

WITOS FleetView

The telematics solution from WIRTGEN GROUP



WITOS
FleetView



CLOSE TO OUR CUSTOMERS

WHAT IS

WITOS FLEET VIEW?





WIRTGEN GROUP TELEMATICS AND ON-SITE SOLUTIONS

With its intelligent telematics system WITOS FleetView, WIRTGEN GROUP supports fleet and servicing management for WIRTGEN GmbH, JOSEPH VÖGELE AG, HAMM AG and KLEEMANN GmbH machines.

Thanks to system-based preprocessing, transmitting, visualising and evaluating of machine and position data, fleet and servicing management is becoming increasingly more efficient in day-to-day operations. WITOS FleetView ensures that you always have a clear overview of your machine fleet.

WHAT DOES

WITOS FLEET VIEW OFFER?

The service portfolio of WITOS FleetView ranges from targeted monitoring of machines in their day-to-day operation to supporting maintenance and diagnostics processes.

Thanks to a comprehensive range of features, WITOS FleetView is an ideal complement to the WIRTGEN GROUP Smart Service machine-specific inspection and maintenance agreements.



THE WITOS FLEET VIEW BENEFITS AT A GLANCE

- > WITOS FleetView keeps you informed of the location and operational state of your machines, any time and anywhere*
- > It simplifies scheduling and planning processes and helps avoid unnecessary machine transports
- > Intuitive user interface for efficient scheduling
- > Simplifies the entire maintenance process and saves time and effort in day-to-day operations
- > Minimises downtimes by facilitating timely service appointments
- > Faster response times in the event of faults
- > Detailed and targeted analyses of operational behaviour and usage patterns of the machines make service as well as maintenance easier and guarantee that your machines retain their value in the long term
- > Analysis of machine utilisation to optimise use of the machine

*Data transmission is dependent on mobile network coverage.



PERFORMANCE CHARACTERISTICS

ASSET

- > Position data
- > Machine identification
- > Operating status
- > Fuel fill levels
- > Machine data

MONITORING

- > Position monitoring
- > Time fence monitoring
- > Maintenance monitoring
- > Movement monitoring
- > Error monitoring
- > E-mail notification

MAINTENANCE MANAGEMENT

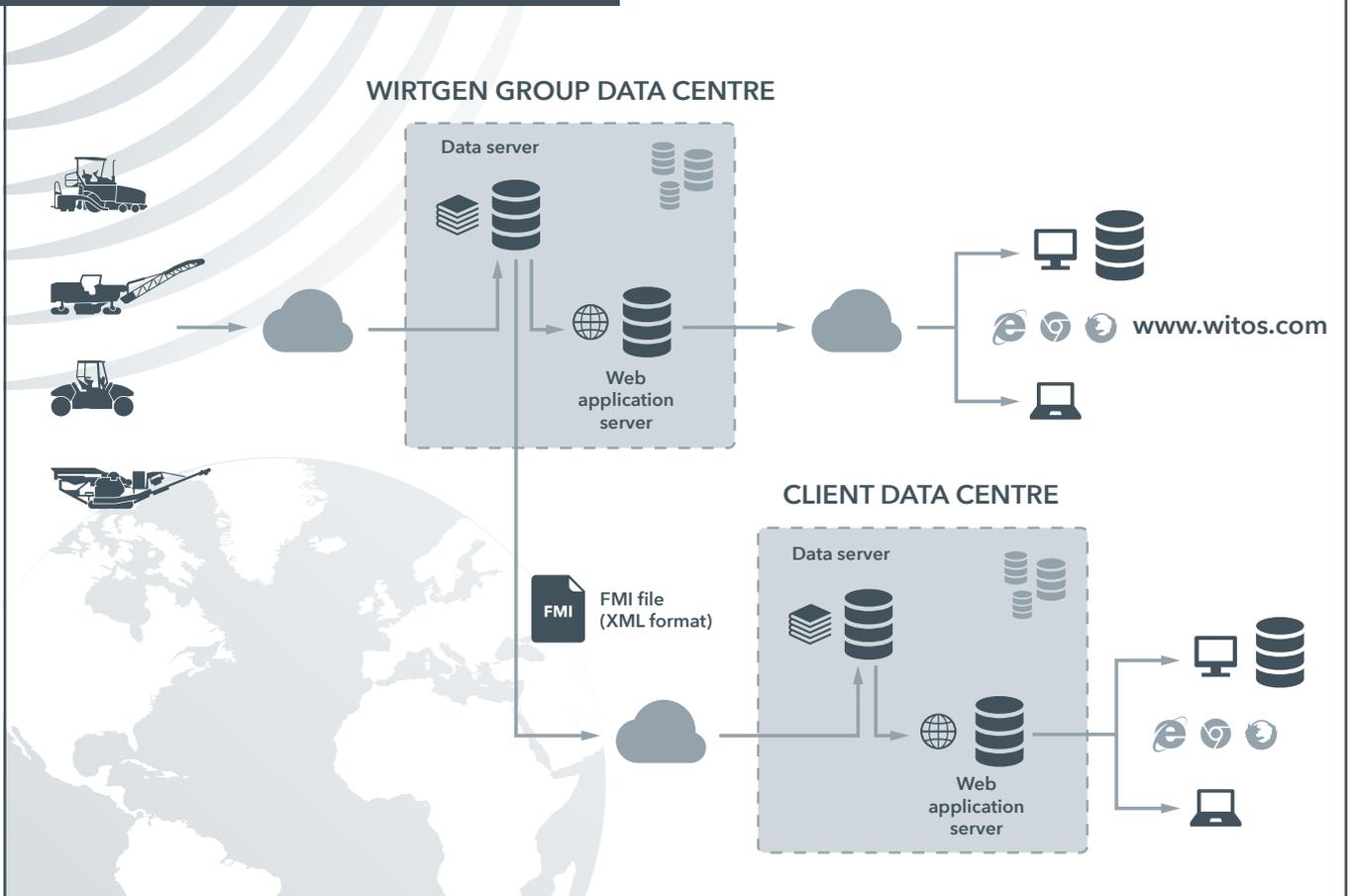
- > Maintenance schedules
- > Status indicators
- > Maintenance entries
- > Maintenance histories

DIAGNOSIS

- > Machine warning messages
- > Machine error messages
- > Engine messages
- > Message histories



WITOS FMI



> *The Fleet Management Interface (FMI) also allows you to import data from existing systems via a standardised server-2-server interface.*

THE WITOS FMI BENEFITS AT A GLANCE

- > You can retrieve the machine data from the WITOS server and import and evaluate it in your own telematic or ERP system.
- > The scope of the data accessible with the WITOS FMI interface varies. It can include the AEMP 1.2 or ISO ITS 15143-3 standard data, or the data of WIFMS, which is WIRTGEN's own standard.
- > WITOS FMI is included in the WITOS FleetView supply package.



For integration in existing systems, please contact your WIRTGEN GROUP subsidiary.

SCOPE OF DATA OF THE WITOS FMI INTERFACE

SCOPE OF DATA OF WIFMS

- > Manufacturer
- > Machine serial number (SN/OBU)
- > Global positioning system time
- > Global positioning system latitude
- > Total operating hours
- > Total distance
- > Fuel rate
- > Engine speed
- > Coolant temperature
- > Customer designation for machine
- > Global positioning system altitude
- > Global positioning system longitude
- > Speed
- > Total fuel consumption
- > Fuel fill level
- > Load factor
- > DEF fill level*

SCOPE OF DATA OF ISO/TS 15143-3 (AEMP 2.0)

- > Installation date
- > Manufacturer
- > Machine type
- > Customer designation for machine
- > Machine serial number (SN)
- > PIN (product identification number)
- > Fuel fill level
- > Distance
- > Average engine load last 24 h
- > Fuel consumption last 24 h
- > Total idle time
- > Total regeneration time
- > DEF fill level*
- > Engine status
- > Total fuel consumption
- > Maximum engine speed last 24 h
- > Diagnosis messages

SCOPE OF DATA OF AEMP V1.2

- > Installation date
- > Machine type
- > Machine serial number (SN/OBU)
- > Global positioning system time
- > Global positioning system latitude
- > Total operating hours
- > Fuel consumption last 24 h
- > Manufacturer
- > Customer designation for machine
- > Global positioning system altitude
- > Global positioning system longitude
- > Total fuel consumption
- > Total distance



Scope of data depends on model

*AdBlue® is a registered trademark of Verband der Automobilindustrie (VDA) e. V. (German Association of the Automotive Industry).

WEB APPLICATION

MACHINE OVERVIEW

The fleet overview provides a compact overview of the current operational state of your machines. You can select one or several machines for more detailed views and analyses. Comprehensive filtering and sorting functions will help you to customise the overview to your

requirements. You can predefine up to five different views based on parameters defining your needs. Once customised and saved locally, this ensures that the information you want is always quickly available to you at a glance.



> Machine data
Identify your machines with absolute certainty and see your freely definable contact at a glance.

Load factor M1 Ø [%]	Load factor M2 Ø [%]	Speed Ø [m/min]
54.0		13
18.0		1
19.0	-125.0	24
28.0	0.0	5

> Operational data
Look inside your machines and see current data such as minimum, maximum and average operational data values.

> Position data
Transmitted position data will tell you exactly where your machines are.

> Data from WITOS FleetView
Always able to act: compactly displayed machine statuses provide you with a fast overview of the operational state of your machines.

> Monitoring status, upcoming maintenance and current warning and error messages - the most important information is available at a glance, allowing a rapid response.

MAP

The map view shows the current location of one or several machines.*

The machine path function enables you to track the route that the machine takes during operation and transport.

You can use the radius search to select several machines or individual ones, such as those on a construction site. You can then look at the machines in more detail in other views, such as the fleet view, message view or history view.



WIRTGEN GROUP WITOS FleetView

WIRTGEN GROUP

Map (U / N / E / R)

ALB-Vorfühmaschine
S/N: 18100153
Type: W 130 CF
Operating hours: 793 h

Workstate: Operation
Communication status: On
Monitoring status: Off
In maint. status: Overdue maintenance
Report status: No error
Service agreement: None
Timestamp last message: 25.01.2019 11:49

Customer designation: 18100153
Serial number: 18100153
Interval: 116 17:42 - 12/20/2016 17:42

Radius (km): 50
Click on the map to activate

> Short machine information
The message window contains information on the machine's operational, error, monitoring and maintenance status.

*Brief information is available for individual machines to report on the status of the machine concerned.

APPLICATION

MONITORING

Define times and places when and where your machines are permitted to operate. By activating monitoring protection, you will receive immediate e-mail notification of unauthorised access to the machine.

To minimise unnecessary downtimes for your machines, emails can notify you of upcoming machine maintenance,

allowing you to plan in the staff and material required in good time.

You can also be notified of error and warning messages by email.



Customer designation	Status	Alarm	Event
Monitoring Geo-Fence	Off		
Monitoring curfew	Off		
Monitoring shock sensor	Off		
Monitoring alarm notif.	Off		
Monitoring fault notifications	Off		
Pending Service (OH)	Off		
Overdue Service (OH)	Off		

Monitoring activation	Monitoring configuration
Customer designation	ALS-Vorführmaschine
Status	
Monitoring Geo-Fence	Off
Monitoring curfew	Off
Monitoring shock sensor	Off
Monitoring alarm notif.	Off
Monitoring fault notifications	Off
Pending Service (OH)	Off
Overdue Service (OH)	Off

Surveillance Activation	Surveillance Configuration
Customer description	18100140 S/N
Radius	0,0 + - km
Work day start	
Sunday	hh:mm
Monday	07:00 + - hh:mm
Tuesday	07:00 + - hh:mm
Wednesday	07:00 + - hh:mm

> Curfews

A notification is sent if the machine is switched on within the freely definable time curfew.

> Geo fencing

Receive a message the moment that the machine is outside the defined, permitted geo fence during monitoring.

> Motion sensor

The integrated motion sensor generates position messages even when switched off. This ensures that transport movements are documented.

When the machine is shut off, the telematics unit can be "woken" if the motion sensor is triggered, automatically forwarding a message to designated persons. This means that you are instantly informed of any non-scheduled movements, for example.

OPERATIONAL DATA / HISTORY

Take a look back into the past of your machines. The history view allows you to display operational and position data for your machines over a freely definable period in a clear and easily readable layout.

Depending on your selection, you can also display up to three additional parameters in graphic form on the operating status indicator and generate them in PDF format.

At the push of a button all tabulated data can easily be generated as CSV file.



The screenshot displays the WITOS FleetView interface for a Wirtgen Group machine. The main window shows a detailed table of operational data with columns for Date, Time, Status, and various performance metrics. Below the table, there are several interactive components:

- Operational Data Chart:** A bar chart showing engine RPM (1/min) over time, with a legend for Ignition on, Engine on, and Operation.
- Selection Dialog:** A configuration window for data queries, including fields for Compare value 1, 2, and 3, Reference time (03/07/2016 10:16), Direction (forward/backward), and Grouping (5 Minutes).
- PDF Export:** A red 'PDF' button with a document icon and the Adobe logo.
- Export Options:** A green 'X' icon and a blue document icon representing CSV export.
- Summary Report:** A smaller view of the data table and charts, likely generated from the selection dialog.

APPLICATION

MESSAGES / HISTORY

All current and past messages from the machines at a glance: See a summary and specify which detailed information shall be displayed with the messages.

All messages are displayed and described exactly as they are on the machines. Clear message categorisation and documented display/deactivation times enable you to draw significant conclusions regarding the machines' service statuses.



> **Blue messages** indicate particular non-critical states of the machine system that must be taken into account when operating the machine.

S/N	Reported-	Reported until	Operating hours [h]
Grouped by S/N: "18100140" / Number of messages: 204 / First occurred on: 02/08/2016 07:47 / Last occurred on: 02/15/2016 16:12			
18100140	02/08/2016 07:47	02/08/2016 07:51	113.5
18100140	02/08/2016 07:47	02/08/2016 07:51	113.5
18100140	02/08/2016 13:37	02/08/2016 13:46	113.7
18100140	02/08/2016 13:40	02/08/2016 13:40	113.8
18100140	02/08/2016 13:49	02/08/2016 13:50	113.9
18100140	02/08/2016 14:02	02/08/2016 14:05	114.1
18100140	02/08/2016 14:04	02/08/2016 14:05	114.2
18100140	02/08/2016 14:11	02/08/2016 14:16	114.3
18100140	02/08/2016 14:11	02/08/2016 14:16	114.3
18100140	02/08/2016 14:13	02/08/2016 14:16	114.3

> **Yellow messages** represent an abnormal and impending critical state, allowing you to specifically monitor it and avoid subsequent damage to the machines.

> **Red messages** indicate critical states that require the machine to be stopped immediately.

> **Black messages** keep you informed of the machine's drive engine status and are shown in SPN/FMI code.

SERVICE / HISTORY

The history view of the maintenance section contains all the information you need to ensure optimally maintained machinery. From maintenance reports on previous workshop visits to information on the type and

schedule of upcoming maintenance work, the service functions reliably ensure that your machines remain operational.



The screenshot displays the WITOS FleetView software interface. The main window shows a maintenance history table with columns for maintenance type, date, and duration. A 'Create service' dialog box is open in the foreground, allowing users to input service details. Below the dialog, a 'Maintenance History' table provides a detailed view of recent service events.

Maintenance typ	Executed on	Maintenance at [h]	Executed by
250h-Service	11/11/2014 06:53	976	Reperaturabteilung
1000h-Service	11/11/2014 06:55	976	Reperaturabteilung

APPLICATION

MASTER DATA

A client-specific machine ID can be added to the master data. There is also the option of indicating a contact person for each machine, such as the machine operator (1).

Owners can transfer or lend the machine to other WITOS FleetView users. The machine then appears in the new user's WITOS FleetView system for the time period specified by the owner (2).

The starting value can be individually configured in the operating hours calculation (3). In the case of machines without CAN bus connection, WITOS FleetView can count the number of hours that a machine has operated based on the D+ alternator signal.



The screenshot displays the WITOS FleetView application interface. At the top, the 'WIRTMEN GROUP' logo and 'WITOS FleetView' title are visible. The main window is divided into several sections:

- Machine Details:** Fields for Customer designation, S/N, S/N TCU master data, Type / appendix, Name, First name, Email, Phone, Headquarters, Subcompany, Dealer, Service s., Responsible service s., Owner, and Holder.
- Machines (2/8/13):** A table listing machine data with columns: Customer designation, S/N, Product, S/N TCU machine, S/N TCU master data, S/N no. machine, S/N no. master, Type / appendix, Operating ho., Brand, Headquarters, Dealer, Owner, and Holder.
- Machine Configuration (1):** A dialog box for editing machine details, including Customer description, S/N, S/N TCU master data, Type / appendix, Name, First name, Email, and Phone.
- Machine Configuration (3):** A dialog box for configuring operating hours calculation, including fields for Oh. calculation, Setpoint, New setpoint, S/N, Operating hours, Setpoint delta, and Last setpoint change.
- Distribute (2):** A dialog box for distributing machine data, including fields for Number of machines, Owner (Fleet ID), Owner (Name), and Distribute up to, with Ok and Abort buttons.

REPORTS

There are three pre-defined reports available as an interactive graph. They show the user a breakdown of the operating hours over a defined period of time. The reports also show fuel consumption, fuel rate, engine speed, coolant temperature and engine load.

There are also five pre-defined reports in list format to give an overview of statuses throughout the machine fleet.



The screenshots illustrate the WITOS FleetView interface. The top two images show interactive graphs for machine performance, including operating hours breakdowns and fuel consumption trends. The bottom image displays a detailed data table for machine fleet status.

Machine ID	Customer	Fleet	Serial number	Serial no. (IC)	Machine agreement	Last maintenance	Next maintenance	Warranty (%)	Hours
10100001	ALB	ALB 100001	10100001	10100001	10100001	10100001	10100001	100	10000
10100002	ALB	ALB 100002	10100002	10100002	10100002	10100002	10100002	100	10000
10100003	ALB	ALB 100003	10100003	10100003	10100003	10100003	10100003	100	10000
10100004	ALB	ALB 100004	10100004	10100004	10100004	10100004	10100004	100	10000
10100005	ALB	ALB 100005	10100005	10100005	10100005	10100005	10100005	100	10000
10100006	ALB	ALB 100006	10100006	10100006	10100006	10100006	10100006	100	10000
10100007	ALB	ALB 100007	10100007	10100007	10100007	10100007	10100007	100	10000
10100008	ALB	ALB 100008	10100008	10100008	10100008	10100008	10100008	100	10000
10100009	ALB	ALB 100009	10100009	10100009	10100009	10100009	10100009	100	10000
10100010	ALB	ALB 100010	10100010	10100010	10100010	10100010	10100010	100	10000

> Users can zoom in and out on the interactive graph to quickly determine how the machine was used in the selected period of time.

APPLICATION

REPORTS

The displayed report (1) can be exported in PDF format (3) to show a freely defined time period (2), allowing users to generate analyses for individual fields.



The screenshot displays the WIRTGEN GROUP WITOS FleetView interface. The main window shows a dashboard for a specific machine (Type W. 130 CR, S/N 18100476) with a presentation period from 01.01.2019 00:00:00 CET to 31.01.2019 23:59:59 CET. The dashboard includes several charts: a donut chart for operating hours (60 h total, with 11 h in green and 49 h in orange), a bar chart for operating hours by day, and a line chart for fuel consumption. A 'PDF Export' dialog box is open in the foreground, showing the start and end of the reporting period (14.01.2019 00:00:00 to 30.01.2019 23:59:59) and the resolution (Week, 1 day interval). A smaller inset window shows a preview of the report that will be generated, including a table of machine data and a chart of operating hours.

Serial number
18100476
18100476
18100287
14201419
18301002
19200004
07200002
13000080

Field	Value
Make	Fendt/Fendt
Model	Arbeitsstation-Erntegewinn
Year	2019
Registration	W. 130 CR
Serial number	18100476
Registration date	01.01.2019
Registration type	Standard

ADVANTAGES

ADVANTAGES FOR CUSTOMERS, CUSTOMER SERVICE & HIRERS

CUSTOMERS

- > Comprehensive, single-source fleet management
- > Greater availability thanks to fast machine status detection
- > Fewer downtimes thanks to fuel monitoring
- > Optimum machine scheduling thanks to GPS position and machine status
- > Surveillance to prevent unauthorised access to the machine
- > Greater availability thanks to predictive maintenance work planning

CUSTOMER SERVICE

- > Predictive planning for maintenance work
- > E-mail notification when servicing is due
- > Prioritisation of maintenance operations
- > Faster telephone troubleshooting thanks to machine messages
- > Target-oriented preparation of servicing operations thanks to fault localisation
- > Precise information on machine position for service technician deployment

HIRER

- > Precise machine location detection
- > Reports on the machine's usage
- > View of machine handling history
- > Clear basis for calculating machine hire

The WITOS FleetView telematics system with WITOS FMI includes the WITOS control unit (TCU), use of the web-based fleet management system and the WITOS maintenance fee for 3 years from start-up (further free use of the system is possible after this term has elapsed, but cannot be guaranteed due to changes to mobile phone standard (e.g. from 2G to 3G), network coverage problems or similar).





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