E-Brevet

Summary

- E-Brevet is a smartphone-based alternative to the paper Brevet card, which can be used for advisory route Calendar and Permanent routes
- It logs the time at each control, having checked (via the phone's GPS) that the location (latitude and longitude) is as specified by the organiser
- The completed brevet is uploaded to a web site. This can be an internet site, or hosted on the organiser's computer (for calendar events where the arrivee has no internet signal) allowing rapid recording and validation of finishers

Benefits

- Avoids having to get a receipt, at locations where this may be difficult
- Eliminates need for info controls
- Faster processing at the depart/arrivee (uploading and validating complete GPS tracks is too complicated for rapid processing)
- Helps perception of AUK as an up to date organisation

Organiser requirements

Perms, or Calendar Events with Internet Access at the Start

- Access to the internet to set up the Brevet (PC, tablet or phone will do)

Calendar Events with no Internet Access

- A computer (Windows or Mac are OK)
- E-brevet software – supplied on and run from a USB drive, no software need be installed on the organiser's computer
- If there is no Wi-Fi available at the depart / arrivee, a wireless switch, so that a local area network can be set up

Rider requirements

- A smartphone – current software has been written for Android only, from API level 15 (which means almost all Android phones should be able to access it). The app will be available from Google Play Store once finalised. The phone must be set with location services at "high accuracy", but battery usage is low, as the app only requests location information when running in the foreground, with the phone active.

Rider's view – Android App

Menu screen

The menu offers:

- Download brevet – this resets the app to a new ride, and downloads the brevet details from the organiser's website
- Upload ride – uploads completed ride details to the organiser's website
- Settings – accesses the settings screen above
- About - App version info
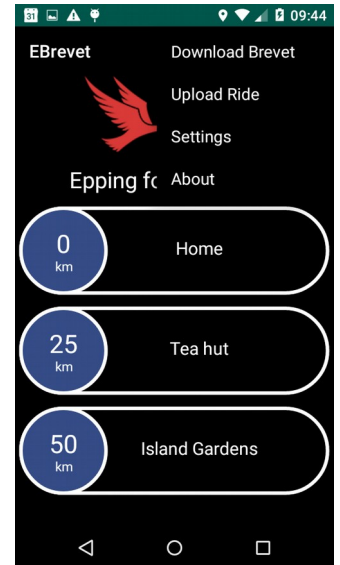
Settings screen

There are some settings that need to be configured:

- Rider name (this is copied to the Brevet record once the rider starts)
- Rider membership number (this is copied to the Brevet record once the rider starts)
- Brevet code
- If using a local web server, a URL must be entered. A default value is set for the internet-based service
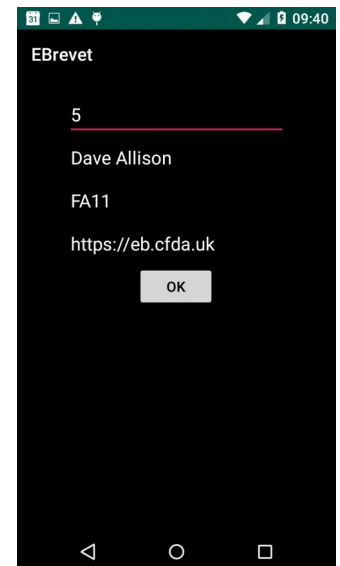
Ready to start

With the brevet loaded, the rider sees this screen

- For a calendar event, if there is a choice of start times, the rider must select one before starting. He cannot start until 10 minutes before the actual start time, and the start time will be record as the planned start time. The location will be checked
- For a permanent event, the start time is simply whenever t he start button is clicked, and is recorded as that time. The location will be checked
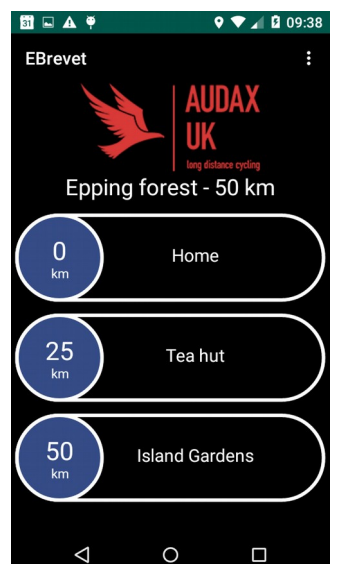
Started

Each control is shown as a numbered circle. The first control (the depart) is shown as green, because the start time has been recorded.
- A blue circle means the control has not been reached
- An amber circle means the control has been reached but too early or late
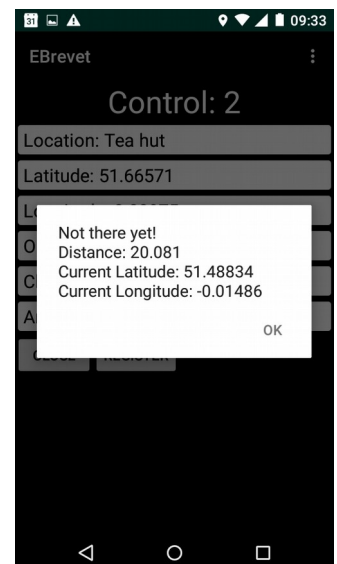- A red circle means that the arrivee has been reached out of time (too early or late)
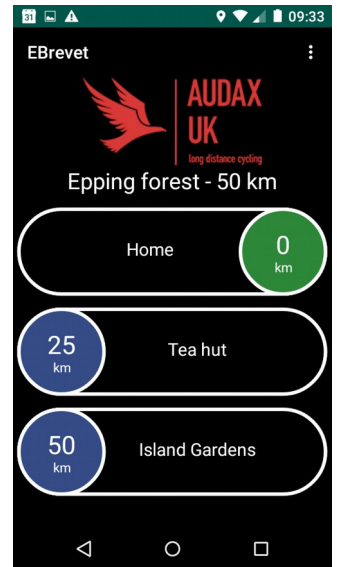
Arrival

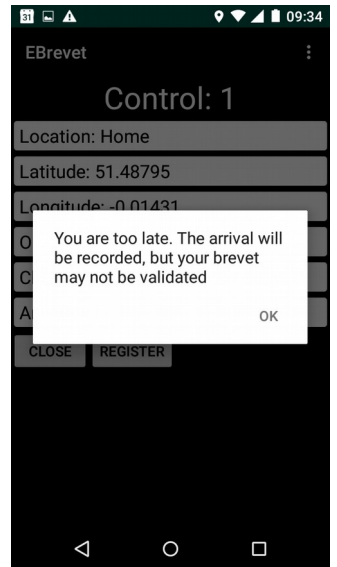When the rider is at the control, clicking on the control number, shows the following:

Not there yet

If the rider is not actually at the control:

Too late

If the rider is too late at a control (and similarly if too early) – a warning is given, but the arrival will be logged

Web Site – Perms, Calendar Events where Internet Access is available

Organiser – set up a brevet

The Event Admin screen allows routes to be configured. This can be used for permanent or calendar events, and is essentially a list of control locations, distances, and a proximity setting that defines how close the rider must be to register an arrival.

Event Admin

Select an Event: [Epping forest ▾] [Add New]

Event No:	FA11	Event Name:	Epping forest
Body:	AC Hackney	Organiser:	Caroline
Distance (km):	50	Min Speed:	3	Max Speed:	30

Controls

Name	Km from start	Lat	Long	Proximity	
Home	0	51.48795	-0.01431	0.5	🗑 ↓ ↑
Tea hut	25	51.66571	0.03975	0.5	🗑 ↓ ↑
Island Gardens	50	51.48693	-0.00964	0.5	🗑 ↓ ↑

Control Map

You may need to zoom out to see all controls. You can drag a control marker to adjust its position
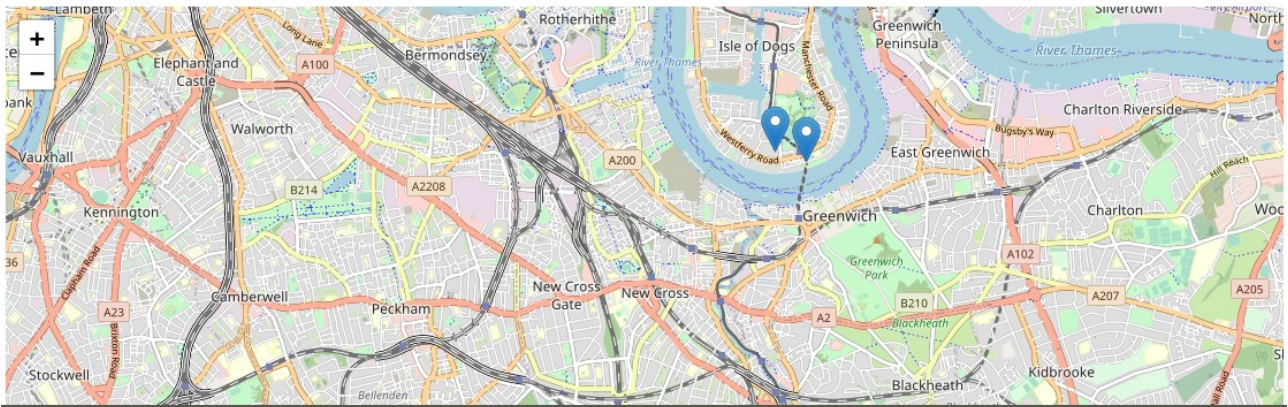
Brevet Customisation Screen

For permanent events, there are options to select a start control (or a custom start between controls), and to reverse the ride direction. The custom start location is selected from a map (not shown here, but at the bottom of this screen)

Customise Event: Cambridge Pork Pie

Original Route

Control	Location	Distance
0	Girton	0
1	Oundle	50
2	Melton Mowbray	100
3	Oundle	150
4	Girton	200

First Control: 2 ▾   Reverse Route: ☑   Set start location: ☐

Modified Route

Control	Location	Distance
0	Melton Mowbray	0
1	Oundle	50
2	Girton	100
3	Oundle	166
4	Melton Mowbray	216

[Save Brevet]

Control Map

Finishers Record

The screen below is a rider's view – uploaded events for that rider. If a control was out of time, the ride is shown in red, and the drill down shows which controls were affected. A similar screen will allow organisers to see (and download) lists of riders for a particular event

Completed Events

Events in red have inva...

From:

08/06/2020 ⊗

Event Id

FA4

FA2

FA4

FA4

	Control Details for New round the dog			✕
	Control	**Open Date/Time**	**Arrival Date/Time**	**Close Date/Time**
	0	11/06/2020, 07:55:30	11/06/2020, 07:55:30	11/06/2020, 07:55:30
	1	11/06/2020, 07:59:30	11/06/2020, 08:16:22	11/06/2020, 08:15:30
	2	11/06/2020, 08:01:30	11/06/2020, 08:23:18	11/06/2020, 08:25:30
	3	11/06/2020, 08:05:30	11/06/2020, 08:32:35	11/06/2020, 08:45:30
	4	11/06/2020, 08:07:30	11/06/2020, 08:36:39	11/06/2020, 08:55:30

Event Id	Name	Date	
FA4			Details
FA4	New round the dog	2020-06-11	Details
FA3	Click and Collect	2020-06-11	Details
FA7	Trinity Buoy Wharf	2020-06-12	Details
FA9	River view	2020-06-14	Details
FA7	Trinity Buoy Wharf	2020-06-15	Details
FA9	River view	2020-06-20	Details

Web Site – Perms, Calendar Events where Internet Access is not available

An alternative version of the site is available which can be run from a laptop for locations where no internet access is available. By using a wi-fi switch, the organiser can create a local network, and the organisers PC can act as a web server for riders to download and upload the brevet. The layout and function of this site is essentially the same as above, but it is intended for calendar events only (so no custom routes)

Issues

Security

Is not arduous - we may want to consider security in more detail, but need to balance effort in securing the system against the ease of fabricating a paper-based brevet or gpx track.

- Because the organiser's site will be run from a local web server, and a to-be-defined address, it operated over http not https (no SSL certificates, as these would not be trusted by the app)
- Steps have been taken to make spoofing the result (i.e. generating a dummy result and posting that to the website) difficult, by inclusion of a hashed key in the posted data, which is checked by the server. The algorithm for generating this key will not be published.
- We may want to intr

Phone Operating Systems

We would need to provide an iPhone version of the app if it was adopted