



## Voice activated mating data capture

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Improving fertility is one of the priorities of the dairy industry and is a key driver of farm profit. Currently, there is no easy way to capture cow-side mating information and most of this is written on docketts and hand entered later, if it is captured at all. There is a need to automate this so that this information becomes available to help farmers better manage the fertility of their herds.

The solution which DataGene developed with the help of Monash University students, Anthony Nguyen, Charul Manglani and Sam McCarthy is a cow-side data capture SmartPhone App which can capture the cow-side mating data, using voice detected commands right at the time of artificial insemination. The meta data includes, the Cow ID, Bull Common Name, Date of Artificial Insemination, Farm ID and the Technician ID. Given that the process of artificial insemination requires both hands of the technician, it was important to develop a solution which is hands free. A blue-tooth headset is the chosen method for the user to interact with the App. There are three use cases outlined below. It is important to note that in all use cases the farm may or may not have access to internet.

The technician knows the cows that will be mated before reaching the farm, and the bulls they are to be mated to. In this situation, the farmer has used a separate Farmer App to upload the numbers of the cows, and the bulls to be used, or pre-planned his matings at the start of the season. In this case the AI information can be prepopulated, and the Technician App can alert the technician which bull to use upon him reciting the cow number.

The technician knows the number of cows that will be mated before reaching the farm, but not which bull they are to be mated to. In this situation the technician will recite the number of the cow, and the name of the bull which will be recorded by the App.

### Introduction

### Use Case 1

### Use Case 2:

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### Use Case 3:

The farmer has a stock of straws on his own farm. So the technician is unaware about the cows and bulls before he reaches the farm. In this case the farmer and technician will decide prior to, or during the AI process which cow is to be mated to which bull. The technician will then recite the cow number and bull name when completing the mating.

### The application

The application has certain key words such as Start, Bull and Cow which act as triggers to recognise that the next word spoken is the start of mating run, bull name and cow number respectively. The remaining data such as Mating Date, farm Number and Technician Name are automatically collected by the application and stored on the local (phone) SQLite database SQLite and later synced with the server database, on availability of internet.