

Date: 24/011/2025

Innovation Report

Company

Egis ANZ

Author(s)

Aedan Hewitt

Chad Brownhill

Jayme Chrichton

Table des matières

Name of the Supplier X..... Erreur ! Signet non défini.

EXECUTIVE SUMMARY

Innovation Maturity Level:

Medium, Testing Stage, not available in the market -> (4-6)

Business model
List Benefits/Gains:

Costs & time
Savings

Name of the innovation

Jet Fans Inspection System (JFIS)

Comments:

Insert your information here

The cost savings are realised by replacing an outsourced Critical Systems subcontractor service with an in-house solution integrated into the new IR&M Agreement. Further, reducing the cost associated with the level (quantity and type) of resource required.

Images

Investment Initial (Total €):

000000.00€
Describe additional Cost 1...

000000.00€
Describe additional Cost 2...

000000.00€
Describe additional Cost 3...

Project Manager(s)

Chad Brownhill

Key Partner(s): NXTGEN Air Solutions
Project Team:

Egis Operations ~ NSW IR&M Services

Partner description

<https://nxtgenas.com.au/>

Activity:

Road

O&M themes:

Others

Intellectual property:

Collaborative IP

Target Beneficiaries:

Both

Results

Insert your information here

Description of the context (problem to be solved):

Current jet fan mechanical inspections are manual, rely on physical climbing into restricted spaces (**safety** risk), and are reliant on subjective (**reliability** of data inconsistent) visual inspections: leading to lower accuracy; reduced traceability; & reliance on an expensive outsourced subcontractor.

Safety risk associated with manual climbing into confined fan housings from an EWP, and the subjectivity, **inefficiency** and **cost** associated with current outsourced visual inspection methods.

Still underway ~ Estimated \$6.6m cost reduction over the (7yr) contract term. High-quality Work Orders with consistent technology-backed data available in AMIS. Increased data traceability to track degradation over time. Elimination of manual climbing into fan housings (safety gain). Automated instant feedback on defects.

Description of the solution:
Next steps

Insert your information here

The jet fan inspection camera and the machine learning AI software, is a purpose-built solution combining rugged, field-deployable hardware with a hybrid software platform (edge + cloud).

Technical prerequisites (to set up the solution): 1. Transurban participation and endorsement of prototype development. (**approved**) 2. Transurban approval of changes to job plans for 6M and 12M jet fan inspections. 3. Waiver of Air Quality Systems Specialist – Capability Requirements (Schedule 2, section 6.5.2(a)).
Hardware/Software Needed: JFIS hardware, hybrid software platform (edge + cloud), AMIS integration.

Insert your information here

Do you need to have specific hardware, processes, standards, etc.

Actions:

Insert your information here

Implement on to the IR&M Services, while also being tested on WestConnex (existing Contracts). The innovation was raised during the WestConnex Deed Senior Leadership Team meeting in August 2025 and received strong support. Egis has committed to bring forward its funding for this development under the current contracts. Ultimate ambition is continued product development toward an "automated crawler" to remove working at heights entirely, and augmentation for axial fan inspection.

Is it Populated/Published

Innovation hub ([link](#)):

Select an item.

No, not yet

ADDITIONAL INFORMATION (if needed)

Name of the innovation

EXECUTIVE SUMMARY

Innovation Maturity Level:	High, Commercial Solutions can be purchased -> (7-8)	Business model
Name of the innovation	Water Treatment Plant (WTP) byproduct (filter cake sludge) reuse	List Benefits/Gains: Comments: Insert your information here Circular Economy / Waste Diversion / Sustainable Material Stream. It converts a costly waste product into a reusable construction material.
Images	 	Investment Initial (Total €): 000000.00€ Describe additional Cost 1... 000000.00€ Describe additional Cost 2... 000000.00€ Describe additional Cost 3... 000000.00€
Project Manager(s)	Aedan Hewitt	Key Partner(s): Oak Services
Project Team:	Egis Operations ~ NSW IR&M Services	Partner description https://oakservicesgroup.com.au/
Activity:	Road	Collaborative IP
O&M themes:	ESG	Intellectual property:
Target Beneficiaries:	Both	Results Insert your information here
Description of the context (problem to be solved):		

The M8 Motorway's Water Treatment Plant (WTP) produces waste sludge (Filter Cake) from coagulation/flocculation processes, generating a significant volume of waste (approx. 887 tonnes annually or 2.43 tonnes per day). This material is traditionally disposed of into landfill, conflicting with Transurban and Egis' objectives for environmental improvement.

High volume of WTP waste sludge (filter cake) being sent to landfill, and the need to improve environmental performance and apply circular economy principles to tunnel maintenance.

We have encapsulated waste sludge into compliant, non-structural concrete blocks. 182 tonnes of waste (n AU FY 24/25) already diverted from landfill on the M8. Improvements to the WTP are realising more filter cake (as opposed to wet sludge), increasing the % of filter cake derived from the WTP. New sustainable material stream created for civil project works. 100% recycling of waste sludge from all WTPs (Egis commitment). Note: Currently working on testing structural integrity. This is a transformative project and a working example of circular economy principles applied to critical infrastructure (WestConnex). FHE has undertaken extensive investigations, including enhanced material testing and proactive regulatory engagement with the NSW EPA (the Regulatory Authority).

Description of the solution:

Insert your information here

Encapsulation of waste sludge (filter cake) into non-structural bricks using a developed solution in partnership with Oak Services and Bulk.

Material testing program, regulatory engagement (NSW EPA proposal submitted), and industry collaboration to find practical reuse pathways. The outcome is a reusable construction block from wastewater solids.

Technical prerequisites (to set up the solution): Enhanced Material Testing Regime (to provide detailed compositional analysis). NSW EPA approval (a formal proposal has been submitted). Partnership with a licensed waste facility (Oak Services and Bulk).

Insert your information here

Nil

Next steps

Actions:

Insert your information here

Enhanced Material Testing Regime (to provide detailed compositional analysis). NSW EPA approval (a formal proposal has been submitted and approved). Partnership with a licensed waste facility (Oak Services and Bulk).

Further testing is currently under way to ascertain the structural integrity of the bricks.

Is it Populated/Published

Innovation hub ([link](#)):

Select an item.

Insert your information here

ADDITIONAL INFORMATION (if needed)

Name of the innovation