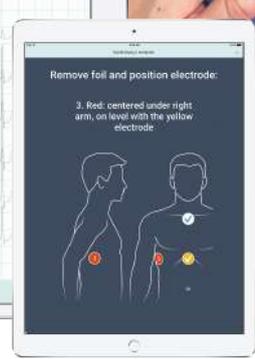
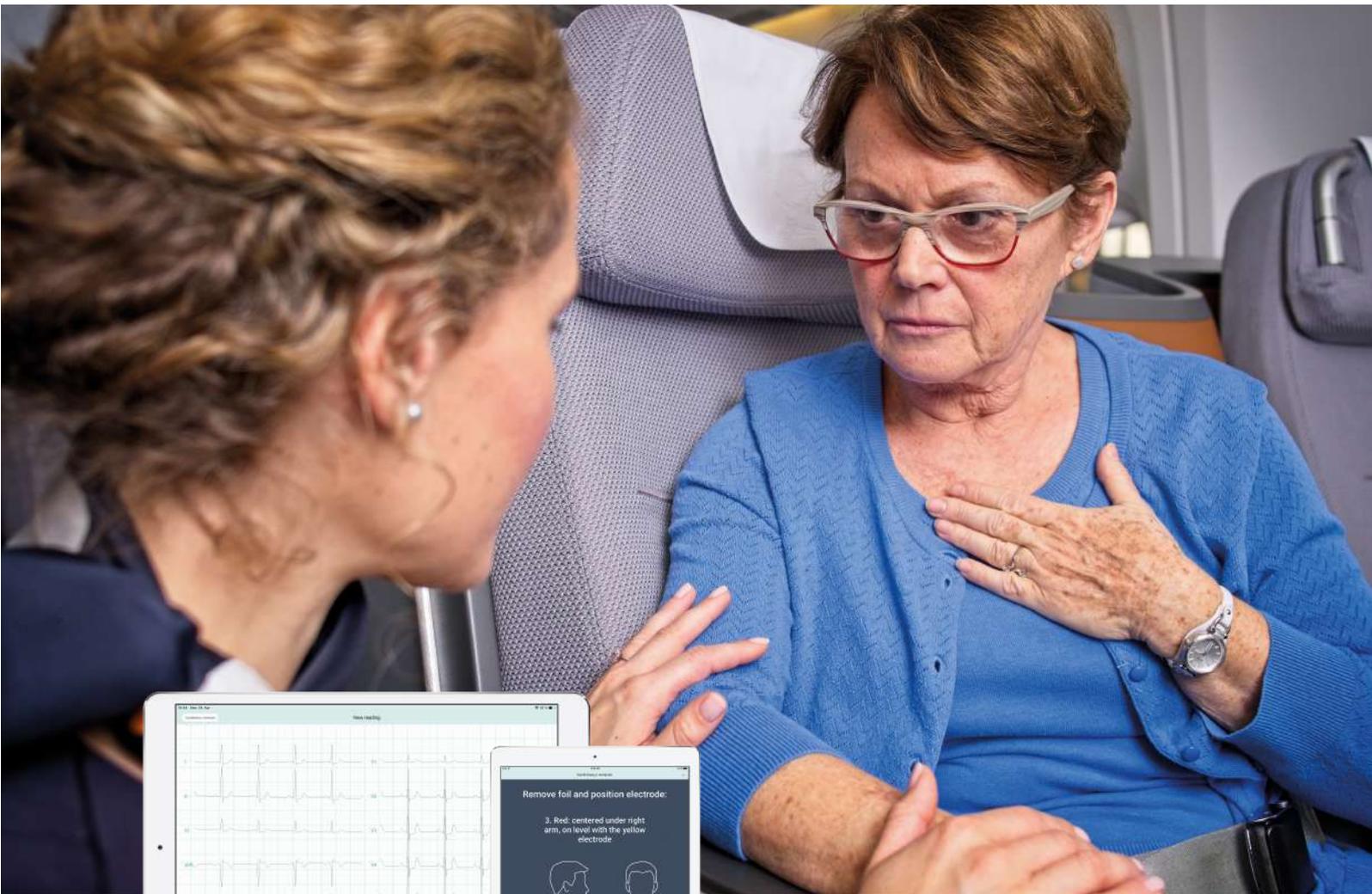


Passenger Safety at Heart

Ultralight 12-lead ECG



Made
in
Germany



CardioSecur 
Knows Your Heart

CardioSecur Aviation

Heart attack is the single most common reason for medical emergency diversions, causing high cost, operational disruption and safety risks for airlines.¹ CardioSecur introduces highly sophisticated ECG technology capable of diagnosing heart attacks and life-threatening arrhythmias to the aviation sector. Its app was specifically designed for non-medical staff and guides cabin crew step-by-step through the entire process. It automatically transmits generated data via on board Wi-Fi to the ground. CardioSecur Aviation merges seamlessly into existing emergency processes and efforts minimal training.

Reliable diagnostics. Prevent diversions.



High quality
medical data



Easy to use &
implement



Seamless ground
transmission



Unrivaled cost-
effectiveness

Lufthansa - Trusting in CardioSecur

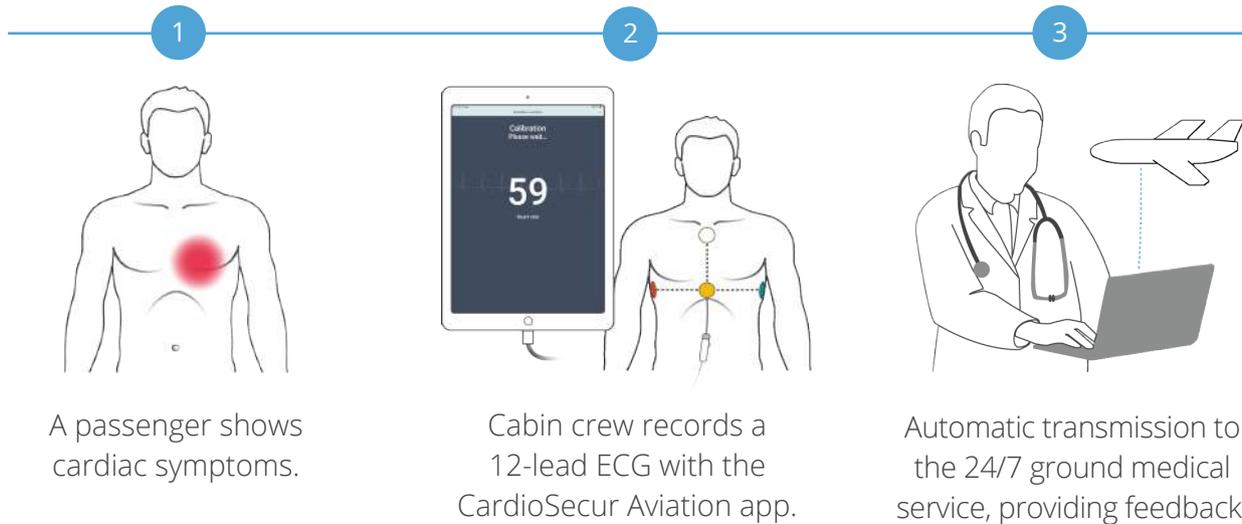
After overwhelming success in introducing CardioSecur Aviation on Lufthansa's A380 fleet, the airline deployed the system to its entire long-haul fleet. In cooperation with MedAire's MedLink service all CardioSecur ECGs are evaluated by means of seamless ground transmission. This allows for diagnosis of infarctions and any type of arrhythmia.

The new CardioSecur service enabled Lufthansa to increase passenger safety, prevent unnecessary re-routing and trigger justified medical diversions due to the unrivalled ECG data quality.



How it works

Comprehensive ECG in just 3 steps:



In addition, a physician on board may use the expert mode to view the live ECG in the cabin. An ECG can be recorded intuitively by non-medical staff in less than 3 minutes across any passenger anatomy.

Exceptional ECG-system properties

- Comprehensive 12-lead ECG with only 4 electrodes for diagnosis of critical infarctions
- Ultra-light technology (50g)
- No battery recharging required
- Seamless communication via Wi-Fi
- Approved class IIa medical product
- Unlimited number of ECG recordings
- Secure data processing via fully EU GDPR compliant server infrastructure
- App securely distributed via MDM

Medical service at its best

It is always a challenge to assess if a medical emergency is time critical. Lacking comprehensive data in-flight, makes it close to impossible for any physician to tell, if a life-threatening infarction or arrhythmia is present and a diversion recommendable.

CardioSecur Aviation closes the diagnostic gap on board and seamlessly integrates into existing emergency processes. Its easy to use 12-lead ECG automatically links with a 24/7 on ground medical service, which interprets the ECG and provides feedback to pilots within minutes. Optionally, a doctor on board may resort to the live ECG in expert mode to support the process.

CardioSecur thereby effectively allows for infarction and arrhythmia detection and enables taking the appropriate decision on flight diversion.

Increasing safety. Reducing cost.

By significantly reducing unnecessary diversions, CardioSecur has proven to increase passenger safety, mitigate flight disruptions and achieve significant cost savings year over year.

CardioSecur is strikingly cost-effective in that it:

- accommodates existing in-flight processes
- affords minimal staff training
- affords minimal consumables (one set fits all)
- requires no battery recharging
- requires no aircraft refitting
- does not impact fuel consumption (50g light)

Technical Details

- 12-lead ECG (I, II, III, aVR, aVL, aVf, V1-V6) optionally 22-lead (additionally V7-V9, VR3-VR9)
- Vector-electrocardiography based system (3D) with only 4 electrodes known as the EASI standard^{2,3,4}
- Ultra-lightweight cable (only 50g)
- ECG recordings of 15 seconds each
- Heart rate: 18 to 256 beats per minute
- Bandwidth: 0,05 to 40 Hz, Sampling rate: 250 Hz
- Disposable wet gel electrodes
- Optimised for iPads™

1) Jürgen Graf, Uwe Stüben, and Stefan Pump. In-Flight Medical Emergencies. Deutsches Ärzteblatt International 2012; 109(37): 591-602. 2) Accuracy of the EASI 12-Lead electrocardiogram compared to the standard 12-lead electrocardiogram for diagnosing multiple cardiac abnormalities. Journal of Electrocardiology. 1999; 32 Suppl: 38-47. 3) Dower, GE, et al. Deriving the 12-lead electrocardiogram from four (EASI) electrodes. Journal of Electrocardiology, 1988, 21, Suppl. pp. 182-7. 4) Comparison of standard and derived 12-lead electrocardiograms registered by a simplified 3-lead setting with four electrodes for diagnosis of coronary angioplasty-induced myocardial ischemia. European Cardiology, 2012 Jul; 8(3): 179.

CardioSecur

Knows Your Heart



CardioSecur is an innovation of Personal MedSystems GmbH
ISO 13485 certification by TÜV SÜD



Personal MedSystems GmbH
Wilhelm-Leuschner-Straße 41
60329 Frankfurt am Main
Germany

+49 (0) 69 9072013 0

aviation@cardiosecur.com

For more information visit:
www.cardiosecur.com/aviation

