

Call For Proposal: A WiFi Network for Large Area Coverage

Background/Challenge

In many situations such as emergency, special operations and post-disaster recovery, WiFi systems potentially offer the ability to provide access to emergency communications over a large area where there is no fibre or terrestrial mobile network coverage. The limitations of existing commercial WiFi access points (APs), means that providing coverage over a large area may need a large number of APs, but this would be prohibitively expensive or impractical for real world operations. Therefore, the CIN is seeking **innovations in the significant reduction of APs** compared with conventional approaches.

Project aims and outcomes

The project aims to create a platform solution for an innovative WiFi network solution that provides connectivity for remote public broadband WiFi access with the following **features**:

1. Supports up to 100 simultaneous users.
2. Supports data rate of up to 10Mbps per simultaneous user. Graceful degradation of the user data rates may be acceptable.
3. Outdoor full coverage of a fixed 2x2 km area.
4. Must be compliant with relevant WLAN standards and compatible with commercially available WiFi devices.
5. Each WiFi AP can be connected to mains power but must have an independent power supply to last for multiple hours.
6. Must have its own backhaul capability independent from terrestrial networks (such as satellite).
7. Must be capable of rapid deployment and operation in outdoor environments including during emergency situations.

The platform is expected to be flexible enough to cater for a diverse range of locations/applications and deployment scenarios. Examples include, but are not limited to:

- a. Special operations.
- b. Temporary accommodation centres.
- c. Remote communities.
- d. Remote train stations and bus terminals.
- e. Small remote townships.
- f. Fixed IOT Sensors.

Demonstrations

It is expected that the project will deliver early demonstrations within the first six months and the final demonstration at the project completion. At least one NSW government agency must be involved in the demonstrations.



Project Duration

The project duration is expected to be not more than 12 months. Subject to the support of the CIN, the project may continue to a second phase.

Project Funding

The project cost to the CIN is expected to not exceed \$300k.

Collaboration

To support collaboration, the project team should consist of at least two CIN members with at least one university member. The project lead and the project contractor with CIN can be two different organisations.

We encourage a university member to be the contractor in order to leverage their research support systems. We also encourage the participation of CIN industry members to enable early technology adoption.