

Premiere at the IAA Transportation 2022 in Hannover

Innovative sustainability and efficiency in deliveries: Mobile locker stations help to avoid traffic disruptions in the city

The fourth generation of Rinspeed's modular "CitySnap" vehicle shows the way to pilot tests and series production. Mobility pioneer Frank M. Rinderknecht: According to the latest study, every other delivery vehicle is superfluous.

"CitySnap" reduces traffic, emissions, and costs - focus on customer convenience and efficiency

The "CitySnap" proof-of-concept vehicle shows a solution for innovative, sustainable, and efficient delivery that can be implemented at short notice. "Customer Focus" is the Rinspeed motto. The customer - and thus the person - is the focus with all facets. Because Rinspeed boss Frank M. Rinderknecht is certain: "People want more and more convenience and simplicity, but also sustainability in their lives". This unique delivery solution offers both.

Global online trade - projected to grow by around four percent prior to Covid-19 - has literally exploded in the past fifteen months with growth rates of 30% and more. The volume of goods and parcels from eCommerce has increased dramatically, today some 3'250 parcels are shipped worldwide every second. There is no end in sight to the exponential growth.

This extraordinary situation calls for modern delivery solutions - preferably contactless, hygienic, and therefore very customer-friendly. With delivery vehicles that independently distribute, place, and collect mobile locker stations, the Swiss powerhouse of ideas Rinspeed is presenting an exciting logistics concept.

The case study of one of the world's leading auditing and consulting firms examined the Rinspeed "CitySnap" delivery concept in the context of the growing demand for logistics and developments in urban areas. The scenarios show - based on the fifty largest cities in Germany - an impressive savings potential. The use of the ingenious Rinspeed solution reduces the number of delivery vehicles required by up to 50 percent. In addition, this system saves six percent in CO2 emissions - per package! The "CitySnap" also offers considerable savings potential in terms of costs. Compared to conventional parcel delivery, it reduces the expenditure involved by around 17 percent per parcel, a cost advantage that consumers can benefit from. The increased productivity of the employees due to the eliminated time-consuming removal processes more than outweighs the additional costs for the mobile, interchangeable locker stations and the infrastructure.

The previously planned delivery mechanisms on the automated last mile and especially for the extremely important but also extremely critical "handover", i.e., the acceptance of the parcel by the recipient, are unsatisfactory and inefficient. Even drones or intelligent robots will not be able to do this more cost-effectively in the medium term. A just-in-time meeting on the street between recipient and delivery vehicle is unsuitable because traffic and human behavior are exceedingly difficult to predict. If, on the other hand, the vehicle waits until the recipient of the parcel can arrive, the delivery rate falls, and the delivery costs rise accordingly.

So a new system is needed that eliminates the weaknesses of today's delivery system but is also compatible with the future - the "CitySnap". The heart of the vehicle is an aviation-inspired swap system that has been tried and tested in all weather conditions worldwide (PCT patent pending). In the "CitySnap," completely new applications are possible. Among other things, the desired service can now be delivered to the customer quickly and easily, regardless of where the customer is - at

home or at work. These can be transportable locker stations that are parked in the vicinity for a certain period so that they are accessible to the customer. "Microhubs" for bicycle couriers, mobile dispensers, or points of sale such as a "mom-and-pop health food store" or nuts and bolts for the construction site are also conceivable. The "CitySnap" is truly multifunctional and even pallets are no problem.

Limited opening hours, long journeys and the endless and unpleasant courier caravans with the associated environmental and traffic burden are a thing of the past. And by the way: no more unattended shipments and no more theft. Locker stations on wheels, just around the corner. Set up in easily accessible and well-lit locations where end customers can get their parcels at any time in a secure environment. And the best thing about it is: This innovative way of delivering parcels to customers faster and more easily can begin today - with a human driver.

Fully automated driving, a realization as of late, will be a long time coming. That is why the "CitySnap" is initially designed for a human driver. However, the driver's activity in the delivery of the locker stations is limited to driving. The "CitySnap" with the mobile locker stations is already loaded and unloaded automatically and only takes a few minutes. Later computers and sensors will take the place of the driver in the self-driving vehicle.

The "CitySnap" is - as always when Rinderknecht is at work - peppered with technical and optical treats contributed by a global network of renowned companies.

EY has examined the market appeal of the "CitySnap" logistics solution on the last mile and supports the step-by-step development of the future ecosystem for modular mobility.

New concepts require adapted solutions. That is why the well-known KePol locker stations from Keba from Linz, Austria, were adapted to the mobile requirements and a mobile lightweight version was developed. An app makes using the locker stations easy for everyone.

To make it easier for the driver to dock onto the platforms, the "CitySnap" has a sophisticated camera system from U.S supplier Gentex Corporation. The company's digital rearview mirror also shows what is happening behind the vehicle, allowing the driver to maneuver safely in traffic. The locker stations are also equipped with unique nanofiber sensors that can detect suspicious or even dangerous chemical substances.

Speaking of safety: modern touch panels on the steering wheel from BCS Automotive Interface Solutions control the desired functions with a light tap on the symbols. There are no limits to creativity in design.

With the help of LED-based UV-C lighting, the interior can be cleaned and prepared for the next passenger. The innovative rear lights with integrated display functions of the "CitySnap" enable optical messaging with other road users. In the interior, the latest lighting and sensor technology meets functional A-pillars with safety displays. For the projectors and rear lights of the "CitySnap", Rinspeed relies on the latest lighting technology from ams Osram and on innovative product solutions from Prettl Lighting & Interior in Pfullingen.

Rinspeed's latest project, the «CitySnap», rolls once again on Borbet wheels. This time on board: the stylish CW5 7.5x18 inches in "mistral anthracite polished glossy". With a maximum wheel load of 1'400 kg, it shows thanks to its strikingly dynamic appearance: It can be very stylish to master even high wheel loads with flying colors. Successful tire pioneer Falken supplies its Wildpeak tires in the dimension 255/60-18, which are the perfect complement to the aluminum rims.

For years now, Rinspeed has rightly relied on its ally Strähle+Hess for innovative textile design and harmonious interior styling. The textile products made of recycled polyester compel with their astonishingly woolly feel. The knitted staple fiber yarn with an antiviral and antibacterial finish comes from Schoeller. Rinspeed pays great attention to the feel-good features of the interior. Recticel is the perfect address for this. The company contributes the expertise for acoustically and thermally effective foams.

Stratasys from Rheinmünster supplies innovative 3D printing of various materials for interior and exterior components in a single operation. The Rinspeed proof-of-concept car was technically realized by Swabian company Mosolf Move-Tec, a specialist in special-purpose vehicle construction and electromobility.

The "CitySnap" can also transport bulky boxes or numerous return parcels. Thanks to the ingenious solution from OBE Kinematics in the rear, they can be loaded and unloaded in a more ergonomic position.

The partners in the "CitySnap" are:

ams Osram - <https://ams-osram.com>

BCS - www.bcs-ais.com

Borbet GmbH - www.borbet.com

Ernst & Young GmbH - www.ey.com/de_de/automotive-transportation

Falken Tyre Europe GmbH - www.falkentyre.com

Gentex Corporation - www.gentex.com

Keba AG - www.keba.com

Mosolf Move-Tec GmbH - www.mosolf.com

OBE Kinematics - <https://obekinematics.com>

Prettl Lighting & Interior GmbH - www.prettl.com

Recticel Engineered Foams - www.recticelengineeredfoams.com

Schoeller GmbH & CoKG - www.schoeller-wool.com

Strähle+Hess GmbH - www.straehle-hess.de

Stratasys GmbH - www.stratasys.com