

RESEARCH NEWS

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Open Access and Innovation Portal SAIRA®

Share and browse technologies, research and best practices on COVID-19

New technologies and research to fight COVID-19 can only help if knowledge is rapidly shared and deployed. The novel Open Access Hub area on SAIRA®, developed by Fraunhofer, enables fast and easy sharing and publishing on the latest research findings on COVID-19. To secure the authentication, ownership and integrity of information the platform will be integrated with Blockchain technology.

As COVID-19 has been dominating the everyday life of millions of people worldwide and leaving its mark on people's health, societies, and economies, research teams around the globe are working hard on new technologies to help fight the pandemic. Sharing this knowledge and collaborating is crucial to address this global challenge and win the fight against the COVID-19. However, traditional peer-reviews usually takes several weeks and often publications are only made available in relevant journals that are not freely accessible. This is why the Fraunhofer Institute for Applied Information Technology (FIT), together with the Secretariat of the World Association of Industrial and Technological Research Organizations (WAITRO) launched the SAIRA® Open Access Hub to facilitate the publication and distribution of research, technologies, insights and best practices on COVID-19. Furthermore, this will reinforce Germany's position as a location for research and innovation.

Simple, fast and freely available

"The hub is based on the FAIR data principles, which stipulate that data should be findable, accessible, interoperable and reusable," explains Sabine Kolvenbach, project manager at Fraunhofer FIT. "It can be used by anyone to make new technologies and information available to the global community." To ensure its content meets high quality standards, a panel of peer reviewers from Fraunhofer and WAITRO partner organisations checks every publication made on the platform before they go online. If necessary, reviewers have the possibility to contact the authors. Unlike conventional publication processes, all contributions to the new platform are reviewed immediately, thereby enabling their publication within a matter of days.

Editorial Notes

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A Blockchain infrastructure ensures authenticity

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In addition to human-based forms of quality control, researchers are also working to integrate the platform with a Blockchain infrastructure that will secure the platform against manipulation and guarantee the authenticity and integrity of all content. “It’s the first time that blockchain is being used to secure an open access hub,” says Kolvenbach. The basic concept is simple. All the information uploaded to the platform is in digital form. On this basis, asymmetric cryptography is used to create a unique hash value – a digital fingerprint – that is then stored on a decentralized basis – i.e., distributed among a large number of computers. If, for example, reviewers edit the content, such changes are likewise documented on a decentralized basis. “If anyone changes even a comma or a period, the hash value also changes, and all these changes are logged,” Kolvenbach explains. “This ensures that any article submitted on the platform is and remains authentic and unaltered.” The Open Access Hub will be connected to the bloxberg Blockchain, which was initiated by the Max Planck Society.

Digital identities

Another unique feature of the hub is that it dispenses with classic login procedures. User rights are administered on the basis of decentralized identifiers (DIDs). DIDs can only be administered by users themselves. As in Blockchain, authorization is granted via cryptographically signed requests. This restores an additional element of data sovereignty to the user. This means that users can now have their digital certificates checked cryptographically and without having to divulge additional information about their identity to the requesting service. One example for this would be the verification of a minimum age of a user without the need for the user to disclose their exact age to the service.

The SAIRA® Open Access Hub was initiated by the World Association of Industrial and Technological Research Organizations (WAITRO). WAITRO has over 100 members in 40 countries, three-fourth are developing and emerging countries, and Fraunhofer has been hosting the WAITRO Secretariat since 2019. The Open Access Hub is now online. Researchers at Fraunhofer FIT will now be working to progressively extend the platform.

Open innovation

SAIRA® also has an Open Innovation section that aims at enabling the creation of international consortia and to facilitate international collaborations between research organizations, the industry and start-ups. In short, SAIRA® facilitates the sharing of ideas and a forging of partnerships for project implementation. Members of the WAITRO community, including various Fraunhofer Institutes, have been using the SAIRA® Open Innovation Hub since early 2019. It is currently being expanded to include new features such as the integration with the bloxberg Blockchain. The further development of the platform scheduled to be completed by the end of 2020.

More information:
<https://www.fit.fraunhofer.de/de/fb/cscw/projects/saira.html>
<https://saira.eco/open-access-covid-19/>
<https://saira.eco/>
www.waitro.org

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Picture 1: The SAIRA® Open Access Hub provides fast and easy access to information relating to COVID-19.

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