INNOVATION AVIOTECH PTY LTD

AUSTRALIAN GRANTED PATENT

AU2019238567B2

GRANTED: 24 FEBRUARY 2025

EXPIRY: 19 MARCH 2039

INTERNATIONAL PATENT PROTECTION

Protecting innovation. Securing global aviation safety.

GRANTED

AUSTRALIA · NEW ZEALAND · EUROPE · UNITED KINGDOM · INDIA

PENDING

UNITED STATES OF AMERICA · CANADA

AIRCRAFT EVENT INTELLIGENCE & ADAPTIVE DATA RECOVERY ARCHITECTURE

From passive recording to intelligent aircraft data preservation.

A patented architecture connecting aircraft data, adaptive evidence capture and critical information recovery.



DETECT — Identify critical events in real time

ANALYSE — Process ARINC 717 flight data and extract parameters

ADAPT — Adjust image capture intelligently

PRESERVE — Independently store what matters

TRANSMIT — Wirelessly transmit critical information automatically

RECOVER — Enable faster recovery and better outcomes

PREPARED FOR COMMERCIAL LICENSING & STRATEGIC ACQUISITION DISCUSSIONS

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KEY PRESENTATION THEMES

- Patent Protected
- Global Protection
- Event Intelligence
- Recovery Challenge
- Commercial Opportunity

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OUR PATENT STRENGTH

The Deployable Flight Data Recorder with Data Retrieval and Method represents a significant advancement in aviation safety and incident investigation. Our patented architecture delivers a unique combination of deployability, intelligent data management and autonomous recovery that addresses critical gaps in existing solutions.



KEY PATENT STRENGTHS

NOVEL & INVENTIVE

A unique deployable architecture with intelligent data capture, preservation and retrieval.

PROBLEM–SOLUTION FOCUSED

Directly addresses the loss of critical data in aviation incidents when it is needed most.

INTELLIGENT DATA MANAGEMENT

Captures, prioritises and protects the most relevant data autonomously.

AUTONOMOUS RECOVERY

Enables independent location and retrieval of data, even in challenging environments.

COMPREHENSIVE CLAIM COVERAGE

Robust claim set protecting system, method, components and key functionality.

GLOBAL SCOPE

International patent protection in major aviation markets with strong enforcement potential.

INTERNATIONAL PATENT PROTECTION

GRANTED	PENDING
AUSTRALIA	UNITED STATES OF AMERICA
NEW ZEALAND	CANADA
EUROPE	
UNITED KINGDOM	
INDIA	

Expanding protection supports global commercial opportunities and long-term asset value.

CORE INVENTION HIGHLIGHTS

- **DEPLOYABLE ARCHITECTURE** – Enables active deployment in critical conditions to capture data that would otherwise be lost.
- **ADAPTIVE DATA SELECTION** – Intelligently identifies and records the most relevant parameters based on context and event conditions.
- **RUGGED & INDEPENDENT SYSTEM** – Designed for survivability and autonomous operation without reliance on aircraft power.
- **DATA RETRIEVAL & PRESERVATION** – Ensures secure storage and independent recovery for accurate investigation and analysis.

A PROTECTED INNOVATION WITH REAL-WORLD IMPACT

Strengthening aviation safety, improving accident investigation outcomes and supporting a safer future for flight.

COMMERCIAL VALUE

This patent portfolio underpins a platform technology with significant commercial potential across the global aviation industry, including OEMs, airlines, regulators, MROs and defence.

HIGH MARKET RELEVANCE

Addresses a critical and recognised industry need.

STRONG IP ASSET

Broad protection across system, method and components.

GLOBAL OPPORTUNITY

Protected in key jurisdictions with expansion potential.

STRATEGIC ADVANTAGE

Offers partners a differentiated technology edge.

OUR VISION

To provide the aviation industry with intelligent, reliable and recoverable data solutions that make every flight safer and every investigation more complete.

> "Intelligent data. Preserved when it matters. Recovered when it counts."
>
> Innovation AvioTech Pty Ltd

INNOVATIVE TECHNOLOGY. PROTECTED BY PATENTS. DESIGNED FOR AVIATION SAFETY. BUILT FOR THE FUTURE.

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EXECUTIVE PROPOSITION

This is not simply a deployable black box.
It is a protected aircraft event intelligence architecture.

AU2019238567B2 enables aircraft data to trigger intelligent evidence capture, independent preservation and faster recovery of critical information.



PROTECTED AIRCRAFT EVENT INTELLIGENCE ARCHITECTURE

1. FLIGHT DATA INPUT

CONNECTS TO AIRCRAFT SYSTEMS

- ARINC 717
- FDR / QAR data
- Aircraft sensors
- System parameters

2. EVENT RECOGNITION

INTELLIGENT DETECTION OF SIGNIFICANT EVENTS

- Acceleration changes
- Attitude excursions
- System anomalies
- User defined criteria

3. ADAPTIVE CAPTURE

AUTOMATICALLY CAPTURES WHAT MATTERS MOST

- Image / video capture
- Cockpit voice audio
- Parameter snapshot
- Contextual metadata

4. PROTECTED STORAGE

INDEPENDENT & SECURE DATA PRESERVATION

- Rugged deployable unit
- Tamper resistant design
- Environmental protection
- Long term data integritv

5. WIRELESS RECOVERY

RAPID RETRIEVAL OF CRITICAL INFORMATION

- Cellular (4G/5G)
- Satellite (Iridium)
- LoRa / Long range RF
- Global accessibility

WHY IT MATTERS

Captures the right data at the right time
Event driven logic ensures the most relevant information is recorded.

Reduces time to critical information
Wireless access delivers data faster to investigators and decision makers.

Improves investigation accuracy
Provides richer context and more complete evidence for analysis.

Independent of aircraft survivability
Deployable unit survives impact, fire, water submersion and extreme conditions.

Enables new operational value
Supports safety analytics, fleet monitoring, regulatory compliance and data driven decision making.

COMMERCIAL VALUE & STRATEGIC ADVANTAGE

STRONG IP ASSET

Broad claims covering deployable architecture, event recognition, adaptive capture, storage and wireless recovery.

EASY INTEGRATION

Interfaces with existing aircraft data buses and systems. Designed for new aircraft and retrofit applications.

GLOBAL MARKET OPPORTUNITY

Addresses a multi billion dollar global market across commercial, business, general aviation and defence.

COMPLEMENTARY TECHNOLOGY

Complements existing FDR / CVR systems by adding intelligent capture, preservation and accessibility.

LICENSE OR ACQUIRE

Ready for licensing, co-development or acquisition by industry leaders seeking differentiated IP.

IDEAL FOR

- AVIONICS MANUFACTURERS
- FLIGHT RECORDER SUPPLIERS
- CONNECTED AIRCRAFT PLATFORM PROVIDERS
- AVIATION ANALYTICS COMPANIES
- DEFENCE & MILITARY APPLICATIONS

THE RESULT

A smarter, more resilient and connected approach to aircraft data preservation that delivers critical intelligence when it is needed most.

FASTER DATA RECOVERY
Get critical data in minutes, not days.

BETTER OUTCOMES
Improve safety, reduce risk, save lives.

GREATER RELIABILITY
Engineered to operate independently in the most extreme conditions.



FROM PASSIVE RECORDING TO INTELLIGENT AVIATION SAFETY INTELLIGENCE.

A PROTECTED ARCHITECTURE. A GLOBAL SOLUTION. A SAFER FUTURE.

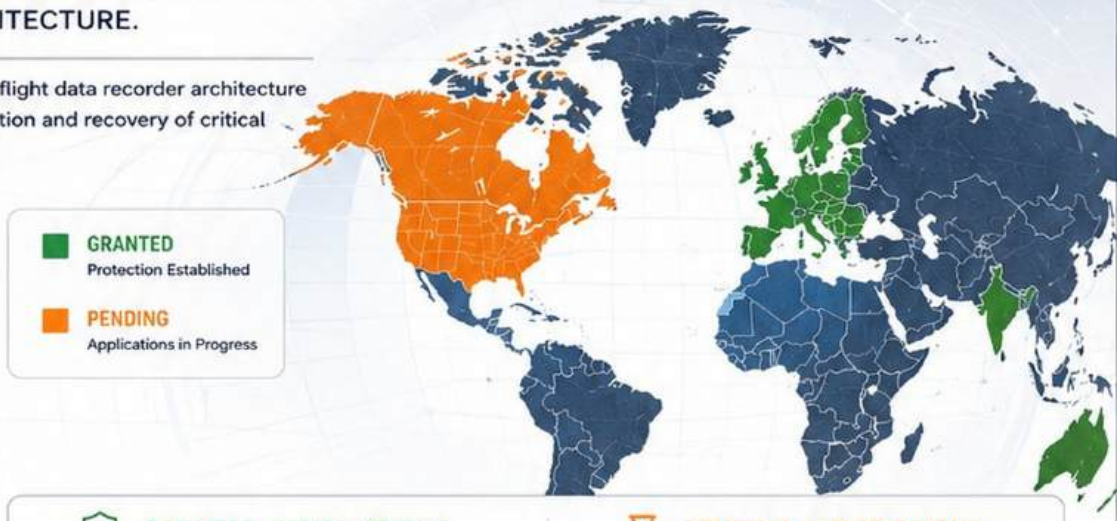
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PATENT POSITION SNAPSHOT

A GRANTED AND EXPANDING INTERNATIONAL PATENT PORTFOLIO PROTECTING THE DFDR ARCHITECTURE.

The patent portfolio protects a deployable flight data recorder architecture designed to improve the capture, preservation and recovery of critical aircraft event information.



PRIMARY PATENT ASSET
AU2019238567B2

DEPLOYABLE FLIGHT DATA RECORDER WITH DATA RETRIEVAL AND METHOD

A patented architecture for intelligent aircraft event detection, adaptive data capture, independent preservation and wireless retrieval of critical information.

GRANTED JURISDICTIONS

AUSTRALIA	Granted 24 Feb 2025	✓
NEW ZEALAND	Granted (Patent Issued)	✓
EUROPE	Granted (EP Patent)	✓
UNITED KINGDOM	Granted (Via EP Patent)	✓
INDIA	Granted (Patent Issued)	✓

PENDING JURISDICTIONS

UNITED STATES OF AMERICA	Application Pending	⧗
CANADA	Application Pending	⧗

COVERING MAJOR AVIATION MARKETS AND REGULATORY JURISDICTIONS WORLDWIDE.

PATENT PORTFOLIO OVERVIEW

Patent Title	Deployable Flight Data Recorder with Data Retrieval and Method
Australian Patent Number	AU2019238567B2
Australian Grant Date	24 February 2025
Australian Expiry Date	19 March 2039
International Publication	WO2019178637A1
Priority Date	18 December 2018
Patent Family	PCT/AU2019/051495
Patent Type	Standard Patent
Technology Classification	Aviation Safety / Flight Data Systems / Information Retrieval

STRATEGIC IP ASSET

A robust patent portfolio with granted protection in key global markets and pending rights in North America, ensuring wide commercial reach and long-term exclusivity.

CORE PROTECTION SCOPE

DEPLOYABLE ARCHITECTURE
Enables automatic deployment in defined conditions to protect the device and its data.

EVENT DRIVEN INTELLIGENCE
Uses aircraft data and predefined criteria to identify significant events that require evidence capture.

ADAPTIVE DATA CAPTURE
Intelligently captures the most relevant parameters, images, audio and system data based on event context.

INDEPENDENT DATA PRESERVATION
Rugged, tamper resistant storage safeguards data integrity and ensures evidential reliability.

WIRELESS DATA RETRIEVAL
Enables secure, remote retrieval of critical information through multiple communication channels.

COMPREHENSIVE CLAIM SET
Broad claims protect system, method, components and key functionalities, providing strong barriers to design around.

A PROTECTED INTERNATIONAL AVIATION SAFETY ASSET
WITH GRANTED RIGHTS ACROSS MAJOR AVIATION JURISDICTIONS AND PENDING RIGHTS IN NORTH AMERICA.

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THE AVIATION CHALLENGE

CRITICAL INFORMATION IS OFTEN LOST WHEN IT IS NEEDED MOST

Today's flight recorders are excellent at recording everything. But when an aircraft is destroyed, the data that matters most is often damaged, inaccessible or unrecoverable.

> "In aviation safety, what you cannot recover, you cannot learn from.
>
> Critical data is the difference between understanding and uncertainty."

THE CORE PROBLEM

During significant events, vast amounts of data are generated, but traditional recording systems face critical limitations.

AIRCRAFT DESTRUCTION
Impact, fire, water and extreme forces can destroy recorders or their data.

DATA OVERLOAD
Hours of data make it difficult to find the few seconds that really matter.

DELAYED ACCESS
Physical recovery can take days, weeks or may never be possible.

INVESTIGATION DELAYS
Missing or incomplete data leads to uncertainty, longer investigations and higher cost.



THE REALITY

>80% OF ACCIDENTS INVOLVE SIGNIFICANT EVENTS BEFORE IMPACT[1]

>70% OF INVESTIGATIONS RELY ON INCOMPLETE OR PARTIAL DATA[2]

UP TO 30% OF RECOVERED RECORDERS HAVE DATA COMPROMISED BY IMPACT OR FIRE[3]

1. Source: ICAO Safety Report
2. Source: NTSB / EASA Investigation Reports
3. Source: Industry Data & Accident Studies

THE SOLUTION GAP

There is a critical need for an intelligent system that can recognise what matters, capture it automatically, preserve it independently and make it recoverable when it counts.

AU2019238567B2 ADDRESSES THIS GAP

An intelligent, deployable architecture that captures, preserves and delivers critical aircraft event information when traditional systems may fail.

INDUSTRY IMPACT

SAFETY IMPROVEMENT
More complete and reliable data drives better insights and safer skies.

COST REDUCTION
Faster investigations and fewer inconclusive accidents reduce cost and downtime.

OPERATIONAL ASSURANCE
Airlines and operators gain confidence in data integrity and system reliability.

REGULATORY ALIGNMENT
Supports evolving global requirements for recording, monitoring and data accessibility.



CONSEQUENCES OF DATA LOSS

Lost Opportunity to Learn
Critical clues may be lost forever, limiting safety improvements.

Higher Investigation Costs
Incomplete data increases resources, time and cost to reach conclusions.

Uncertainty & Risk
Incomplete findings increase uncertainty for operators, regulators and the public.

Safety Risk Continues
Without the full picture, similar events may happen again.



When critical data is lost, everyone pays the price.

THE KEY TAKEAWAY

Traditional systems record everything. Our patented architecture ensures the right data is captured, preserved and available when it matters most.

CAPTURE
The data that matters most

PRESERVE
Independently and securely

DELIVER
Fast, reliable access when needed

IMPROVE
Safety outcomes across the industry

AU2019238567B2 CREATES A NEW STANDARD IN AVIATION EVENT INTELLIGENCE AND DATA RECOVERY.

PROTECTING CRITICAL INFORMATION. ENHANCING AVIATION SAFETY. SAVING LIV

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THE DFDR SOLUTION

A PROTECTED ARCHITECTURE THAT DETECTS, ADAPTS, PRESERVES, TRANSMITS AND RECOVERS CRITICAL AIRCRAFT INFORMATION

The Deployable Flight Data Recorder with Data Retrieval and Method (**DFDR**) uses aircraft data to recognise significant events, intelligently capture what matters, preserve it independently and make critical information available faster when it is needed most.



INTELLIGENT EVENT DETECTION
Recognises critical aircraft events in real time

ADAPTIVE DATA CAPTURE
Automatically adjusts what and how much is recorded

INDEPENDENT PRESERVATION
Rugged, tamper resistant storage protects data regardless of aircraft power status

WIRELESS TRANSMISSION
Multiple communication pathways for global access and recovery

FASTER INVESTIGATION
Critical information available sooner for better outcomes

THE DFDR PROCESS – FROM EVENT TO RECOVERY

1. DETECT
Continuously monitors aircraft data streams to identify significant events.

2. ANALYSE
Processes data to extract key parameters and determine event severity and context.

3. ADAPT
Automatically adjusts image/video frame rate, recording parameters and data capture.

4. PRESERVE
Stores the most relevant information in an independent, rugged and secure system.

5. TRANSMIT
Transmits critical data wirelessly via multiple networks to ensure global reach.

6. RECOVER
Authorised users recover critical information faster to support investigation and safety.

AIRCRAFT DATA DETERMINES WHAT MATTERS. THE SYSTEM ADAPTS WHAT IT CAPTURES.
CRITICAL INFORMATION IS PRESERVED AND DELIVERED WHEN IT MATTERS MOST.

WHAT THE DFDR RECEIVES

ARINC 717 FLIGHT DATA
High frequency digital flight data up to 128 parameters

AIRCRAFT SYSTEMS DATA
Engine, APU, hydraulics, electrical, control surfaces and more

ACCELERATION & MOTION DATA
6DOF sensing for attitude, acceleration, impact and vibration analysis

COCKPIT VOICE & AUDIO
Captures cockpit audio when events occur

VIDEO & IMAGERY INPUTS
Cockpit, cabin, exterior and system visual data

WHAT THE DFDR DOES



INTELLIGENT EVENT LOGIC
Predefined and adaptive criteria to identify significance

ADAPTIVE IMAGE CONTROL
Event driven frame rate and quality adjustment

AUTONOMOUS OPERATION
Operates independently without reliance on aircraft power

RUGGED & DEPLOYABLE
Designed to survive crash, fire, water and extreme forces

SECURE DATA PRESERVATION
Tamper resistant storage with data integrity protection

MULTI LINK COMMUNICATIONS
4G/5G, Satellite (Iridium), LoRa, Wi-Fi for global connectivity

WHAT THE DFDR DELIVERS

FASTER ACCESS TO CRITICAL INFORMATION
Reduces investigation time from months to days

IMPROVED INVESTIGATION ACCURACY
Higher quality, relevant data improves root cause analysis

GREATER DATA SURVIVABILITY
Independent storage and deployable design increases chance of data recovery

GLOBAL ACCESSIBILITY
Remote data retrieval from anywhere in the world

STRONG SAFETY OUTCOMES
Better information leads to better safety decisions

IDEAL FOR INTEGRATION BY LEADING ORGANISATIONS

- AIRCRAFT MANUFACTURERS
- AVIONICS & FLIGHT RECORDER SUPPLIERS
- CONNECTED AIRCRAFT PLATFORM PROVIDERS
- AVIATION ANALYTICS & DATA COMPANIES
- DEFENCE & MILITARY APPLICATIONS
- REGULATORS & SAFETY AUTHORITIES
- INVESTIGATION ORGANISATIONS

FROM RECORDING EVERYTHING TO PRESERVING WHAT MATTERS MOST.
INTELLIGENT. PROTECTED. AVAILABLE WHEN IT COUNTS.

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CORE CLAIM ARCHITECTURE

A PROTECTED COMBINATION OF TECHNICAL FEATURES WORKING TOGETHER TO DELIVER CRITICAL AIRCRAFT EVENT INTELLIGENCE.

The patent claims cover an integrated architecture where aircraft data is used to detect significant events, adapt capture behaviour, preserve the most relevant information independently and enable wireless retrieval.



SYSTEM ARCHITECTURE OVERVIEW

AIRCRAFT DATA INPUT
- ARINC 717 (FDR)
- Sensors
- Aircraft systems
- Parameters

EVENT LOGIC & DETECTION
- Acceleration parameter extraction
- Event recognition logic
- Significant event identification

ADAPTIVE CAPTURE RESPONSE
- Image recorder activation
- Dynamic frame rate adjustment
- Context based capture management

INDEPENDENT PRESERVATION
- Rugged independent storage
- Tamper resistant
- Data integrity protection
- Crash / fire / water survivability

WIRELESS RECOVERY
- Multi link transmission
- 4G/5G, Satellite, LoRa, Wi-Fi
- Secure data transfer
- Remote access & recovery

CORE CLAIM ELEMENTS AND THEIR FUNCTION

#	CORE CLAIM ELEMENT	ROLE IN THE ARCHITECTURE	KEY BENEFIT
1	AIRCRAFT RECORDER INTERFACE	Interfaces with aircraft recording systems and receives flight data and parameters.	Seamless integration with existing aircraft infrastructure.
2	ARINC 717 PROCESSING	Processes ARINC 717 flight data from the FDR to provide accurate, standardised information.	Uses proven aviation data standards for reliability.
3	ACCELERATION PARAMETER EXTRACTION	Extracts acceleration and attitude parameters to identify significant events.	Detects what matters most in real time.
4	EVENT TRIGGERED RESPONSE	Applies predefined criteria to trigger system response when events occur.	Reduces irrelevant data and focuses on critical events.
5	IMAGE RECORDER INTEGRATION	Integrates with image recorder to capture visual evidence linked to the event.	Provides essential visual context for investigations.
6	DYNAMIC FRAME RATE ADJUSTMENT	Adjusts frame rate based on event severity and aircraft conditions.	Optimises data volume while capturing the right detail.
7	INDEPENDENT DATA STORAGE	Stores captured data independently in a rugged, tamper resistant environment.	Ensures survivability and preservation of critical data.
8	WIRELESS TRANSMISSION OF DATA	Transmits selected critical data via multiple communication channels.	Enables faster access and recovery anywhere in the world.

CLAIM STRENGTH HIGHLIGHTS

ACCEPTED CLAIM COMBINATION
The combination of a plurality of data recording devices with a plurality of predefined triggering criteria has been acknowledged by the Examiner as adding strength and reducing the risk of inadvertent deployment.

MULTI LAYER PROTECTION
Covers the full architecture from aircraft interface, event detection, adaptive capture, independent preservation to wireless recovery.

BROAD AND VERSATILE
Applicable across a wide range of aircraft types, missions and operating environments.

DIFFICULT TO DESIGN AROUND
The interdependence of the elements creates a robust barrier to copying the complete solution without careful claim analysis.

COMMERCIAL DEFENSIBILITY
Strong claim set supports licensing, partnerships, acquisition and enforcement of intellectual property rights.

TECHNICAL INNOVATION IN CONTEXT

- Not a single feature, but a coordinated architecture working as one.
- Each element enhances the next, creating an intelligent, resilient and adaptive system.
- The value lies in the protected combination of features and their functional integration.

PATENT SCOPE COVERS MULTIPLE ASPECTS

- Deployable flight data recorder systems
- Event detection and adaptive response
- Image and voice capture with dynamic control
- Independent storage and preservation
- Wireless communication and recovery
- Methods and processes for the above
- Combinations and integrations of the components

THE STRENGTH IS IN THE PROTECTED COMBINATION.

AIRCRAFT DATA DRIVES EVENT RECOGNITION, ADAPTIVE CAPTURE, PRESERVATION AND RECOVERY.



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WHY THIS MATTERS NOW



AVIATION IS MOVING TOWARDS INTELLIGENT EVENT RECOVERY

Modern aircraft generate unprecedented amounts of operational information. The challenge is no longer simply recording data. It is identifying, preserving and recovering the information that matters most.

DFDR aligns directly with this industry evolution.

INDUSTRY TRANSFORMATION

1. **CONNECTED AIRCRAFT** — Aircraft continuously exchange operational data.
2. **ARTIFICIAL INTELLIGENCE** — AI supports analysis, prediction and safety decisions.
3. **FLIGHT DATA ANALYTICS** — Operators analyse millions of flight parameters.
4. **PREDICTIVE MAINTENANCE** — Data helps identify faults before they occur.
5. **DIGITAL TWINS** — Virtual aircraft are updated from live operational data.
6. **AUTONOMOUS SYSTEMS** — More automation requires intelligent event recording.

EVOLUTION OF AIRCRAFT SAFETY & DATA USE

1. **TRADITIONAL BLACK BOX** — Passive recording
2. **DIGITAL FDR** — More data and durability
3. **CONNECTED AIRCRAFT** — Real time data links
4. **FLIGHT ANALYTICS** — Operational insight
5. **ARTIFICIAL INTELLIGENCE** — Prediction and optimisation
6. **AIRCRAFT EVENT INTELLIGENCE** — Identify what matters most

MORE DATA
More aircraft data than ever.

FASTER ACCESS
Investigations need evidence quickly.

SMARTER CAPTURE
Relevant data matters most.

AUTOMATION
Systems must recognise events.

WHERE DFDR FITS

1. **AIRCRAFT SYSTEMS** — Multiple data sources
2. **EVENT DETECTION** — Significant events identified
3. **ADAPTIVE CAPTURE** — Captures the most relevant evidence
4. **INDEPENDENT PRESERVATION** — Protected storage for critical data
5. **WIRELESS RECOVERY** — Transmits via multiple channels
6. **SAFETY IMPROVEMENT** — Faster data leads to better outcomes

WHY THIS CREATES COMMERCIAL VALUE

1. **NEXT GENERATION SAFETY** — Event driven capture supports safer investigations.
2. **COMPLEMENTS EXISTING RECORDERS** — Designed to enhance existing systems.
3. **CONNECTED AIRCRAFT FIT** — Works with digital aircraft ecosystems.
4. **AI EVENT INTELLIGENCE** — Supports advanced analytics and prediction.
5. **REGULATORY EVOLUTION** — Aligned with future safety expectations.

THE AVIATION INDUSTRY IS EVOLVING FROM PASSIVE FLIGHT RECORDING

TOWARDS INTELLIGENT AIRCRAFT EVENT INTELLIGENCE.

AU2019238567B2 IS POSITIONED AT THE INTERSECTION OF THAT TRANSFORMATION.

INTELLIGENT. PROTECTED. AVAILABLE WHEN IT COUNTS.

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COMMERCIAL APPLICATIONS & MARKET OPPORTUNITIES



A PLATFORM TECHNOLOGY WITH MULTIPLE COMMERCIAL PATHWAYS

The patented DFDR architecture extends beyond traditional flight data recording. Its protected combination of event intelligence, adaptive data capture, independent preservation and wireless recovery enables applications across numerous aviation sectors.

This creates multiple opportunities for licensing, strategic partnerships and product integration.

PRIMARY COMMERCIAL MARKETS

COMMERCIAL AIRCRAFT
Fleet safety, regulatory compliance and post event investigation.

DEFENCE AVIATION
Mission data preservation, survivability and operational intelligence.

BUSINESS JETS
Executive aircraft safety and incident investigation.

CARGO AIRCRAFT
Fleet monitoring, safety improvement and recovery efficiency.

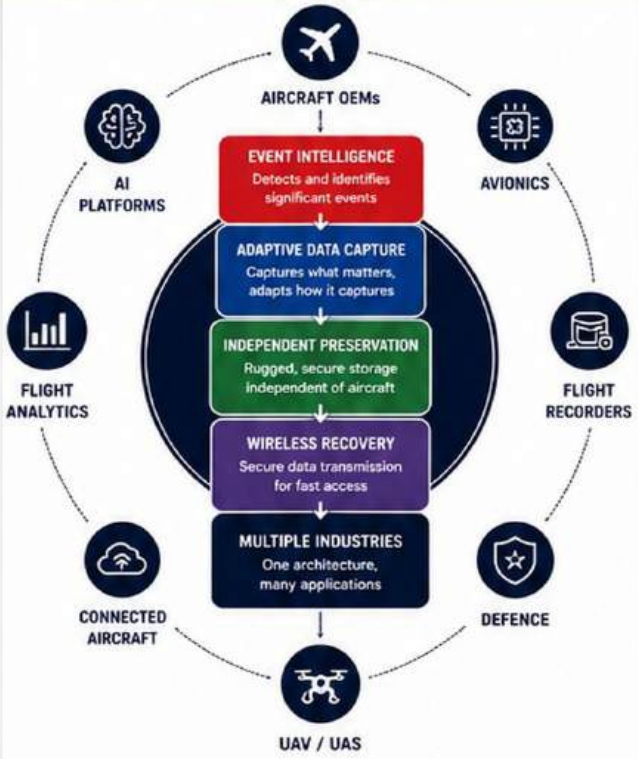
HELICOPTERS
Offshore, EMS, search & rescue, and military operations.

GENERAL AVIATION
Next generation safety recording for light aircraft.

UNMANNED AIRCRAFT (UAVs)
Intelligent event recording for UAV and UAS operations.

AUTONOMOUS AIRCRAFT
AI driven event intelligence for future autonomous platforms.

DFDR TECHNOLOGY PLATFORM



INDUSTRY INTEGRATION FLOW

AIRCRAFT SYSTEMS
Sensors, avionics and operational data

FLIGHT DATA RECORDER
ARINC 717 data and recorded parameters

DFDR EVENT INTELLIGENCE LAYER
Detect, adapt, preserve, transmit

CONNECTED AIRCRAFT PLATFORM
Data networks and gateways

FLEET OPERATIONS
Monitoring, analytics and decision support

ACCIDENT INVESTIGATION
Rapid access to critical information

SAFETY IMPROVEMENT
Better outcomes and lives saved

FUTURE MARKET OPPORTUNITIES

CONNECTED AIRCRAFT	EXCELLENT
DIGITAL AVIATION / DATA ECOSYSTEMS	EXCELLENT
AI FLIGHT ANALYTICS	EXCELLENT
AIRCRAFT HEALTH MONITORING	HIGH
AUTONOMOUS FLIGHT	EXCELLENT
SMART FLIGHT RECORDERS	EXCELLENT
DIGITAL TWINS	HIGH
DEFENCE & MILITARY SYSTEMS	EXCELLENT

LICENSING OPPORTUNITIES

AIRCRAFT MANUFACTURERS
Integrate directly into new aircraft programs for enhanced safety and differentiation.

FLIGHT RECORDER MANUFACTURERS
Add intelligent event intelligence to existing recording solutions.

AVIONICS COMPANIES
Seamless integration with avionics systems and data management platforms.

DEFENCE CONTRACTORS
Mission data recording, survivability and evidence recovery solutions.

GOVERNMENT AGENCIES
Enhance national safety, regulatory oversight and investigation capability.

AIRLINES & OPERATORS
Fleet intelligence, incident reduction, operational improvement and regulatory compliance.

WHY THIS CREATES VALUE

ONE PATENT → MULTIPLE INDUSTRIES → MULTIPLE PRODUCTS → MULTIPLE LICENSING OPPORTUNITIES → LONG TERM COMMERCIAL VALUE

COMMERCIAL BENEFITS

PLATFORM TECHNOLOGY
Supports multiple products and solutions.

BROAD MARKET OPPORTUNITY
Commercial and defence aviation applications.

COMPLEMENTARY NOT COMPETITIVE
Works alongside existing systems and infrastructure.

SCALABLE AND ADAPTIVE
Suitable for future aircraft technologies and architectures.

LICENSABLE ARCHITECTURE
Multiple revenue streams and partnership models.

STRATEGIC VALUE
Attractive acquisition target with strong barriers to entry.

ONE PROTECTED ARCHITECTURE.
MULTIPLE AVIATION MARKETS.
GLOBAL COMMERCIAL OPPORTUNITY.

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COMPETITIVE DIFFERENTIATION

WHY AU2019238567B2 REPRESENTS A DIFFERENT APPROACH

Traditional flight recorders are designed primarily to record information.

The DFDR architecture is designed to recognise, prioritise, adapt, preserve and recover critical information when significant aircraft events occur.

This distinction creates a new generation of aircraft event intelligence.



EXISTING TECHNOLOGIES

FLIGHT DATA RECORDERS (FDR)
Excellent recording capability.
Limited event intelligence.

COCKPIT VOICE RECORDERS (CVR)
Excellent audio recording.
No adaptive evidence capture.

CONNECTED AIRCRAFT
Excellent communications.
Limited autonomous evidence preservation.

FLIGHT ANALYTICS PLATFORMS
Excellent analysis after flight.
No independent event preservation.

CAPABILITY COMPARISON

CAPABILITY	TRADITIONAL FDR	TRADITIONAL CVR	CONNECTED AIRCRAFT	DFDR ARCHITECTURE
FLIGHT RECORDING	✓	PARTIAL	PARTIAL	✓
COCKPIT AUDIO	✗	✓	✗	✓
EVENT INTELLIGENCE	✗	✗	LIMITED	✓
ADAPTIVE RECORDING	✗	✗	LIMITED	✓
INTELLIGENT PRIORITISATION	✗	✗	✗	✓
INDEPENDENT PRESERVATION	LIMITED	LIMITED	✗	✓
WIRELESS RECOVERY	RARE	RARE	PARTIAL	✓
EVENT DRIVEN OPERATION	✗	✗	PARTIAL	✓

STRATEGIC ADVANTAGES OF DFDR

COMPLEMENTS EXISTING SYSTEMS
Works alongside FDRs and CVRs without replacing them.

ADDS NEW CAPABILITY
Introduces event intelligence and adaptive evidence capture.

PLATFORM ARCHITECTURE
Enables multiple products and integration opportunities.

FUTURE READY
Designed for the connected, autonomous and AI-driven aviation future.

FLEXIBLE INTEGRATION
Suitable for retrofit, line-fit and modular integration.

DFDR PROVIDES



COMMERCIAL DIFFERENTIATION

Instead of competing against existing products, DFDR becomes an enabling technology for:

- FLIGHT RECORDER MANUFACTURERS
- AIRCRAFT OEMs
- AVIONICS COMPANIES
- DEFENCE CONTRACTORS
- GOVERNMENT AGENCIES
- AIRLINES & OPERATORS
- AI & ANALYTICS PLATFORMS

INDUSTRY POSITIONING

TRADITIONAL RECORDERS — Record data → CONNECTED AIRCRAFT — Transmit data → FLIGHT ANALYTICS — Analyse data → ARTIFICIAL INTELLIGENCE — Predict & optimise → **DFDR AIRCRAFT EVENT INTELLIGENCE** — Recognise, adapt, preserve, recover

DFDR adds the missing layer of intelligent, autonomous event response and recovery.

TYPICAL USE CASES

- ACCIDENT & INCIDENT INVESTIGATION
- RAPID DATA RECOVERY
- DATA SURVIVABILITY IN EXTREME EVENTS
- SAFETY MANAGEMENT SYSTEMS
- FLEET INTELLIGENCE & MONITORING
- CONTINUOUS SAFETY IMPROVEMENT

NOT ANOTHER FLIGHT RECORDER.
A NEW LAYER OF AIRCRAFT EVENT INTELLIGENCE.

INTELLIGENT. | PROTECTED. | AVAILABLE WHEN IT COUNTS. | ENHANCING AVIATION SAFETY.

INNOVATION AVIOTECH PTY LTD

AUSTRALIAN GRANTED PATENT
AU2019238567B2
GRANTED: 24 FEBRUARY 2025
EXPIRY: 19 MARCH 2039

STRATEGIC LICENSING & ACQUISITION OPPORTUNITIES

A TECHNOLOGY PLATFORM POSITIONED FOR STRATEGIC COMMERCIALISATION

The **DFDR** architecture has been designed to complement existing aircraft systems rather than replace them.

Its combination of event intelligence, adaptive evidence capture, independent preservation and wireless recovery provides opportunities for integration across multiple aerospace sectors.

The commercial potential extends to licensing, strategic partnerships and acquisition discussions.



PRIMARY INDUSTRY SECTORS

AIRCRAFT MANUFACTURERS
Integration into future aircraft programmes.

FLIGHT RECORDER MANUFACTURERS
Intelligent next generation recorder capability.

AVIONICS COMPANIES
Enhanced aircraft safety, monitoring and awareness.

DEFENCE & SECURITY
Mission data survivability and operational intelligence.

CONNECTED AIRCRAFT PLATFORMS
Intelligent event driven data architecture.

FLIGHT DATA ANALYTICS
Improved quality and relevance of captured information.

UAV & AUTONOMOUS SYSTEMS
Event based recording and recovery.

REGULATORY & SAFETY AUTHORITIES
Investigation support and safety enhancement.

AEROSPACE ECOSYSTEM



PRIORITY COMMERCIAL TARGETS

MARKET SEGMENT	EXAMPLE ORGANISATIONS
AIRCRAFT MANUFACTURERS	Airbus, Boeing, Embraer, ATR, Leonardo
FLIGHT RECORDER SYSTEMS	Curtiss Wright, Acron Aviation
AVIONICS	Collins Aerospace, Honeywell Aerospace, Thales
AIRCRAFT DATA & CONNECTIVITY	Teledyne Controls, GE Aerospace Digital Solutions
DEFENCE & MISSION SYSTEMS	BAE Systems, Leonardo, Saab
UAV & AUTONOMOUS SYSTEMS	Defence UAV developers, advanced aerospace companies

Examples illustrate market segments rather than implying endoresment or current commercial engagement.

COMMERCIAL INTEGRATION PATHWAYS

NEW AIRCRAFT PROGRAMMES
Integrated during aircraft development.

EXISTING AIRCRAFT FLEETS
Retrofit capability for in service aircraft.

FLIGHT RECORDER UPGRADES
Add intelligent functionality.

CONNECTED AIRCRAFT PLATFORMS
Cloud connected safety architecture.

DEFENCE SYSTEMS
Mission critical data recovery and survivability.

AUTONOMOUS AIRCRAFT
Future event intelligence platform.

WHY COMPANIES MAY BE INTERESTED

PRODUCT DIFFERENTIATION
Adds unique intelligent event capability to existing offerings.

EXPANDED IP PORTFOLIO
Broadens and strengthens technology offerings and market position.

FUTURE AIRCRAFT PROGRAMMES
Supports evolving aircraft architectures and safety requirements.

REGULATORY ALIGNMENT
Complements future safety initiatives and investigation requirements.

STRATEGIC POSITIONING
Access to protected technology in an emerging and high value market.

COMMERCIALISATION MODELS

PATENT PORTFOLIO
Strong international protection across key jurisdictions.

EXCLUSIVE LICENCE
Rights for a specific company across all or defined markets.

FIELD SPECIFIC LICENCE
Rights restricted to sectors, products or regions.

STRATEGIC PARTNERSHIP
Co development and market expansion opportunities.

TECHNOLOGY INTEGRATION
Integrate DFDR architecture into existing or new products.

ACQUISITION
Complete ownership of the technology and IP.

INVESTMENT HIGHLIGHTS

INTERNATIONAL PATENT PROTECTION
Granted in multiple jurisdictions with strong protection.

MULTIPLE COMMERCIAL APPLICATIONS
Relevant across commercial, defence and emerging aviation sectors.

SCALABLE PLATFORM ARCHITECTURE
Designed for integration across a wide range of aircraft systems.

COMPLEMENTS EXISTING TECHNOLOGIES
Enhances current systems without replacing existing infrastructure.

SUITABLE FOR LICENSING OR ACQUISITION
Multiple commercial pathways to generate long term value.

A PROTECTED AVIATION TECHNOLOGY PLATFORM POSITIONED FOR STRATEGIC LICENSING, INTEGRATION AND ACQUISITION OPPORTUNITIES ACROSS THE GLOBAL AEROSPACE INDUSTRY.

INTELLIGENT. | PROTECTED. | AVAILABLE WHEN IT COUNTS. | ENHANCING AVIATION SAFETY.

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STRATEGIC INVESTMENT VALUE

WHY AU2019238567B2 REPRESENTS A STRATEGIC INTELLECTUAL PROPERTY OPPORTUNITY

The value of AU2019238567B2 extends beyond a single aviation product. It provides access to a protected architecture that aligns with the evolution of connected aircraft, intelligent event management, adaptive evidence capture and future aviation safety systems.

Acquiring or licensing the technology may accelerate innovation while reducing development time and intellectual property risk.



WHY ACQUIRE INSTEAD OF DEVELOP?

PROVEN IP
Granted patent protection in key aviation jurisdictions.

FASTER MARKET ENTRY
Integrate protected technology rather than develop independently.

REDUCED DEVELOPMENT RISK
Build upon an established, patented architecture.

COMPETITIVE DIFFERENTIATION
Enhance existing product portfolios with unique capability.

PORTFOLIO EXPANSION
Strengthen existing intellectual property holdings.

FUTURE READINESS
Position products for next generation aircraft systems.

VALUE CREATION MODEL

PROTECTED PATENT → TECHNOLOGY INTEGRATION → ENHANCED PRODUCT PORTFOLIO → COMPETITIVE ADVANTAGE → MARKET DIFFERENTIATION → REVENUE GROWTH → LONG TERM ENTERPRISE VALUE

STRATEGIC INVESTMENT PILLARS

01 INTELLECTUAL PROPERTY
Granted international protection across key aviation jurisdictions.

02 TECHNOLOGY
Protected aircraft event intelligence architecture with unique capabilities.

03 COMMERCIALISATION
Multiple licensing and commercial pathways across diverse aviation markets.

04 INTEGRATION
Designed to complement existing systems and infrastructure with minimal disruption.

05 SCALABILITY
Applicable across multiple platforms, aircraft types and aviation sectors.

06 LONGEVITY
Patent protection extending into 2039 in Australia, with corresponding protection in other granted jurisdictions.

STRATEGIC BENEFITS

BENEFIT	COMMERCIAL OUTCOME
Enhanced product capability	Greater market differentiation
Reduced time to market	Faster commercial deployment
Stronger competitive position	Increased customer value
Broader IP portfolio	Improved strategic leverage
Multiple industry applications	Diverse revenue opportunities
Global relevance	Opportunities across major aviation markets

COMMERCIAL VALUE DRIVERS



COMMERCIAL MODELS

EXCLUSIVE LICENSING
Full rights within defined territory or application.

FIELD SPECIFIC LICENSING
Rights tailored to specific markets or product categories.

STRATEGIC PARTNERSHIP
Co-development and market expansion collaboration.

TECHNOLOGY INTEGRATION
Incorporation of DFDR architecture into existing systems.

ACQUISITION
Complete ownership of the technology and IP portfolio.

FOR CORPORATE DECISION MAKERS

- Strengthen existing product portfolio
- Accelerate innovation and reduce risk
- Enhance intellectual property holdings
- Support future aircraft programmes
- Create long term commercial value

STRATEGIC INTELLECTUAL PROPERTY. PROVEN INNOVATION. GLOBAL COMMERCIAL POTENTIAL.

INTELLIGENT. | PROTECTED. | AVAILABLE WHEN IT COUNTS. | ENABLING THE FUTURE OF AVIATION SAFETY.

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THE OPPORTUNITY

POSITIONED FOR STRATEGIC LICENSING, PARTNERSHIP AND ACQUISITION

A strategic intellectual property opportunity that delivers intelligent event recognition, adaptive evidence capture, independent preservation and wireless recovery for the next generation of aviation.



EXECUTIVE SUMMARY

AU2019238567B2 REPRESENTS:

- A protected aircraft event intelligence architecture
- A platform technology rather than a single product
- A complementary enhancement to existing aircraft systems
- A commercially scalable intellectual property asset
- A strategic opportunity aligned with future aviation trends

WHY THIS OPPORTUNITY MATTERS

INTERNATIONAL PROTECTION
Granted in multiple major aviation jurisdictions.

PROVEN INNOVATION
Protected architecture with defined technical features.

BROAD APPLICATIONS
Commercial aviation, defence, UAVs and future aircraft.

INTEGRATION READY
Designed to complement and integrate with existing systems.

MULTIPLE COMMERCIAL MODELS
Licensing, partnerships or acquisition opportunities.

LONG TERM VALUE
Patent protection supporting future product development.

COMMERCIAL PATHWAYS

01 TECHNOLOGY REVIEW → 02 CONFIDENTIAL DISCUSSION → 03 TECHNICAL EVALUATION → 04 COMMERCIAL ASSESSMENT

- LICENSING
- STRATEGIC PARTNERSHIP
- ACQUISITION

THE VALUE PROPOSITION

- INTELLIGENT EVENT DETECTION
- ADAPTIVE DATA CAPTURE
- INDEPENDENT PRESERVATION
- WIRELESS RECOVERY
- BETTER INVESTIGATION
- SAFER AVIATION



WHAT MAKES THIS OPPORTUNITY COMPELLING

- **ACCELERATE INNOVATION** – Integrate proven technology rather than build from scratch.
- **REDUCE TIME TO MARKET** – Shorter development cycles and faster deployment.
- **ENHANCE COMPETITIVE POSITION** – Offer unique intelligent event capabilities.
- **STRENGTHEN IP PORTFOLIO** – Gain valuable, defensible intellectual property.
- **ACCESS GROWING MARKETS** – Aligned with connected, AI and autonomous aviation.
- **CREATE SHAREHOLDER VALUE** – New revenue streams and long term growth potential.

INNOVATION AVIOTECH WELCOMES CONFIDENTIAL DISCUSSIONS

TECHNOLOGY EVALUATION | LICENSING | STRATEGIC PARTNERSHIPS | JOINT DEVELOPMENT | ACQUISITION OPPORTUNITIES

All discussions are treated with the highest level of confidentiality.

"The future of aviation safety will depend not only on recording information, but on recognising what matters, preserving it intelligently and making it available when it is needed most."

**PROTECTED INNOVATION. STRATEGIC OPPORTUNITY.
THE FUTURE OF AIRCRAFT EVENT INTELLIGENCE.**

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CONFIDENTIAL DISCUSSION

INNOVATION BEGINS WITH A CONVERSATION

Innovation AvioTech Pty Ltd welcomes confidential discussions with organisations seeking to advance the future of intelligent aviation safety systems.

We are seeking partners who recognise the strategic value of protected aircraft event intelligence, adaptive evidence capture and advanced data recovery technologies.



DISCUSSION OPPORTUNITIES

- TECHNOLOGY EVALUATION
- LICENSING
- STRATEGIC PARTNERSHIPS
- JOINT DEVELOPMENT
- PRODUCT INTEGRATION
- ACQUISITION DISCUSSIONS

CONTACT INFORMATION

Company	Innovation AvioTech Pty Ltd
Technology	Deployable Flight Data Recorder with Data Retrieval and Method
Australian Patent	AU2019238567B2
International Status	Granted in Australia, New Zealand, Europe, United Kingdom and India. Pending in the United States and Canada.
Website	www.innovationaviotech.com
Email	info@innovationaviotech.com
Contact	Massimo Massa

WHY PARTNER WITH INNOVATION AVIOTECH?

PROTECTED INTELLECTUAL PROPERTY
Strong patent protection in key aviation jurisdictions.

PROVEN INNOVATION
Unique architecture with defined technical advantages.

BROAD MARKET APPLICATIONS
Commercial aviation, defence, UAVs and future aircraft.

INTEGRATION READY
Designed to complement and enhance existing aircraft systems.

COMMERCIAL FLEXIBILITY
Multiple models for licensing, partnership or acquisition.

LONG TERM VALUE
Future aligned technology with long term commercial potential.

"The future of aviation safety is not defined by how much data we record, but by how intelligently we recognise, preserve and recover the information that matters most."



CONFIDENTIALITY STATEMENT

This presentation contains proprietary and confidential information relating to protected intellectual property. It has been prepared solely for the purpose of evaluating potential licensing, strategic partnership and acquisition opportunities. Distribution or reproduction without prior written permission is not authorised.

THANK YOU

We look forward to exploring how we can create value together.

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TECHNICAL APPENDIX

PROTECTED INNOVATION AT A GLANCE



TECHNICAL SUMMARY

This appendix provides a concise overview of the protected architecture and its principal technical components.
It is intended to assist engineering, product management and intellectual property teams during preliminary technical evaluation.

PATENT SUMMARY

Patent Title	Deployable Flight Data Recorder with Data Retrieval and Method
Australian Patent	AU2019238567B2
International Publication	WO2019178637A1
Technology Area	Aircraft Event Intelligence and Adaptive Data Recovery Architecture
Primary Application	Aircraft Safety Systems

INTERNATIONAL PATENT STATUS

GRANTED
- Australia
- New Zealand
- Europe (EP3768599)
- United Kingdom
- India

PENDING
- United States
- Canada



CORE TECHNICAL ARCHITECTURE

AIRCRAFT SYSTEMS → AIRCRAFT RECORDER INTERFACE → ARINC 717 PROCESSING → EVENT DETECTION → ADAPTIVE CAPTURE → INDEPENDENT STORAGE → WIRELESS RECOVERY → INVESTIGATION & SAFETY ANALYSIS

PRIMARY TECHNICAL CAPABILITIES

AIRCRAFT DATA PROCESSING
Processes digital flight data and parameters from multiple aircraft systems via ARINC 717 interface.

EVENT RECOGNITION
Identifies predefined and adaptive significant events using onboard algorithms and logic.

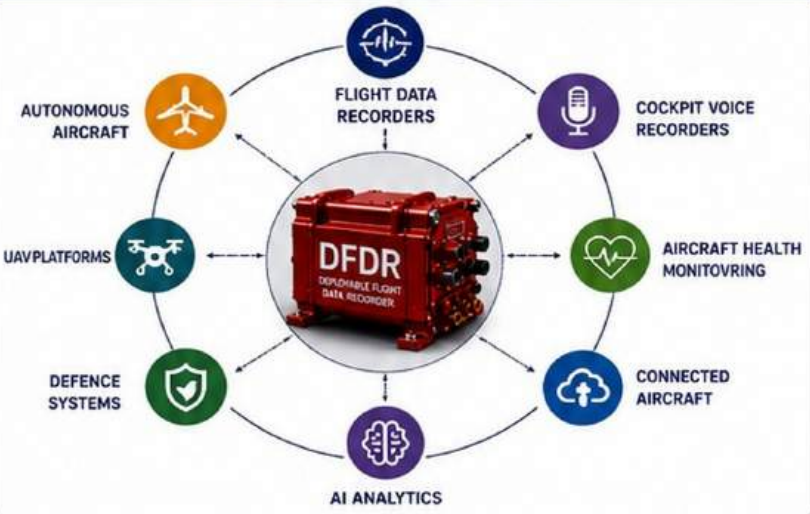
ADAPTIVE CAPTURE
Dynamically adjusts recording rate, duration and data selection based on event severity and context.

INDEPENDENT PRESERVATION
Stores critical data in protected, independent memory with power isolation and crash survivable design.

WIRELESS RETRIEVAL
Enables secure remote access and selective download of stored data via multiple communication channels.

MODULAR INTEGRATION
Modular architecture designed for integration with existing flight recorders and aircraft platforms.

POTENTIAL INTEGRATION AREAS



TECHNICAL DISCLAIMER

This presentation is intended as a commercial overview. Final technical scope, claim interpretation and freedom to operate assessments should be based upon the granted patent specifications and formal legal review.

For full technical details, please refer to the complete patent specifications and claims of AU2019238567B2.

PROTECTED ARCHITECTURE.
INTERNATIONAL PATENT RIGHTS.
FUTURE AVIATION SAFETY.

PROTECTING WHAT MATTERS.
ENABLING SAFER SKIES.

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WHEN RECORDERS ARE NOT RECOVERED

THE HIDDEN COST OF CONVENTIONAL FLIGHT DATA RECOVERY

Obtaining FDR and CVR data as quickly as possible after an accident is crucial to idtentify causes and prevent future accidents. However, many events have shown that timely recovery can be impossible in remote, overwater or inaccessible locations.

Source: Flight Safety Foundation White Paper, August 2014[1]



THE RECOVERY PROBLEM

ACCIDENTS OVER WATER
Deep ocean crashes make location and recovery extremely difficult and time consuming.

REMOTE & INACCESSIBLE AREAS
Extreme terrain, weather and conflict zones can prevent recovery or cause severe delays.

DAMAGE & DESTRUCTION
Impact forces, fire and water pressure can destroy recorders or make them unreadable.

LONG DELAYS
Search operations can take months or years, delaying investigations and safety improvements.

NO RECOVERY
In many accidents, FDR or CVR have never been found.

REAL ACCIDENTS. REAL CONSEQUENCES.

Selected Examples of Unrecovered or Lost Recorders[2]



MALAYSIA AIRLINES FLIGHT 370 (2014) — NOT FOUND
Disappeared over the southern Indian Ocean. Despite the largest search in aviation history, the aircraft and its recorders have never been located.



AIR FRANCE FLIGHT 447 (2009) — RECOVERED LATE
Crashed into the Atlantic Ocean. Both recorders were recovered after a two-year search from depths of 3,900 m (12,800 ft).



TWA FLIGHT 841 (1974) — NOT FOUND
Bombing over the Ionian Sea. Despite narrowed location using underwater beacons, neither FDR nor CVR were recovered.



KAM AIR FLIGHT 904 (2005) — CVR NOT FOUND
Crashed in mountainous Afghanistan. FDR contained no data due to a pre-existing fault. CVR never found. One investigator was killed during the recovery attempt.



SOUTH AFRICAN AIRWAYS FLIGHT 295 (1987) — FDR NOT FOUND
CVR recovered at 4,900 m (16,100 ft) – the greatest depth in history. FDR was never located.

COST, DELAY AND RISK

EXPENSIVE OPERATIONS
Deep ocean searches can cost tens of millions of dollars. Example: MH370 search estimated at over USD 150M.

SPECIALIST RESOURCES
Naval ships, sonar, ROVs, divers and advanced equipment are required.

NO GUARANTEE OF SUCCESS
Even with advanced technology, recovery is not guaranteed.

MONTHS OR YEARS
Investigations and safety recommendations are delayed, increasing risk for future flights.

HUMAN RISK
Recovery missions in hostile, high-risk or extreme environments can cost lives.



THE DFDR SOLUTION – CHANGING THE RECOVERY EQUATION

AUTOMATIC DEPLOYMENT
Triggered by predefined events to preserve critical data.

LOCATION & TRANSMISSION
Independent systems transmit location and data via multiple communication channels.

DATA PRESERVATION
Protected storage ensures information survives even when the aircraft does not.

FASTER ACCESS
Information available to investigators in hours, not months or years.

SAFER AVIATION
Faster investigations.
Timely safety actions.
Lives can be saved.

"The future of aviation safety will depend not only on recording information, but on recognising what matters, preserving it intelligently and making it available when it is needed most."

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MULTI SECTOR APPLICATIONS

ONE PROTECTED RECOVERY ARCHITECTURE, MANY HIGH VALUE MARKETS

The patented DFDR architecture delivers intelligent event detection, adaptive data capture, independent preservation and wireless recovery across a wide range of platforms where critical information can be lost, damaged or difficult to recover.

1 AIRLINE AIRCRAFT



- Comprehensive flight data
- Accident investigation
- Fleet safety intelligence
- Regulatory compliance

2 SMALL AIRCRAFT



- Lightweight solution
- GA and training aircraft
- Cost effective safety
- Easy integration

3 DRONES & UAVs



- Autonomous operations
- Mission data recording
- Crash location & recovery
- UTM & compliance

4 SHIPS & MARITIME



- Voyage data recovery
- Accident evidence
- Black box for ships
- Remote ocean incidents



5 MILITARY VEHICLES



- Mission data preservation
- Survivability in harsh environments
- Battlefield recovery
- After action analysis

6 HELICOPTERS



- Offshore operations
- Search and rescue
- EMS & air ambulance
- Defence operations

7 SPACECRAFT & ROCKETS



- Launch event recording
- Stage separation data
- Telemetry preservation
- Recovery tracking

8 RAIL & TRANSPORT



- Derailment evidence
- Event data capture
- Operational safety
- Remote monitoring

9 MINING & HEAVY EQUIPMENT



- Incident recording
- Equipment protection
- Remote site recovery
- Maintenance intelligence

10 AUTONOMOUS VEHICLES



- Event capture & logging
- Sensor data preservation
- Crash reconstruction
- AI & analytics support

MORE POSSIBLE APPLICATIONS

OIL & GAS OFFSHORE | SUBSEA VEHICLES | INDUSTRIAL PLATFORMS | AGRICULTURAL MACHINERY | UNCREWED SURFACE VESSELS | EMERGENCY SERVICES

CORE TRANSFERABLE ARCHITECTURE

- Event recognition across any platform
- Adaptive capture based on operational context
- Independent, crash survivable data storage
- Wireless transmission for rapid recovery
- Integration with existing system architectures



COMMERCIAL EXPANSION POTENTIAL

Multiple Global Markets | High Safety Impact | Scalable Technology | Multiple Business Models | Long Term Value

FROM AIRCRAFT SAFETY TO INTELLIGENT EVENT RECOVERY ACROSS TRANSPORT, DEFENCE AND AUTONOMOUS SYSTEMS.

ONE ARCHITECTURE. MULTIPLE SECTORS. GLOBAL RECOVERY INTELLIGENCE.

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INDUSTRY EVIDENCE & SAFETY IMPERATIVE

Why faster, independent data recovery is no longer optional



Accident history has shown that even with highly robust recorders, critical flight data can be lost, damaged, inaccessible or recovered too late to support timely investigation and safety learning.

The single biggest gap is not recording. It is recovery.

WHAT AVIATION SAFETY BODIES RECOGNISE

QUICK ACCESS IS CRUCIAL
Rapid access to FDR and CVR data is critical for determining causes and contributing facctors and for developing safety recommendations.

REMOTE & OVERWATER CHALLENGES
Accidents in remote or overwater locations can make timely recovery impossible or take months or years.

DEPLOYABLE CONCEPTS SUPPORTED
Deployable systems (virtual or physical) are supported as a way to preserve and make critical information available in time.

AUGMENT, NOT REPLACE
Deployable solutions augment existing FDR and CVR systems and provide an independent path to recover data.

> *"Flight Safety Foundation strongly supports the development of a deployable flight recorder system (DFRS) for commercial air transport aircraft."*
>
> — Flight Safety Foundation White Paper, August 2014*

WHAT ACCIDENT HISTORY CLEARLY SHOWS



MALAYSIA AIRLINES FLIGHT 370 (2014)
Disappeared over the southern Indian Ocean.
Aircraft and recorders have never been located.



AIR FRANCE FLIGHT 447 (2009)
Crashed into the Atlantic Ocean.
Both recorders recovered after a two-year deep ocean search from 3,900 m (12,800 ft).



TWA FLIGHT 841 (1974)
Bombing over the Ionian Sea.
Despite underwater beacons, neither FDR nor CVR were recovered.



AMERICAN AIRLINES FLIGHT 77 (2001)
Hit the Pentagon.
Recorders destroyed by impact and fire. No recoverable data.



KAM AIR FLIGHT 904 (2005)
Crashed in mountainous Afghanistan.
FDR contained no data (pre-existing fault), CVR never found. One investigator killed during recovery.

MANY OTHER CASES CONFIRM THE SAME REALITY:
Unrecovered. Damaged. Destroyed. Inaccessible.

WHAT DFDR CHANGES

INDEPENDENT LOCATION
Built-in GNSS and automatic transmission ensure rapid location of the event.

CRITICAL DATA PRESERVED
Event-driven capture ensures key parameters and audio are secured before systems fail.

PROTECTED & SURVIVABLE
Hardened, fire-resistant and pressure-tolerant design for extreme environments.

WIRELESS RECOVERY
Data transmitted via multiple channels (satellite, cellular, radio) for rapid access.

FASTER SAFETY LEARNING
Earlier access to reliable data means faster answers and faster safety improvements.

DFDR bridges the gap between what aircraft record and what investigators can actually recover.

EVIDENCE FROM AUTHORISED SOURCES

FLIGHT SAFETY FOUNDATION



FLIGHT SAFETY FOUNDATION (2014 WHITE PAPER)*

- Rapid access to FDR/CVR data is crucial for understanding accident causes and preventing future accidents.
- Supports development of deployable flight recorder systems (DFRS) for commercial aircraft.
- Virtual transmission or physical ejectable systems both considered viable approaches.

BEA
Bureau d'Enquêtes et d'Analyses pour la sécurité de l'aviation civile



BEA STUDY FDR READ-OUT (2005 REPORT)†

- Rapidly obtaining complete and accurate FDR data after an accident or incident is often critical.
- Incomplete, missing or unreadable data significantly hampers investigation.
- Regulatory frameworks require improved verification, calibration and documentation of FDR systems.

UNRECOVERED RECORDER CASES‡

- **Multiple** commercial accidents where FDRs and/or CVRs were never found.
- Recorders lost in oceans up to 4,900 m (16,100 ft) deep.
- Cases include deep ocean, remote terrain, heavy impact, fire and logistical limitations.
- Recovery operations often cost millions, require naval assets and can take months or years.



THE HARSH REALITY (EXAMPLES)

40+
COMMERCIAL ACCIDENTS SINCE 1960s WHERE FDR OR CVR WERE NOT FOUND OR UNRECOVERED

OCEAN DEPTHS
From hundreds to thousands of metres in deep ocean cases

MONTHS / YEARS
Typical time required for deep ocean search and recovery

MILLIONS
High cost of search & recovery operations for conventional FDRs

HUMAN RISK
Search operations in remote or hostile areas have resulted in loss of life

> *"The question is not whether aircraft record data.*
> *The question is whether critical data can be recovered when it matters most."*

* Flight Safety Foundation White Paper: Deployable Flight Recorder Systems – A Key to Preventing Accidents, August 2014 | † BEA Study: Flight Data Recorder Read-Out Technical and Regulatory Aspects, May 2005 | ‡ Source: Wikipedia – List of unrecovered flight recorders (accessed

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IMPLEMENTATION ROADMAP

FROM PROTECTED INTELLECTUAL PROPERTY TO COMMERCIAL INTEGRATION

A structured pathway to evaluate, validate and integrate the DFDR architecture into aircraft, defence and other high-value platforms.



1 CONFIDENTIAL REVIEW

- Execute NDA
- Provide patent documentation
- Discuss commercial objectives
- Align on opportunity and scope

OUTCOME
Mutual alignment and path forward

2 TECHNICAL EVALUATION

- Review target aircraft systems
- Assess recorder interfaces (ARINC 717, CVR, discrete, CAN)
- Evaluate data pathways, storage and power
- Define preliminary integration concept

OUTCOME
Technical feasibility and integration concept

3 CLAIM MAPPING

- Map target products to DFDR claim architecture
- Identify overlapping features
- Evaluate infringement risk and freedom to operate
- Assess licensing pathways

OUTCOME
Claim analysis and commercial strategy

4 PROTOTYPE PATHWAY



- Build DFDR demonstrator
- Lab testing & environmentals
- Simulated event triggering
- Wireless data recovery demonstration
- Performance validation

OUTCOME
Validated proof of concept

5 INTEGRATION STRATEGY

- Define integration approach
- Retrofit, OEM integration or platform enhancement
- Avionics certification pathway
- Supply chain and production planning

OUTCOME
Integration plan and certification roadmap

6 COMMERCIAL AGREEMENT

- Licensing agreement or partnership
- Joint development or acquisition
- Commercial terms and territories
- Long-term support and IP protection

OUTCOME
Commercialisation and market entry

KEY BENEFITS THROUGH THE ROADMAP

- **REDUCES RISK** of lost or delayed investigations
- **SAVES TIME** by enabling faster data access
- **LOWERS COST** of recovery and investigation
- **IMPROVES SAFETY** through actionable intelligence
- **APPLICABLE GLOBALLY** across multiple sectors
- **PROTECTED IP** backed by granted patents

SECTORS READY TO BENEFIT


AIRLINE AIRCRAFT


SMALL AIRCRAFT


DRONES & UAVs


SHIPS & MARITIME


MILITARY & DEFENCE


HELICOPTERS


SPACE & ROCKETS


RAIL & TRANSPORT


MINING & HEAVY EQUIPMENT

INNOVATION AVIOTECH PTY LTD
INNOVATIVE SOLUTIONS FOR SAFER SKIES
Deployable Flight Data Recorder with Data Retrieval and Method

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