



Australian Synchrotron Development Plan Project Submission Form

Section A: Summary and Proponent Details

Project Title

Secure remote access for Beamlines

Spokesperson

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Executive Summary (approx. 100 words)

<p>The Australian Synchrotron has a need to remotely access Beamlines through a secure, reliable and auditable mechanism in order to allow:-</p> <p>1/ Beamlines staff to provide extended support to scientists</p> <p>2/ Users to perform experiments remotely</p> <p>The current ad hoc techniques used to perform this do not provide adequate safety, accountability and data security and are not sustainable in the long term.</p>

Other proponents (add more rows if necessary)

Name	Institution	Email address
Anne Borda/Chris Myers	VERSI	chris.myers@versi.edu.au

Section B: Detailed Description

Attach a document using the following headings (max 10 pages):

B1: Description of Proposed Beamline/Development Project

The Australian Synchrotron has a need to control beamlines from locations physically remote from the facility. The two main use cases for this are:-

1/ Beamlines Scientists are required to provide support at times when they cannot be present in the facility

2/ Beamline users from time to time may wish to control monitor and control experiments from the home laboratory.

The current simplistic techniques used to achieve this suffer from serious limitations and cannot be sustained into the long term operations of the facility. These limitations are:-

1/ There is no consistent security applied to the access. The remote user accesses via special security exception, it is uncontrolled and unaditable

2/ Multiple simultaneous remote access is possible. This can lead to “dual’ control, with inherent dangers and thrashing.

3/ Passwords are not controlled in a consistent manner. This is very poor security. The AS is exposed to cybercrime and malicious unauthorized usage. Authentication and authorization is an important pillar in the "defence-in-depth" approach, The AS has lacks a coherent solution for control systems and web applications

4/ The control systems are “unaware” of the possibility of remote control. This is a dangerous situation – a remote user could perform an operation dangerous to a local user.

5/ There is no consistent mechanism for remote access. This is inefficient and leads to errors and confusions as well as difficulty in auditing and support.

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B2: Applications and Potential Outcomes to Australian Scientific Community

How does the project advance synchrotron-based research in Australia/NZ? What are the likely outcomes? Include specific examples where possible.

Major efficiencies and improvements in the user experience are possible with remote Beamlines control. The dangers inherent in allowing it to continue in an insecure and uncontrolled fashion could lead to potential adverse publicity

e.g. <http://www.timesonline.co.uk/tol/news/science/article4744329.ece>

and shut the facility down for longer period. Even greater shutdowns would occur if there was an incident involving safety and remote control.

B3: Match to Selection Criteria

These criteria can be found in the guidelines.

B4: Potential Users

Does the project address a clearly identified need in the community? The need may be actual or potential.

There are two classes of users - support staff and beamlines users. Both exist at the moment and are finding the technologies irresistible. It is anticipated that on certain beamlines – for example PX1, the majority of users will be using remote techniques (over 85%). This project will allow the continuing and safe sustained operation of the remote technologies.