Using xAPI in Adaptive Virtual Learning

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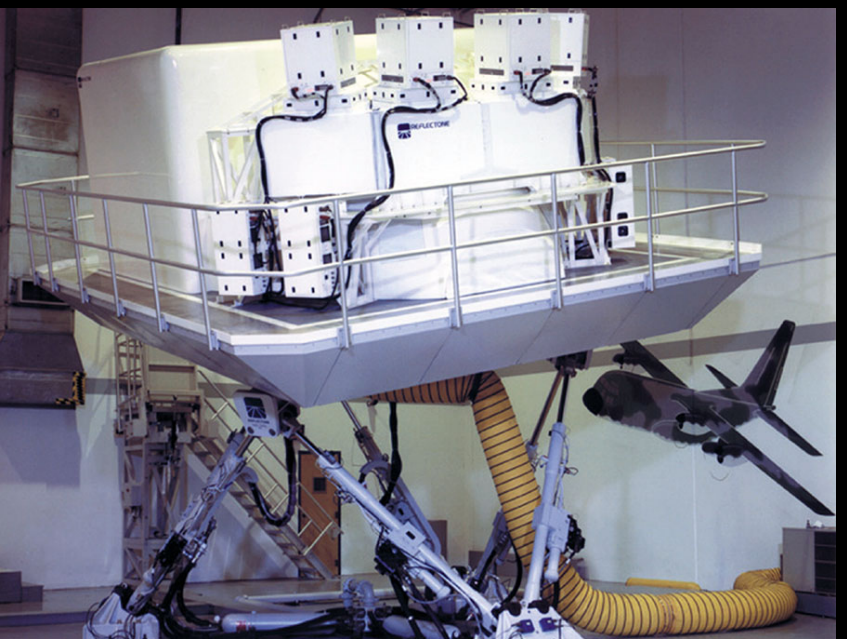
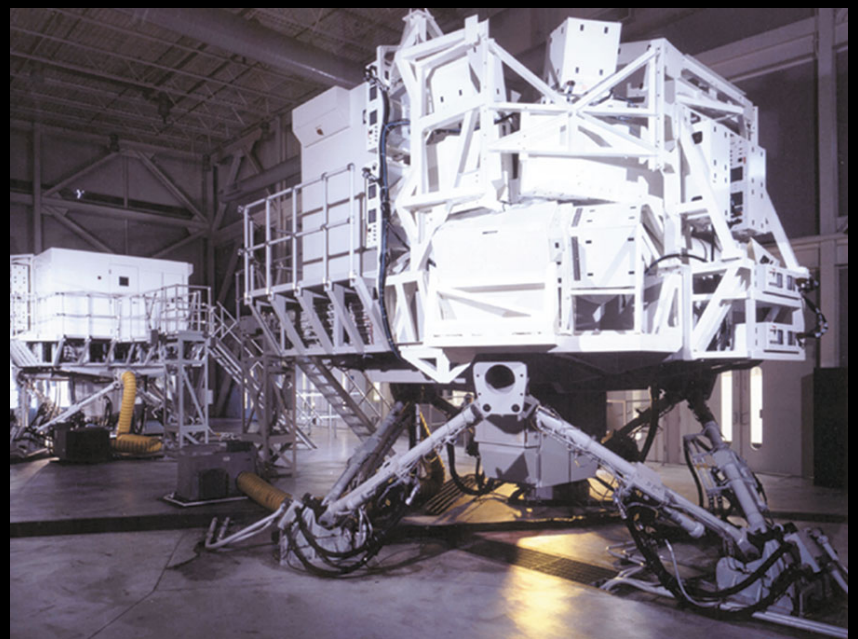
Using xAPI in Adaptive Learning

Scott Bybee and Martin Bogan

CAE

CAE 1940 - 1990s





CAE 2000 - 2018

CAE

Simulator Data Captured

- objectives completed
- performance rating
- flight recordings
- telemetry (e.g. instrument data)
- conditions
- time

Virtual Reality Data Captured

no SCORM data

Everything Data Captured

simulation LMS VR/AR/MR CBT IBT/classroom ad-hoc self-study

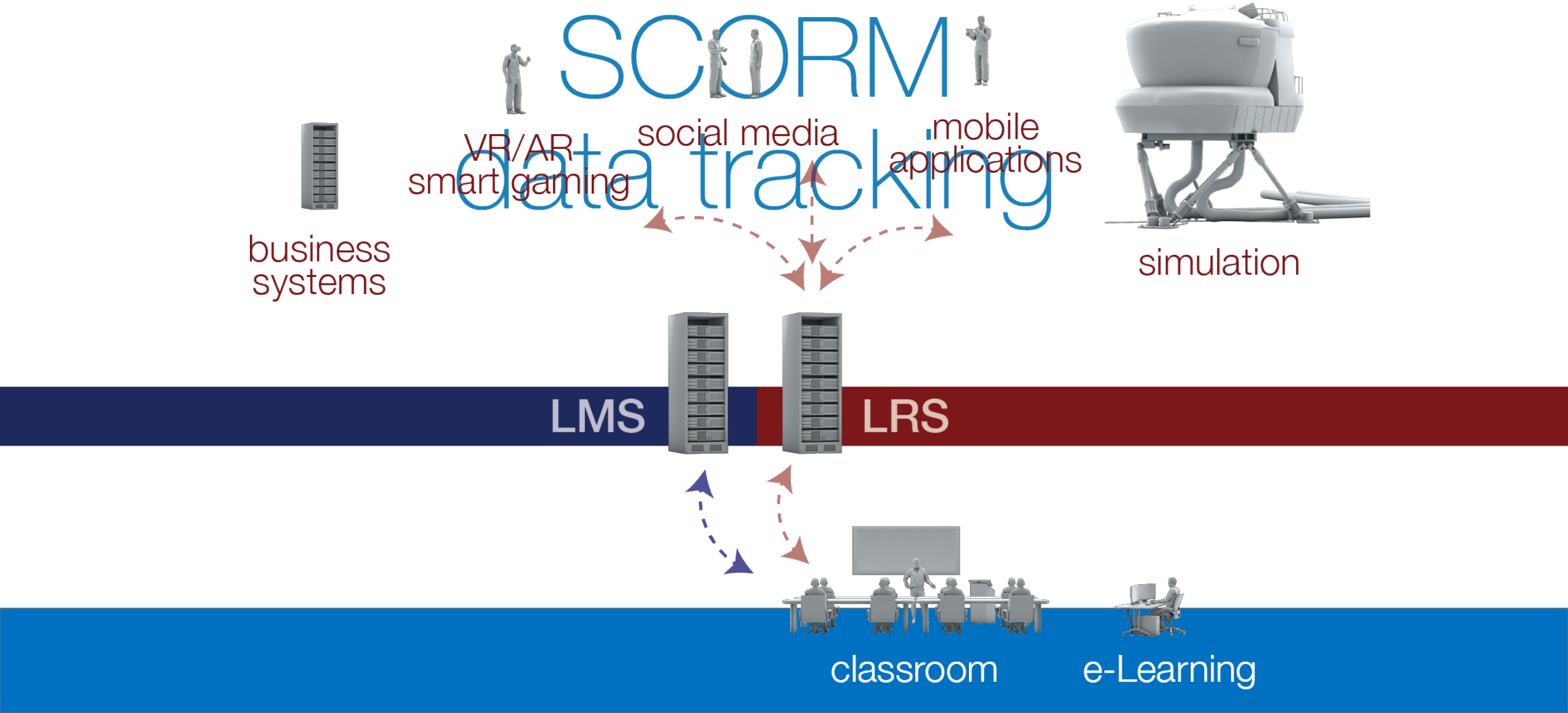
experience API

delivery
scheduling
sequencing
assessments
competencies
user management
course management
requirements tracking
learning records

learning records

LMS

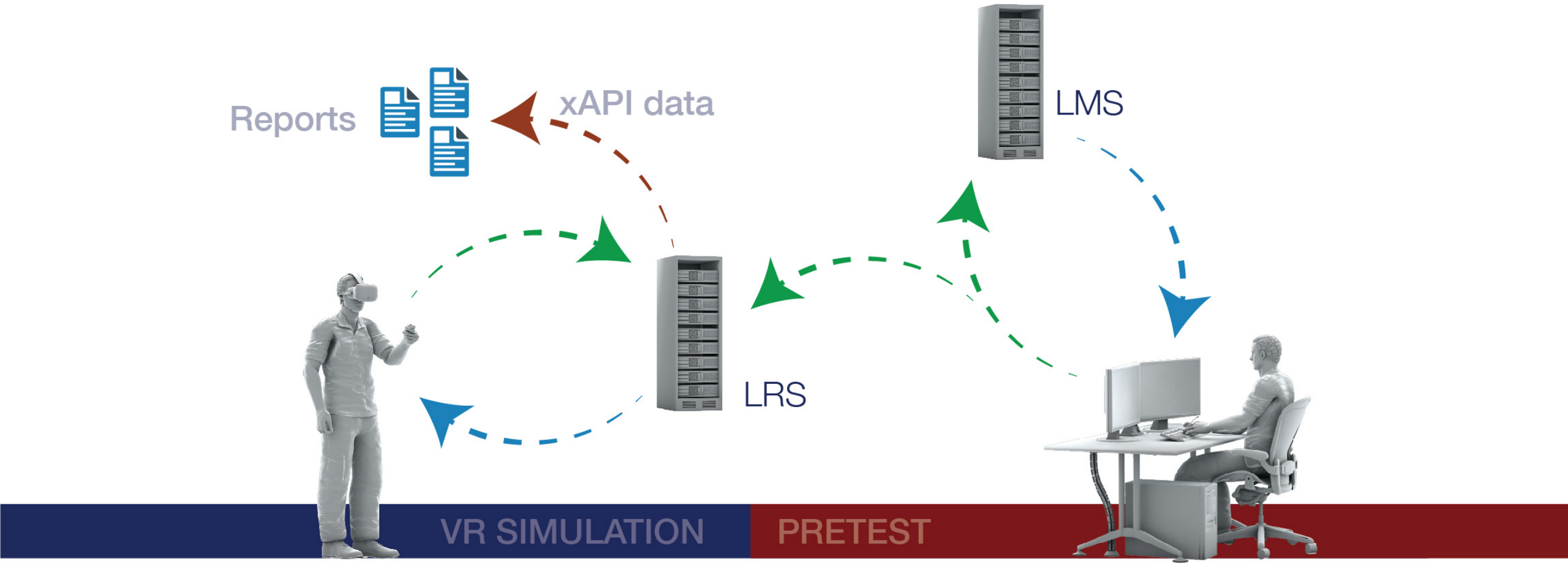
LRS


SCORM
data tracking
business systems
VR/AR
smart gaming
social media
mobile applications
simulation
LMS
LRS
classroom
e-Learning

xAPI Powered Adaptive Learning

MQ9 GCS Pilot Training

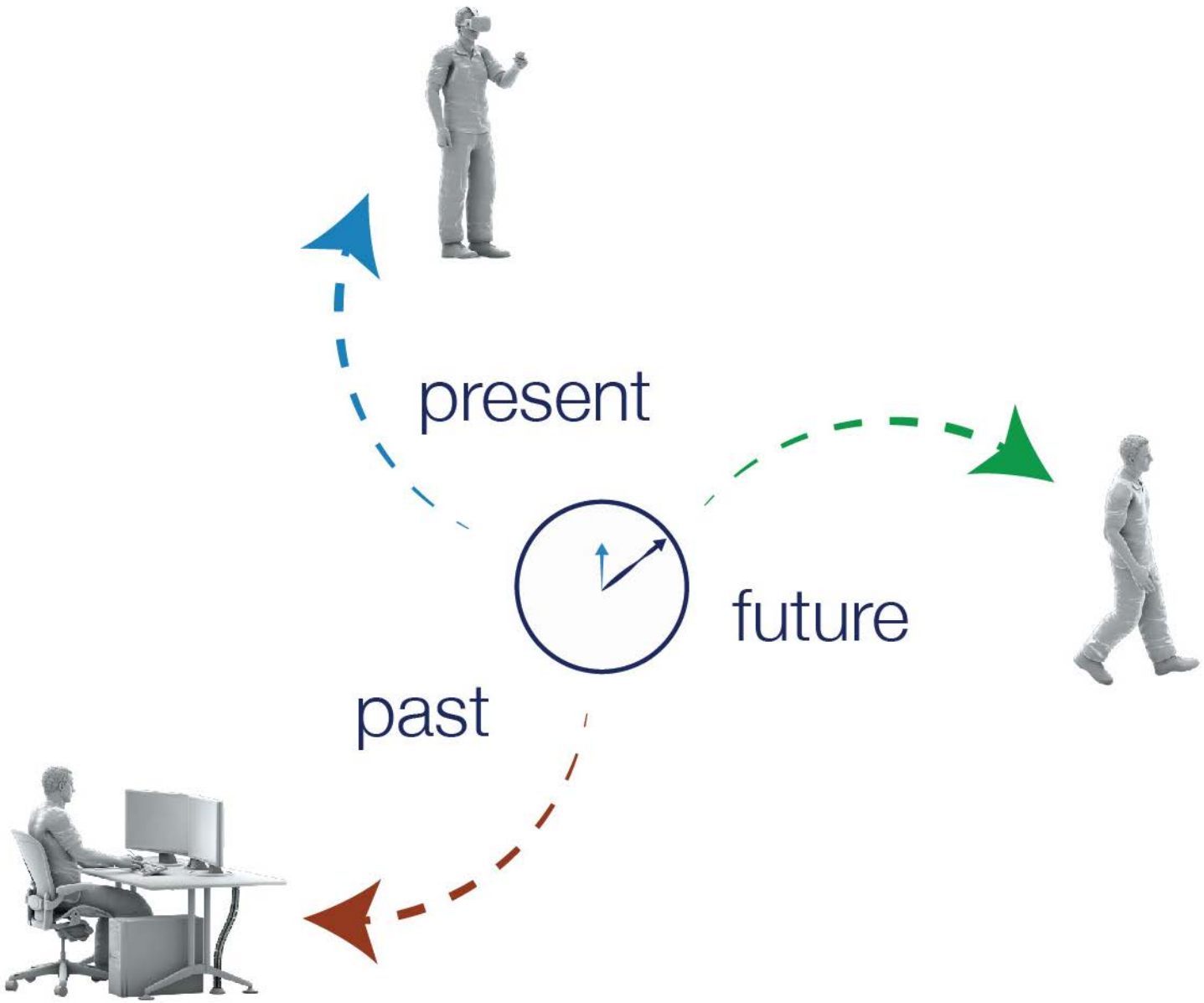
GCS Data Flow

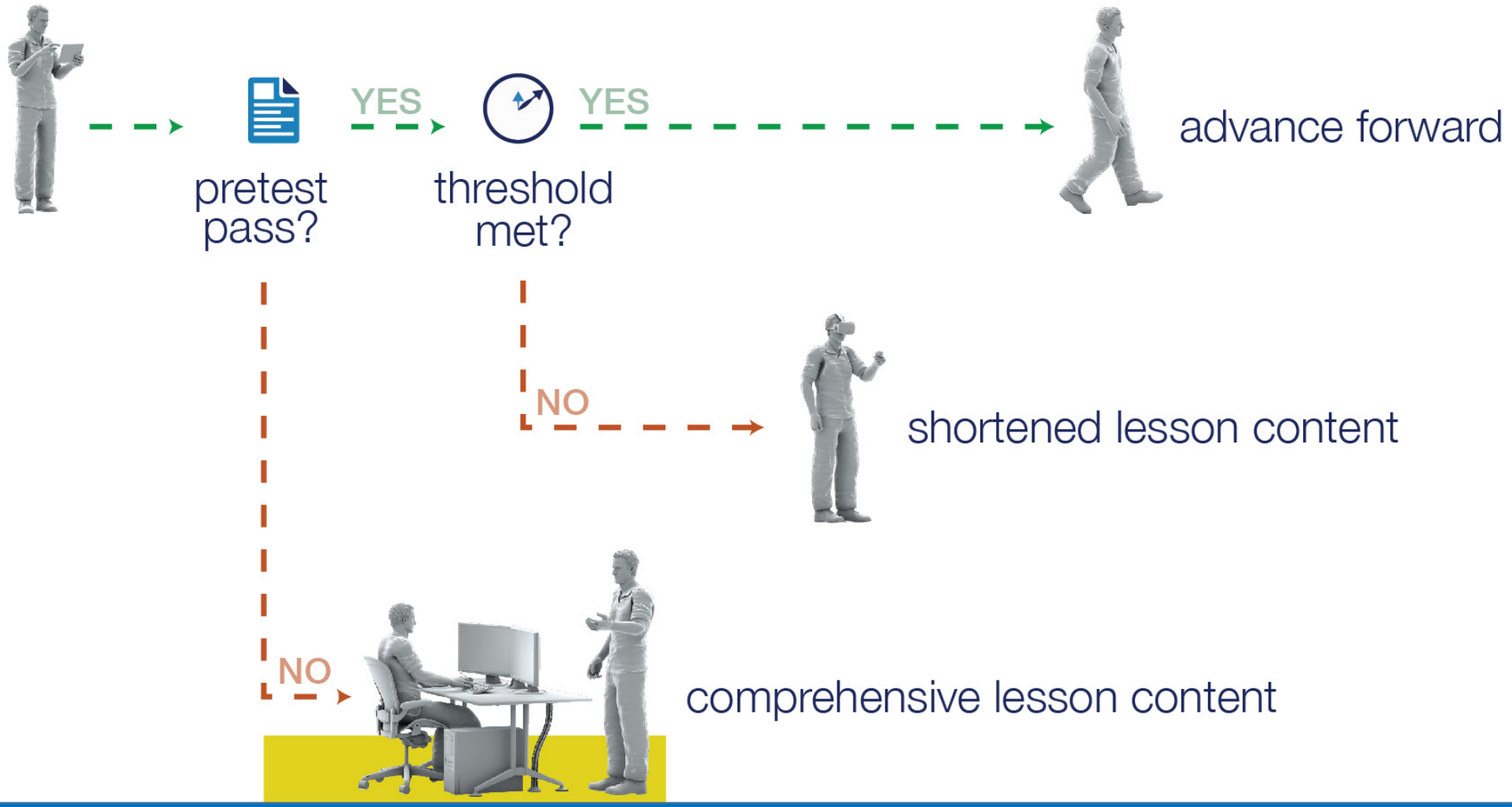


150%

increase in data points collected

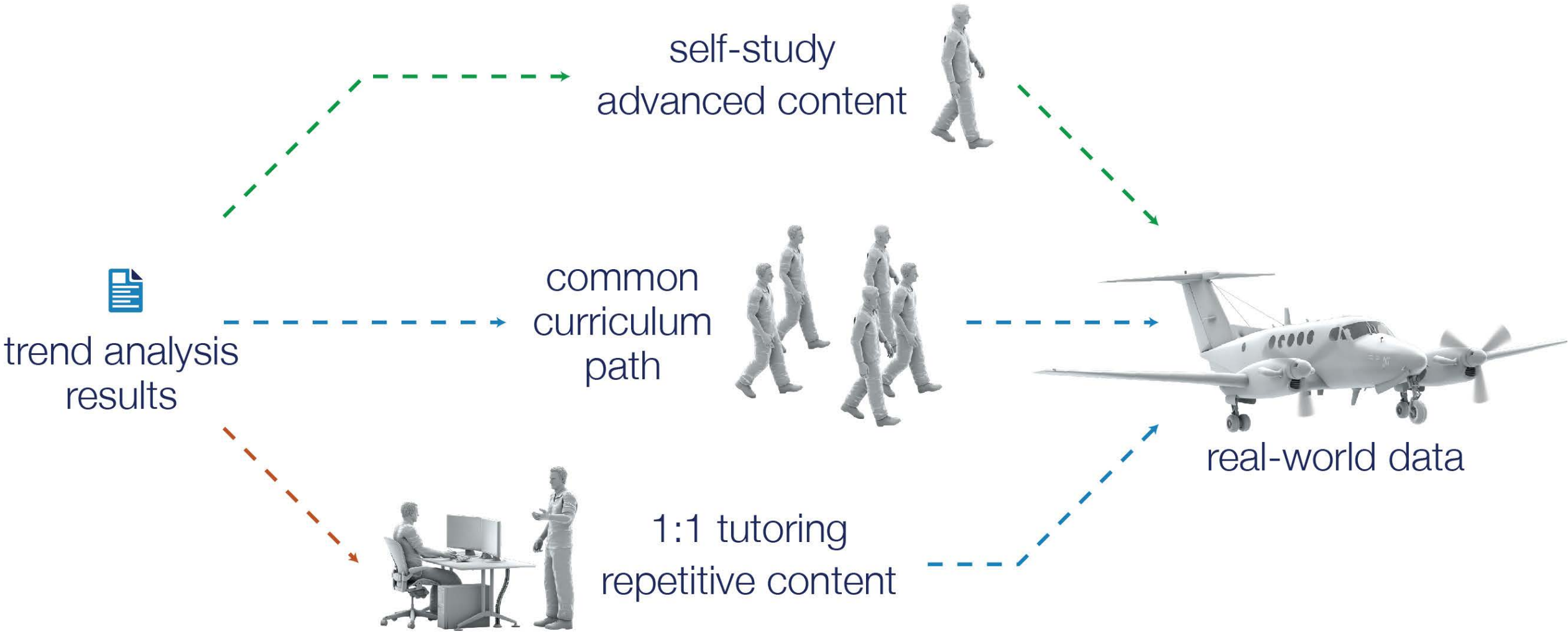
Adaptive Learning



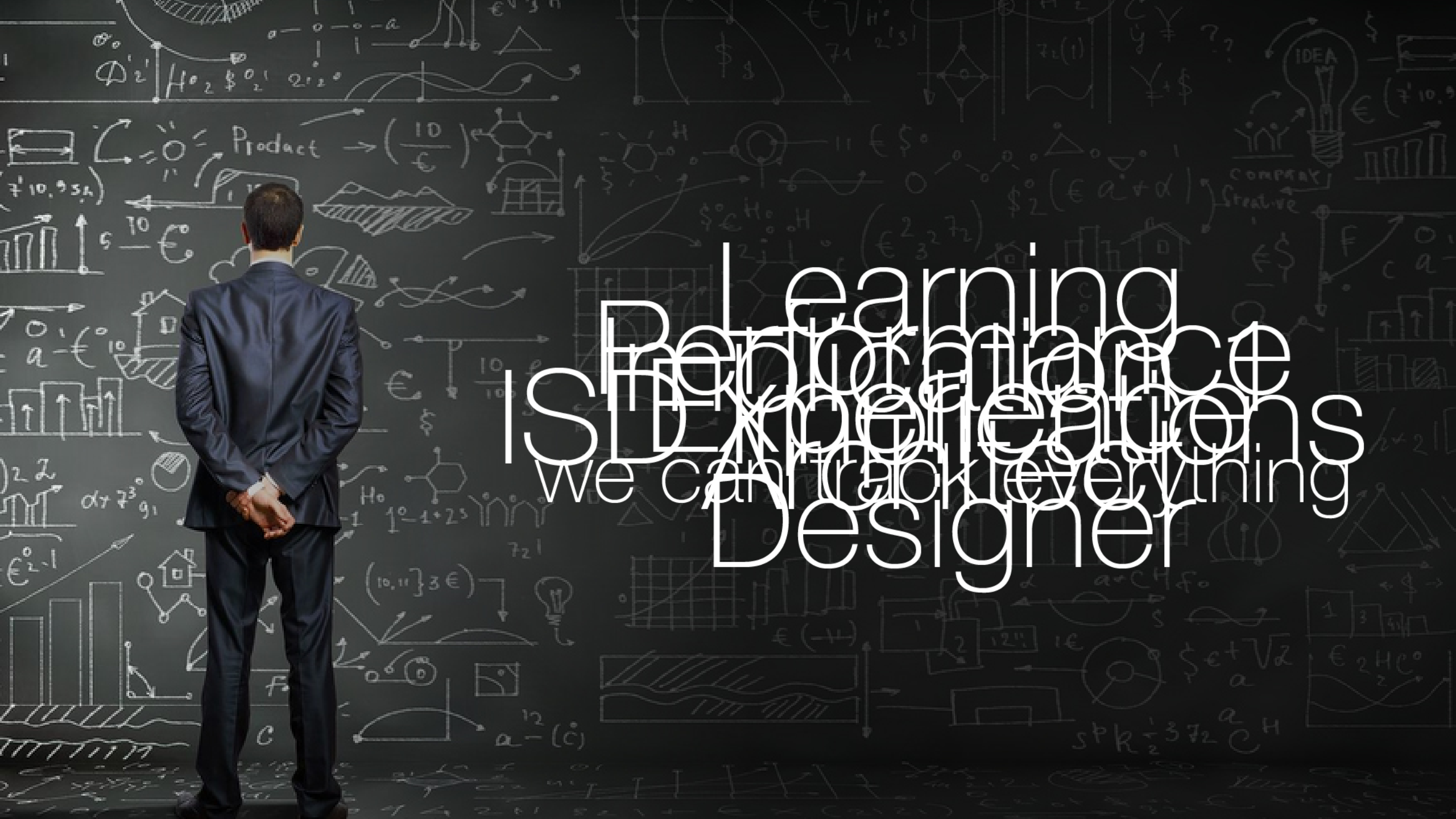


Adaptive Learning ~ Past

Adaptive Learning ~ Present



Adaptive Learning ~ Future


Learning
Performance
Experiences
ISD
We can track everything
Designer

?
What Should be Tracked

300

lessons

3000

objectives

3000^{x}

branching opportunities

Alex landed aircraft

subject | verb | object

Implication 2

develop a data structure and strategy

skill level metadata

barely

aircraft type metadata

C-12

Profiles

application specific concepts

statement patterns and templates

extensions

Data Strategy

industry specific verbs/objectives) + (universal actions e.g. video controls

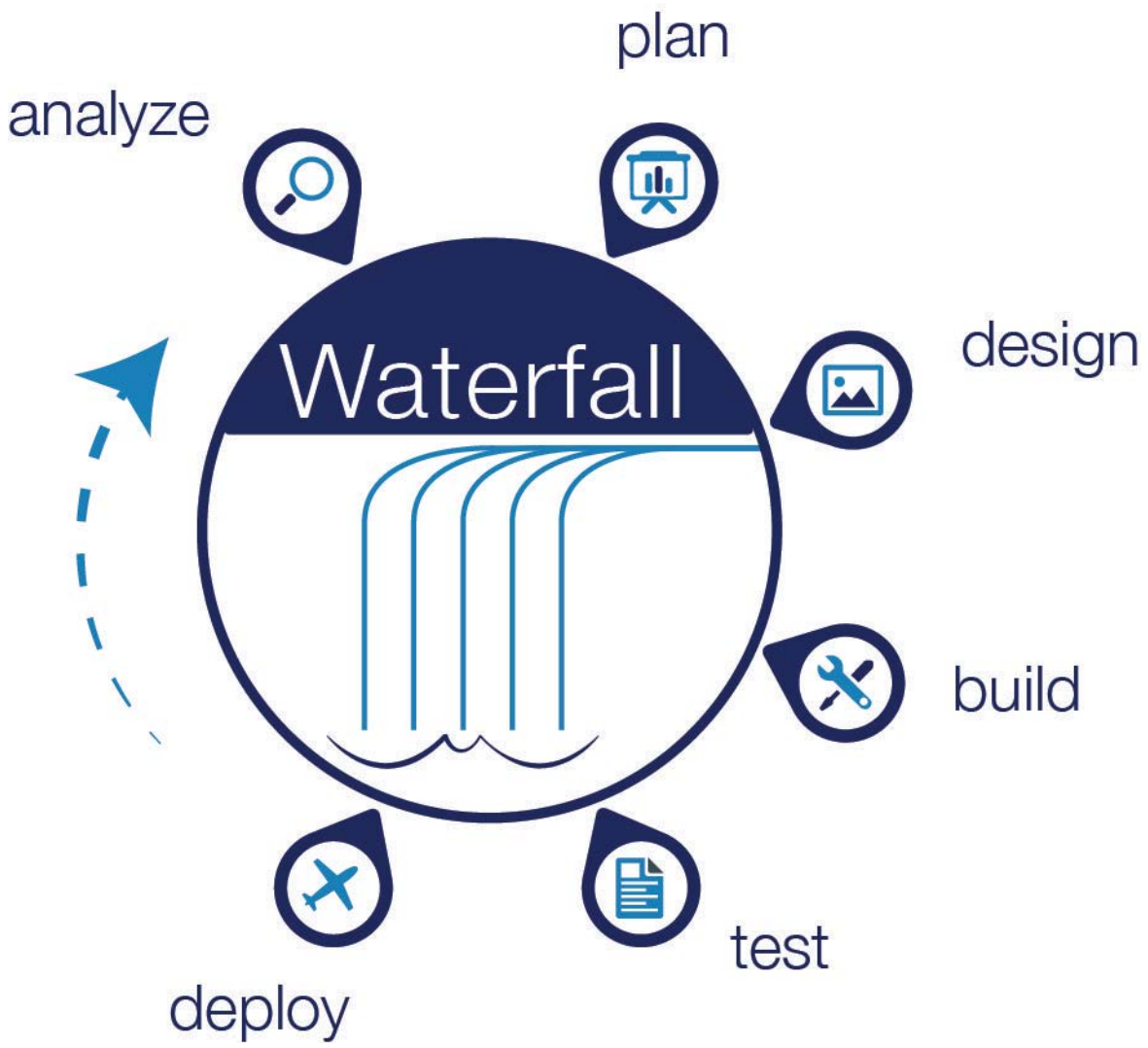
industry extensions
(provide context with descriptive data)

DoD ISD Profile

400 Acquisition Objectives

Implication 3

changes to project management



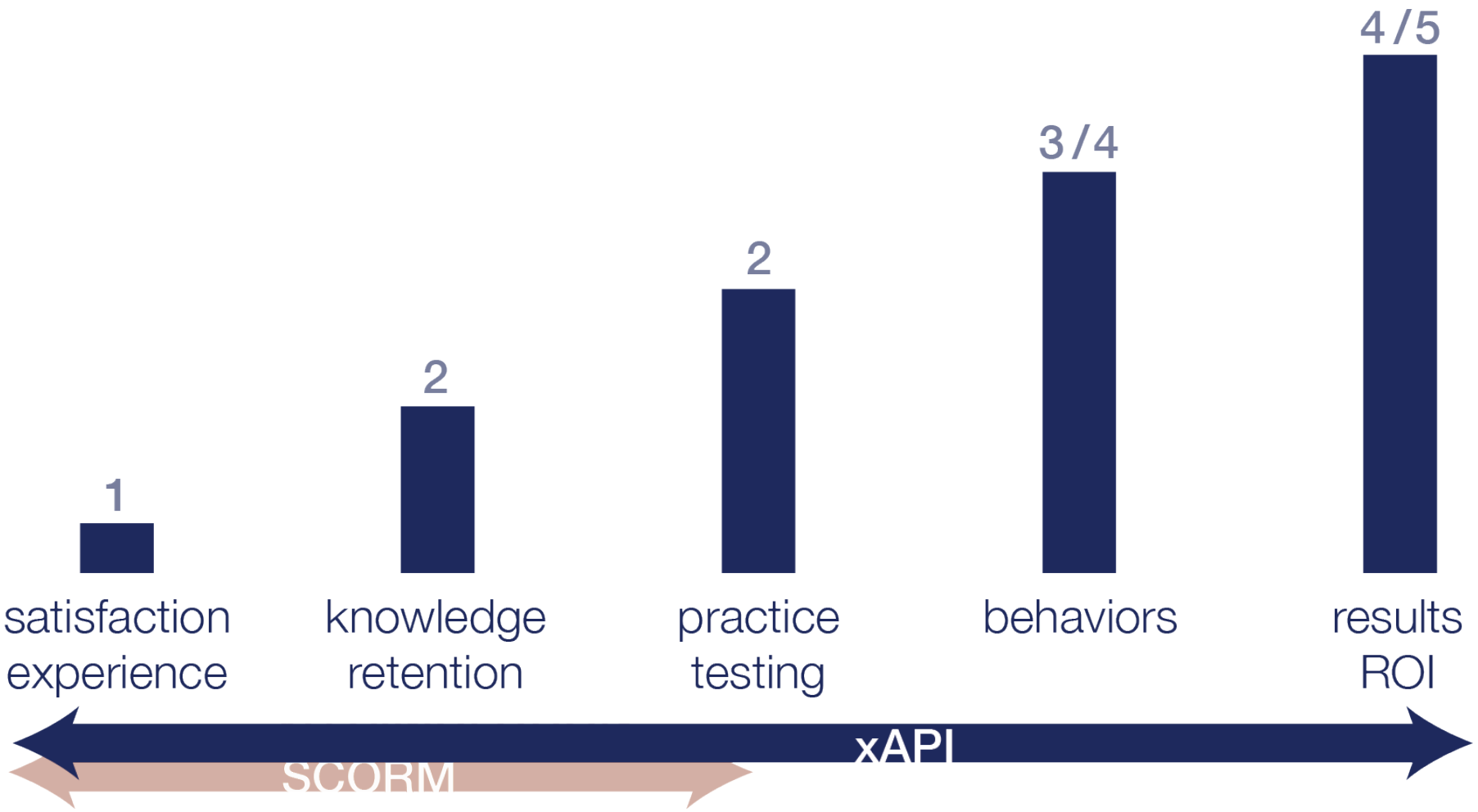
Traditional Project Management Strategy

Am I on budget?

AGILE

Implication 4

increase in analytics



Kirkpatrick's Levels of Training Evaluation

Do It Together

join a community of practice

work with other data stewards

standardize your strategy

determine what to track

start in your data ecosystem

Using xAPI in Adaptive Learning

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RESOURCES

ADL.net

https://github.com/adlnet/xapi-profiles

http://melslearninglab.com/2018/07/02/big-xapi-list/

https://adopters.adlnet.gov