

**TECH OFFER**

**Smart Clothing For Continuous, Non-Invasive Monitoring Of Babies' And Elderly'S Health**



**KEY INFORMATION**

**TECHNOLOGY CATEGORY:**

**Electronics** - Sensors & Instrumentation  
**Healthcare** - Telehealth, Medical Software & Imaging  
**Infocomm** - Internet of Things & Wearable Technology  
**Personal Care** - Wellness & Spa  
**Sustainability** - Sustainable Living

**TECHNOLOGY READINESS LEVEL (TRL):** **TRL8**

**COUNTRY:** **AUSTRALIA**

**ID NUMBER:** **TO174302**

**OVERVIEW**

Healthcare is moving towards a self-management and prevention model, fuelled by limited healthcare resources, associated rising costs, and greater consumer awareness of health and lifestyle. The recent Covid-19 pandemic has also highlighted the need for homes to facilitate lower acuity care and for patients to be assessed and advised remotely.

However, current medical technology is primarily designed for professional use in hospitals and is typically too complex and costly for patients to use at home.

An Australian smart wearables startup has developed an innovative medical device platform utilising technology such as proprietary sensors and machine learning algorithms, and chatbots/avatars, and is intuitive to use.

The technologies are weaved into a form of comfortable clothes which can be integrated into users' daily lives for easy monitoring of health status. The technology platform is particularly suited for use in low care settings such as prohabilitation, rehabilitation and patient compliance.

The startup is looking for partners from community hospitals/step-down care, hospitals, pet, space, and defence industries.

## TECHNOLOGY FEATURES & SPECIFICATIONS

The smart garment is embedded with sensors which collect data from the wearer comfortably, in a non-invasive manner. The data is then transmitted by Low Energy Bluetooth to a mobile phone app which parses this data through advanced algorithms to provide actionable feedback and alerts to the user. Feedback and coaching advice are also provided via notifications and pre-recorded video snippets.

The data stream collected from patients contribute to the development of analytics to detect early deterioration or potential issues and enables algorithms to learn users' habits to become more personalized.

## POTENTIAL APPLICATIONS

This technology has numerous applications including:

1. Singlet for babies (most mature platform) – which detect infants' feedings, sleeping, core/skin temp, development, and breathing patterns. This information is then used to act as a virtual midwife to new parents to answer their questions and coach them through the uncertainties and stresses that new parents face.
2. Smart garment for elderly (in development) - to help elderly better manage themselves at home and render assistance quickly, remotely.
3. Smart garment for people with disabilities, such as in the motor neuron space.
4. For pets, remote workers, defence, and space.

## UNIQUE VALUE PROPOSITION

In the US, 72% of parents suffer from baby blues and 10-20% suffer from post-natal depression. The infant singlet provides parents with confidence and reassurance and helps reduce cost to families and society by allowing consultations between the families and healthcare system remotely and at the convenience of users.

Remote monitoring of wellbeing also benefits the healthcare system by reducing strain and reliance on hospitals such as reducing or even eliminating the need for follow-up visits.

Value propositions:

- Keeping the patient safe and well
- Providing confidence and reassurance to care givers, both trained and untrained
- Reducing healthcare costs by allowing for early discharge
- Reducing re-hospitalisations
- Enhancing remote care by providing unbiased data to clinician, ensuring the patient requires it and by allowing for

frictionless communications between patient and clinician.

- Personalized algorithms for early detection and prevention of potential chronic and complex issues