Project Name	Reducing Inventory Discrepancies in Warehouse Operations
Today's Date	October 6, 2025
Project Start Date	October 10, 2025
Target Completion Date	December 15, 2025

Project Element	**Response**
Problem Statement • Includes time, measurable item, gap and business impact	Frequent discrepancies between SAP MM system inventory records and physical counts have resulted in an average variance of 10% per cycle count, leading to delayed order fulfillment, rework, and financial inaccuracy. This project aims to reduce the discrepancy rate to less than 5% within 10 weeks to improve inventory reliability and operational efficiency.
Business Case • Why is this project important to do now? • What is the project's financial impact? • What is the impact on DPMO/ Sigma level? • What is the impact on customer service	Accurate inventory is essential for seamless warehouse operations, timely replenishment, and effective financial reporting. Inventory mismatches cause shipment delays, labor inefficiency, and lost productivity. Reducing discrepancies is expected to save approximately 20 labor hours weekly, equivalent to $1,200 per month in reduced rework and reconciliation time. An increase in the sigma level results in a decrease in Defects per Million Opportunities (DPMO), indicating a more capable process with fewer errors, lower yield-related costs, increased customer satisfaction, and better overall efficiency. Reducing discrepancies will minimize rework, improve customer satisfaction, and enhance profitability through reduced material handling time and stockouts.
Goal Statement • Specific • Measurable • Achievable • Realistic • Time-bound	To reduce inventory discrepancies from 10% to below 5% within 10 weeks using Lean Six Sigma DMAIC methodology, ensuring at least 98% inventory accuracy in SAP MM and physical counts, minimizing back orders and improving order fulfillment reliability for customers.

List of Improvement Goals	**Measure (units)**	**Baseline**	**Goal**
1. 2. 3. 4. 5.	Inventory Accuracy (%)	90%	98%
	Discrepancy Rate (%)	10%	5%
	Reconciliation Time (%)	8 hrs.	6 hrs.
	Picking time	20 min	15 min

Process • Describe the process in which the problem exists	The process includes receiving shipments, put away, picking, cycle counting, and reconciliation in SAP MM. Discrepancies arise during put away and picking when incorrect item quantities or locations are updated in the system.		
Project Scope • What part of the process will be addressed? • What are the boundaries of the project or process? • What areas are inside or outside the team's focus or authority? • Attach a SIPOC diagram if necessary	**In-Scope:** Cycle count and reconciliation process for Zone A racks. **Out-of-Scope:** Vendor-managed inventory and damaged/obsolete items. **Boundaries:** From physical count to data update in SAP MM.		

Suppliers	Inputs	Process (5–7 Steps)	Outputs	Customers
Vendors / Suppliers	Shipment documents, Purchase orders	1. Receive materials and verify PO in SAP MM	Verified receipt data	Receiving team
Receiving Department	Item details, packing list	2. Inspect and label items	Labeled items	Put-away team
Put-away Team	Location assignment, barcode labels	3. Store items in assigned racks (Zone A)	Updated stock records	Picking team
Picking Team	Pick lists, handheld scanner	4. Pick items for order fulfillment	Picked orders	Shipping team
Cycle Count Team	Count sheets, SAP MM data	5. Conduct cycle counts for Zone A	Count results	Inventory Control
Inventory Control	Discrepancy reports, SAP MM	6. Reconcile physical vs. system count	Updated inventory records	Management, Finance
Quality/Operations	Updated SOPs	7. Implement corrective actions & standardize	Standardized process	Customers, internal teams

Team	**Member Name**
Project Sponsor	Andrew Molnar
Key Stakeholders	Dante Jackson
Team Lead	Yash Bokade (Inventory Specialist)
Team Members	Faith Knoppel, Brandon Fowler, Hunter Clethen, Jake Lennon
Process Owner	Bradford Blackbull
Other	

Timeline by Project Stage	Milestone	Target Completion Date
Define	Project Charter and kickoff problem validated (SIPOC completed)	Oct 15, 2025
Measure	Define and collect data (baseline data created)	Oct 25, 2025
Analysis	Finding causes (Root Cause Analysis)	Nov 5, 2025
Improve	Fix causes (Pilot Process Improvement)	Nov 25, 2025
Control	Standardize the fix (Update Sop & control plan)	Dec 10, 2025

Project Title	**Reducing Inventory Discrepancies in Warehouse Operations**

Expectation	Example	Team Rule
Attendance	**Attendance is required at all team meetings. Changes in meeting times must be made at least 24 hours ahead of time.**	**All members must attend weekly check-ins. Notify in advance for absences.**
Participation	**Team members may not be substituted unless approved by team leader.**	**Everyone contributes to data collection and analysis tasks.**
Focus	**We will stay on task and on topic, using the Project Charter as our guide. A meeting agenda will be published at least one day in advance.**	**Each meeting follows a pre-published agenda.**
Interruptions	**Interruptions for emergencies only. Phones turned to silent.**	**No unrelated conversations during work sessions.**
Preparation	**All deliverables are expected to be completed in a timely manner. Each meeting will have a published agenda.**	**Review assigned metrics before each meeting.**
Timeliness	**Meetings will begin promptly as scheduled.**	**Join meeting within 5 minutes of scheduled time.**
Decisions	**We will choose the best decision-making method for each situation. We will support decisions made by the team.**	**Team lead facilitates, majority vote if needed.**
Data	**We will rely on data to make decisions.**	**All improvements must be data-supported.**

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Expectation	Example	Team Rule
Conflict	**We welcome honest disagreements, as long as everyone is treated with respect. A facilitator will be used if conflict cannot be resolved.**	**Use respectful communication and mediation if needed.**
Other		**Maintain confidentiality of warehouse data.**

Team Member	Role	Signature
Yash Bokade	**Inventory Specialist**	**YB**
Andrew Molnar	**Warehouse Manager**	**AM**
Dante Jackson	**Operations lead**	**DJ**
Faith Knoppel	**Picker Representative**	**FK**
Brandon Fowler	**Quality Coordinator**	**BF**

Data Collection Plan – Inventory Accuracy Improvement

1. Measures and Operational Definitions

- Inventory Accuracy (%) = (Accurate Counts ÷ Total Counts) × 100
- Discrepancy Rate (%) = (Discrepancies ÷ Total Items Counted) × 100
- Reconciliation Time (hrs) = Time between discrepancy detection and resolution
- Picking Time (min) = Average time taken to pick an item/order

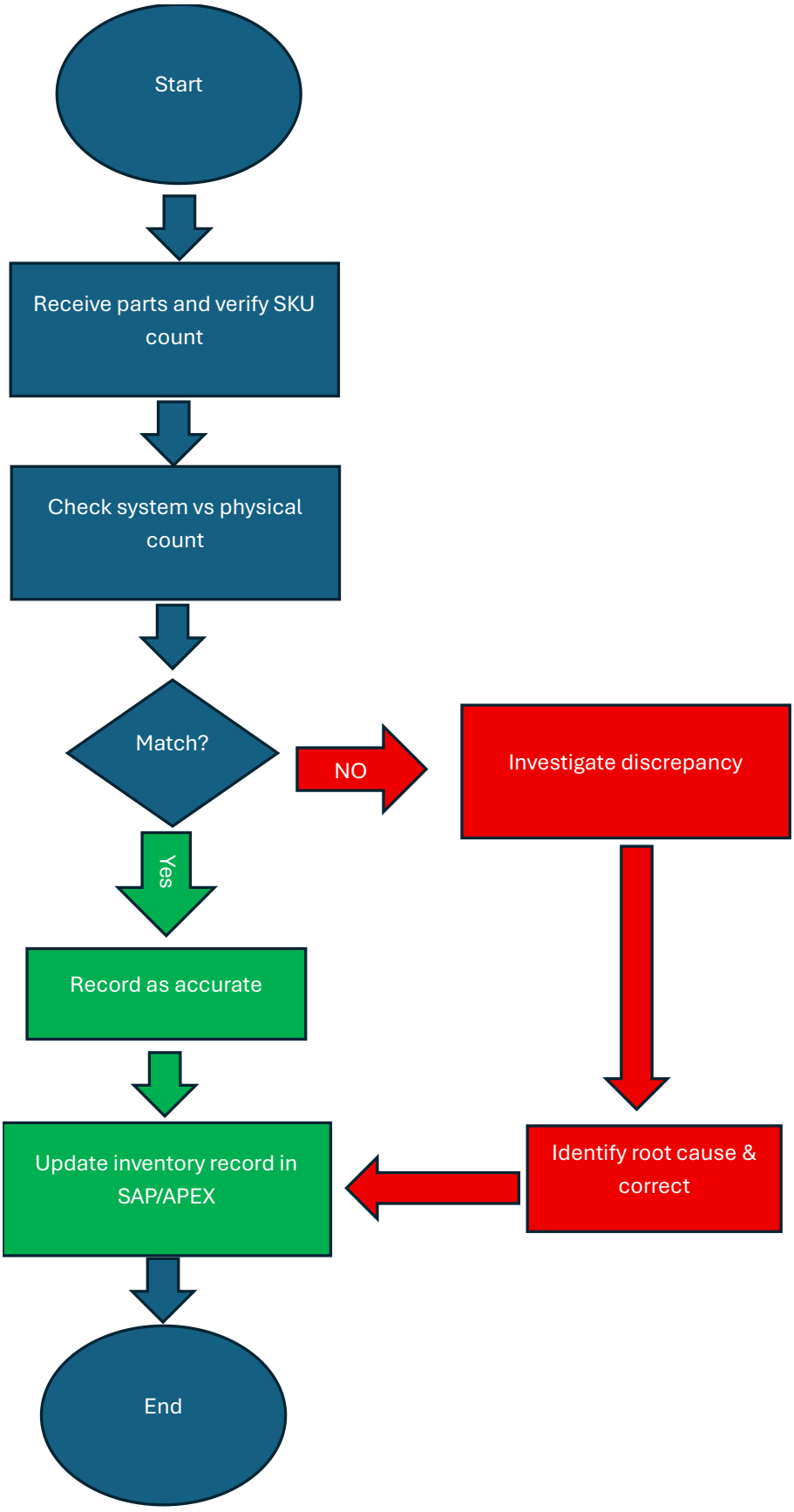
All metrics are continuous data, recorded from SAP/APEX systems and warehouse logs.

2. Data Collection Matrix

Measure	Who Collects	Where	When/Frequency	Source/System	Tool/Form	Sampling Plan	Quality Control
Inventory Accuracy	Warehouse Team	Market Hub Zones A–C	Daily during cycle count	SAP MM, APEX Logs	Excel Tracker	100 SKUs per day	Supervisor spot-checks
Discrepancy Rate	Inventory Analyst	Stock bins	Weekly	SAP Reports	Excel Dashboard	Stratified sample by SKU category	Random 10% verification
Reconciliation Time	Inventory Analyst	Warehouse floor	Daily	APEX Ticket Logs	Time Log Sheet	Every discrepancy event	Timestamp validation
Picking Time	Warehouse Associates	Picking Area Zone A	Every 5th order	SAP Picking Logs	Stopwatch + Excel	5 samples per shift	Weekly review by lead
Root Cause Logs	Quality Engineer	Audit Zone	Weekly	Excel / APEX	Pareto Log	All recorded errors	100% review during meeting

3. Data Quality Controls

- Weekly spot checks by supervisor to verify data entry accuracy.
- Gauge R&R (lightweight): double-check 10% of entries by a second operator.


Start
Receive parts and verify SKU count
Check system vs physical count
Match?
NO
Investigate discrepancy
Yes
Record as accurate
Update inventory record in SAP/APEX
Identify root cause & correct
End

Hypotheses & Statistical Analysis

Summarized from your Excel dashboard:

Metric	H_0	H_1	Test
Inventory Accuracy	No change before/after	Accuracy ↑	Two-sample t-test
Discrepancy Rate	No change	Discrepancy ↓	One-tailed t-test
Reconciliation Time	No change	Time ↓	Two-sample t-test
Picking Time	No change	Time ↓	Two-sample t-test
Root Cause Frequency	No change	Distribution changed	Chi-square

Reflection and Lessons Learned

Completing the Six Sigma Yellow Belt capstone project has provided a comprehensive understanding of how data-driven decision-making enhances process efficiency and quality. By applying the DMAIC framework—Define, Measure, Analyze, Improve, and Control—I learned how to approach operational challenges systematically, ensuring that each improvement is measurable and sustainable. Through the creation of the project and team charters, process map, and data collection plan, I was able to clearly define the problem, align stakeholder roles, and visualize workflow inefficiencies within the inventory management process.

This project deepened my knowledge of statistical tools, control charts, and hypothesis testing in Microsoft Excel, allowing me to link quantitative analysis with real-world performance outcomes. I also learned the importance of process documentation, standardization, and continuous improvement using Lean Six Sigma principles. Overall, this experience not only strengthened my analytical and problem-solving skills but also enhanced my ability to lead cross-functional improvement initiatives that drive accuracy, reduce waste, and improve operational excellence in inventory control and warehouse management environments.