



CHAINLESS

PERS - Pedaling Technology

October 2024



  Designed & assembled
in Annecy, France



Mobility is evolving fast towards more biking and more lightweight *Active Vehicles.*

Nested in this deep trend, the cycling world witnesses great changes that transforms daily commutes.



At CIXI, we provide our clients with cutting-edge *Chainless Pedaling System* and after sales services.

Supported by





**Chainless
Technology**

+



**CIXI
connectivity**

=



**A fantastic
E-bike / Cargo bike**

Why chainless?

Our *electronic pedaling system* has been designed to offer integration flexibility, allowing for great design freedom in new vehicles creation.

The *chainless electronic pedal system* features a regenerative braking system that recharges the battery, extending the vehicle's range and reducing wear associated with traditional braking systems.





Chainless pedaling system

that provides a unique pedaling experience



REVERSE MODE BY BACK PEDALING

For a vehicle with 3 wheels or more, control front and back manoeuvres only with the pedals.



REGENERATIVE BRAKING

The regenerative braking can be easily and intuitively activated using the pedals. This increases your vehicle's range and reduces wear on braking components.



NO MECHANICAL TRANSMISSION

No more maintenance, breakdown risks, or grease stains on your pants due to mechanical transmission.



NATURAL HAPTICS

Our patented algorithms ensure all along fluid and responsive pedaling in all circumstances, including when standing on pedals.



ENERGY CONTRIBUTION

The energy produced while pedaling is transferred to the motor, even when your battery is empty.



NO MORE GEAR SHIFTING

Pedal at your comfort rhythm, whatever the speed and the slope.

A modular **solution** with **Chainless** at its heart

The **PERS** includes a connectivity kit providing essential features to bicycle manufacturers and end users.

FOR BIKE MANUFACTURERS

Easy integration of the system due to the absence of a mechanical transmission.

No geometrical limitations on the shape of the bikes/vehicles - allows new types of bikes/vehicles.

Connected features for smooth and direct real-time customer support.



FOR THE PILOT

Removal of the mechanical drivetrain and its drawbacks (maintenance, breakdown risks, noise, etc.)

Simple and intuitive use, without gear shifting, just like in an electric car.

Regenerative braking technology that increases battery range and reduces wear on braking systems.

Connected features that enhance the user experience (Bluetooth locking/unlocking, geolocation, etc.).



Components of Dev Kit devkit.cixi.life



SYSTEM OVERVIEW

Dev Kit

Our development kits are available for prototyping and pre-production phases. Delivery of the series models is scheduled for 2025.

1 CHAINLESS CRANKSET PERS

The central element of your vehicle. Responsive, smooth, and efficient, it adapts to all types of pedaling (seated and standing).

2 BATTERY

Multiple batteries are compatible with the *PERS*, tailored to your range requirements.

3 MOTOR CONTROLLER

Manages the control of the propulsion motor by the *PERS*.

4 PROPULSION MOTOR

Various motors are compatible with the *PERS*, tailored to your vehicle and usage.

5 CONTROLS AND DISPLAY

Allows the user to select the desired level of effort and pedaling cadence.

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Get in touch with our
commercial team

PERS CHAINLESS SYSTEM

Tech specs

PERS Technical specification

Maximum torque	185 Nm
Maximum speed	100 Rpm
Efficiency	Higher than 80 % ¹
Weight	Just under 3.5Kg ²
Max Power ^{60 seconds}	613 W
Maximum Continuous power	360 W ³

¹ Reached at 150 w and 75 rpm cadence

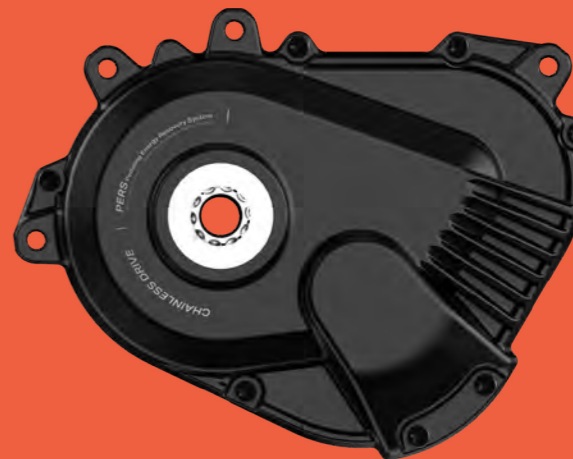
² Weight without crankset nor pedals

³ Higher than human capability. Jonas Vingegaard averaged 374w during 50 minutes in the climb of the Tourmalet in 2023.

96.20 mm



208.80 mm



162.96 mm



PERS CHAINLESS SYSTEM

Tech specs

The **PERS** system manages the electronic and electrical environment of your vehicle.

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BATTERY



MOTOR CONTROLLER



MOTOR



BERMAN DESIGN AWARD WINNER 2024



REDF DOT DESIGN AWARD 2024



DISPLAY & BUTTONS

ACCESORIES

front and rear optics, horn, brakes, blinkers, solar pannels 48v and custom accessories (depending on CAN compatibility)

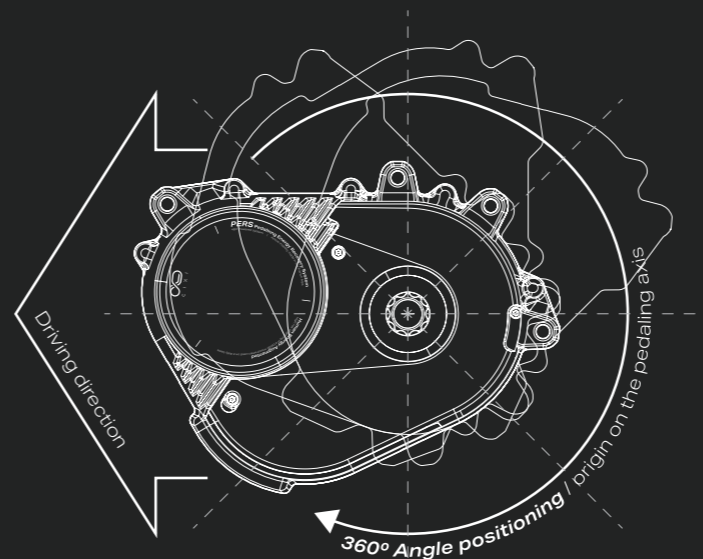
CONNECTIVITY
Bluetooth + 4G

Our IoT Box keeps the vehicle connected to servers delivering **advanced features to the end user** such as lock / unlock, rider statistics, geolocation and digital keys to enable sharing / fleet configurations.

Chainless System

Tech specs

A simple and unique architecture that makes it easy to build the new generation of connected active bikes and vehicles.

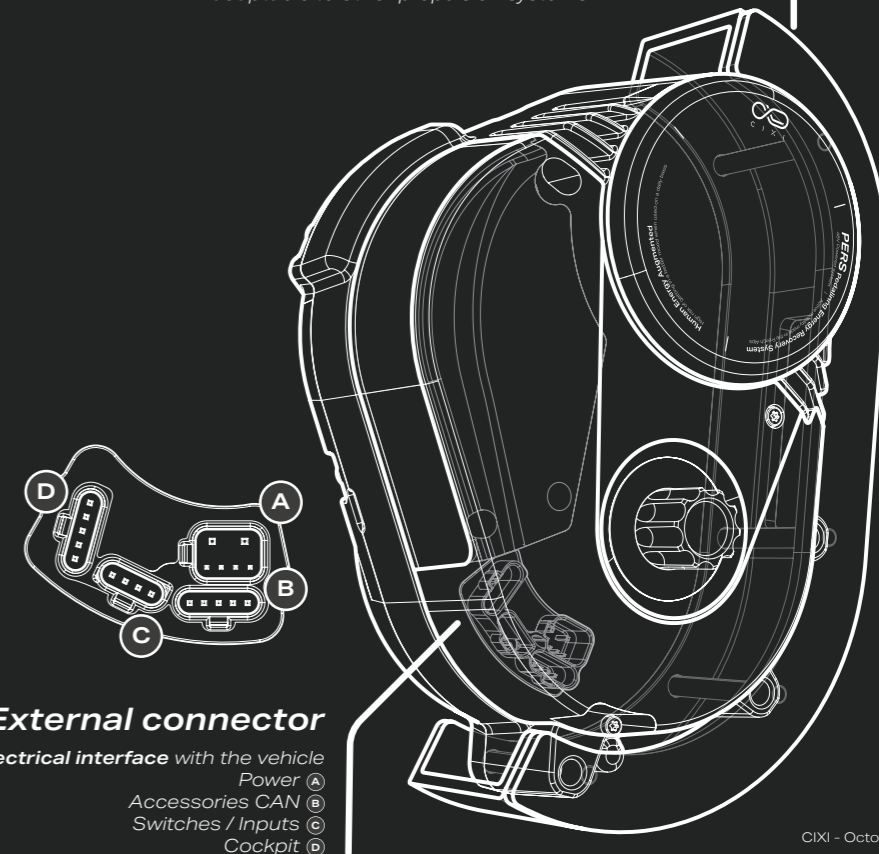


INTEGRATION POSITIONING

The PERS can be fixed in any angle around the pedaling axis, **always keeping the motor (CIXI logo) on the left driving direction.**

PERS / BIKE INTERFACE

Mechanical interface with a width of 49 mm, allowing for easy and robust integration into any type of frame and adaptable to other propulsion systems.



PERS External connector

The electrical interface with the vehicle
 Power **A**
 Accessories CAN **B**
 Switches / Inputs **C**
 Cockpit **D**



Components of Dev Kit devkit.cixi.life

PERS DIGITAL CONNECTIVITY

Develop your business, stay connected to your riders, and improve their experience



Communicate effectively with your users.



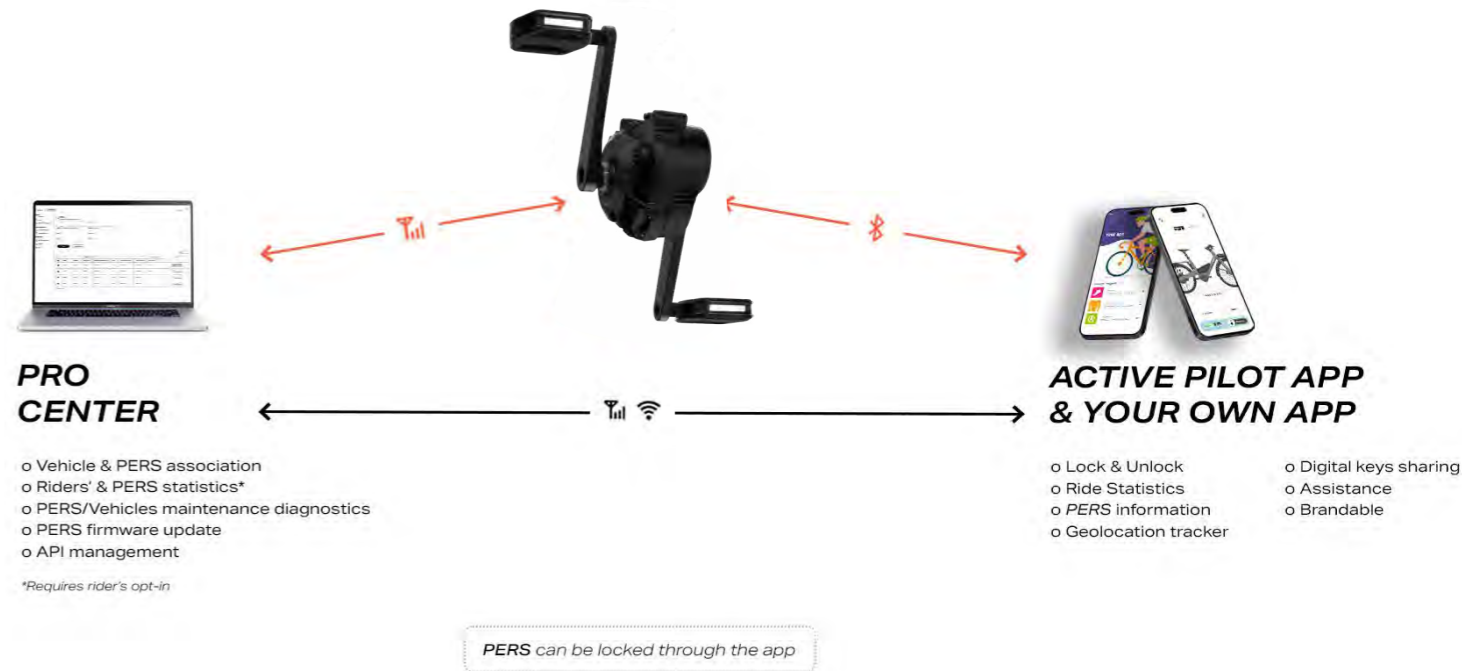
Provide your riders with essential features (lock/unlock, geolocation, vehicle maintenance, etc.)



Quick and efficient collaboration between manufacturers and retailers.

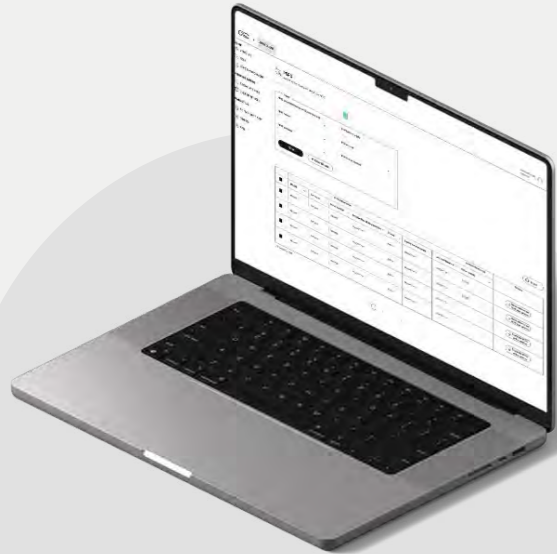
DIGITAL ECOSYSTEM

The *PERS* is at the heart of CIXI's digital ecosystem



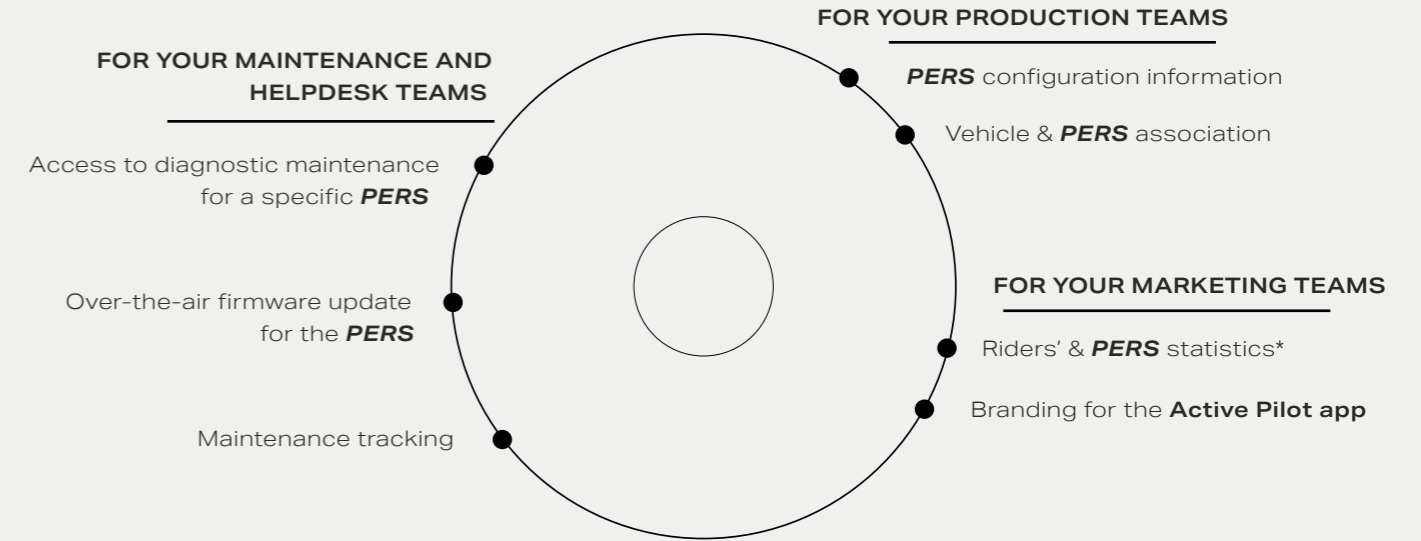
PRO CENTER & APIs

Your all-in-one website interface



- Customize your **PERS** to meet your needs and usage.
- Communicate effectively with your users.
- Manage your vehicles and collaborate effectively with your network of retailers and dealers.

For manufacturers, dealers & fleet managers



All these features are also available through APIs for your own production, marketing, and after-sales service ecosystem enriched with data from our **PERS**.

*Requires riders' consent

ACTIVE PILOT APP & APIs

Your riders enjoy a tailored experience due to the connected features of the Active Pilot app.

- Provide an easy management of their active vehicles and active journeys
- Communicate directly with your end users
- Promote your products and services



*The app is not mandatory for locking or unlocking a vehicle equipped with a **PERS***

For your riders



GEOLLOCATION
OF THE VEHICLE



LOCK & UNLOCK
OF THE VEHICLE



DIGITAL
SHARING



RIDING DASHBOARD
& STATISTICS



REAL-TIME
MAINTENANCE INFO



OVER-THE-AIR
FIRMWARE UPDATES

All these features are also available through APIs for you to enrich your own app

TESTIMONIALS

Customer feedback.

Brice EPAILLY

Founder of Caminade

“**Let's break our chains.**”

The **PERS** pedal system with electric transmission has allowed us to improve the maneuverability of our two-wheel drive tricycle while simplifying its maintenance. The engine mapping developed by CIXI, particularly focusing on regenerative braking, significantly increases its autonomy.

Xavier Wargnier

Founder of Ateliers HeritageBike

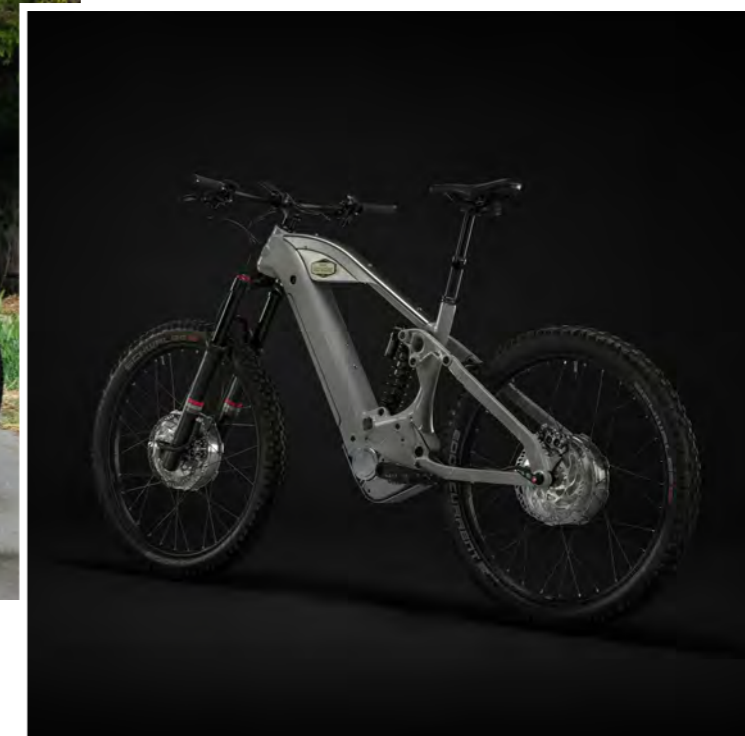
This is only the beginning of our collaboration, I am certain of it.”

From the beginning, Pierre and I knew that we would eventually create a project together, and we have achieved this with this **truly innovative mountain bike, built in record time** with the teams on the shores of Lake Annecy.



Caminade - V2 Camigo

Ateliers HeritageBike - The first electric mountain bike with two-wheel drive and no mechanical transmission



How to *order*



Get in touch with our commercial team

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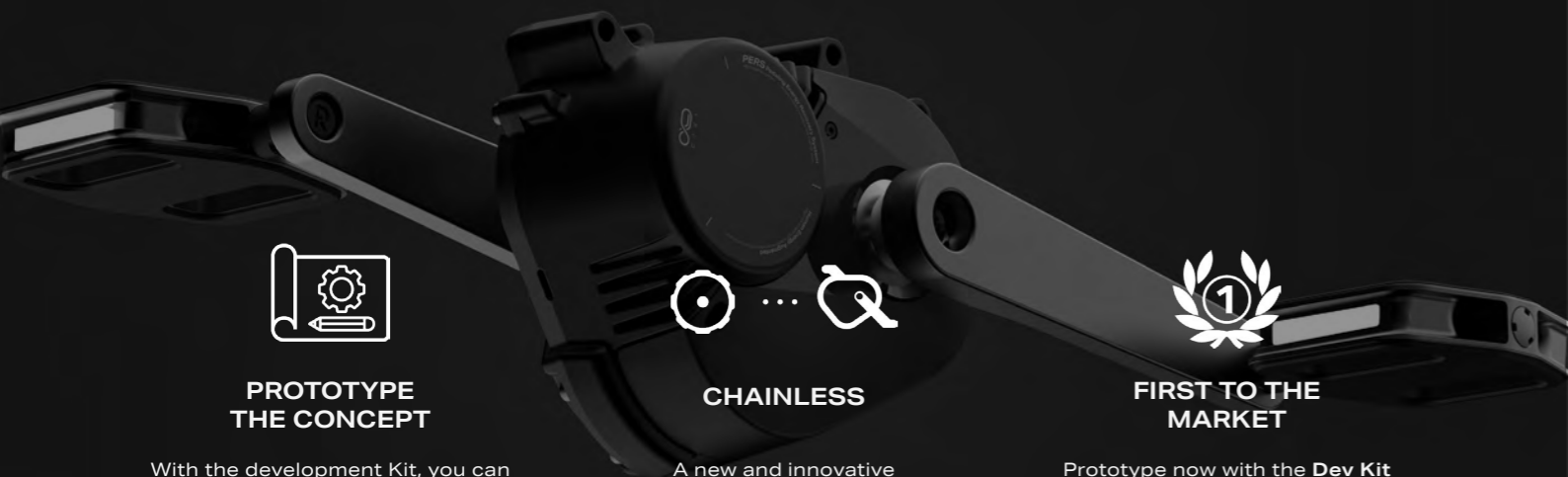
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Apply for Dev Kit

Image non contractual. The contents of this kit may be modified at any time to keep pace with developments in our R&D.



PROTOTYPE THE CONCEPT

With the development Kit, you can now integrate Chainless Technology into your future projects.



CHAINLESS

A new and innovative pedaling experience.



FIRST TO THE MARKET

Prototype now with the **Dev Kit** and be amongst the first to offer a breakthrough product.

OUR OFFERS*

Chainless Pedaling System Developer Kits

	Stand alone PERS TECH	Developer kit PEDELEC & SPEED BIKE	Developer kit CARGO
PERS Technology	PERS Technology B2	PERS Technology B2	PERS Technology B2
Motor(s) + controler	-	Heinzmann	Heinzmann / GEM
Battery	-	720Wh In tube / down tube	1440Wh (parallèle 2x1440Wh)
HMI buttons & Screen	-	CIXI cockpit Gen 1 Pedelec	CIXI cockpit Gen 1 Cargo
Engineering services & integrations support	10 hours included	10 hours included	10 hours included
APIs Acces	✓	✓	✓

*For series prices, please contact our sales team at sales@cixi.life

VIGOZ

VIGOZ

Unique pedaling experience for vehicles **never seen before**



PEDAL TO DRIVE

Equipped with our intuitive **Chainless Pedaling System** to ride up to **120 km/h**.
Electronic transmission/Transmission by wire.



SAFE

Enhanced safety systems - **crashworthy structure and seatbelts** - protect the pilot and passenger to drive safe through any weather and on any road.



ENERGY EFFICIENT

Light & aerodynamic to ride **160 km efficiently** and reduce the natural resources required to build and recycle.



MEMBERSHIP

Monthly fee for a **flexible, hassle-free experience** that inscribes into a sustainable future.



Discover the VIGOZ

October 2024

Find out more about the
vision of active mobility.



cixi.life



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