

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.

Instructions (what is the structure of this report)

Services excellence is the objective of our O&M Signature approach.

Name: Add the Name of the Innovation

Images: Add 2 images of the innovation

Project Manager(s): Add your information here

Activity: Add your information here

O&M themes: Add your information here

Target Beneficiaries: Add your information here

Description of the context: Describe the original problem you intend to solve.

Description of the solution: Describe the solutions main characteristics of the solution

Technical prerequisites (to set up the solution): Are there any special technical needs we need to cover in order to implement?

Innovation Maturity Level: Select the level of maturity of the innovation

List Benefits/Gains: Select the principal benefit that will be perceived

Comments: List specific benefits that are expected from the implementation

Investment Initial (Total €): Describe the costs and amounts, implementation, maintenance, etc.

Key Partner(s): Name of the company and the Link or Describe the domain

Intellectual property: Select if the company has a type of intellectual property

Results: After implementation, what were the outputs?

Next steps: List any next steps for continuous improvement

Is it Populated/Published: Innovation hub (link): Is it published? If yes, just add the link

Business model

List Benefits/Gains: Select an item.

Comments: List specific benefits that are expected from the implementation

Investment Initial (Total €): Describe the costs and amounts, implementation, maintenance, etc.

Key Partner(s): Name of the company and the Link or Describe the domain

Intellectual property: Select an item.

Results: After implementation, what were the outputs?

Next steps: List any next steps for continuous improvement

Is it Populated/Published: Innovation hub (link): Is it published? If yes, just add the link

How to insert a new report table

1. Right Click in the table

2. Left Click, Copy

3. Insert a New Page

4. Left Click, Paste

When finished, update the contents table:

Mettre à jour la table...

Contents

Name of the solution

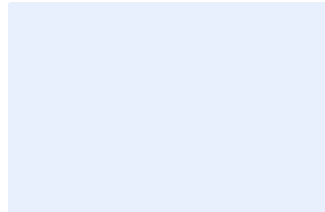
Name of the solution

EXECUTIVE SUMMARY

Innovation Maturity Level: Medium, Testing Stage, not available in the market -> (4-6)

Name of the innovation
Jet Fans Inspection System (JFIS)

Images



Project Manager(s) Chad Brownhill
Project Team: Egis Operations ~ NSW IR&M Services
Activity: Road
O&M themes: Others
Target Beneficiaries: Both

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.

Description of the solution:

Business model

List Benefits/Gains: Costs & time Savings

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.

Investment Initial (Total €):	000000.00€
Describe additional Cost 1...	000000.00€
Describe additional Cost 2...	000000.00€
Describe additional Cost 3...	000000.00€

Key Partner(s): NXTGEN Air Solutions

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

Intellectual property: Collaborative IP

Results

Insert your information here
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.

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)

Name of the innovation

Water Treatment Plant (WTP) byproduct (filter cake sludge) reuse

Images



Project Manager(s) Aedan Hewitt
Project Team: Egis Operations ~ NSW IR&M Services
Activity: Road
O&M themes: ESG
Target Beneficiaries: Both

Description of the context (problem to be solved):

Business model

List Benefits/Gains: Other
Comments:

Insert your information here

Circular Economy / Waste Diversion / Sustainable Material Stream. It converts a costly waste product into a reusable construction material.

Investment Initial (Total €):	000000.00€
Describe additional Cost 1...	000000.00€
Describe additional Cost 2...	000000.00€
Describe additional Cost 3...	000000.00€

Key Partner(s): Oak Services

Partner description <https://oakservicesgroup.com.au/>

Intellectual property: Collaborative IP

Results

Insert your information here

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.

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

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).

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