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BioDynaMo modelling platform reaches maturity and seeks new applications

Post date: 14 Nov 2022

Technical coordination of the BioDynaMo project transferred from CERN to University of Cyprus on 14 November 2022. BioDynaMo (https://biodynamo.org/) is a software platform for creating, running, and visualising all kinds of 3D agent-based simulations. Agent-based simulation is central to a wide range of research fields, from biology to finance and social sciences.

The transfer of the technical coordination of the project to Assistant Professor Vasileios Vavourakis at the University of Cyprus marks a significant milestone in the lifecycle of the project, with the project team now actively seeking new applications for their powerful platform.

The project was launched back in 2015 as part of CERN openlab (https://openlab.cern/)'s work with Intel on code modernization, and received support from the CERN budget for knowledge transfer (https://kt.cern/) to medical applications. Its primary goal was to accelerate biological simulation.

Last year, BioDynaMo released v1.0 (https://www.surrey.ac.uk/news/surrey-develops-breakthrough-new-simulation-platform) of its platform, with important updates also being made in 2022. It has already been adopted by researchers from a range of fields. For example, the platform has been used to simulate the spread of COVID-19 (https://biodynamo.org/blog/epidemiology-final/) and to examine socio-economic inequities in the Netherlands. (https://kt.cern/news/news/knowledge-sharing/cern-technology-support-study-socio-economic-inequities-new)

In this new project phase, the consortium will strive to lower the barriers to entry for new users and contributors alike. The consortium will also work to enhance user experience and further improve the code, with the aim of offering even more modularity and flexibility to users from a diverse range of disciplines.

"We are proud to have incubated this successful project," says Alberto Di Meglio, head of CERN openlab. "With BioDynaMo having reached a sufficient level of technical maturity, the time is now right for the consortium to explore new applications in and partnerships with other research fields, ensuring maximum impact for society."

"I am very honoured by the consortium board's decision to entrust me with the role of technical coordinator of BioDynaMo," says Vavourakis. "I will preserve the great investment that has been made until now, guaranteeing the high-quality code base that is fundamental for reproducible and sustainable research".

BioDynaMo is one of the technologies selected for the CERN Technology Impact Fund (https://cernandsocietyfoundation.cern/projects/cern-technology-impact-fund), a new framework that supports CERN technologies with a strong potential to address global societal issues. Through this mechanism, the CERN Knowledge Transfer group identifies promising CERN technologies and – with the help of the CERN & Society Foundation – works to increase their maturity, so that they can be used in concrete applications in support of the United Nations' Sustainable Development Goals.

You can read a longer version of this article on the BioDynaMo website (https://biodynamo.org/), here. You can also follow the BioDynaMo project on Twitter (https://twitter.com/biodynamo_org) and LinkedIn (https://www.linkedin.com/company/biodynamo/) to learn about exciting new opportunities for collaboration.
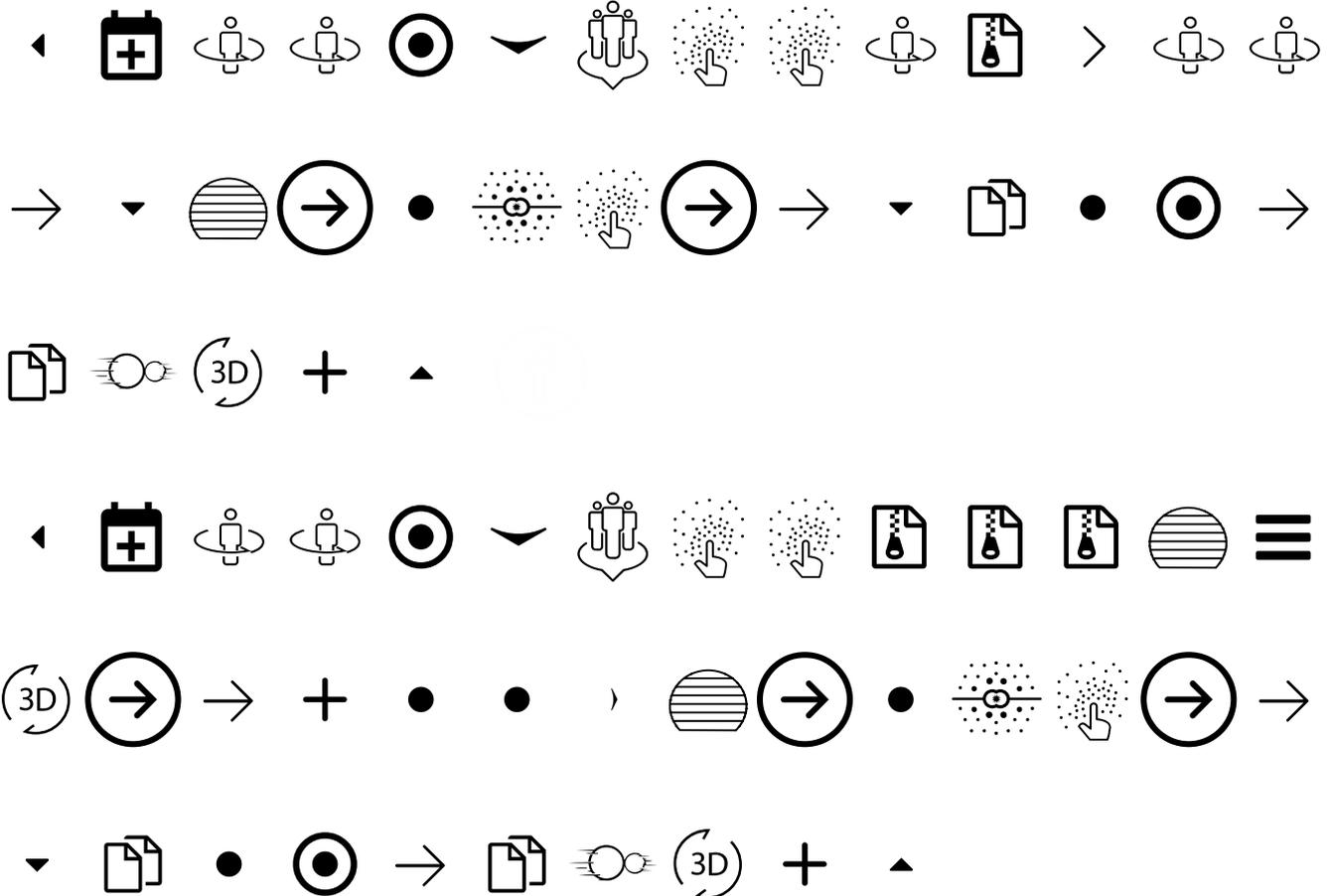
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