



## Understanding utilization and extending service life with the new “utilization radar” analysis tool

**WITTENSTEIN alpha presents a new feature of the Health Index gearbox analysis tool: the “utilization radar”. This Smart Service analysis tool delivers information about critical operating states in WITTENSTEIN alpha gearboxes with cynapse® functionality – that is, with integrated temperature and acceleration sensors, a logic and memory unit and an IO-Link data interface. The purpose of the utilization radar is to determine the current total utilization of a gearbox and to ensure it achieves its service life – or to extend this – by comparing the findings with individual limit values.**

The analysis tool can therefore help to minimize failures, downtimes and maintenance costs for drive trains. For machine manufacturers, it opens up a wealth of opportunities in digital business models, for example in the monitoring, servicing and repair of drive axles.

The analysis tool forms part of WITTENSTEIN alpha's cynapse® Analyze portfolio of Smart Services and will in future be offered for all the company's gearboxes with cynapse® functionality.

### Operating states relevant to service life are now “on the radar”

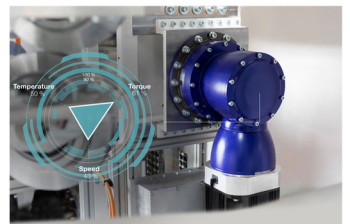
The utilization radar delivers information about operating states with excessive levels of stress and the resulting negative effects on the service life of gearboxes with cynapse®. The new feature is therefore of particular interest for machines with varying load profiles, high-availability systems in continuous operation, applications with high dynamics and use scenarios involving gearboxes that are hard to access or incur high maintenance costs for other reasons. The smart analysis tool and its data-based gearbox analysis therefore offer benefits to both machine manufacturers and operators.

### Digital twin: Using analytical data in connected data spaces

The data from the cynapse® Analyze is ideal for use in smart digital services aimed at monitoring the condition of gearboxes and drive trains. WITTENSTEIN is currently working on a research project to draw up standards regulating how data like this can be used jointly by different participants. The aim is to provide a uniform technical

November 25, 2025

WITTENSTEIN SE develops products, systems and solutions for highly dynamic motion, maximum-precise positioning and smart networking for mechatronic and cybertronic drive technology.



Smart Service cynapse® Analyze – Health Index with new “utilization radar” feature

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and legal framework in future for the use of this data in smart data spaces. The digital twin – which WITTENSTEIN alpha generates for every gearbox and offers to its customers – is a vital element that standardizes and manages this data and makes it available.

### **cynapse® Analyze by WITTENSTEIN alpha: a growing portfolio of digital analysis tools for smart gearboxes**

In the interests of drive train digitalization, WITTENSTEIN alpha offers a range of complementary and ever more sophisticated smart services for gearboxes with cynapse® functionality. As the first building block we have the basic **cynapse® Connect** Smart Service for integrating and routing data. This includes both data provided by cynapse and additional speed and torque data that can be made available by a servo drive or a PLC via OPC UA.

Expanding on this, the **cynapse® Monitor** Smart Service allows easy visualization and evaluation of smart gearbox data, including setting limit values and issuing alarms if these are exceeded. It provides insight into the operating behavior of drive axles, so that critical operating states can be detected early on.

The **cynapse® Analyze** is a continually growing portfolio of smart analysis tools. It includes the Health Index, which was introduced in 2024, and its utilization radar feature, presented for the first time at SPS 2025. These analysis tools use data from the cynapse® Connect and enable the operating behavior of gearboxes and drive axles to be examined and improved. This allows even more complex anomalies in the machine process or component behavior to be detected at an early stage – even simultaneously at different locations in a machine. Leading machine manufacturers incorporate solutions based on cynapse® Analyze in their range of digital services for all aspects of their installations.

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**Pictures** (source: WITTENSTEIN SE):



#### **01- and 02-WSE-Health-Index-Utilization-Radar-EN:**

The utilization radar is a new feature of the Smart Service cynapse® Analyze analysis tool from WITTENSTEIN alpha. It delivers information on the operating states of gearboxes, with the aim of ensuring their service life is achieved and also extended.

Texts and photographs in printable quality can be downloaded from <https://www.wittenstein.de/en-en/company/press/>

#### **WITTENSTEIN – one with the future**

With around 2900 employees worldwide and sales of €526 million in 2024/25, WITTENSTEIN SE enjoys an impeccable reputation for innovation, precision and excellence in the field of cybertronic motion – not just in Germany but internationally. The group possesses exceptional expertise for the mastery and further development of all technologies relevant to mechatronic drives and comprises six innovative Strategic Business Divisions. We develop, produce and sell products such as high-precision servo drives and linear systems, servo systems and motors as well as cybertronic drive systems for many areas of application including machine and plant construction, aerospace or oil and gas exploration. Nanotechnology and software components round off the portfolio. With 25 sites in more than 45 countries, the WITTENSTEIN group ([www.wittenstein.de](http://www.wittenstein.de)) is represented in all major technology and sales markets.

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