 400 cartons per minute, depending on the OEM TE unit.

The CLTracker TE™ is used to print on cartons with a 2 print head thermal inkjet coder and inspect with a camera information accuracy.

The CLTracker TE™ also automatically manages serial number status. If a carton is ejected due to a default in the tamper-evident, the CLTracker TE™ will automatically change the status of the serial number.

1 handheld scanner is available with the LineMaster software to perform manual serial number status modification.
The Offline Label Tracker™ efficiently prints and verifies your labels to ensure accurate serialization identification.

**Key Features**

The OLT is composed of an electronic enclosure with a Dual LineMaster & PharmaProof software.

- 1 desktop coder is used for label roll print.
- 1 handheld scanner is available to be used with the LineMaster software to perform manual commissioning and QA sampling.

The OLT will be always sold stand-alone

*Dependent on some external components*
AGGREGATION SOLUTION
AGGREGATION 101

- Aggregation is the association of uniquely serialized packs to a higher packaging level, which also has a unique serial number.
- Each time a product (i.e., child) is scanned, it is added to a list (siblings) before it is placed into a container (parent).
- When the container is full, a container unique identifier (UID) is then scanned.
- The relationship between child and parent is recorded into a repository.

EXAMPLE:

- 12 Carton are packed in the same bundle; in serialisation terms, it means that 12 children were aggregated to a parent.
The BottleTracker™ handles the verification of serial numbers and facilitates bottle aggregation into secondary packages without impacting the production flow. This station allows various inspections such as presence and placement verification of labels and leaflets. It is specially designed to increase your quality and compliance with labeling regulations while improving your line efficiency by obtaining a leaner operation.

- Precise and robust bottle handling (round, square, oblong)
- Label/leaflet presence and placement detection with 360° reading of bottle Data Matrix
- Fast association without risk
- Tracking code printed by continuous inkjet with speed up to 300 bottles/minute
- Toolless adjustments
- Ejection with confirmation
The Top Code Association Station™ handles the verification of serial numbers and facilitates bottle aggregation into secondary packages without impacting the production flow. This station allows various inspections such as presence and placement verification of labels and leaflets. It is specially designed to increase your quality and compliance with labeling regulations while improving your line efficiency by obtaining a leaner operation.

- Precise and robust bottle handling (round, square, oblong)
- Label/leaflet presence and placement detection with 360° reading of bottle Data Matrix
- Fast association without risk
- Tracking code printed by continuous inkjet with speed up to 300 bottles/minute
- Toolless adjustments
- Ejection with confirmation
If the aggregation scanning cannot be efficiently inserted into an existing machine, OPTEL offers the BundleTracker™, a roll-in, stand-alone station that will hold and move the bundle under/over scanning devices and allow re-scanning in the bundle in the event of a reading error.

The BundleTracker™ performs a verification of proper product count and product status and creates the list of products in each bundle while rejecting inappropriate bundles.

- Improves reading efficiency to lower ejection rates
- Minimum setup time with turnkey installation for minimal integration time
- Reduces manual operation for accurate aggregated data
- Configuration with one to five camera scanning devices
PACKSTATION™
FMP
(LINEMASTER ™)

FULLY MANUAL PACKING STATION

Manual solution for the identification and verification of manually packed products with barcode scanners. Operators can identify and verify labels at any packaging level, including bottles, cartons, bundles, shipping cases or pallets, to manually perform the reading of barcode data. The unit can be customized or preconfigured.

- Portable unit
- Serialization and aggregation at any packaging level
- Rework station
- Control cabinet and HMI
- Compatible with multiple types of packaging
- Allows connectivity to multiple systems and/or machines from other manufacturers
- NR 12, 21 CFR Part 11 and European Annex 11 compliance

Click [LINK] to see PACKSTATION™ FMP in action

Data Sheet [LINK] here
Designed to read the serial number of each product in the case without compromising the line’s packaging speed. The station makes it possible to read multiple layers of cartons in a single case.

- Portable unit
- Automatic aggregation
- Automatic setup adjustments
- Motorized arm for automatically adjusting the focus of the cameras
- Aggregation of several layers of cartons
- NR 12, 21 CFR Part 11 and European Annex 11 compliance
- Serialized and non-serialized capability
- Wide variety of box sizes
OPTEL complete, modular traceability solutions

Complete E2E solution

MODULE 1

MODULE 2

GeoT

MODULE 3

Serialization+Aggregation

Chatbot

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GeoT farmers register in the GeoT platform
GeoT farmers identify durian fields and trees
GeoT farmers harvest durian and tie QR coded labels to each fruit
GeoT farmers aggregate durians with crates containing X fruits
Crates receive a GeoT Crate ID
Wholesalers scan GeoT Crate ID at reception/dispatch (stock mgmt.)
Retailers scan GeoT Crate ID at reception (stock mgmt.)
Consumers access info on fruit provenance (how/where/when…)
History log of each fruit is registered in our Cloud

100% ORGANIC DURIAN
Our farm has strictly followed organic farming principles for the past 25 years: no burn, no pesticides, no herbicides, no chemical fertilisers. We proudly preserve biodiversity to ensure organic fruits that are more flavourful and contain higher levels of antioxidants and flavonoid.

Read the following sections:
- Product journey
- Product information
- Expert’s advice
- Virtual visit
- Retail points
- Overseas farmers supply rice to buyer
- Buyer registers rice crops with GeoT Crop ID and exports rice
- Importer scans GeoT Crop ID at reception and sell to wholesalers
- Wholesalers scan GeoT Crop ID and process rice in pack/brand
- Wholesalers apply label in bags with GeoT Bag ID and sell to trade
- Retailers scan GeoT Bag ID at reception (stock mgmt.)
- Consumers access info on rice provenance (how/where/when...)
- History log of each fruit is registered in our Cloud
Juice/Juice Concentrate: GeoT/Chatbot
Provenance - Authentication - Consumer Engagement

➢ All participants register in the GeoT platform
➢ Farmers register crops with a GeoT Crop ID
➢ Concentrate Processors register GeoT Crop ID reception and new GeoT Concentrate ID
➢ Concentrate Resellers register GeoT Concentrate ID reception
➢ Plants register GeoT Concentrate ID reception
➢ Plants Item level traceability via end product serialization
➢ Consumers authenticate product
➢ Consumers access Chatbot for brand content/Micro Site
Soft Drinks: Serialization/Aggregation
Reusable Asset Management - Circular Packaging

- Filling Line
- Shipping/Distribution
- Selling Points
- Consumption
- Re-filling (24x)
- Inspection
- Re-filling
- Bottle washing
- Bottle washing
- Empty bottles shipped back to filling plants
- Empty bottles returned to selling points

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Waters: Serialization/Aggregation
Reusable Asset Management - Circular Packaging

AGGREGATION
- closures
- labels
- cases
- pallets

Pre-serialized Datamatrix label

AUTHENTICATION
+ consumer engagement platform via chatbot

Water Jug Cycle

Selling Points

Shipping/Distribution

Consumption

Empty jugs returned to selling points

Re-filling (30x)

Inspection

Jug reconditioning

Empty jugs shipped back to filling plants

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LOT DATA HOLD: DAIRY/PLANT LOT ITEMS + PACKAGING ITEMS

- For every batch preparation there are multiple data entries for raw materials, packaging materials and finished goods
- Each production batch has its own configuration
- Data collected from different internal systems to be merged and followed by OPTEL’s Cloud for data management, stock/dwell time handling and production efficiencies
- Track & trace of moveable tanks: condition, location and components for each tank

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TRACEABILITY FROM L1 TO L4

➢ Optel supplies hardware, software and system for full traceability from plant to field
➢ Coders and visual inspection compliant with high speed lines and low rejection rates
➢ Handheld mobile devices for eventual rework
➢ Serialisation: UID for each SKU is printed, applied and inspected
➢ Aggregation: SKU are aggregated to cases, cases are aggregated to pallets
➢ Track and trace all levels: warehouse, shipment, distribution and sales
**Beer Bottles/Cans: Tax Stamps**

**Excise Tax - Authentication**

**IT Connection to obtain S/N of child codes (bottles/cans) and parent codes (cases) from Excise Portal**

**Offline bottle/can label printing of child codes**

**Online label application, inspection, case label printing, aggregation with case, inspection, rejection & rework area**

**IT Connection to report tax stamp use to Excise Portal and deploy connectors to subsequent line**
Beer Bottles: Serialization/Aggregation

Reusable Asset Management - Circular Packaging - Brand Protection

AGGREGATION: closures-labels-cases-pallets

QR or alphanumerical code printed in crown using UV ink, aggregated to label and its UID

UID is embedded in QR Code printed on the Label

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Beer Kegs: Serialization/Aggregation

Lead Times - Refilling - Brand Protection

SMARTWAVE
BEER KEG
MONITOR

Sensor tag UID embedded to the keg to track:
- Keg location
- Time spent across Supply Chain
- Storage temperature
- Distributor/account performance
- Events in keg history
- Alerts
Wines: GeoT/Chatbot
Provenance - Authentication - Consumer Engagement

Premier Cru

Grand Cru

VITICULTURE
Track and trace of individual parcels to measure light incidence, rainfall, soil composition, agricultural practices, average temperature, weather incidents, fruit brix... generating data on specific vintages

VINIFICATION
Track and trace of wine batches and blending into barrels... generating data on barrel and bottle ageing

GeoT technology also applies to other alcoholic beverages: baijiu, whisky, cognac, etc.
SECURITY LABELS
IZON labels with a QR code to track & trace individual bottles, and a new generation hologram that counterfeiters cannot replicate.

3D model containing a number of Secure Dots, revealed only when tipping the IZON label

Different patterns revealed when rotating IZON label at 90° to the left or to the right

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