



Integrating JDE E1 with Other Systems and Applications in Clif Bar's Manufacturing Operations

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JD Edwards

INFOCUS

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Agenda

- Introductions
- Clif Bar & Company Overview
- Overview of Bakery Systems
- System Integrations
- Analytics, Dashboards, Visual Bakery
- Where We're Headed
- Q&A

MAKE IT GOOD





Clif Bar & Company

- Founded 1992
- Berkley, CA
- Healthy, nutritious snacks
- Privately-held
- Employee and family-owned
- Values-based
- Double digit CAGR for 12 years
- Outsourced manufacturing for 24 years

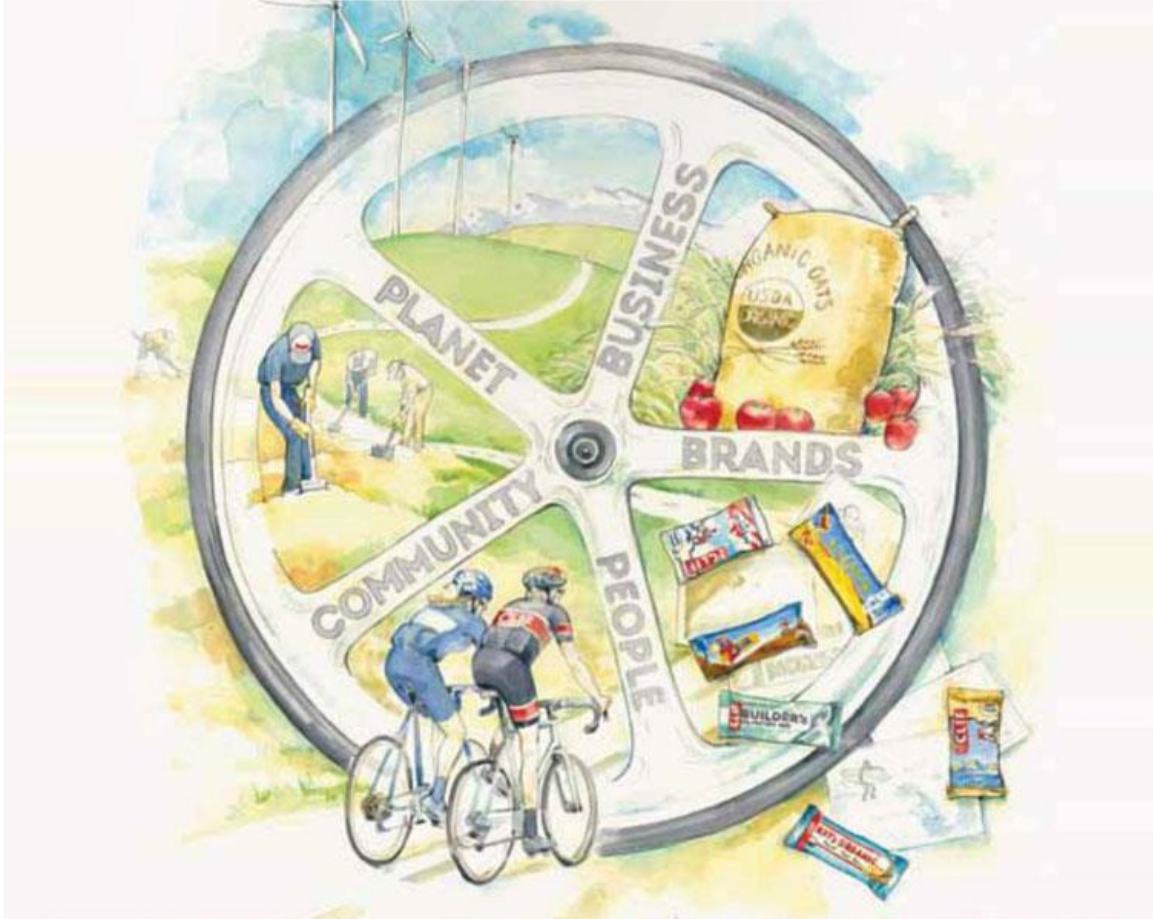
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Aspirations & Ingredients

Aspirations



Ingredients





Clif Bar Bakeries

- Twin Falls, ID
 - New sustainable facility
 - Over 300 employees
- Indianapolis, IN
 - Over 400 employees
- 24/7 operations
- 70% of production internal
- 3 million bars per day
- 800 million bars per year

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JD Edwards EnterpriseOne

- Version 9.1
- Tools 9.1.4.5
- SQL Server Database
- E1 since 2011 (World prior)
- 600 Users

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Clif Bar Bakery Systems

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**JD EDWARDS
ENTERPRISEONE**

RFgen

SafetyChain SOFTWARE
← ● ● ● ● →

SOMAX®

JD Edwards EnterpriseOne (E1)

Primary ERP System

- Product Data Mgmt
- Material Req Planning
- Purchasing
- Work Orders
- Transfer Orders
- Lot Management
- Inventory Transactions
- Product Costing
- Mfg Accounting
- Day End

RFgen Software

Mobile Barcode and Data
Collection System

- Receiving
- Replenishment
- WO Issues
- WO Completions
- Load Building
- Picking, Packing
- Shipping
- Inventory Transactions
- License Plate Labeling
- Integrations: MES,
SafetyChain, SOMAX

SafetyChain

Food Safety and Quality
Software

- COA Tracking
- Truck Inspections
- Sanitation Records
- GMP Audit Tracking
- Quality Tests: Calibrations,
Swabs
- QA Retain Logs

SOMAX

Predictive Maintenance
System (CMMS)

- Equipment Management
- Spare Parts Management
- Preventative Maintenance
- Predictive Maintenance
- Maintenance Requests
- Maintenance Work Orders

Clif Bar Bakery Systems



Wonderware

Manufacturing Execution Software

- HMI/Operator Controls
- Line Status/Area Controls
- Metrics/Alarming
- Work Order Execution
- Captures Production Execution Data
- Captures Quality Data
- Reporting
- Historian



AutoCoding

Lot Coding System

- Prints Lot Codes and Other Information on Film, Caddies, and Master Cases
- Used to Print LP Label on Finished Good Pallets



AIM

Recipe and Scaling System

- Used in Kit Rooms to Weigh Dough Batches from Recipes
- Used to auto-deliver bulk ingredients to mixers



Other MES Related

- Connectelligence: Transforms Data Between MES and MES related Systems
- Clif Recipe: Recipe Management System – Dough, Packaging

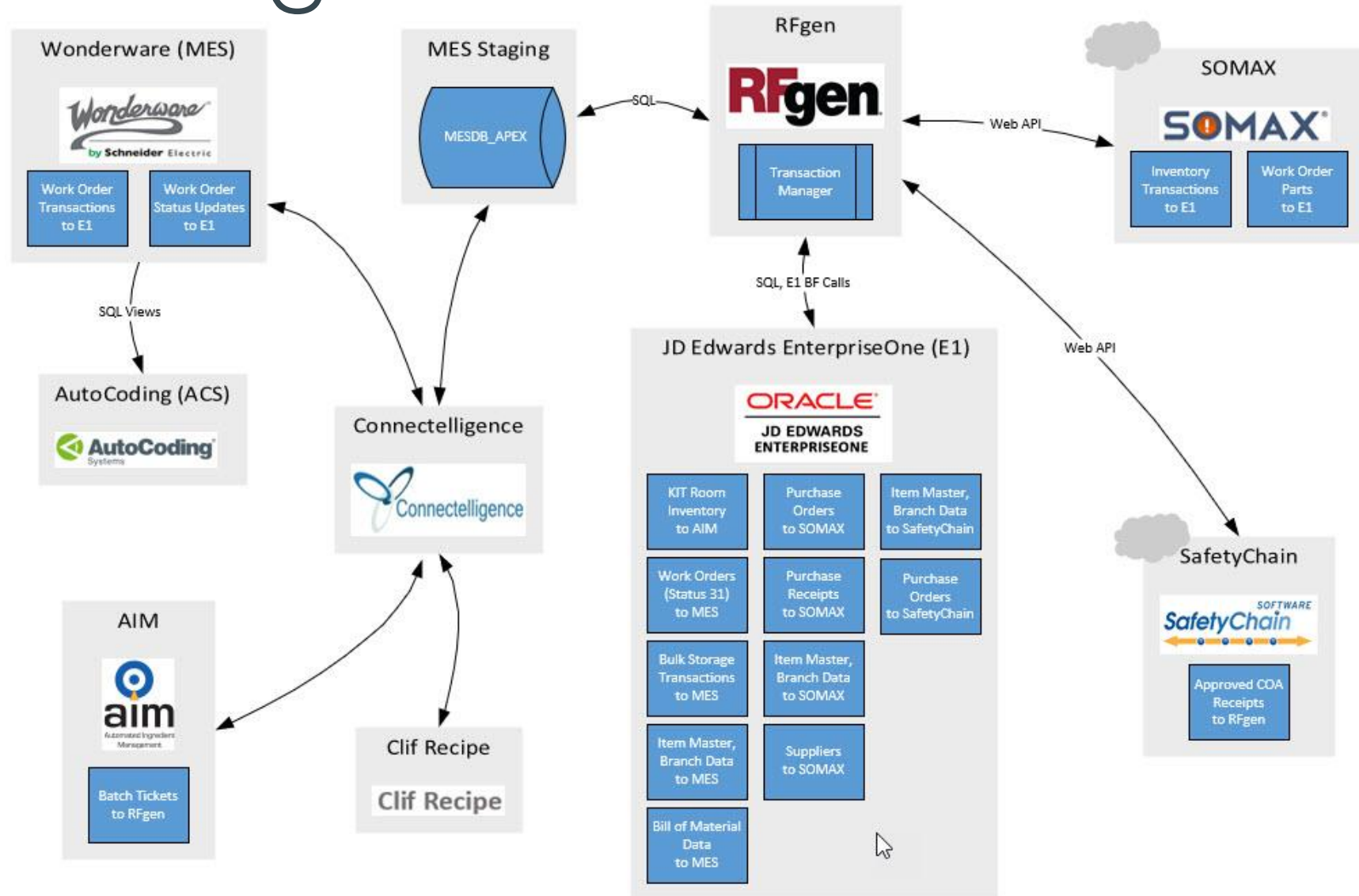


Other

- Learning Management
- HR/Payroll
- AP Automation
- Power BI
- ReportsNow
- Recruiting
- Building Management
- Video Surveillance
- Alarm
- Facility Access
- Timeclocks
- Intranet
- Help Desk Support
- Change Management

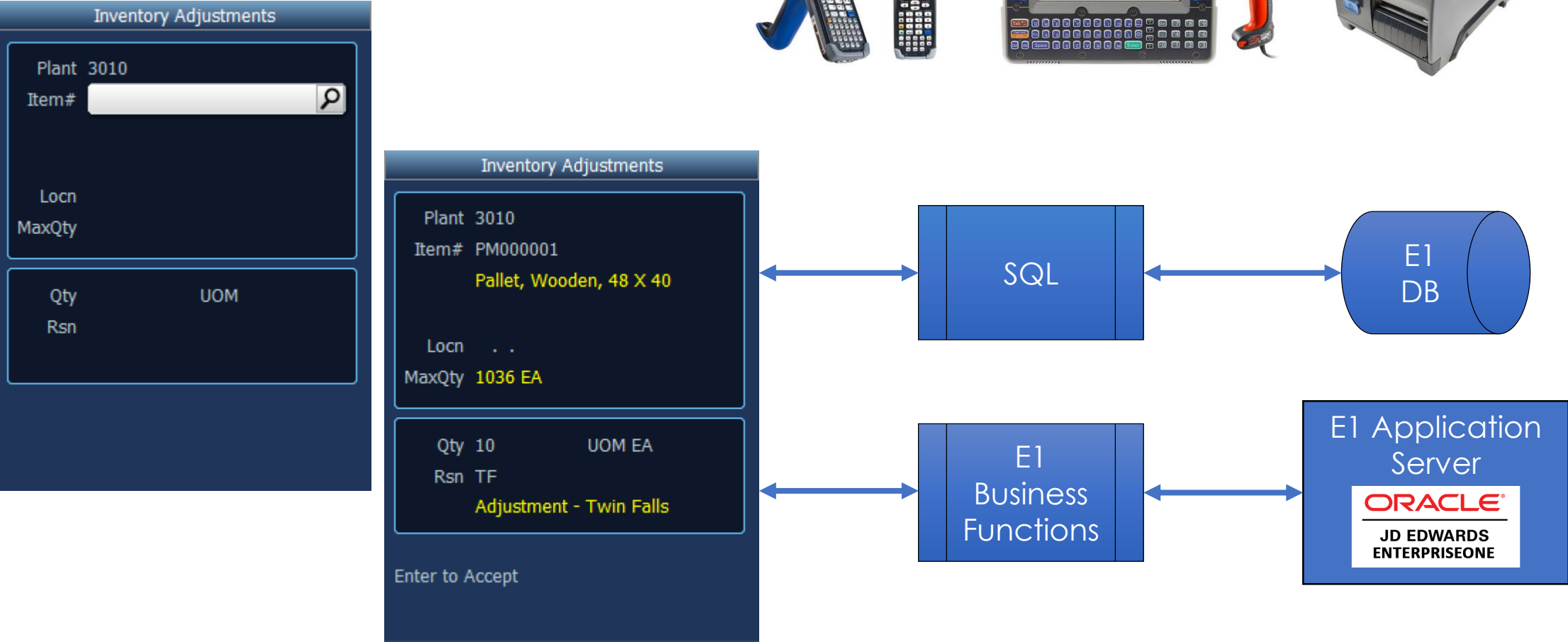


System Integrations





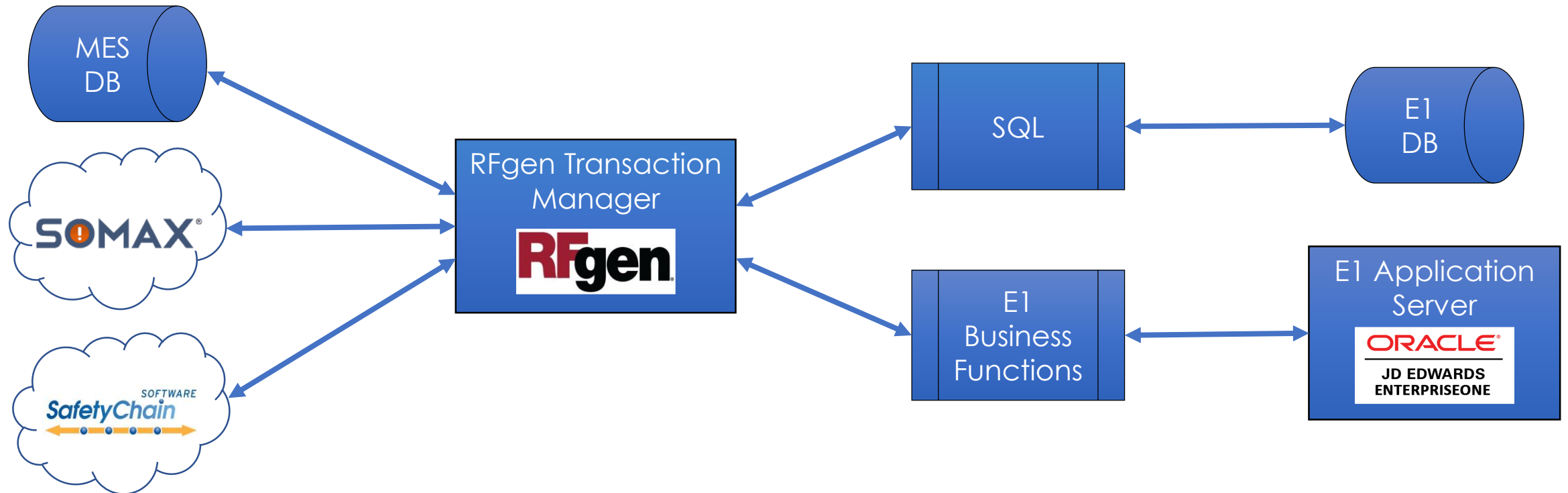
RFgen Mobile Application Flow





RFgen Transaction Manager

- Scheduled Tasks run every x minutes
- Call E1 Business Function, Web Service, SQL, etc.





E1 Data Integration Methods

- Use statuses
 - Work Orders sent to MES
- Send all data each time
 - Item records sent to MES
 - Spare Parts sent to SOMAX
- Use last updated date
 - Purchase Orders sent to SOMAX
 - Bill of Materials sent to MES
- Use unique key
 - Spare Part PO Receipts sent to SOMAX

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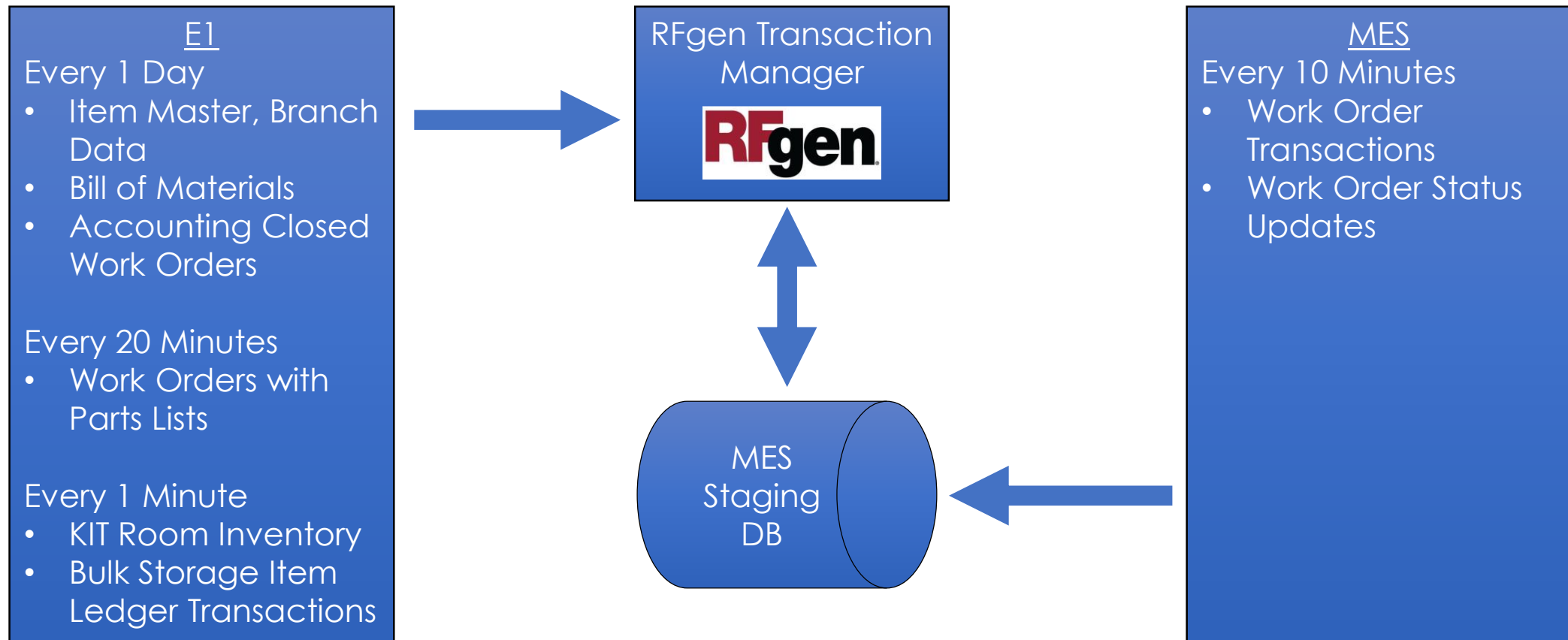




E1/MES Data

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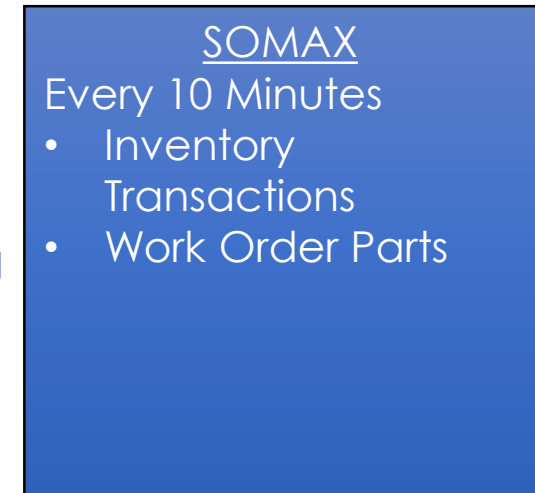
Wonderware®
by Schneider Electric





E1/SOMAX Data

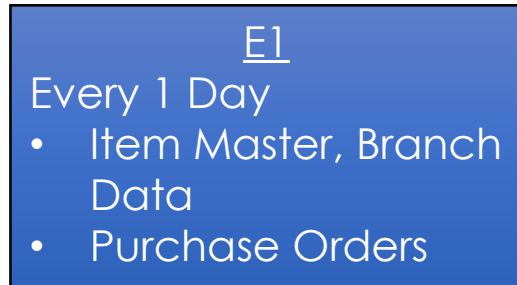
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E1/SafetyChain Data

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RFgen Transaction
Manager

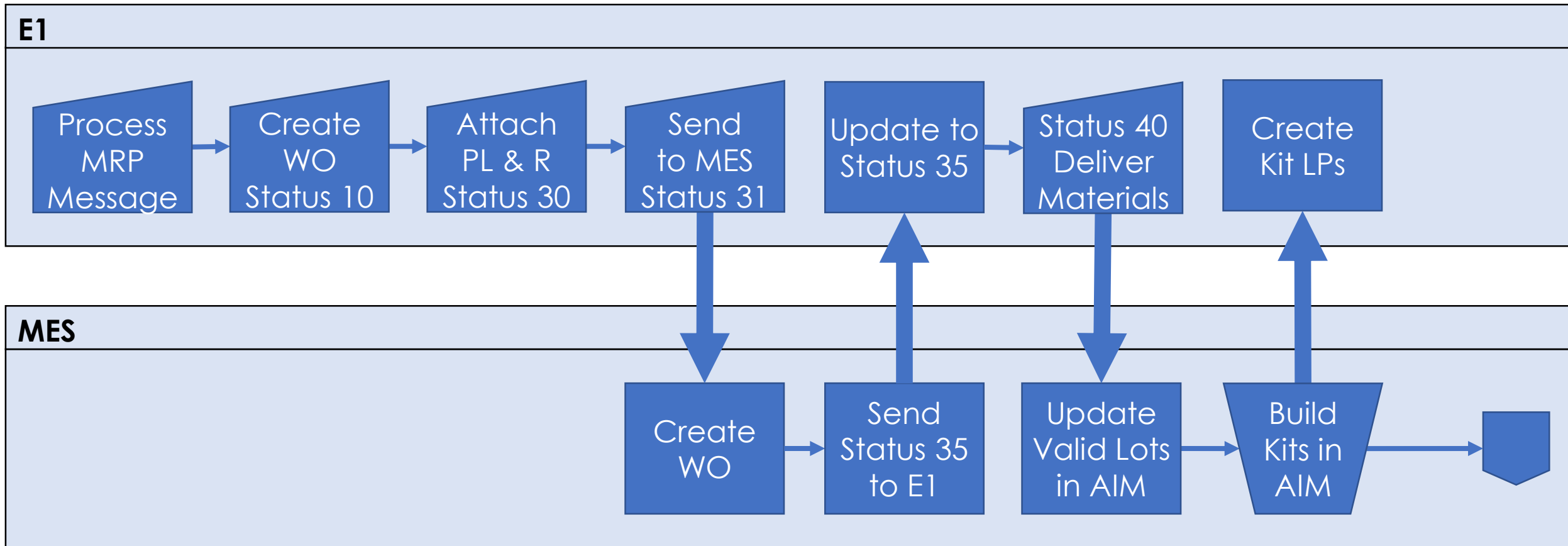


SafetyChain
Every 10 Minutes

- Approved COA Receipts

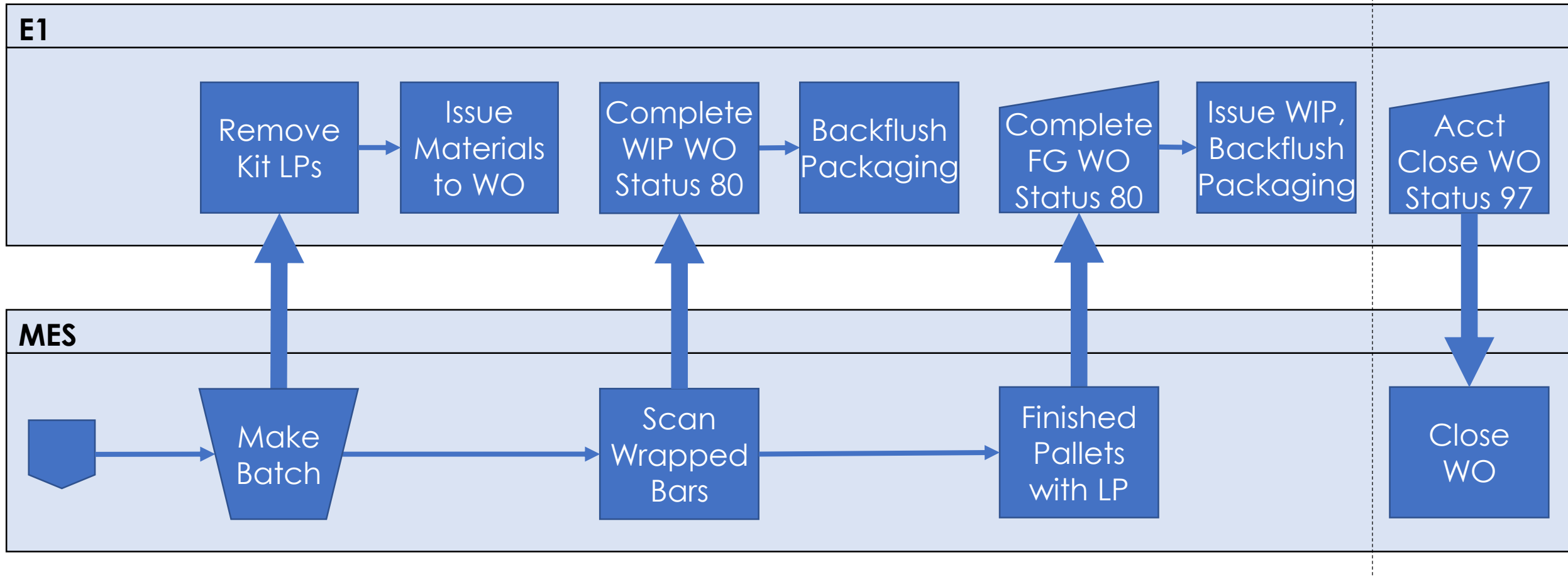


Work Order E1 MES Flow



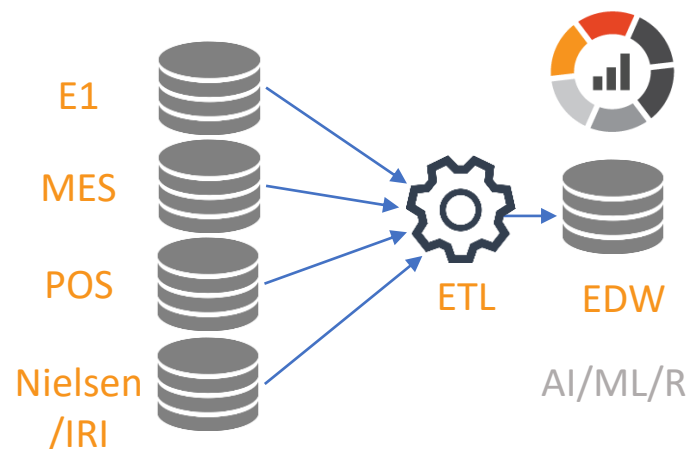


Work Order E1 MES Flow (continued)



Analytics Architecture

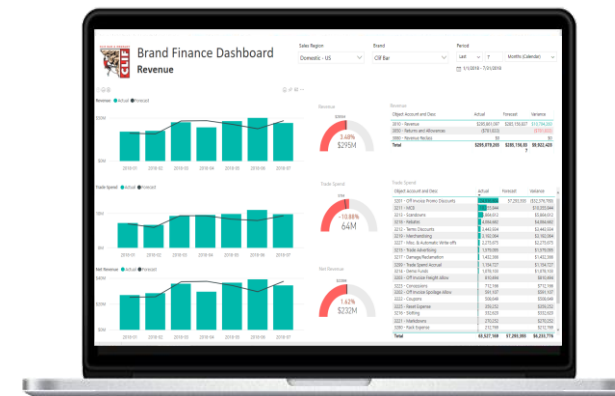
Infrastructure



Master Data Governance



Visualization



Data Integrity - Translation of data into business friendly format

- 30+ data sources
- Real-time Analytics
- Enterprise Data Warehouse

Data Governance – Single Version of Truth

- Dimensions & Measures
- Security
- RADII consensus process

Instant Analysis and Decision-making accuracy

- Realtime access
- Multiple form factors
- Self-service



Dashboards



Yield Dashboard Dough to Wrapper (bars)

Bakery

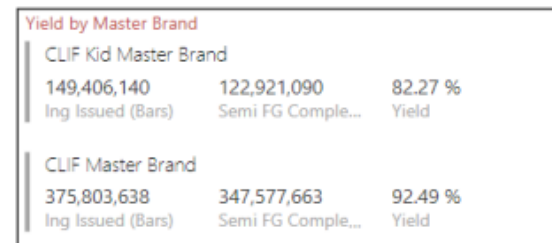
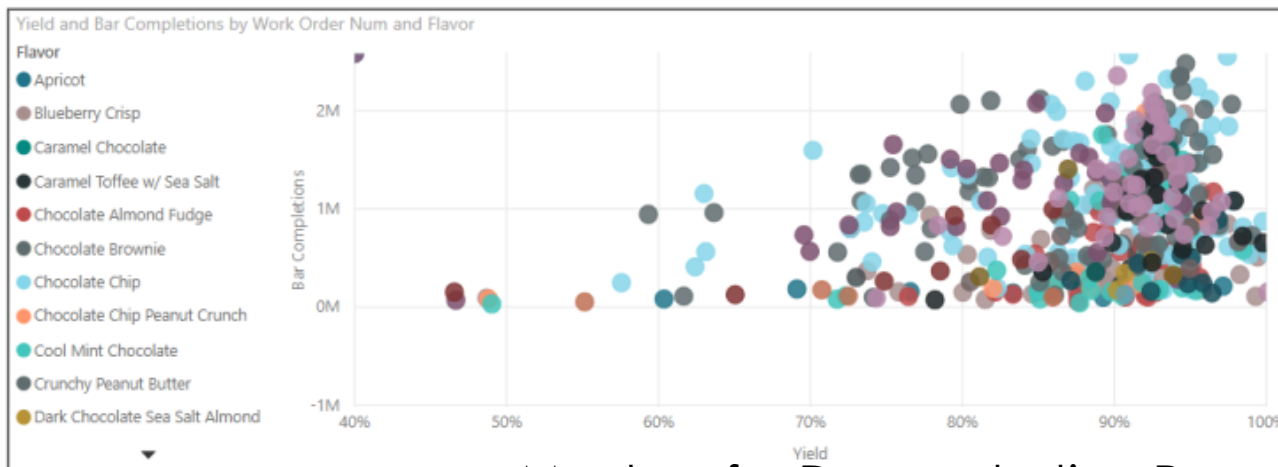
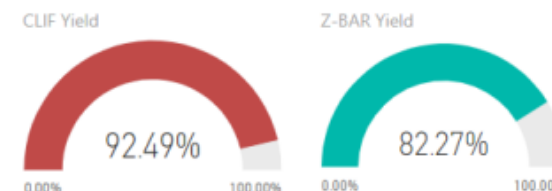
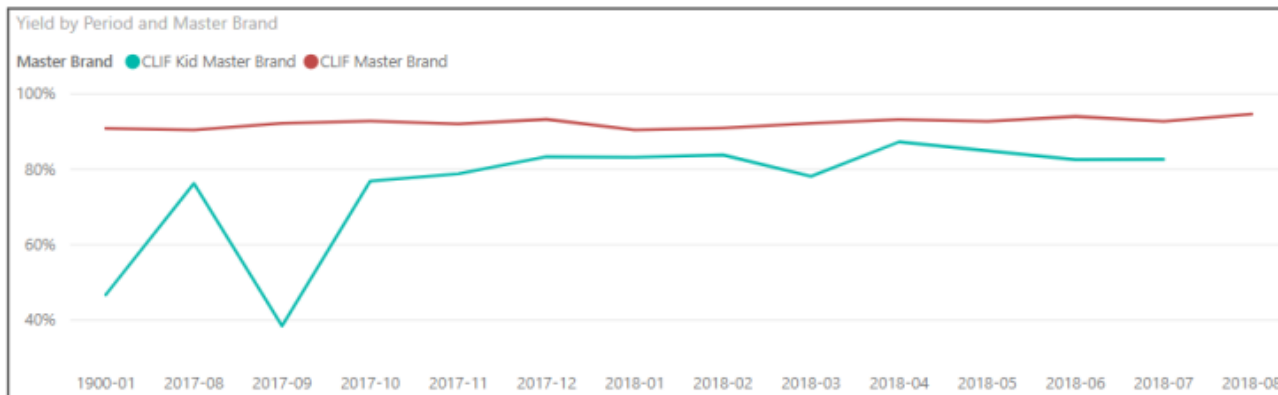
- 3010 - Twin Falls Manufacturing
- 3020 - Indy Manufacturing

Master Brand

- CLIF Kid Master Brand
- CLIF Master Brand

Transaction Date

Last 12 Months
8/18/2017 - 8/17/2018

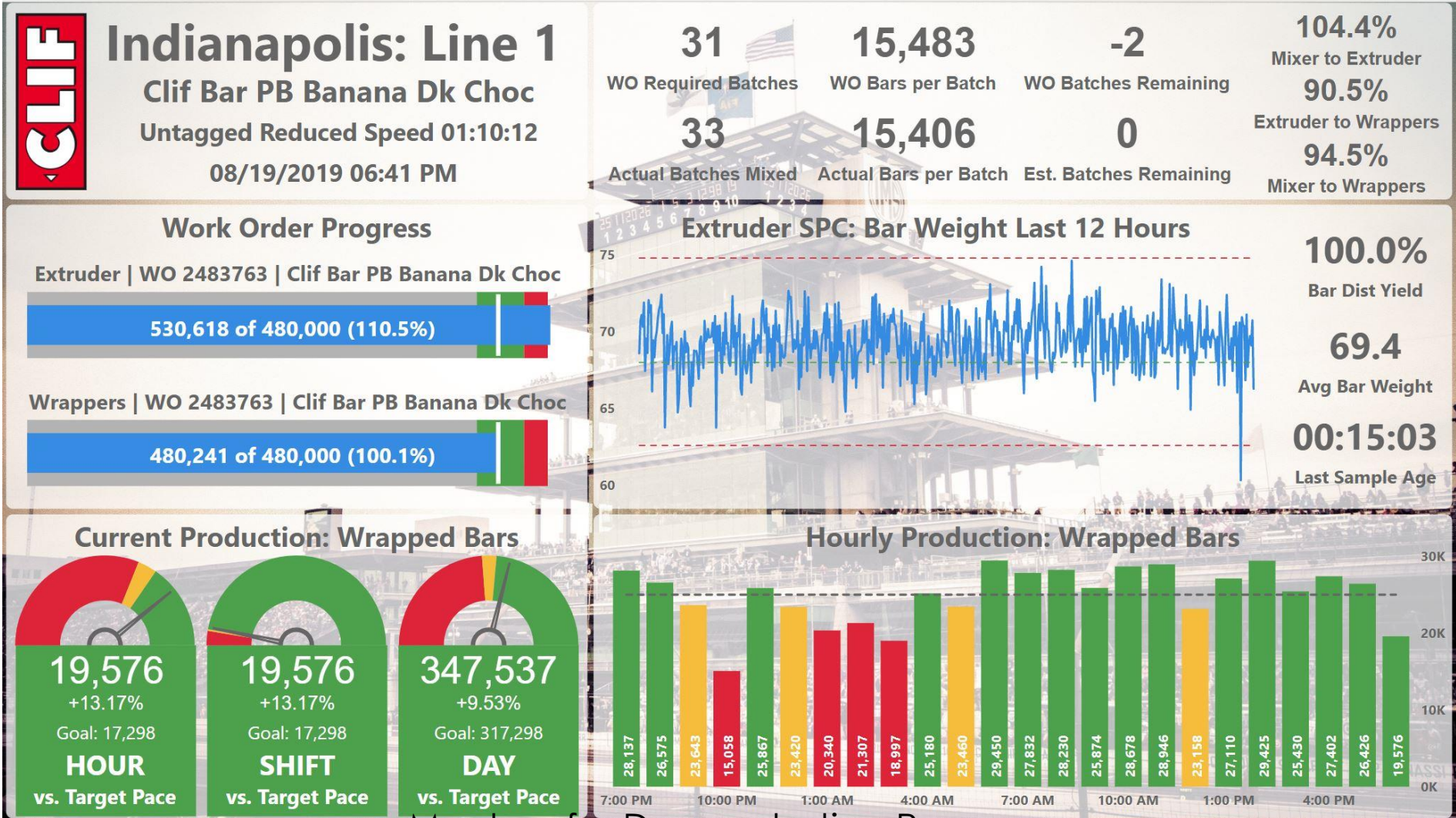


Flavor	Yield Pct
Chocolate Chip	89.90 %
Spiced Pumpkin Pie	89.22 %
Caramel Chocolate	87.69 %
Iced Oatmeal Cookie	83.22 %
Chocolate Brownie	81.31 %
Apricot	80.31 %
S'Mores	78.92 %
Total	89.58 %

Mockup for Demonstration Purposes



Visual Bakery



Mockup for Demonstration Purposes



Where We're Headed

- E1 Upgrade to 9.2
- RFgen Upgrade
- Redundant Architecture
- Purge and Archive
- Tools like Orchestrator, UDOs, Café One, Pages, etc.
- Visual Bakery continued
- MES Data Modeling for Self-Service Analytics

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Q&A

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Please complete a session evaluation

Session ID: 104520

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