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Eligible & EPBD-compliant

Wireless room solution DEOS TEO

Intelligent LoRaWAN radiator thermostat

Energy-efficient building modernisation with DEOS TEO



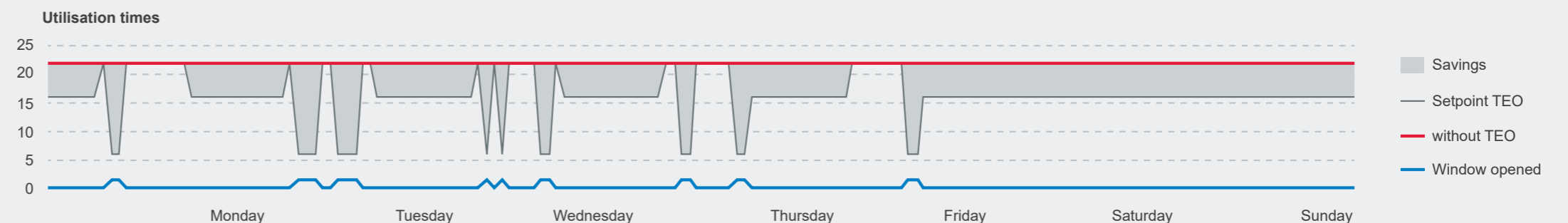
High energy prices and stricter legal requirements are driving building owners to push ahead with the modernisation of their existing buildings. Energy optimisation is one way of reducing energy costs in the long term. However, high investment costs and operational downtime due to conversion work present building operators with complex challenges. With the DEOS TEO wireless radiator thermostat, we offer you a solution for energy-efficient refurbishment that is extremely cost-effective compared to other measures and requires only minimal installation and maintenance work. Turn your existing buildings into energy-saving monsters in no time at all with DEOS TEO!

1 Save up to 40% energy

The intelligent DEOS TEO radiator thermostat enables automated control of the heating output in individual rooms. Set temperatures can be flexibly defined for individual rooms or entire areas via a central control unit. Time and calendar programmes can also be integrated so that the rooms are always set to the desired temperatures and are only heated when it is really necessary. The integration of additional LoRa sensors, such as window contacts and presence detectors, further increases efficiency. Our experience shows that energy consumption can be reduced by up to 40% in this way.



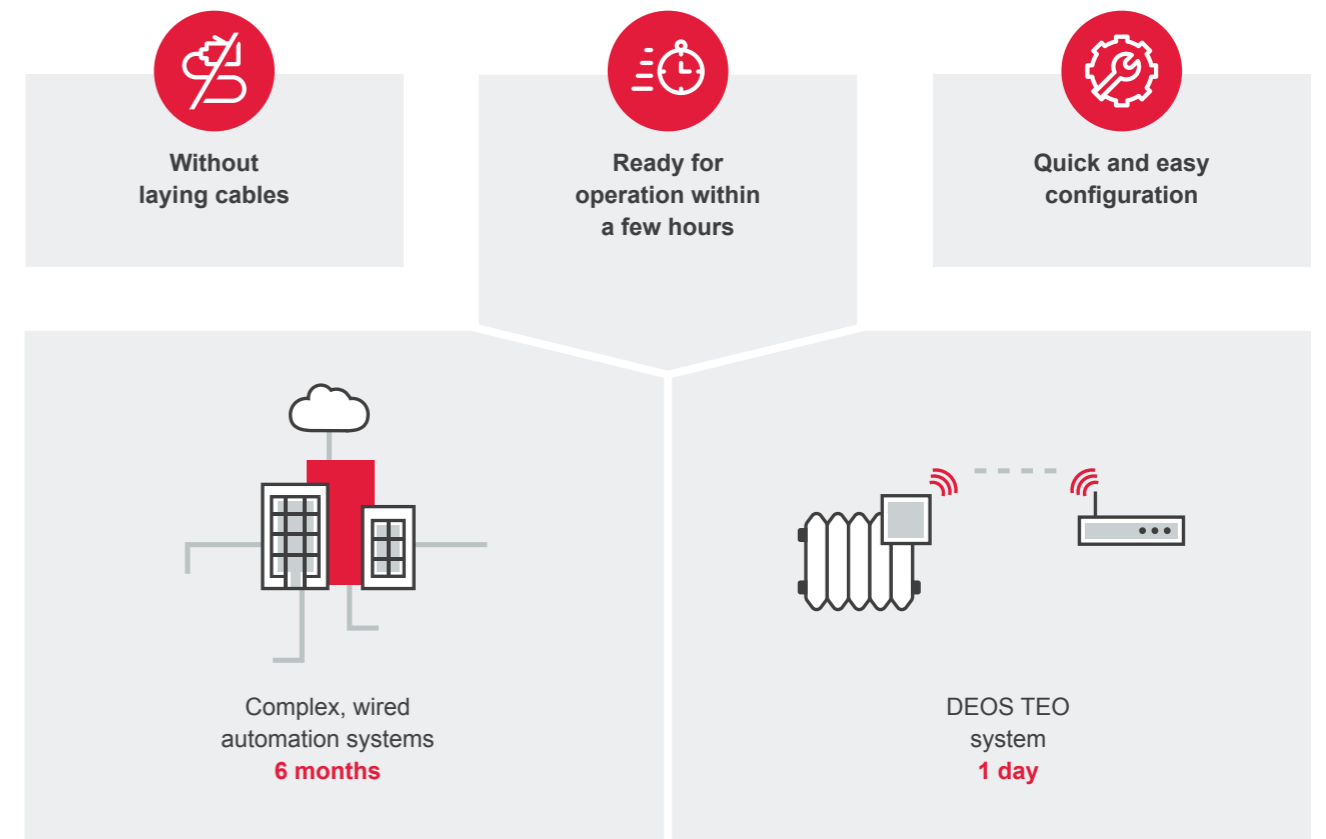
- ✓ Central control of room temperatures
- ✓ Depositing of calendar and time programmes
- ✓ Expandable through the integration of LoRa sensors:
 - Consideration of window opening and presence
 - Individual temperature adjustment via setpoint adjuster
 - Control of the air quality (CO₂, humidity)



2 Conversion during building operation

Unscrew the old radiator thermostat, screw on the DEOS TEO – done! Installing the DEOS TEO requires neither trained personnel nor a shutdown of the premises. Thanks to the LoRaWAN radio connection, the wireless system is ready for use within a few hours.

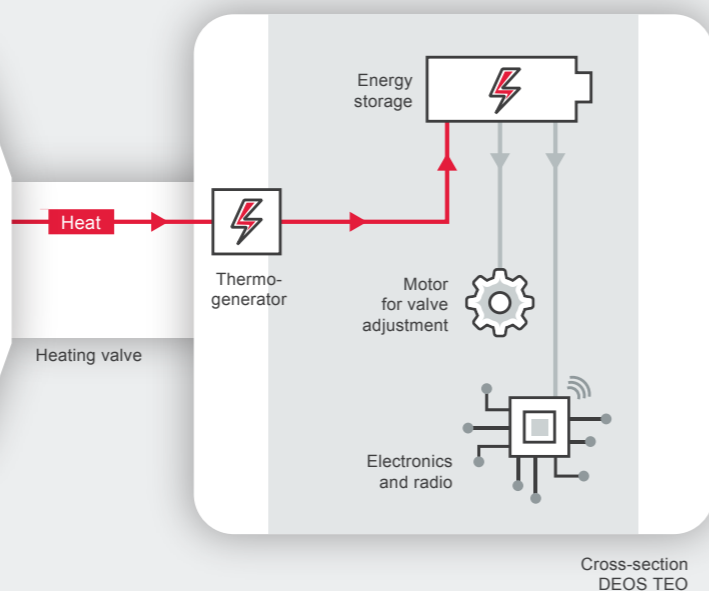
The intuitive configuration software enables quick import and export of devices and rooms via interfaces in CSV or Excel format. It can also be conveniently operated via the browser, regardless of location.



3 DEOS TEO is maintenance-free

Thanks to its patented thermogenerator, DEOS TEO is energy self-sufficient and requires no batteries. The internal energy storage unit charges itself using the heat from the radiator. Compared to competitor products, DEOS TEO therefore not only scores points with its minimal maintenance requirements, but also represents a sustainable solution in view of the environmental impact of batteries.

Function thermogenerator



4

LoRaWAN – high security, high range

LoRaWAN stands for 'Long Range Wide Area Network' and refers to an energy-efficient wireless technology with a very long range that was specially developed for the Internet of Things (IoT). The low data rate of 50 kbit/s enables battery lifetimes of up to 10 years per sensor type and high building penetration. LoRaWAN is operated in

the ISM band (frequency range from 867 to 869 MHz) and can be used nationwide in Germany without incurring licence costs, making it very economical compared to other radio technologies such as mobile communications or WiFi.

	LoRa™	enocean®	WiFi™	Bluetooth®
Data throughput	Up to 50 kbit/s	125 kbit/s	Up to 1 Gbit/s	Up to 3 Mbit/s
Range in buildings	High	Low	Medium	Low
Energy requirements	Low	Low	High	Medium
Provisioning costs	Low Due to good penetration and licence-free use	High Due to low penetration (many gateways and repeaters) and licence costs	Medium Favourable end devices, high electricity costs	Medium Inexpensive end devices, many gateways and repeaters required due to low penetration
Security	High Two-factor device authentication and 128-bit AES encryption	Medium No two-factor authentication and no encryption by default	High WPA3, WPA2 encryption	Medium From Bluetooth 5 128-bit AES encryption and pairing methods such as Numeric Comparison

Assessment of DEOS AG

5 DEOS TEO is eligible for funding

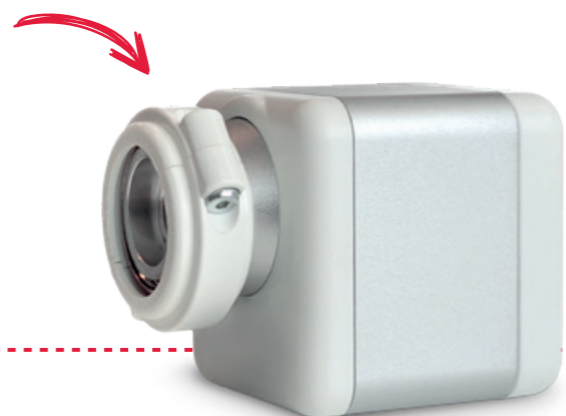
DEOS TEO is even more attractive thanks to funding. The European Energy Performance of Buildings Directive (EPBD) defines requirements for the energy performance evaluation of buildings and the funding of renewable energies in order to support more environmentally friendly and sustainable construction practices. Your country probably also offers attractive funding programmes. Please contact us and we will find the right funding for you.



Note: Other energy-saving solutions for non-residential buildings, such as DEOS energy management, may also be eligible for funding. Please contact us.

6 DEOS TEO is secure against tampering and theft – ideal in public buildings

With DEOS TEO, the room temperature is set centrally and is safe from unauthorised tampering. In addition, the heating thermostat is very robust and can be equipped with an anti-theft device if required. DEOS TEO is therefore particularly suitable for public buildings such as schools, hospitals or administrative buildings.



7 Profitability and ROI – case study

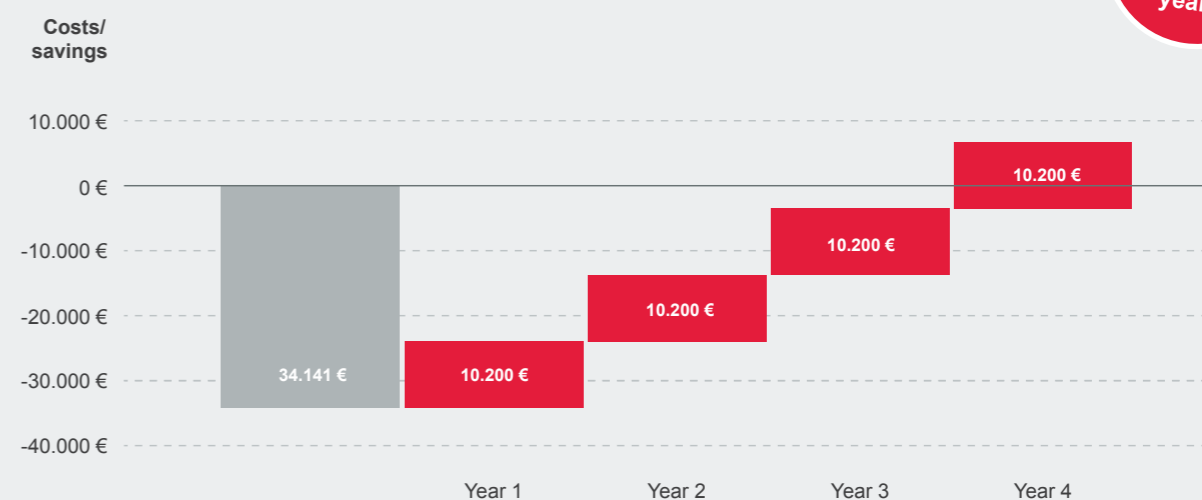


Let's run through a scenario based on the figures for the Eduard-Orth primary school in Germersheim. The main aim is to save energy and therefore costs by installing centralised radiator temperature control. Based on the analyses of the heat cost allocators, the heating cost savings in this school were 34% thanks to DEOS TEO. This corresponds to an annual cost saving of € 10,200.

The simple amortisation period calculated from 'investment costs / annual savings' in this project is € 34,141 / € 10,200 = 3.3 years. After this time, the school begins to benefit from direct cost savings, while at the same time the heating control system becomes more efficient and sustainable.

In addition to the financial benefits, the solution contributes to CO₂ reduction and thus to the achievement of sustainability goals, which further increases its economic and environmental attractiveness.

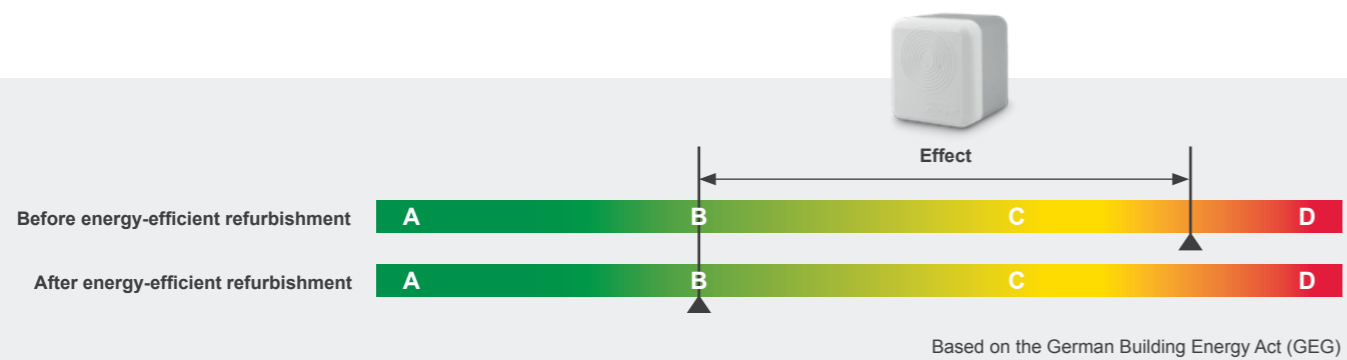
When comparing DEOS TEO with solutions from other providers in the field of professional wireless thermostats, the savings made by eliminating batteries, the savings in labour and maintenance costs for battery replacement, the elimination of battery storage and disposal and the savings in setting up the LoRaWAN wireless network in the building should also be taken into account. This is where DEOS TEO scores highly in all areas, as other solutions on the market incur precisely these costs.



8 Connection to the existing building automation system

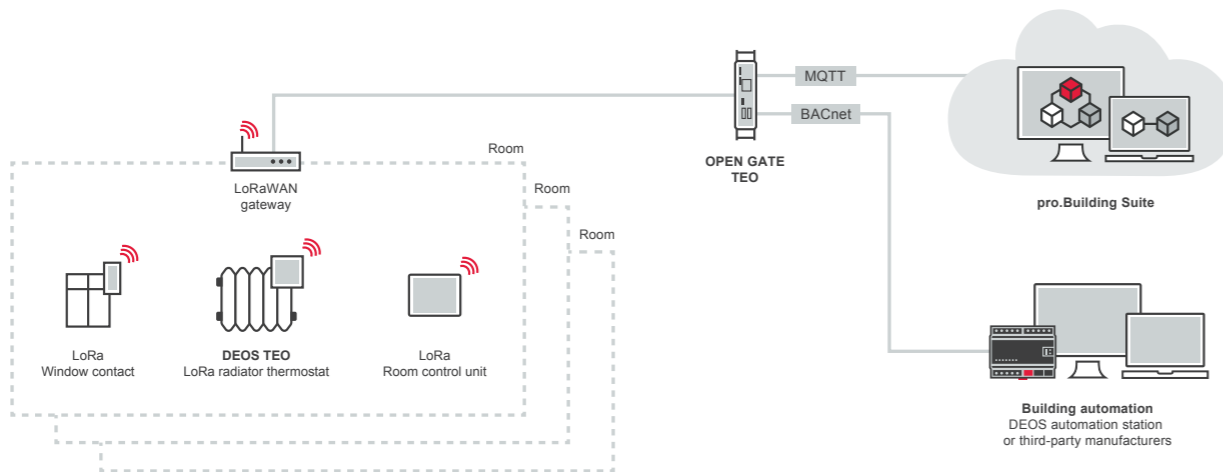
DEOS TEO can be seamlessly integrated into an existing building automation system via a BACnet interface. Customers of the DEOS OPEN system benefit from a customised macro for operation and visualisation in OPENweb and OPENview.

DEOS TEO fulfils the requirements of the German Building Energy Act (German law for the implementation of the EPBD) by enabling room automation level A for existing buildings. This means that the building automation level can be raised to class B by feeding the data back to the primary system.

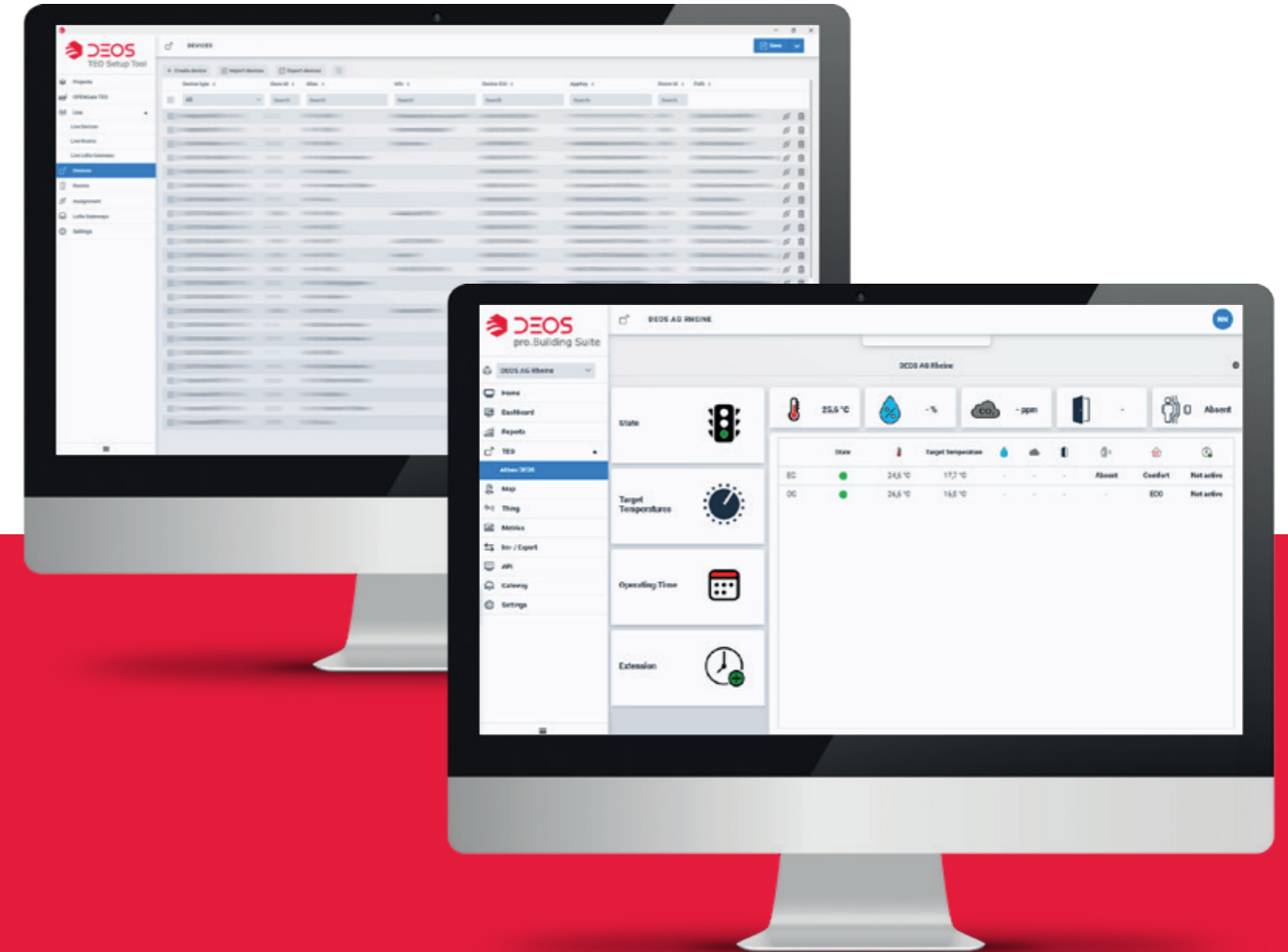


OPEN GATE TEO

The OPEN GATE TEO is at the centre of the solution. The central control system, which is based on room logic, is stored here. The OPEN GATE TEO has bidirectional interfaces for connecting the pro.Building Suite and the building automation system. A LoRaWAN gateway is used for communication between the LoRa sensors and the OPEN GATE TEO, which receives/transmits the data via LoRaWAN and is connected to the OPEN GATE TEO via Ethernet.



9 Convenient operation and configuration via browser



Configuration software enables quick and easy configuration of room automation with DEOS TEO and is available both as an offline and online version. Devices and rooms can be created automatically by importing Excel and CSV files.

Online operation with pro.TEO enables the quick and location-independent setting of target temperatures and operating times for each room or area and provides an overview of the operating status of the LoRa devices. Automatic trend recording makes it possible not only to read out live data, but also to track and interpret data trends over a period of time. The application is intuitive and easy to use.

Simple, fast and effective DEOS TEO is the ideal solution for your existing building

Do you have any questions or would you like to find out more about our solutions? We will be happy to provide you with personalised advice. Our team looks forward to working with you to develop the best solutions for your requirements.

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...or online

www.deos-ag.com



We are part of the Regin Group

The Regin Group is a European manufacturer of intelligent building automation and management systems as well as field products. For more than 75 years, our goal has been to sustainably improve energy efficiency in buildings and facilities through our technical solutions.

Today, the Swedish Regin Group consists of three strong product brands – Regin (SE), DEOS (DE) and Industrietechnik (IT). With our extensive product portfolio, we create integrated automation solutions – the best of three brands.

DEOS is your regional contact for the entire group portfolio in the DACH region.

For buildings and systems that inspire.



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