

**To be completed by Proposer:**

Title of proposal	STEM DRONE CLUB
Proposer's Name	Mr Damien Connellan
Date	01/06/2022
Description of Asset/Event to be purchased/supported Attach further information if required	<p>Drones with associated controllers for the secondary students. The opportunity also exists for the STEM Drone Club to support other College initiatives including videos used in marketing, demonstrations during Open Day, JTC Day flying exhibitions and local media opportunities (Local paper, CEWA etc). Furthermore, if the College goes down the path of offering a Certificate III in Aviation (Drones) then we will have drones available for the students to practice on.</p> <p>With the acquisition of bigger and more capable drones, the smaller drones can be used to operate a drone club in Primary (most likely Year 6). Then when these students reach Secondary school the students will be able to move on to drones with increased capabilities.</p>
How does the proposal support the objectives of the Association (see guideline A)	<p>STEM is an area that many educational institutions are exploring educational opportunities in. I have been operating a STEM drone club here at the school now for coming up to 4 years now and it is growing rapidly in popularity. The club is open to all secondary students from Years 7 to 12 and girls are heavily encouraged to become involved. Currently we have 12 Tello drones that the Science Dept bought at the end of 2018, that allowed us to form the club. With the increase in popularity and trouble with flying too many drones using the WIFI signal, we wish to move into radio band. We hope to acquire the more modern drones with increased range and capabilities.</p> <p>We tend to lose the secondary students after a few months as they quickly grow tired of the low capabilities of the beginner's drones. The drones we hope to purchase will last us many years to come and have outstanding features now days.</p>
Can the item be labelled as a PA asset? If yes how?	Drones will be engraved with the College name and have Asset IDs.
Will the College own the asset or run the event?	Yes, the drones will be stored in the Science department and Damien Connellan will run the STEM Drone Club at least once a week in the gym here at school during term time.
What is the capital investment required Attach quote/estimate documentation.	<p>The drone club is hoping for \$8,000 to buy enough equipment so that as many students can be flying drones at one time.</p> <p>We hope to purchase 12 DJI Mini 2 4K Drones, with the fly more package, which includes extra batteries, a charger and the better controllers. We hope to buy more TELLO batteries to replace the aging batteries that were purchased initially. Also to buy more TELLO propellers as many get damaged/broken as the students push their capabilities.</p> <p>I have attached several quotes from different companies. If our proposal is successful, we will seek the best value for money.</p> <p>These quotes are for:</p> <ul style="list-style-type: none"> <li>• Mavic Mini 3 Drones with the Fly more combo.</li> <li>• 30 New Tello Drone batteries.</li> <li>• 6 Folding landing pads</li> <li>• Replacement propellers for the Tello</li> </ul> <p><u>Drone shop (Bayswater)</u> Total = \$11,016 <u>DJI Shop</u> \$11,364 <u>Jb hifi</u> Will match any quote</p>
What is the annual maintenance cost?	Minimal other than spare/replacement propellers.

Which student years will benefit?

All Secondary students wishing to pursue a cocurricular activity in STEM. Currently we have students from Year 7 to 11 involved. We heavily encourage girls to become involved in the club and drones are a great way to see more female students engage in Science and Mathematics in a real and practical sense. Over the years we have been seeing more and more Mary Ward students become involved with flying the drones. In fact, C-Jay Watson is one of our finest drone pilots and is one of the first students to offer to help the new students to drone club.

Although the club is overseen by Mr Connellan, he actively encourages the students that exhibit leadership potential to lead by example and even adopt leadership roles within the club itself (e.g., Captain and Committee). The student leaders in the club will assist those students with less confidence than themselves and will allow them to share any tips and tricks they have gained through flying these drones in 3D space.

The STEM Drone Club seeks to prepare our students for the future.

The use of a novel technology that will shape the world they will live in for decades to come. Drones are currently used in:

- Building and Architecture to survey the area.
- Photography & videoing events.
- Emergency situations in the search for missing persons on walking tracks, the wilderness, at sea etc.
- The rescue of people from areas with very limited access.
- Warning surveillance by Surf Lifesavers in the lookout for sharks.
- Agriculture for the surveillance of crops and cattle.
- Wildlife conservation for the tracking of endangered species, calculating population sizes & tracking migration routes of whales etc.
- Medicine for the delivery of transplant organs.
- Delivering goods from companies such as Amazon etc.
- Students not normally selected for leadership roles in the College, because of their quieter and more intellectual nature will have access to leadership positions within the club. These roles will include 3D spatial course design, obstacle construction and peer mentoring.
- Foster friendship for students in a vertical fashion, in that students in Year 7 will have friends and positive role models in the upper secondary years. Like minded students, who do not normally engage in the traditional sports, will be able to form closer relationships with like-minded individuals.
- Brain development allowing excellent hand-eye coordination in the first instance, then leading to the ability to control a device in 3D space providing increased depth and spatial awareness.
- Flying the drones around a course in real time will stimulate innate problem solving skills as the students negotiate the obstacles placed around the course. This will allow the students not only to use their cognitive problem solving abilities but also sharpen their reflexes and develop their fine motor skills.
- There will be a need for people with these skills in the future in roles that many of us cannot even imagine at this time. This program will give our students the ability to be leaders in those fields when the jobs become available.
- In planning and implementing the plans we have for Open Day and JTC Day festivities the students will work together to develop plans for the displays and develop close teamwork skills to provide a seamless presentation.

We have plans to make the club available to older Primary school students in the future. The acquisition of these new drones will allow us to immediately implement the drone club in the Primary school.

<p>In the case of an asset, which College staff will be involved in managing and/or maintaining the asset?</p>	<p>Mr Damien Connellan formed the club in 2018 and currently runs it once a week in the Gymnasium from 3:30pm until 4:40pm on Wednesday afternoons. This was determined to be the best time by the students. The drones are shared equally between the students to ensure equal flight time. The assets are then returned to the Science Dept with the help of the students. Mr Damien Connellan maintains the drones and charges all the batteries in readiness for the drone club each week.</p>
<p>Has the above-mentioned College staff agreed to manage/run the item? Please attach correspondence.</p>	<p>Mr Connellan will continue to run the club and have done so since 2018. Mr Connellan has shown continuous commitment to the STEM Drone Club and is hoping to foster continued growth within the College. Mr Connellan has attended a Drone Pilot's Course in his own time to aid him in his ability to help the students. He is now a qualified Drone Pilot, registered with CASA and has a Remote Pilot's Licence (RePL) to fly drones.</p>
<p>How has the value-for-money guideline been met? (eg preferred supplier, three quotes etc)</p>	<p>Mr Connellan been in contact with several Drone shops in Perth and has attached the quotes. Depending upon the funding we will decide whether to go with a cheaper or more expensive and durable option. The option to build the drones ourselves also exists in the future and will be tied with the Design and Technology Department (D&amp;T).</p> <p>Mr Connellan own 2 drones himself and is experienced in the purchasing drones and will oversee the purchase of the assets with the Parents Association funds. We will also look for added value through the prospective suppliers.</p> <p>A parent of a student involved with the Drone Club has offered to donate money to the club to help buy better drones for the club. Mrs Ho-Hudson has kindly offered to donate \$4000. Therefore, with the \$8,000 from the Parent's Association, the \$12,000 for the drones is covered.</p>
<p>What other considerations should the PA be aware of?</p>	<p>In forming the Drone Club I have taken the initiative to create an opportunity that did not exist previously in the College. I believe that this opportunity should be available to ALL students regardless of gender or age. The age of drones in society is upon us and I want to give our student the ability to be at the forefront of this exciting new world. Up until now I have been allowing the students to fly my bigger drones, to keep them motivated.</p> <p>I have been promoting the STEM Drone Club at every opportunity in Newsletters, the College's social media with the help of Ms Martella, and in the College Yearbook. I will continue to do so to engage the entire College community in this exciting opportunity.</p> <p><b>This request for funding is approved by Mr Henderson.</b></p>