# Group: Bandicoot

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**Camera Traps and images**

* What is the current range of the traps?

*Not needing to worry about. The machine learning model (supplied by the Client) takes care of this, and is not within our scope.*

* What are the specifications of the current traps?

*All the same model, off the shelf, feature 3G comms, use email via SMTP for sending images. Will all be placed in appropriate positions with adequate 3G coverage. Each trap will be fitted with a SIM card, and will have a unique ID. GPS Co-ordinates for the camera trap positions are available from client.*

* How may traps do you have now

*12 traps total, deployed in 2 main areas. 6 traps per area.*

* What are the specifications of the future traps?

*No need for future plans, project spec is to build a prototype/proof of concept.*

* What is the plan for the number of traps, e.g. How many do you plan to have in the next 12, 24, 36 months

*No need to plan for future, project spec is 12 traps for now, over 12 months*

* Do you expect us to supply additional camera traps?

*No, camera trap hardware is supplied by client, we don’t need to worry about them at all.*

* Where are the traps located?

*2 locations, both in NSW, GPS co-ords to come soon.*

* Where will the additional traps be located?

*No additional traps to be added*

* How many sightings do you expect in a 24 hour period by the current number of traps?

*This is what we are trying to find out. Could be 0 through to 100’s. Depends on the local drop bear activity and how well placed the traps are placed.*

* How many images does the trap take during one sighting?

*Each camera can take 1 – 5 images per detection, the current traps are set to 3 images per detection*

* What is the size of the image?

*Each of the 3 images are 750x750 resolution, ~500kBs per image. Sent as an email attachment.*

* Would you consider changing image size?

*No, fixed by Client. Settings are based on what the Machine Learning Model requires.*

* Are you looking to store images - what is the timeframe?

*Store every image! Both positive and negative sightings. Even false sightings help the Machine Learning Model.*

* Who needs to access this information?

*Image data: only researchers, and people currently involved with the project. Maximum of 5 users for the system.*

* Do you want to save all photos or just the dropbear ones?

*Every image needs to be saved*

* How long do the photos need to be stored and/or accessed?

*3 year period, minimum. If that is to change, that is outside current scope of this project.*

**System questions**

* Do users need to be able to access the drop bear information when they are not online

*No*

* Do users need notifications when they enter or are in a drop bear hotspot

*No, notifications should be based on Postcode. The app should display positive drop bear locations based on Postcode rather than based on the user’s current location.*

* Do we need a way to project how many drop bears we think there are in total based on the positive identifications?

*Total over 24 hour period, per postcode based on positive sightings.*

* What infrastructure will you provide?

*Camera traps, Machine Learning Model, test data.   
Client however is requesting that our solution be a cloud system, running on AWS.*

* Do you want a fast system or a more accurate but slight delayed system?

*#1 priority is preventing the loss of data. If that means slight delays, then that’s fine. #2 priority is speed, in terms of detecting a positive sighting, and pushing the notification to the app.*

* What sort of OS are we looking at for the app? Or should it be comparable for all, please provide detailed response?

*App: IOS and Android (only current versions need to be supported) Needs to be parity between IOS and Android.   
Main functionality of the app: Provide a total number of positive drop bear sightings in the given postcode over the last 24 hour period. AND, an option for push notifications to update on each positive sighting as they occur.*

* Speed, quality, reliability – which of these are the top 2 priorities for you?

*Reliability, Quality, Speed in that order. – However, notifications should be coming within minutes of a sighting.*

* Will you be providing the image detecting code (specifically, code to determine if the image does in fact contain a drop-bear), or are you requiring this to be developed by us?

*No, the client will be retaining all Machine Learning code and training data. However, we will be provided with a ‘Tensorflow based prediction model’. Model will be fed an image, and will return a prediction image and an object that contains some information such as classification accuracy, labels, classifications classes. Our job will be to incorporate this info into our system.   
Timestamp for this question: 11:20*

* If you are expecting a large amount of photos, would you prefer they were sent to the server as captured, or stored in a buffer and sent all together at the same time every day to reduce network requirements.

*Depends on how your team wants to handle it. As we want real-time notifications, we will need to process images as they come in. However, we our #1 priority is not to loose data, you may need to implement a buffer and/or queue.*

* When a drop bear is detected, what exactly do you desire for notifications? SMS message? Phone notification?

*App: push notifications if the user has enabled them, otherwise, just an update to the totals.  
Website: Email notifications to users who have subscribed.*

* In regards to the camera, are you also requiring a way to monitor battery life? Perhaps notifications when a camera is running low?

*Each camera can send a daily heartbeat message. This is a daily email sent to the client admin user, and contains information such as battery life, this email is external to our image detection system and not within our scope to deal with.   
Each trap is fitted with a Solar Panel, so battery life shouldn’t be an issue. However, this heartbeat message generally monitors the state of the trap. If an issue is found (and reported via email) then it is the client’s responsibility to deal with that.*

* Do you require notifications when a camera appears to be offline? Consider the scenario where Camera A, B, C are online. Camera A drops offline (perhaps it is damaged, or the battery goes flat), and only Camera B & C are still active. Would you like to be notified if connection is lost?  
    
  *Not within our scope.*

**General questions**

* What information is the DB Protection Society looking to acquire?  
  would you also like additional data stored to what was mentioned e.g. movement frequency, DB nest, etc?

*Dropbear Protection Society is interested in:  
Ecological survey data (time and date of image taken, the image itself, GPS location of the trap that took the image, classification (positive/negative sighting), confidence level of the sighting (as a %)).  
State and Federal Government are interested in the alert functionality.*

* Could we please have more details on the types of users and who they may be?  
  As solution is focussing on foreign tourists, will multiple language translations be required? Will they be required in the future?

*As this is a prototype, just consider generic users. As this is not open to the Public at this time, we don’t need any specifics on user types. Other features such as language are to be added in a future, commercialized build, but that is outside of scope for now.*

* Is there a maintenance period to be included? What are the specific requirements of the maintenance period if it is included?

*Client has grant money for 3 years. This will cover the cost of hosting the cloud solution. Within 3 months, we need to provide an estimate of monthly costs of our server costs and cloud hosting.*

* Is training to be provided, if so what are the specific requirements of the training, is it train the trainer or all users?

*Only train Dr Client (main user) as he will show other users how to use website/app. No additional training required for now.*

* Are we expected to report on the benefits? If so, please provide baseline data.

*Any benefits are to be shown by Dr Client, he will determine if the system is beneficial. Not our job.*

* What is the schedule for delivery and key milestones?

*1 year for delivery, Milestones every 3 months, where we show progress on all features being developed. Last 3 months is a field trial with real camera traps in place.*

* What is the budget?

*James missed this question for some reason?*

* What reporting requirements will you need during the project?

*And this one?*

* What are the security considerations? Are there any policies we need to be aware of?

*No security concerns for now. Data should be kept from Public, however, the data is freely available to researchers. They can gain access to this data by filling out a web form on the website to request access to data. Dr Client would then manually approve and release the data to those who made the request.*

* What is the future plan of commercializing this project?

*Not yet determined. The prototype we are developing will determine future viability of commercialization. Any future commercialization is outside of scope of this prototype project.*

* Are there any additional requirements that we need to incorporate to the current system?

*Nothing yet.*