

Bike routing app uses space for cyclists

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Beeline app and device. Credit: Beeline

A navigation app that guides people on safer, more enjoyable bike journeys will be launched later this summer as social-distancing measures encourage more cyclists to take to the road.

Developed by London-based company Beeline, it uses space data and

crowdsourced information to generate route suggestions, and can be connected to a device fixed onto the bike's handlebars that provides easy-to-understand prompts.

Keen cyclists Tom Putnam and Mark Jenner founded Beeline in 2015 with the aim of producing an alternative routing service to Google Maps, an app which is designed primarily for car navigation. They already have two navigation devices on the market, Velo and Moto.

With the support of ESA Business Applications under the ESA Space Solutions umbrella, Beeline is now working on an improved routing system to provide people with a better cycling experience, especially in urban areas.

The new app uses GPS to track smartphone location, but also considers sources such as road elevation maps derived from Earth observing satellites, as well as data on cycle infrastructure, accident hotspots and much more.

It combines this with crowdsourced information provided through in-ride feedback from cyclists and then uses an algorithm to determine the most pleasant way of getting from A to B.

This means the system can learn about the preferences of individual cyclists, so route suggestions can be tailored to their skill and experience level.

By using crowdsourced information, the suitability of routes can also be continually updated as changes occur; for example, in response to new pop-up cycle infrastructure being installed in many cities.

The Bluetooth-linked device then displays information including journey progress, direction prompts, and speed, allowing the [cyclist](#) to focus on

the road and navigate simultaneously.

As well as individual cyclists, the app will be used by delivery companies to search for faster, safer routes, and bike share companies to suggest pleasant journeys to their customers.

"As a result of the coronavirus pandemic, people are being encouraged to cycle rather than use crowded public transport. This means in the near future there will be a large increase of new and inexperienced cyclists on the road, especially in cities," says Tom.

"Although the app is aimed at all experience levels, we are working hard to ensure safer and more pleasant routes are suggested to new cyclists, giving them the confidence to explore using their new mode of transport."

"Cycling has many benefits for society and our health, and, given the current guidelines put in place to reduce coronavirus transmission, these are now even more important," says Fausto Vieira, ESA Space Applications Engineer and Technical Officer of the Beeline project.

"ESA is thrilled to support the development of this Beeline technology, which has been demonstrated to provide people with an improved cycling experience when compared to well-known mapping platforms."

More information: beeline.co/

Provided by European Space Agency

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