Novoville

SMART SYSTEM FOR ON-STREET & OFF-STREET PARKING

novoville

Powerful Cities, Empowered Citizens

Smart **Parking**

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Overview

Parking management in modern cities is becoming an increasingly difficult issue to tackle. Novoville offers an integrated intelligent parking system, designed to solve the biggest problems regarding on-street and off-street parking: the accurate real-time information and easy payment process for motorists, the effective management and monitoring of parking operations for local authorities, the reduction of traffic congestion, and the cost-effective law enforcement.

Novoville Smart Parking creates a seamless parking experience from the moment a driver arrives through the reporting of parking activity in the city, including permits and fines. Today, the platform manages more than 35,000 parking spots in 3 countries and diverse urban geographies. We offer a broad range of parking solutions that cohesively work together and integrate with third-party IoT platforms, allowing local authorities to manage their parking operations remotely via our cloud-based software.

Novoville Smart Parking is fully customisable and scalable so that we can provide each authority with the configuration that best meets their needs. One authority might opt to use our full product suite, while another might choose to operate certain elements of our smart parking solution. Novoville Smart Parking operates either autonomously or in conjunction with existing systems.

Typically, we are able to deliver and implement a complete solution in 30 to 90 days, depending on scale. Subscription packages range from months to years.

To benefit from Novoville's technology, authorities can either:

- Enhance their existing applications by integrating Novoville modules and interfaces, or
- Replace existing apps with any of the available Novoville modules

Novoville is a UK business that has been helping authorities significantly increase engagement and customer satisfaction since 2016. We deliver cost savings over short timescales for local authorities by accelerating channel shift. Our team has extensive experience in local and central government, data analytics, behavioural economics and software development. We have received multiple awards and are one of the top 10 GovTech startups in Europe, serving over 70 local authorities and 3.5m citizens across 5 European countries as of April 2022.
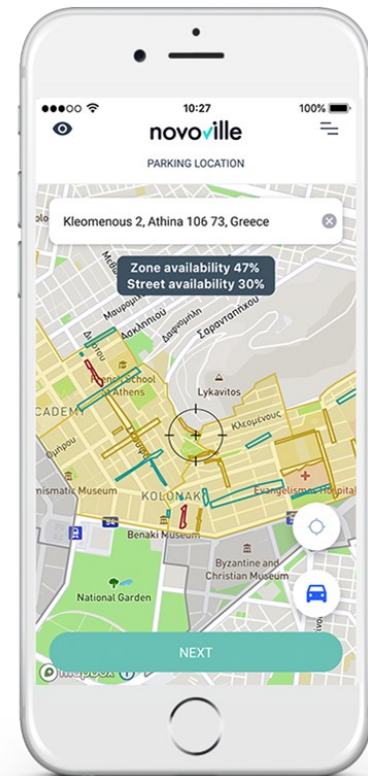
Product Description

Manage all your parking and permit operations in a single system, improving enforcement and traffic conditions in the city. Integrate data from all IoT platforms and smart sensors to create a mobility ecosystem.

The Novoville Smart Parking system has been designed to provide a simplified process and to encourage self-service. In the shift towards virtual permits, Novoville Smart Parking helps councils accelerate their digital shift and form part of a fully transactional online service, thus improving efficiency and achieving cost savings. Novoville Smart Parking is delivered fully configured. All system updates and maintenance are part of the subscription contract.

The solution is part of Novoville's highly modular Software-as-a-Service (SaaS) platform, which allows for integrations with existing systems. It supports secure data-exchange and is fully GDPR compliant. It is offered as a cloud-based solution hosted on Microsoft Azure's official UK infrastructure, resulting in low implementation time and costs.

Novoville's smart system for on-street and off-street parking is also compatible with the Cisco Kinetic for Cities platform, among other smart city and IoT platforms.

The platform uses multiple interfaces to suit users' needs (mobile app, web app, SMS), supported by a cloud-based management dashboard for local authorities. The dashboard provides complete control of parking & permit operations, as well as real-time visibility of organisational performance with enhanced data analytics and service delivery KPIs.
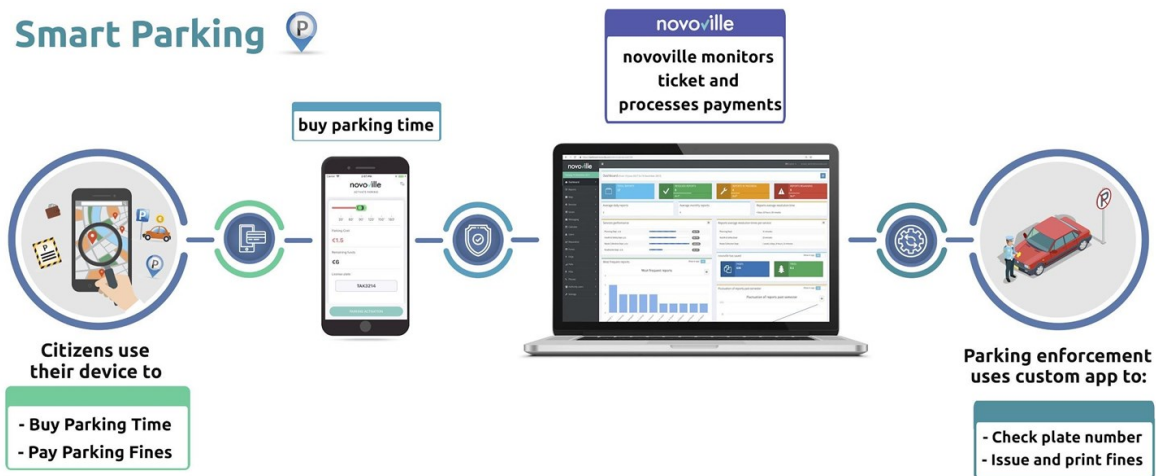
Mobile App for Motorists

On-street & Off-street Parking

The Novoville Smart Parking mobile app provides motorists with a convenient, lightning-fast way to park. No more fiddling for change, searching for the nearest parking metre or queueing at a self-service kiosk. Motorists can use the app to pay for a parking spot right from their mobile device, quickly, easily and securely, by simply registering their vehicle registration plate.

It only takes a few taps to complete a transaction on the Novoville app, so motorists can avoid the daily hassle and stress of city parking. The process is simple:

1. They find the most convenient or cheapest parking facility
2. Select the parking duration they need
3. Buy parking time instantly or pay in advance for time that they can use later
4. Get reminders before their parking session expires
5. Extend their parking time remotely from the app
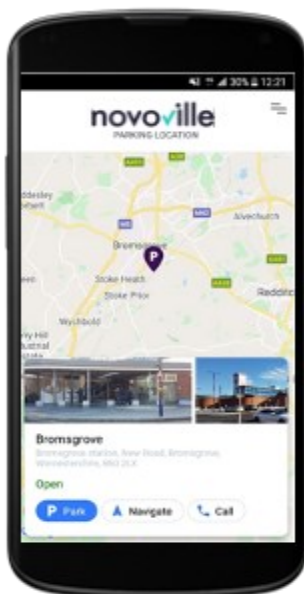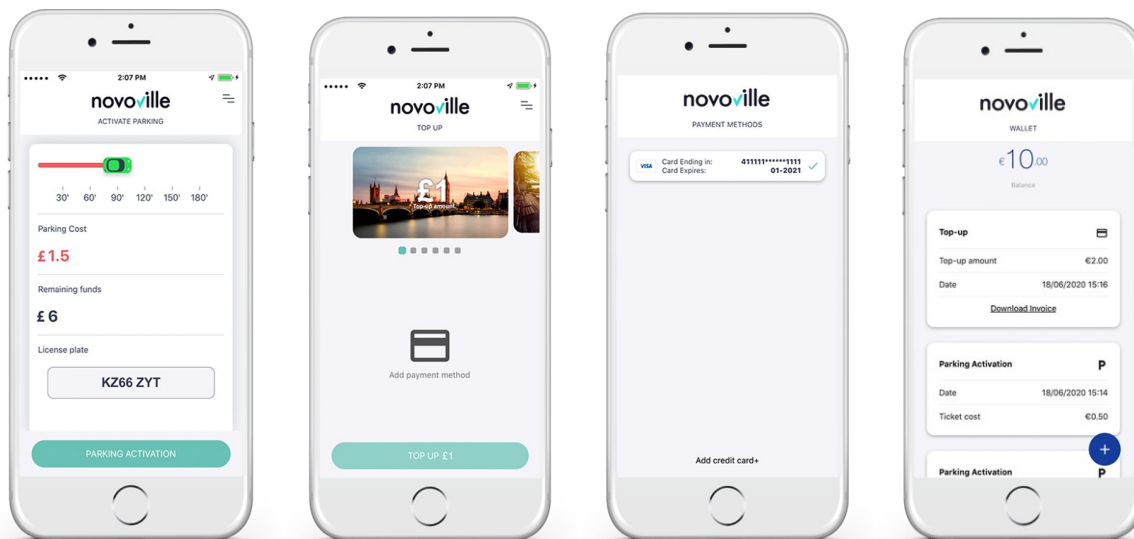
The app can contain all relevant information to parking in your locality, such as permitted parking zones & times, and users can receive live notifications from the authority about anything affecting their capacity to park. All transaction history and receipts are kept in one place, making it easy to know how much you've spent, expense receipts, or check if you might be better off buying a permit.

Through the app, authorities can easily offer incentives and discounts. These can be deployed to encourage motorists to reduce their carbon footprint by using park and ride, car pooling, and other such schemes.

By integrating IoT data, motorists can view live occupancy data where they would like to park, preventing long searches for parking spaces. Drivers can simply type a destination into the app and be directed straight to an available parking spot, stress-free. Electric car users can check the availability and pre-book electric charging points in advance, making it easier to switch. ANPR camera data can also be integrated and leveraged to modify

pricing according to the vehicle, to further incentivise replacing old vehicles with more environmentally friendly ones.

At scale, the Novoville Smart Parking system is a way to make your mobility more efficient in a myriad of different ways. Put together, Novoville's modules have a significant impact on people's ability to get around and, ultimately, their perceived quality of life.

Fine & Permit Payments

In addition to purchasing parking time, Novoville makes it easy for users to pay for fines and permits using a single interface (in 2020, 74% of the UK population used a mobile device to manage their finances). Various payment options are supported, including credit or debit cards, direct debit, Apple Pay, Google Pay and Paypal.

These options are available in the Novoville drop-in UI that pops up seamlessly in the relevant module. Novoville AI ensures that users are automatically notified of the payment and processing stages without using operators' time.

With Novoville's help, local authorities are able to tailor the payment system with any extra data field they want collected (e.g. address, council tax id, etc.). This can allow for the automatic creation of permits for council employees, for instance. By setting up automatic workflows through Novoville, they save time, optimise financial reporting, reduce audit complexity, and minimise integration costs.

To control the app (content, pricing), access analytics data and manage customer service requests, operators simply log into the management dashboard and access all features from one place, depending on their level of access.

Finally, the novoville APIs servicing all mobile apps are compatible with a series of third-party enforcement vendors. Our APIs take care of the transmission of the information relating to a new parking ticket to more than 10 established enforcement companies in the UK.

SMS Service for Motorists

For motorists who do not wish to download the mobile app, or in case they do not have an active internet connection, Novoville offers the ability to purchase parking time by SMS.

Motorists create a Novoville wallet and then send a text to a designated number just before they park and receive a confirmation text back. In addition, should they choose to, motorists can receive communications from their local authority via SMS, such as announcements, local information and anything affecting their capacity to park.

Mobile App for Civil Enforcement Officers (CEOs)

Novoville provides Civil Enforcement Officers (CEOs) with easy-to-use tools to monitor and report parking violations quickly and accurately. The app eliminates manual effort to improve efficiency, and streamlines the penalty charge process to generate revenue faster.

1. Dedicated enforcement mobile app (branded and customisable)
2. Scans vehicle registration plate to check for active parking session and/or issued parking permit
3. Connects wirelessly to a handheld printing device that issues parking fines in case of violation
4. Provides the option to attach photo evidence, accurate location, violator notes and internal notes for adjudication
5. Integrates with payment platform used by citizens to submit payment
6. Sends real-time data to the central management system to allow for a complete overview and control over parking operations
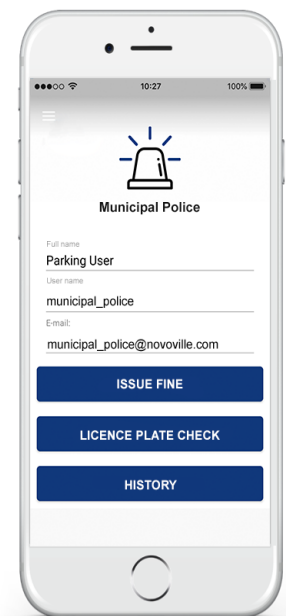
The app connects with a wide range of hardware — from waterproof, commercial grade devices to standard off-the-shelf consumer grade equipment — to allow for the instant printing of fines and paper notices of any shape, size or form.

Novoville's enforcement app helps officers succeed in their mission to reduce traffic congestion and make the city a safer and more attractive environment for visitors, businesses and local residents.

Cloud-based Management Dashboard

Novoville brings all information together on a single dashboard, giving local authorities complete control of parking & permit operations, a comprehensive picture of their ecosystem and the ability to communicate with users instantly. The management dashboard, the mobile apps (citizen & enforcement) and the APIs constitute a complete solution offering.

The cloud-based dashboard allows for a rapid, low-cost implementation while ensuring security and privacy compliance. It gathers, structures and provides access to real-time information for the whole organisation, allowing for accurate reporting and data-driven decisions. The basic functions of the management dashboard are:

- Data management & analytics
- User management
- Transactions and payments management including e-wallets
- Fines management
- Omni-comms and messaging management (incl. POIs, polls, calendars, etc.)
- Parking Policy management: pricing, operating hours, multiple locations, zones, etc.

### Data Management & Analytics

The Novoville Smart Parking dashboard gathers, analyses and disseminates securely real-time data on parking activity, allowing authorities to improve parking services, optimise operations, cut costs, improve enforcement and provide better services to drivers and residents. It minimises the essential administration time by providing thorough and complete management information and reports that can be exported.

Furthermore, councils can monitor live and historic occupancy data of individual parking spaces or complete areas, correlated with customer behaviour analytics and payment data.
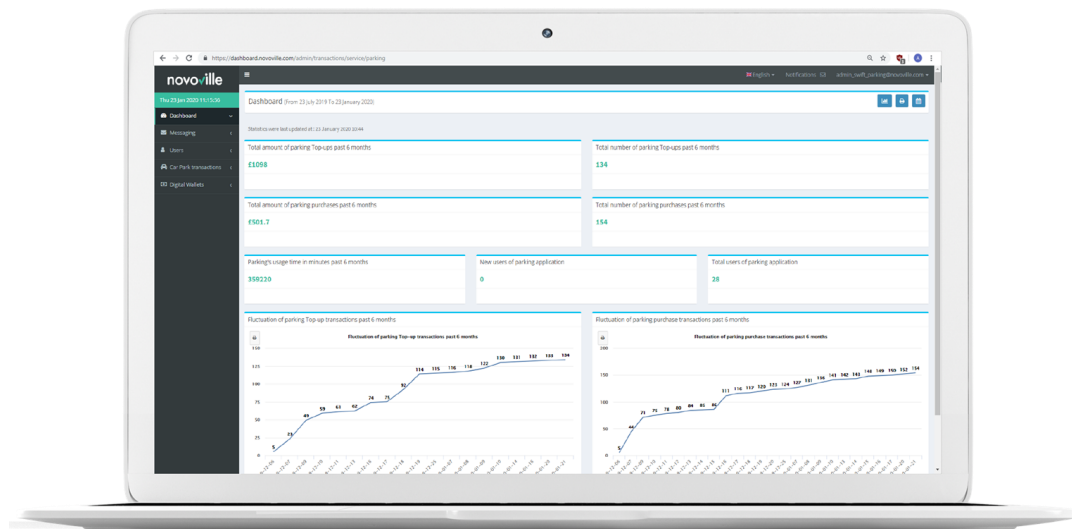
 Novoville is the only mobility platform that gives authorities full visibility of the data collected from their constituents as they use their mobility services.

The system integrates data from multiple sensors and IoT applications so as to allow for a countless cluster of permit types, including the most intricate specifications relating to emissions, specific age groups or parking disability schemes.
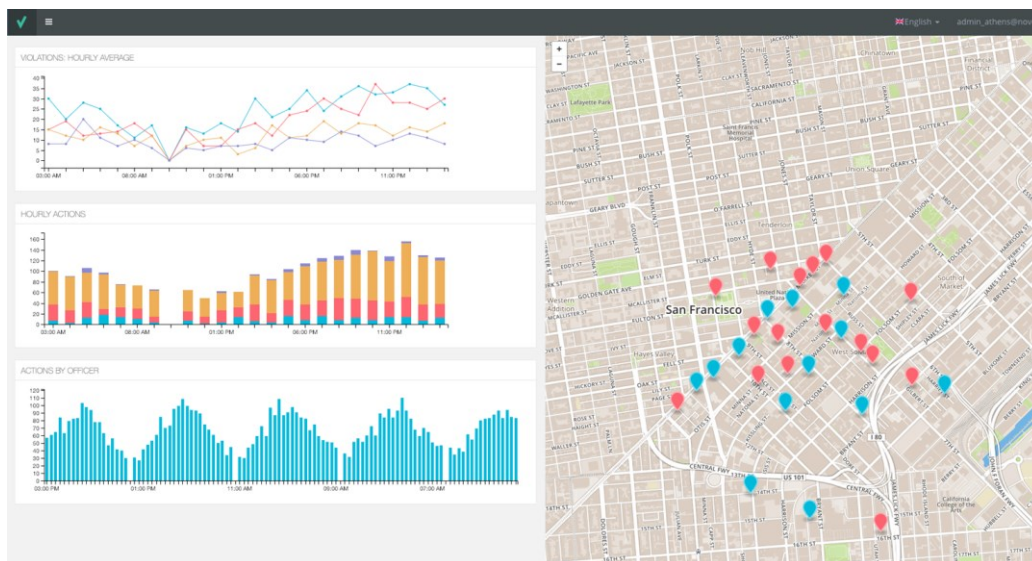
Using our dynamic form creator, local authorities can create online mobile-friendly forms for a number of citizen requests and services, including residential, temporary, visitor, event permits, etc. This way, authorities can significantly reduce administrative expenses while at the same time shortening the lead time of the permit application process through the use of FAQs for applicants.

Omni-Comms & Re-engagement

The dashboard also allows authorities to communicate with users instantly, reduce postal costs, as well as boost community engagement by promoting their brand by introducing loyalty schemes, creating polls, etc.

The available messaging tools demystify the process of reaching customers on their preferred medium. With only a few clicks, authorities can reach customers across multiple channels, including SMS, push notifications, emails, in-app messages and social media posts.

The system automatically detects the preferred, cheaper and available interface to contact a person. It also converts the message to fit the specifications of each channel, e.g. an announcement regarding parking closure sent by SMS should be conveyed differently than in an email or a push notification.

Messages can be created on the Novoville dashboard and shared with the target audience instantly — without the need to create different drafts for each channel or hire communication professionals.

By contacting citizens using their preferred medium, local governments can significantly enhance the impact, reach and effectiveness of their communications. Simple tagging of the notifications before they are sent allows citizens to filter them (as announcements, events, emergencies, etc.) on their interface.

Furthermore, through the management dashboard, administrators can manage other content-related functionality such as POIs, FAQs, Mobile polls, and more.

Technical Information

Novoville Smart Parking is developed and hosted as a 'Software as a Service' (SaaS) & 'Transactional Commissioned' enforcement system. It is offered as a cloud-based solution, using Microsoft Azure's highly secured and reliable infrastructure, diminishing implementation time, and is fully GDPR compliant.

Mobile apps are compatible with Android 6.0 or above and Apple iOS 11.0 or above.

A RESTful API can be supplied to allow third-party software, e.g DVLA, to interface with the Novoville web services directly. Alternatively, we can supply data in standard formats (such as XML) to third-party software. All the above are fully documented and secure.

A separate stand-alone API will deal with the authentication of the users to allow access to parking services. This is Novoville SSO API and can be integrated as an extension to other SSO APIs. Prior to any in-app action, the app accesses the SSO API in order to get an authentication token that is subsequently used to access any of the functionality supported by the app. User data resides on the secure and encrypted UK-based Microsoft Azure Novoville servers, but can also be deployed on-premise, if required.

Novoville Smart Parking is also compatible with the Cisco Kinetic for Cities platform.

Project Scope

Novoville has designed a three-step process to successfully launch and support the solution at each new local government. The goal is to deliver immediate results and drastically reduce implementation time. Novoville can typically implement the Smart Parking solution to a local authority within 4 weeks, including the time required for onsite training.

This process consists of the following:

1. Exploration & Requirements Analysis Phase
2. Integration & Launch Phase
3. Support & Maintenance

Exploration & Requirements Analysis Phase

This phase kicks off with a workshop to understand what the priorities are for the authority. The points covered in the workshop will include the current service provision and the final objective.

As a part of defining the working solution, we will consider the vision for the customer journey and the processes and data that exist currently. Optimising the journey will include onsite visits and focus groups with staff as well as motorists.

Key outcomes of this phase include:

A. gathering and categorising all available data and where it coexists;
B. a needs-assessment report;
C. the customer journey and data flow;
D. an outline design of the initial service;
E. selection of relevant key performance indicators;
F. a draft marketing plan to ensure optimised uptake of the platform.

Integration & Launch Phase

The components of the customer journey will be created on the app and dashboard and made available to the authority. This process is straightforward and at its basic version consists of the following:

1. Processes: Providing the customer service or support teams with an understanding of the processes and the information required at each stage of the process. Where manual intervention is required, for example to refund a duplicated fare or change charges, to explain how these activities are performed using the dashboard.

2. Local information: The authority selects what additional information needs to be uploaded to the apps (FAQs, POIs, phones numbers, etc). This minimises customer service calls and emails.

3. Integration: Novoville provides a roadmap to integrate legacy systems with the core product. It will then only require a web browser to operate.

4. Testing and training: Once the product is fully integrated and used for training by customer service teams, Novoville tests the functionality in its own sandbox environment. Once signed off, we conduct a short closed user trial period to test that

everything works in the way that the authority expects. We then deliver onsite training to all stakeholders. Once the training is completed, results are evaluated. All calls logged are examined and are then incorporated into further training sessions.

5. Marketing: We typically work with the authority's press teams during the launch phase to coordinate our efforts. This includes designing marketing materials and creating online ads on their behalf.

After a few weeks of operation, the Novoville team will make suggestions for further optimisation of service.

Support & Maintenance

Novoville provides a single level of support, which is built into the subscription cost.

It includes an online helpdesk and ticketing system available 24/7, as well as telephone support during business hours (9am-5pm, Monday to Friday, except UK Bank Holidays).

On-call support will respond to critical availability issues outside of standard business hours. Our support SLA is included in the terms of service document.

Our helpdesk is staffed with dedicated support engineers, with system admins and other technical experts becoming involved to resolve support issues as necessary.

Each authority or transport provider has a designated account manager and will receive dedicated support for any issue.

For further details please follow the Terms of Services section.

Confidentiality Statement

The information contained in this document is confidential, privileged, and only for the information of the intended recipient and may not be used, published, or redistributed without the prior written consent of Novoville Limited.

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