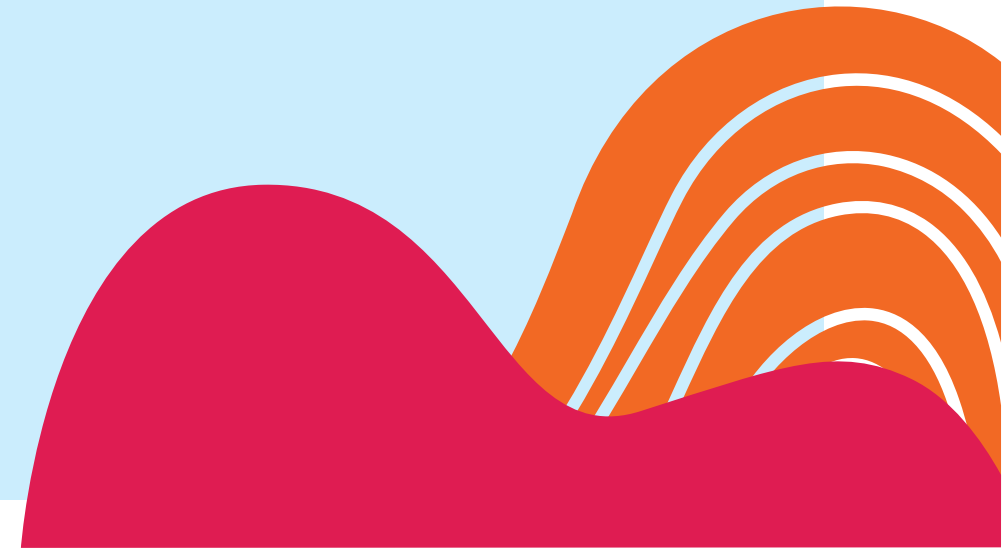DRAFT

TRANSPORT

Electronic Inspection Lodgement (EIL) Showcase

Agenda

DRAFT

1	**Project overview**
	Business problem definition
	Technical solution summary
	Business outcomes
	Technology stack
2	**Interactive showcase**
	Key solution features
	Major wins
3	**Q&A**
	Key stakeholders
	Automated workflow
	High level solution design

01

Project overview

Business Problem Definition

Transport (Roads) calls for Tenders periodically (currently once every two years)
for organisations to supply items including plants and trucks to be hired for infrastructure and maintenance projects throughout the year.
Items from successful Tenders are recorded and maintained in the Hire Plant System(CHP) and must be inspected at least once annually
before being hired.

Approximately 11,000 items are inspected annually:
around 5,500 items are inspected by Transport Fleet Inspectors
around 1,000 items are inspected by External Inspectors (contracted by Transport)
around 4,500 items are inspected by Self-Assessed Contractors (SACs)

Inspections conducted by External Inspectors and SACs are sent to Transport Fleet Inspectors for review,
and these results are manually entered into CHP. The current Inspection process is highly manual and paper-based
resulting in significant time being expended in conducting manual checks and data entry into the CHP, as well as printing and mailing costs.
Transport Fleet Inspectors also have access to PDF versions of the Inspection Forms, however manual data entry is still required into CHP.

This project aims to replace the existing CHP Forms/Reports with a solution that is a robust and flexible system
providing an intuitive user interface, workflow management and mobility in the field. The new solution will replace major functionalities
and will reduce manual interventions as well as costs in addition to increasing efficiency.

Business Outcomes

The digital solution will :

√ Replace the standalone inspection reports on pdf

√ Extend CHP capabilities (with the digital solution)

√ Enable inspection item assignment to external users

√ Provide workflow capabilities for inspection report review and approval

√ Provide automated email notification for inspection status update

√ Enable external user access to the digital solution

√ Support internal and external users administration

√ Automate integration with CHP

√ Automate integration with Objective

Technical Solution Summary

The solution aims to digitise the end-to-end activities of the inspection lodgement process including inspection item registration for plants and equipments, user registration for external & internal inspectors, inspection report submission & approval workflow, integration with CHP system and document management in Objective.

The digital solution provides a responsive user interface developed using Java framework and supports single sign-on for internal users. External users will be onboarded via Multi Factor Authentication (MFA) for secured online application access. Online and offline capabilities are enabled to support inspection at remote sites with poor network connection.

Various backend functionalities are provided by multi-layer APIs which are developed based on the Spring Microservices framework. In addition, Kong API Gateway and Service Mesh implementation orchestrate and enable common functionalities such as security, monitoring, logging, authentication and caching.

The application will be scalable to support a user community of 1000 users in total including 15 internal users.
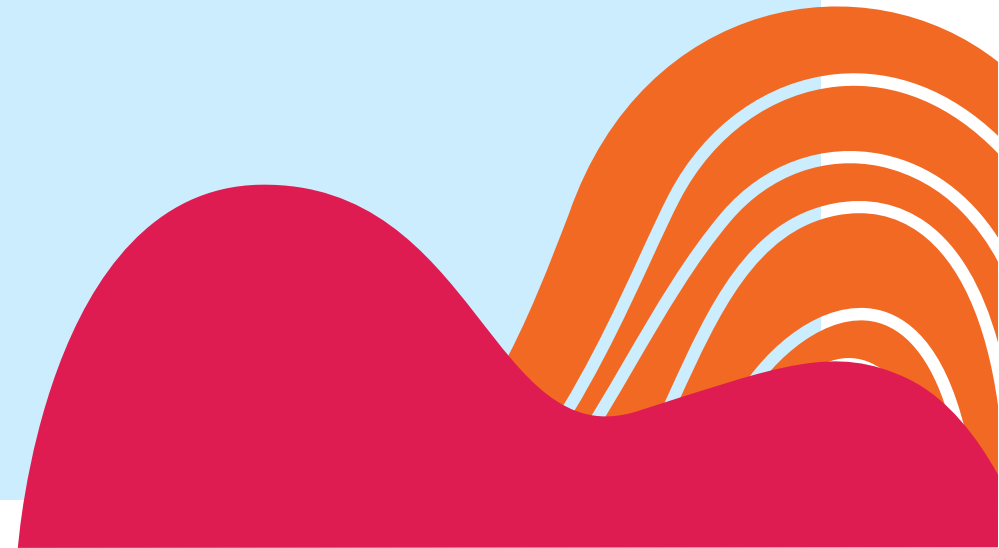
Technology Stack

The digital solution is developed using :

√ Java

√ Angular

√ Progressive Web Apps

√ Kong

√ Objective APIs

√ Oracle DB

√ Azure

√ Akamai

√ Nginx

02

Interactive showcase

Key Solution Features

√ Single sign-on

√ Intuitive UI with little user training required

√ Auto sync with backend CHP and retrieve latest information

√ Adhoc item assignments

√ Mobility via laptops and iPad

√ Offline capabilities which are independent of internet signal strength

√ External access which is not limited to Transport network access

√ Auto save and no panic during low battery on user device

√ Automated workflow and notification

√ Seamless backend integration with Objective

Major Wins

√ Greenfield progressive web apps

√ First EKS web architecture post BAHS

√ Rapid application development with solution pilot completed in 4 months

√ Solution 100% developed by internal IT resources

√ Business process improvement from manual form-based submission to automated online submission

√ Occupational safety enhancement by reducing inspection time on sites

√ Data quality elevation by user input validation and instant error notification

√ Compliance uplift by workflow visibility and data transparency

√ Cyber security reinforcement by Azure and Smart ID Connect

√ Innovative user experience and solution mobility

03

Q & A

Q1. Who are the key stakeholders?

Business key stakeholders		Project team	
Director Maintenance and Delivery	John Soars	Senior business partner	Ellen Osman
Project sponsor	Kris Kris-nair	Senior project manager	Enerca Cheung
Portfolio category manager	Bruce Maclennan	Lead business analyst	Mark Wood
Portfolio category manager	Greg Voutos	Project co-ordinator	Leslie Khang
Project manager	Andy Leong	Project co-ordinator	Benita Adam
Senior fleet inspector	Greg Cribbin	Project co-ordinator	Trina Nguyen
Project officer	Kirrilee Trapp	Change manager	Preeti Sharma
Other key stakeholders		**Technical team**	
Director CE&D	Anna Todhunter	Application development manager	Srikanth Narisetty
Senior Product Manager	Rubaiyat Kibria	Solution architect	Madhan Melapalayam srinivasan
Enterprise architect	Massimo Rinaldi	Integration lead	Raghavi Yarasi
Security SME	Gaurav Kanodia	Integration lead	Maheswari Chamarthi
CHP SME	Patrick Huynh	Technical lead	Manokaran Chidambaram
CHP SME	Mercy Fares	Technical lead	Anitha Chandrasekar Asokan
Objective owner	Ralph Zeltzer	UI developer	Jayesh Mohanan nair
Objective SME	Ashley Sharp	Senior Java developer	Kasi Kolahalam
Objective Integration SME	Zacaria Gala	Senior Java developer	Sudheer Jonnalagadda
Objective Integration SME	Venkatraman Gopalakrishnan	Java developer	Nagaraj Tulasigeri
Azure SME	Muhammad Khan	Java developer	Venkatanareshbabu Peddireddi
SIDC Manager	Joe Varkey	Java developer	Santosh Karakavalasa
SIDC Infrastructure	Mahmoud Abughazleh	UX developer	Sarath Lal em
Kong API SME	Venkatraman Gopalakrishnan	Testing manager	Rehman Mujibur
Kong API SME	Sharathchandra Yd	Test lead	Keerti Sham
Kong API SME	Steve Varghese	Tester	Nowshi Shaik
Kong API SME	Zaferullah Khan	Tester	Sanoj Rajshekharan
Digital Platform	Justyn Ang	Tester NFT	Priyanka Kamath
Branding SME	Cam Wheatly	Tester NFT	Swati Jena
Branding SME	Barbara So	Technical support manager	Shivani Mehta
Security SME	Gaurav Kanodia	Technical support administrator	Nishanth Sridhara
Security SME	Abdul Rahman	Senior system administrator	Balasubramanian RP

Q2. What is the automated workflow behind the scene?
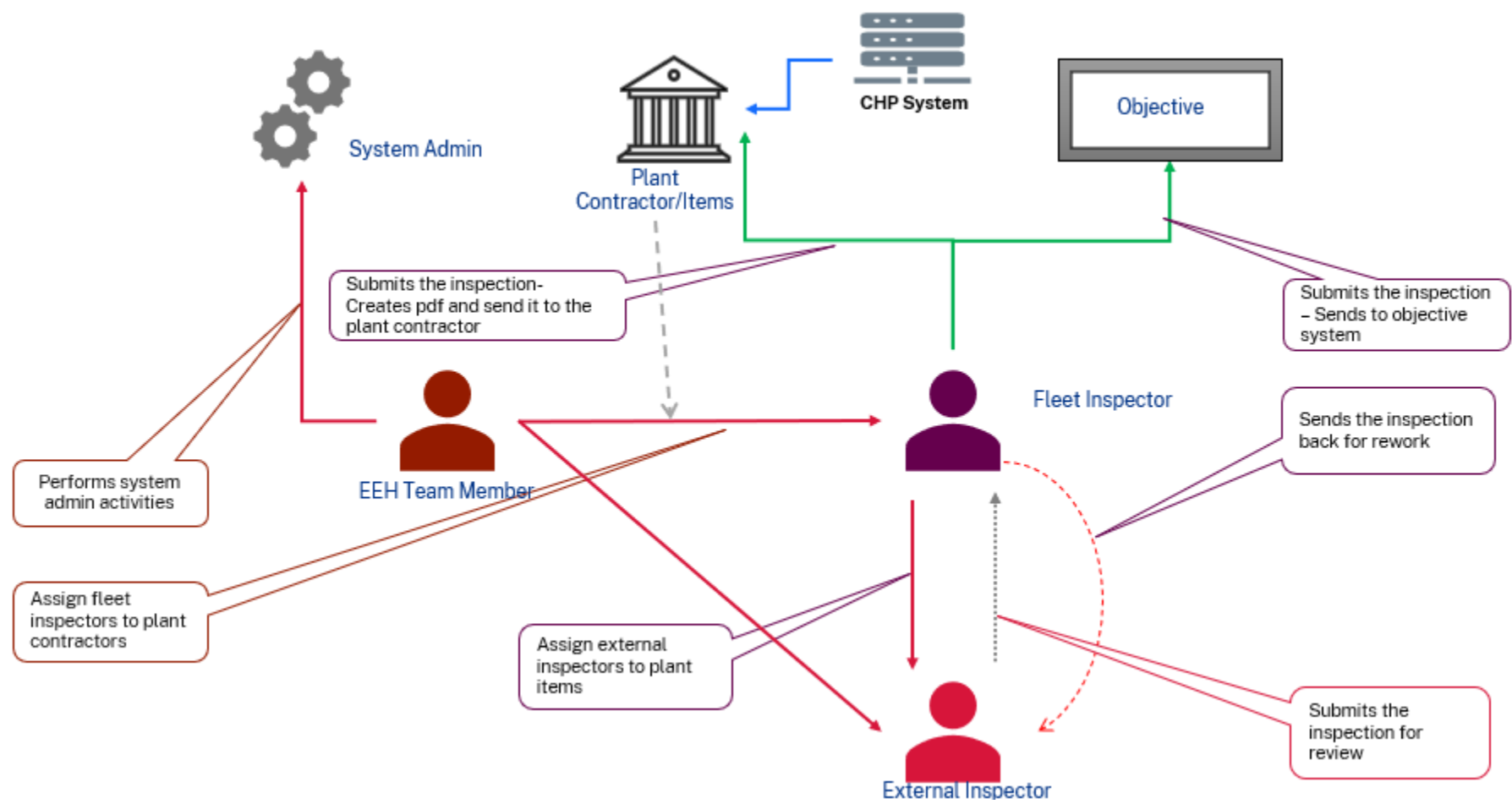
Q3. How does the solution design work?