In the project proDruck a holistic employment model for people with disabilities will be developed. Focus is the development and 3D printing of individual technical assistance systems for people with disabilities, which enables help for self-help. With the development of new business models and web-based training concepts, the participation in sustainable technologies and their active co-creation will be possible. A 3D printing workshop is planned, which is adjusted to the specific needs of people with disabilities.

**PROJECT OVERVIEW**

**DURATION**
10/2018 – 09/2021

**PARTNER**
- Paderborn University (C.I.K.; FAM)
- von Bodelschwinghsche Stiftung Bethel
- LEONEX Internet GmbH
- trinckle 3D GmbH

**FUNDED BY**
Federal Ministry of Education and Research (BMBF)

**RESEARCHER**
- Lena Risse, M.Sc.
- Manuel Ott, M.Sc.
- Anne Kruse, M.Sc.

**COORDINATION**
Prof. Dr.-Ing. Rainer Koch (CIK)

**FURTHER SUPPORT**
- trinckle 3D GmbH
- LEONEX Internet GmbH
- von Bodelschwinghsche Stiftung Bethel
- Paderborn University (C.I.K.; FAM)

**AIM OF THE PROJECT**

**First results**
First product ideas, especially in the assembly aids area, were realized and tested within the Bethel workshops. The example shown in figure 2 is for the assembly of small screws and nuts. This enables the affected persons to assemble even small screws and nuts with less problems. This increases the proportion of people who are capable of this work and thus the scope of duties of the affected persons.

Additionally, first ideas for everyday aids were developed and the manufacturability and usability will be evaluated at the university. One of the most impressive examples so far is a food dispenser for an assistant dog of a highly disabled young child (see figure 3). This enables him to reward him for good action, thus, this will raise interaction between both to bond their relationship in daily life.

For the workshop, the location was selected under consideration of different requirements, which are important for a location that works for and with people with disabilities. The workshop aims to purchase two Ultimaker printers.

**OUTLOOK**
The implementation of the online platform will be elaborated further in order to bring a prototype into action at Bethel by the end of the year. Furthermore, the development of the trainings for the online platform and the 3D printing workshop will start.

The overall project aim of identifying required products for people with disabilities will be increased. Bethel has planned over 30 workshops, who all have different assembly aids, which will be checked if there are any possibilities to improve this aids through the manufacturing with 3D printing. As the project progresses, the acceptance of 3D printed components will increase among the people working in the Bethel workshops. The knowledge about the possibilities of 3D printing will also grow, so that in the course of the project the ideas for everyday aids will also come directly from those affected persons.

**PROJECT INFORMATION**
In addition to the above named project partners an associated network is intended, with organizations like the BBl (Bundesverband evangelische Behindertenhilfe) and the BAG (Bundesarbeitsgemeinschaft Werkstätten für behinderte Menschen e.V.), medical houses with interest in 3D printing and companies with interest in inclusion especially in the production area.

The research project is funded within the framework of the research program “Innovation for tomorrow’s production, services and work” of the Federal Ministry of Education and Research (BMBF) in the competition for “Personal Services”. It receives a funding of 1.4 Mio. € by the BMBF and is supported by the PTKA (Projekträger Karlsruhe).

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**FIGURE 1 Aim of the project**

**FIGURE 2 Screws and nuts assembly aid (left: 6mm, right: 4mm)**

**FIGURE 3 Food dispenser**