



OTM Workflow Best Practices



By

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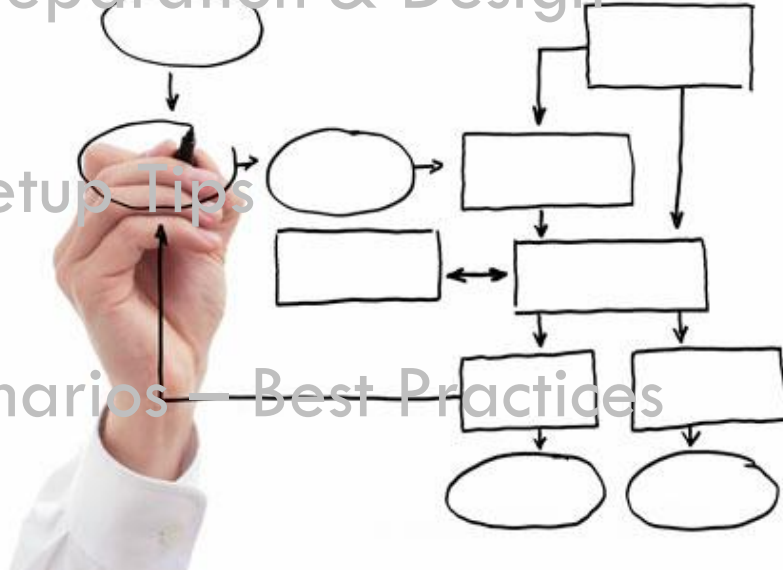


Agenda

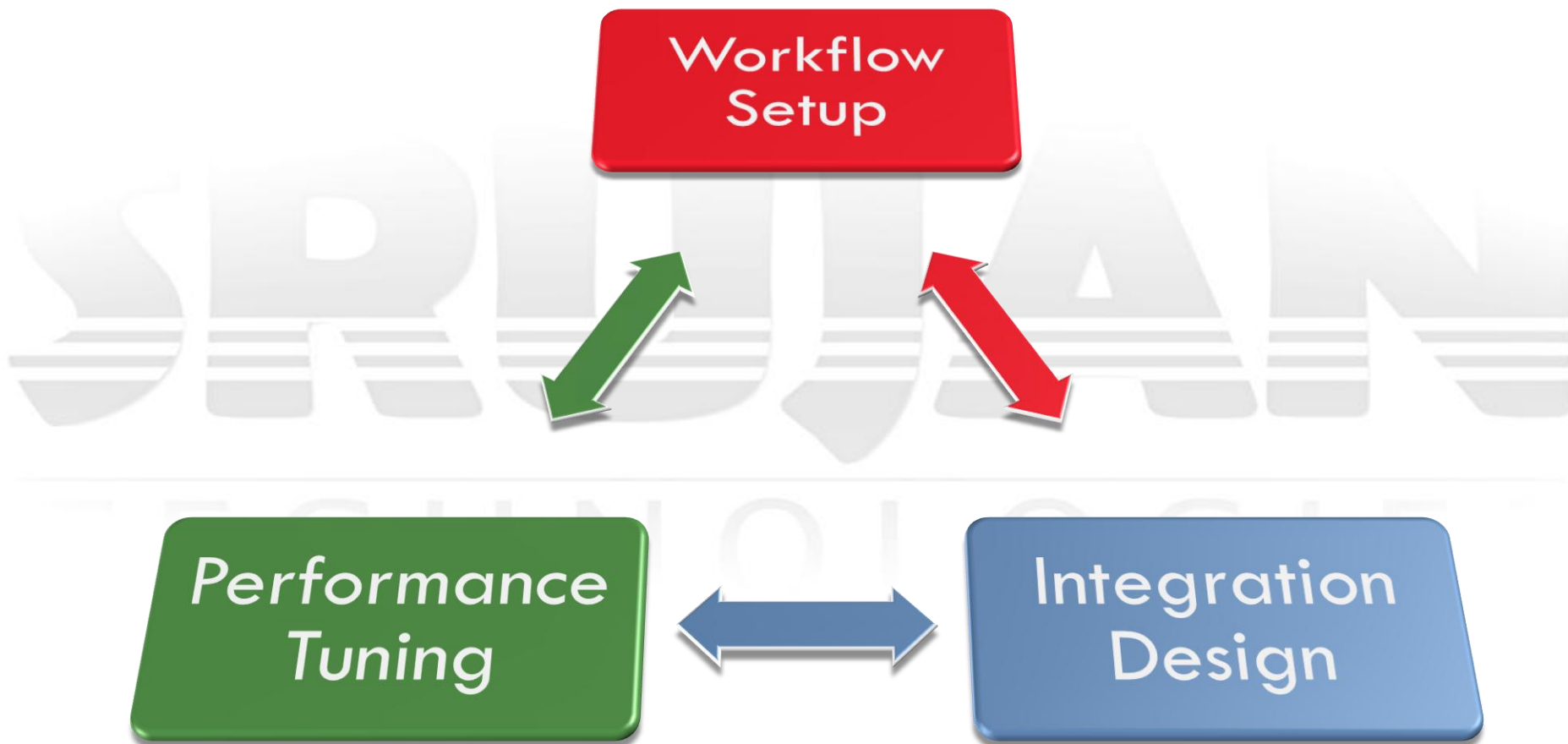
- Workflow Dependencies & Components
- Workflow Preparation & Design
- Workflow Setup Tips
- Business Scenarios – Best Practices
- Documentation

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Workflow Dependencies



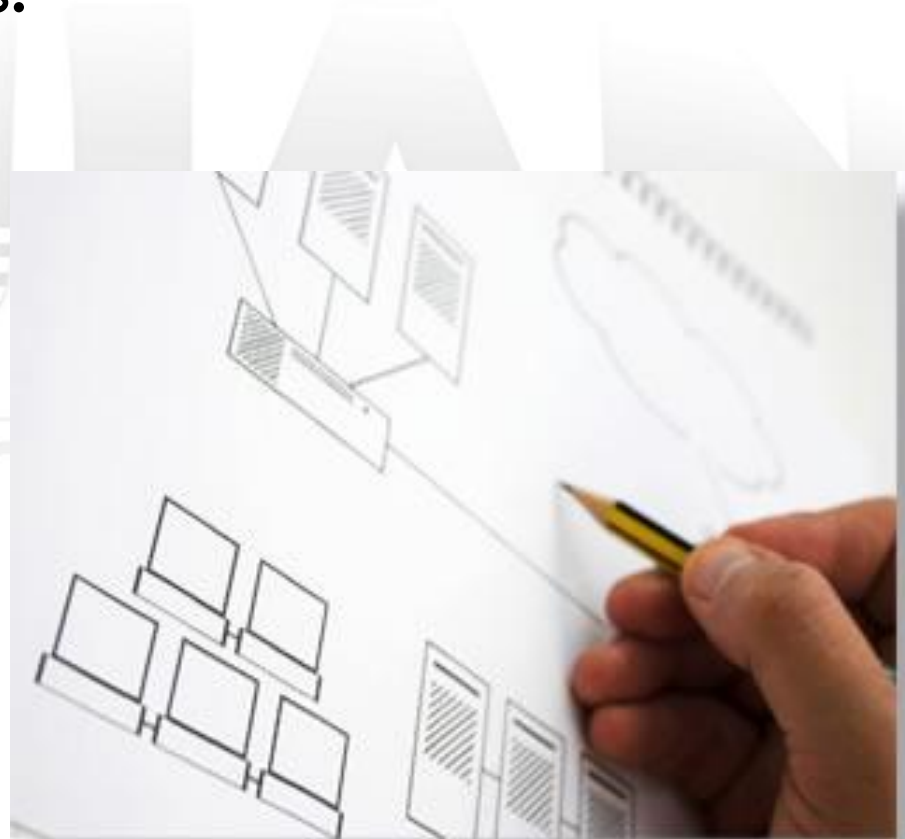
Major Workflow Components

- ❑ Automation Agents
- ❑ Schedule Jobs
- ❑ (Integration) Saved Queries
- ❑ Milestone Monitors
- ❑ VPD Profiles
- ❑ Action Checks and
- ❑ Many more



Integration Design

- Does it impact workflow design? How?
- Integration Components:
 - Interface Design
 - External System Setup
 - Out XML Profiles
 - Error Handling



Performance Tuning

- Again, does it impact workflow design? How?
- Major Performance Tuning Components
 - Tuning Threads
 - Tuning Connection Pools
 - Server Level Tuning (JVM, Memory, etc)
 - Minimizing Logs



Agenda

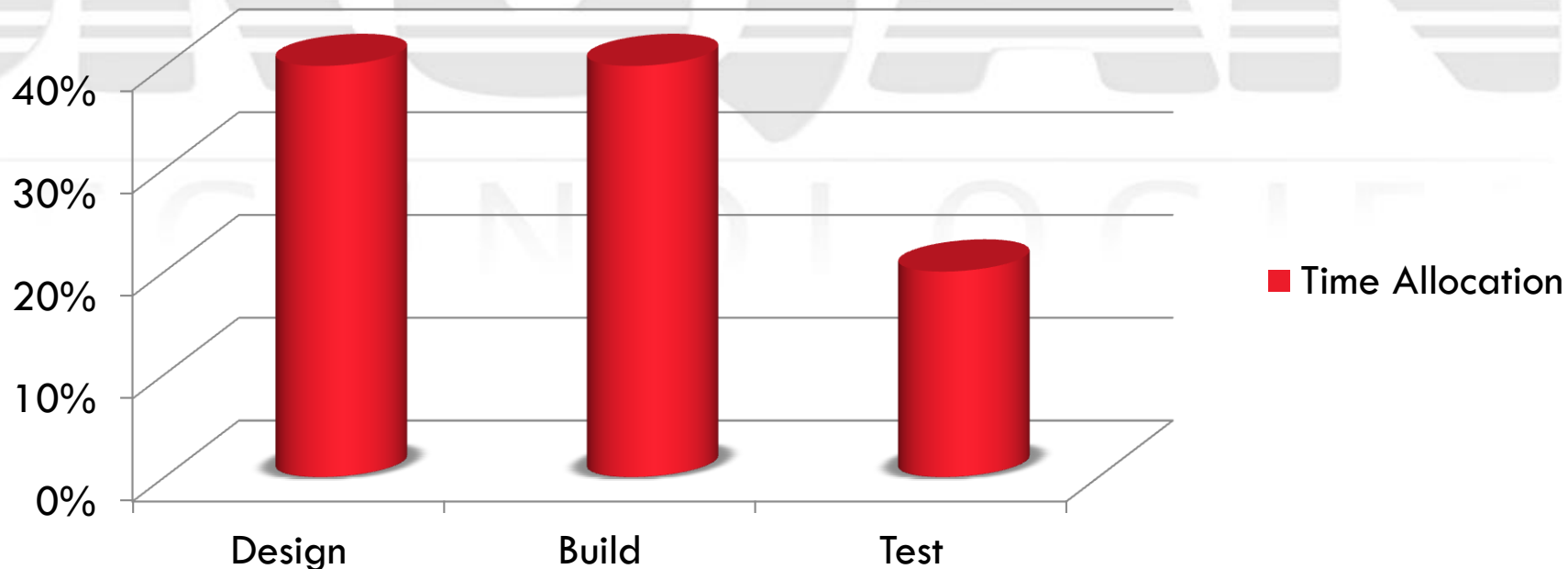
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Workflow – Time Allocation

- Following chart gives high level time allocation for complex workflow setup
- This may vary depends on the complexity

Time Allocation by Phase



Workflow Preparation

Collect

- Requirement Discussions

Analyze

- Understand & identify affected objects

Prepare

- Document high level workflow setup

Workflow Preparation – Analysis

- Analysis:
 - ▣ Document all workflow related tasks before start the build phase
 - ▣ Identify all the common components such as saved queries, agent events, schedule jobs, OTM workflow vs Integration layer changes, etc
 - ▣ Analyze the proposed approach in terms of timing, performance, data accuracy, etc

Workflow Preparation – Design

- Design:
 - Avoid multiple agents triggering for same agent event
 - Initiate the DB package with frequently used queries & complex business logic
 - Introduce flags at object level for easy workflow & reports separation in multi phased/business process implementations
 - Optimize the server resources by distributing schedule job timings
 - Identification of interfaces & integration process

Workflow Preparation – Design contd...

- Process identification is key in workflow design

Agents

Saved Queries / Packages

Schedule Jobs

Milestones

Action Checks

User Security (VPD, etc)

Anything else?

Workflow Preparation – Design contd...

- Agents:
 - ▣ Identification of exact triggering conditions
 - ▣ Identify similar requirements can go together
 - ▣ Agents high level flow for each business scenario
 - ▣ Identify key agent actions/lookup/queries

- Integrations:
 - ▣ List of interfaces and data dependency
 - ▣ Communication Method & List of Ext. Systems
 - ▣ Out XML Profiles

Workflow Preparation – Design contd...

- Error Handling:
 - ▣ Initiate process for proper technical error handling
 - ▣ Identify the possible solutions for business exceptions

- Team:
 - ▣ Allocate one dedicated team for workflow preparation to avoid redundancy
 - ▣ Review the finalized process with different team before build phase starts

Workflow Preparation – Sample

- Requirement: Copy the shipment quantities to shipment actuals received via shipment events
- Analyze: Identify when to copy actuals, for every shipment event or only Pickup or Delivery? Check any other requirements can marry with this one
- Prepare: Document the requirement & write the high level pseudo agent related to this requirement

Workflow Preparation – Sample contd...

□ Prepare:
 Sample document
 for Agents
 Specification

What might be
 poor design here?

3. Update Shipment Quantities from Shipment Events

3.1. Purpose

The purpose of this agent is to perform the appropriate updates to shipment actuals when shipment event received through integration.

3.2. Requirements

- Agent that is triggered off the shipment event to copy the received shipment quantities to shipment actuals.

3.3. Agent Details

Agent: SRUJAN SHIPMENT EVENT TRACKER

Event(s):

- SHIPMENT STATUS - TRACKING

Action(s):

- Wherever shipment is set to DELIVERED status
 - Call stored procedure to copy quantities from IE tables to shipment ship unit tables

Error Handler:

- Notify IT SUPPORT contact group about agent failure with agent name in the subject.

3.4. Exit Criteria

This is the list of unit tests to be performed by the developer as acceptance that the workflow build is complete and ready for System Testing.

Test Case ID	Test Case Description	Expected Result	Pass or Fail	Comments
1	Send the delivery event with ship unit quantities	Ship Unit quantities will copy from IE tables to shipment ship unit		
2	Send the delivery event without ship unit quantities	Ship Unit quantities should not be overwritten		

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Workflow Setup – Agents

- ❑ Avoid triggering multiple agents for given agent event. This can cause serious problems if we mis-use.
- ❑ Avoid using WAIT action
- ❑ Careful while writing DSU Action:
 - ❑ Default behavior refreshes entire Business Object Tree (i.e. Shipment, Stop, Ship Unit, etc.)
 - ❑ Enable ‘Parse SQL’ option to increase performance by only refreshing objects updated by SQL
 - ❑ Use ‘Do Not Refresh’ when performing multiple updates to the same object within one Agent

Workflow Setup – Agents contd...

- Similar actions should not trigger in parallel on same object.
 - ▣ For ex, Recalc on date change & Rerate on locations change. There are chances we can expect these two changes at once
- Every agent must pass through the test cases
- Split the agents by business process
- Enforce the version controlling in the agents

Workflow Setup – Agents contd...

- Avoid writing all actions into one big agent
- Error Handler section should minimum notify users
- Before going to production, **NO AGENT TECHNICAL FAILURES** for any reason.
- The acceptable failures will be business exceptions but not technical exceptions

Workflow Setup – Saved Queries

- ❑ Every SQL query must be optimized by running explain plan
- ❑ When a query is expected for heavy usage, validate the query with DBA for better performance
- ❑ Move the commonly used queries into a DB package
- ❑ Avoid using OTM shipped views more than once in the same query
- ❑ When a query is running for a longer time, negotiate with the business team to compromise the requirements

Workflow Setup – Ext. Systems

- Ext. systems configuration is simple and key
- Identify the BEST communication method to use, for ex, HTTP, Web Service, FTP, etc by analyzing the current environment
- MUST have an habit to use “Out XML Profile” with template option to reduce the xml size in ext. systems
- Try to create a separate ext. system for each interface even though they are referring to same URL
- Avoid using GLOG_* out xml profiles in notifications

Workflow Setup – Schedule Jobs

- ❑ Query must be tuned to the greater extend
- ❑ Timing must be adjusted properly
- ❑ Avoid running different long running jobs at the same time

Workflow Setup – Tuning

- Threads:
 - A backlog of queued events and/or a long average wait time may indicate a need to increase threads
 - Moving longer processing events to a dedicated thread group will increase throughput and reduce backlogs
 - Workflow processing is monitored with the Event Diagnostics screen

- Increase the connection pool sizes to desired level based on the load test results

Logs

- ❑ Too much logging will impact on performance
- ❑ Avoid using “Ad-Hoc” logs (which are written for all users)
- ❑ Do not turn on too many logs for “User” logs as well, still impacts performance

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Best Design Approaches

- Restrict the user access to see the orders & shipments related to their work location
 - Create separate screen sets, manager layouts & menus?
 - Create separate VPD profile and User Role?
- Create one VPD profile with different User Roles link via VPD context variables?

Best Design Approaches

- Send planned shipment to legacy when shipment tendered or accepted
 - Send planned shipment when tendered & accepted
 - Revise the requirement and try to send planned shipment at tender accepted time and introduce out xml profile to reduce the size of XML as low as possible
- With this approach, half of the transmissions for sending the planned shipments will be decreased

Best Design Approaches

- Recalc Shipment when shipment dates are changed,
Rerate shipment when locations are changed
- Write one agent for Recalc when dates changed and another agent for Rerate when locations are changed
- One agent with conditional check for dates vs location changes. Introduce Rerate status to identify rating failures
- This will the avoid duplicate planning process when both dates and locations are changed at the same time

Best Design Approaches

□ Send vouchers to payment system

- OTM will send voucher to middleware, business validation checks perform in the middleware before sending to payment system
- Perform as max as possible business validations before approving the invoice and then send to middleware for further processing
- Provides the better exception handling mechanism

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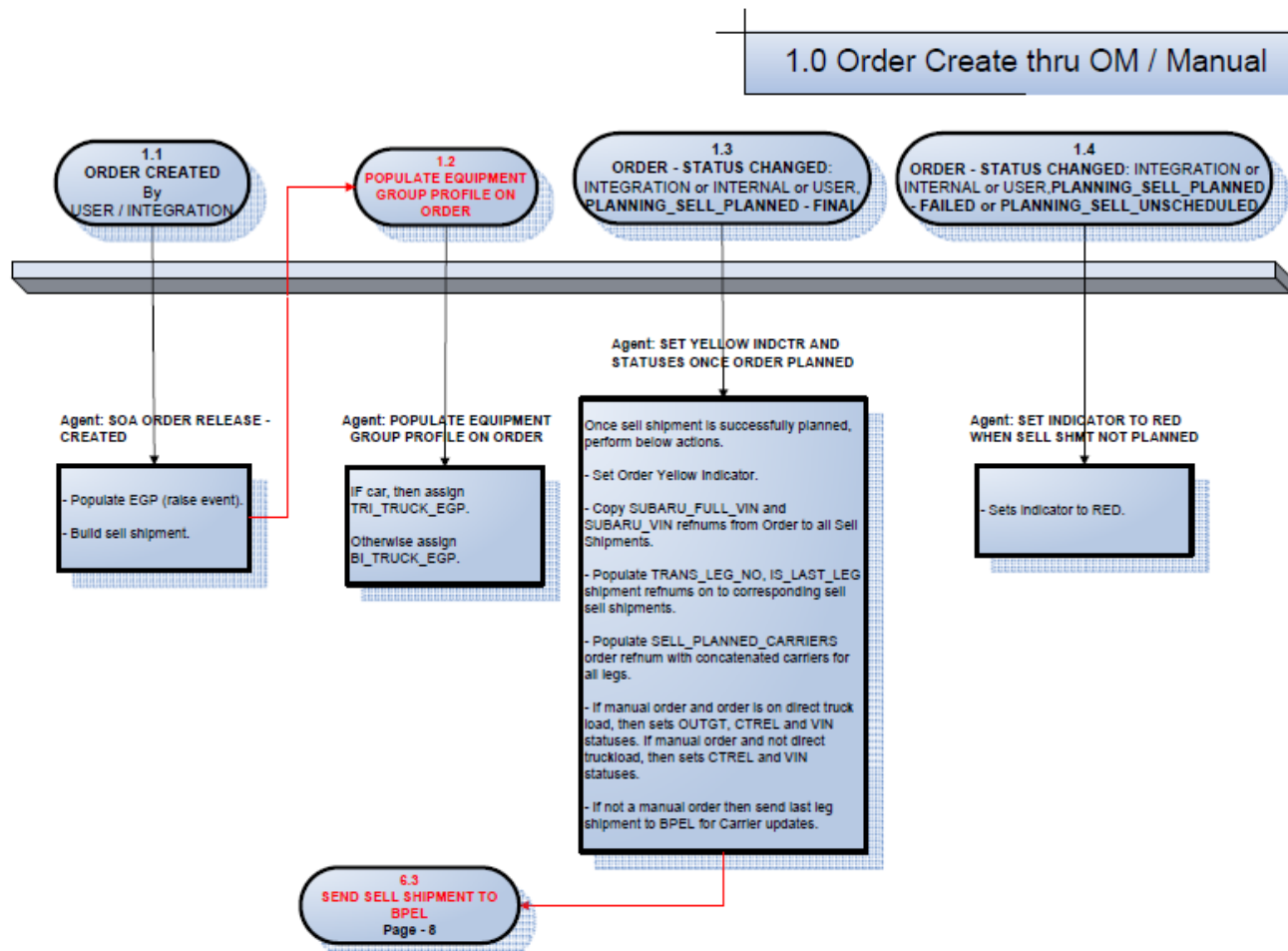
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Documentation

- List of workflow requirements (agents or etc) spreadsheet
- Agents Specification Document
- End to End technical document for complex processes
- Saved Queries details & usage

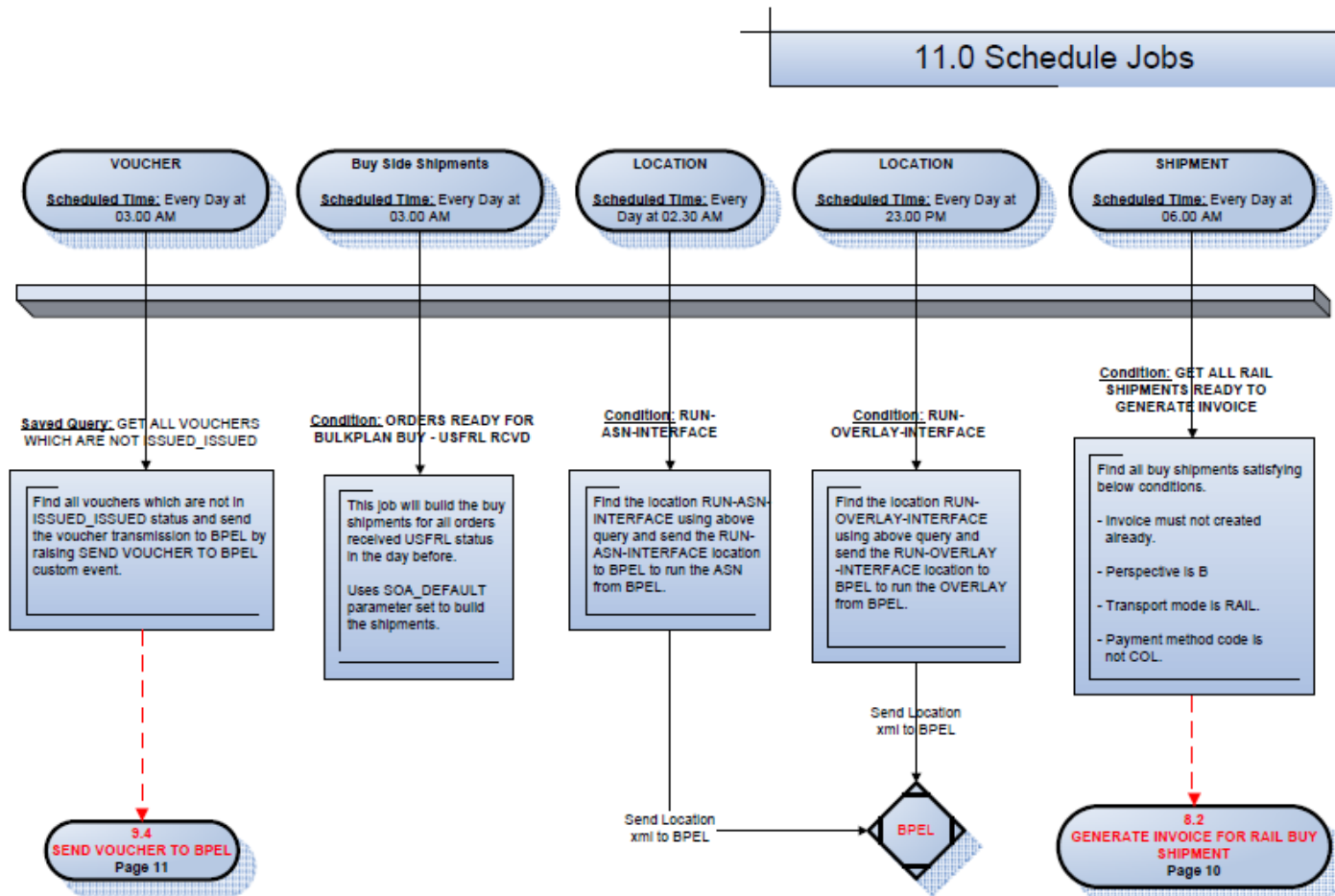
Documentation

□ Agents Flow Diagram



Documentation

□ Schedule Jobs Flow Diagram



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