Australian Endurance Riders Association Inc

AERA ELECTRONIC TIMING SYSTEM (ETS)

This manual provides a step by step guide for the operation of the AERA Electronic Timing System [ETS].

The successful operation of the ETS requires the following 5 key steps to be actioned.

1. Ride Day Laptop Requirements.
2. Completing the 'Ride Setup' menu and allocating an E-Tag to a Bib Number in AeraSpace.
3. Installing the ETS hardware and pre-ride testing.
4. Ride day operation and trouble shooting.

Section 1: Ride Day Laptop Requirements

Not every Laptop has the capacity and performance level necessary to operate the ETS. The Laptop to be used will need to satisfy a 'System Performance Check' as well as have an RJ45 Ethernet network jack (or adapter for wired network connection) to plug in the base station access point.

RUNNING THE SYSTEM PERFORMANCE CHECK

This step should be run well in advance of the ride weekend, in case the laptop is poorly rated to run the ETS. Should the laptop be rated poorly, then by testing well in advance, this will permit sufficient time to source and test an alternative laptop.
The 'System Performance Check' is run from an AeraSpace Menu option as follows.

>> Open AeraSpace >> select the 'Timing System' menu >> select 'System Performance Check' menu
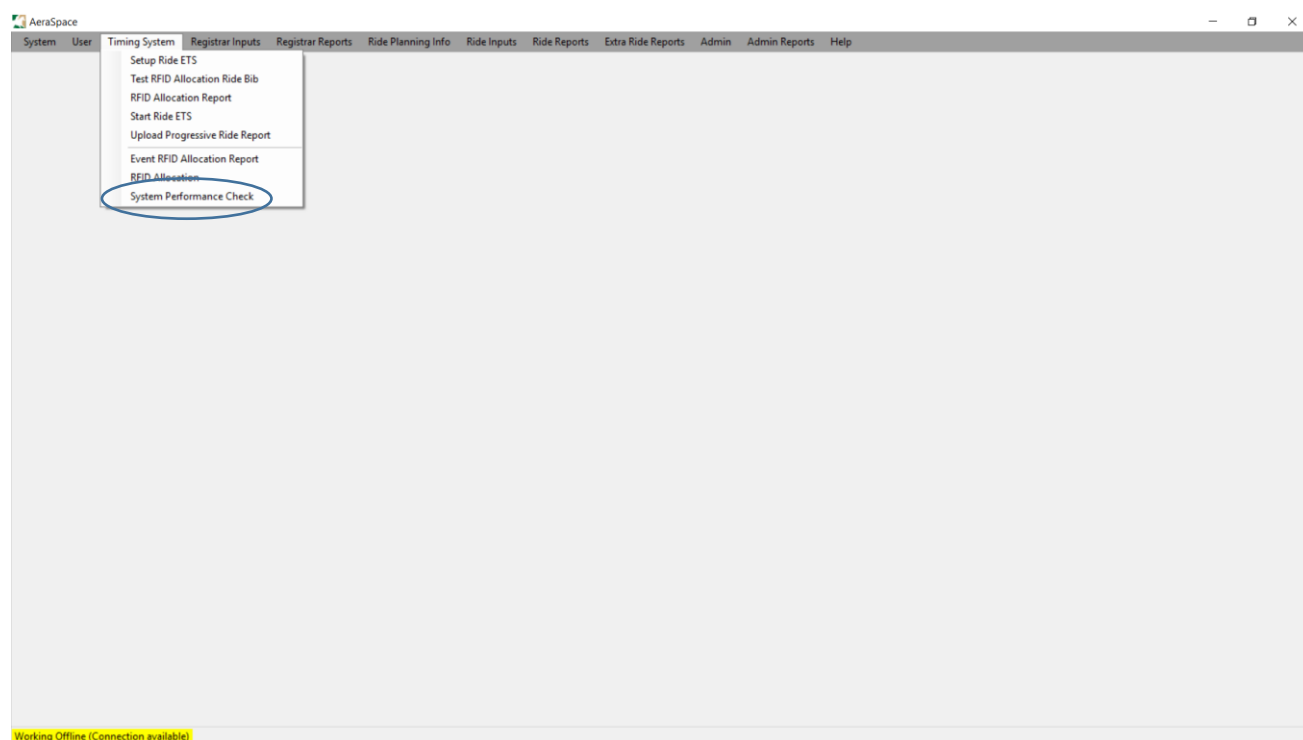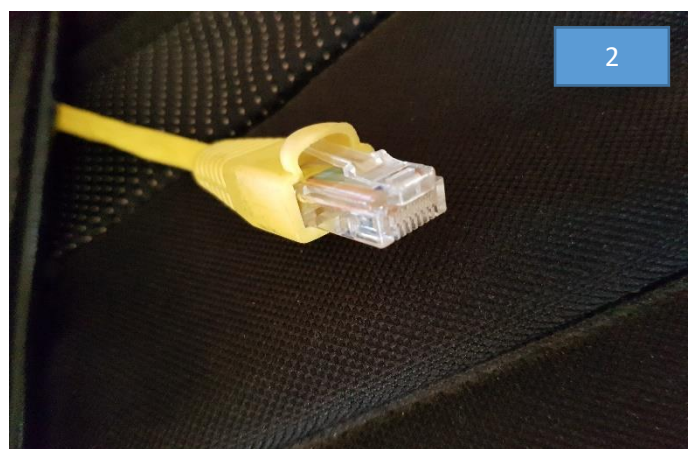

AeraSpace will return a message as displayed below. If the laptop is rated poorly, please identify and test an alternative laptop.
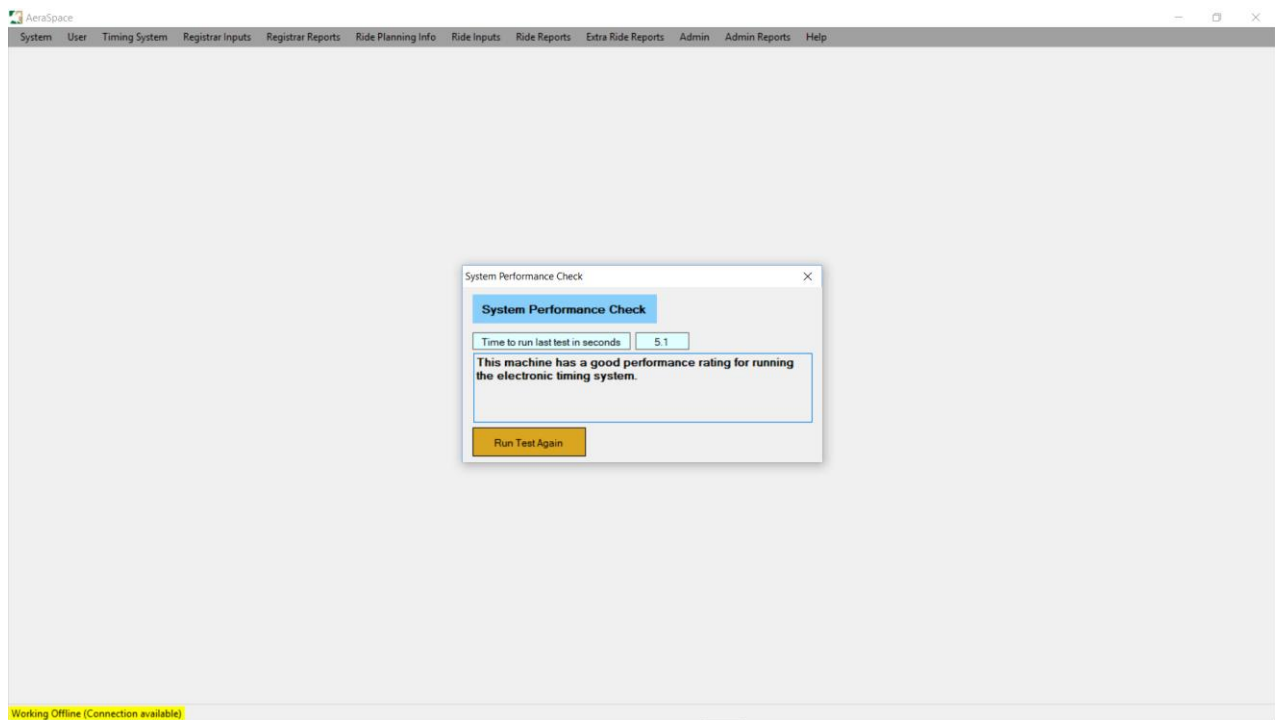
RJ45 ETHERNET NETWORK JACK

The laptop must connect to the ETS Access Point and this requires an RJ45 Ethernet Network Jack (pictured 1 below). There is also a photo of the plug (pictured 2 below) that must be plugged into the RJ45 jack.

If your laptop scores a 'good performance rating' and possesses the RJ45 Ethernet Network Jack then the laptop is ready and capable of running ETS at the upcoming event.

Section 2: Completing the 'Ride Setup' menu and allocating an E-Tag to a Bib Number in AeraSpace.

Every ride, irrespective of ETS or not, must have the ride set-up parameters entered in AeraSpace prior to the start of the ride. Where ETS is to be used at a ride, it is best to turn-on the ETS parameter before any ride entries are entered into AeraSpace. The reason being that ETS adds an additional field into the ride entry screen being the 'E-Tag' number field. It is best to enter / edit the E-Tag number as the entries are created rather than go back and input them later.

For a ride to be capable of operating the ETS, the ride setup must be flagged to accommodate ETS.
If this step is not performed, ETS <u>cannot</u> operate for the ride. Note: The Division Calendar Registrar should already have created the basic 'ride shell' information in AeraSpace.

1. <u>Make the upcoming ETS ride, your default ride on the laptop.</u>

    For ease of operation, it is best to set the laptop ride default to the ride being conducted.

   a) On the Main Menu >> select 'User' menu >> select 'Operator Defaults' menu.
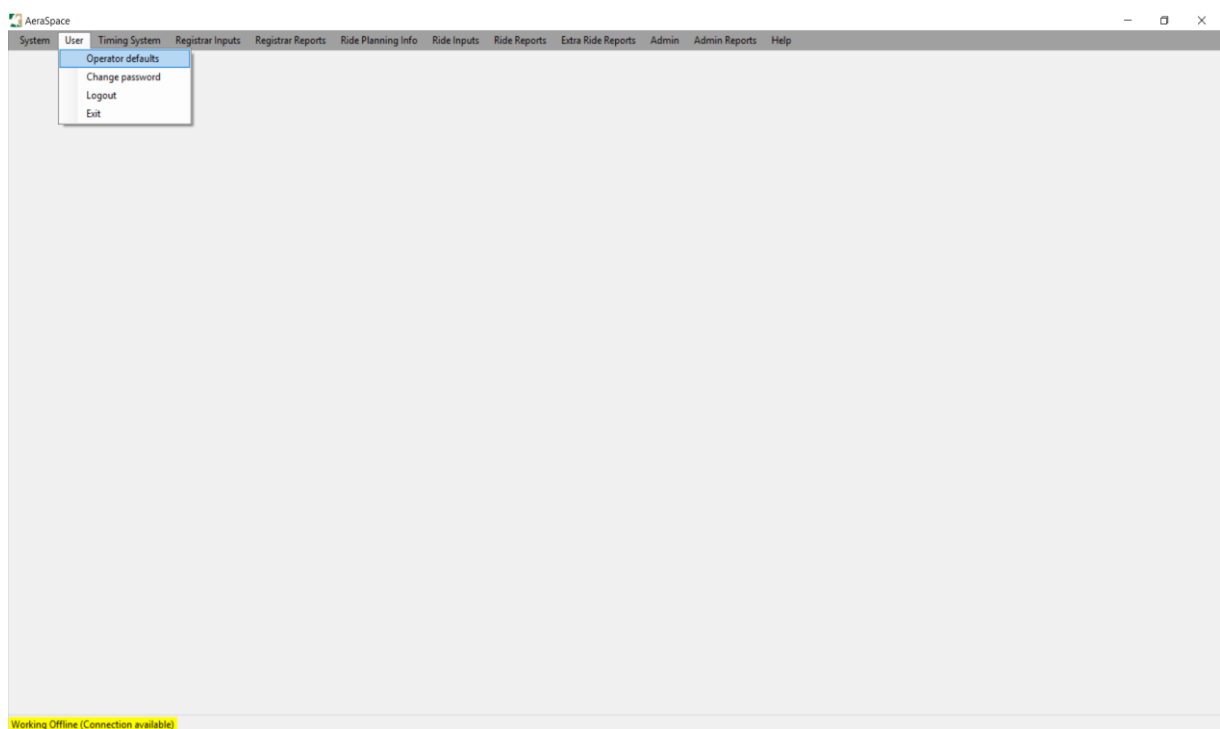
    b) On the Operator Defaults menu, (pictured below) utilise the dropdown boxes to select the ride that will utilise ETS. When the appropriate ride has been selected save the screen by hitting the X in the top right corner of the 'Operator Defaults' menu screen. Note: Do <u>NOT</u> tick the 'Work Online' option.
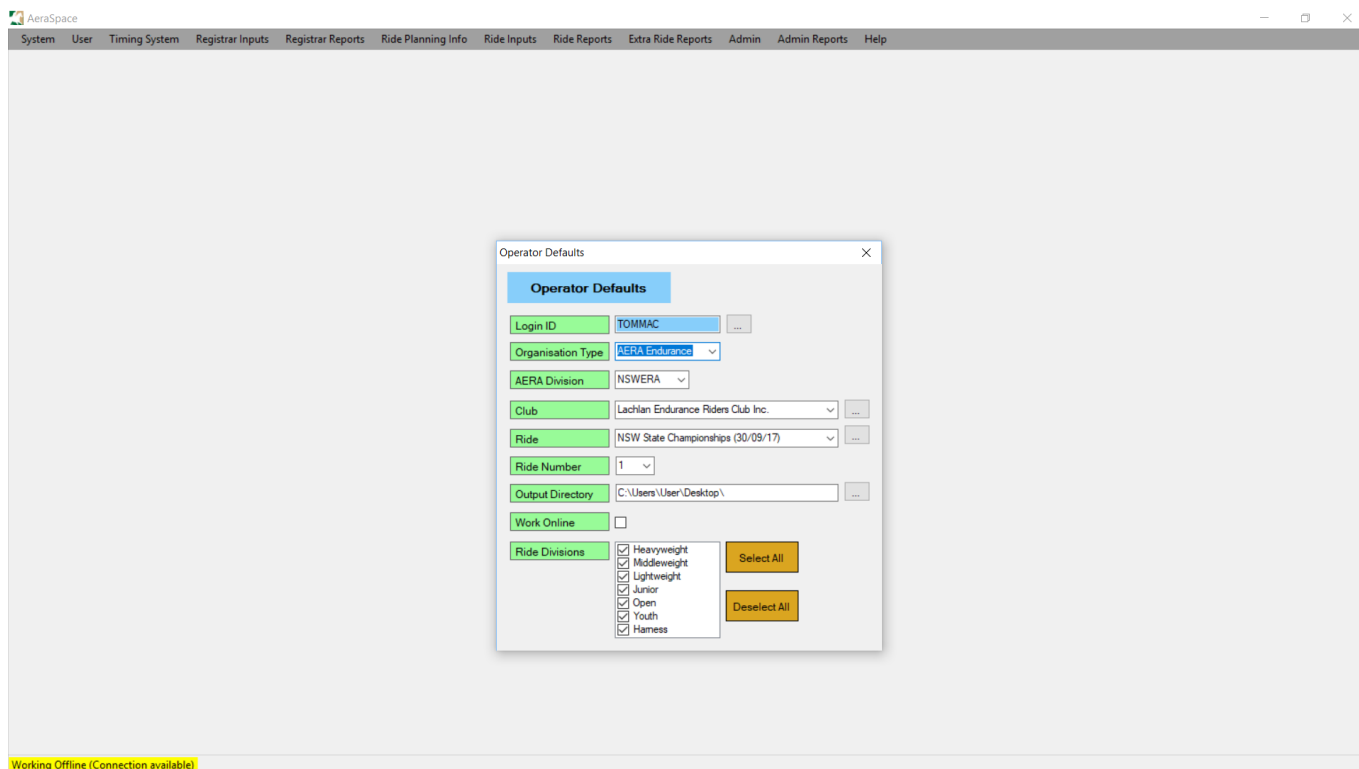
2. Entering the 'Ride Setup' data.

The accurate completion of the Ride Setup screen is critical. If you have incorrect start times, leg distances or hold times, these will affect the resulting ETS calculations and information output.

a) On the Main Menu >> select 'Ride Setup' menu.
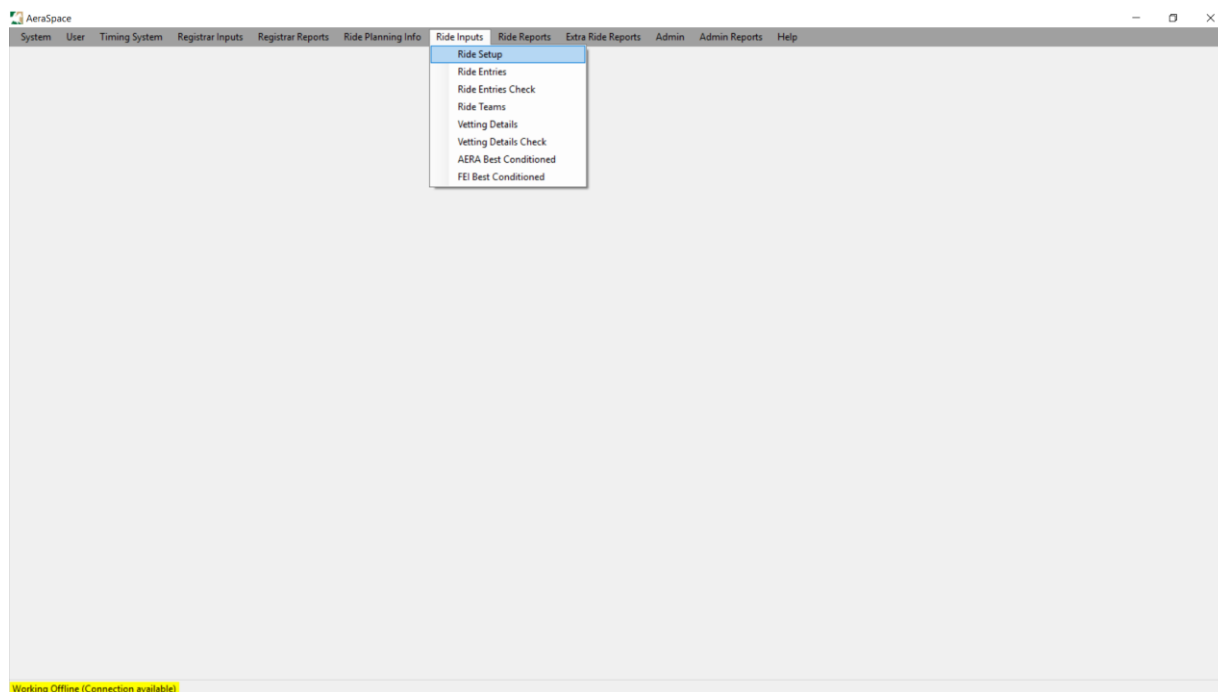
b) The Ride Setup screen will display as pictured below. The amount of data setup will depend on what information the Division Calendar Registrar has already entered and it will vary from Division to Division. Begin entering / updating the data by working across the headings from left to right and down the page from one ride to the next. It is best to fully complete one ride before going down the page.

Note: All times are entered in 24 hour format. Some examples follow:
12 midnight = 00:00

1 am = 01:00
12 midday = 12:00
1 pm = 13:00
4.30 pm = 16:30

Ride Type –   use the drop down menu to select the correct ride type.
Distance –   enter the correct total ride distance here.
Min Time -   ignore - should be blank – recorded in the 'Legs' menu.
Max Time -   ignore – should be blank – recorded in the 'Legs' menu.
Vet Type -   use the drop down menu to select either 'Standard' or 'VGIH'.
Timing Type –   use the drop down menu to select 'Manual' or "Electronic'.
                   Electronic timing is optional for one or more rides on the weekend.
Legs –   click on the leg icon for the ride and a new screen will open which is displayed below
Status –   ignore – should be 'Not started'
Status Date –   ignore the date
Member Cost –   ignore – should be blank
Non Member -   ignore – should be blank
1st Leg Start -   should always be 'shotgun'
Groups –   ignore – should be blank

| Leg Number – | should be in numerical order. |
Leg date –	must be the date that ride actually starts.
	Note: A midnight start on Friday the 08/05/17 must be entered as Leg date being the 09/05/17 with a Start Time of 00.00 hours.
Distance –	enter the relevant leg distance.
Cut-off Time -	enter the relevant cut-off time for that leg (if applicable) otherwise leave blank.
Min Novice Time -	enter the minimum novice time for each leg.
Max Heart Rate -	enter the maximum heart rate for each leg.
Max Vet Time -	enter the maximum present time for each leg.
Hold Time -	enter the hold time for each leg.
Compulsory Represent -	tick if there is a compulsory represent on any leg (otherwise leave blank). If you tick a compulsory represent, the system will default a 15 minute Maximum Represent time. This is the maximum time period before the due time out that you can represent your horse for the compulsory represent.

You have now entered the necessary data in the 'Ride Setup' menu for ETS to operate. The next step is to ensure that an E-Tag is allocated to each rider bib in the 'Ride Entries' menu.

Note: If displayed timing is being used at your event, with riders, stewards and the public all able to see the ride time, then you **must make sure that those clocks are all synchronised to each other, and most importantly, to the ride computer**, so there are no time discrepencies.

3. Allocating an E-Tag to each Rider Bib.

    a) On the main menu select 'Ride Inputs: menu and select "Ride Entries' menu.
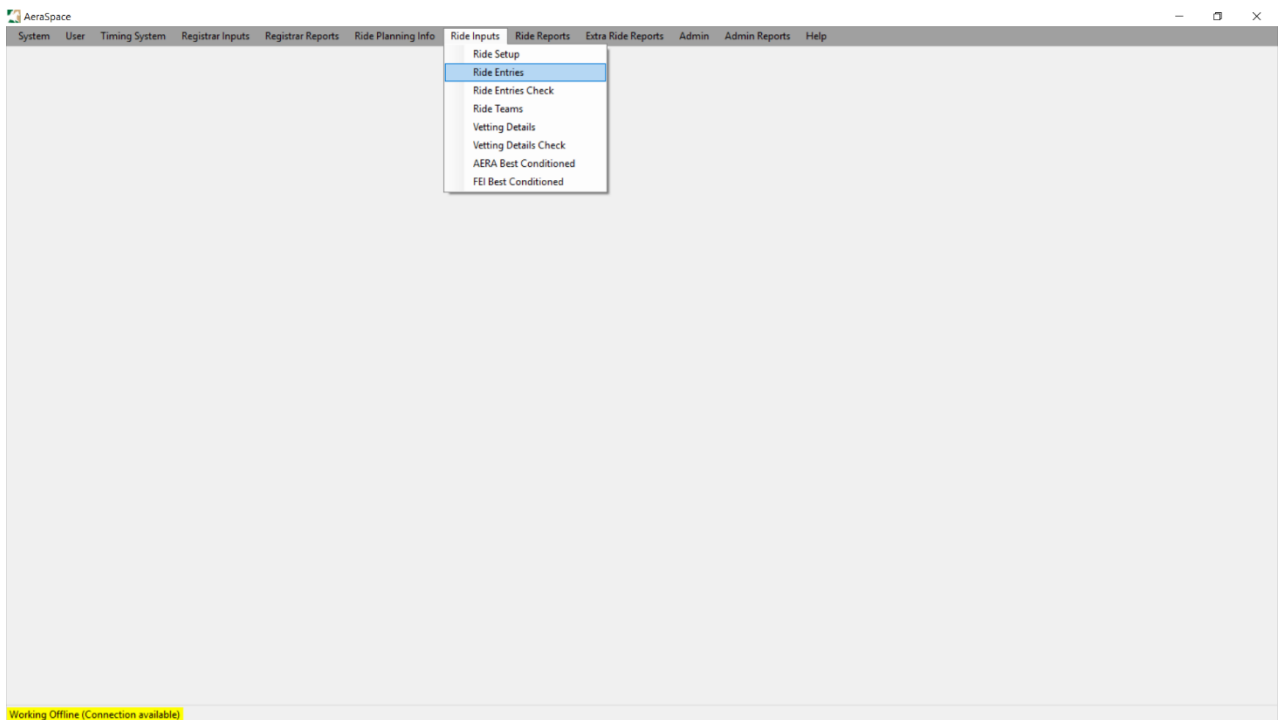
b) When inputting the ride entries, when the data entry person enters the 'Bib Number', the 'Electronic Tag' field will automatically default to the same number as the Bib Number.

Where possible, it is best to match the E-Tag to the Bib Number, but sometimes this is not possible, so the 'Electronic   Tag Number' filed can be edited to reflect the actual E-Tag issued to the rider. If you attempt to issue the same E-tag to   2 different riders, the system will deliver an error message and not let you proceed.

Managing RFID cards   &   Bibs

General

The RFID cards as supplied are numbered 1 to 300

Depending on the numbering sequence(s) on the ride bibs, it is easier if you match the RFID number to a bib number: 1 to 1;   51 to 51 etc.

This may not always be possible, and that's ok. You can have any RFID card with any Bib, it just makes it easier to organise if they are the same.

Set up & distribution

1.Decide which bibs, number wise, you are going to use for which ride.

2.Where possible, find a matching numbered RFID card to go with that bib, and loop the card lanyard onto the bib, so that they can be given to the rider together.

3.Write the Bib number, and RFID number on the Entry Form, so the data entry person knows exactly which goes with which, so they can be matched in AeraSpace.

4.Explain to the rider that during the ride, the lanyard should be placed around their neck, with the RFID card dropped down their shirt, so it does not flap around in their slipstream. THEY SHOULD NOT BE LEFT ATTACHED TO THE BIB.

Collection post ride

The RFID card, holder and lanyard are not easy to replace, and have a cost to QERA if lost, so there needs to an organised collection of them all post ride. The easiest thing is to collect them with the bibs, and to enforce their return by not giving out the logbook until they are returned.

END HERE FOR THE MOMENT.

THE ETS requires the following hardware which is external to the ETS Kit.

- Mains or an appropriate PC compatible inverter generator to power the ride laptop and the ETS Base Station.
- Mains, inverter / generator or 12V batteries to power the desired number of ETS units at the required gate locations, being the Arrival Gate, Vet Gate and the Departure Gate.
- A structure to house each of the 3 gates (usually a 3m x 3m gazebo at each gate) including a table and chair.
- 135cm steel posts and 50mm PVC pipes and elbows to act as guides to riders and to place the scanning units on.

Viewing Ride Results on Phones or other devices via the ride Wi Fi

To view results on your mobile device turn on your Wi-Fi and connect to the access point called AERA_Public. Then start your web browser and type the following into the address bar at the top:

Ride Results

10.13.79.2:81

Departure Gate

10.13.79.2:81/Departure

Vet Gate

10.13.79.2:81/Vet

Steps to display ride results during event with Electronic Timing System (ETS)

Before you start

It is assumed you have already connected a second screen to your computer to enable this feature and have the ETS running within AeraSpace.

Step 1 – Computer Display Settings

Go to your computers display settings by searching "Display Settings" and select *Change Display Settings*.

Step 2 – Extend your display

When you first go into the display settings screen you may see something like the following.
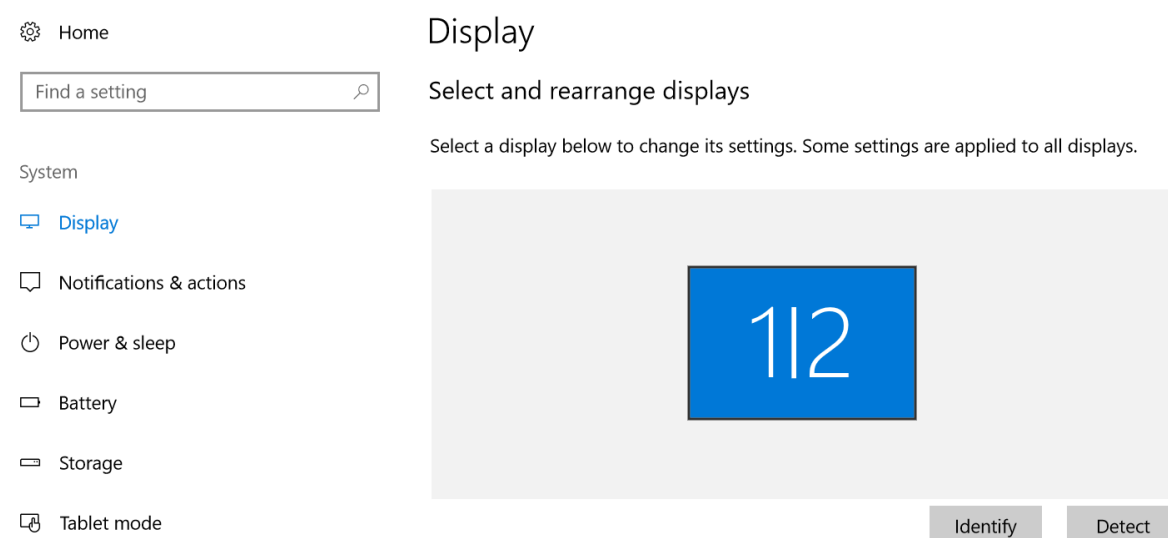
Scroll down to the section titled *Multiple Displays* and change the setting to *Extend these displays*. Once done, you should see your current program(s) running on one screen and a blank desktop on the other.

Multiple displays

Duplicate these displays

Extend these displays

Show only on 1

Show only on 2

Connect to a wireless display

Display adapter properties

Step 3 – View the ETS Webpage

In AeraSpace system, select *Timing System*, then *Start Ride ETS* (if not already running). Select which page you want to display from the "Page" drop down menu and then press the *View Web Page* button. This should open a web page in your internet browser.

Step 4 – Show the web page on the second display

Drag the internet browser to the right (or left depending on your settings) of your main screen and it should begin to appear on the second display. Once fully visible, maximise this screen to show as much information as possible.

Step 5 – Change what is displayed

If you want to change what is displayed, return to the *Start Ride ETS* screen, select a different page to display and press the *View Web Page* button. This should open a new tab in your internet browser with the required page.

Electricity / Power supply

There are 3 different ways you can power the ride computer and ETS units - 240v Mains Power;12v Battery Power; 12v Generator. All three are OK to use, however there are things to keep in mind with all alternatives.

Remember, there are many things to power - ride computer; printer/copier; ETS units; tablets; power packs. So **you need a reliable power supply.**

Overall   The gate units have built in 240v to 12v adaptors, and have sockets that take either of the 2 provided power leads - one with a normal 240v plug, and one with eyelets to connect to batteries. Just select the correct lead for the power source you are using.

240v mains power   this is the best alternative, as you don't have to worry about recharging batteries, or coping with re-fueling and surging issues with generators.

You need to make sure you have necessary extension leads to reach your optimum locations for the ETS units, and have enough separate power points for efficient operation of the ride computer, printer etc.

Battery power   You must have good quality, fully charged batteries. DEEP CYCLE batteries are best, rather than standard car batteries, as they will give much longer charge life, and consistent output. Fully charged batteries should last for a normal 80km ride, but for longer rides – 160 km 24 hour rides, or marathons - you will need to have a suitable battery charger available, and somewhere to plug it into mains power. Sometimes it might be necessary to have a fully charged spare battery on hand, to allow you to rotate usage, and always have one battery on charge.

If adequately planned beforehand, and managed at the event, battery power can work quite adequately.

Generator(s)   these can work well, but can be problematic if the timing gates are some distance apart, in which case more than one generator might be needed. Most modern generators give good power, however, must be kept adequately fuelled and have settings correct, to prevent dropping out, and power surging, which can affect system stability.

Tablets

The tablets make managing the Vet Gate and Departure Gate timing stations much easier.

For the Vet Gate, if the timing steward there has a tablet, with 10.13.79.2:81/Vet screen running (as described above), then once a rider has come through the Arrival gate, their details will automatically show on the Vet Screen, with their latest due vetting time displayed. This makes it easier for the steward to keep track of riders' progress, and enables the steward to warn riders that their time is running out, and also lets them know when the rider is late.

For the departure Gate, the tablet will list all riders in departure time order, then as each becomes eligible to depart, will display a green tick. This saves the steward having the rider continually scanning, then deciding by the colour of the light displayed, if the rider is due to leave.

Important   The tablet batteries are not robust, and will not hold power for a long time, so it is important that a battery pack be attached to each tablet from the start of their use. The battery packs will last through the day, and when they do get low in power, they can be recharged, leaving the tablet with its own battery still full to carry on.

This is a much better option than using the tablet battery power up first and then attaching the battery pack, and will give more reliable service.

Troubleshooting

ETS Hardware

1 x Pelican Hard case with foam fill

4 x Gate units   + 4 x 240v power leads + 4 x 12v power leads

3 x printers   + 3 x leads – gate unit to printer

4 x aerials for gate units

1 x smaller Pelican Hard case

3 x Scanners with leads hard wired

3 x L brackets for back of scanners with 4 small bolts and washers each

2 x Tablets in covers

3 x battery packs (for tablets)

1 x 240v charger units – for tablets / battery packs

1 x tripod stand – for WiFi aerial

1 x WiFi aerial with 9m blue lead

1 x Splitter box – Wifi aerial lead one end / 240v power lead + computer lead other end

300 RFID cards + spares

300 plastic sleeves + spares

300 lanyards + spares

3 x 1.8m lengths of 50mm PVC with U bolts attached – to support scanners at timing gates

3 x 75 amh Ritar deep cycle batteries – to power gate units when needed

1 x battery charger – to charge Ritar batteries

Spare rolls of printer paper