



Tokai Rika and Dai Nippon Printing Announce a Jointly Developed Digital Key Platform for Smart Phones

- The platform, that provides safe and secure digital key, which can be utilized in a wide range of services, launches in February 2021 -

TOKAI RIKA Co., Ltd. (Head Office: Oguchi-cho, Niwa-gun, Aichi, Japan, President: Hiroyoshi Ninoyu) and Dai Nippon Printing Co., Ltd. (Head Office: Shinjuku-ku, Tokyo, Japan, President: Yoshinari Kitajima) (DNP) have jointly developed a smartphone-based digital key platform with a variety of locking and unlocking capabilities. This platform will be available for use from February 24, 2021.

In addition to vehicles and the mobility sector, this platform can be used to distribute and manage digital keys across a wide range of fields, including retail, logistics, and housing. As the process of digital transformation (DX) advances, a general shift in user awareness from ownership to sharing is anticipated. Following this trend, the developed platform makes various services, such as the locking and unlocking of vehicle or house doors, the reception of parcel deliveries via public lockers, and so on, all available on a single smartphone.

This platform combines the manufacturing and wireless communication technologies cultivated by TOKAI RIKA through its automotive parts' business with DNP's high-security information technology, which is an essential requirement for the mobility field. By incorporating the strengths of both companies, this platform eliminates the need for physical keys in various situations and should help people to pursue even more rewarding lifestyles in complete safety and peace of mind.

TOKAI RIKA launched its digital key business in 2020 under the name "TOKAI RIKA Digitalkey." The aim of this new platform is to further expand the company's digital key business.

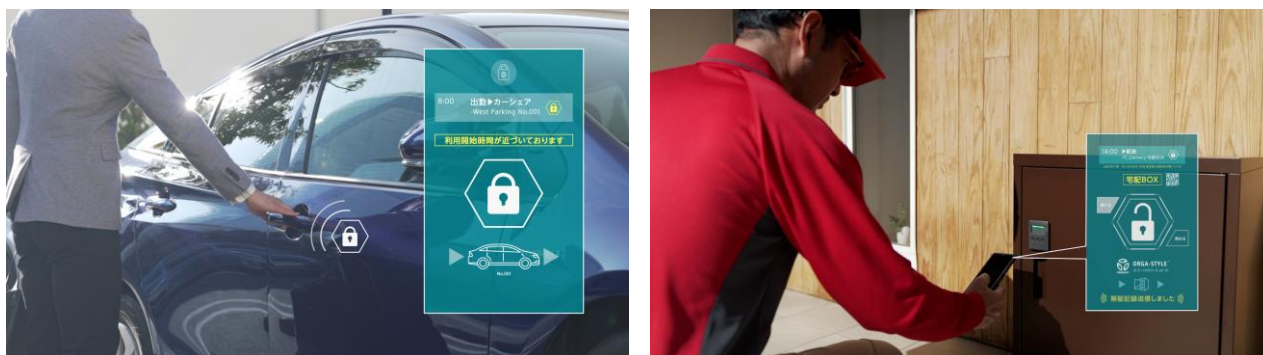
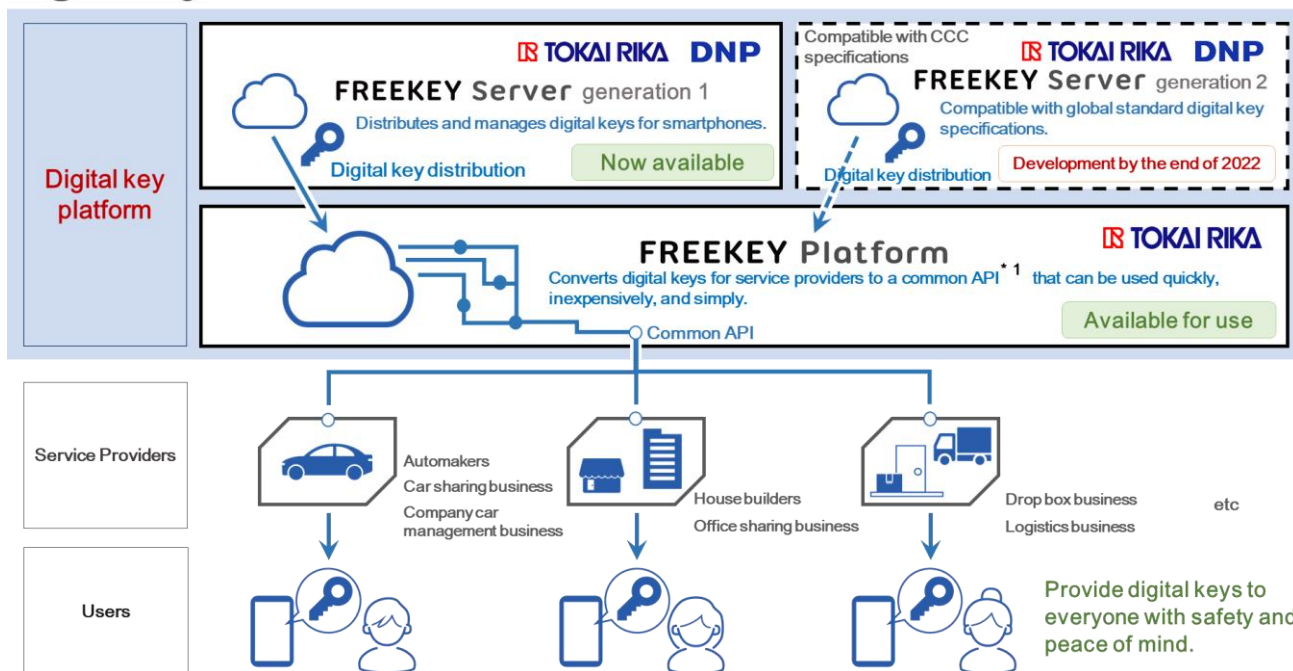


Illustration of digital key usage (from video outlining the digital key concept of TOKAI RIKA and DNP)

- Left: A user locking and unlocking the door of a shared vehicle.
- Right: A home delivery service posting a package into a drop box.

Digitalkey Business Overview



The area shaded in blue shows the smartphone-based digital key platform provided by TOKAI RIKA and DNP.

Platform Functions, Characteristics, and Roles of Both Companies

The developed platform consists of the FREEKEY Server, which performs digital key distribution and management, and the FREEKEY Platform, which integrates multiple digital key protocols.

FREEKEY Server generation 1 (Available from February 2021)

A server that distributes and manages digital keys capable of operating a wide range of locks using a single smartphone.

- Jointly developed by both companies, the FREEKEY Server allows a smartphone to be used as a key for locking and unlocking vehicles, houses, and a wide range of other items. When needed, digital keys can be downloaded rapidly via a smartphone app. These digital keys eliminate the inconvenience and risk of carrying, storing, and losing physical keys. Valid time limits can also be set to enable use as temporary keys for sharing services.
- DNP's IoST platform^{*2}, which incorporates advanced security technologies cultivated through the company's development of IC cards and other products, protects the smartphone digital key data from increasingly sophisticated cyberattacks, with a particular focus on stopping vehicle theft and the unauthorized use of services in the mobility field.
- The FREEKEY Server also incorporates TOKAI RIKA's hardware technologies, such as the wireless controls cultivated through its automotive parts' business, and software technologies including its digital key distribution logic. The resulting technology extends beyond the developed platform and provides a total solution for electronic locks compatible with digital keys.

FREEKEY Platform (Available for use)

A system that converts digital keys for service providers to a common API that can be used quickly, inexpensively, and simply.

- By connecting this system with systems from service providers, digital keys can be used quickly, inexpensively, and simply as part of the cloud services and smartphone apps provided by these companies. A digital key is not simply a key. Digital keys enable a wide range of applications necessary for the realization of smart cities, including authentication, the distribution of electronic tickets, and so on.

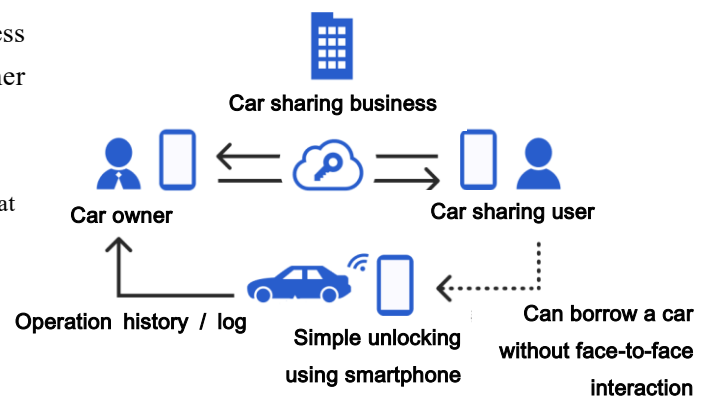
Examples of Possible Business Models

➤ **Digital keys for services in the mobility field**

This includes the provision of services for business operators involved in the sharing of cars and other mobility-related products.

E.g.: car sharing between individuals

The platform allows car owners and users to hand over keys at any time without physically meeting, thereby eliminating the inconvenience of having to hand over a physical key and helping to realize smooth and secure car sharing.



➤ **Digital keys for services outside the mobility field**

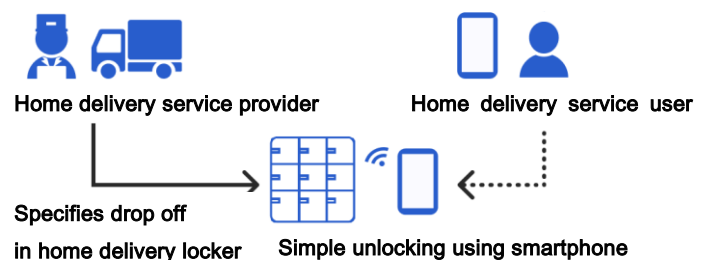
The developed platform enables the provision of systems for logistics service providers via home delivery lockers, housing developers, tourism, and other service providers.

E.g.: home delivery lockers

Home delivery lockers that can be opened and closed using a smartphone are ideal for non-face-to-face delivery of personal packages, a service that is continuously growing in demand.

The use of digital keys to provide safe package drop-off services is convenient for both home delivery service

providers, who no longer have to re-deliver packages, and users, who no longer have to restrict their schedules to fit delivery times.



Future Developments

TOKAI RIKA and DNP intend to utilize their mutual strengths, and create combinations between digital key platforms, smartphones, and applications for different devices to provide digital key-related services for various industries.

In 2023, TOKAI RIKA and DNP plan to develop and release FREEKEY Server Generation 2, which will be compatible with the next-generation global standard specifications being formulated by the cross-industry Car Connectivity Consortium (CCC)*³. The two companies are aiming to grow the sales of their digital key-related business from 5 billion yen in 2025 to 10 billion yen in 2028. TOKAI RIKA and DNP are also currently in the process of constructing an integrated platform equipped with basic functions that can be used in common by various services that will underpin the smart cities of the future, such as authentication, payment, the connectivity of personal data, and so on.

- Video outlining the digital key concept of TOKAI RIKA and DNP :

<https://youtu.be/qIaKvHZCrb0>



- TOKAI RIKA's digital key website (English):

<https://digitalkey.jp/en>



- DNP's digital key platform website :

https://www.dnp.co.jp/biz/solution/products/detail/10159252_1567.html



TOKAI RIKA CO., LTD. Head Office: Oguchi-cho, Niwa-gun, Aichi, Japan, President: Hiroyoshi Ninoyu
First Section of the Tokyo Stock Exchange (Securities Identification Code: 6995)
Dai Nippon Printing Co., Ltd. Head Office: Shinjuku-ku, Tokyo, Japan, President: Yoshinari Kitajima
First Section of the Tokyo Stock Exchange (Securities Identification Code: 7912)

*1 API: Abbreviation for “application programming interface.” This is a general term for a function that communicates and coordinates with external applications. In this platform, it refers to the function that coordinates between the systems offered by service providers and the server that distributes and manages the digital keys (the FREEKEY Server).

*2 See the following link for information about the IoST platform:
https://www.dnp.co.jp/biz/solution/products/detail/1192660_1567.html

*3 CCC: A cross-industry organization advancing the development of technologies for smartphone-to-car connectivity solutions. In addition to companies involved in the automotive industry, the 128 members of the CCC also include smartphone manufacturers and security businesses (figures correct as of February 18, 2021).
CCC website: <https://carconnectivity.org>

* All company and product names in this press release are trademarks or registered trademarks of the relevant companies.
* All specifications, service details and the like described in this press release were accurate on the day of publication. Such specifications and details may subsequently change without notice.