

# 'CAPROVI'

## SHEEP AND GOAT MANAGEMENT SOFTWARE FOR FARMERS AND INTEGRATORS

### SHEEP AND GOAT FLOCK MANAGEMENT INTEGRATED ENTERPRISE SOLUTION

**Integrated Enterprise Modules:** Sheep and goat production system although small-hold requires an integrated approach to organize the farmers around input / output and the market. We have developed a unique platform that supports end-to-end solution to the goat-sheep farming. The platform is also useful for research institutes / extension organizations and the Government organizations.

The software is developed in VB.NET and is server based which enables networking of different farms in the organization. The data can be pooled in the central server for purpose of analysis:

#### The platform has following elements:

- 1. QR coded ear tags:** This is our own patented technology wherein the plastic ear tags are printed with encrypted QR code. When the code is scanned with our App the user gets connected to the animal's file. The data then can be updated either at the animal side or later at the office. The data of only scanned animals can be updated by the service provider whereas the farmer owner can enter selected data without scanning of the code. In that case he has to enter the unique identification number manually.

***However, our system is also compatible with linear bar coded ear tags as well as the data can be entered manually.***

- 2. Caprovi App:** The App can be installed on the Android phone from the Play store and can be used with unique user name and password. The App is QR / Linear bar code scanner cum flock health and production data management system. The App can be used by the farmers / staff working in the farm, the veterinarians and the technicians. The admin can define access scope to each user to ensure data safety and confidentiality.
- 3. Caprovi Desktop:** This software can be installed on the desktop / laptop of senior managers who can undertake big data analysis. There is also facility of data merging.
- 4. Caprovi dashboard:** The dashboard is for multi-farm organizations. The senior managers can track the services in real time. Using the dashboard various geo-maps can be generated. The dashboard also enable file access to the head office staff.

5. **Caprovi Admin-** The Admin module enables customization of the software for the

**Tag-n-Trace:**                    **A novel polymeric ear tag technology for secured and robust animal identification and traceability.**

**‘Tag-n-Trace’ Identification Device for Sheep and Goat:** We have simplified livestock traceability like never before by converting the traditional ear tag into second generation technology ‘Tag-n-Trace’ by replacing linear bar code with query encrypted two-dimension QR code. The encryption with query string is our innovation to make data access secure, private, robust, simple and cost effective. Registration of sheep and goat in the data system has now become a three-step five -minute job: (a) download our App ‘Capriovi-Mobivet’ from



Google Play Store, (b) tag the animal and scan with the App to open registration form, (c) enter required information including owner details (you can scan Aadhar card of the farmer to populate his details) and animal details and save. Once the animal is registered the data file becomes from next moment. Whenever any veterinary or any other management intervention is done, such as, vaccination, AI, PD, kidding, simply scan the tag code to open the respective file and update the records. ***We bet it takes less than a minute to update new records.***

**Is ‘QR code’ printing on ear tags permitted by the International Committee on Animal Recording (IntCAR)?** Yes, as per guidelines 10.7.6.2. of the IntCAR Recording Guidelines 2017, printing of two- dimension matrix codes on ear tags is permitted to aid machine reading. Since India is member of the IntCAR use of such coded technology is permissible as at the same cost of ear tags it brings numerous advantages which is described below.

**Can Any manufacturer supply Tag-n-Trace ear Tags?** Yes, we provide the program code string for each ID series to the manufacturer who while manufacturing ear tags can convert the string to the unique QR code and print on the tag along with visual identification number. Most of the tag manufacturers in India have this capability.

**Is Tag-n-Trace superior?** There are several benefits of using Tag-n-Trace Technology: (1) It costs same as linear bar-coded ear tags. (2) It avoids errors of entering 12 -digit ID number in updating device as with scan the ID is populated in the entry form. (3) No possibility of data fudging or manipulation as data can be entered only after scanning of the tag- a big step to ensure that the work was done. To explain, there is a suspicion if the animals were vaccinated or data is being manipulated without actually doing vaccination. With Tag-n-Trace this will not be possible. The vaccinator will have to scan tag of at least one animal in the farm to open vaccination entry form of all eligible animals. Another advantage is that once the

vaccination record is updated in server digital vaccination certificate and next due date can be communicated to the farmer (in his own language) for record. (4) Data updated in real time, no lag period. (5) Most important no additional device as Tablet or laptop needed- service providers can use their smart phone. (6) Even farmers who have smart phones can be provided user name and password to access their animal data.

**Is Tag-n-Trace superior over RFID? Yes.** In reality in small-hold non-automated farming system RFID has no use. Tag-n-Trace offers several advantages briefed above. The constraints of RFID are: (a) these tags are 7-8 times expensive than Tag-n-Trace, (b) separate stick reader costing more than Rs. 15,000 is required but still the scan provides only ID number and not the animal details. In case of our tags the cell phone installed with 'Caprivi-Mobivet' App can be used to scan and access sheep / goat data.

Tag-n-Trace QR coded ear tags	134 kB Conventional RFID Ear tag
Cost – Almost equal to the simple tag, suitable for small-hold semi-automated farms	Expensive- 5-7- times higher with only addition of automation compliant
No extra gadget needed: Can be read with cell phone equipped with camera better with > 6 mega pixel	RF reader required - Need expensive dedicated RF reader or reader cum data transmitting device – Not affordable
Interfacing with data file: Connectivity to animal data file	No - Reader has no interface with data file- Only reads the identification number, due to space limitation other data can not be stored
Scanning software – Free software provided for scanning and data update	No data transfer possible- Reader cum transmitter to be used re very expensive -
No data fudging possible- Facility of update only after QR scan – ensures that the data is not fudged	Unless expensive reader cum data transmitter is used

### Advantages:

1. Traceability of animals possible
2. The services can be monitored as data update only when the service providers visit the farm and scan the ear tag code
3. Easy opening of data entry form

4. Data entry error-free
5. Data credibility very high
6. The farmers will benefit when they wish to sell excess animals as these can be marketed along with parent record and performance data

**Please Note:**

- We also supply Tag-n-Trace ear tags complying the IntCAR standards. The encrypted QR code with visual number is printed on high quality flexible ear tags that has negligible drop rate, if applied properly.
- We will supply same ID number and QR coded tags in case the tag is damaged or lost, on chargeable basis.
- The QR code printing and scanning efficiency has been tested – will last animal lifetime
- We can also collaborate with your present tag supplier in case you prefer. The manufacturer however has to pay nominal royalty to the inventors of the Tag-n-Trace technology (under-patent).