



## THE PROBLEM

While astronomers routinely use instruments with detectors worth half a million dollars for their observations, it is not possible to simply plug one of these into a computer and expect it to work – specialist control electronics are required to drive and direct these finely-tuned sensors. These electronic systems are usually about the size of a bar fridge – fine for putting into a big telescope, but not suitable for use in other industries, especially when that industry is located in Earth orbit.

Many sectors can only get around this problem by using industrial-grade products with compromised sensitivity and speed limitations. This is where our detector controller Rosella comes in.



## THE SOLUTION

This project will mature commercialisation readiness of the ANU Rosella detector controller for Leonardo's advanced shortwave infrared SAPHIRA electron avalanche photodiode (eAPD) arrays, for low-noise, high-res, remote sensing for space.

As well as Earth observation, possible future applications for Rosella may exist in defence and medical imaging, where portable, high performance and reliable electronics are required for creating visuals with high levels of sensitivity and speed.



## RESEARCH CAPABILITY

### ANU - Institute for Space (InSpace)

- National Space Test Facility.
- The Heavy Ion Accelerator Facility.
- Advanced Instrumentation and Technology Centre.
- Siding Spring Observatory.
- Australian Centre for Space Governance.
- Quantum Optical Ground Station.



## PROJECT PARTNERS



Australian  
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