

## Sparc Partner with AIML to Develop AI Driven Corrosion Assessment Software

### HIGHLIGHTS

- Sparc and the Australian Institute for Machine Learning (AIML) are co-developing AI-driven software to enhance protective coatings performance assessment
- The software tool utilises advanced computer vision and machine learning to significantly improve the efficiency and accuracy of manual coatings performance assessment
- Sparc estimates an addressable market of ~850 labs across the coatings industry, testing and research houses and end-users performing relevant coatings performance assessment
- A pilot project has validated proof-of-concept under ISO 12944 corrosion boundary testing
- Letters of support have been received from multiple coatings industry players

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**Sparc Technologies Limited (ASX: SPN) (Sparc, Sparc Technologies or the Company)** is pleased to announce, in partnership with the Australian Institute of Machine Learning (AIML) at Adelaide University, a project developing AI-driven software designed to modernise protective coatings performance assessment.

The software under development utilises advanced computer vision and machine learning to revolutionise the assessment of protective coatings performance within globally used testing methods. A pilot project has demonstrated a strong proof-of-concept based on ISO 12944 corrosion boundary assessment with plans to expand into other scribe-based and damage-based protective coatings testing protocols. Sparc is highly encouraged by the commercial value of the software tool based on feedback from the protective coatings industry and letters of support have been received from multiple coatings industry players.

### **Sparc Managing Director, Mr. Nick O'Loughlin commented:**

*"Sparc Technologies is an innovation-led company at its core and we are always looking for opportunities to build on our deep understanding of, and growing position within, the protective coatings industry. This collaboration with the the Australian Institute of Machine Learning at Adelaide University leverages complementary skills from both teams to develop AI-based software for the protective coatings industry which has the potential to significantly improve and accelerate R&D under testing methods which have been unchanged for >25 years. We are very encouraged regarding the potential marketability of the software based on feedback from the protective coatings industry."*



## AIML Director, Professor Simon Lucey commented:

*"AIML is very pleased to be working on this innovative project targeting enhanced protective coatings performance assessment alongside Sparc Technologies. The replacement of outdated manual corrosion assessment with computer vision holds great potential to increase efficiencies and improve outcomes for the coatings industry."*

Protective coatings are the frontline defence against the corrosion of steel infrastructure. Accurate and efficient performance assessment for protective coatings has significant economic implications, particularly considering that corrosion costs an estimated 3.4% of global GDP annually (\$3.9 trillion)<sup>1</sup>. The protective coatings industry utilises rigorous testing procedures to a number of internationally recognised standards in order to simulate long-term coatings performance in real-world environments. Several of these testing procedures purposely damage (referred to as 'scribe') a protective coating to accelerate corrosion, with the resulting performance measurement referred to as scribe creep (reflecting the spread of corrosion from the scribe). The current method of assessing scribe creep relies on subjective human judgements of the corrosion boundary and manual measurement and reporting. This is a labour-intensive and time-consuming process which has been unchanged for >25 years.

Sparc and AIML's AI driven approach combines highly advanced AI and machine learning capabilities with deep protective coatings assessment expertise to develop a solution which offers, among other benefits:

- **Higher accuracy:** Visually trained AI software utilising an extensive database of historical results can more accurately detect the corrosion boundary and coating disbondment.
- **More consistency:** A standardised process for taking panel images using existing lab equipment is designed to deliver repeatable results at a high level of confidence.
- **Enhanced productivity:** The current manual assessment and reporting process takes an experienced coatings technician ~40 minutes per result compared to tens of seconds using the AI software.
- **Better data:** Manual assessment produces a single result whereas the AI software is modelling a huge number of data points which can be reported in multiple ways enabling comprehensive statistical analysis.

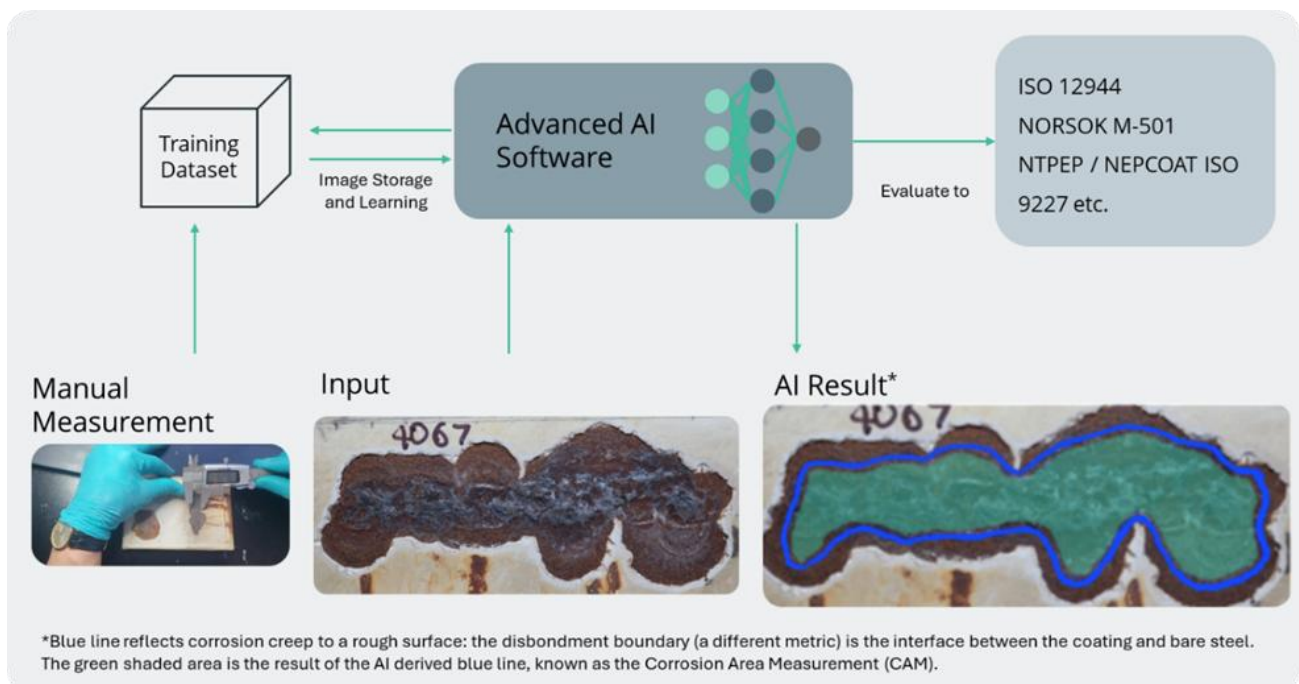


Figure 1: Illustrative schematic of how the technology works

<sup>1</sup> Bradley, J. 2024, *Cracking the corrosion conundrum: Infrastructure*. Create (Engineers Australia), <https://createdigital.org.au/cracking-the-corrosion-conundrum-infrastructure/>



Sparc and AIML have successfully demonstrated a proof-of-concept model, showing encouraging alignment between the AI driven corrosion boundary assessment and human evaluation. The software is being developed using ISO 12944 corrosion assessment but is expected to be deployable across a variety of widely used scribe-based and damage-based international testing protocols. Multiple coatings industry players are supporting the development of the software with the goal of beta testing in third-party coatings laboratories within 12 months.

Sparc's commercialisation pathway will focus on industry co-development and future software licensing to established testing laboratories and coating companies, enabling rapid global deployment. The estimated target addressable market of ~850 global testing facilities provides a significant commercial opportunity, with strong interest from leading protective coatings industry players and testing houses already established.

### **About the Australian Institute for Machine Learning (AIML)**

The Australian Institute for Machine Learning (AIML) was established in 2018 and conducts globally leading research and development in machine learning, artificial intelligence, computer vision and deep learning. The AIML is the first and largest machine learning research institute in Australia and is renowned for its computer vision research globally. The Institute has ~200 researchers and staff.

AIML translates research into impact through:

- collaborating with world-leading companies to develop high-tech products and solutions;
- providing an interdisciplinary approach to research and consulting;
- carrying out pure research to provide benefits to society;
- raising the profile of South Australia as the place to be for innovation; and
- employing South Australia's bright young minds.

**-ENDS-**

**Authorised for release by:** Nick O'Loughlin, Managing Director.

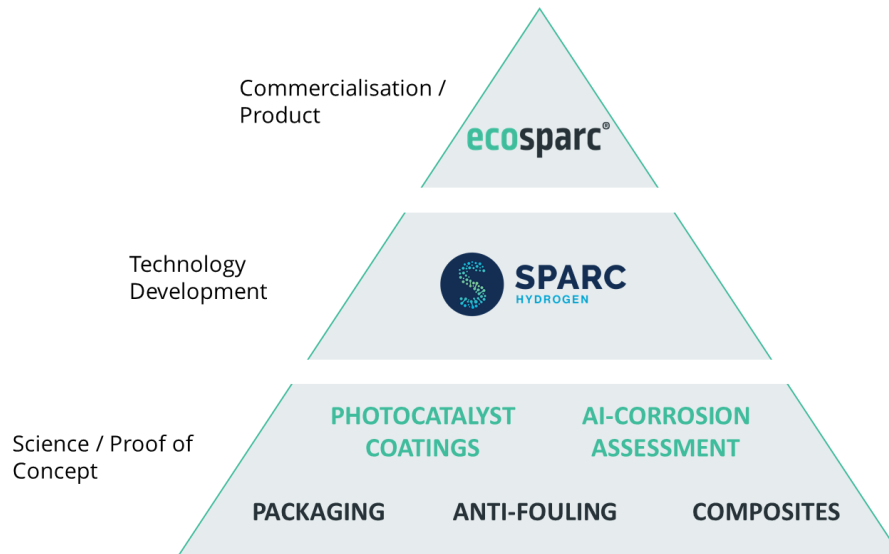
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## About Sparc Technologies



**Sparc Technologies Limited** ('Sparc', ASX: SPN) is an Australian technology company developing solutions that enhance environmental and sustainability outcomes for global industries. Sparc has two transformative technology areas in which it works: green hydrogen and graphene enhanced materials. Sparc conducts research and development in-house and has extensive engagement and relationships with the university sector in Australia and globally.

1. **Sparc Hydrogen** is a joint venture between Sparc Technologies, Fortescue Ltd and the University of Adelaide which is pioneering next-generation green hydrogen production technology. Photocatalytic water splitting (PWS) is an emerging method to produce green hydrogen without electrolyzers - using only sunlight, water and a photocatalyst. Given lower infrastructure requirements and energy use, PWS has the potential to deliver cost and flexibility advantages over existing hydrogen production methods.
2. Sparc has developed and is commercialising a **graphene based additive** product, **ecosparc®**, which at low dosages significantly improves the performance of commercially available epoxy-based protective coatings. Sparc has commissioned a manufacturing facility to produce **ecosparc®** and is engaging with global coatings companies and large asset owners on testing, trials and commercial partnerships.

For more information about the company please visit: [sparctechnologies.com.au](https://sparctechnologies.com.au)

For more information about Sparc Hydrogen please visit: [sparchydrogen.com](https://sparchydrogen.com)

