

FIREFIGHTER

The Training Experience

Summary

Firefighter VR is a virtual reality solution that helps firefighters train anytime and anywhere. Being a standalone digital training solution, the cost of instructors, dedicated learning spaces and traveling to training facilities is completely eliminated. Using simulated equipment, firefighters can train independently without any risk of damage or injury. By tracking individual performance, successful learning is measured while areas for improvement are identified. Our turnkey solution includes a one-time sale of VR hardware with an expandable library of modular training software. Based on their requirements, customers can purchase training modules as needed or request the development of custom training scenarios. With a focus on independent and immersive training, Firefighter VR can enhance learning and help save lives.

The Problem

Almost 80 million fires in industrialised countries have claimed the lives of an estimated 1 million people over the past 20 years.

About 38.2% of all fires break out in buildings, 13.1% - in transport, 2.1% - in forests, 20.7% are grassland / shrub / undergrowth fires. Finally, fires from garbage / waste / landfills follow - around 10.7% and 15.2% are other fires.

Source: CTIG 2017

Firefighter training is time, space and resource intensive.



Many emergency scenarios cannot be taught. Those that are possible are highly expensive because of costs of skilled instructors, dedicated training facilities and travelling to access them.

Due to the efficacy of robust modern-day fire safety systems, industrial firefighters have limited experience with real-life scenarios. It is also difficult to train on systems when they are in use.

Very few trainings exist for fire chiefs and are often based on generic scenarios. This limits their ability to plan, manage and mitigate risks at the facilities they are responsible for.

Our Solution: Train Anytime and Anywhere



Train

- Train in immersive & intuitive virtual reality simulations.
- Learn how to handle emergencies that cannot be recreated in real life.
- Cut the overheads of specialised trainers, facilities and travel.



Maintain

- Train on equipment that cannot be accessed frequently.
- Operate systems without any risk of damage, loss or injury.
- Manage your learning goals through analytics and performance feedback.



Customise

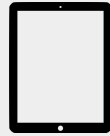
- Train at different levels for individual, team or facility-wide scenarios.
- Buy or commission software modules from our expanding training ecosystem.
- Integrate a Northdocks digital twin of your facility for planning & management.

Digital Twins

The support of our sister company, Northdocks GmbH, lets us work with a more flexible approach. While they focus on custom solutions such as digital replicas of facilities, we can develop modular VR trainings with an industry-wide focus. Where required, we can collaborate to provide more tailored solutions.



The potential to grow into more than VR training for firefighters.



Mobile device based training solutions.



User generated and shareable scenarios.



VR training for other security & industrial sectors



City planning for state institutions

Jun 2019
Sprinkler
Training
Closed-Beta

Jul 2019
Fire Truck Pump
Training
First Prototype

Sep 2019
Fire Hose
Training
Closed-Beta

Nov 2019
Fire Truck Pump
Training
Closed-Beta

Jan 2020
Firefighter VR
Product Testing
& Finalisation

Feb 2020
Firefighter VR
First Product
Launch

First Product - Scope & Timeline



Sprinkler System
Prototype
<https://youtu.be/EQeMtfIAEPI>



Fire Truck Pump
Prototype



Fire Hose
Prototype
<https://youtu.be/K5r1PpTxLP0>

€ 9,750

- Oculus Rift with cameras & sensors, VR-ready notebook.
- 3 training modules: Sprinkler, fire hose & fire truck pump.
- Free support and updates for 1 year.
- Access to affordable future training modules.

Sprinkler Training

Learn by watching

- Sprinkler systems can only be taught during routine maintenance, which occurs once a month.
- Trainees accompany experienced firefighters during this maintenance to discuss features and functionality.
- Machinery cannot be manipulated to teach as mistakes cost a large amount of recovery time for these systems.
- Due to these limitations, not all members of the team are trained on sprinkler systems.
- Typical training time = 1 year.

"Sprinkler system flooding Duisburg theater with 80,000 liters of water"

Sprinkler System VR Training

Learn by doing



Functional Mode

- Manipulate the system in any way and watch it react as in reality.
- Operate without any risk of damage or loss.

Virtual Guide Mode

- Train step-by-step through guided operational & maintenance routines.
- Learn at your own pace at any time without supervisors or trainers.

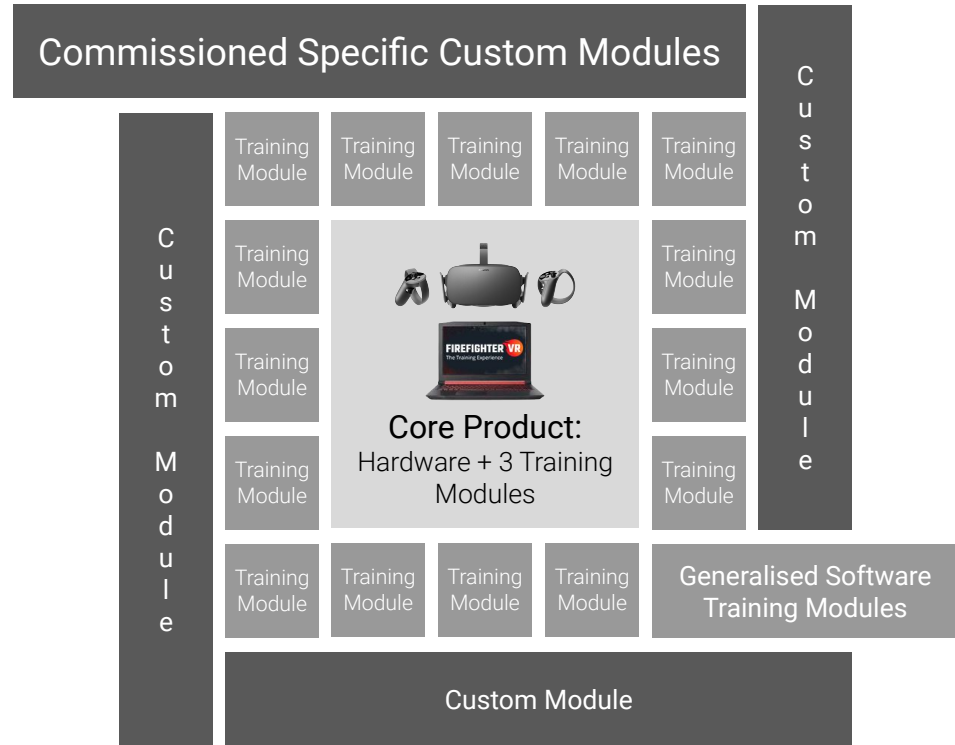
Training Mode

- Practice routines in engaging and gamified scenarios.
- Review performance, compete with colleagues and improve together.

Scaling Up

- A core product including VR hardware and 3 software training modules.
- A growing library of software training modules for firefighting equipment and scenarios.
- Custom scenario development:
 - Digital twin integration.
 - Group financed custom scenario.
 - Equipment supplier custom software & hardware trainer.

The Training Ecosystem



Roadmap

2019 - 2020

- Prototype for Henkel:
Fire truck pump
- Firefighter VR 1st product:
 - Fire hose
 - Fire truck pump
 - Sprinkler system
- Prototype for Henkel:
Telescopic mast
- Prototype for Airports:
Airfield simulation

2020 - 2021

- Industry focused prototypes:
 - Hazardous fluid pump
 - Emergency pneumatics
 - Hydraulic shears & spreader
- State-focused prototypes:
 - Crowd safety simulation
 - Mass casualty incident
 - Disaster simulation
 - Anti-terror security

2021 - 2022

- Development of market ready products from previous prototypes
- Fire chief training prototype
- Facility-wide training prototype

Growth in equipment sales hints at growth potential for training

"The **Fire Sprinkler Market** is expected to exceed more than **US\$ 13 Billion** by 2024 at a CAGR of **10.2%** in the given forecast period"

[Market Watch](#)



"These analysts forecast the global **fire hose market** to grow at a CAGR of **6.03%** during the period 2016-2020"

[PR Newswire](#)



"The global **fire truck market** is expected to expand at a CAGR of **3.6%** for the period between 2018 and 2027"

[Future Market Insights](#)

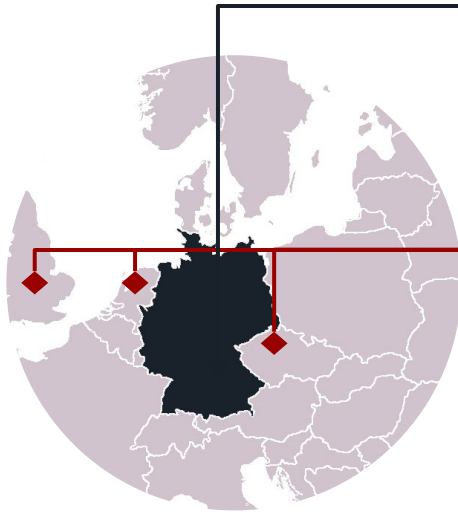


Market Potential

Potential local customers:
845+ registered Werkfeuerwehr
in Germany

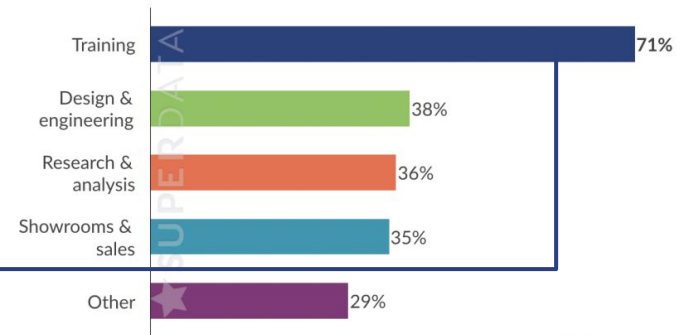
International inquiries from:

- Netherlands
- Czechia
- UK



VR Use By Enterprise

Share of demand-side firms using VR across key segments, Q4 2018

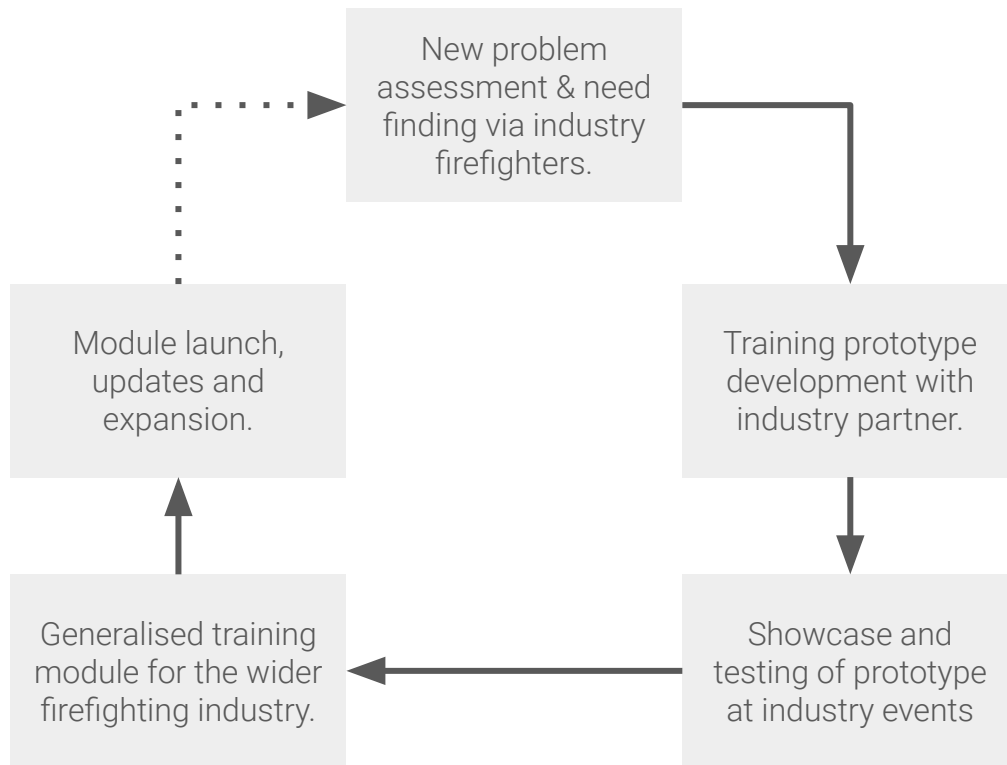


"71% of companies that use VR are using it for training"
[Superdata Research](#)

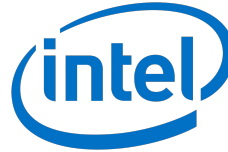
Our Location

North Rhine-Westphalia is the most important chemical location in Germany: around one third of all sales in the chemical industry are generated by NRW companies. The business location is characterised by first-class research as well as a special mix of a broad middle-class and numerous internationally successful large companies. As a central supplier of materials, new developments in the chemical industry trigger a high proportion of innovations in many other value chains. It is therefore regarded as an important driver of innovation for the entire industry.

Our Process



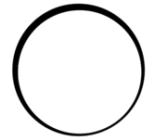
Our Customers



SIHI® Pumps



Christian-Albrechts-Universität zu Kiel



sonnen



Medtronic



Helmholtz Centre for Ocean Research Kiel

SONY



Current Inquiries



Industry Events

2018

- [WFV Symposium](#) - Bad Dürkheim

2019

- [WFV Symposium](#) - Berlin
- [Feuertrutz](#) - Nürnberg
- [GPEC](#) - Berlin
- [RETTmobil](#) - Fulda
- [VFDB Annual Forum](#) - Ulm
- [A+A](#) - Düsseldorf

2020

- [Interschutz](#) - Hannover

Market Presence



The Founding Team



Patrick Reschke
Biz Dev & Marketing

- 23 years of experience in the digital economy
- Established the first E-Sports tournaments in Europe
- Educational scientific visualizations
- F1 training simulation for BMW in 2006
- Digitalisation for the industrial sector and digital twins



Joachim Perschbacher
Production

- Background in Computer Science
- 15 years experience in scientific data fusion and data visualisation
- Planetary surface simulations for the ESA
- Strong track record in astronomy and seafloor visualisation



Malte Dittmann
3D Art & Design

- Proficient in 3D-modelling, motion graphics and storyboarding
- Expert in agile art development
- Skilled in creating immersive environments motivating users to learn easily within a digital framework



Imaad Manzar
Design & Production

- Background in Mechanical Engineering
- 6 years experience in managing design and project teams
- Leads the CGL Market Intelligence workgroup
- Collaborated on a free mobile app to teach Syrian refugee children how to read Arabic



Tobias Stüttem
Programming & Biz Dev

- Experienced in AR/VR, e-learning and simulation
- Created an AR telescope for the Bundesgartenschau 2011 to playfully discovery history
- Designed learning games for children between the ages of 3 and 10
- Thesis on simulation of plant ecosystems

Advisory Board



Raimund Bücher

- Chief of the Fire Brigade at Henkel
- Chairman WFV Germany



Christoph Wachholz

- Head of Fire Protection at Currenta
- Chairman WFV NRW

Key Partners



We foster the economy



Regional Economic Programme: Funded by the European Union - European Regional Development Fund (ERDF), the Federal Government and Land Schleswig-Holstein



Björn Steiger Stiftung

WIR HELFEN LEBEN RETTEN

VERBAND DER
CHEMISCHEN INDUSTRIE e.V.
WIR GESTALTEN ZUKUNFT.



VCI



FIREFIGHTER VR

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