Reduce, Reuse, Re/Upcycle
Evolving a New Future for an Old Telescope

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Background

The 1980s 10m radio telescope at the University of Canberra was used till 2005 by the Engineering faculty for satellite tracking and communications. Falling foul of university cutbacks it then stood unused, unloved and unmaintained for 20 years. By the 2020s it was becoming unsafe, but would be hugely expensive to remove. It was a problem looking for a solution.

Enter the Arts and Design faculty. Inspired by the UN Sustainable Development Goals of wellbeing (3), education (4) and sustainable consumption and production (12), Heritage and Creative Arts staff and students began to see a new vision for its future, based on 3 concepts:

- Reduce, Reuse, Upcycle
- An instrument for all interests
- An instrument for everyone

Over the past 8 years a project has evolved to see value in this machine, stabilise it, return it to working order, and create a community to care for it and use it. We think we can do this for under $AUD 200,000, by working with the goodwill and resources in our community.

Reduce, Reuse, UpCycle

We reduce our environmental impact by

- Retaining embodied materials and energy
- Minimising disturbance to the environment

We Reuse

- The telescope's sturdy, adaptable design – after 30 years in place it has minimal corrosion, no evidence of structural defects, and the concrete base is sound

- The telescope's embodied, heritage material and design decisions – so retro!
- The resources embedded in our community, with each new person adding a lifetime's worth of skills and experience, creative ideas, bits of spare equipment, invitations to join existing networks and projects, and to build on their knowledge and piggy-back off their hardware and software.

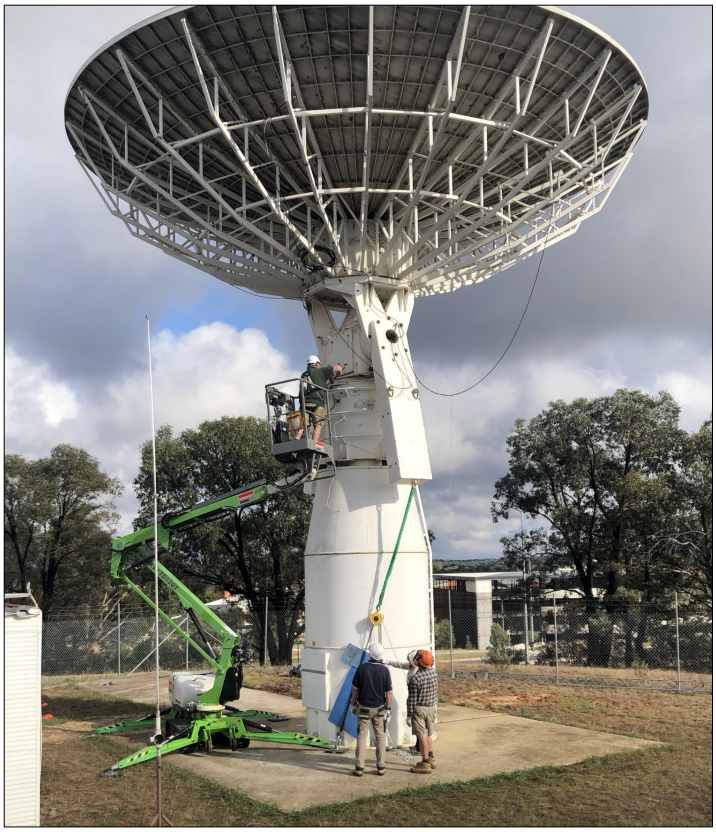
We Upcycle by

- Making it compliant with modern safety regulations, such as replacing old cabling
- Making it compatible with modern remote control and data collection systems. This means replacing the motors and control gear to make it more accessible and versatile. The old motors will be kept to preserve understanding of old skills and technology.
- Combining low-cost community use with paid commercial use, to generate an ongoing maintenance budget.
- Planning for transmission capability.

An instrument for all interests

Plans for the telescope include:

- Teaching in heritage management, materials conservation, data networking, creative writing, robotics, large machine engineering and maintenance, and radio astronomy.
- Creative projects – sending poetry to the stars, projecting artworks, exploring robotic movement of the dish – think astronomy, think dance!
- A return to satellite tracking, including tracking heritage objects in space.
- Radio sky surveys, partnered with antennas from around Australia.



An instrument for everyone

Big scientific instruments are usually seen as being "just for the experts", with the path to being an expert looking narrow and stony. The heritage aspects of the UC radio are already helping to blur the lines between people of different generations, backgrounds, interests and abilities, with heritage buffs and website designers complementing the skills of engineers and astronomers. Additional audiences we are targeting are:

- Preschoolers - imaginative, creative experiences
- Primary schoolers – working out how it was built, tracking the sun
- High schoolers – tracking and observing objects in space, with volunteer astronomers
- U3A (University of the Third Age) and amateur astronomy and radio communities
- PhD researchers – their own projects!
- An information feed about the telescope's activities to the nearby hospital and planned aged care facility
- Astro tourists following the Inland Astro Trail: Inlandastrotrail.com

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Images: Eleanor Smith and Alison Wain

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