



# Technology as a tool for learning

**Paul Roddis**

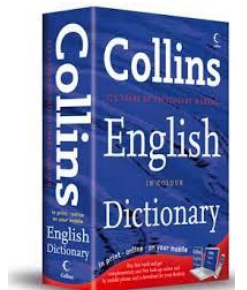
Training Manager



## 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

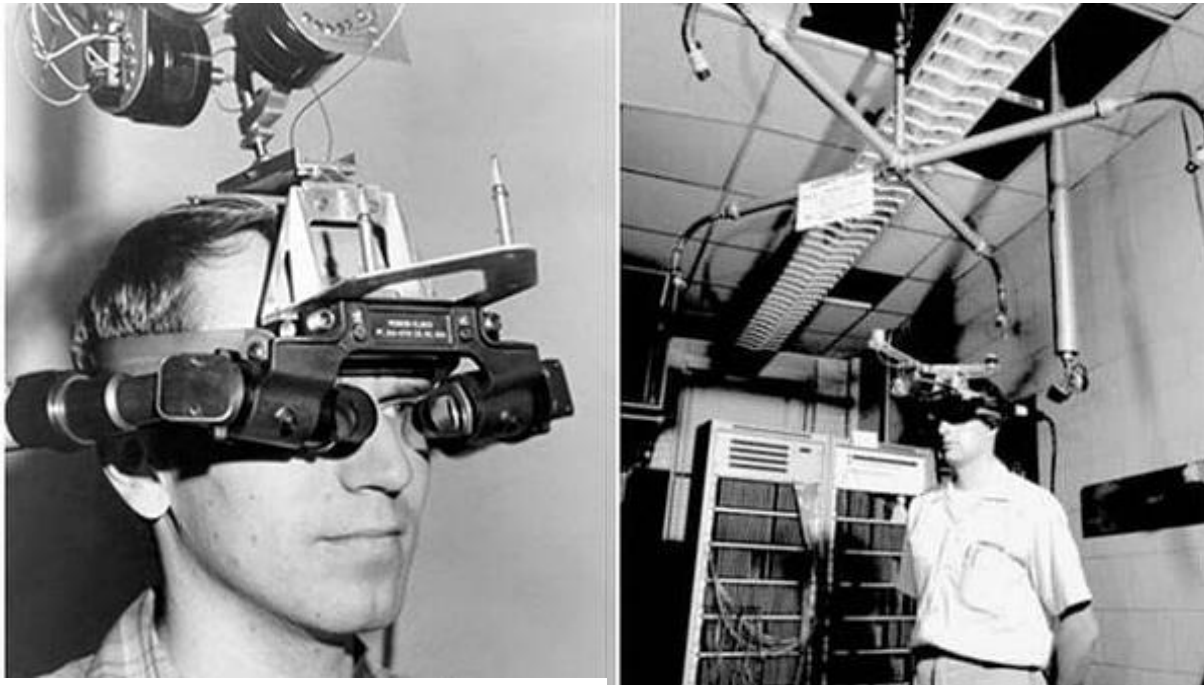


SENSORAMA, INC., 855 GALLOWAY ST., PACIFIC PALISADES, CALIF. 90272  
TEL. (213) 459-2162

- 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



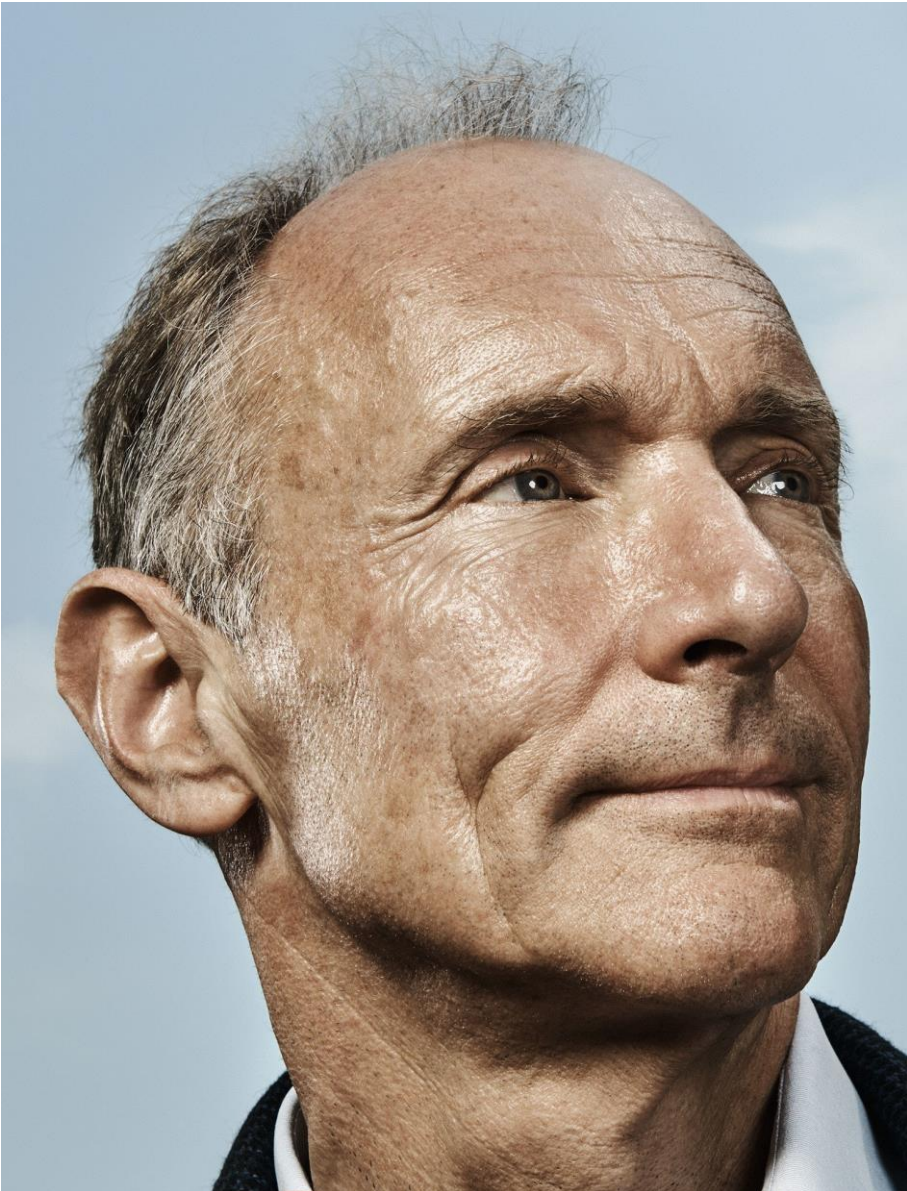
- 1981
- first portable computer was introduced
- The Osborne 1



- 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.



- 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



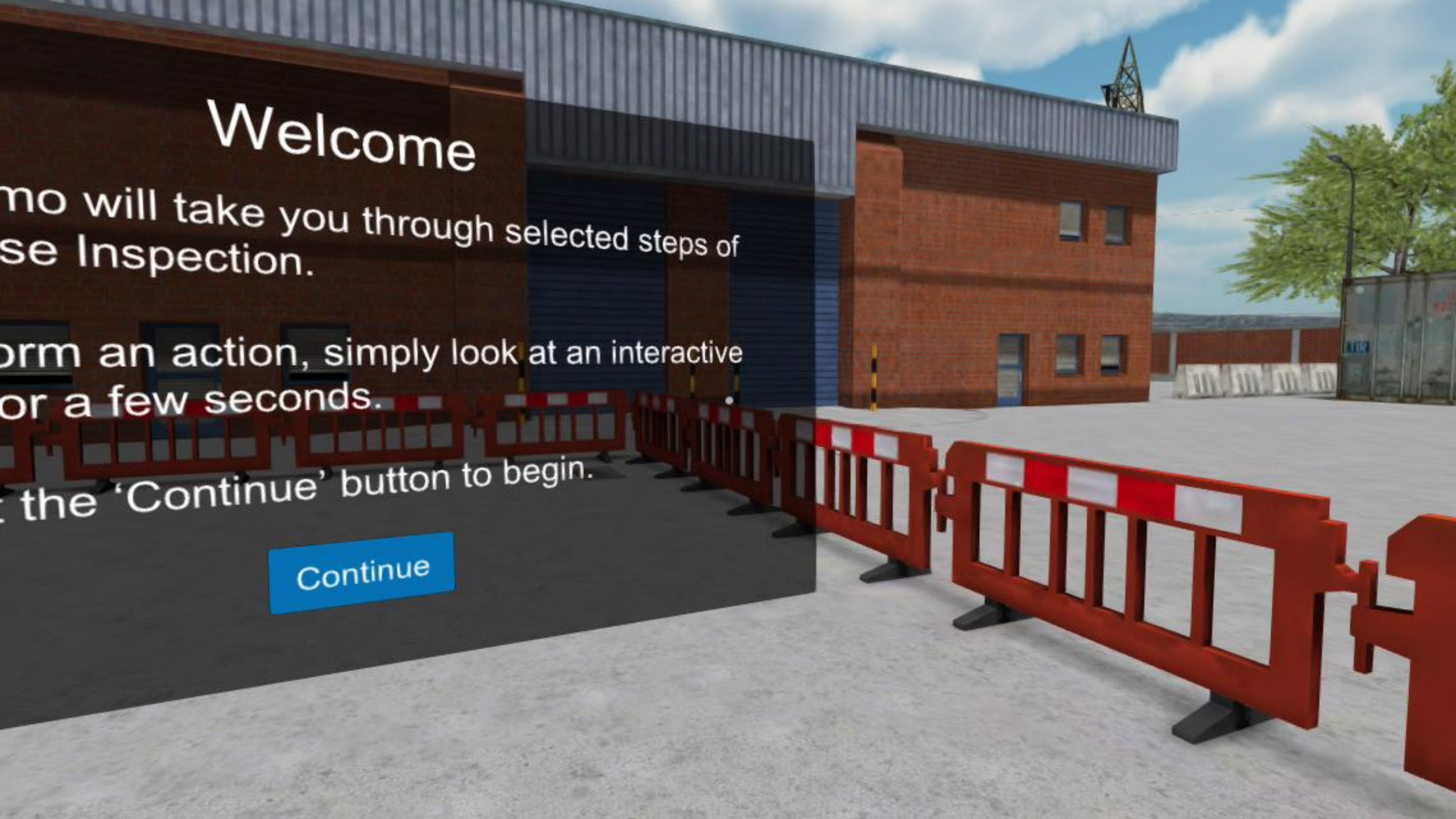
# Welcome

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

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ACCESSREADY **XR**

VR Training

equipment and required skills together



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



# THE

thewild.com

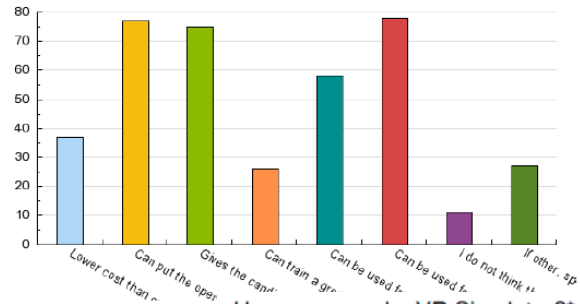


The IPAF Board:  
One primary area of focus is:

“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

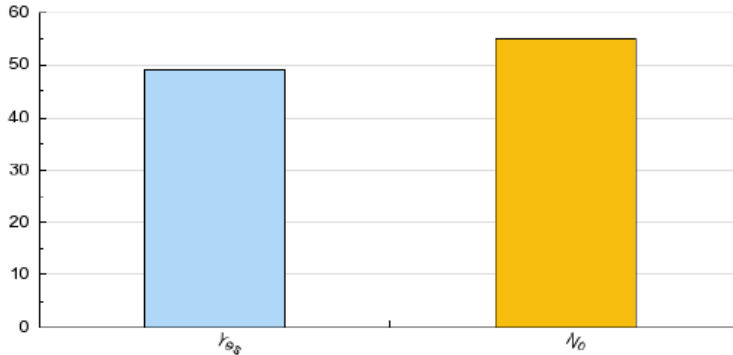
What do you think are the advantages of using a simulator. Please tick all that apply:



Have you used a VR Simulator?\*

Option

- Lower cost than owning and maintaining a real system
- Can put the operator in a potentially high-risk situation
- 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 system
- I do not think there are any benefits
- If other, specify

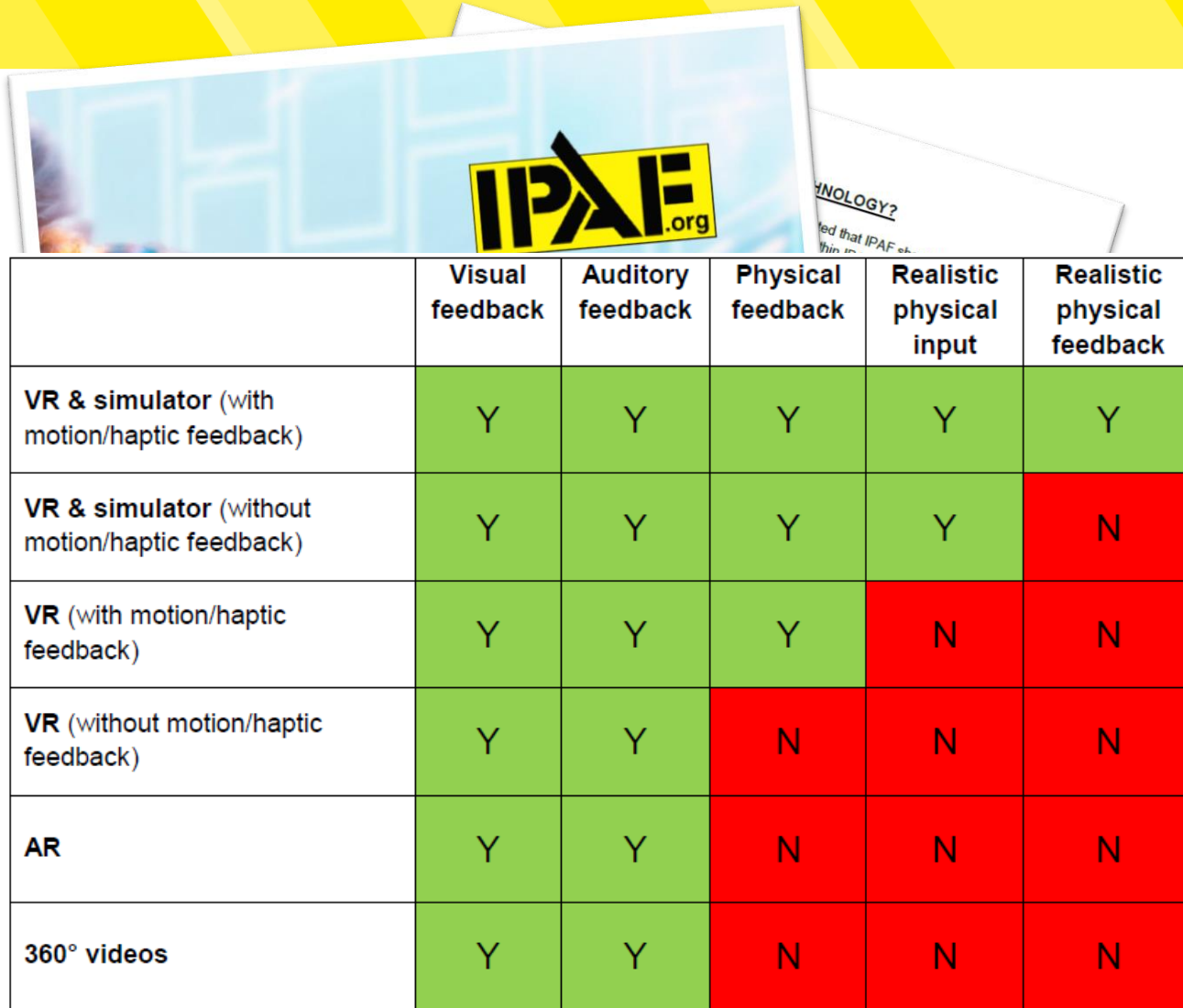


Option	Answers	% Answered	% Total
Yes	49	47.1%	47.1%
No	55	52.9%	52.9%

0 skipped this question

- 2018
- IPAF Launch Global consultation
- Strategy published December 2018
- [www.ipaf.org/XRstrategy](http://www.ipaf.org/XRstrategy)

# Evolution



The table is presented on a background featuring a collage of images, including a blue and white grid pattern, a yellow IPAF logo, and a photograph of a person wearing a VR headset. The table itself has a white border and is divided into six columns. The first column lists various technologies, while the subsequent five columns evaluate these technologies based on the presence of visual, auditory, physical, realistic physical input, and realistic physical feedback. Green cells indicate a 'Yes' (Y) response, while red cells indicate a 'No' (N) response.

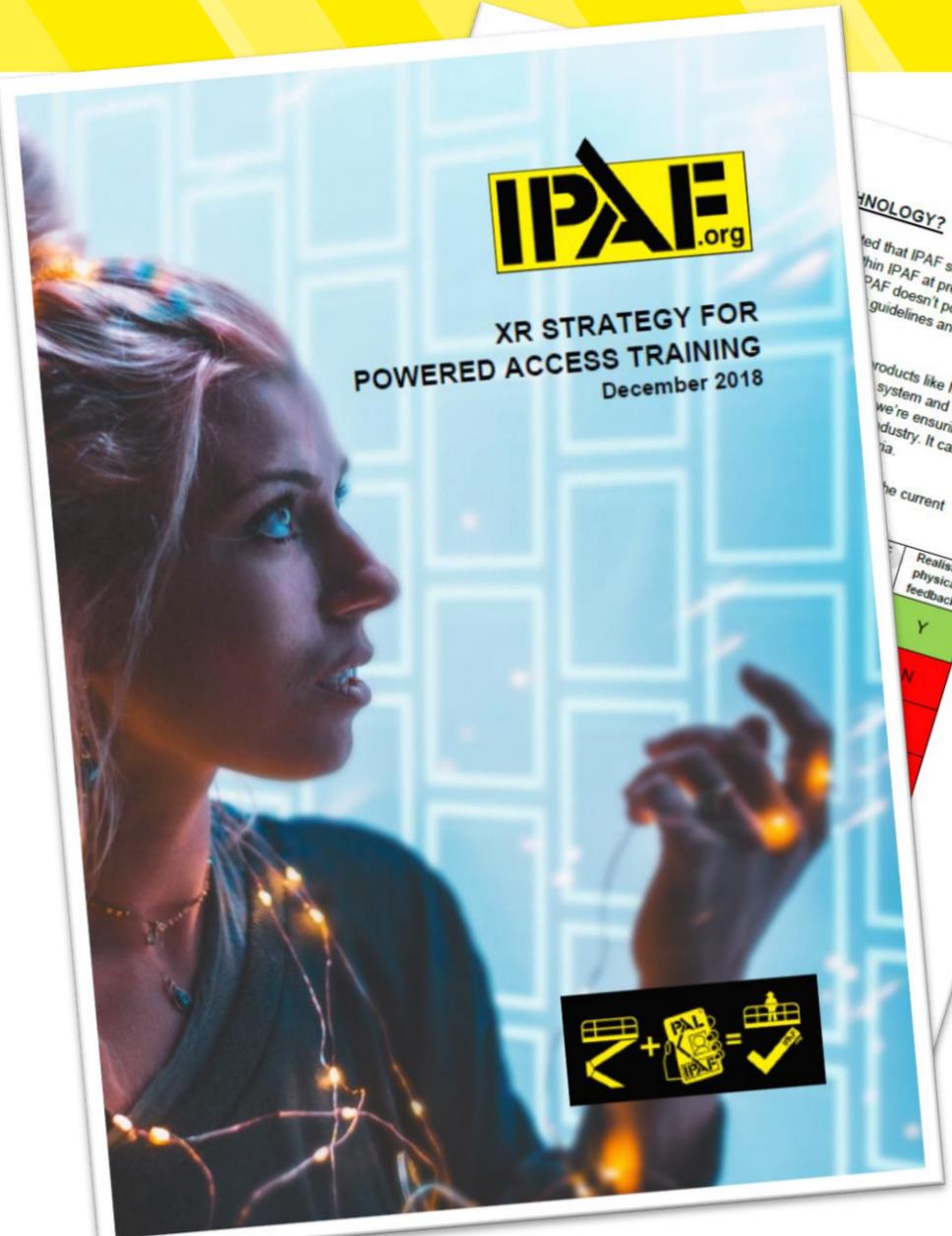
	Visual feedback	Auditory feedback	Physical feedback	Realistic physical input	Realistic physical feedback
VR & simulator (with motion/haptic feedback)	Y	Y	Y	Y	Y
VR & simulator (without motion/haptic feedback)	Y	Y	Y	Y	N
VR (with motion/haptic feedback)	Y	Y	Y	N	N
VR (without motion/haptic feedback)	Y	Y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



The image shows the cover of a report titled 'XR STRATEGY FOR POWERED ACCESS TRAINING' dated December 2018. The cover features the IPAF logo at the top, a woman's profile looking at a digital interface with glowing points, and a small graphic at the bottom showing a scissor lift, a plus sign, the IPAF logo, an equals sign, and a checkmark. The background of the cover has a blue grid pattern.

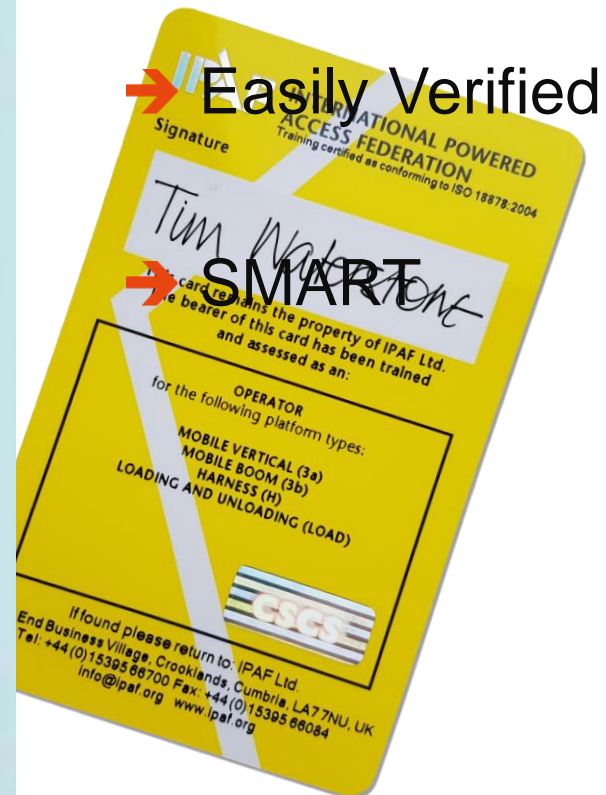
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XR STRATEGY FOR  
POWERED ACCESS TRAINING  
December 2018

- 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)

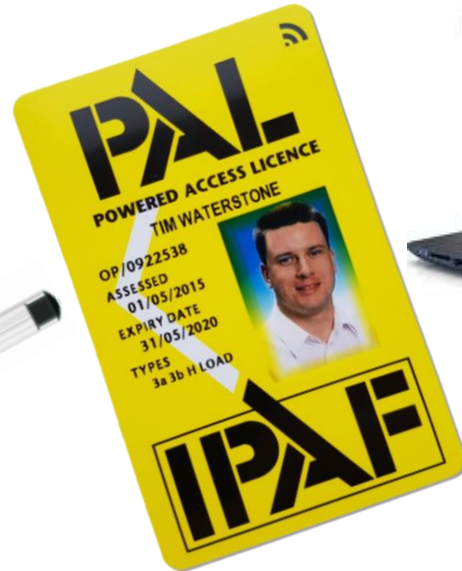
→ Annual refresher (Germany)



# In the classroom

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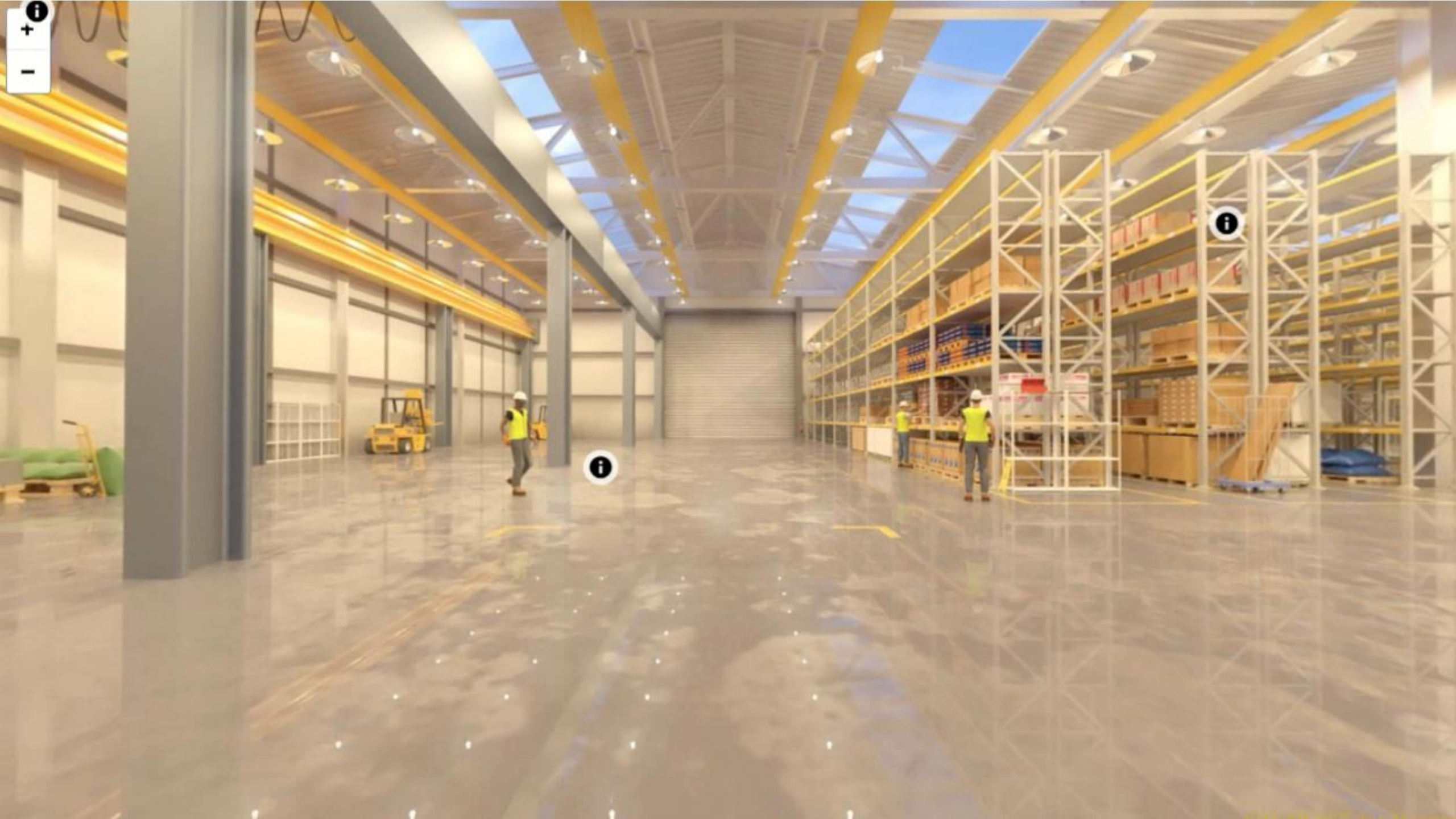


# Immersive learning

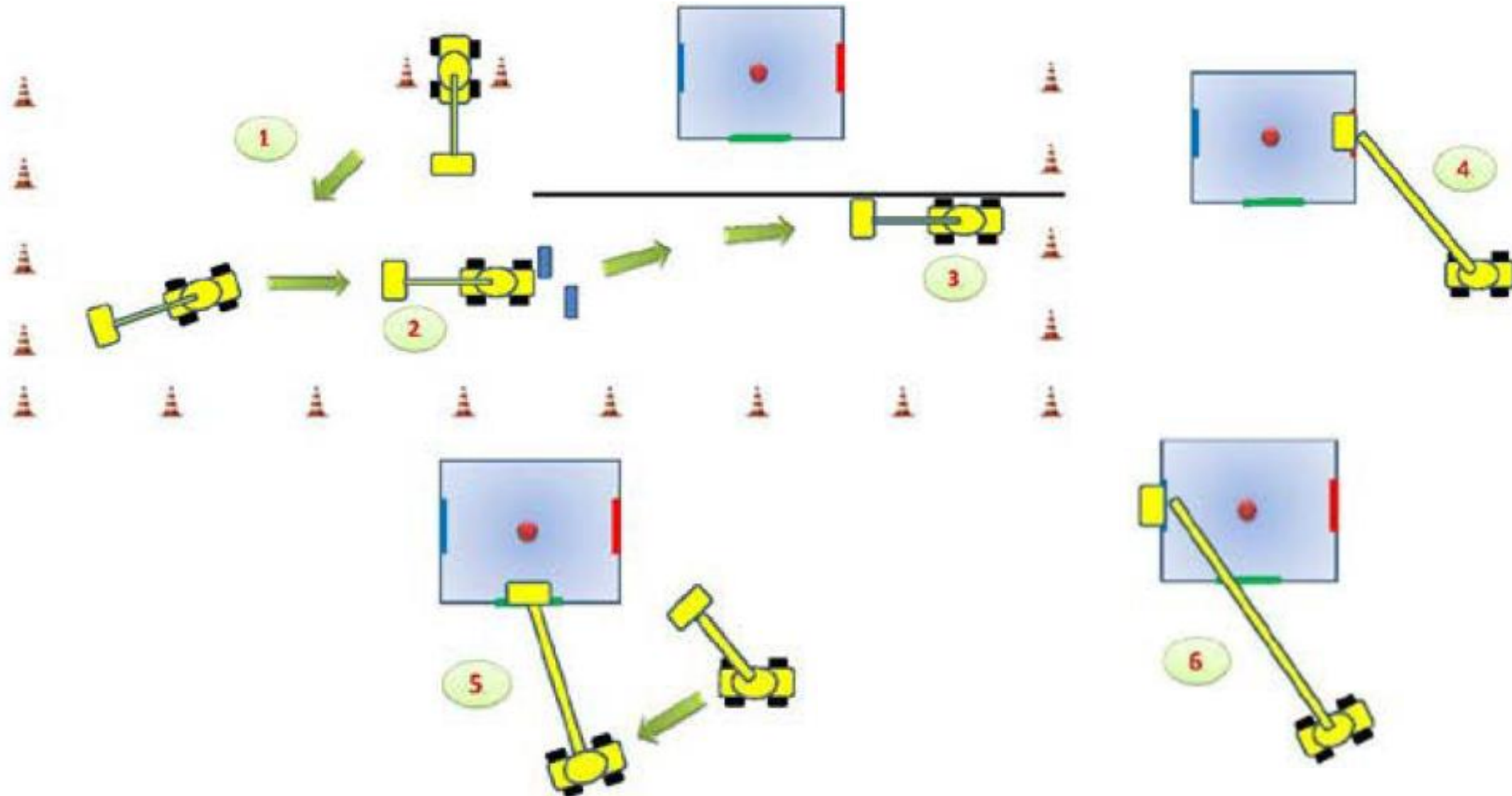
- 360° images
- Realistic challenges
- Contextualise the learning







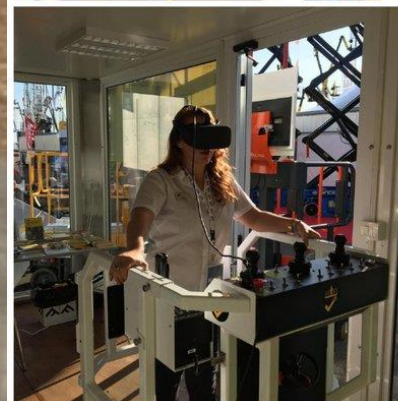
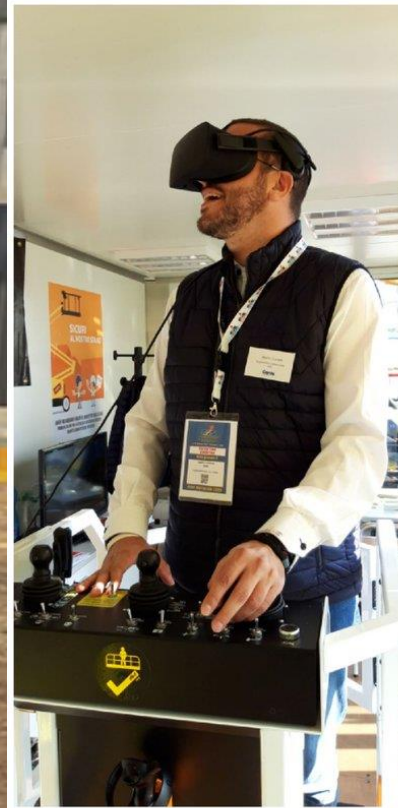
# PAL+ Practical Test

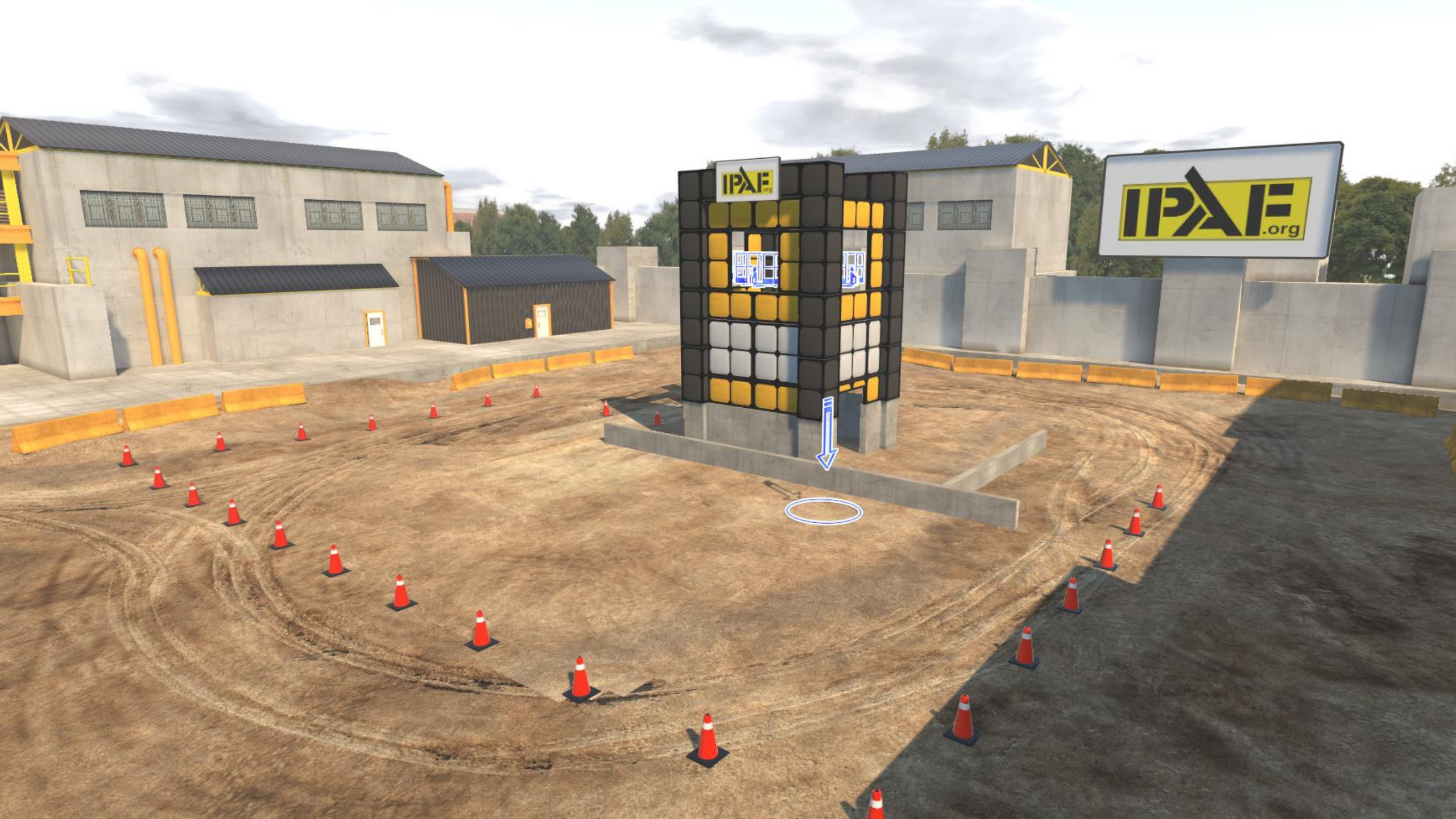


# PAL+ Practical Test

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# PAL+ Practical Test

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➔ PAL+ Practical



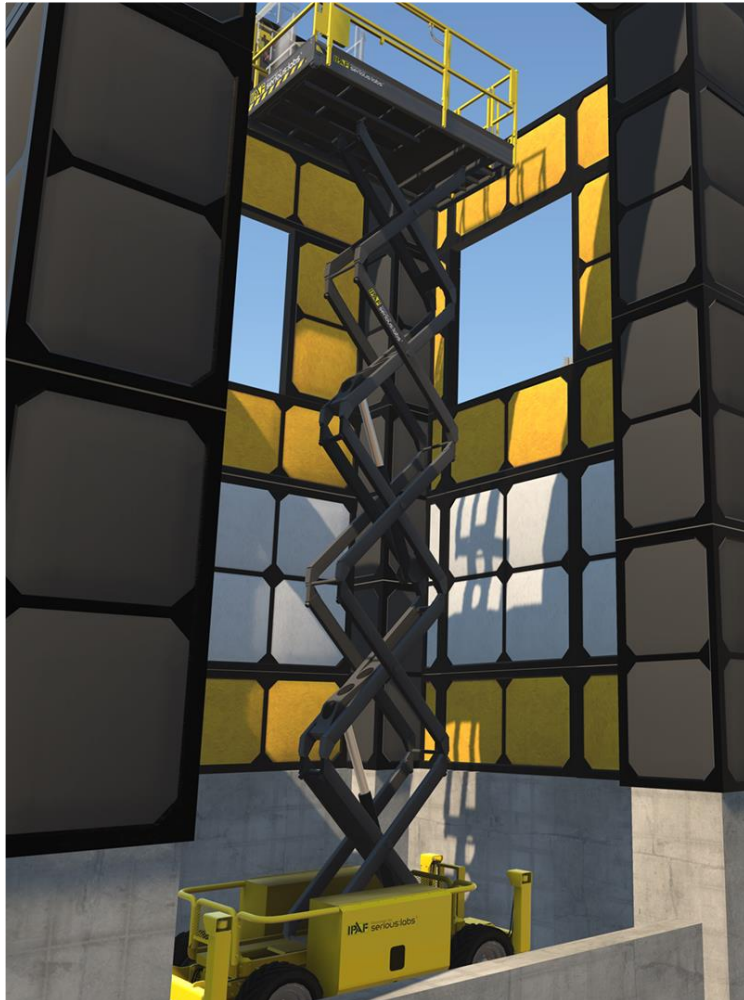
➔ PAL+ Simulator Practical

# PAL+ Practical Test

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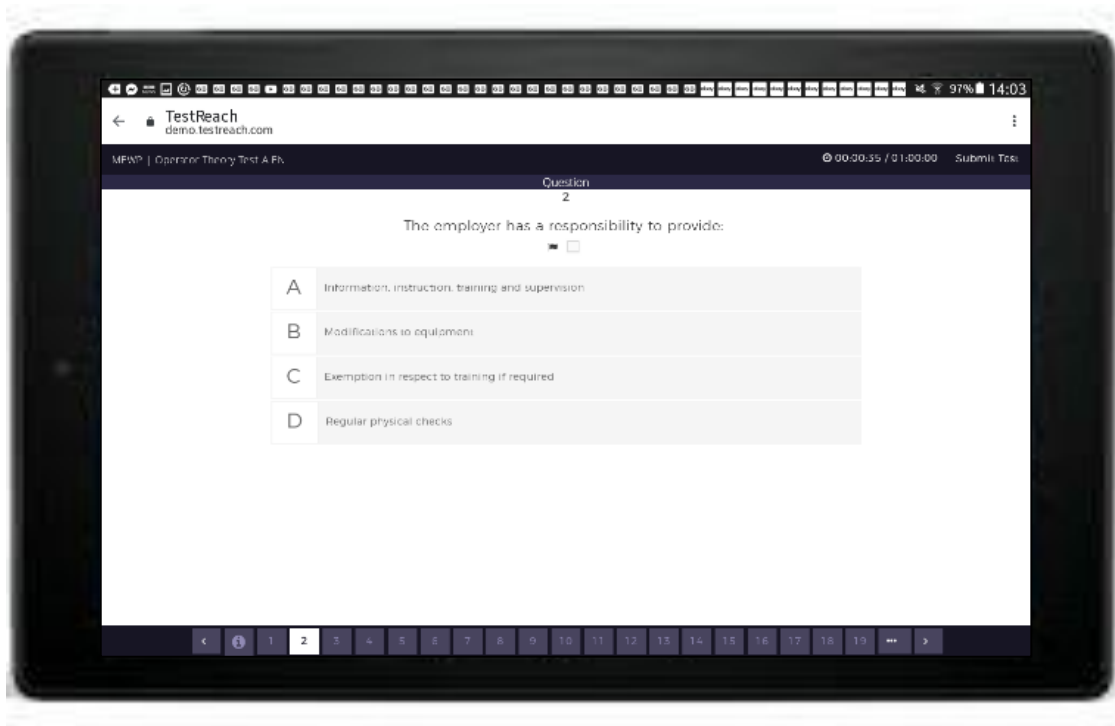
➔ PAL+ Practical



→ PAL+ Simulator Practical

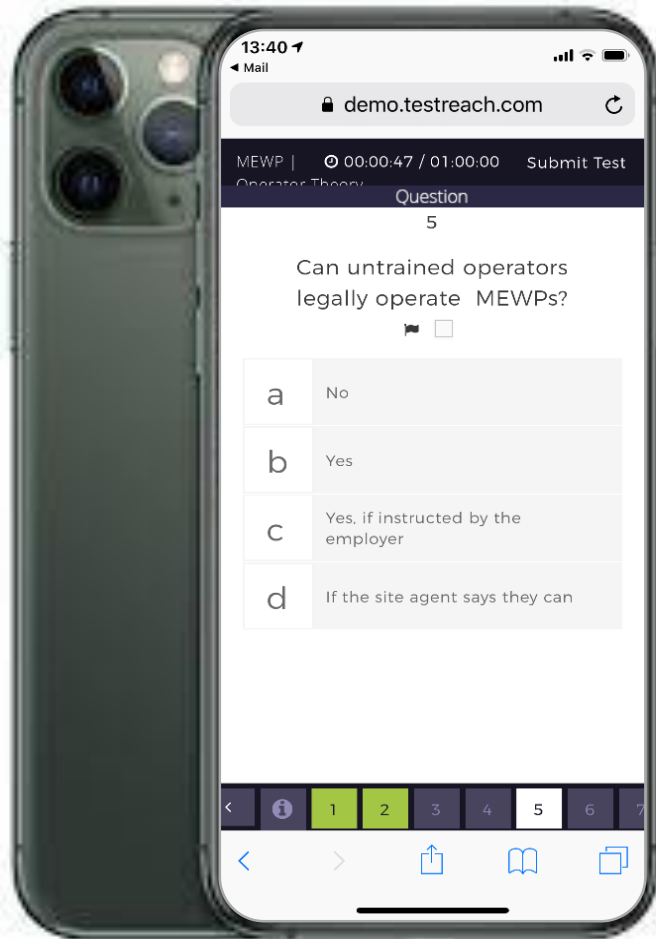
# Looking ahead

# Digital forms and question papers



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

# Digital forms and question papers

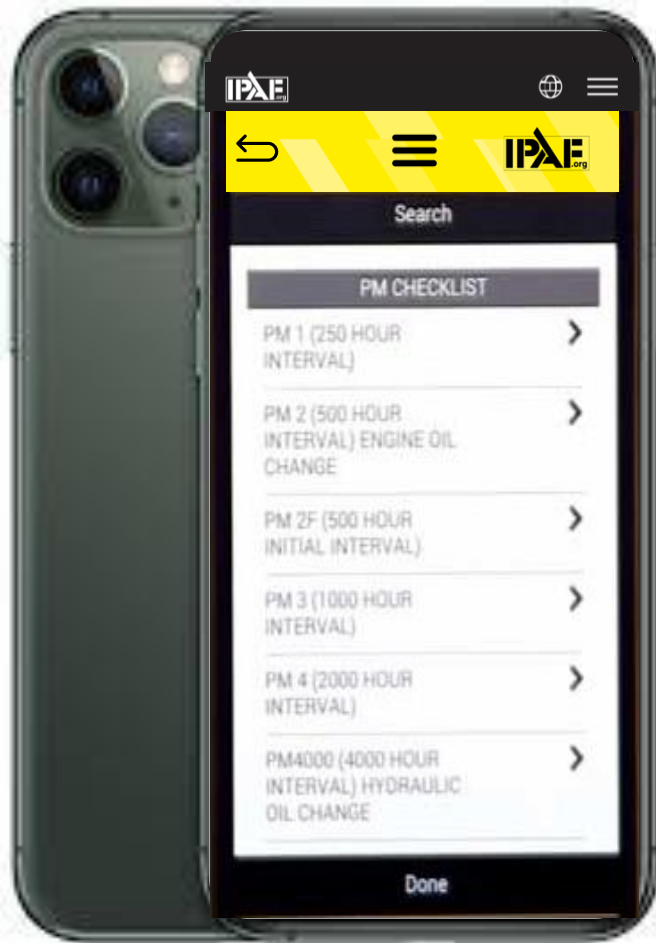


- Reduced Administrative Burden.
- Increased Security.
- Simple language selection
- Global Assessment Reporting.
- Tablet or Phone

Digital



→ 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 overlay. The city lights are visible in the background, and a network of white lines connects various circular icons. The icons include a cloud, a globe, a shopping cart, a building, a house, a laptop, a car, a radio tower, a smartphone, a heart with a pulse line, and two people. A large, semi-transparent '5G' logo is centered in the background.

→ Communication



→ Collaboration

# → Information

→ ~~The~~ ~~can~~ ~~make~~ ~~you~~ ~~is~~ ~~a~~ ~~an~~ ~~and~~ ~~effective~~  
use of Powered Access worldwide

