MANKIND PROJECT

FOCUS on DEEP TECHNOLOGY

WHAT DO WE MEAN BY “DEEP TECHNOLOGY”?

Deep Technology is defined as solutions whose business model is fundamentally based on research and technological knowledge. This is in contrast to most business models, which are based on delivering products or services at a net profit.

Deep Technology covers a long development period – from the idea to the status of transfer (more than 10-15 years).

- The goal: making the **Mankind Project FUSION** successful sooner rather than later
- The way: connecting commercial ventures with institute-based research
- The impact: networking research, technologies, and experience for FUSION
- The perspective: transfer to other deep-tech topics (aerospace, precision medicine, neuroscience, quantum computer or smart materials)

WHERE WE BEGIN….

There are currently more than three dozen fusion start-ups operating worldwide, with more on the way.

These start-ups, many of which are privately funded, have been established in the last three to five years and are often spin-offs of a government research institute or a large company.

- ✓ The most recent examples in Germany are Marvel Fusion GmbH in Munich, and Gauss Fusion GmbH in Berlin.

To date, almost five billion U.S. dollars have been invested in these companies worldwide. The money comes from commercial business sources such as crowdfunding, corporate investments, venture capital, etc., as well as from government sources such as subsidies, research centers, universities, etc.

- ✓ Support specific to Deep Technology is still far too weak, especially in Germany, where there are barely any funding programs.
- ✓ The application in practice is the result of many years of fundamental research and development.

THE CHALLENGE

The technology to build a fusion reactor has been developed in research centers around the world for over 60 years. However, this refers to large-scale research facilities such as JET, ITER, Wendelstein, NIF, JT60, etc. The Karlsruhe Institute of Technology (KIT, formerly FZK, KfK) is one of these centers, where almost all technologies essential to fusion energy production have already been developed or are being developed.

To build a bridge to connect research institutes to commercial enterprises, a spin-off company is not always the best choice, because it has to be focused on profits. Because of that profit-orientation, it quickly moves away from the research institute, which is often part of a publicly owned parent organization, which results in a loss of know-how. Consequently, the search is on for a better model for cooperation in the field of Deep Technology. This could be a “spin-in” company, as opposed to the more common “spin-off”.

This leads to the idea: A non-profit organization built as a network, such as the planned Mankind Project (2023), would have considerable advantages for communicating in the field of Deep Technology and, in this case, specifically concerning fusion.

- ✓ Commercial companies would not see a non-profit as a competitor.
- ✓ There would be no reason for governments to object.
- ✓ A non-profit organization can raise funds without the same constraints as a commercial enterprise.
- ✓ Money from a non-profit has the potential to foster transfer priorities and projects in ways that competitive organizations could never do.
- ✓ Starting a non-profit network now – in 2023.

PROPOSAL FOR A CASE STUDY

For fusion start-ups, activities such as Trend Scouting, Business Development, and Strengthening Deep Technology could form the basis for technology transfers from the research institute, which could also be the tasks of the new network.

In addition, those knowledgeable in the field of Deep Technology should be in the best position to improve the dialog between science and the general public.

The goal is to increase acceptance of fusion as a critically important scientific field, which can benefit all of society.

THE INITIATORS

Dipl. Ing Aniceto Goraieb, MBA and Dr. Markus Lemmens are partners and founders in a company, which can be described as a "spin-in" on the Karlsruhe Institute of Technology (KIT) Campus.

For more than 30 years Goraieb Versuchstechnik has been involved in the development of fusion reactor fuel and the materials needed to make it. In 2009, the KBHF GmbH was founded as a privately organized infrastructure for the handling of these materials in strategic cooperation with KIT.

An association, Mankind Project e. V. (e. V. is an association), with the above-mentioned goals, has already existed since the year 2000, and it is planned to re-establish it with the support of the KIT during 2023. This is an endeavor, which is set against the background of the increasingly important field of Deep Technology for the German economy and hopefully beyond. The first topic of Mankind Project e. V. is fusion; others, such as in aerospace e.g., may follow.

Founder and shareholder of KBHF GmbH:

Dipl.-Ing. Aniceto Goraieb MBA
CEO
goraieb@kbhf.de

Dr. Markus Lemmens
Director Marketing and Business Development
lemmens@kbhf.de

KBHF GmbH
Fusion Energy R&D
North Campus of KIT - Karlsruhe Institute of Technology
Hermann-von-Helmholtzplatz 1
76344 Eggenstein-Leopoldshafen
Germany

www.fusion-for-future.de

A workshop "Fusion Idea Stream" is planned for Thursday, 13 July 2023, at the SOFE (Symposium on Fusion Engineering) Conference in Oxford, UK. Info on SOFE can be found here:
https://sofe2023.co.uk/