



Technology as a tool for learning

Paul Roddis

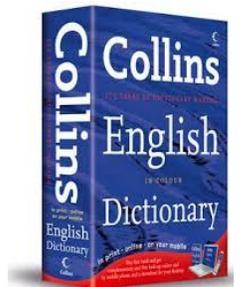
Training Manager



What is technology?

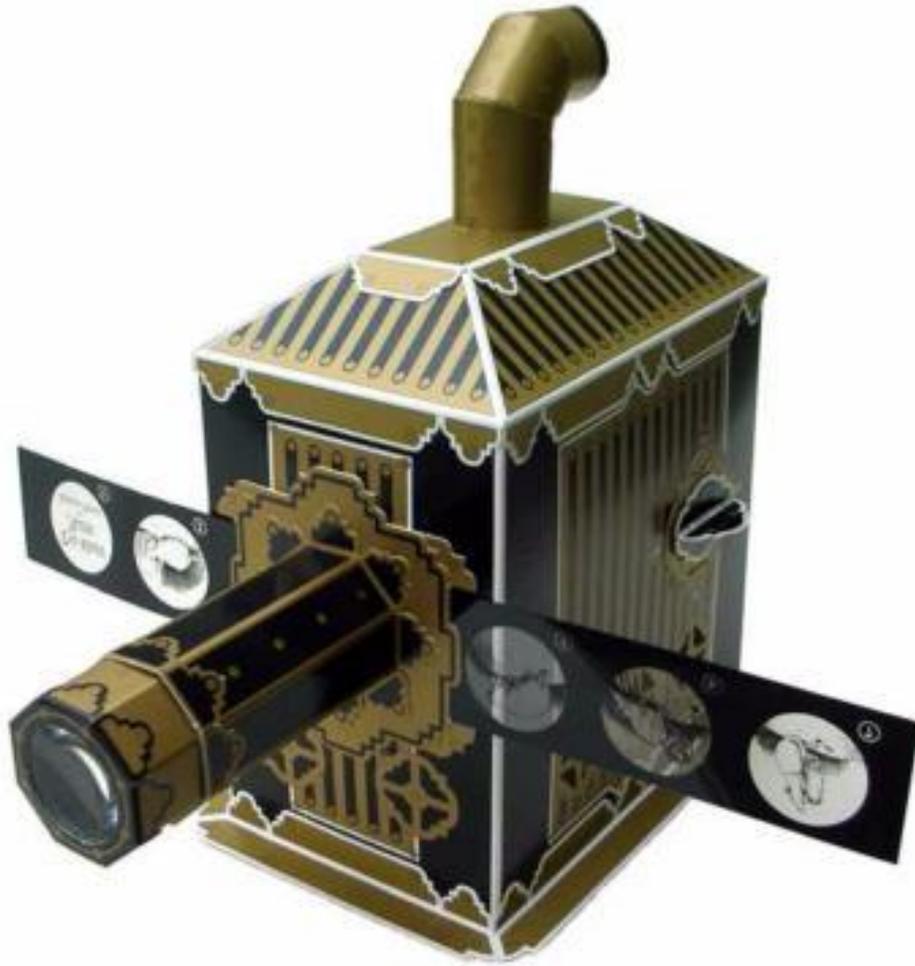
→ *Methods, systems, and devices which are the result of scientific knowledge being used for practical purposes.*

→ Source





- 1650
- Horn books, wooden paddles with printed information



- 1870
- Magic Lantern, the predecessor to slide machines, projected images printed on glass plates



- 1929
- The First Flight Simulator



- 1930
- overhead projector

Introducing . . .

sensorama

The Revolutionary Motion Picture System
that takes you into another world
with

- 3-D
- WIDE VISION
- MOTION
- COLOR
- STEREO-SOUND
- AROMAS
- WIND
- VIBRATIONS

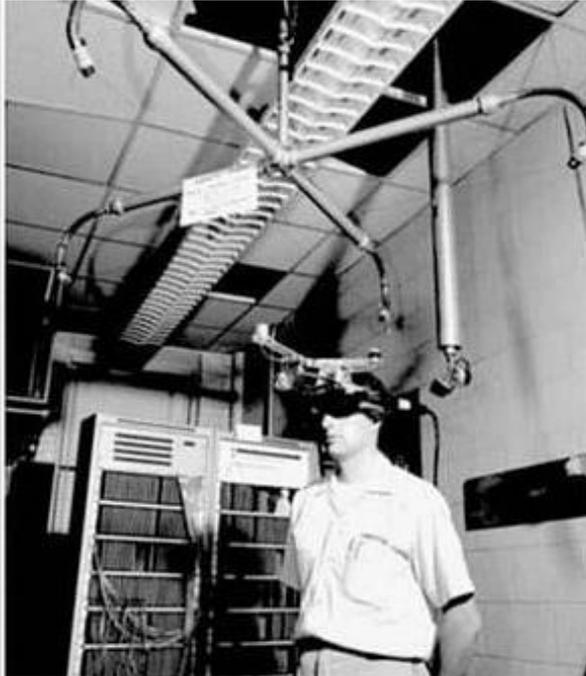


SENSORAMA, INC., 855 GALLOWAY ST., PACIFIC PALISADES, CALIF. 90272
TEL. (213) 459-2162

- 1956
- First Virtual Reality prototype
- Sensorama
- featured stereo speakers, a stereoscopic 3D display, fans, smell generators and a vibrating chair



- 1960
- The first VR Head Mounted Display
- The Telesphere Mask



- 1968
- The first AR Head Mounted Display
- The Sword of Damocles



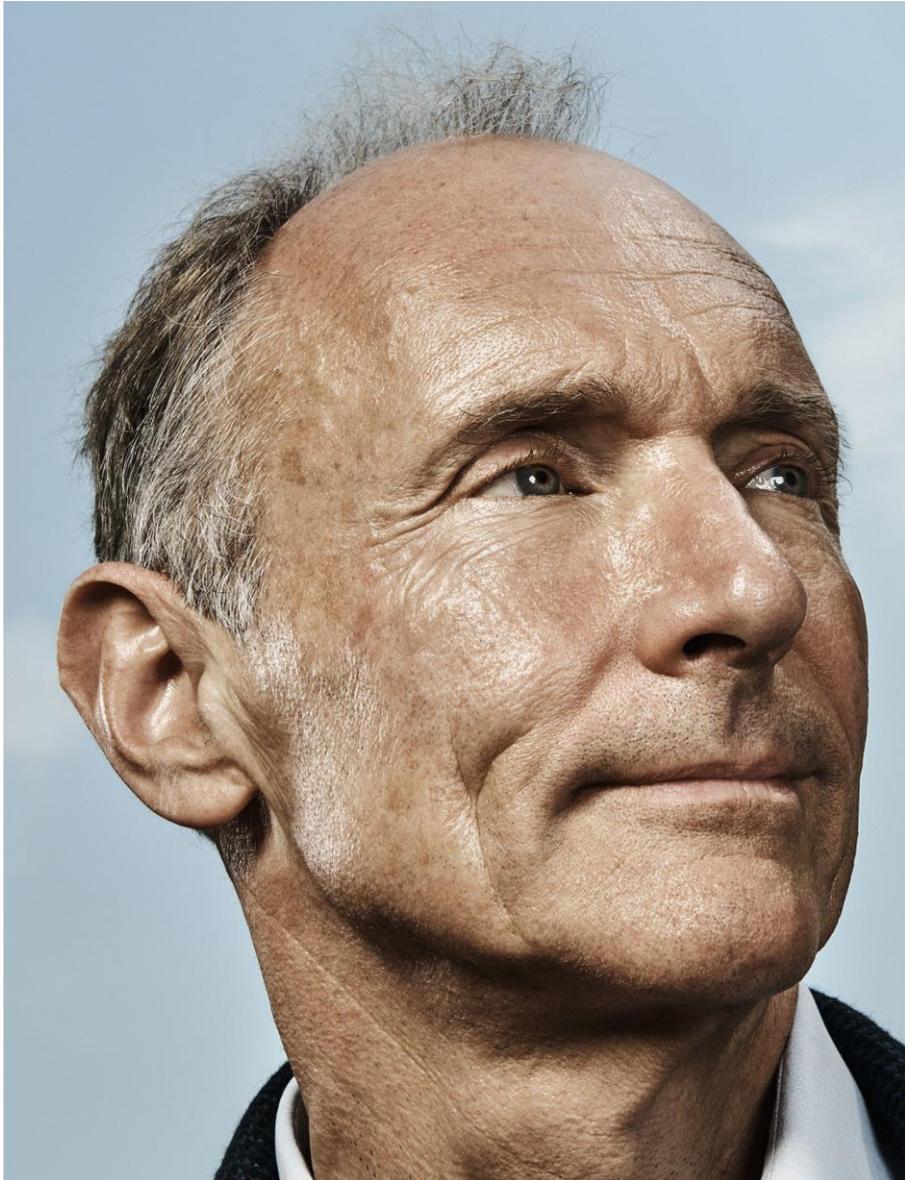
- 1981
- first portable computer was introduced
- The Osborne 1



- 1985
- Hand held graphing calculators
- Casio fx-7000G



- 1990
- First commercial LCD projector
- Imagina 90



- 1990
- The World Wide Web
- Sir Tim Berners-Lee

VIRTUAL FIXTURES

(A.R. system - 1992)

Wright Patterson AFB



- 1992
- first fully functional augmented reality system
- Virtual Fixtures



- 1993
- SEGA VR glasses



- 2007
- Google introduce “Street view”
- Using 360° Cameras





→ 2007

→ First generation iPhone



- 2008
- First iteration of Serious Labs MEWP Simulator



- 2010
- First prototype of the Oculus Rift headset
- Palmer Luckey, an 18 year old entrepreneur.

Evolution



→ 2010

→ First generation iPad

- 2013
- Volkswagen debuted MARTA
- (Mobile Augmented Reality Technical Assistance)



Evolution



- 2015/16
- HTC Vive
- Playstation VR



- Samsung Gear VR
- Google Cardboard
- Google Daydream



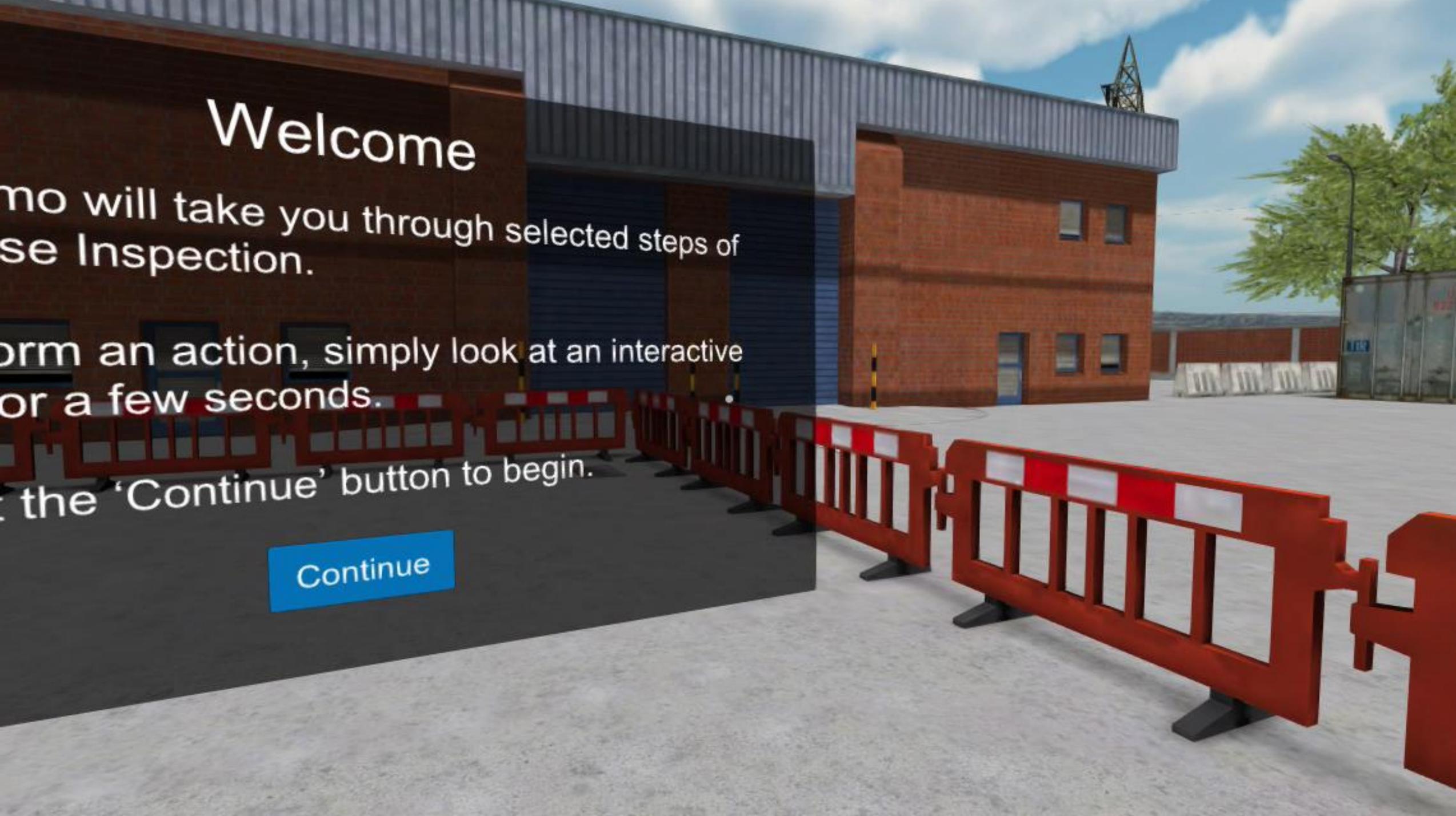
Welcome

Who will take you through selected steps of
the Inspection.

To perform an action, simply look at an interactive
object for a few seconds.

Click the 'Continue' button to begin.

Continue





→ 2016

→ Microsoft HoloLens



Augmented Reality glasses as the central user interface in the workshop while having both hands free.



- 2017 IAPA Awards
- Serious Labs won the Innovative Technology Prize
- For the Reach EX motion base



Evolution

IPAF 2019
ELEVATION

IPAF.org





Haulotte

H 14 TPX

Haulotte



ACCESSREADY *XR*

VR Training

equipment and required skills together



- Complicated?
- Confusing?
- Should IPAF be involved?
- What is actually happening out there?



THE

thewild.com

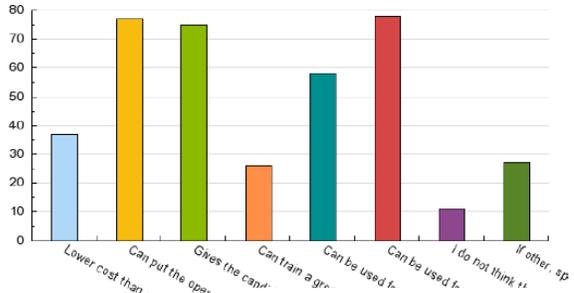


The IPAF Board:
One primary area of focus is:

“Developing and implementing a strategy to optimise the use of virtual reality (VR), simulators and our expanding eLearning offer, while integrating the Smart PAL Card into systems to deliver a full digital experience.”

Evolution

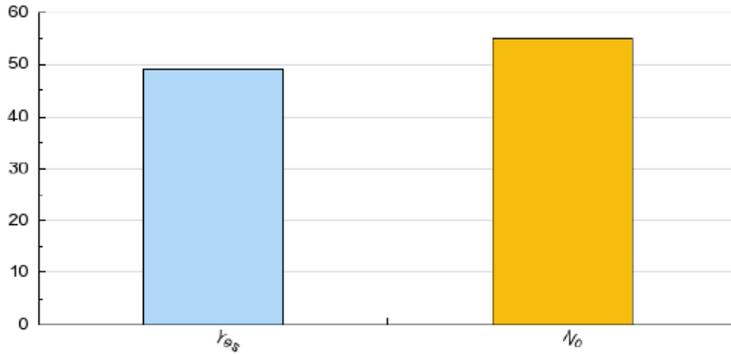
What do you think are the advantages of using a simulator. Please tick all that apply:



Have you used a VR Simulator?*

Option

- Lower cost than owning and maintaining a simulator
- Can put the operator in a potentially high-risk environment
- Gives the candidate a safe environment with no mistakes
- Can train a greater number of operators
- Can be used for periodic refresher training
- Can be used for familiarisation prior to use on the real machine
- I do not think there are any benefits
- If other, specify



Option	Answers	% Answered	% Total
Yes	49	47.1%	47.1%
No	55	52.9%	52.9%

0 skipped this question

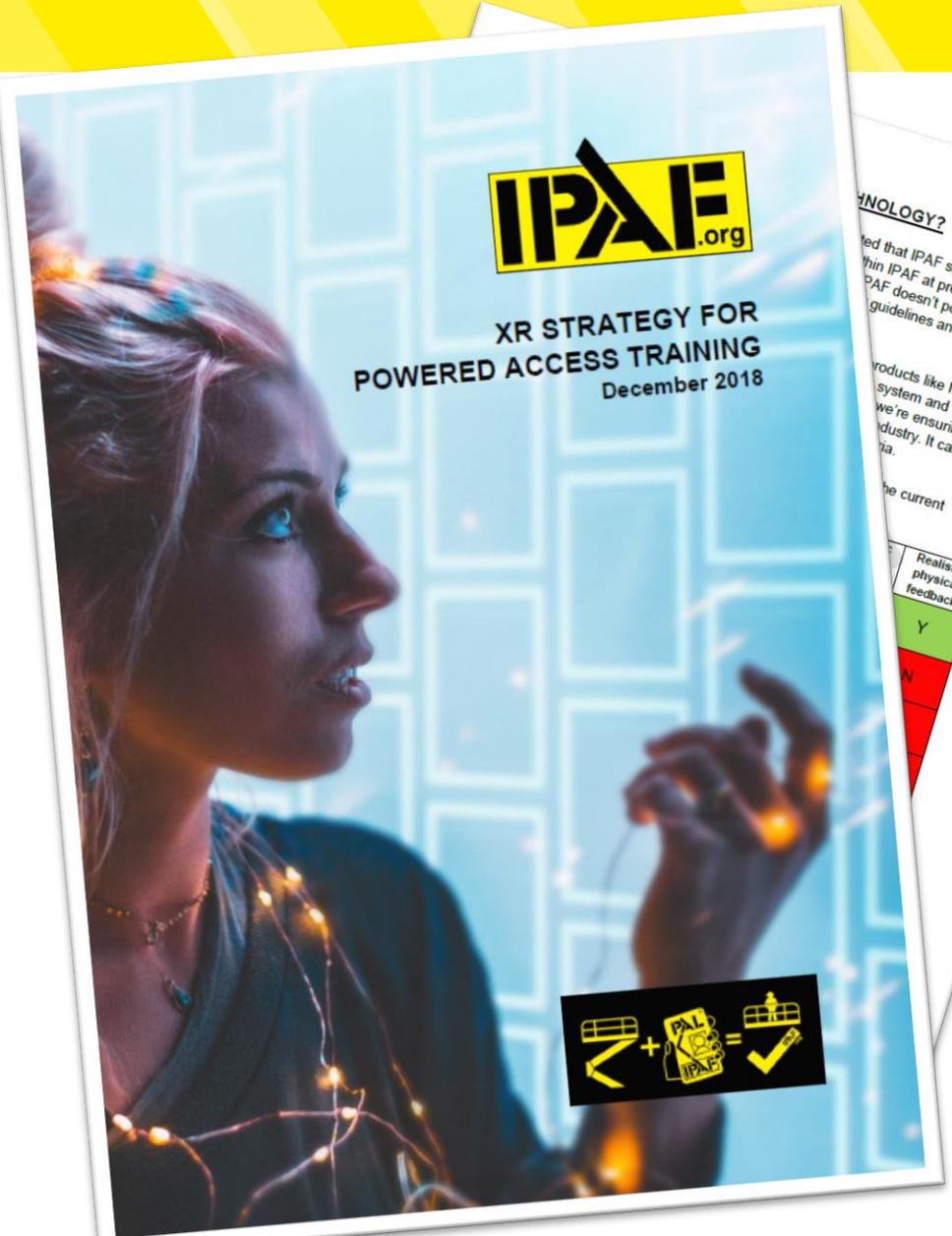
- 2018
- IPAF Launch Global consultation
- Strategy published December 2018
- www.ipaf.org/XRstrategy



	Visual feedback	Auditory feedback	Physical feedback	Realistic physical input	Realistic physical feedback
VR & simulator (with motion/haptic feedback)	Y	Y	Y	Y	Y
VR & simulator (without motion/haptic feedback)	Y	Y	Y	Y	N
VR (with motion/haptic feedback)	Y	Y	Y	N	N
VR (without motion/haptic feedback)	Y	Y	N	N	N
AR	Y	Y	N	N	N
360° videos	Y	Y	N	N	N

- IPAF should
- Not become engaged in trying to develop this technology
- Be at the forefront of the use of XR.
- Approve or accredit the technology





IPAF.org
XR STRATEGY FOR
POWERED ACCESS TRAINING
December 2018

The image shows the cover of a report titled 'XR Strategy for Powered Access Training' from December 2018. It features the IPAF logo and a woman looking at a digital interface. A small diagram at the bottom shows a yellow crane icon plus a person icon with a checkmark, representing the combination of training and safety.

TECHNOLOGY?

ed that IPAF shouldn't develop
thin IPAF at present and the
IPAF doesn't position itself as
guidelines and advice are at

products like MEWP
system and companies
we're ensuring the
dustry. It can help
ta.

he current

Realistic
physical
feedback

Y

N

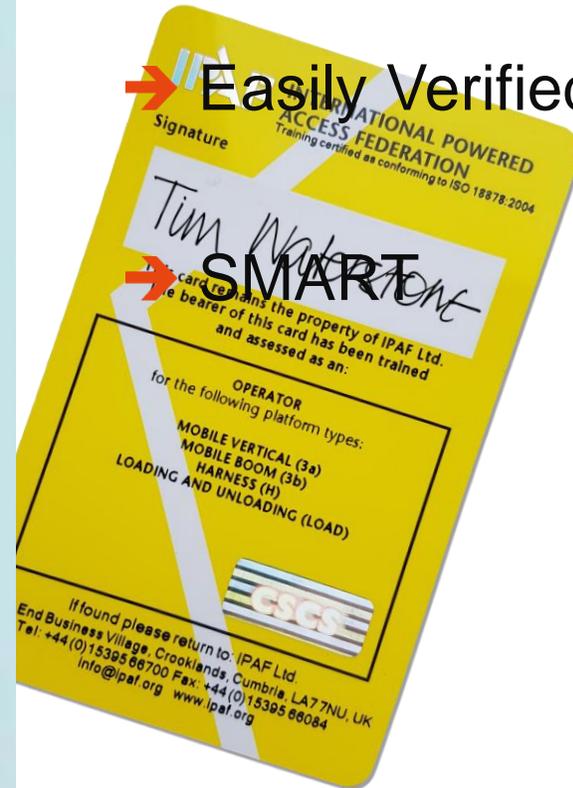
- VR simulators could play a major role in:
- *refresher training*
- *high-risk scenarios e.g. PAL+*

**How are we using
technology now?**

The PAL Card



→ Easily Verified



→ SMART



→ eLearning

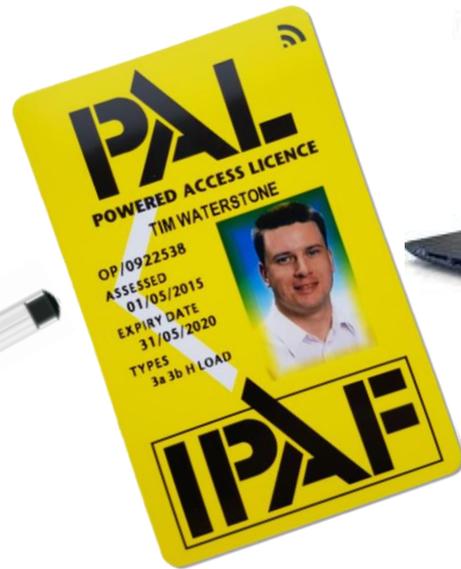
→ Operator Training

→ MEWPs for Managers

→ MEWP Supervisor (USA and Canada)

→ Annual refresher (Germany)

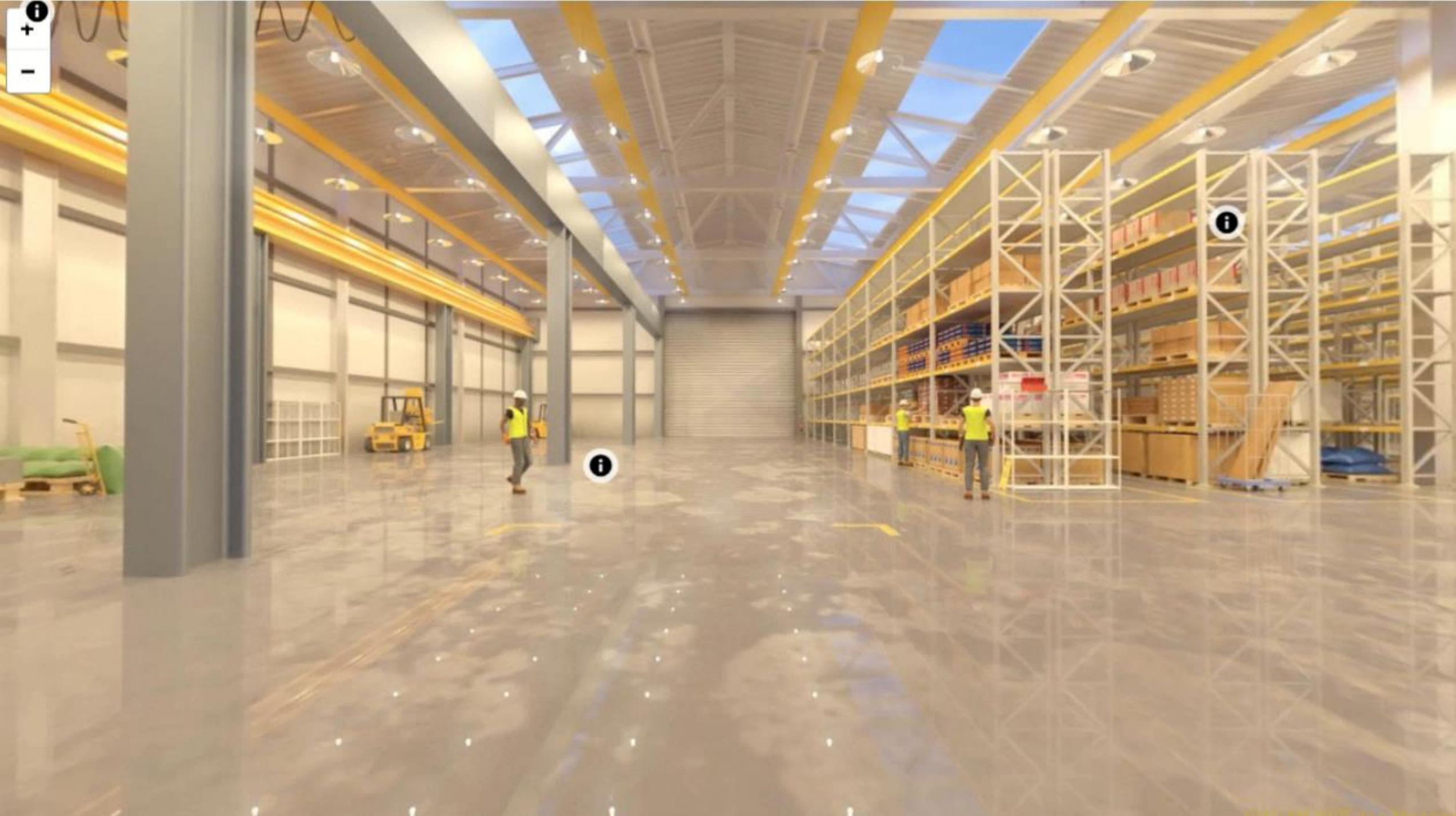
In the classroom



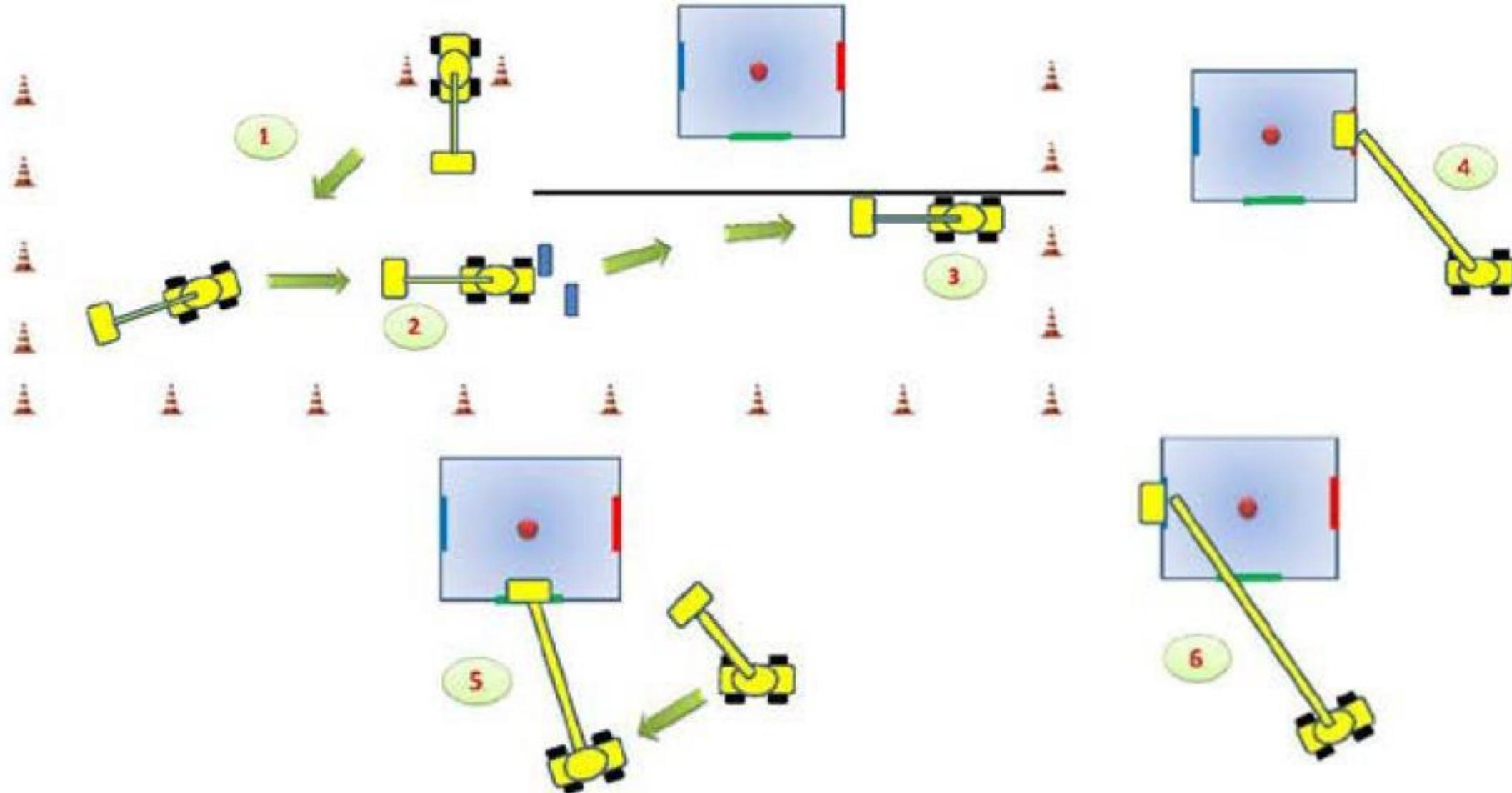
- 360° images
- Realistic challenges
- Contextualise the learning







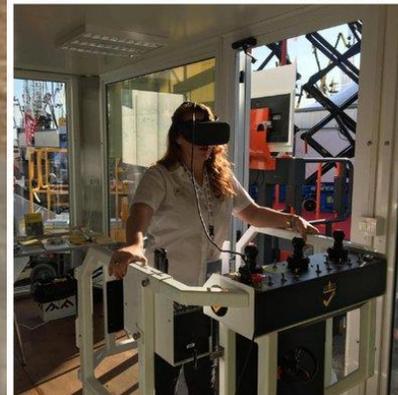
PAL+ Practical Test

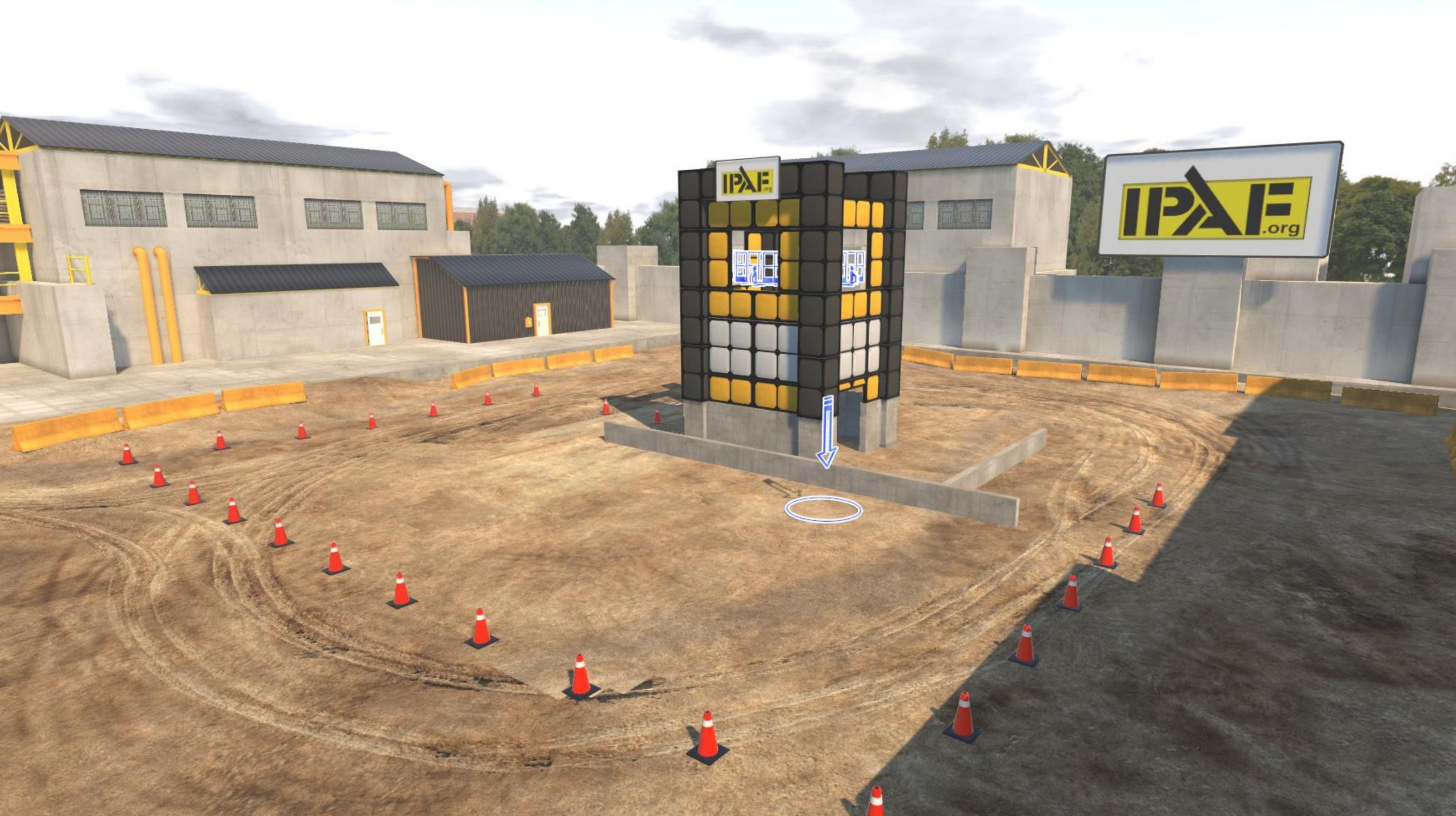


PAL+ Practical Test

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PAL+ Practical Test



➔ PAL+ Practical

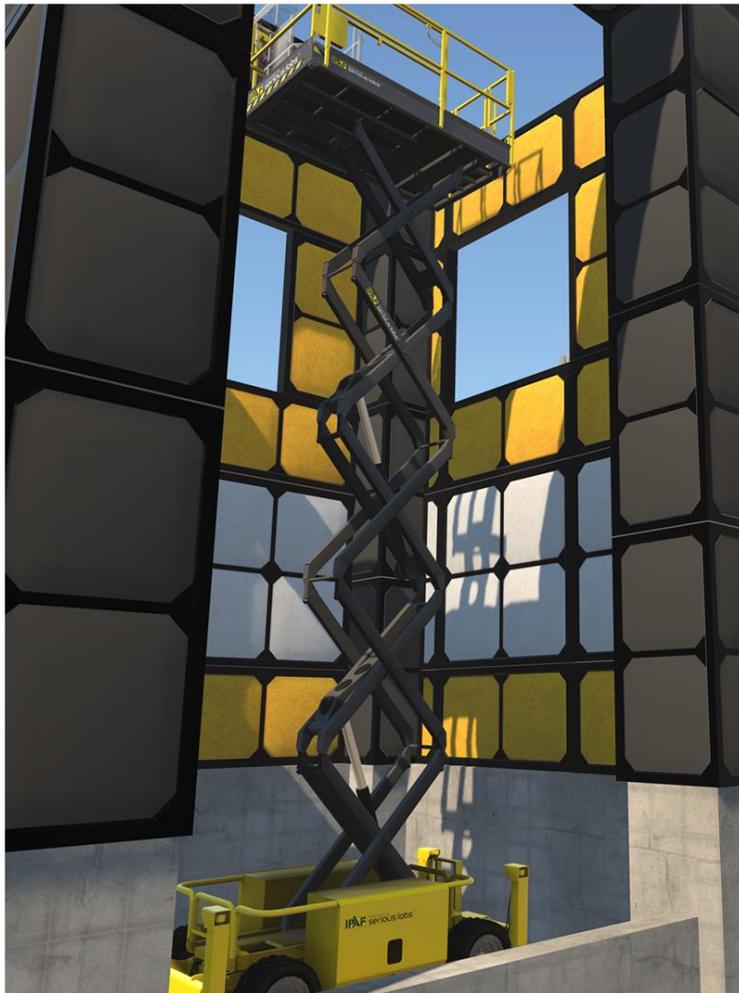


→ PAL+ Simulator Practical

PAL+ Practical Test



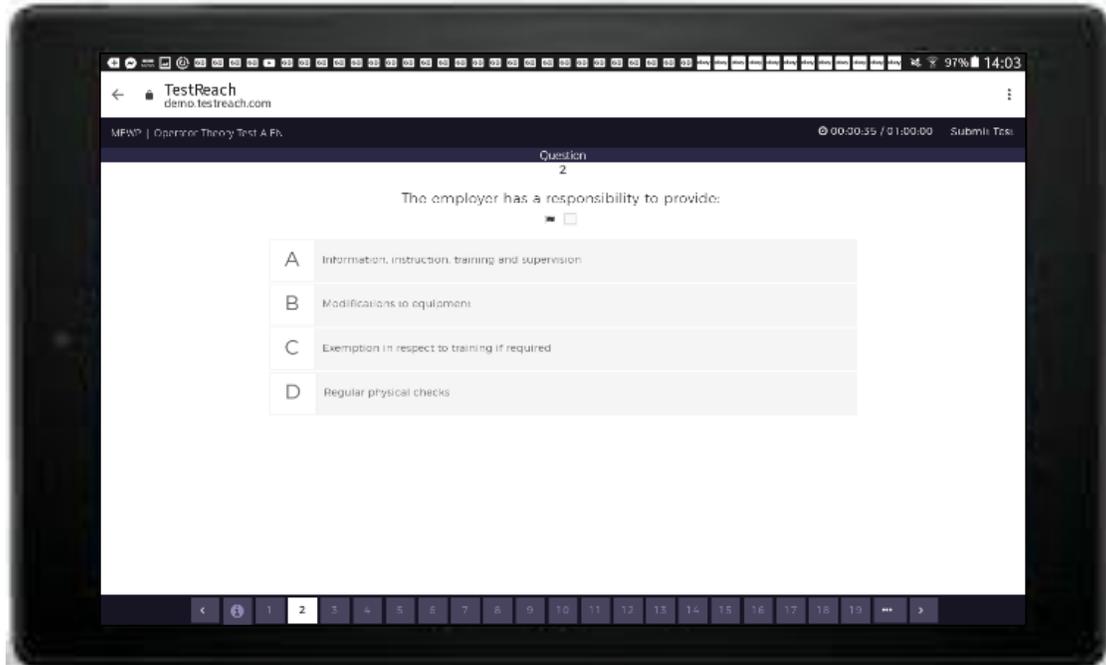
→ PAL+ Practical



→ PAL+ Simulator Practical

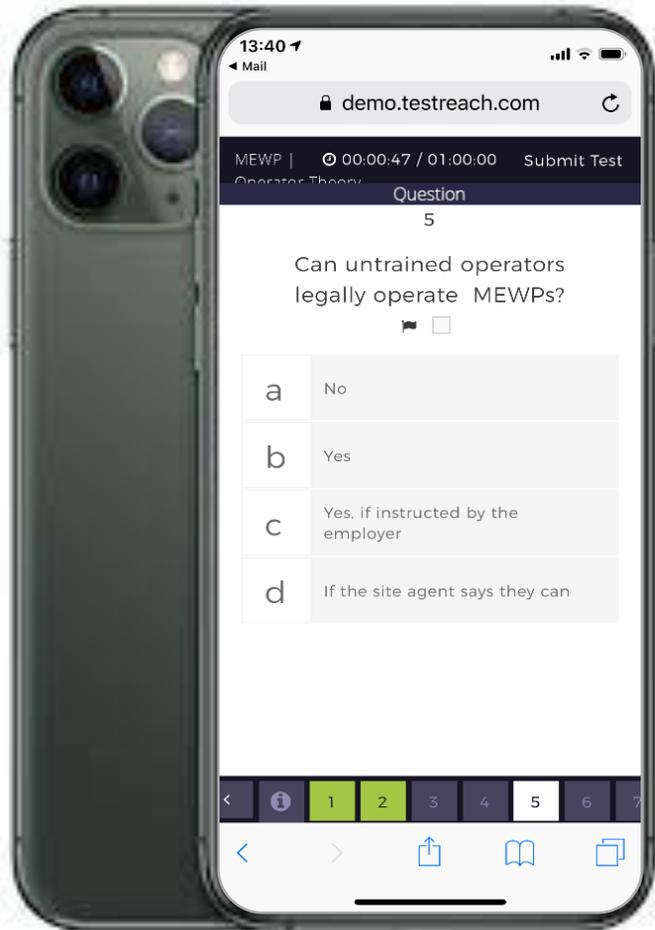
Looking ahead

Digital forms and question papers

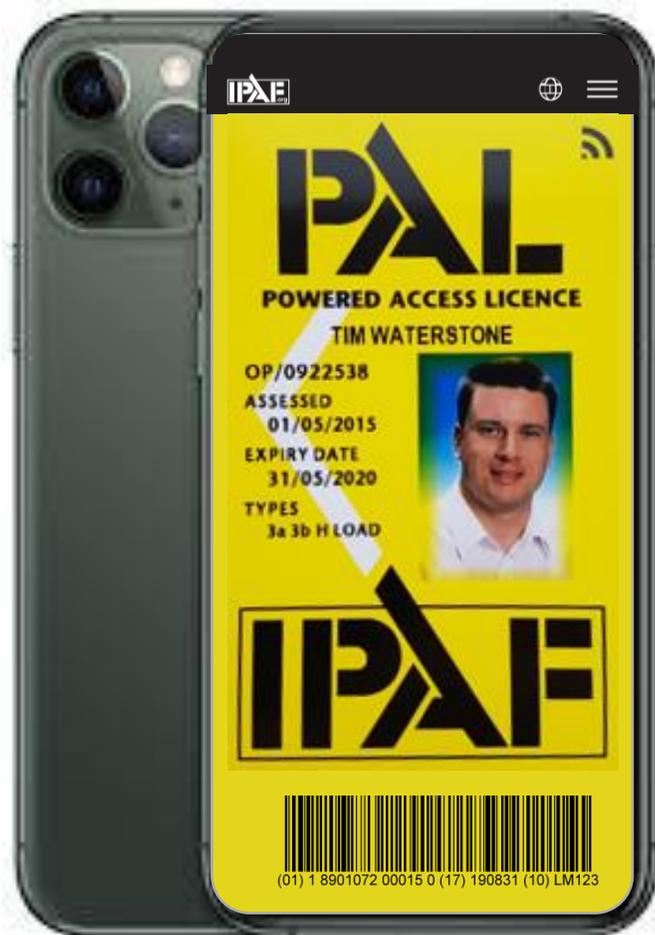


- Reduced Administrative Burden.
- Increased Security.
- Simple language selection
- Global Assessment Reporting.

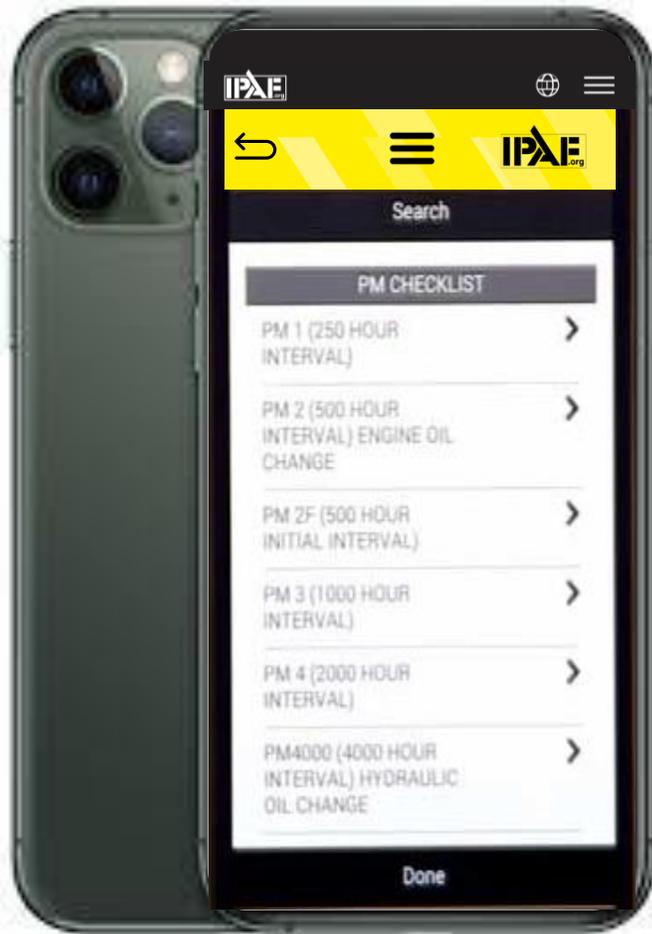
Digital forms and question papers



- Reduced Administrative Burden.
- Increased Security.
- Simple language selection
- Global Assessment Reporting.
- Tablet or Phone



→ Digital PAL Card?



→ Digital PAL Card?

→ Pre use inspection App?



- Digital PAL Card?
- Pre use inspection App?
- Digital Operators Safety Guide?

The future?

An aerial night view of a city with a network of glowing icons overlaid. The icons are connected by a network of lines, representing a communication or data network. The icons include a cloud, a globe, a shopping cart, a building, a house, a laptop, a car, a truck, a smartphone, a heart, and two people. A large, glowing Wi-Fi symbol is in the center. The background shows city lights and a river.

→ Communication



→ Collaboration

→ The main goal is an effective use of Powered Access worldwide

