MOTAC

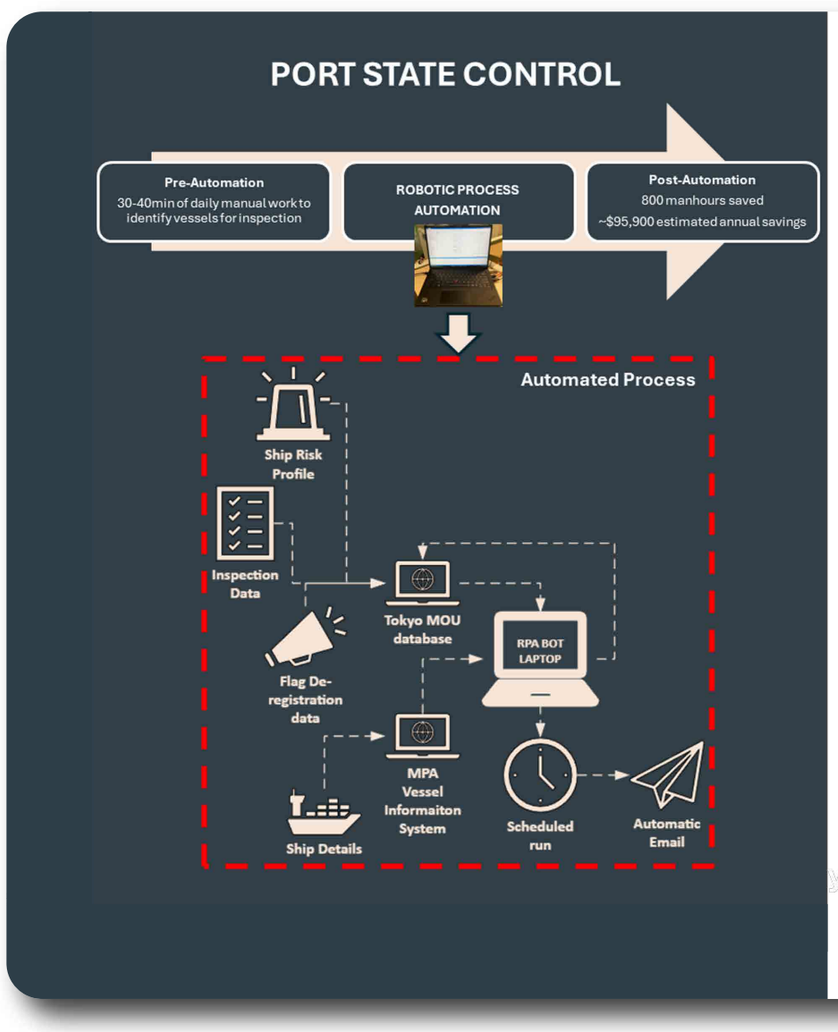
Ministry of Transport Awards Ceremony 2025/26

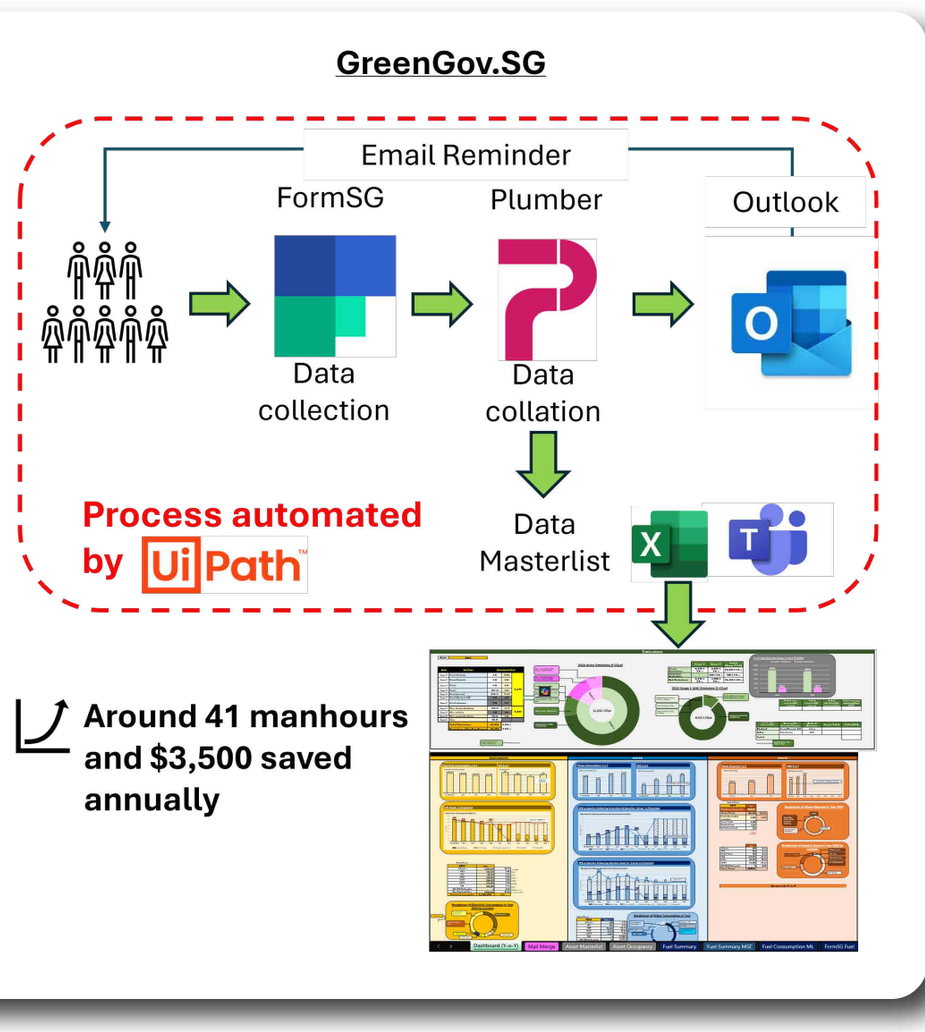
MINISTER'S VALUE-FOR-MONEY ACHIEVEMENT AWARD

MPA SINGAPORE

MERIT AWARD

STREAMLINING PSC AND GREENGOV.SG PROCESSES WITH ROBOTIC AUTOMATION





PROJECT TEAM

Ranabir Chakravarty	Advisor
Kit Jam Chen	Advisor
Bharath Kumar Ganesh	Team Leader
Hon Leng Tang	Member
Muhammad Danial Abdul Razak	Member
Bing Ying Chai	Member
Fouziah Rahim	Advisor
Wong Xinhao	Team Leader
Rachel Tan	Member
Ler Han Qiang	Member
Gerald Tay	Member
Chen Kit Jam	Member
Tang Hon Leng	Member
Chai Bing Ying	Member
Wong Xin Hao	Member

MOTAC

Ministry of Transport Awards Ceremony 2025/26

MINISTER'S VALUE-FOR-MONEY ACHIEVEMENT AWARD

MPA SINGAPORE

MERIT AWARD

STREAMLINING PSC AND GREENGOV.SG PROCESSES WITH ROBOTIC AUTOMATION

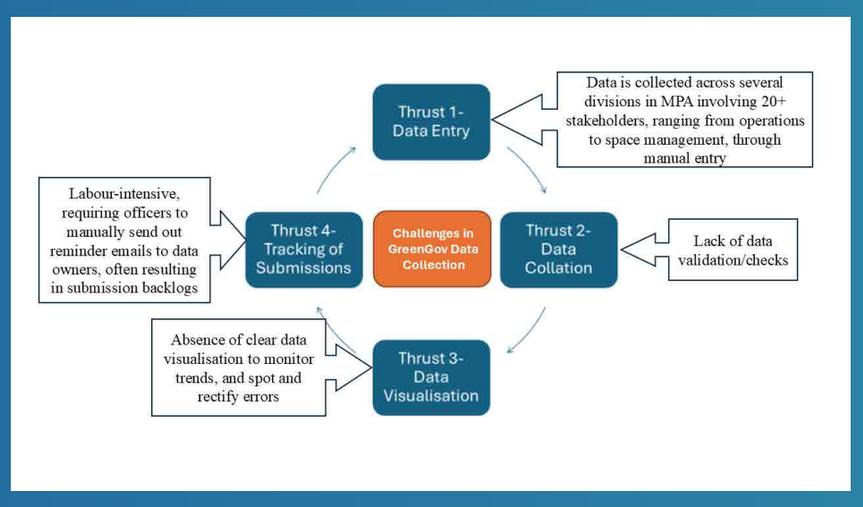
NEED FOR PROJECT

Port State Control (PSC)

- Time-intensive manual process: Officers spent 30–40 minutes per cycle preparing vessel lists, often during early mornings and weekends, with information frequently outdated by arrival time.
- Inconsistent and error-prone selection: Manual data handling led to human errors, inconsistent decisions across officers, and lack of standardised workflow for applying selection criteria.
- Unable to scale with demand: The system couldn't keep pace with growing vessel movements and operational complexity, which required multiple daily data updates.

GreenGov.SG

- GreenGov.SG data included fuel consumption for vessels and land vehicles, electricity and water consumption by MPA assets, and waste disposed of at MPA facilities.
- Data lacked clear data visualisation to monitor trends, and spot and rectify errors.



- Data was collected across several divisions in MPA involving 20+ stakeholders, ranging from operations to space management. Tracking of submissions was labour-intensive, requiring officers to manually send out reminder emails.

MOTAC

Ministry of Transport Awards Ceremony 2025/26

MINISTER'S VALUE-FOR-MONEY ACHIEVEMENT AWARD

MPA SINGAPORE

MERIT AWARD

STREAMLINING PSC AND GREENGOV.SG PROCESSES WITH ROBOTIC AUTOMATION

PROBLEM STATEMENT

Need to streamline the manual processes in PSC vessel selection and GreenGov.SG reporting as they were time-consuming and caused data inaccuracies and operational delays.

MOTAC

Ministry of Transport Awards Ceremony 2025/26

MINISTER'S VALUE-FOR-MONEY ACHIEVEMENT AWARD

MPA SINGAPORE

MERIT AWARD

STREAMLINING PSC AND GREENGOV.SG PROCESSES WITH ROBOTIC AUTOMATION

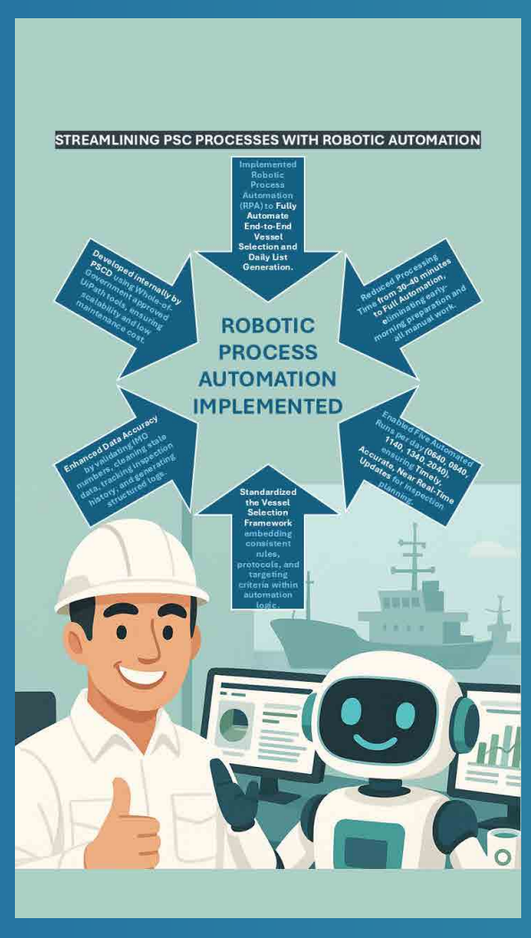
SOLUTION

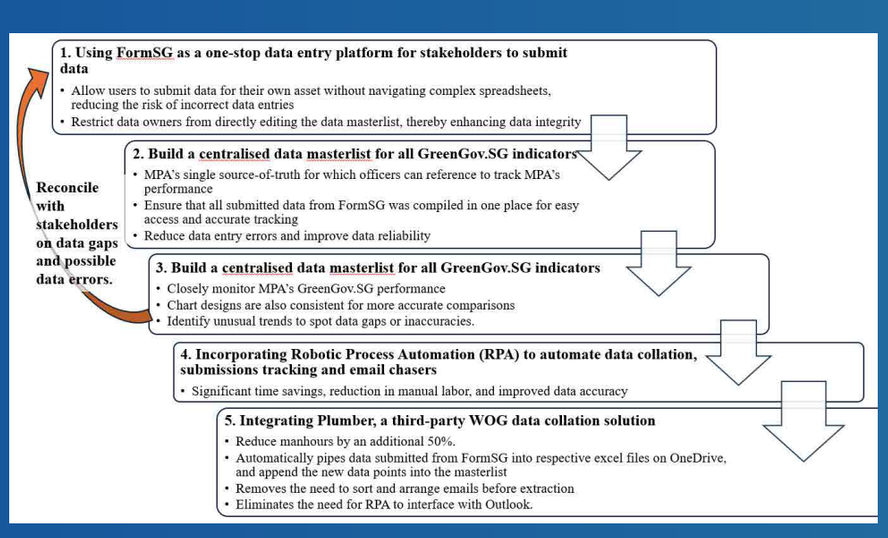
PSC

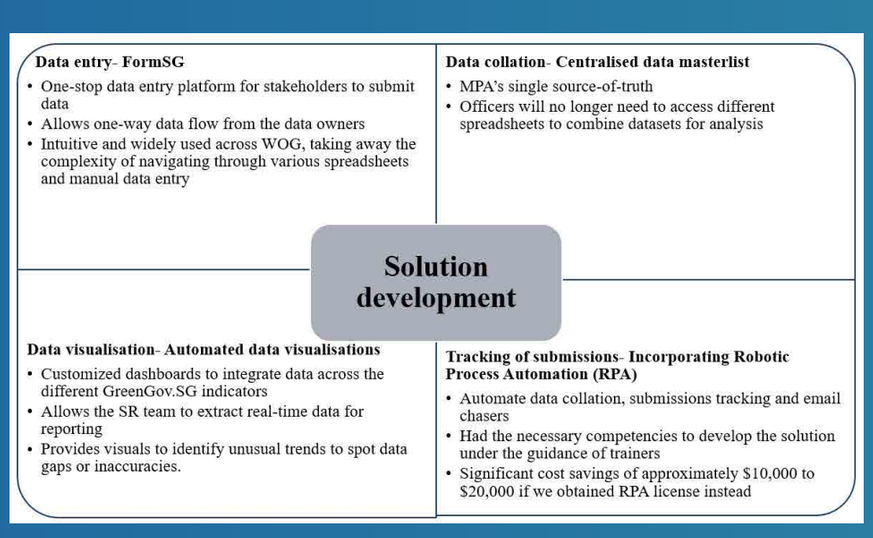
- Fully automated vessel selection: Implemented Robotic Process Automation (RPA) to eliminate the 30–40 mins manual process and early-morning preparation, running automatically five times daily for near real-time updates.

- Standardised and accurate data: Embedded consistent selection rules and protocols whilst validating IMO numbers, cleaning stale data, and tracking inspection history.

- Cost-effective internal development: Built in-house by PSC Dept. using Whole-of-Government approved UiPath tools, ensuring scalability and low maintenance costs.







GreenGov.SG

- Used FormSG as a one-stop data entry platform for stakeholders to submit data.
  Built a centralised data masterlist for all GreenGov.SG indicators.
  Incorporated RPA to automate data collation, submissions tracking and email chasers.

MOTAC

Ministry of Transport Awards Ceremony 2025/26

MINISTER'S VALUE-FOR-MONEY ACHIEVEMENT AWARD

MPA SINGAPORE

MERIT AWARD

STREAMLINING PSC AND GREENGOV.SG PROCESSES WITH ROBOTIC AUTOMATION

SOLUTION STATEMENT

Implemented RPA to automate PSC vessel selection and GreenGov.SG data collection workflows, which eliminated manual processing and enhanced data accuracy.

MOTAC

Ministry of Transport Awards Ceremony 2025/26

MINISTER'S VALUE-FOR-MONEY ACHIEVEMENT AWARD

MPA SINGAPORE

MERIT AWARD

STREAMLINING PSC AND GREENGOV.SG PROCESSES WITH ROBOTIC AUTOMATION

IMPACT

PSC

- Time savings and operational efficiency: Eliminated 30–40 mins of manual work per cycle, enabling officers to focus fully on inspection duties while automated multi-run updates reduced missed inspections.
- Improved officer's wellbeing: Removed early-morning, pre-shift, and weekend manual processing duties, which significantly improved work-life balance for officers.
- Enhanced quality and future readiness: Standardised vessel selection through embedded rules and automated validation, which strengthened digital capabilities for future integration with the Integrated Shipping System (ISS).
- Cost savings: $95.90k annually.
- Time savings: 800 manhours annually.

MOTAC

Ministry of Transport Awards Ceremony 2025/26

MINISTER'S VALUE-FOR-MONEY ACHIEVEMENT AWARD

MPA SINGAPORE

MERIT AWARD

STREAMLINING PSC AND GREENGOV.SG PROCESSES WITH ROBOTIC AUTOMATION

IMPACT

Resources	Manhour Savings	Total Cost Savings
• Web app visualization dashboard will cost approximately between $15,000 to $25,000 	**Total manhour savings: 41.4 manhours** • **Time-savings for data processing by 90%**; a total manhour reduction from 40 manhours to 4 manhours per year **(36 manhours savings)** • **Reduced the time taken to send email chasers by 95%,** from 15 minutes to 30 seconds- a total manhour reduction from 6 manhours to just 0.6 manhours per year **(5.4 manhours savings)**	41.4 manhours x $85 (based on recommended hourly labour rate) **= $3,519** Annual subscription for RPA ($4369) is being shared across developing other automation bots in C&C

GreenGov.SG

- Used the RPA bots to automate the data collection process, which eliminated errors and reduced time spent on manual processes, and allowing officers to focus on higher-value tasks.
- The master list acted as the single source of truth, which enhanced auditability.
- Cost savings: $3.52k annually.
- Time savings: 41.40 hours annually.

OUTCOME STATEMENT

An efficient automated system for PSC vessel selection and GreenGov.SG data collection that redirected officers' capacity towards higher-value tasks.