



PEARL-DNA project shows results at Storage and Computing with DNA 2026 conference

PEARL-DNA, a three-year research project funded under the EU's Horizon Europe programme that set out in October 2023 to revolutionise the way we handle digital data storage by developing DNA-based solutions, presented its final achievements during the Storage and Computing with DNA 2026 (SCDNA26) conference from 27 to 29 May 2026 in Rome, Italy. SCDNA26 is a leading international event that brings together researchers, industry leaders, policymakers and innovators on the future of sustainable, long-term DNA-based data storage. The event is supported by the DigNA portfolio, an initiative of the European Innovation Council (EIC) created to explore scalable and reliable high-throughput approaches for using DNA as a general data-storage medium.

DigNA

DNA Data Storage Technology

STORAGE AND
COMPUTING WITH **Dna**

PEARL-DNA, one of eight projects within the DigNA portfolio funded under the 2022 EIC Pathfinder challenge on DNA-based digital data storage, was led by BioSistemika (Slovenia) and united experts from several other research groups and SMEs, including the Institute for Information Processing at the **Leibniz University Hannover** (Germany), DNA conservation technology provider **Imagene SA** (France), the Division of Molecular Biotechnology and Genomics at the **Technical University of Applied Sciences Wildau** (Germany), Institut iPrint at **HES-SO** (Switzerland), the University of Applied Sciences and Arts Western Switzerland (Switzerland) and EU-project management, communication and dissemination expert **accelopment Schweiz AG** (Switzerland).

These PEARL-DNA partners now came together for the project's final flagship event, "SCDNA26: from idea to applications", that took place on Wednesday, 27 May 2026, during SCDNA26. Organised by Biosistemika and accelopment as part of the DigNA portfolio, this final PEARL-DNA session attracted experts and end-users to explore the real-world potential of DNA-based data storage. Tomaz Karcnik (Karčnik) from BioSistemika moderated the event, which discussed the challenges and opportunities of DNA data storage in various domains. Additionally, Tomaz Karcnik also showcased the latest achievements of the PEARL-DNA consortium and gave a talk on "Robust DNA Data Storage via Block-by-Block Synthesis: The PEARL-DNA Architecture" on Thursday, 28 May 2026, while PEARL-DNA partners presented a scientific poster on "PEARL-DNA – Revolutionising Sustainable DNA-Based Data Storage".

DNA-based data storage has reached a level of maturity where end-to-end systems can be demonstrated but wider commercial applicability still needs to be demonstrated.



Dr. Tomaž Karčnik, Project Coordinator
BioSistemika



The PEARL-DNA outcomes offer an environmentally sustainable solution to store massive data sets efficiently, thereby meeting the global storage demand of modern society as conventional digital storage systems face increasing sustainability challenges linked to energy consumption and infrastructure requirements.

DNA-based data storage is emerging as a promising alternative for smartphone data, advancements in artificial intelligence, healthcare, astronomy, climate science and countless other fields thanks to its high information density and potential for long-term stability. Around the world, universities, research centres, public institutions and innovative companies are actively advancing these fields by developing faster DNA writing and reading processes, reducing costs and improving reliability. These efforts are helping **transform DNA data storage from a promising concept into a future-ready solution for the growing global demand of sustainable data preservation.**

About the DigNA portfolio

The DigNA portfolio was born in the scope of the EIC Pathfinder Challenge (HORIZON-EIC-2022-PATHFINDERCHALLENGE-01-05) proposed to explore scalable and reliable high-throughput approaches for using DNA as a general data-storage medium. It brings together nine EIC Pathfinder projects: PEARL-DNA, DiDAX, HYPERION, MI-DNA DISC, DISCO, DURA-store, NEO, DNAMIC and TextaDNA. In order to structure and intensify collaborative efforts of the Pathfinder Challenge portfolio projects, four working groups targeted at different outcomes and interest groups were created. These working groups include Technical synergies, Outreach and Public Engagement, Metrics as a foundation for Standards and Roadmapping and Protection and Exploitation.

About PEARL-DNA

Complex datasets generated from scientific research, experiments, simulations and observations in various scientific disciplines need to be stored first before analysis. However, we are running out of data storage with existing data storage options lacking longevity, density and cost efficiency to meet global demands. Funded by the European Innovation Council, the PEARL-DNA project proposes to employ DNA for data storage. Its unparalleled information density and stability over millennia make it an ideal data storage candidate. The project aims to push technological barriers and develop a DNA-based platform for storing digital data with features such as high writing speed, error correction and energy efficiency.

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Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Innovation Council and SMEs Executive Agency (EISMEA). Neither the European Union nor the granting authority can be held responsible for them. Swiss participants in this project are supported by the Swiss State Secretariat for Education, Research and Innovation (SERI) under contract numbers 23.00332 and 23.00328.