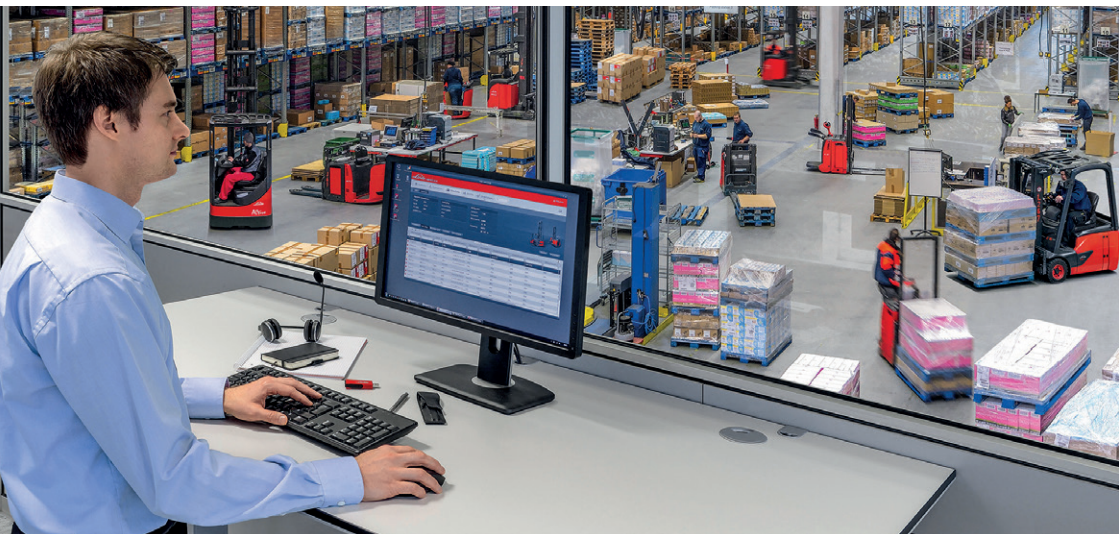Linde Material Handling

Linde connect

SAFE AND EFFICIENT FLEET MANAGEMENT

LINDE CONNECT

We make your fleet intelligent

Our software and hardware connect your vehicles and deliver comprehensive information. allowing you to make efficient use of your fleet.

Portfolio

How Linde connect products interact to make your day-to-day work easier.

Infrastructure

Whether Bluetooth, Wi-Fi or mobile broadband technology, all the options are available for your fleet data communications.

Software

Plan fleet usage, manage drivers' details, monitor and manage vehicles, analyze data, and generate reports: thanks to our programs, you can handle all of this effortlessly from your desk.

Reports and Analysis

Make your fleet as efficient as possible. Over 15 different interactive reports are available for that purpose.

Exploit the opportunities offered by digitization: Modern machinery constantly collects data that gives an insight into its state and its capacity utilization. We at Linde connect make this data available to you locally or via the Internet. With the connect product family, we have developed a fleet management solution that connects your vehicles and your staff, meaning you are always up to date on the status of your logistics in your production plants or your warehouses. This transparency makes using your fleet safer and more economical, and increases the availability of each vehicle.

→ Transparency
→ Cost-effectiveness
→ Security
→ Service optimization

Simple vehicle and driver management

Effective access control

More safety in traffic on premisses

Linde **connect**

Clear analysis of fleet usage

Predictive maintenance

Visible reduction of violent damage

Training
The Linde Academy offers courses for connect:desk users focusing on a variety of subjects.

Hardware
Our hardware will reliably communicate with a vehicle, collate information, and transmit it wirelessly.

App
The connect pre-op check app simplifies vehicle checks and simultaneously provides access control.

Functional
Our connect portfolio is modular in design, allowing you to choose precisely the functions for your fleet that you actually need.

MODULAR FLEET MANAGEMENT

Our fleet management solution consists of various hardware and software modules. connect offers you transparent data on usage and vehicle deployment, as well as an overview of planned service intervals and upcoming driver training. For you that means improved on-site traffic safety, higher vehicle availability and increased cost-effectiveness.
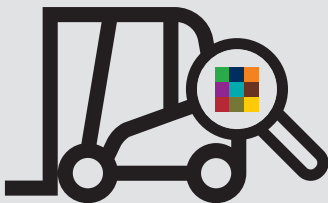
Hardware   **Transmission technologies**   **Software**

The connect hardware components connect your vehicles and databases using communication technology. The hardware collects data from sensors and control unit and passes it on.

Transmission technologies of the fleet management systems are diverse. According to requirements and equipment you can choose the technology that suits you best.

→ Data transmission via GPRS, Bluetooth or Wi-Fi
→ Wireless transmission of firmware and function updates
→ Straightforward retrofitting of existing vehicles thanks to simple installation

The connect software gives you a clear view of all your fleet data. It is used to manage vehicle and driver data, and it makes it easy to generate reports.

→ Data constantly updated
→ Tailored and automated reporting
→ Suitable for all fleet sizes
→ A wide range of customization options and intuitive operation

Access control

With connect:ac, you can control access to your fleet: who is currently behind the wheel of which vehicle? This creates the basis for your planned fleet usage.

| ac | **connect:**ac
access control | Electronic key |
| ac | **connect:**ac
pre-operational check | Pre-shift check via app |

Vehicle data

connect:dt documents the usage of fleet vehicles: Has a vehicle been used a lot or has it often been idle? Have there been accidents? Is the vehicle functional?

dt	**connect:**dt crash detection	Electronic damage monitor
dt	**connect:**dt operating hours	Digital logbook
dt	**connect:**dt trouble codes	Automated error code transmission from truck

Usage analysis

connect:an enables fleet managers to analyze and monitor the performance of their fleets: How often does a vehicle make a trip or lift something? How much energy does it consume?

| an | **connect:**an
usage analysis | Digital usage analysis |
| an | **connect:**an
battery management | Digital battery maintenance |

SOFTWARE

connect:desk – the data cockpit

The connect:desk application is the centerpiece of our connect portfolio. This is where all the data collected by the hardware comes together and is analyzed and monitored. The software is used to manage the drivers, the vehicles, and the fleet as a whole, putting all the relevant information at your fingertips.

Organized

connect:desk displays information broken down by company organization and assigns the drivers accordingly.

Planned

connect:desk reminds you about regular fleet maintenance and driver training, and assists you in planning work rotas to accommodate these measures.

Number of users and features of the software are fully scalable and the user interface is intuitive. connect:desk is therefore equally suited to vehicle fleets both large and small. Not only experienced fleet managers with complex tasks, but also occasional users who only need individual functions find it easy to use.

connect:desk is normally installed on a PC or notebook. There is also an optional browser version. Simply ask your dealer about it. The database can be hosted on a local server or at Linde Material Handling. This gives you full control of your data. Any number of users can be incorporated, and their access rights and available functions can be configured individually.

Transparent

connect:desk presents you with the key vehicle data, clearly displayed on a customized dashboard – or in the form of detailed analyses and reports relating to individual vehicles, drivers, or divisions.

- → Maps the organizational structures of individual divisions or of the entire company
- → Assignment of drivers and vehicles to one or more organizational levels
- → Management of access rights based on the vehicle type, driver's license, and period of validity
- → Planning and monitoring of vehicle maintenance
- → Planning of training and refresher courses
- → Digital archiving driver and vehicle documents
- → Generating interactive reports in the form of tables and diagrams
- → Generating analyses of fleet optimization and vehicle usage
- → Automatic e-mail dispatch of individually configured reports and messages

INFRASTRUCTURE

Data Communication

Communication between the vehicle and connect:desk can be realized with various systems. You can choose the best way to transmit your data: Bluetooth, Wi-Fi or mobile broadband.

Vehicle components

Data transmission

Database

Hosted locally or with Linde

Application software

Mobile broadband

Bluetooth

SyncPoint *

Wi-Fi
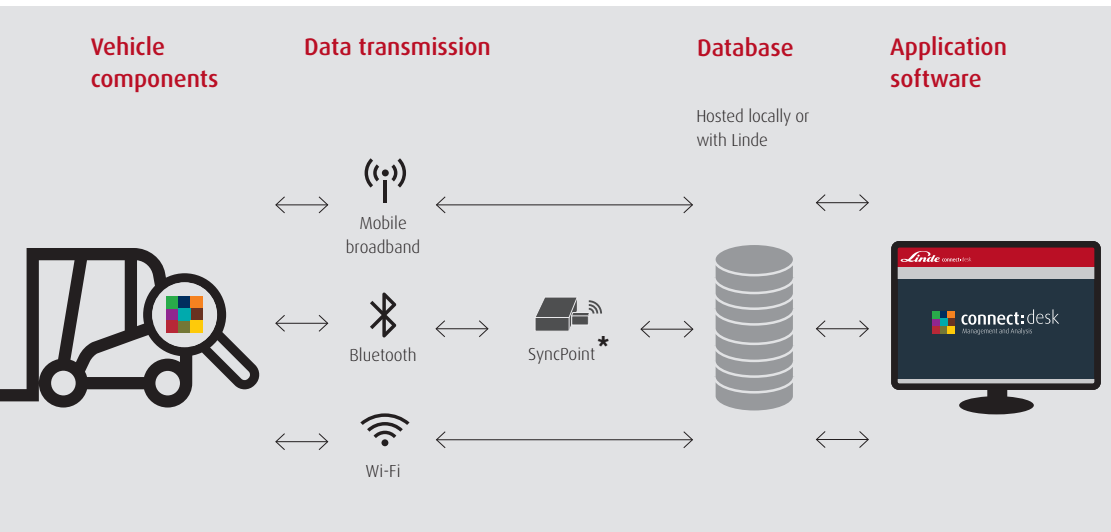
Which requirements determine your infrastructure?
Choose the perfect transmission technology for your needs. You do not have to worry about other processes! All three transmission methods automatically run in the background without the driver or fleet manager actively having to play a part. Incidentally, all three options can be combined and used in one fleet. The data can be hosted locally with you or at Linde Material Handling.

* SyncPoints

... are industrial computers or PCs with a Linde Bluetooth stick that collect data from vehicles via Bluetooth. The software controls communication, processes the data and delivers it to the database so that it is available in connect:desk.

✳ Bluetooth   📶 Wi-Fi   ((ᵢ)) Mobile broadband

When the vehicle comes within range of a SyncPoint, data is automatically accessed and transmitted via Bluetooth.

Data is transferred directly from the vehicle to the database within the wireless network.

Data is transmitted to the database over the mobile broadband network.

Your benefits at a glance

→ **No interference in Wi-Fi network**
→ **Cost-effective:** As a rule, already factory installed. A few SyncPoints on your company grounds are already sufficient for data transmission.
→ **Data security:** Data remains inside the company.

→ **Data security:** Data remains inside the company.
→ **No new infrastructure required:** connect uses the existing Wi-Fi network within the company.
→ **Current data:** Blanket coverage enables data to be transferred regularly and kept up-to-date in connect:desk.
→ **Authentication on basis of IT standards:** Authentication is carried out with WPA2 (password) or WPA2-Enterprise (certificates).

→ **No infrastructure required:** No hardware is required on company premises.
→ **Indoor and outdoor coverage:** Vehicles can transmit data indoors and outdoors. The strength of the connection depends on the network of the mobile broadband operator.
→ **Fast and simple installation:** The data unit is easy to retrofit on older vehicles.

Vehicle components

→ **Retrofit kit**: The Bluetooth retrofit kit is available for older vehicles that do not have Bluetooth. It can be ordered from the central spare parts warehouse in Kahl.

→ The vehicle has to be equipped with a **Wi-Fi box**, which is available as a retrofit kit.

→ Almost all new vehicles can be ordered with an online box fitted in the factory.
→ Retrofit kits are available for many older vehicle models; they can be fitted in a few simple steps.

On-site infrastructure

→ **SyncPoints** are installed at favourable locations in the plant where trucks always pass (e.g. at charging stations, traffic hubs or parking spaces).

→ Experts from connect carry out the **one-time setup** procedure on site.
→ **Cooperation** with the company's IT department is necessary to implement Wi-Fi transmission.

→ **No additional infrastructure**, such as Syncpoints or Wi-Fi hotspots, is required for data transmission.

REPORTS AND ANALYSIS

More than 15 interactive reports about your fleet

The connect:desk software enables you to access over 15 different interactive reports on the entire fleet and individual areas, vehicles or drivers. The data is represented in easy-to-understand diagrams and tables. You will always know exactly who used which truck when and how.

The most important reports at a glance:
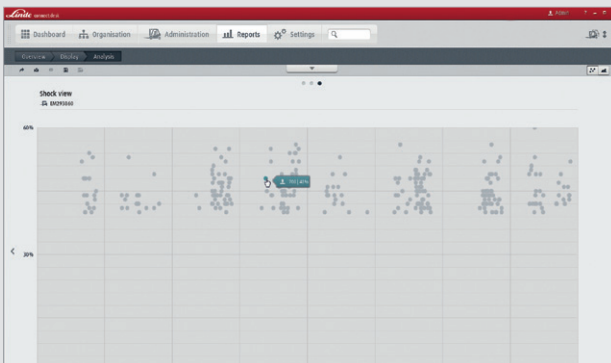
Shocks: The shock data enables you to find out when a driver has given a vehicle a jolt – e.g. caused by a collision or a pothole. This increases drivers' sense of responsibility.
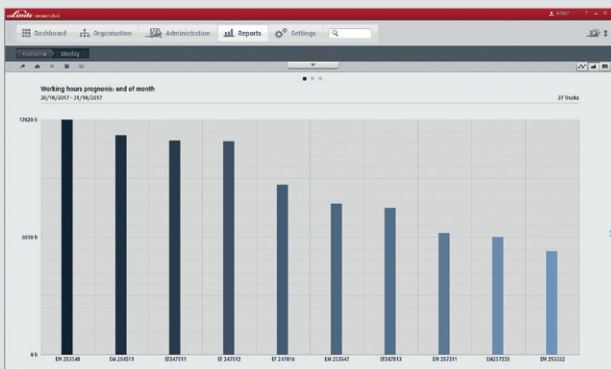
Operating hours forecast: Expected fleet operating hours are calculated on the basis of real vehicle usage data. You can determine whether the system should predict the number of operating hours up to a specific time or the time at which a specific number of operating hours is reached.

These categories of reports are available:

Logbook
List of all recorded events for each vehicle

Usage
Overview of usage and utilization of all vehicles

Service
Service and maintenance schedules of all vehicles at a glance

Coordination
Overview of driver data and vehicle availability and distribution
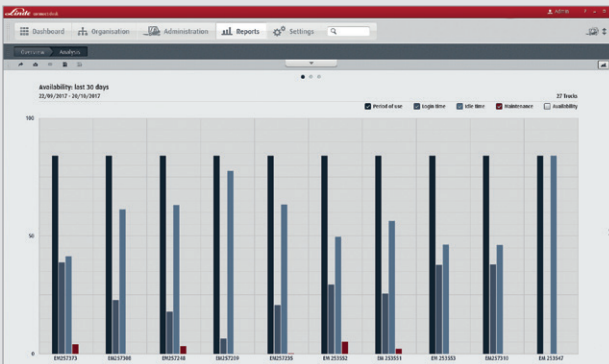
Availability: This diagram shows whether vehicles are being used, have been parked or are being serviced or repaired. The bars indicate how much potential operational capacity individual vehicles and the entire fleet still have.
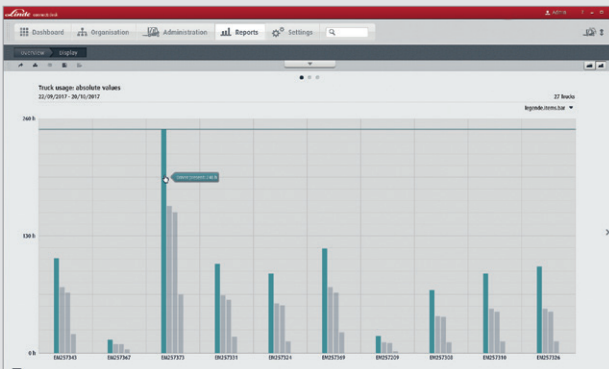
Truck usage: Here you will find detailed information about how a vehicle is used: How long is a driver logged in? How high is the proportion of journeys and lifts during that time?

APP

Vehicle check via smartphone

Simplify the vehicle check before each shift and at the same time create effective access control – with the aid of the pre-op check app and the connect:ac pre-operational check function.

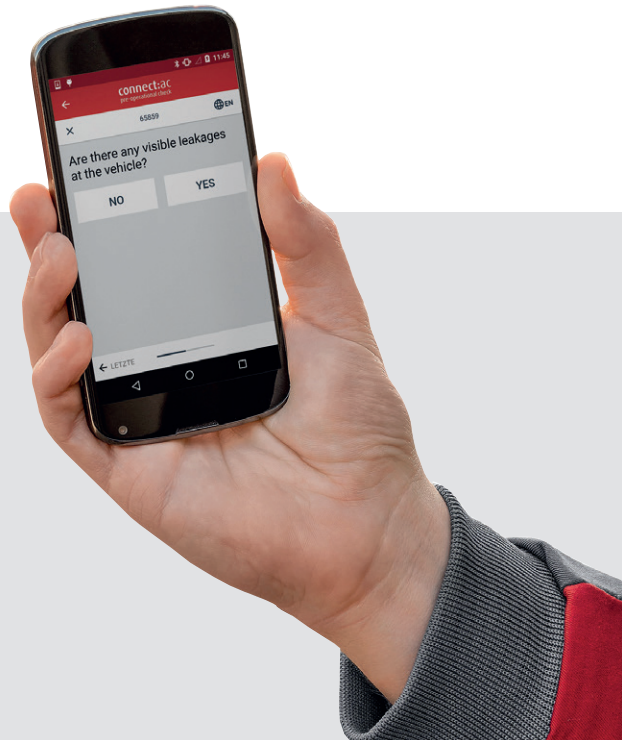Completing a smartphone checklist ensures that the truck can only be started when a check has been carried out and the vehicle is fully operational. Damage or irregularities can be documented with a photo and immediately reported to the fleet manager.

The checklist configurator allows the fleet manager to freely define the desired questions on vehicle condition to suit the requirements of the job or the location. It is also possible to specify when a check is successful and the vehicle can be started, as well as the conditions under which it shuts down or requires a photo to be taken for documentation purposes.

→ Improved safety on company grounds
→ Automatic email report of the checklist results in real time
→ Photographic record of vehicle damage or irregularities
→ Regular survey of vehicle condition
→ Freely definable questions
→ Recording of questions and answers for later analysis possible

HARDWARE

Teaching your forklift to talk

The various connect hardware components are the link between your fleet, the database, and the connect software. They collect and transfer control and sensor data or serve as an electronic ignition switch. Our hardware components can be ordered ex works with new vehicles or are available as a retrofit kit.

1 connect:access unit (CAM)

2 Connectivity retrofit kits

3 connect:data unit (CDX)

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1 connect:access unit (CAM)

The access unit (CAM) is available in two different versions: drivers can identify themselves to a vehicle either by means of a personal PIN or using an RFID chip. Vehicle data such as shock readings are transmitted to the SyncPoints via Bluetooth. This unit is likewise available as a retrofit solution.

2 Connectivity retrofit kits

Is part of your fleet not equipped with your chosen transmission technology? Then it is easy to upgrade to wireless data communications with the appropriate retrofit kit for Bluetooth, Wi-Fi or mobile broadband.

3 connect:data unit (CDX)

The data unit (CDX) logs the data on the vehicle and transmits it to the Linde cloud via the cell phone network. It can also send commands back to the vehicle controls. The unit also downloads firmware updates and additional functions via the cell phone network

Retrofitting the connect:data unit is easy and takes very little time. The unit is directly connected to the vehicle controls and is operational immediately.

TRAINING AND SUPPORT

The Linde Academy in Aschaffenburg offers various training courses for using connect:desk. Our trainers will also happily travel to your premises to provide group training sessions.

We sit down with you and put together just the right training components to suit your needs. We help you choose and install everything from the necessary infrastructure all the way up to the finalized connect solution. If questions arise during ongoing operations, support is provided by experts from your contract partner or Linde Service.

For more information on the subject of training please contact us:

→ **www.linde-mh-akademie.de**

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battery management

Digital battery maintenance

Are you interested in Linde connect? Please contact your Linde dealer who will be happy to provide information and advice.

Linde Material Handling GmbH,

Linde Material Handling, a KION Group company, is a leading global manufacturer of forklift trucks and warehouse trucks, and a solutions and service provider for intralogistics. With a sales and service network that spans more than 100 countries, we are close to customers in all major regions around the world.

With over 100 years of experience in providing material handling solutions to companies in virtually every industry, we help our customers optimise their entire material handling process.

Our experts analyse all workflows from goods receiving to shipping and work with the customer to develop solutions that fully meet their individual requirements.

In the process, Linde Material Handling guarantees smooth implementation, reliable commissioning and responsive service.

For further information, please visit: **www.linde-mh.com**

Linde connect

Linde Material Handling

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