

ELECTRIC BICYCLE SOFTWARE SUITE

Powering an All-In-One eBike
Cycle Computer

Mastery in
Software
Engineering

FORTECH.

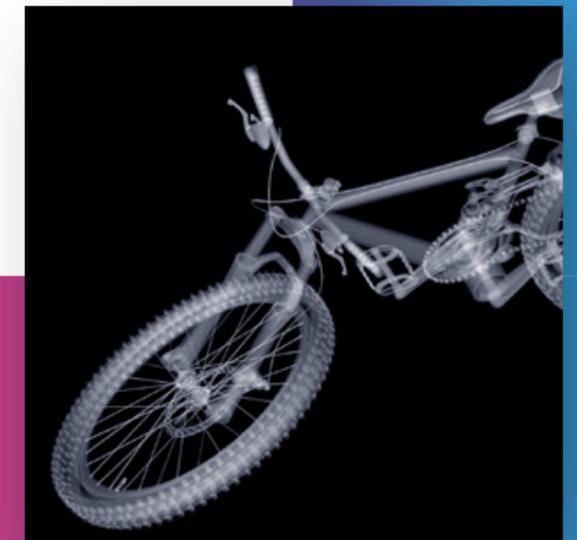


Key Facts

-  Industry: Internet of Things
-  Team Size: 50 People
-  Duration: 7 Years (ongoing)
-  Technologies:
 - C/C++, Qt, Embedded Linux,
 - HTML/JS/CSS, jQuery, AngularJS,
 - Java/J2EE, Grails, Android, iOS, Oracle,
 - NoSQL
-  Services:
 - Software Development,
 - Software Testing,
 - Integration,
 - Support
-  Trends: Electric Vehicles

Highlights

- The eBike onboard computer is one of the world leaders in its segment.
- Fortech provides the full stack solution - embedded application, a web portal, and mobile applications - with a team of 50 software engineers.
- Fast team ramp up from 3 to 50 members.



Solution

The core product is an HMI (Human Machine Interface) of an eBike powertrain that consists of the battery, including the charger, and the drive unit, including the gearbox - engine.

The solution is a complex infrastructure that implements the software running on the device connected to the electric motor and all the dependencies related to the connection to end users' mobile phones and persisting information in the cloud. It consists of four software components: an embedded application, mobile applications (Android and iOS), an online REST API server and an online portal. Primarily, the software provides the users with relevant information about routes and biking activity.

Some of the highlights of the device include usability (high-quality design, large color display), functionality (e.g. built-in navigation engine, map information downloads and installation, automated system for updates check), integration (communication with mobile devices and online data synchronization) and security (IoT security standard compliant).

Collaboration

As a technology partner, Fortech implements all the software components of the eBike system.

- The embedded application, which shows exercise-related information to the user, like speed, distance and calories burnt and displays live information coming from the sensors.
- The online platform used for persisting device information and to generate statistics based on that.
- The mobile applications, which enable users to send routes, adjust the level of assistance the eBike provides and receive push notifications about calls, messages or music player activity.
- The online communication, done via the mobile apps, using custom built Bluetooth tethering implementation or direct Wi-Fi connection.

The eBike has been publicly launched onto the market and enjoyed a great response from consumers and industry reviewers. The project is currently in a maintenance and enhancement phase, with new features being added at a fast pace.

Client Benefits



SECURITY:
Standard compliant IoT security.



RICH FUNCTIONALITY:
Built-in navigation engine, map information downloads and installation, automated system for update check.



INTEGRATION:
Communication with mobile devices and online data synchronization.





ABOUT FORTECH

Fortech is a Romanian software development company headquartered in Cluj-Napoca. Employing more than 700 software engineers and growing, Fortech is one of the largest software outsourcing providers in the region, repeatedly recognized by Deloitte and EY as one of the fastest growing technology companies in Central and Eastern Europe.

Fortech provides full stack custom software development and software testing services, with focus on solutions for Automotive, Healthcare, eCommerce and the Internet of Things. Since 2003, two hundred clients chose Fortech as their software engineering partner, among which T-Systems, Swisscom, Symantec, Pfizer and Renault.

For more information, visit www.fortech.ro.

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