MI
MAGIC INDEXER

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INTRODUCTION

What is Magic Indexer (MI)?

Indexing is one of the repetitive tasks which can be handled by robots. Today, with Robotic Process Automation (RPA) technology in the market, coupled with Excel Macros, customizable workflow is able to complete the indexing task accurately.

Digitization of medical records has been labor-intensive and time consuming. HIMS receives an average of 33,000 documents (~550,000pages) monthly to digitize paper medical records to electronic version and upload into Onbase Scanned Medical Records System (SMR), which is viewable via Sunrise Clinical Manager (SCM).

Problem: Why Magic Indexer is essential?

1. Creation of an efficient and effective operation
Each document needs to be indexed with 7-key information such as patient's NRIC, full name, visit number. Each staff takes estimated 1 minute to index 1 document after scanning into Onbase SMR application. Output of the scanned medical records can be increased if indexing task can be done by Magic Indexer.

2. Accuracy of Magic Indexer
Magic Indexer aims to automate the document indexing process with more than 95% accuracy similar to a staff.

RESULTS

Accuracy on Documents Indexed

Total Documents Indexed — Accuracy of index — Accuracy Target 95%
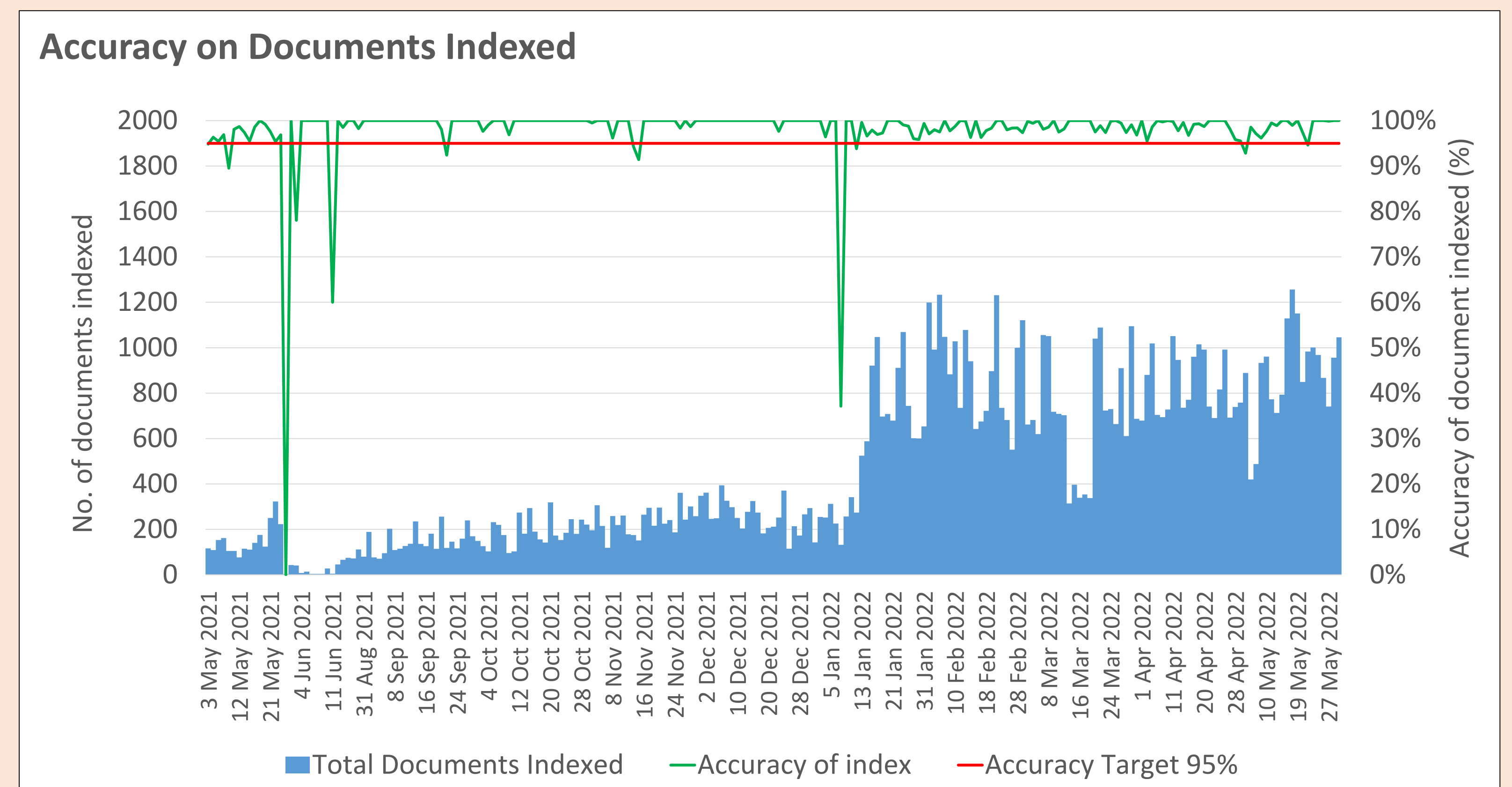
Based on the results achieved from **May 2021 to May 2022**, only 10 days fell below the target rate of 95% accuracy. Reason for indexing error was caused mainly by check-in data entry error by staff .

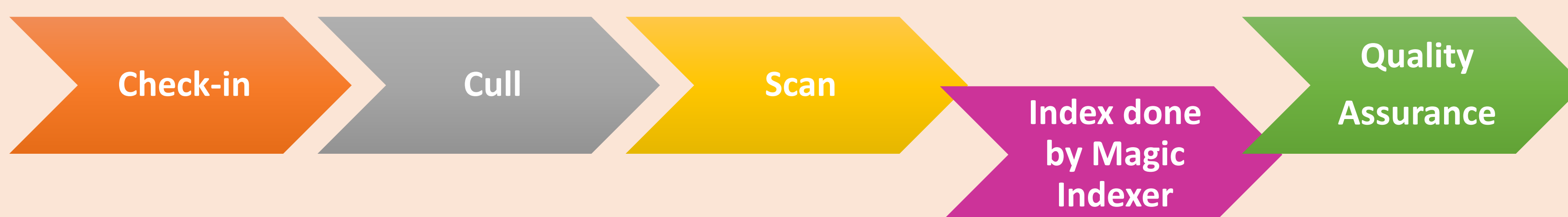| Total Documents completed by MI	Total Time Savings gained	Total Cost Avoidance
99,672	**1,080Hrs**	**S$44,239**

Annually: Future Prospect
Total documents to be completed by MI: 396,000
Total Time Savings : 3,300 Hrs
Total Cost avoidance : S$135,300

METHODOLOGY

Check-in → Cull → Scan → Index done by Magic Indexer → Quality Assurance

Magic Indexer (RPA tool called SikuliX) is used to automate the Indexing process when the document is ready for index in the Onbase SMR application. Upon receiving and check-in documents at HIMS, patient data are stored in a customized Excel Macro file with an unique batch name.
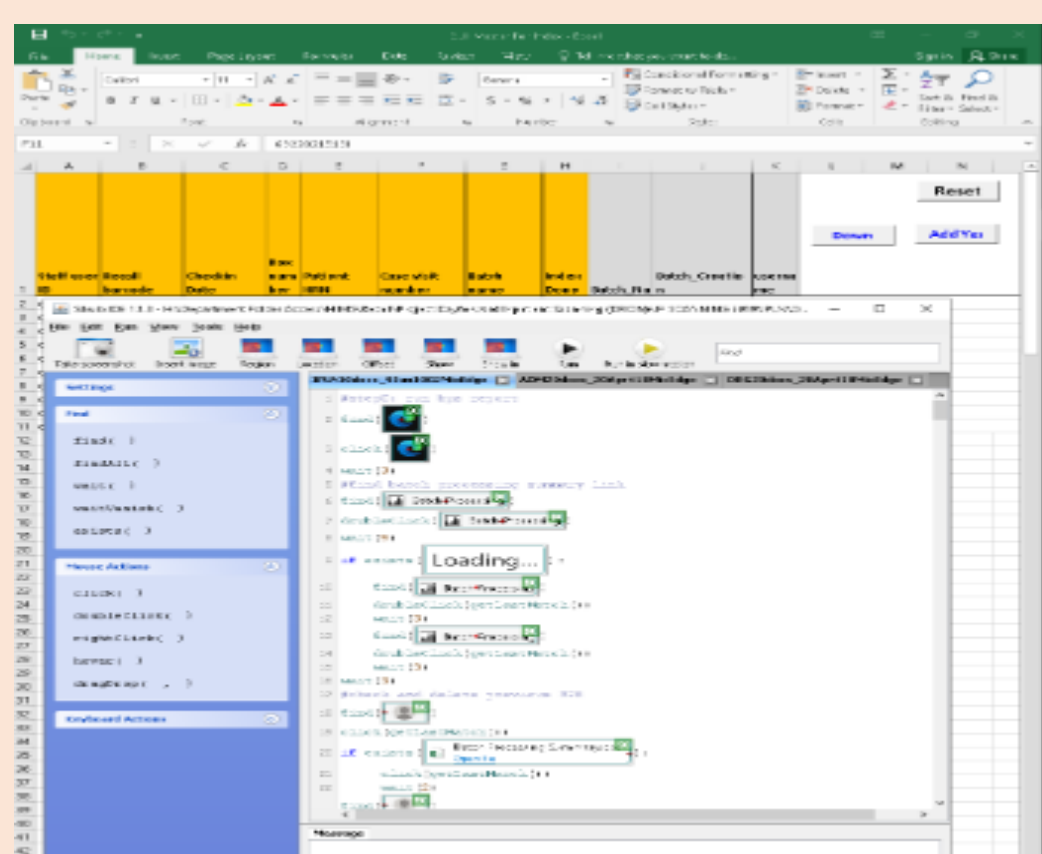
MI and Excel Marco workbook screen

MI helps to transfer data stored within Excel Macro workbook & locate Onbase indexing fields accurately
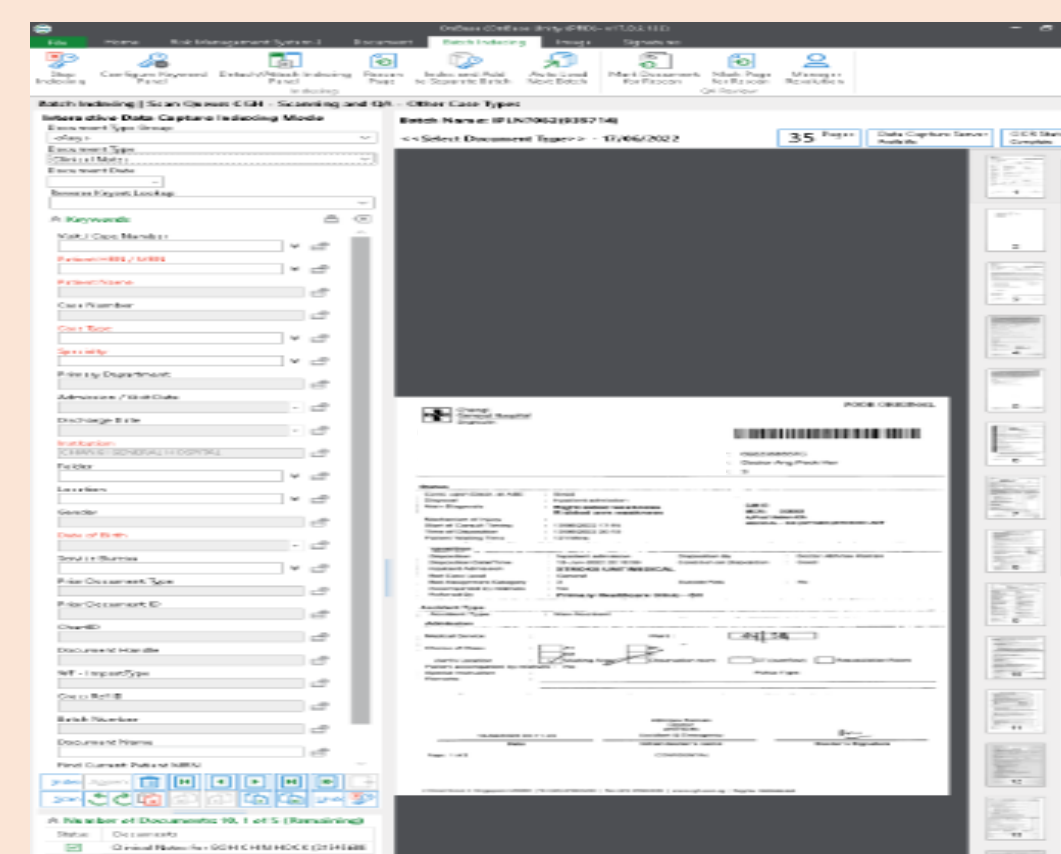
How MI works on indexing fields

Creation of each unique batch name in the Onbase application by the scanning staff is required for Magic Indexer to locate the data from the customized Excel Macro file. Documents awaiting index are continuously indexed batch by batch when the Sikulix software is switched on. Upon completion each batch indexing, Magic Indexer transits each batch to the next queue in Onbase SMR application.

Quality Assurance staff reviews each document to verify the accuracy of scanned images done by staff and the indexed information done by Magic Indexer.

CONCLUSION

This project is in tandem with CGH roadmap on innovating our healthcare services for higher efficiency and cost savings goals.

Using RPA for indexing has shown significant time savings based on how many computers that will be used to run RPA. Cost of software maintenance is low with customizable Excel Macro workbook and Sikulix application. It is a plug-and-play application which can be used in other repetitive tasks.

CGH HIMS has shared this innovation with HIMS from other SingHealth Institutions, which can be benefited at the cluster level to maximize cost savings and improve productivity.

Way Forward:
Magic Indexer has a pipeline projects lineup to automate other document types received daily such as the Outpatient Loose notes.