AUTOMOBILI LAMBORGHINI

1/2019

LAMBORGHINI MAGAZINE

24

AUTOMOBILI LAMBORGHINI

1.2019

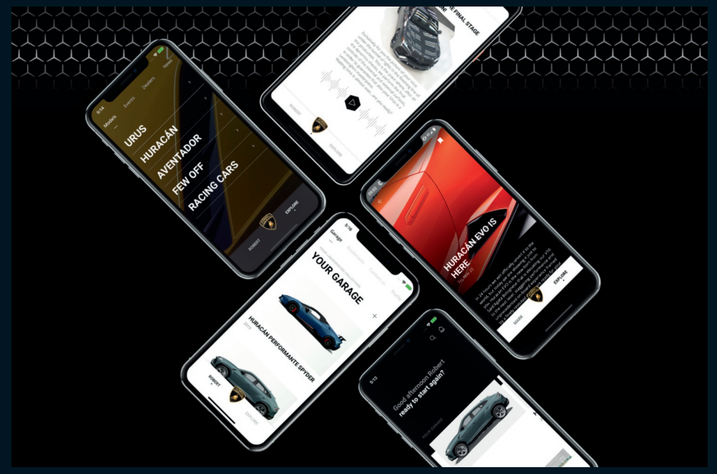
ISSUE #

24

LAMBORGHINI MAGAZINE

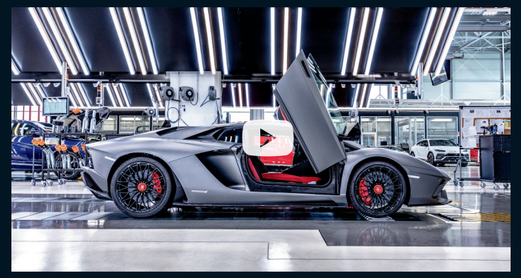
AUTOMOBILI LAMBORGHINI

DIGITAL



LAMBORGHINI UNICA

Being always connected with your car and entering into the heart of the Lamborghini brand: now it is possible. Lamborghini Unica is the enhancement of the customer experience that combines fun and functionality with a new perspective of the Lamborghini lifestyle. Lots of news and special contents, including privileged access to events and previews of the new Lamborghini models, like the new Huracán EVO*.



Download the app by scanning the QR code with your smartphone.

Join the community and join the conversation with #Lamborghini
Visit www.lamborghini.social

*Huracán EVO: NEDC fuel consumption value urban: 20,7 l/100 km / extra urban 10,6 l/100 km / combined: 14,3 l/100 km; CO_2 emissions combined: 331 g/km. WLTP fuel consumption combined: 13,7 l/100 km; CO_2 emissions combined: 332 g/km. EPA-estimated fuel economy: city 13 mpg / highway 18 mpg / combined 15 mpg. See right for further important information regarding the foregoing fuel consumption estimates.

IMPRINT

LAMBORGHINI MAGAZINE is the official magazine of Automobili Lamborghini S.p.A. and is published biannually.

PUBLISHER Automobili Lamborghini S.p.A.
Via Modena 12 | 40019 Sant'Agata Bolognese
Italy | www.lamborghini.com

EDITOR-IN-CHIEF Adrian Pickshaus

CREATIVE DIRECTOR Jürgen Kaffer

EDITORIAL BOARD Katia Bassi | Pietro Donati | Maurizio Grande, Sara Bertusi

MANAGING EDITOR Sebastian Handke | Jørg Schumacher

PROJECT COORDINATOR Sara Bertusi

ART DIRECTOR Jule Pfeiffer | Max Nelles

CHIEF COPY EDITOR Thomas Weiß

PUBLISHING MANAGER Markus Buchbauer

PHOTO DIRECTOR Penelope Toro

PUBLISHING COMPANY | CONCEPT, EDITORIAL AND REALISATION
TERRITORY Content to Results GmbH |
CEO Soheil Dastyari | Bei den Mühren 1 |
D-20457 Hamburg | Germany |
Tel.: +49 40 3703-5003 | www.territory.de

CONTRIBUTORS Thomas Arndt | Jason Barlow | Sara Bertusi | Francesco Colla | Dorothea Sundergeld

PHOTO CREDITS pp. 12-13: Jordan Shiraki | pp. 14-15: Philipp Rupprecht | pp. 16-17: Karvelis & Bacchelli | pp. 18-19 Stefano Guindani | p. 21: Richard Pardon | pp.22-23: Eros Maggi | pp.24-25: Wolfango Spaccarelli | pp. 26-27: Ted7 | pp. 28-29: Rémi Dargegen | pp. 30-33: Diego Vigarani | pp.41-42: Greg Funnell (Portraits) | p.52: Stefano Guindani | p.53: Eros Maggi / Stefano Guindani / Stefano Guindani | p.54: Adam Clark | p.55: Eros Maggi | p.56: David Trood, Getty Images | p.57: Wouter Kingma | p.58: ddp images | p.59: Jamey Price | p. 60: Picture Press | p.61: Karvelis & Bacchelli | p. 62: mauritius images / H. Mark Weidman Photography / Alamy | p.63: Eros Maggi | pp.72-79: Eros Maggi | pp. 90-95: Philipp Rupprecht | pp. 96-101: Karvelis & Bacchelli | pp.102-107: ddp,intertopics / Getty Images | p.113: picture alliance/Westend61 | pp.114-115: Riccardo Sala / Alamy Stock Photo | p.116: Tania/contrasto/laif | pp.118-119: Giuseppe Cacace/AFP/Getty Images | p.121: Miguel Medina, AFP, Getty Images / Chris Hellier, www.f1online.de | pp. 122-123: Marco Erba/SGP | p.124: Karvelis & Bacchelli / Eros Maggi / Karvelis & Bacchelli | p. 125: Karvelis & Bacchelli | pp. 126-131: Jamey Price | p.132: Automobili Lamborghini | p.133: Eros Maggi / Crazy Brutes | p. 134: Automobili Lamborghini / Alex Farinelli | p.135: Michael Shaffer / Stefano Guindani / Charlie Magee | p.136: Diego Vigarani / Eros Maggi / Karvelis & Bacchelli | p. 137: Karvelis & Bacchelli / Umberto Guizzardi / Karvelis & Bacchelli / Stefano Guindani | pp.138-143: Automobili Lamborghini | p.146: Diego Vigarani

ADVERTISING SALES GRUNER + JAHR GmbH & Co KG | G+J Media Sales | Direct Sales | Brieffach 11 | D-20444 Hamburg | Jan-Eric Korte | Tel.: +49 40 37 03-5310 | korte.jan-eric@guj.de | www.gujmedia.de

PRODUCTION COORDINATION G+J Herstellung, Mario Richter

PREPRESS Peter Becker GmbH Medienproduktionen | Frankfurter Straße 87 | 97082 Würzburg | Germany

PRINTING raff media group gmbh | Industriestraße 14 | 72585 Riederich | Germany

CIRCULATION EN 23 000, IT 2000

A guide on fuel economy and CO_2 emissions which contains data for all new passenger car models is available at any point of sale free of charge and from DAT Deutsche Automobil Treuhand GmbH, Hellmuth-Hirth-Str. 1, D-73760 Ostfildern or on the internet at www.dat.de.

The NEDC fuel consumption information is based on the New European Driving Cycle test. The WLTP fuel consumption information is based on the Worldwide Harmonised Light Vehicle Test Procedure.

CONTENT #24

TOTAL RECALL

Data is a valuable resource that will shape our future. Yet most of it is stored on unreliable media. How can we preserve knowledge for the future?

TEXT: SEBASTIAN HANDKE

It's a sign of the times: we have forgotten how to delete. Huge volumes of data are produced, transmitted and saved every day. The Internet is fast and apparently infinite. 90 percent of the data that exists today was generated in the last three years, and more than 2.5 exabytes are produced every day – that's 2 500 000 000 000 MB. A number of data-hungry technologies, such as the Internet of Things, haven't even become properly established yet.

And what do we do with all this information? We store it in the Cloud. What sounds like a divinely secure, incorporeal place consists, in reality, of only computers and hard-drives. Not only is there limited space on these hard-drives, but if we were to carry on this way, we would reach the limits far more quickly than we would imagine. But there is an even more serious issue: our digital data storage systems are anything but reliable.

When 3500-year-old limestone tablets were discovered in Iraq, archaeologists were able to decipher the characters on them. Books with high-quality binding can survive at least a few centuries, while a Blu-ray Disc will endure for one, at best. And the life cycle of an external hard drive is only six years. We humans may have learned to make back-up copies of our photos, emails and tax statements, but we usually do so on storage media with appallingly short life cycles.

The old-fashioned kind of photos from exposed film are also susceptible to decay, and can become scratched or creased. And in any case, the photochemical process does not stop straight away. Photos keep developing for years, which can lead to dramatic changes, depending on how they are stored. But in all of these cases, what remains can still be seen by the naked eye. With digital storage media, on the other hand, even minor damage can result in your data being wiped out completely. A hairline on the chip, moisture in the housing, or any kind of jolt could delete memories forever. To be on the safe side, you have to keep loading the data onto new hardware. That costs time and money – and mistakes can always happen.

Google Vice President Vinton Cerf warned three years ago that the memories and knowledge of a whole generation were at risk. 5.6 million English-language Wikipedia articles, 40 billion photos on Instagram, 30 million songs on Spotify – an increasingly large share of our culture exists in digital form. Fortunately, human beings are inventive and resourceful. More and more scientists are looking for new – and old – ways of storing the knowledge of mankind.

Researchers at the University of Southampton have developed a new technology they call "5D optical data storage". The material? Ultra-hard glass. The method? The deflection of light within glass. The data is not arranged horizontally on the surface, as on a Blu-ray. Instead, it is buried deep within the glass. The beam angle and the diffraction of the light add two extra dimensions. Using this method, a crystal the size of a coin can store around 3000 times as much data as a Blu-ray Disc, withstand temperatures of up to 1000 degrees Celsius, and survive intact for around 13.8 billion years – or around as long as the known universe has existed.

So glass is an outstanding data carrier. Surprisingly, however, organic storage media are also viable. DNA, for example, has enormous storage capacity: one gram can store 1 billion terabytes of data. Researchers at the University of Padua have developed a system that makes it possible to store and retrieve data using DNA. For storage, the researchers coded a simple message – the same as the →

HISTORY OF DATA

How long can the letters on stone artifacts be read? When does a book become unreadable? And isn't it terrifying that floppy discs from the 1990s are often already totally illegible? A small history of mankind's fight for immortality – regarding storage media.

5300 YEARS

Age of the oldest ever found limestone plates with characters. They were discovered in Iraq. Even today archaeologists can decipher what their ancestors wrote down on the stone.

300 YEARS

A well-made book can resist the dangers of time for some centuries if it is treated fairly.

100 YEARS

Estimated life span of a Blu-ray-Disc. The first Blu-ray was introduced in 2002.

140 YEARS

ago the first film material was exposed to light. It can still be viewed today.

13.8 BILLION YEARS

A crystal the size of a coin can store 3000 times the amount of data a Blu-ray Disc holds. It can withstand temperatures of 1000 Degrees Celsius. It is the newest project in the race for data storage.

2.5 EXABYTES

of data are produced worldwide every day. That are… 2 500 000 000 000 MB

5.7 MILLION

Number of English-language articles in Wikipedia.

40 BILLION PICTURES

have been shared on the Instagram platform since it started.

30 MILLION SONGS

are available on Spotify

one that heralded the Internet age: "Hello World." A navigation system – a kind of molecular GPS – is needed to ensure that these words can be found again in the "archive" later. Videos and operating systems have already been stored in artificial DNA. However, genome molecules are not only attractive due to the high data density they offer. They are also exceptionally stable. When stored in a cool, dry environment, they can be expected to survive for several hundred thousand years – after all, fully intact DNA has also been found on the bones of early humans who lived in present-day Spain around 430 000 years ago.

So that is one approach: better, more advanced, and more secure media. Other projects head in the opposite direction, using storage methods one would assume to be obsolete. Take magnetic tape, for example. The older ones among us probably remember the narrow, coated plastic tape used in audio and video cassettes. A slightly bigger version of that technology is now enjoying growing popularity in the world of industry. Unlike hard drives, they do not need to be kept in constant motion. As a result, they are more efficient and are not sensitive to jolts.

The Svalbard Global Seed Vault is located 180 meters below ground, in the permafrost of the Svalbard archipelago in the North Atlantic. The entrance to the facility juts out of the mountain like a monolith. Inside, behind secure airlocks, you will find never-ending rows of shelves on which almost 1 million seed samples from all four corners of the earth are stored at -18 degree Celsius – an archive of the diversity of plants on our planet. A second underground storage center, the Arctic World Archive, has since been built nearby, and is jointly operated by the Norwegian company Piql and the Norwegian government. Important data can be stored there, safe from hackers, tampering, natural disasters and decay over time.

The information stored there is said to be secure for up to 1000 years. The technology used to achieve that is surprisingly old: photographic film. Customers send their documents to the archive on a digital medium, and these are then transferred onto rolls of film – either encoded, or in a readable format so that they can be projected onto a wall and looked at. Film was invented around 140 years ago, and film rolls, which have been in use since the 1940s, have proven to be astoundingly durable. The colder the storage conditions, the longer the material will remain stable. That is why the former coal mine in Spitzbergen is used for storage. Only one question remains: if, a thousand years from now, aliens were to land on Earth and find the rolls in Spitzbergen, would they be able to just read the information, and from that reconstruct the way of life of a long-lost culture, just as today's archaeologists were able to read the 3500-year-old stone tablets in Iraq? It's not quite that easy, unfortunately, because you need more than just the naked eye to do so. That is why the Arctic World Archive includes uncoded instructions on every individual film roll explaining what technology is needed: A camera, a light source, and – depending on the code – a computer.

Perhaps Michael Mandiberg's approach is the safest, after all. Between 2009 and 2016, the American artist printed off a hard copy of the whole of the Wikipedia encyclopedia. The table of contents alone extends to 91 volumes. ▮▮▮