

CREATING POWER SOLUTIONS.



Efficiency through  
networking of engines  
and machines

Hatz Connected Services



# Connected Services: networked engines and machines

At Hatz, we are redefining the use of smaller diesel-powered machines. Our new Connected Services lay the foundation for redesigning your work – digitally, networked, efficiently.

## **Digital transformation is a reality**

It is human nature to make things simpler or more efficient: Inventions such as the wheel, engine or even computer have become firmly established in everyday life. Today, this principle is the driving force behind rapid digitalisation. Networking humans and machines makes work processes more integrated, easier and faster. And this is exactly where we come in with our new Connected Services. We transform your work with machines into the digitally networked age.

## **Hatz is a digital innovator**

We are once again pioneers in taking the work with machines to the next level. Technical achievements prove the innovativeness of our engine specialists; requiring little maintenance effort, the first light metal industrial diesels or the electronic control for single-cylinder diesels are impressive highlights. Our new E1 technology paves the way for new services and applications that optimise your business processes in the age of digitalisation. We are your partner when it comes to taking the next step towards networked functionality and efficiency with Hatz Connected Services.







Digital machine file



**Localisation**

Health status

Service management

Live data



# Digital information for networked services

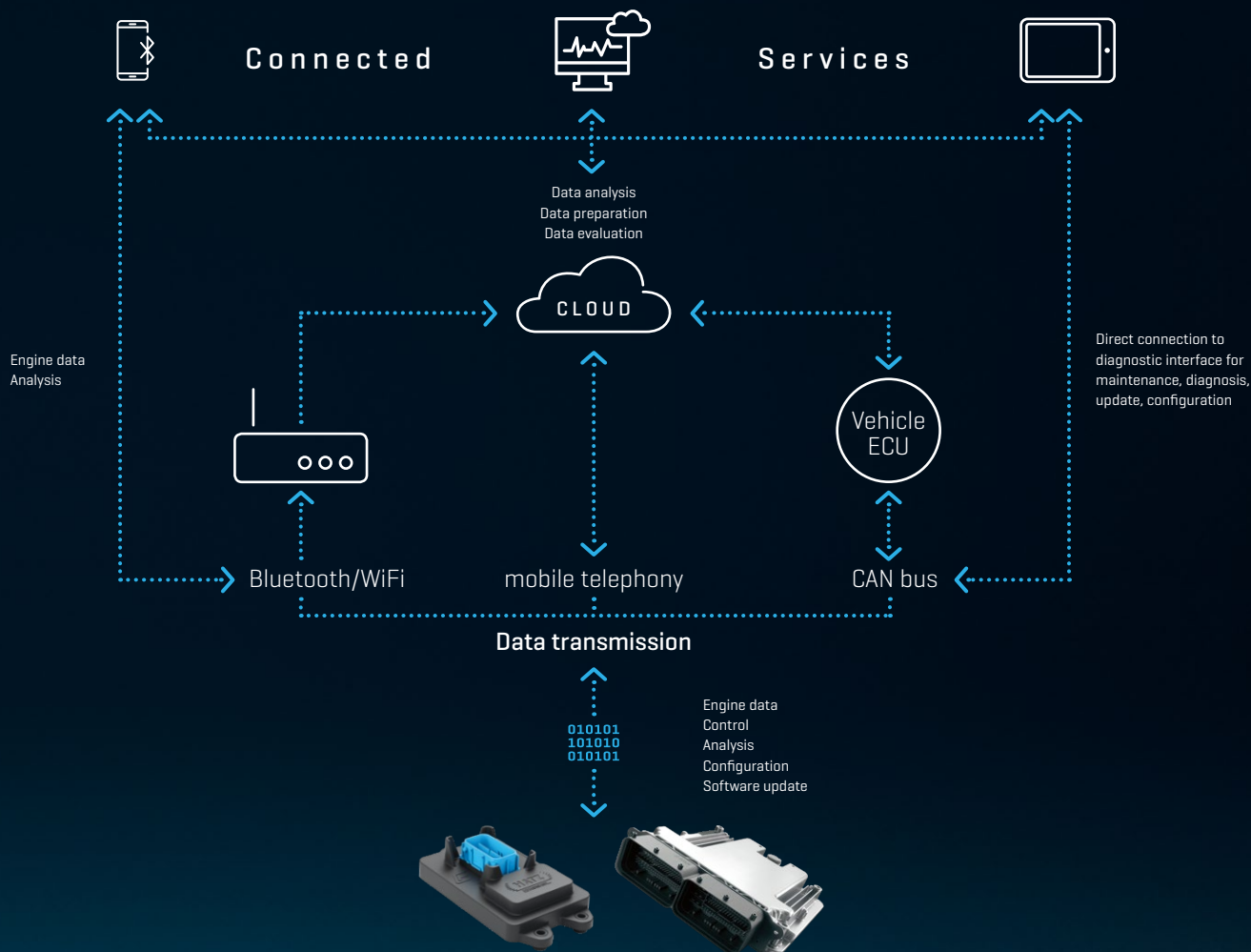
Connected services are the next decisive step in linking digitally controlled engines and machines with innovative applications in internet and information technology.

## **Connected Services based on digital engine control**

Networked services for engines, machines and information technology are based on data and digital transmission paths. Hatz's electronic engine control and data interfaces are key technologies for networking. As early as 2014, we successfully established our first electronically controlled engines on the market. Today we offer a wide range of engines that can make networked services a reality.

## **Connected Services for large and small equipment**

Do you work with large machines up to 64 kilowatts or with small single-cylinder machines and want to connect these digitally in your company with an existing or new IT infrastructure? Then you have come to the right place with Hatz. The large selection of engines with digital potential is the basis for networked solutions across a wide range of applications. The three- and four-cylinder engines of the H-series with fully digital control and the world's first single-cylinder engines with electronic E1 control technology form the basis for integrating your machines into IT and cloud-supported processes.

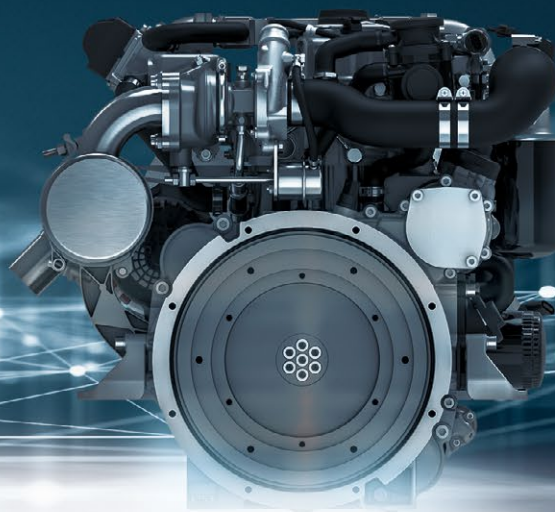


Sensor technology .....> Electronic engine control <..... Injection technology



#### B-/D-Series engines

- Single-cylinder engines up to 11 kW
- Hatz E1 technology with electronically controlled injection



#### H-Series engines

- Three- and four-cylinder engines up to 64 kW
- Common rail technology with electronic engine control



# Application diversity with Connected Services

With Hatz Connected Services you can integrate machines and their data into your information technology in a new way, providing more efficiency in real time.

## Digitalise existing processes with networked solutions

Networking with automated transmission of engine and machine data can optimise and accelerate existing processes in your company. An increase in efficiency can be achieved, for example, in the recording, transmission and evaluation of operating hours, consumption values, engine speeds, temperatures or pressures. However, networked services can do even more. Suitable software can be used, for example, to plan maintenance, order operating materials and spare parts according to actual requirements or create a resource plan for your machines.



Coolant level low



Maintenance due in 30 operating hours



## Example maintenance and service

There are various machines in use on a construction site, including vibratory plates, lighting towers, wheel loaders or joint cutters. Suddenly, in the middle of the night, a vibratory plate refuses to work and the lighting tower runs out of fuel while searching for the source of the error. You now have to try and get both machines up and running again in the dark. Suppose your machines were networked with Hatz Connected Services and the lighting tower would have reported early via push notification that fuel was low and had to be refilled. The failure of the vibratory plate could

also have been avoided under certain circumstances. Timely reporting of operating conditions with warning messages would have ensured timely maintenance or repair. And Hatz Connected Services go even further. Based on the evaluation of the data and the warning message of your vibratory plate, your information technology could have independently ordered the required maintenance and spare parts via an online shop, meaning that they would be available at exactly the right time and in the right place.





Exceeding time limit



Generator on



Report available



**ALARM**

Site Charles Square

Machine MH1880

**Outside geofence**



Fuel tank minimum

### Example theft warning

Imagine that one of your machines goes missing one day. It's not where you left it; however, your software reports that the machine is moving without the engine running. It must have been stolen. Fortunately, the machine is networked with Hatz Connected Services and transmits valuable information from additional control units, including geo data, in addition to engine data. At the click of a mouse in the company headquarters, you can see the exact location of your machine with map view and motion tracking. Another mouse click deactivates all start

functions, making the machine useless for the thief. You inform the police, who can take immediate action thanks to the machine's known location. Shortly thereafter, the thieves are caught and later the machine is back in your yard – all thanks to networked solutions that go outside of the box.



# Actively use data for digital business processes

The manifold possibilities offered by Hatz Connected Services can be extended as desired – adapted to your requirements, optimised for your company.

## **New application possibilities thanks to Hatz Connected Services**

We want to do much more than using networked solutions to make your existing business easier. With Hatz Connected Services, scenarios familiar from the automotive or agricultural machinery industry are now also possible for light equipment and compact machines. Possible options include location determination, remote monitoring from company headquarters or geolocation-dependent operating modes, such as automatic conversion to alternative fuels or an eco-mode for emission-sensitive environments.

With Hatz Connected Services, you benefit sustainably as a machine manufacturer, owner, user, workshop or rental company. Regardless of whether data is generated in the engine control unit or in other components of your machine, it is bundled via networked services and made available as a consolidated data package. Whether the data is transferred physically via the engine and machine data interfaces or online via the cloud is individually tied to your requirements, software and IT infrastructure. Together with you, component manufacturers and specialised application developers, we precisely design the data processing software that optimises your business – for digital solutions in billing and controlling, fleet management or on-site machine operation.





## Data pool

### Data from vehicle control and other components

### Data via engine control

- Engine speed
- Fuel gauge
- Fuel consumption
- Battery voltage
- Oil temperature
- Oil pressure
- Engine temperature
- DPF status
- Operating hours
- Error indication

### External data

- Manufacturer
- Weather
- Traffic
- Map services
- Delivery services
- Petrol stations
- Service network
- Much more



## Hatz Connected Services

Cloud-platforms/apps  
Data interfaces  
Services



Who benefits from Connected Services:

Machine owners

Users

Workshops

Manufacturers

Rental company

Examples of what can be realised with Connected Services (Hatz offer or third party):

### Reporting and controlling

- Health status
- Operation and workload
- Commercial evaluation
- Profitability (use, repair)

### Fleet management

- Workload
- Optimised capacity planning
- Localisation
- Security (geofencing, time fencing, deactivation, user roles)

### Service process

- Maintenance management (condition monitoring, predictive maintenance, time until service)
- Spare parts management (anticipating demand and availability)
- Service communication
- Digital service booklet
- Remote diagnosis (augmented reality support)
- Service documentation (operating instructions, spare parts lists, maintenance plans)

### Billing models

- Result-based (Pay per result)
- Time-based (Power by the hour)
- Usage-based (Pay per use)

### Engine configuration

- Adaptation for operation with alternative fuels
- Eco mode
- Setting of technical parameters (e.g. speed)

# Smart business with Hatz Connected Services

New technologies must be used and optimally integrated into business processes. We listened, and with Hatz Connected Services we created the opportunity to optimally shape the future with new digital applications and services.

Are you still working with manual processes? Are your machines in operation outside somewhere and do you know for sure whether they are still needed, whether they are used sensibly or what the state of their health is?

You know that your machines are not being used optimally and that you are incurring costs that can be reduced or even avoided, but you don't know exactly how to solve the problem?

Then the Hatz Connected Services will help you. Data is provided in real time, including via the engine control system's data interface, and processed in the application of your stationary or mobile information technology for optimised machine operation.

Your advantage: Coupled with a wide range of new applications, timely maintenance work, reduced downtime and complete order picking create flexibility, efficiency and savings.

Connected Services from Hatz are the central platform for digitally optimised, smart use of engines and machines.

Efficiency

Big data



Digitalisation



Cost optimisation



Productivity







Fleet management



Smart machines

IoT platforms



Process optimisation



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