Ground-breaking crew training technology takes flight

The aviation industry predicts that the world's aviation fleet will double by 2042, with an increase in demand for pilots at around 602,000 in the next 20 years. This places huge pressure on aviation training organisations and carriers to efficiently train this unprecedented increase of new pilots, within an increasingly congested airspace, whilst maintaining the industry's renowned first-class safety standards.

What is needed is proven, reliable technology that will train pilots to ensure the safety of every passenger and pilot in the air.

Seeing Machines' CREW TRAINING SYSTEM™

Leveraging 20+ years of operator monitoring experience and based on extensive collaboration with the world's most innovative aviation training organisations, operators and carriers, Seeing Machines has developed the world's first dedicated precision eye-tracking system for flight crew training in the Full Flight Simulator and Full Mission Simulator environment.

Seeing Machines' Crew Training SystemTM provides organisations with intelligent, evidence-based data to support accelerated and enhanced pilot selection, training, and assessment. High-precision eye tracking provides organisations and instructors with an intricate and unmatched real-time understanding of pilot behaviour, including scan patterns, decision-making behaviour, and attention levels.

Crew Training System works as a single and/or multi-crew eye-tracking solution designed to support instructors' objective assessment of aircrew active monitoring, and provide the instructor with scanning evidence to support their real-time assessment requirements, as well as trainee debriefing requirements. Instructors are no longer required to rely on observation and inference of pilot gaze behaviour and can quickly assess how trainees are dividing their attention across the cockpit.
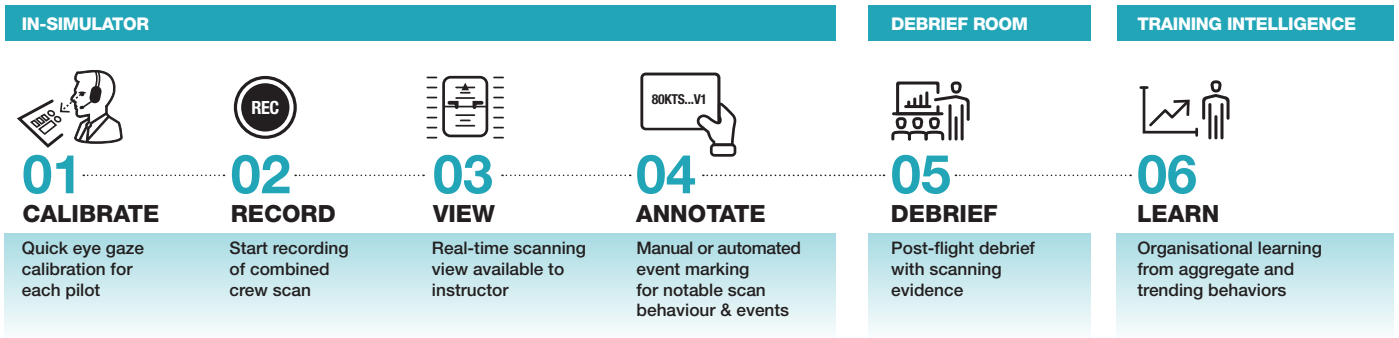
Trainees benefit from tangible real-time and post-flight feedback, providing the opportunity to optimise performance and remedy any suboptimal scanning behaviour or situational awareness.

Key Crew Training System Features:

→ CandyBar™ Time Plot Tracking visualises how aircrew divide their attention over time and monitoring function.

→ High fidelity tracking provides reliable attention results against instruments and areas-of-interest, including through Head-Up Display / Head-Up Guidance Systems.

→ Real-time Scanning View allowing instructors to identify scanning breakdowns in real-time and annotate events for debrief.

→ Synchronize with Simulator Performance Data (SPD) – Crew attention data is synced with audio, visual, actions, and SPD data to add context to scenarios.

→ Calibration is quick, easy and unobtrusive.

→ Scenario-specific training – load, create, and record specific flight training scenarios, and annotate accordingly.

→ Modular, discreet packaging and installation.

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How it works

IN-SIMULATOR				DEBRIEF ROOM	TRAINING INTELLIGENCE

01 CALIBRATE
Quick eye gaze calibration for each pilot

02 RECORD
Start recording of combined crew scan

03 VIEW
Real-time scanning view available to instructor

04 ANNOTATE
Manual or automated event marking for notable scan behaviour & events

05 DEBRIEF
Post-flight debrief with scanning evidence

06 LEARN
Organisational learning from aggregate and trending behaviors

Crew Training System Specifications

	Single-Crew System	Multi-Crew System
Recommended For	**Civil & Military:** Single pilot training Rotary pilot training Ab initio	**Civil & Military:** Multi-crew training
Technical		
Camera	1	2
IR Lights	2	4
Calibration	<1 minute	<3 minutes
Accuracy	1-5 degrees	
Frame Rate	47Hz	
Availability		
Simulator Platforms Supported	Flight Training Device & Level D Full Flight Simulator Full Mission Simulator (military)	
Previous or Current Engagements	BAE Hawk 127 AW 139	Boeing B737, B777, B787 Airbus A220, A320, A330, A350, A380 ATR 72
Areas of Interest	HUD, Head-Down Instruments, Windshield	HUD, Primary Instruments (PFD, ND), Secondary Instruments (Head-Down), Engine Displays, Control Panels
Visualisation Support	Instructor Operator Station and Debrief	Instructor Operator Station and Debrief