

TECH OFFER

Digital Screening for Mild Cognitive Impairment and Vascular Cognitive Impairment



KEY INFORMATION

TECHNOLOGY CATEGORY:

Healthcare - Telehealth, Medical Software & Imaging

Healthcare - Diagnostics

TECHNOLOGY READINESS LEVEL (TRL): **TRL7**

COUNTRY: **SINGAPORE**

ID NUMBER: **TO175338**

OVERVIEW

Early detection of Mild Cognitive Impairment (MCI), especially the vascular subtype, is becoming increasingly important as populations age and the burden of dementia rises globally. Approximately 12% to 18% of people age 60 or older are living with MCI, and an estimated 10% to 15% of individuals living with MCI develop dementia each year — many of which could benefit from timely intervention to slow or prevent further cognitive decline.

This **digital solution offers a non-invasive, self-administered cognitive screening tool that can be completed in just 15 minutes via a mobile device or tablet.** It uses a series of interactive, neuroscience-informed **digital tasks** to assess multiple cognitive functions, including working memory, attention, processing speed, and executive function. These areas are particularly relevant in identifying different subtypes of MCI, such as those related to vascular causes.

The system's proprietary algorithm analyzes the user's performance and has been clinically validated in Southeast Asia, achieving 89% accuracy with strong specificity and sensitivity. Its objective, performance-based design makes it suitable for deployment

across various healthcare settings—from hospitals and clinics to insurers and community screening programs.

By offering a quick, engaging, and scalable method for cognitive screening, this solution supports earlier identification of cognitive changes and provides actionable insights that can help guide appropriate follow-up care based on the individual's cognitive profile.

TECHNOLOGY FEATURES & SPECIFICATIONS

At the heart of the solution is a suite of neuroscience-backed digital games, purpose-built to evaluate key cognitive domains—working memory, attention, processing speed, and executive function. These interactive tasks generate performance data processed by a proprietary classification algorithm.

Clinically validated in Southeast Asia through a study involving 250 participants, the tool demonstrated a classification accuracy of 89%, with specificity and sensitivity rates of 83% and 85% respectively.

POTENTIAL APPLICATIONS

This solution can be widely adopted across various healthcare ecosystems, including:

- Hospitals
- GP clinics
- Healthcare insurance providers
- Wellness centres

It also opens up opportunities for commercial products such as corporate cognitive wellness programs and dementia-specific insurance plans, enhancing value propositions for insurers and health-focused employers alike.

UNIQUE VALUE PROPOSITION

Current MCI detection methods typically rely on MRIs and detailed neuropsychological testing—both of which require trained personnel, extended patient interaction, and significant costs. In contrast, this digital tool provides:

- A self-administered test
- No need for specialist oversight
- Completion in under 15 minutes

- An engaging, gamified interface

The result is a highly scalable and accessible cognitive screening method that maintains clinical rigour while ensuring ease of use and user engagement—crucial for widespread adoption in diverse populations.