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Executive Summary: RAO Scout is a medical-grade smart-textile platform that delivers continuous, high-fidelity cardiac monitoring by integrating multi-lead ECG, bioimpedance, SpO_2, PPG, temperature, and motion sensing into a washable compression garment. Flexible hybrid electronics and conductive-ink sensor networks embedded in the textile provide clinical quality physiological data while ensuring long-term comfort and daily usability. The system uses edge-based AI and cloud analytics to detect arrhythmia, respiratory irregularities, and cardiopulmonary anomalies in real time, improving how patients and clinicians manage cardiac health.

The Problem: Cardiac arrhythmias are often underdiagnosed due to limitations in current monitoring technologies. Holter monitors are bulky and limited to short-term use, patch-based systems provide single-lead recordings that degrade with motion, and implantable loop recorders are invasive and expensive. These shortcomings disproportionately impact women, Veterans, and underserved groups, who frequently face delayed detection and fragmented follow-up care. RAO Scout addresses these needs with a long-term, non-invasive system that delivers continuous, multi-modal cardiac and respiratory data with medical-grade accuracy during both rest and activity.

The RAO Scout is built on a strong technology foundation that goes far beyond typical wearables. Instead of relying on a single ECG lead or patch, our garment uses multiple sensing points built directly into the fabric with conductive ink. This lets the system capture a cleaner, more complete picture of the heart's electrical activity, even while the user is moving, exercising, or sweating. A highly refined signal-conditioning system supports the sensors, reducing interference and motion noise and providing clinicians with data quality closer to what they would expect from clinical-grade equipment rather than consumer devices.
In addition to ECG, RAO Scout includes optical sensors to monitor blood oxygen levels and a motion sensor that automatically corrects for movement, keeping readings accurate in real time. The garment also measures subtle changes in chest impedance, which help track breathing patterns and detect early warning signs of fluid buildup or cardiac decompensation that an ECG alone cannot. All these sensors connect to a thin, flexible electronics module that bends with the garment and withstands over 50 washes without degrading performance.

A two-layer AI system analyzes the data. The on-garment processor quickly identifies irregular rhythms within fractions of a second, providing early alerts for conditions such as atrial fibrillation, tachycardia, or pauses. More advanced analysis occurs in the cloud, where longer-term trends, variability patterns, and subtle anomalies are examined to reduce false alarms and provide clinicians with better insight into the patient's overall heart health. Information transfers securely to the mobile app using low-

Target Market: The U.S. arrhythmia monitoring market exceeds $6.5 billion annually, driven by increasing cardiac disease rates and a shift toward at-home, continuous monitoring. RAO Scout is well-positioned at the intersection of e-textiles, cardiology, and AI-enabled telehealth. Its clinical-grade, multi-sensor capabilities appeal to hospital systems, cardiology groups, telehealth networks, and chronic care management programs seeking reimbursement for RPM, RTM, and CCM. Veterans and high-risk adults are immediate early adopters due to the high prevalence of arrhythmias and cardiomyopathy in these groups.

monitoring devices, it offers high-quality multi-lead ECG, multi-modal signal fusion, and continuous comfort, resulting in higher patient compliance and better diagnostic value. U.S.-based e-textile manufacturing ensures supply chain stability and supports federal procurement, including VA and DoD initiatives. The platform's intellectual property portfolio, covering sensor placement, textile integration, fusion models, and AI processing, positions RAO Scout for long-term defensibility and value creation.

The regulatory strategy is anchored in an FDA 510(k) pathway, with predicate devices such as the iRhythm Zio XT and Vital Connect systems. Planned clinical pilots will compare RAO Scout's multi-lead ECG output against standard 12-lead ECG and leading patch monitors to validate accuracy, safety, signal quality, and usability. These studies will support a pre-submission meeting targeted for Q1 2028, followed by scaled manufacturing and commercial deployment.

Competitive Advantage Conclusion: RAO Scout marks a shift from episodic to continuous, intelligent, life-integrated cardiac diagnostics. By combining advanced sensing, flexible electronics, and validated AI, the platform delivers a clinically rigorous, scalable solution that can reduce cardiac event risk and expand access to high-quality monitoring. For investors, RAO Scout offers strong market timing, clear technical differentiation, a high-potential reimbursement-driven recurring revenue model, and a long-term opportunity to lead remote cardiopulmonary care.