NEWSLETTER

December 2022

PROJECT IN A NUTSHELL

VerSiLiB aims to develop a proof-of-concept of a novel in-vitro diagnostic system that combines the analysis of DNA and protein biomarkers into one proteogenomic test.

Core idea is a novel enzyme-free *Affinity Mediated Transport (AMT) amplification* method (Patent No. FI20186055) that unifies the analysis of trace amounts of protein and DNA/RNA analytes. AMT is multipurpose being applicable for various analytes.

Project is the first step to enable fast and easy-to-use proteogenomic tests that will be widely applicable in the diagnosis of several significant diseases including viral outbreaks, cancers, and neuro-degenerative, immune and cardiovascular diseases. In the end of the project, the developed technology will be validated for real-life cancer management in a clinical setting.

Partners

- VTT Technical Research Centre of Finland
- Finnadvance Oy
- Procomcure GmbH
- Austrian Institute of Technology
- University of Catania
- National Cancer Institute Regina Elena
- Institute of Physics of the Czech Academy of Sciences

Duration: 04/2022-03/2026

EU funding: M€ 3

Project type: EIC Pathfinder Open

Coordinator: Dr Sanna Aikio, VTT, sanna.aikio(a)vtt.fi

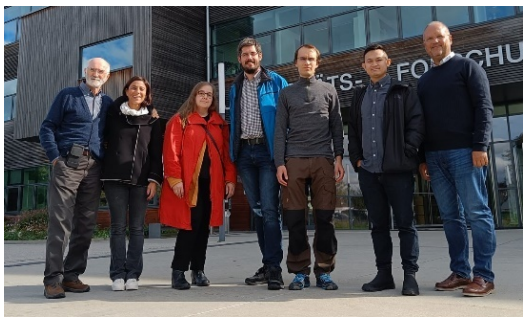
Highlights

VTT hosted the project kick-off meeting in Oulu Finland, in April 2022. Partners had in-depth discussions initiating the collaboration of the highly multi-disciplinary consortium combining expertise in molecular biology, chemistry, physical sciences, engineering, and medicine.

The project started the collaborative research with

- Definition of the *sensor system requirements*
- Development of the *sensor test chemistry*
- First design of the *microfluidic chip* for AMT development
- First *hardware prototype* design, assembly and testing
- Protocols for *reference tests* and standards of truths
- *FEM simulations* of the magnetic actuation as required by the novel AMT amplification method

Close collaboration of the consortium has ensured excellent progression of work providing a solid foundation for the R&D work.



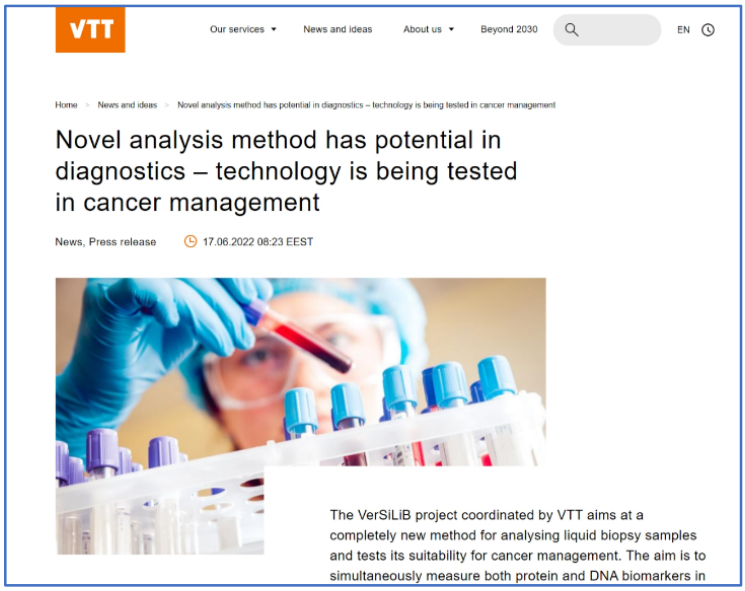
Workshops at M6 Consortium meeting in September 2022 hosted by AIT in Vienna Austria, focussed on finding solutions to the joint challenges with test chemistry and hardware design. The development of a novel AMT sensor requires thorough contemplation of various aspects, interrelations, and interdependencies between assay chemistry, sample handling, magnetic cycling and signal read-out. The meeting succeeded at building a shared understanding across the scientific disciplines.

European Innovation Council Funded by the European Union

Funded by the European Union's European Innovation Council under grant agreement No 101046217. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Innovation Council. Neither the European Union nor the granting authority can be held responsible for them.

Communication highlights

Consortium has been active in communication actions. Project **website** https://versilib.eu/ was launched in May providing information to various stakeholder groups. **Press releases** about the project launch were published by partners attracting **media interest** in science and technology newsletters, general audience media and even television news.



Event highlights

Project partners have participated in several events

- **Invited talks**
  - Dr Patrizio Giacomini from National Cancer Institute Regina Elena gave a talk with title 'Precision Oncology: lights on' in the 'Celebration of the light day' -event, in Rome Italy, May 19-20, 2022
- **Seminars and conferences**
  - PRINSE´22 industry seminar June 8–9, 2022 in Oulu, Finland
  - NANOFACTS conference June 27-July 1, 2022, in Novi Sad, Serbia. Lecture by Prof. Giuseppe Spoto, University of Catania
  - EUROoCS conference July 4-5 in Grenoble, France
  - XIV Convegno Nazionale INBB November 17-18 2022 in Rome, Italy. Prof. Giuseppe Spoto, University of Catania, title of the talk "EIC programme: Pathfinder projects"

Meet us

You can **hear the latest** about VerSiLiB's advancements in the following events:

- Optics and Photonics Days 2023, May 2023, Joensuu, Finland