

# VR in the Powered Access Industry: The Future is Here!

**Jim Colvin**

**President and CEO, Serious Labs Inc.**

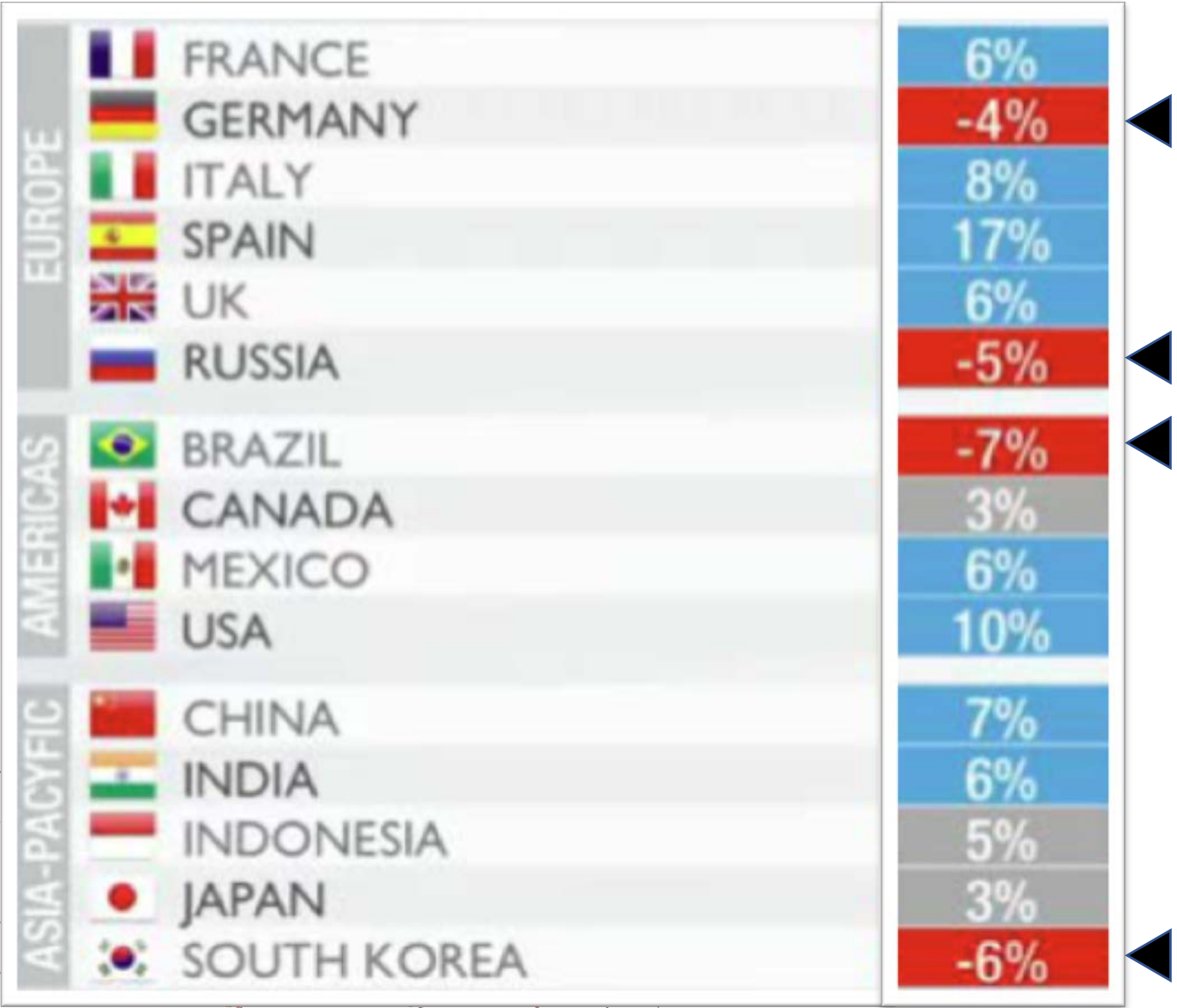
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Reconstruct Reality

2019  
**IPAF**  
summit

**iapa**  
2019  
International  
Awards for  
Powered  
Access

# Global Workforce Crisis

2020



**Labor**  
Shortage/Surplus

2030



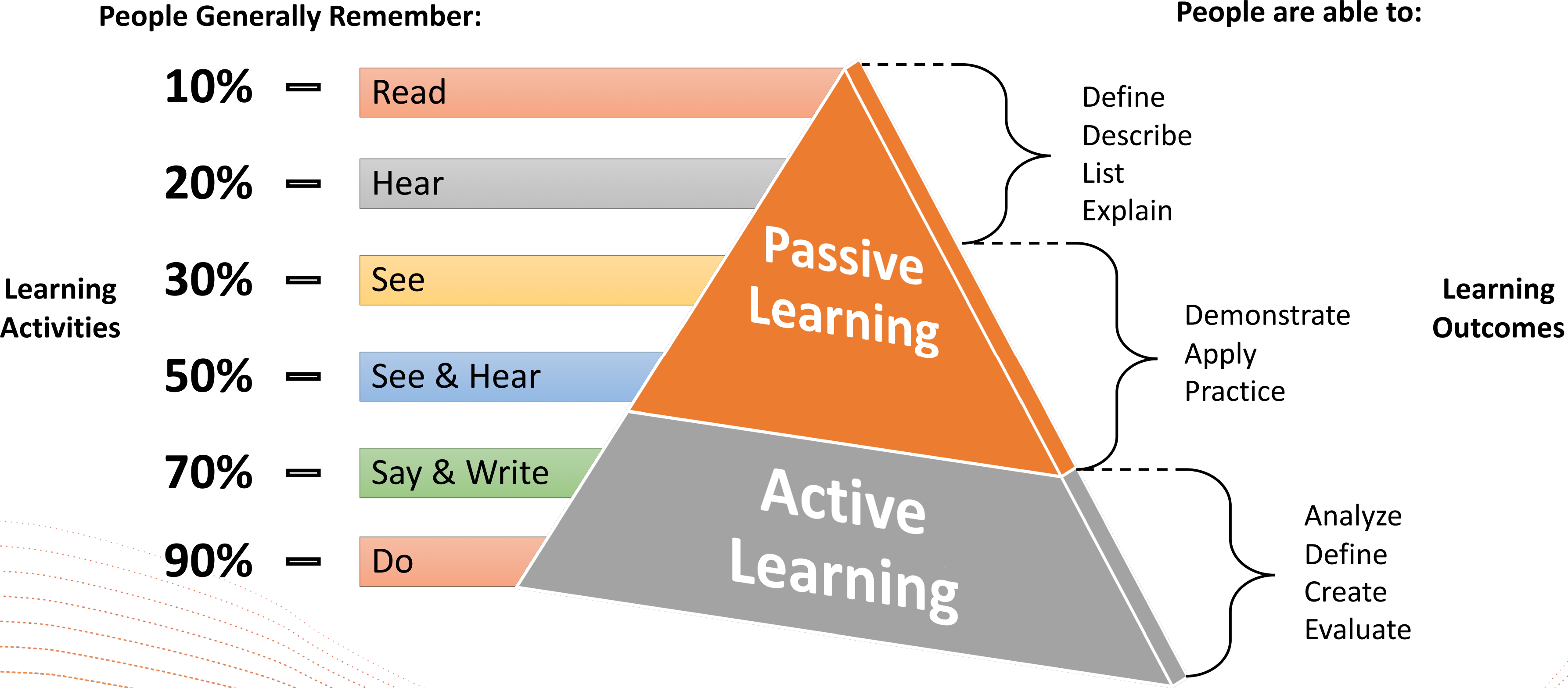




**“We currently have 50,000 unfilled positions in the U.S. for union workers who need to be trained at height. Efficient and effective training for a new generation of members is critical. VR and other new technologies as they are applied to safety and competency training are central to overcoming this.”**

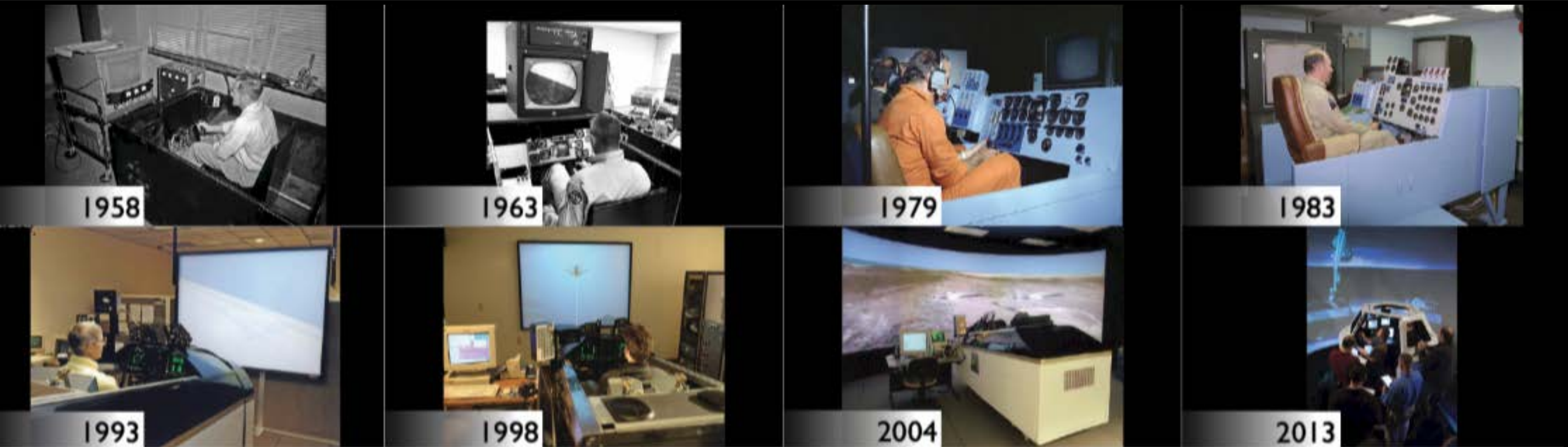
John Burcaw — Strategic Initiatives Coordinator  
International Union of Painters and Allied Trades  
Finishing Trades Institute

# Active and Passive Learning





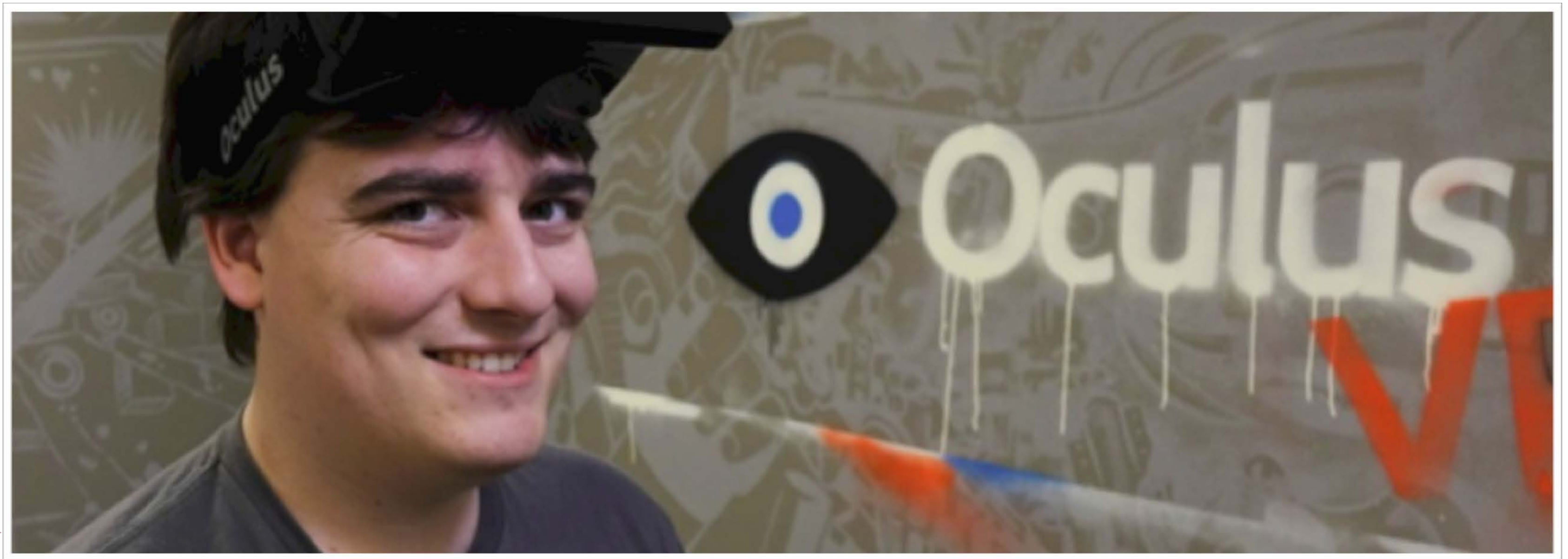
# Simulator Training Throughout History



Very Expensive, Very Big Installs, Not Portable



# Changing the Training Game: Consumer-Ready HMDs



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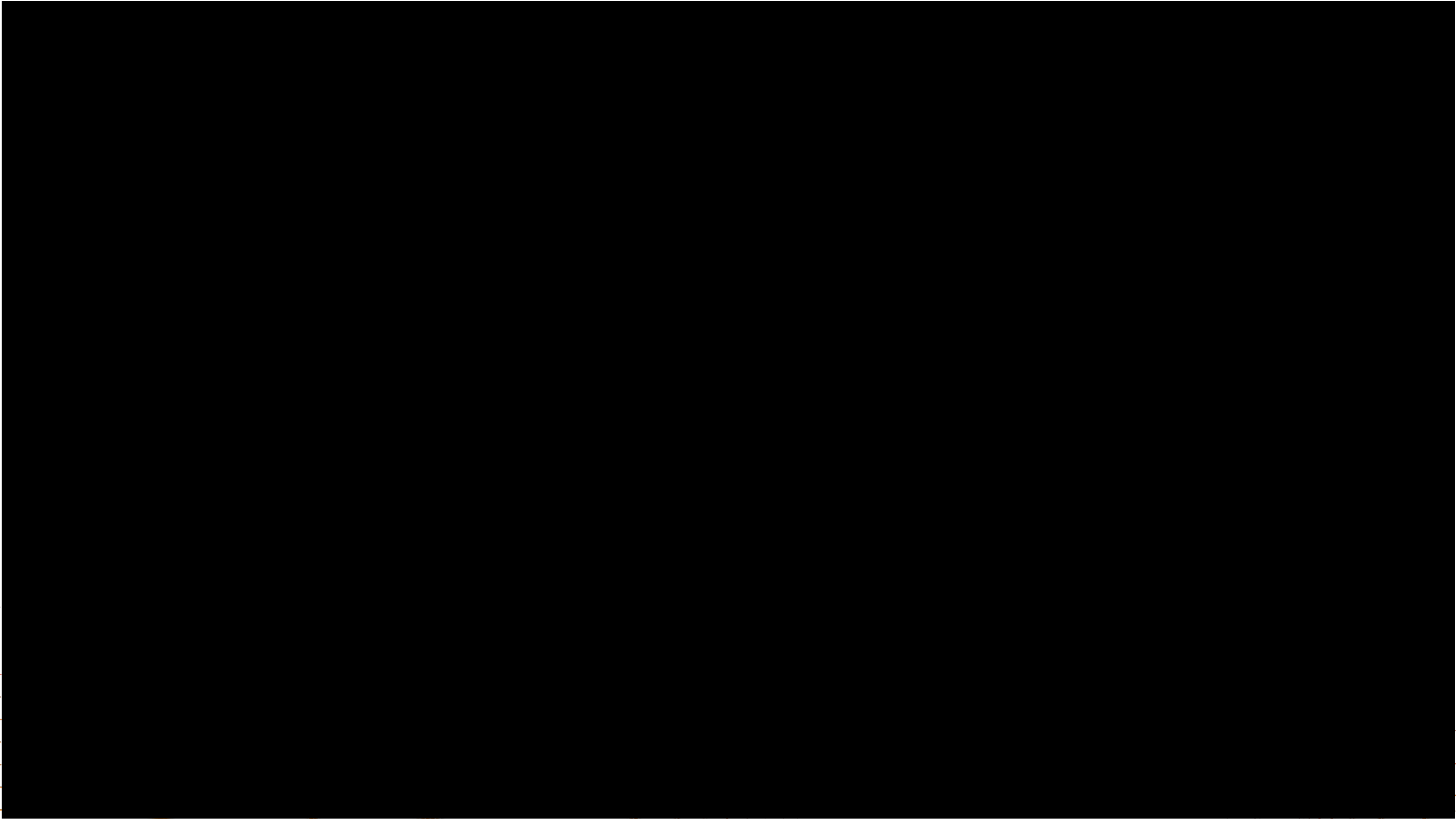
# MEWP Simulator Experiences



**JLG Simulator**  
**[CONEXPO 2017]**



**Atlas Simulations**  
**[Bauma China]**





# 10 Years of Innovation - A Long History of Iteration

2008



2014 - 2016



2017 - 2018





# 2017 Awards for SLI MEWP VR (boom lift)



International Awards for Powered Access  
2017 IAPA Innovative Technology Prize



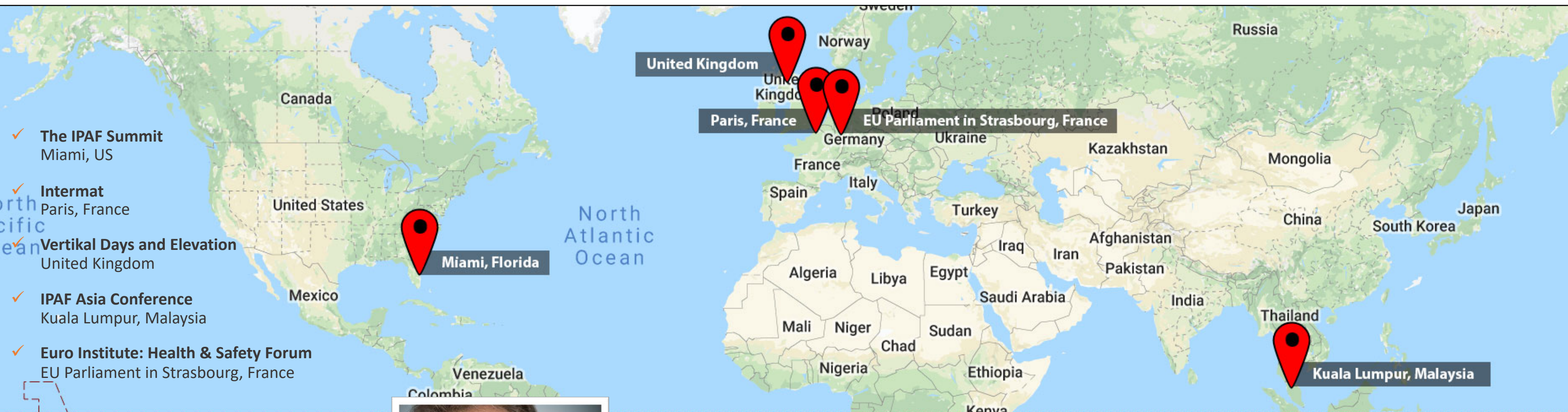


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# 2018 Highlights

# IPAF VR Consultation

IPAF took Serious Labs' sophisticated MEWP simulator to events.



***“The feedback  
IPAF received was  
phenomenal...”***



*“We wanted to hear from everyone, people who had never used a MEWP before to senior IPAF instructors, from school children to powered access pioneers and those in leadership roles of major industry bodies, rental companies and manufacturers.”*

*~ Tim Whiteman, CEO of IPAF*





# IPAF XR Strategy Proposal: Recommendations

- **IPAF should:**
  - Work with simulator manufacturers
  - Approve/accredit simulators
  - Use and develop VR/AR for the training programs
- **VR Simulators:**
  - The market isn't ready for exclusive use in practical testing.
  - Can effectively prepare candidates for practical testing.
  - Could be used in refresher training.
  - Could test ongoing operator competency.



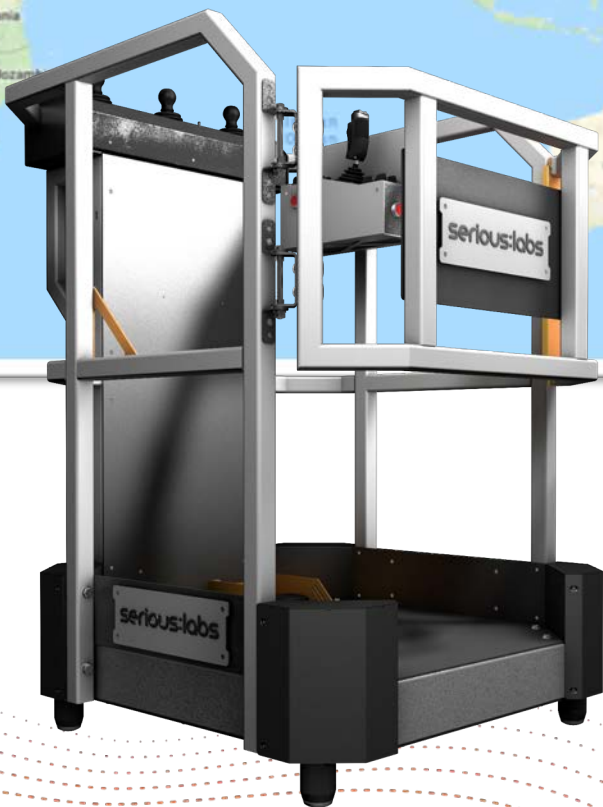


# MEWP VR Simulator Certifications

Our MEWP VR Simulator meets or exceeds the following international certifications enabling us to make our leading edge products commercially available in key global markets.



	Belarus		Denmark		Israel		Nigeria		Slovakia		United Arab Emirates
	Belgium		Finland		Italy		Norway		Slovenia		United Kingdom
	Brazil		France		Japan		Pakistan		South Africa		USA
	Bulgaria		Germany		Kenya		Poland		Spain		Vietnam
	Argentina		China		Hungary		Malaysia		Russian Federation		Switzerland
	Australia		Colombia		India		Mexico		Saudi Arabia		Thailand
	Austria		Croatia		Indonesia		Netherlands		Serbia, Rep. Of		Turkey
	Bahrain		Czech Republic		Ireland		New Zealand		Singapore		Ukraine
	Canada		Greece		Korea, Rep. Of		Portugal		Sweden		





# 2018 Tradeshows, Events, Speaker Engagements

Serious Labs was heavily represented at various high-profile events in Q4 2018. Among these were:

- **Europlatform** – Nigel discussed VR training value, running demos with IPAF. (Belfast, Oct 18, 2018)
- **AEMP EquipmentSHIFT 2018** – Jim presented a talk on virtual reality, innovation, and early adoption. (Columbus, Oct 25, 2018)
- **IPAF Middle East Convention** – Nigel presented a talk on the Future of VR simulation. (Dubai, Nov 7, 2018)
- **AEM Annual Conference** – Jim was part of a breakout panel on new tech for construction industry. (SoCal, Nov 29, 2018)



# 2017/2018 Awards for SLI MEWP VR



**HEAVY  
EQUIPMENT  
GUIDE**

**Heavy Equipment Guide**  
2018 Top Innovations Selection



**Rental Equipment Register**  
Gold award for Top 2018 Innovative Product  
Awards Technology and Overall Categories



**Lift and Access Magazine**  
2018 LLEAP Silver Award for Aftermarket  
Support Products and Services Category



**Compact Equipment Magazine**  
Innovative Iron Awards  
Top three tech products for equipment industry



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# 2019 Use Case Initiatives



## VR PAL+ Testing : Available July 2019!

Administration of PAL+ Practical Testing is costly, challenging, and underutilized!

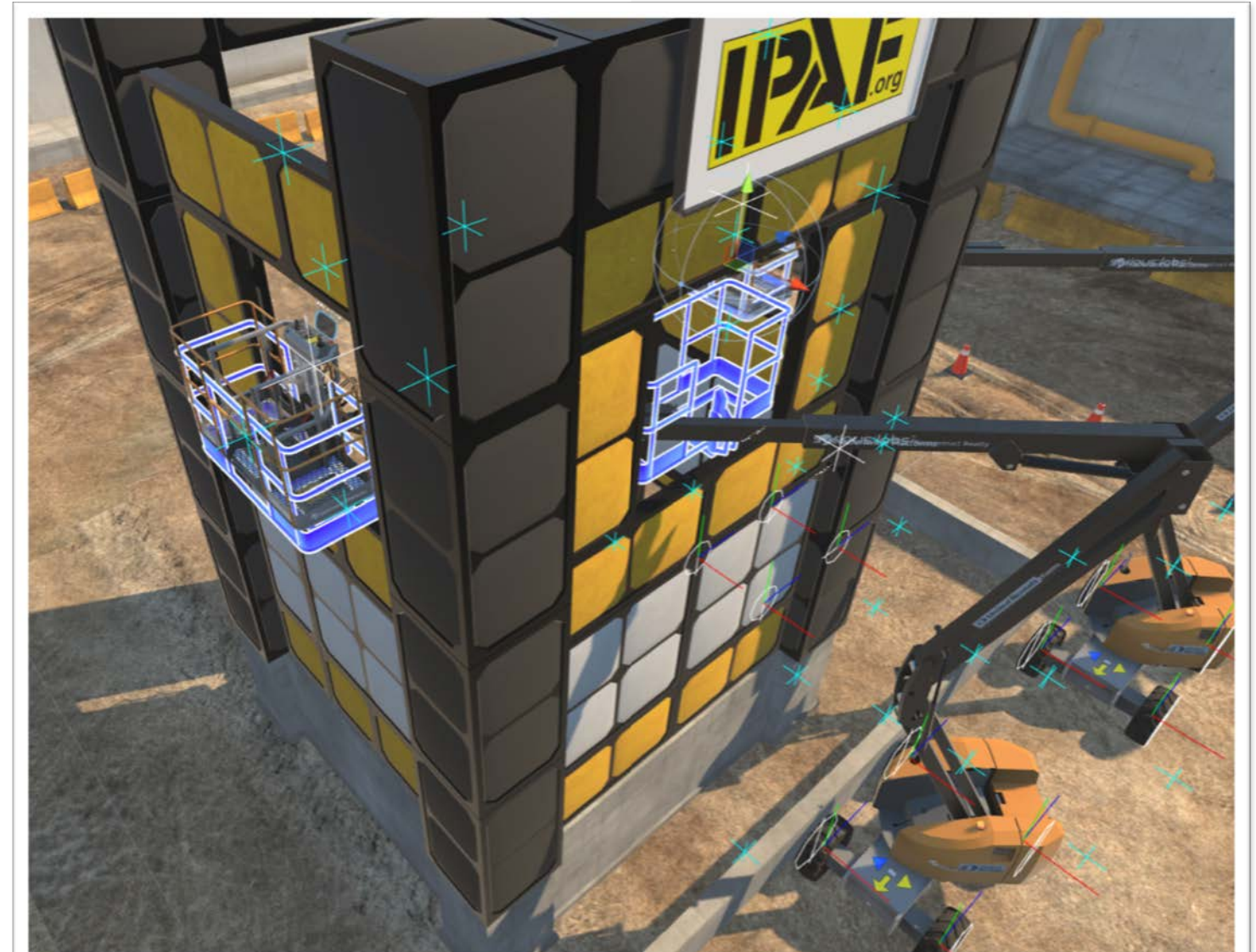
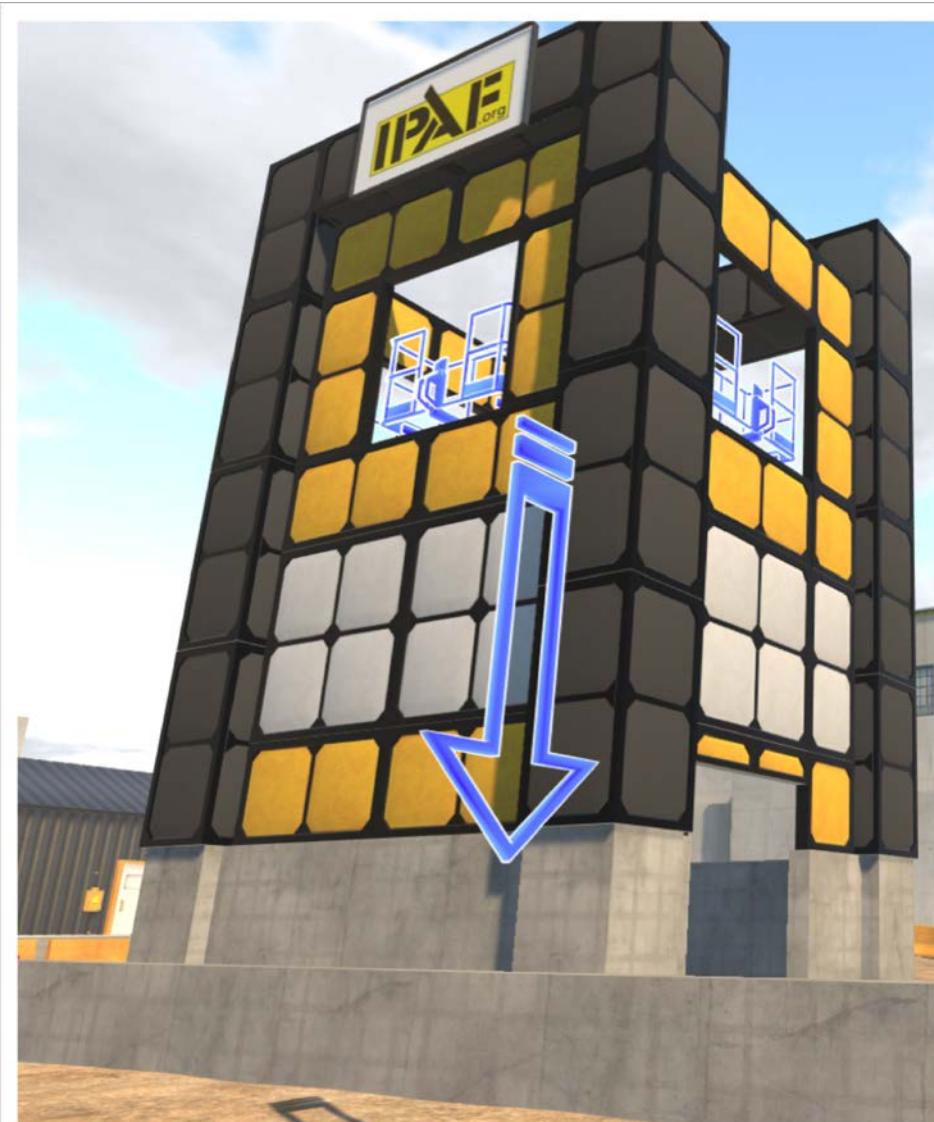
In cooperation with IPAF, the MEWP VR Simulator will deliver PAL+ testing to any PAL card holders interested in advanced operator certification!



PAL+ PREVIEW  
BAUMA MUNICH



# VR PAL+ Testing : Being developed with IPAF LAUNCH at BAUMA in Munich







# PAL Annual Renewal : VR MEWP Simulator

**Currently over 750,000 PAL cards are issued worldwide**

**With 120,000 PAL cards renewing annually**

*\*Demo of Germany-mandated Annual Assessments at Bauma 2019 in Munich  
[BOOTH 7 in the Canadian Pavilion]*

**8:00 AM – 5:00 PM**

1 SIMULATOR



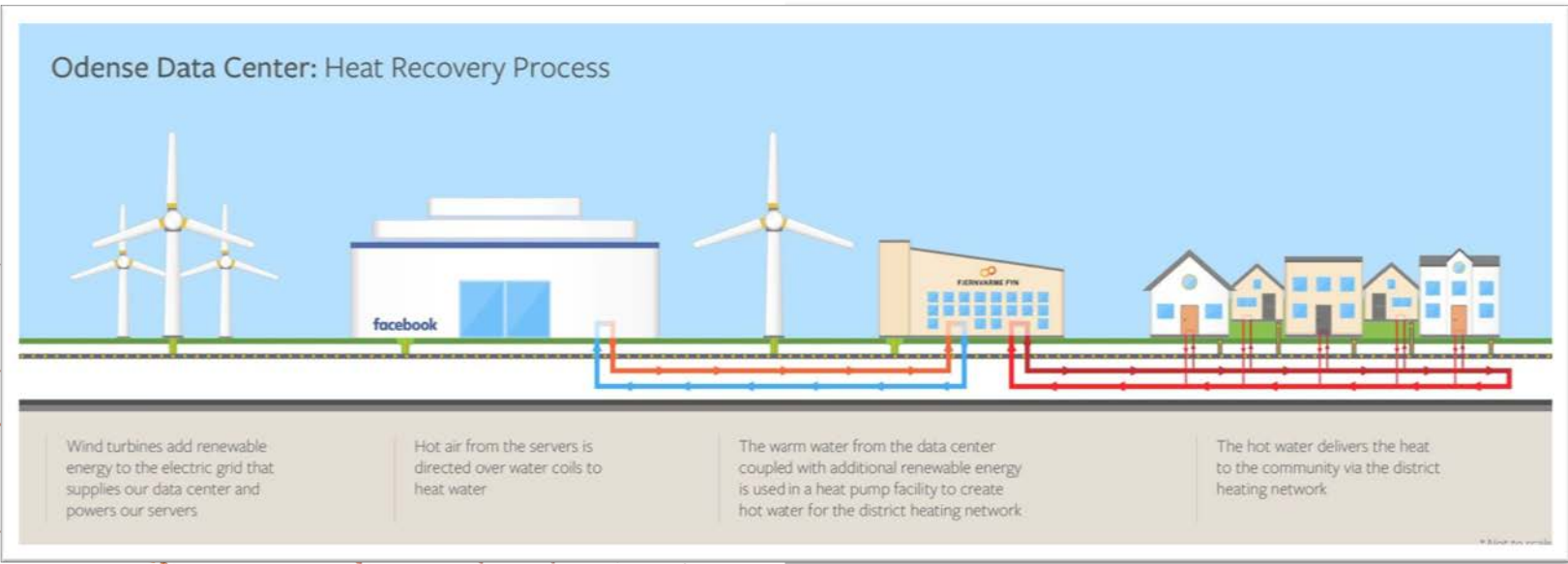
**At a single training center with a single MEWP Simulator training throughput can be maximized at 9 operators/day**

- Assuming 1 hour/Operator
- Average of 22 working days per month
- Optimal number of trainee's renewing monthly = 198
- Annually = 2,376

**Assuming optimal throughput this could be accomplished with 51 SIM's, just for PAL card renewal...**



# RIWAL, Mace and Facebook - Odense, Denmark



**October 2018**  
Supporting Odense Safety Day for Mace at Facebook site

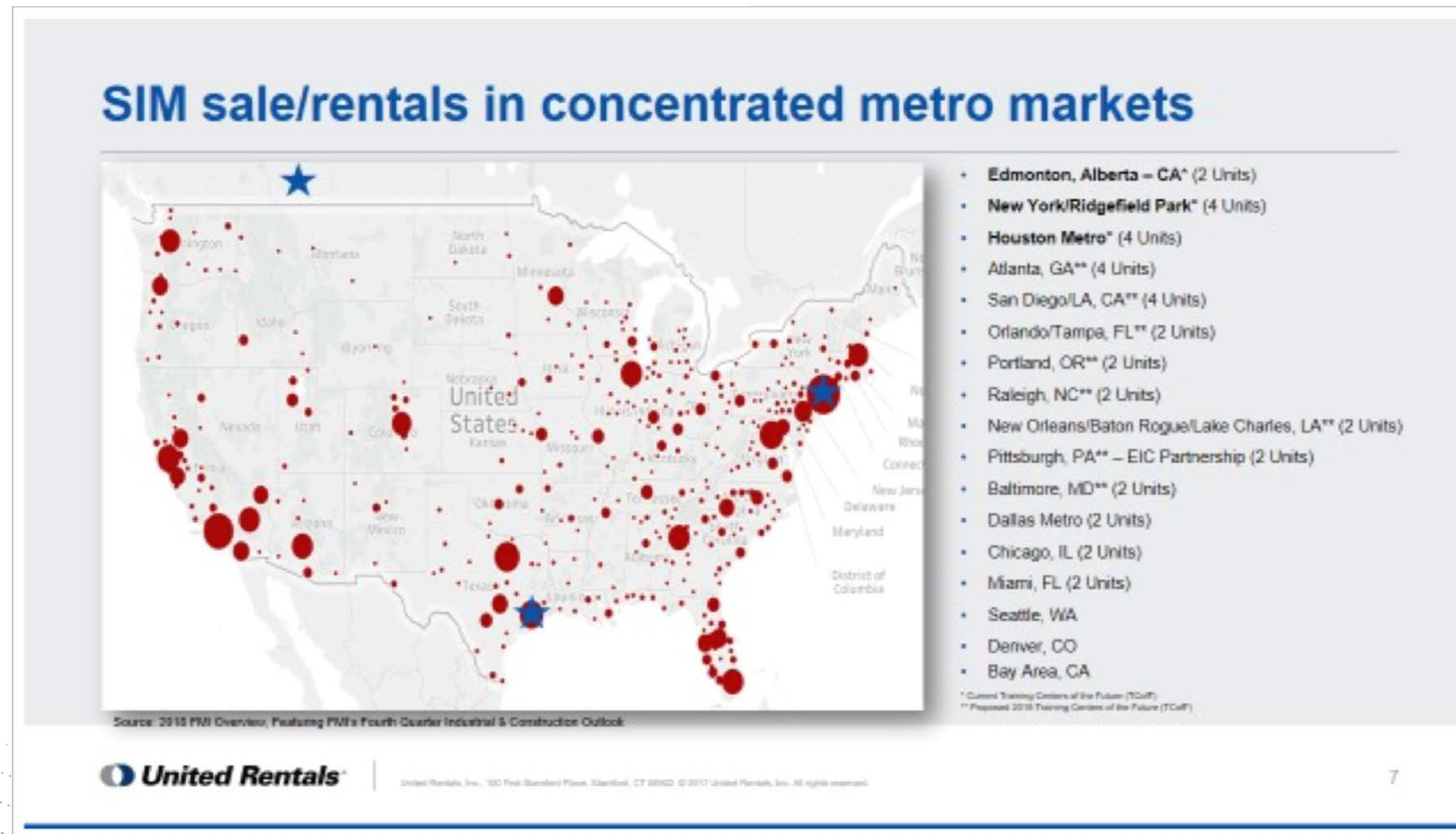


# LAUNCHED : United Academy Training Centers





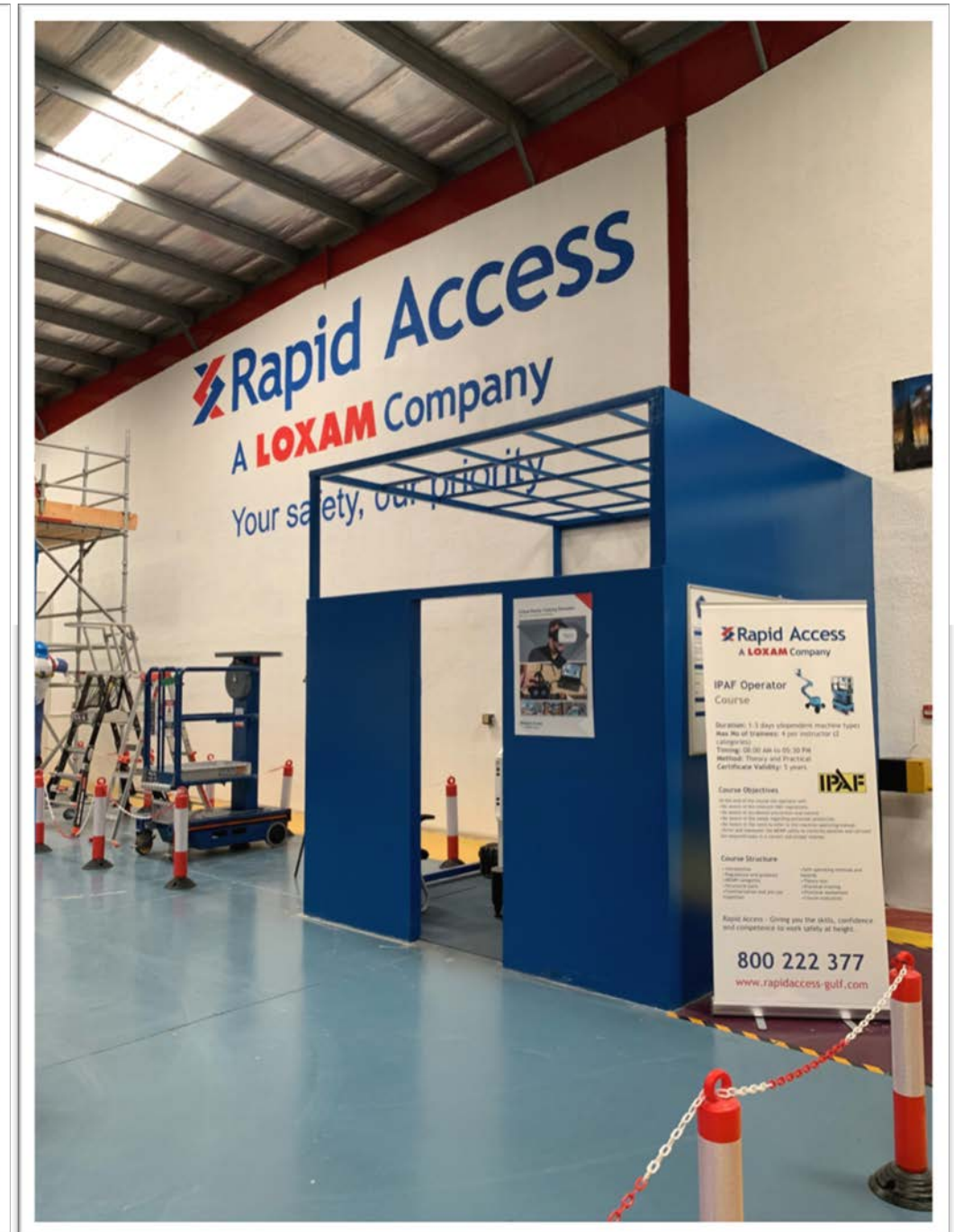
# Training Centers : Future Locations under Consideration





## Profile : Rapid Access in the Middle East

- 2018
  - Simulator arrived
  - Performed market user testing
  - Developed a VR Operator Competency Assessment
- 2019
  - Each month delivering operator training and testing.
  - Providing tailored performance and development reports.
  - Doubling training throughput per trainer.



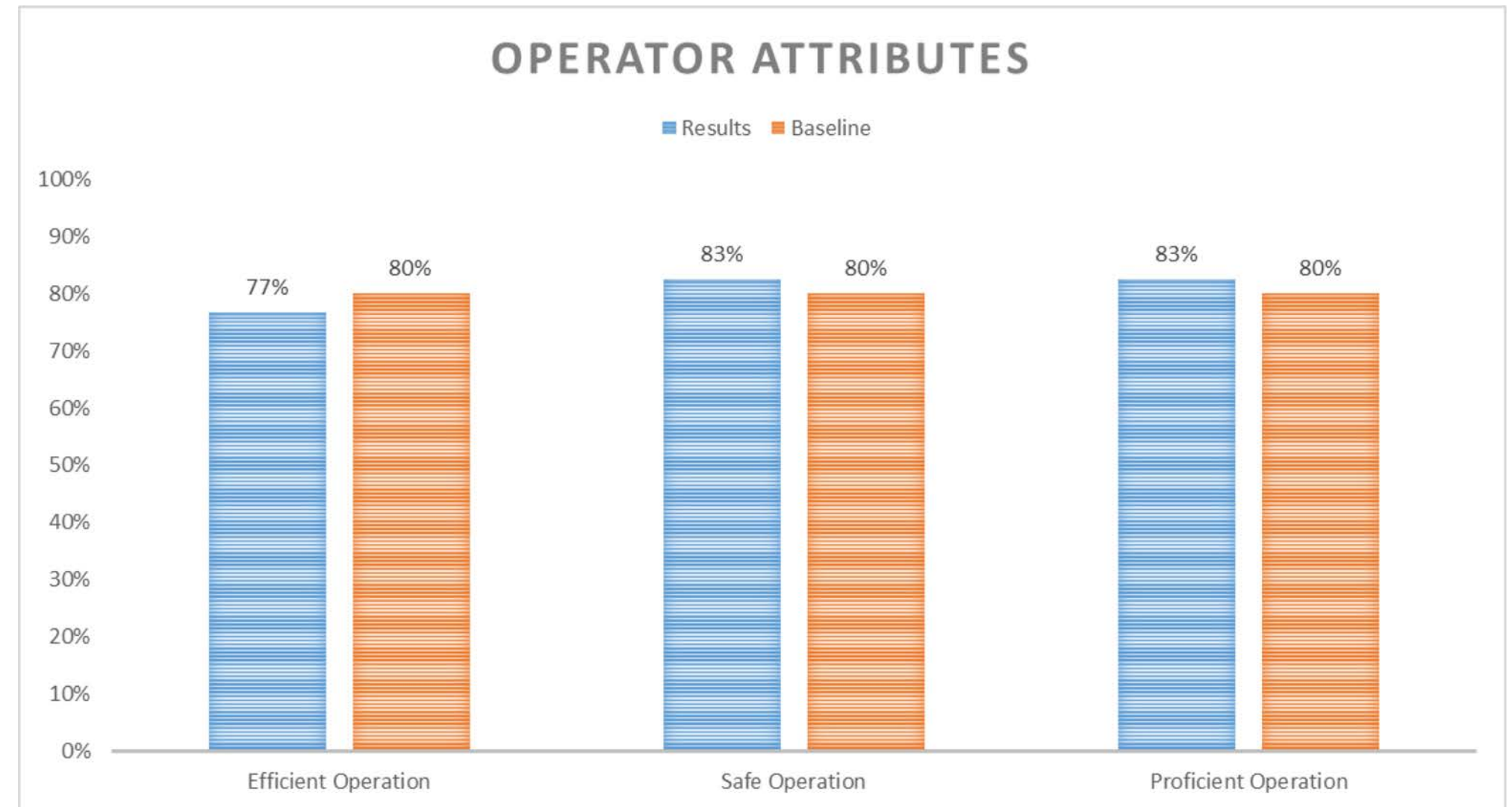


## Executing Accurate Assessments : Attitude, Behaviour, and Awareness

Through machine observation of operator movement, action, position, and orientation, the MEWP VR Simulator captures telemetry which is imperceptible through traditional evaluation.

Our simulator monitors and measures an operator's Safety, Efficiency, and Proficiency, providing detailed assessment in terms of value and risk.

Industry will now be able to realize a direct and measurable ROI for their investment in training through the SLI VR Simulator.



*Operators can now be measured against a baseline determined by master trainers and industry leaders in three areas of competency.*

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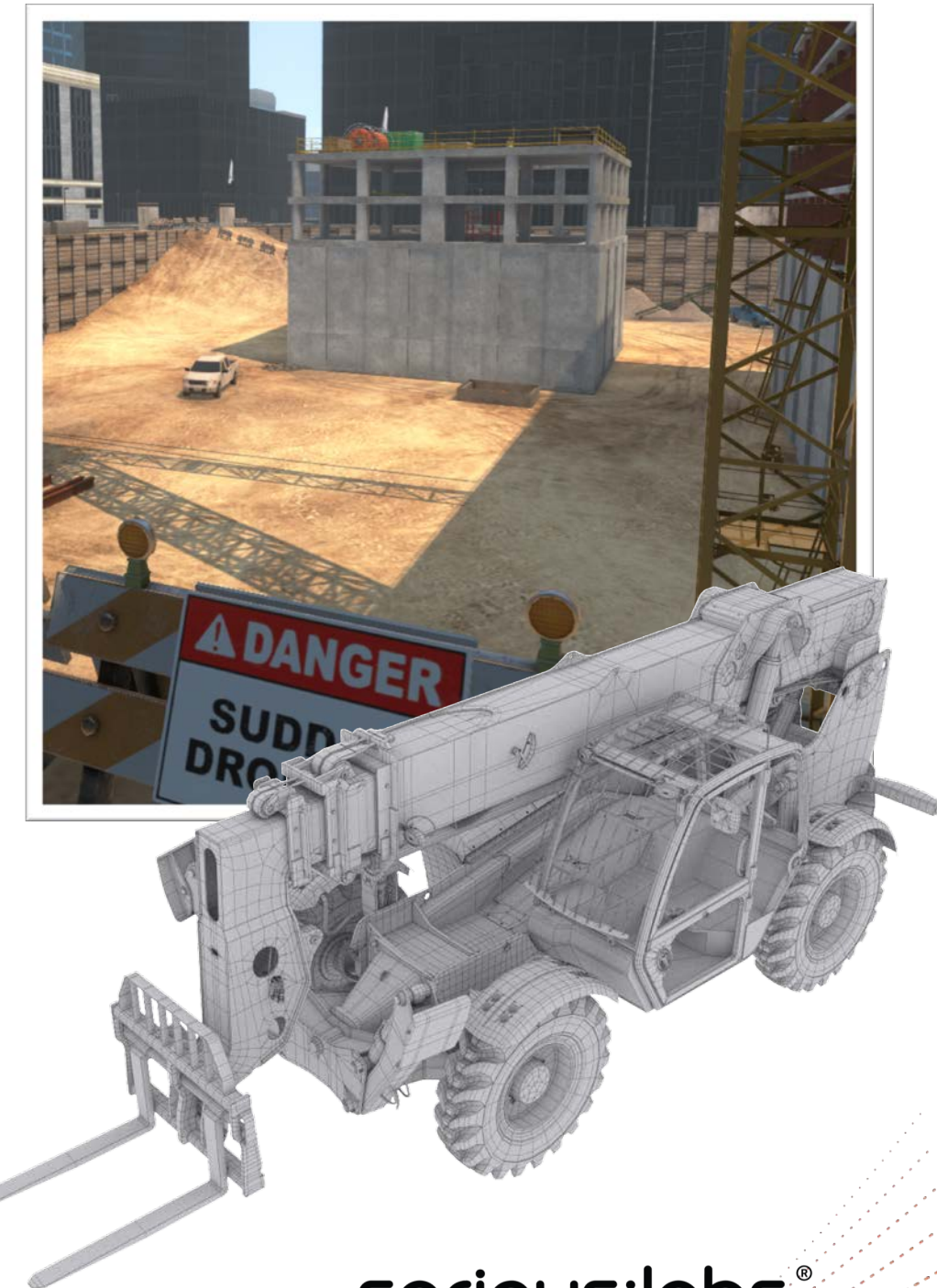
# The Future is XR

Applications of Extended Reality



# Forklift VR Simulators

- Our upcoming Counterbalance and Rough Terrain Forklift VR Simulator is being designed to build and measure operator competency on material handling equipment:
  - Steering
  - Horn Functions
  - Using Mirrors
  - Navigating tight areas
  - Obeying signals and signs
  - Seatbelt Usage
  - Safety Checks
- 25+ progressively complex training scenarios prepare operators for practical evaluations on both Telehandler and Counter Balance Forklifts.
  - **July 2019**  
Counterbalance Forklift
  - **October 2019**  
Telehandler Forklift



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# VR Crane Simulator

We partnered with Industrial Training International (ITI), the 30-year industry leader in crane operator and rigging training, to develop a Crane VR Simulator using our Serious:XR platform.

Together, we've developed an extensive library of VR Crane simulations with 1000+ training scenarios for the following crane types:

- Carry Deck
- Boom Truck
- Overhead Crane
- Tower Crane
- Rough Terrain Crane
- RT 400 Crane
- Heavy Crawler
- Pedestal Crane





# TVA Turns to ITI VR Crane SIM's to Train Their Nuclear Fleet

ITI VR Crane Simulators have been selected by the Tennessee Valley Authority (TVA) to train new crane operators and retrain existing operators for their nuclear generation fleet.

- 6 ITI VR Simulator Stations
- 3 different TVA locations



# Accredited practical exam delivered on the ITIVR Crane SIM globally

ITI and Serious Labs have built into the ITIVR Crane Simulator an ANSI accredited crane operator practical exam, consisting of several scenarios, in partnership with a leading provider of crane certification exams in the USA

- Over 200 practical exams have been conducted on real cranes and the Crane Simulator as part of the study.
- Crane Simulator was compared to the actual actual operator certification practical exam and was **deemed to be predictive of the real world test.**
- Positive results from the research will be released in the coming weeks.
- The positive results will propose that it is possible to receive an accredited practical exam on the ITIVR Crane Simulator anywhere in the world.





# DOW Dupont Pilot: Isolation of Energy Sources

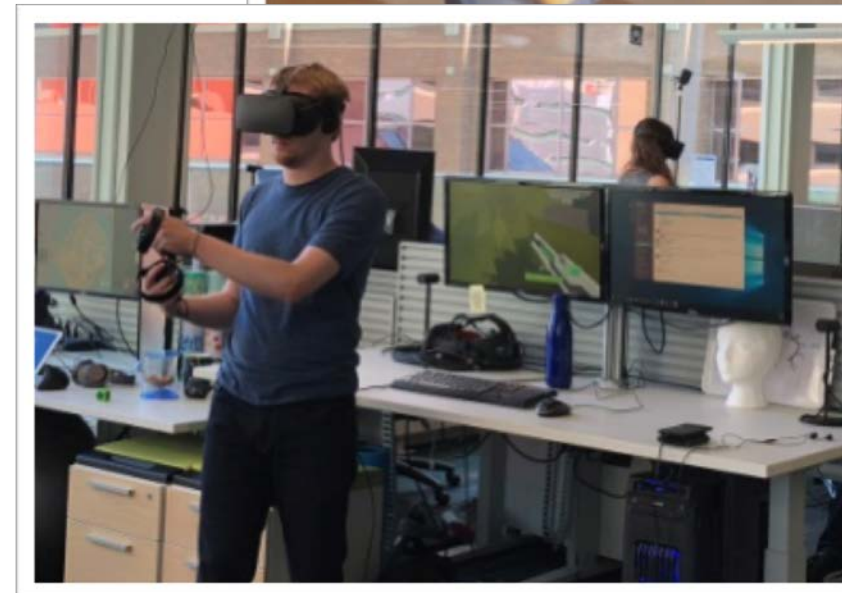


Serious Labs and DOW Dupont (DOW) have partnered to develop a Serious Labs:XR module that offers remote assessment on Isolation of Energy Sources using DOW's RTM process.

DOW is currently running a one year pilot across three locations globally.



- Stade, Lower Saxony, Germany
- Houston, Texas, USA
- Edmonton, Alberta, Canada



Thank you!

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