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Virtual Instructor Extended Reality (ViXR)

A user perspective

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Introducing :

First User of the
Virtual Instruction XR tool (ViXR) by ProSim

GÖZEN HOLDİNG

IFTC is a company of GOZEN HOLDING with 9 companies serving aviation industry more than 45 years.

IFTC International Flight Training Center
GÖZEN GSA
FLYDOG K9 SERVICES
FREE BIRD TRAVEL
GÖZEN SECURITY
GÖZEN AIR SERVICES
FREEBIRD
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Simulator Capacity Challenges

IFTC

Full Flight Simulator (FFS)-"The Mothership"

- Approximately 6500-7000 Hrs/year max capacity
- Scheduling challenges with many customers (Airlines/ATOs)
- Operational Suitability Date (OSD) by OEMs/EASA Regulations
- Peak training periods favored by all customers
- Number of experienced instructors located at various bases
- Expensive training (high purchasing & operational cost)

Opportunities to Expand SIM Capacity

IFTC

Add another FFS ? (6500 hrs / 8-10 M Euro), or :

Offload training tasks (hours) from FFS:

- Flight Training Device (FTD) (2500 hrs / 2,5 M Euro)
- Type representative Multi Crew Coordination (MCC) sim (1000 hrs / 500 k Euro)
- Procedures Trainer (500 hrs / 200 k Euro)
- Procedures Trainer + ViXR (1000 hrs / 250 k Euro)

- Optimized Training Curriculum by working with competent authorities
- Well defined regulations for device capabilities in training
- A solution to reduce the large number of instructor support hours

“WHY?”

“Do we need new technologies ?”

“This a picture of my granddaughter Sara, 10 months old.”

“As an industry we owe it to this new generation and the generations after us that we do our utmost to make the skies safer”

“We contribute to that goal by making sure pilots are provided with the optimum solutions for each of the training tasks”

ViXR Concept

- A tool that enables aircraft procedural training with or without the physical presence of a flight instructor.
- A new interactive tool for and together with the professional aviation training market using augmented reality technology combined with ProSim FSTDs.
- Fulfills the industry demand to improve training quality and consistency.

Making ViXR Possible

TXT Group consists of companies that have a solid network of **multidisciplinary competences** and **vertical excellences**.

We arrange them in a dynamic and productive way, according to the evolution of the technologies, markets and requirements.

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Never better.

ViXR is based on:

- ProSim simulation
- Pacelab WEAVR Platform

- Procedures are displayed on Hololens 2 device by using WEAVR Player.
- Pilot is guided step-by-step by highlights, hints and voice messages
- Pilot activities are tracked by WEAVR Manager cloud
- Tracking data can be exported to customer LMS
- Simple plug & play AR solution

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ViXR Features

- Responsive to aircraft systems in real time
- Normal and non-normal procedures
- Highlight and track procedural compliance
- Provide visual hints, flow indications and voice instructions
- Data recording for debriefing/analysis
- Customer tailored procedures
- Platform for data gathering for future applications (AI/ML)
- The perfect tool for enhanced (and real) EBT/CBTA

ViXR Goal

- Reduced instructor capacity
- Training quality improvement
- Overall training time and cost reduction
- Training consistency
- Excellent tool for pilot selection/assessment

ViXR Scaling Opportunities

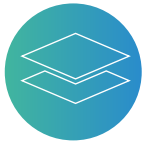
Multiple units active simultaneously with one instructor

Machine learning

Artificial intelligence

Pilot-tailored predictive training

Virtual reality solutions


Mixed reality solutions

HUD alternative solution

ViXR
How does it work?

ViXR has exit conditions defined for each step and customizable by the end user; multiple conditions may be assigned for each step.

Visual Inspection

The highlight box will change from cyan to green.

Expected System State

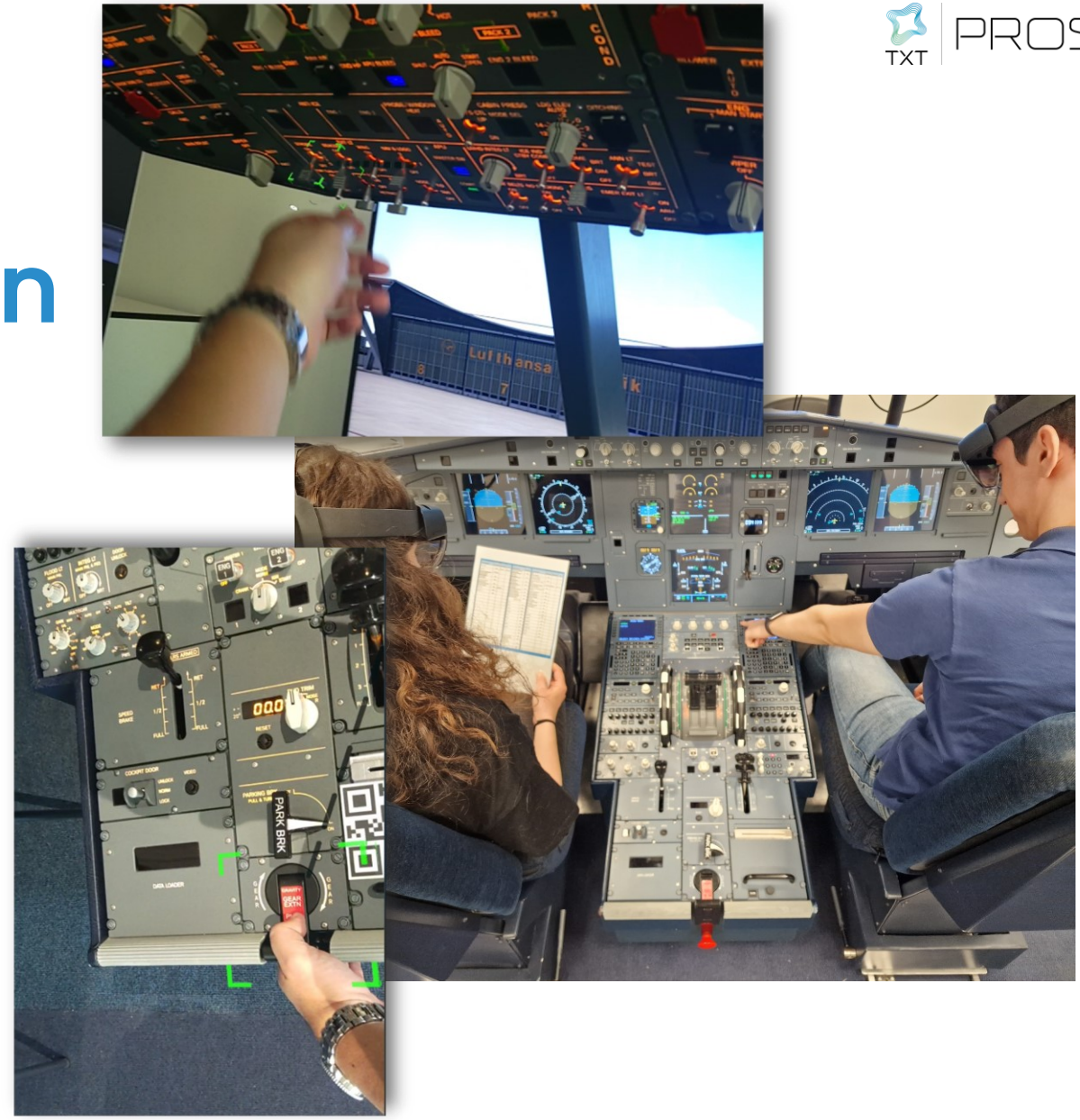
ViXR will check for the appropriate state of a system or switch in the flight deck i.e. Batt On/Off

Touch input

The user needs to touch a flight deck item regardless of its state.

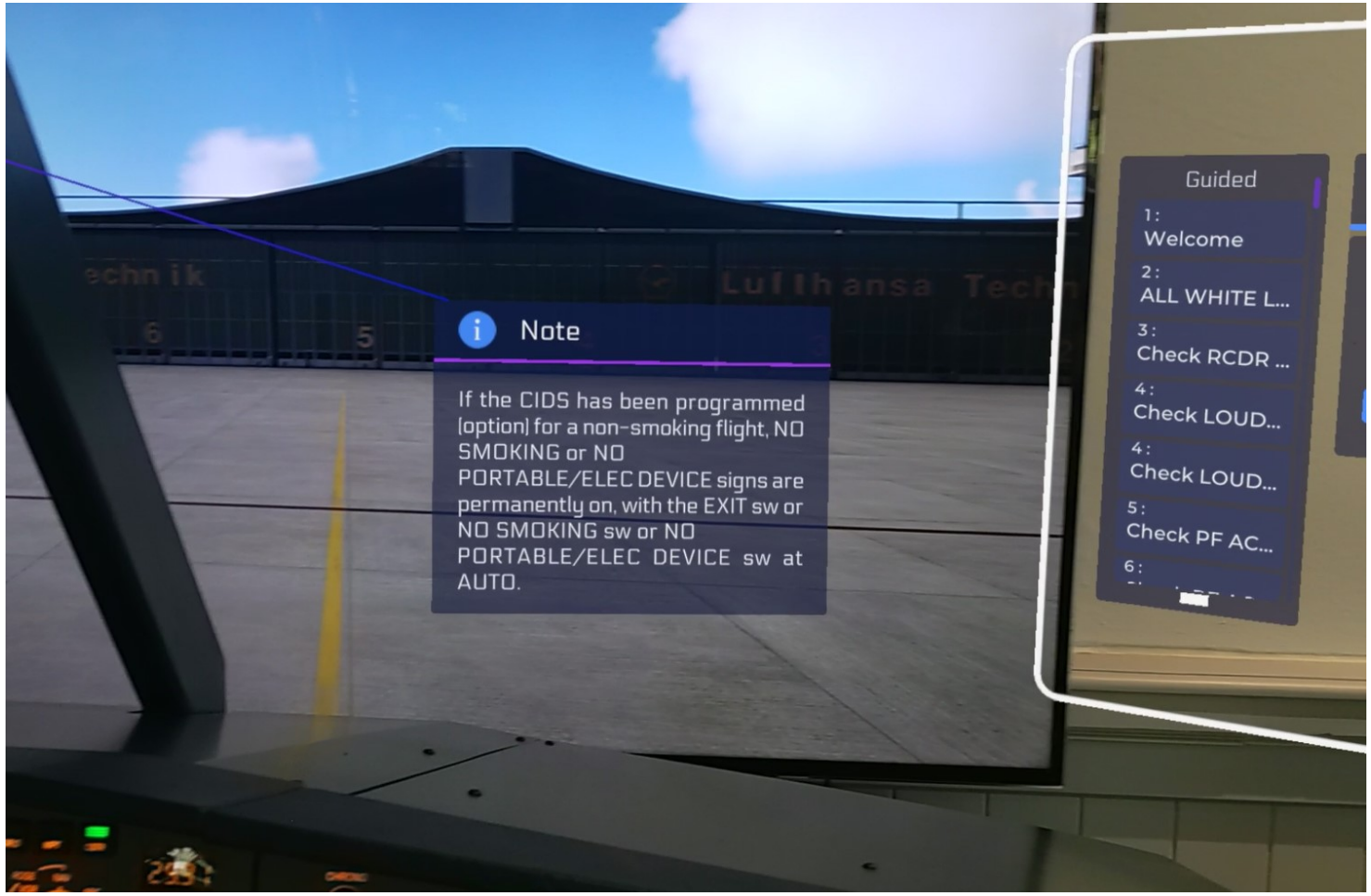
ViXR
Modes of Operation

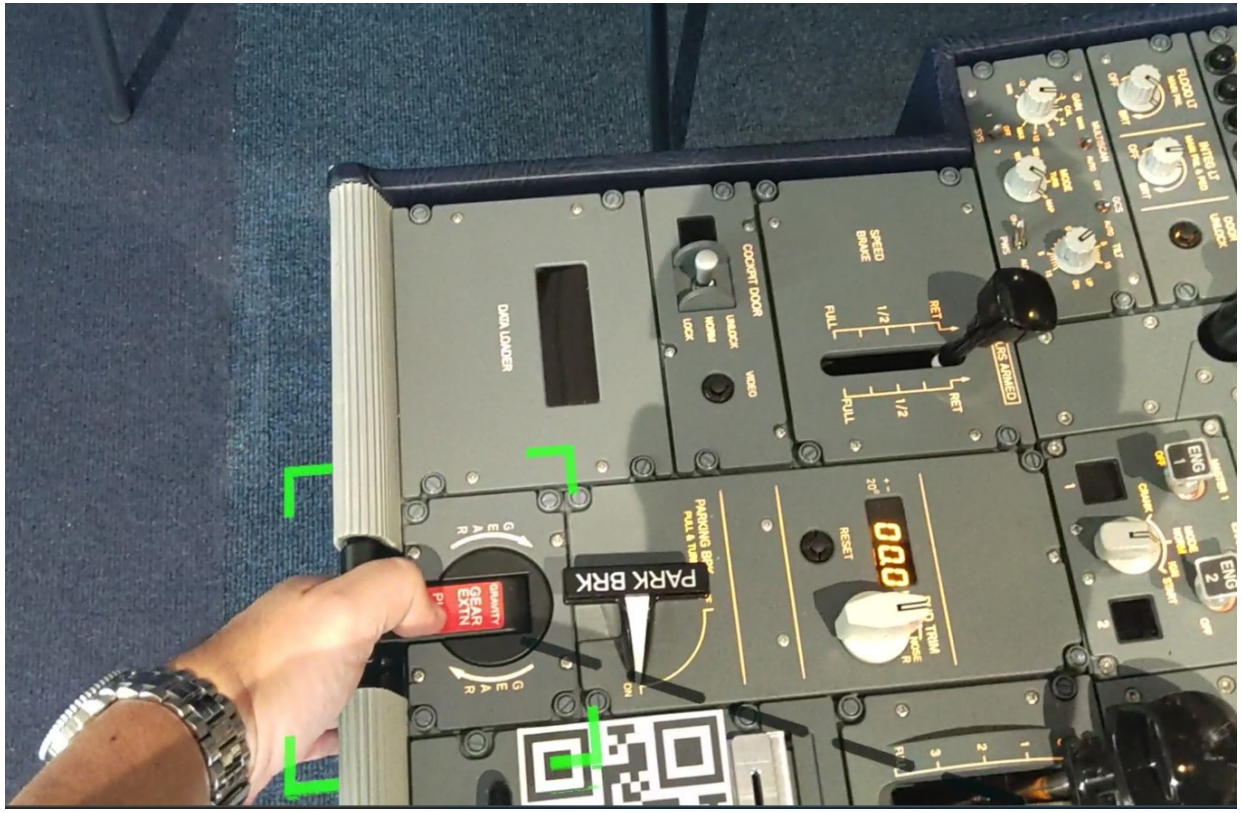
- Guided
  - Includes visual highlights, audio instructions, billboards with additional information, flow indication lines and aural confirmation when the step is completed.
- Assessment
  - Removes all the aids and tracks the trainee performance.



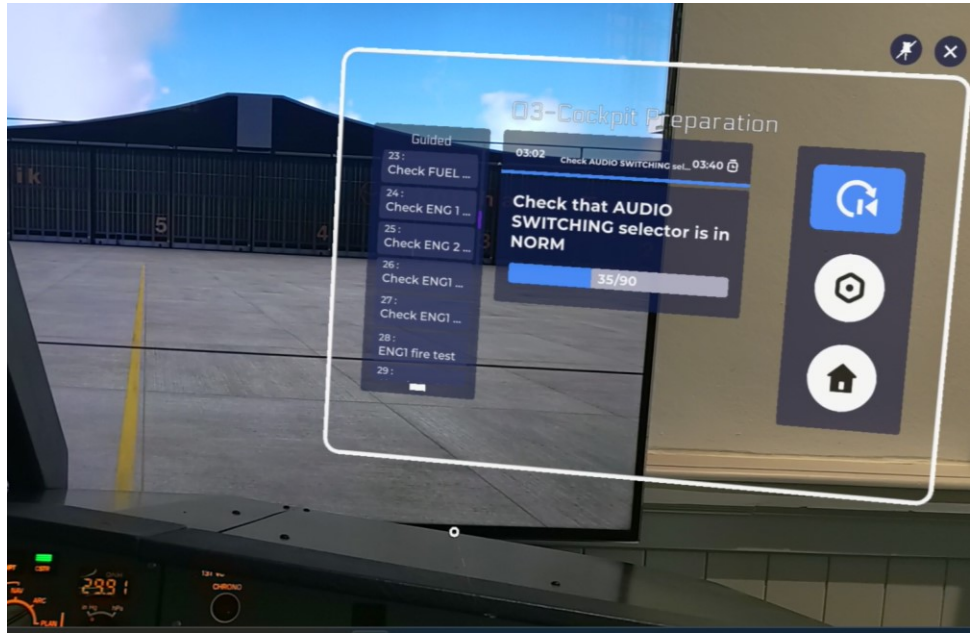
ViXR – AR Highlight

ViXR – AR Billboard





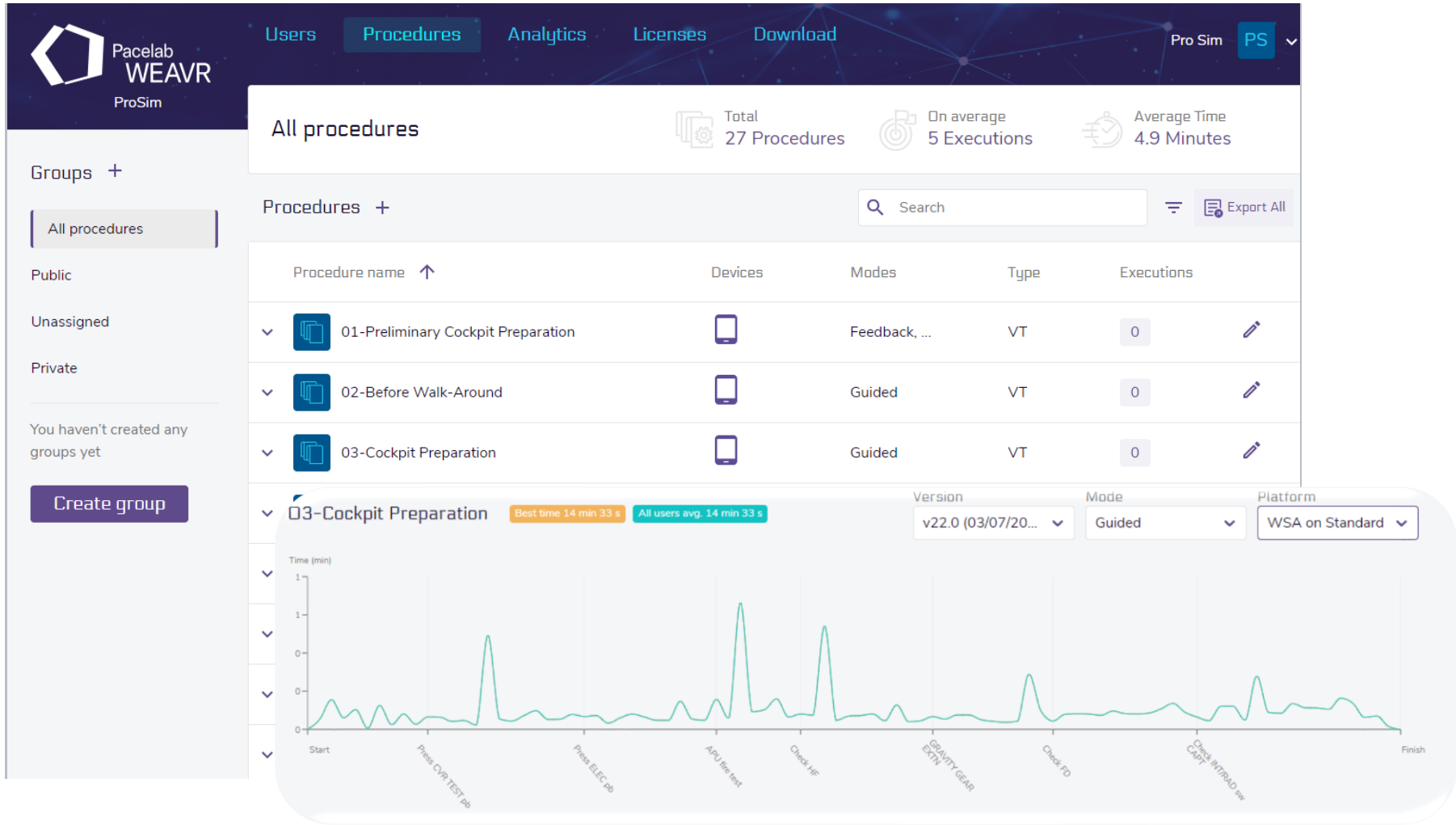
AR Flow Indication Line



Current Step

ViXR – Pacelab WEAVR Manager (LMS)

Student performance Data/ Objective feedback



Output to AI engine for closed loop feedback learning

ViXR at work in IFTC

- ✓ Where in Training Footprint ?
- ✓ # Cadets Trained
- ✓ Results
- ✓ Student experience
- ✓ Effect on throughput of Training System

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RESHAPING THE FUTURE OF TRAINING.

FTD, FNPT, FMS Trainer, Maintenance Trainer, VR Trainer

Muito obrigado pela sua atenção !