



AquaVR – RAS training in Virtual Reality

Hendrik Monsees – IGB Berlin

FRIDAY, MARCH 26TH | 10-12 (CET)



DIGITALISATION IN AQUACULTURE
WEBINAR

Background

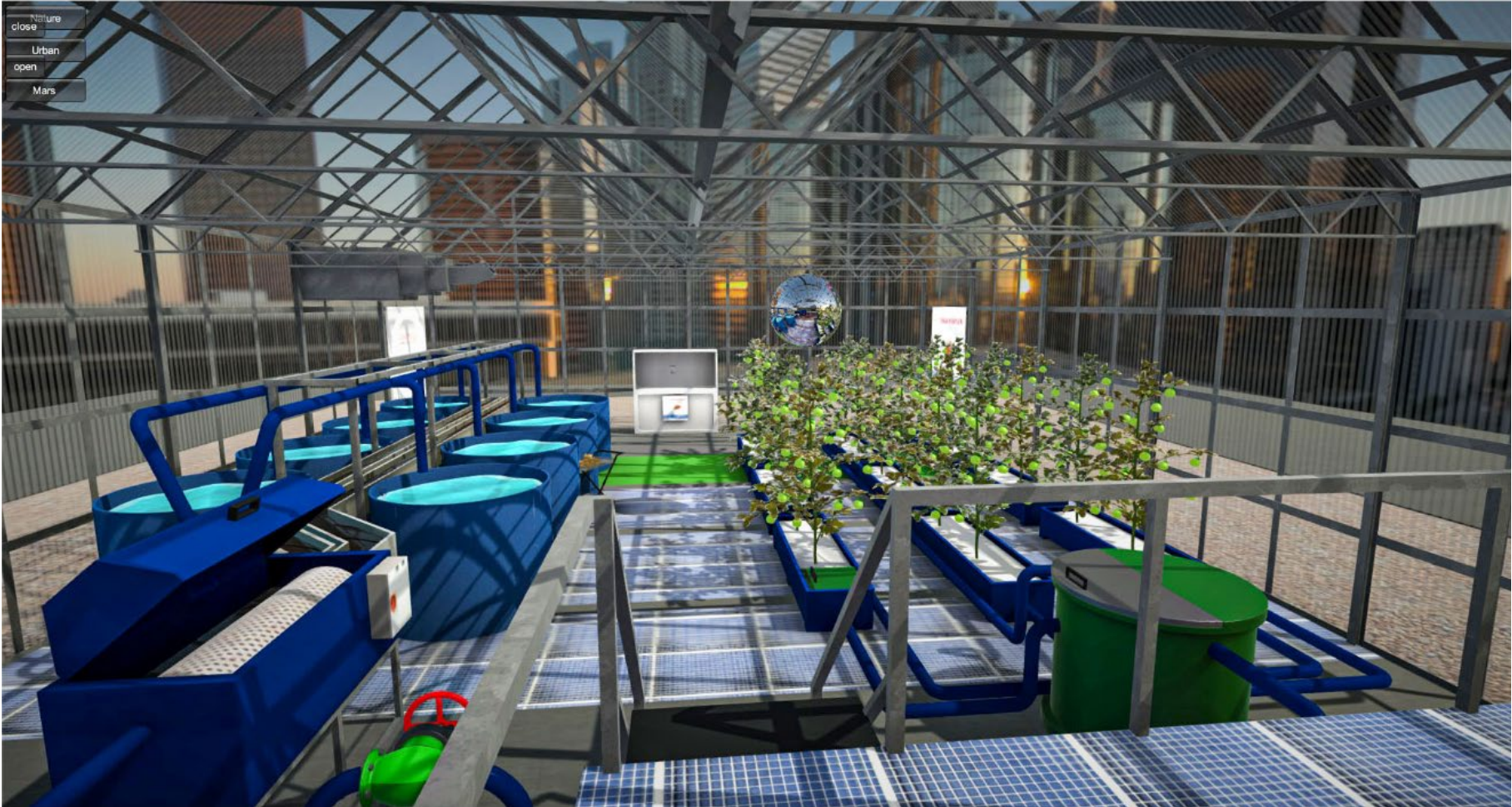
- 2019 Ralf-Dahrendorf-Prize
 - ☐ VR-Aquaponics
 - Follow up application:
 - ☐ Funded BMBF-project „*AquaVR*“
(„*New products for the bioeconomy*“)
 - *Exploratory phase*: October 20 – September 21
- **Current status**
- Application for *feasibility phase in Summer 2021*
 - Duration: 2 years (until end 2023)
 - 4 partners

What is Virtual Reality?



Virtual reality (VR) is a simulated experience that can be similar to or completely different from the real world.

VR-Aquaponics



Virtual Reality in Reality



Use of VR in RAS training



- *RAS are technically complex*
- *Construction of such a plant is associated with high investment costs*
- *Training in running RAS is often difficult*
→ *especially with regard to extreme scenarios*
- *Well-trained staff is sometimes difficult to find*

State of the art



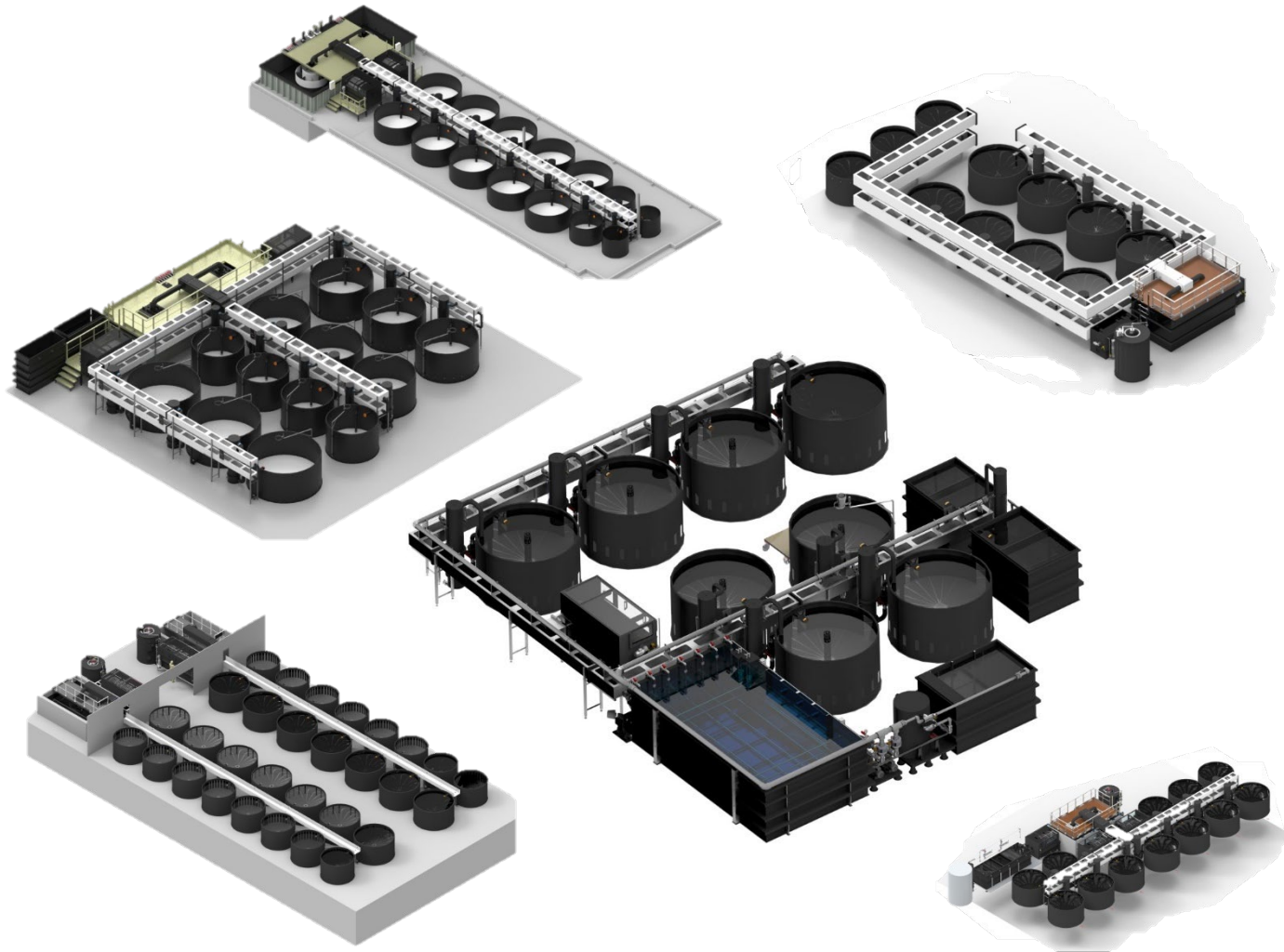
- Education of staff is often country specific
 - In Germany e.g. three governmental training schools + additional practise partners
 - Universities (often lacks realistic practise)
 - Companies (in house trainings)
 - External courses (often classroom based or location based)
- normally no extreme scenarios

What is the aim of AquaVR?



- *Improvement of RAS-training by practising different scenarios as close to practice as possible*
- *Gathering experience without jeopardising actual production in real operations*
- *Linking theorie and practise (in VR)*
- *Teach to think in circles*

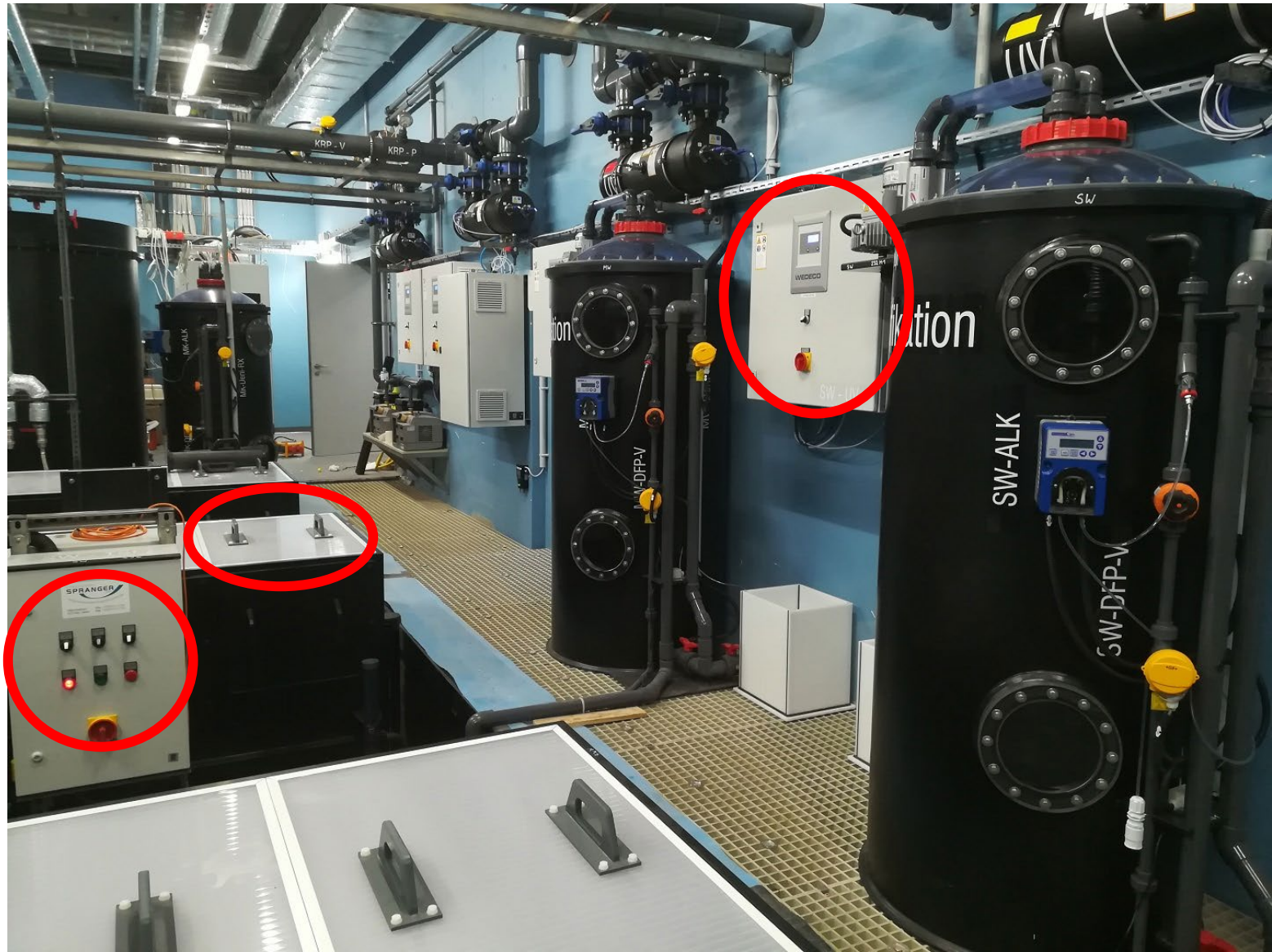
Choosing RAS-design for VR



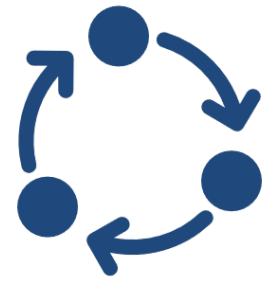
Building RAS in VR



Development of scenarios



Thinking in circles



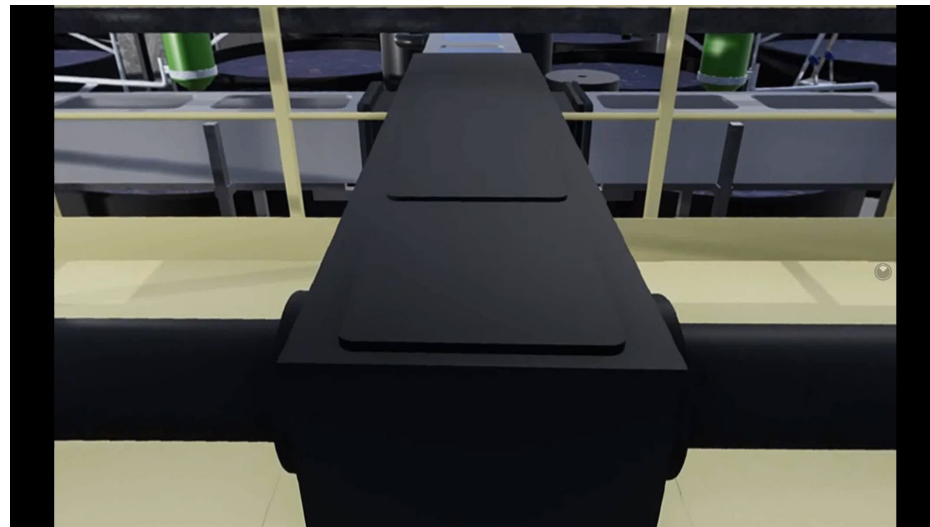
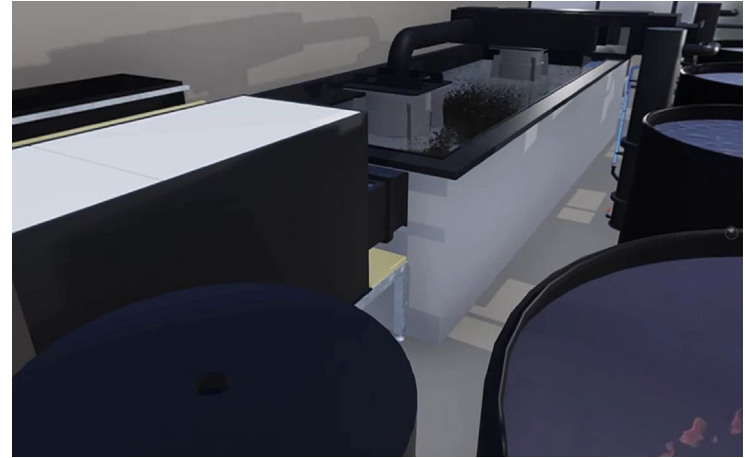


Tailored lessons

Moving bed filter



Drum filter



UV-treatment

Advantages



- location-independent, virtual RAS to interactively present teaching content and simulate and train special scenarios and stress situations
- No need to maintain cost-intensive RAS for training purposes
- Living organisms are not put at risk
- Scenarios are developed with the involvement of practical partners, scientists and educators
- A wide range of problems/situations can be simulated

AquaVR-Team



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Ideas for further collaboration



- Online-Workshop (essential scenarios & ideas)
- Individualised implementation of systems and courses (planning purposes, trade fair presentations, customer presentations)
- Tool for manufacturers (online-troubleshooting)
- AR for RAS units (e.g. drumfilter)
- Customer interactions over long distances (online)



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VR Aquaponics – Game & info material
www.igb-berlin.de/downloads

Why do fish sometimes taste earthy?
www.youtube.com/watch?v=Rk4fYZgpEys

