

### Executive Summary

*Digitalization in labs is currently still the exception and only the biggest and newest high-class labs are making use of the advantages digitalization brings, mainly because millions of Euros in investment are needed.*

*The three mainstream technologies **collaborating robots** (cobots), **3D-cams** and **artificial intelligence** are already standard in other industries and are improving continuously and rapidly. bAhead is transferring these proven and existing technologies into labs, massively simplifying tasks and scaling efficiency.*

***Cobots**, can use lab equipment like humans: using buttons, opening containers and reading and interpreting displays. It's quickly set up, taught and works safely alongside employees (TÜV approval). 3D-Cams combined with AI can recognize devices and consumables as well as their exact position and position changes. We can build a digital twin and simulate also online the application. While the Cam can also read displays and barcodes we need no interface for a lab digitization. We can start now. Years ahead of other solutions.*

*Some years in the future drone logistics will become a standard. We are prepared for this with a proved option.*

*Our **inhouse developed solutions** enable these 3 mainstream technologies to be used in labs and automate not only single tasks, but the complete lab processes. Our **tower-hotel** functions as a storage unit and interface between multiple cobots, accessing our **2-Door containers**, and optional a landing platform on top, to transport containers in between workplaces by drone. Using our **rail system**, the cobot can be used at multiple workplaces with different devices in the lab. A multi-automation.*

*These technologies can automate the product range of company without redevelopment! With no need of the interface and with the possibility to combine some products like pipets, centrifuges, mixers, cyclers readers etc. Costly upgrades to new API connected equipment. Our solutions are **modular and flexible**, ensuring adaption to changes in the lab set up and further automation can be added by additional modules at any time.*

*All technologies are capable of **24/7 usage**, drastically increasing the labs test capacity and output. The average lab productivity can be improved by factor 6-10, given our fair prices the average investment is breaking even in less than a year.*

*Our inhouse technologies have **patents pending and we have strong partnerships** with the industry best providers .*



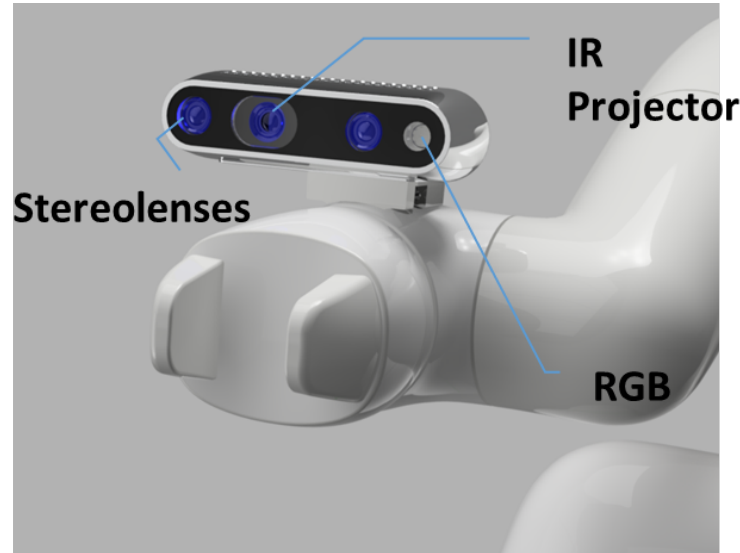
**We massively improved productivity, with high flexibility and at low cost**

**Buddy**

Buddy is a collaborative Robot (Cobot) designed for close interaction with humans:

- Automation of key lab tasks at high precision level (pipettes, interaction with centrifuge, etc.)
- Quick set up and easily programmed
- Open API for programming and data transfer
- TÜV approved safety in human interaction

**Enables 24/7 automation of all key lab tasks, while lab employees can focus on non manual tasks**

**3D-cam & artificial intelligence****3D-cam**

Significantly smaller and lighter  
Stereocamera (Wide field & global shutter)  
Infrared Projector & Additional colour -& depth sensor  
Open Source libraries for software development  
Cost reduction by 90%

**AI possibilities**

- Recognize lab devices, consumables and their exact position
- Enable exact positioning on moving parts (Shaker, Mixer, Centrifuge)
- Reads displays, codes and interprets the information via AI
- Enables optical security check of all actions

**Enables tracking of all lab tasks and additional precision. Existing lab equipment – without connectivity – can be integrated in automation**

**Cheap mainstream technologies from other industries are ready for integration in life science labs**

### Tower-Hotel



patent pending

Functions as storage unit of multiple containers.  
Landingplatform for drone, offers room for pipette  
and can be accessed by cobots from each side

Links landing platform, with storage and  
access for cobots on a small footprint

### 2-Door Container



patent pending

Universal, secure storage for MTP's, vessels, etc.:

- Transportable by drone
- Storable in Tower-Hotel
- Can be operated by cobot
- Stackable, magnetic doors on both sides

Enables safe transportation, storage and  
linking of multiple working station

### Rail-System



patent pending

Cobot can quickly and precisely move between  
different positions within the lab

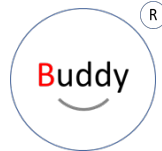
Cobot can be used for multiple tasks and  
applications, reducing amount of cobots  
needed and set up costs for lab

Inhouse developed solution are patent pending and provide key logistic elements to automation process

## Patents & Intellectual Property

Detailed property right and patent strategy enables bAhead to protect all key processes and solutions:

- 1 Process & 6 hardware patents pending
- Additional patents (AI & cloud database) in preparation
- „Buddy“ protected as brand



## Price

- bAhead offers complete sets incl. cobot, starting below 40k€, significantly below competition
- Average break even of investment is achieved in under 1 year
- No update of existing lab equipment needed
- Modular set up allows customers to start with single parts and add further bAhead solutions

## Partnerships

Exclusive long term partnership contract with **Denso** – market leader for tabletop cobots – ensuring best prices, support and garanty.

**Additional partnerships in discussion**

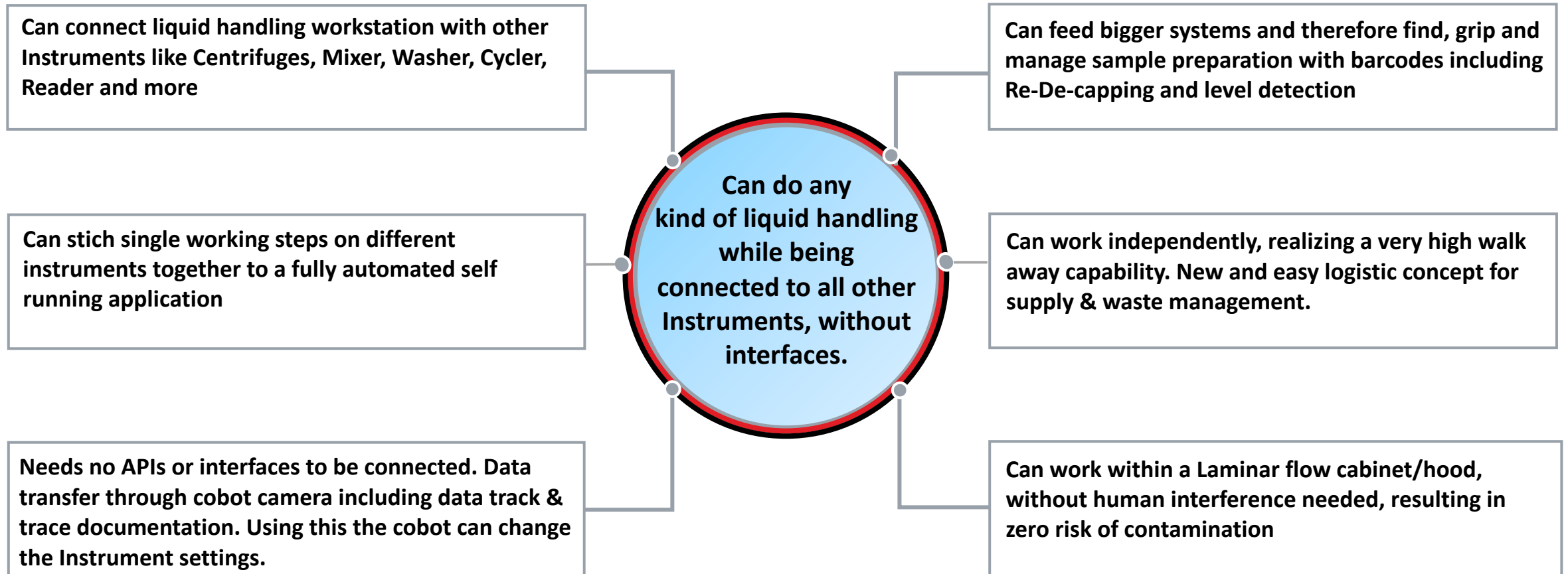
## Productivity

- Labs can operate 24/7
- Multiple process steps done simultaneously
- Output of average lab to improve by factor 6-10
- Automation leads to less individual mistakes
- Employees can focus on key tasks, e.g. develop lab set up and analysis of results



**bAheads solution is patent proof and the cheapest way to immediately improve productivity in an existing lab set up**

## **b** Our system is a fast and precise liquid handling station – and much more than that



**Flexible usage at different workplaces (click system). 24/7 usable and high walk away capability at an affordable price .**

## b Possible benefit from multiple synergies for partner/investor

1

Your company can step into the **massively growing segment** of small and medium sized lab automation with a solution that perfectly adds the existing liquid handling know how and core competencies

2

Your company will increase customer retention and lifetime value, by offering the only solution which don't need interfaces. Gilson will become an **innovation leader** for liquid handling and much more

3

Starting at the first day all existing products of your company get a higher value because the customer can automate them. That creates a **very early and high payback** of a possible investment. **(self-paying investment)**

4

Synergies and scalability will significantly **increase margins** in marketing, sales distribution, service, procurement and R&D

5

Your company will become the **most important partner** for stand alone lab equipment providers (OEM)

6

With the most sustainable Liquid handling solution and technology leadership your company can strengthen the brand and become **the top automated Liquid Handling Company** .

**Only this solution meets all the company and the customer needs.  
You can digitize the lab right now! **Be Ahead** of all competitors**



## Mission & Contact



***We are the first mover at modular and flexible lab-automation,  
massively increasing efficiency, at very low cost,  
using your existing lab equipment range.***

*Leading in sustainable automation*



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fully financed until Q2 2022  
debt free



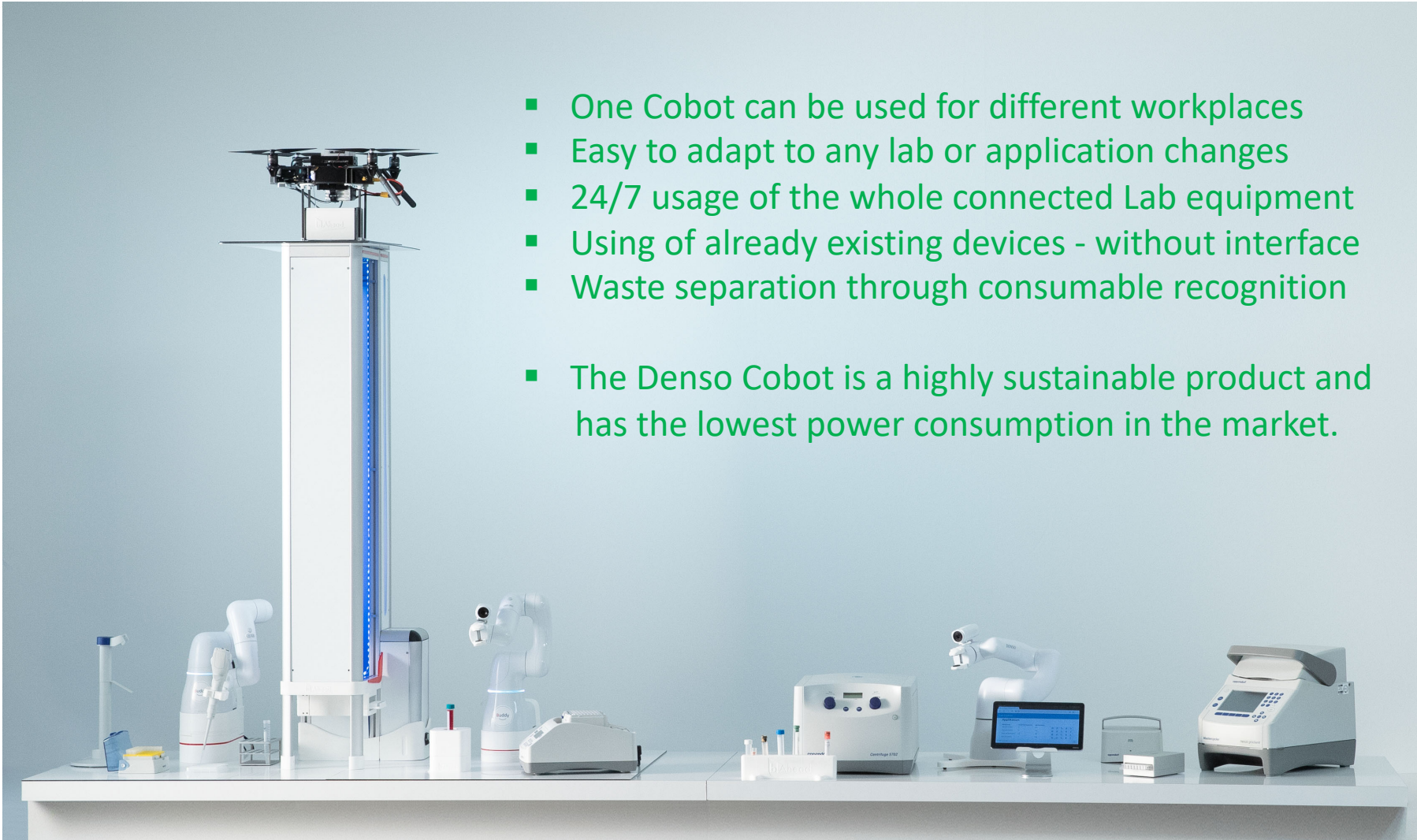
Videos &  
Updates on  
<https://bahead.de/>



Nearly every week we have new confidential possibilities with patent potential. Get in contact to learn more.



- One Cobot can be used for different workplaces
  - Easy to adapt to any lab or application changes
  - 24/7 usage of the whole connected Lab equipment
  - Using of already existing devices - without interface
  - Waste separation through consumable recognition
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- The Denso Cobot is a highly sustainable product and has the lowest power consumption in the market.



▶ **Leading in sustainability & technology means pushing the brand towards No.1**