

The Grumpy Old IT Guy Match Monitoring Framework (GITG-MMF™)

A Practical Framework for Monitoring and Continuously Improving Enterprise Record Matching

Version 1.0

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Executive Summary

Record matching is not a one-time implementation project. Even a highly accurate matching solution gradually loses effectiveness as business processes evolve, new data sources are added, customer behavior changes, and data quality deteriorates.

Organizations frequently spend significant effort implementing sophisticated entity resolution algorithms only to assume that the solution will continue performing indefinitely. In reality, match quality slowly drifts over time unless it is continuously monitored, measured, reviewed, and refined.

The Grumpy Old IT Guy Match Monitoring Framework (GITG-MMF™) provides a structured methodology for measuring the operational health of enterprise record matching solutions. Rather than relying on assumptions, the framework encourages organizations to establish measurable Key Performance Indicators (KPIs) that objectively evaluate the accuracy, consistency, efficiency, and business value of their matching processes.

By continuously monitoring match performance, organizations can detect deteriorating data quality, identify emerging duplicate patterns, optimize similarity algorithms, refine business rules, reduce steward workload, and improve confidence in enterprise master data.

The framework is vendor-neutral and can be implemented using SQL Server, Data Quality Services (DQS), Master Data Services (MDS), Microsoft Purview, Azure Data Factory, Fabric, Informatica, IBM, SAP, Oracle, or virtually any modern data quality platform.

Why Match Monitoring Matters

Every matching solution changes over time.

New customer acquisition methods introduce different naming conventions.

New ERP systems generate unfamiliar identifiers.

New countries create unfamiliar address formats.

Business mergers introduce conflicting customer records.

Without monitoring, organizations slowly lose confidence in their master data while duplicate records quietly increase throughout the enterprise.

Successful organizations recognize that monitoring is just as important as the original matching implementation.

The Purpose of GITG-MMF™

The framework provides a repeatable process for:

- Measuring matching accuracy
- Detecting declining match quality
- Monitoring duplicate creation
- Evaluating steward workload
- Measuring algorithm effectiveness
- Tracking business rule performance
- Identifying data quality trends
- Supporting continuous improvement
- Providing executive visibility
- Maintaining trusted master data

Core Principles

The framework is built on eight guiding principles.

Principle 1 – What Gets Measured Improves

Organizations cannot improve matching performance unless it is measured objectively.

Principle 2 – Accuracy is More Important than Volume

Processing millions of records is meaningless if the matches are incorrect.

Principle 3 – Monitor Trends, Not Snapshots

Daily measurements reveal trends that individual reports often hide.

Principle 4 – Business Rules Must Evolve

Matching rules should continuously adapt to changing business conditions.

Principle 5 – Human Review Provides Feedback

Data stewards provide valuable information that should be incorporated into future algorithm improvements.

Principle 6 – False Positives Are Expensive

Incorrectly merging two different entities can be far more damaging than temporarily allowing duplicates to exist.

Principle 7 – Duplicate Prevention is Better Than Duplicate Cleanup

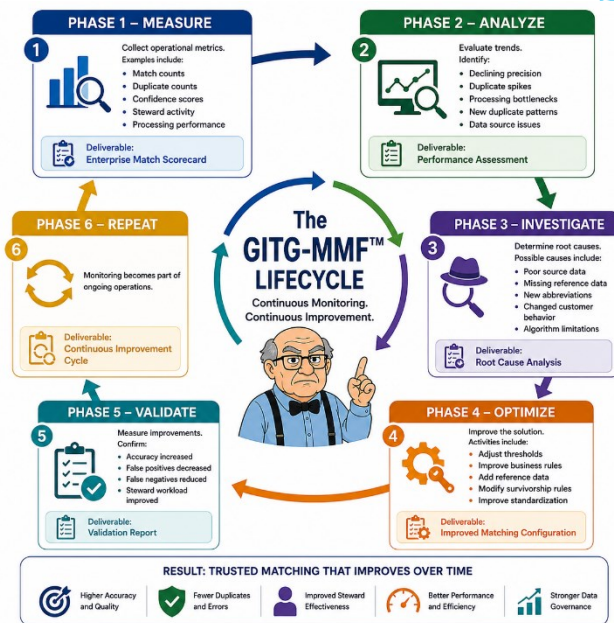
Monitoring should identify where duplicates originate so preventative improvements can be implemented upstream.

Principle 8 – Continuous Improvement Never Ends

Enterprise matching should be viewed as an ongoing operational capability rather than a completed project.

The GITG-MMF™ Lifecycle

The framework consists of six continuous phases.



GITG – MMF (Match Monitoring) Lifecycle

Phase 1 – Measure

Collect operational metrics.

Examples include:

- Match counts
- Duplicate counts
- Confidence scores
- Steward activity
- Processing performance

Deliverable:

Enterprise Match Scorecard

Phase 2 – Analyze

Evaluate trends.

Identify:

- Declining precision
- Duplicate spikes
- Processing bottlenecks
- New duplicate patterns
- Data source issues

Deliverable:

Performance Assessment

Phase 3 – Investigate

Determine root causes.

Possible causes include:

- Poor source data
- Missing reference data
- New abbreviations
- Changed customer behavior
- Algorithm limitations

Deliverable:

Root Cause Analysis

Phase 4 – Optimize

Improve the solution.

Activities include:

- Adjust thresholds
- Improve business rules
- Add reference data
- Modify survivorship rules
- Improve standardization

Deliverable:

Improved Matching Configuration

Phase 5 – Validate

Measure improvements.

Confirm:

- Accuracy increased
- False positives decreased
- False negatives reduced
- Steward workload improved

Deliverable:

Validation Report

Phase 6 – Repeat

Monitoring becomes part of ongoing operations.

Deliverable: Continuous Improvement Cycle

Recommended Key Performance Indicators

The framework recommends monitoring multiple dimensions of match quality.

Accuracy Metrics

Examples include:

- Match Accuracy
- Precision
- Recall

- F1 Score
- Confidence Distribution

These metrics measure how well the algorithms identify correct matches.

Error Metrics

Organizations should monitor:

- False Positives
- False Negatives
- Incorrect Merges
- Missed Matches

These measurements reveal weaknesses in current policies.

Operational Metrics

Monitor:

- Records Processed
- Processing Time
- Average Match Time
- Throughput
- Queue Backlog

These metrics measure operational efficiency.

Stewardship Metrics

Recommended KPIs include:

- Records Requiring Review
- Review Completion Rate
- Average Review Time
- Override Rate
- Escalation Rate

These measurements indicate whether automation is improving or degrading.

Duplicate Metrics

Monitor:

- Duplicate Creation Rate
- Duplicate Resolution Rate
- Duplicate Backlog
- Duplicate Trend
- Duplicate Source System

These metrics identify where duplicates originate.

Business Value Metrics

Examples include:

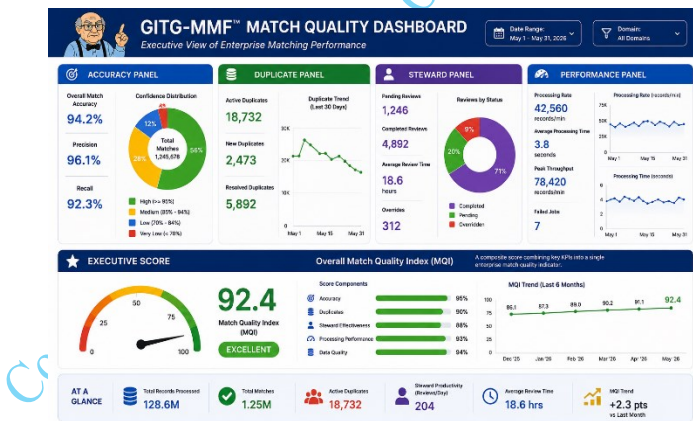
- Customer Consolidation Rate

- Golden Record Accuracy
- Marketing Waste Reduction
- Mail Return Reduction
- Revenue Recovery
- Compliance Improvements

These demonstrate business value beyond technical measurements.

Match Quality Dashboard

The GITG-MMF™ recommends executive dashboards containing:



GITG-MMF Match Quality Dashboard

Accuracy Panel

- Overall Match Accuracy

- Precision
- Recall
- Confidence Distribution

Duplicate Panel

- Active Duplicates
- New Duplicates
- Resolved Duplicates
- Duplicate Trend

Steward Panel

- Pending Reviews
- Completed Reviews
- Average Review Time
- Overrides

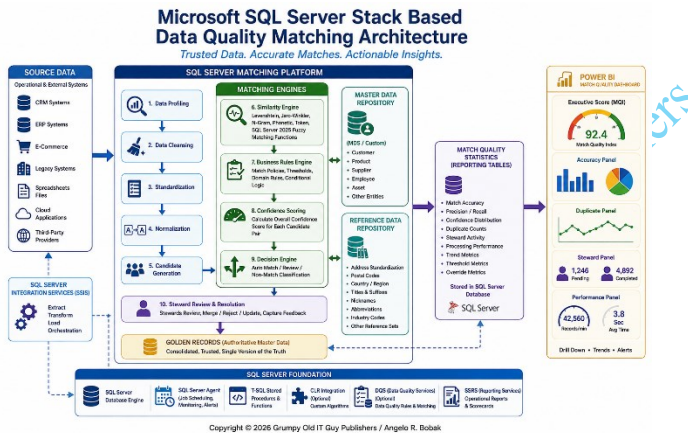
Performance Panel

- Processing Rate
- Average Processing Time
- Peak Throughput
- Failed Jobs

Executive Score

An overall Match Quality Index combining multiple KPIs into a single enterprise score.

Microsoft Power BI is a powerful tool for creating this dashboard.



Microsoft SQL Server Matching Architecture

The framework can be implemented using the Microsoft SQL Server technology stack.

- Microsoft SQL Server
- SQL Server Integration Services (SSIS)
- Data Quality Services (DQS)
- Master Data Services (MDS)
- Power BI
- SQL Server Reporting Services (SSRS)

Roles and Responsibilities

Successful monitoring requires clearly defined responsibilities.



The Data Quality Team

Data Stewards

- Review uncertain matches
- Validate recommendations
- Report recurring issues

Data Quality Analysts

- Analyze KPIs
- Investigate trends
- Recommend improvements

Match Administrators

- Tune thresholds
- Modify matching policies
- Modify Matching Algorithms
- Deploy updates

Data Governance Team

- Establish KPIs
- Approved policies
- Monitor compliance

Business Owners

- Validate business impact
- Prioritize improvements
- Measure operational benefits

Deliverables

Organizations implementing GITG-MMF™ should produce:

- Match Monitoring Strategy
- KPI Catalog
- Match Scorecards
- Executive Dashboards
- Steward Activity Reports

- Duplicate Trend Reports
- Root Cause Analyses
- Optimization Recommendations
- Validation Reports
- Continuous Improvement Roadmap

Technology Considerations

The framework is independent of specific technologies but can leverage:

- Microsoft SQL Server
- SQL Server Integration Services (SSIS)
- Data Quality Services (DQS)
- Master Data Services (MDS)
- Microsoft Purview
- Microsoft Fabric
- Azure Data Factory
- Power BI
- SQL Server Reporting Services (SSRS)
- Azure Synapse Analytics
- Databricks
- Spark

- Python
- R

Expected Benefits

Organizations adopting GITG-MMF™ typically achieve:

- Improved match accuracy
- Reduced duplicate records
- Lower steward workload
- Faster issue detection
- Better algorithm performance
- Increased confidence in Golden Records
- Improved regulatory compliance
- More reliable enterprise analytics
- Greater customer trust
- Continuous optimization of master data

Relationship to Other GITG™ Frameworks

The Match Monitoring Framework complements the broader Grumpy Old IT Guy data management methodology.

Typical implementation sequence:

1. GITG Data Profiling Framework (GITG-DPFTM)
2. GITG Data Cleansing Framework (GITG-DCFTM)
3. GITG Customer Data Standardization Framework (GITG-CDSFTM)
4. GITG Record Matching Framework (GITG-RMFTM)
5. **GITG Match Monitoring Framework (GITG-MMFTM)**
6. GITG Data Quality Framework (GITG-DQFTM)
7. GITG Data Governance Framework (GITG-DGFTM)

Together these frameworks establish a complete lifecycle for creating, maintaining, governing, and continuously improving trusted enterprise master data.

Conclusion

High-quality record matching is not achieved solely through sophisticated algorithms; it is sustained through disciplined measurement and continuous improvement. The Grumpy Old IT Guy Match Monitoring Framework (GITG-MMFTM) transforms match monitoring from an occasional operational task into a strategic governance capability by emphasizing measurable KPIs, trend analysis, steward feedback, and ongoing optimization.

Organizations that adopt GITG-MMFTM gain the ability to detect performance drift early, reduce duplicate creation,

improve matching precision, and maintain confidence in their Golden Records as business conditions evolve. By embedding monitoring into everyday operations, the framework helps ensure that entity resolution remains accurate, efficient, and aligned with organizational objectives, providing a reliable foundation for analytics, regulatory compliance, customer engagement, and enterprise decision-making.

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