

## **Annex A**

### **Terrarium: Synapxe's New Innovation Lab at Elementum**

Terrarium is Synapxe's newly-launched Innovation Lab, located on Level 5 of Synapxe's office at Elementum.

#### **Why Terrarium?**

Terrarium is Synapxe's first innovation lab established to facilitate collaboration and development of innovation projects between Synapxe, public healthcare entities and industry partners. Complementing Synapxe's HealthX programme, it serves as a symbol of Synapxe's commitment to innovation, underscoring its role as the HealthTech ecosystem enabler. Beyond its physical space, Terrarium helps foster a HealthTech community for innovation, across public healthcare institutions, companies big and small, high-tech and R&D clusters.

It is aptly named 'Terrarium', a plant environment which is carefully curated to provide the right balance of light, moisture, soil to ensure the plants thrive and grow, Likewise, Synapxe's Terrarium provides an environment designed to provide the resources, tools, collaboration and support needed for innovation to flourish.

Terrarium will host regular innovation meetups such as thematic showcases of emerging tech, briefings for call-for-innovations and startup pitching sessions. Through Terrarium and HealthX enablers, Synapxe aims to harness cutting edge technology and reduce barriers to health innovation as it continues to advance the vision to inspire tomorrow's health.

#### **Showcases @ Terrarium on 18 September**

##### **Zone 1.1: HealthX Innovation Sandbox**

The HealthX Innovation Sandbox (HX-IS) offers Synapxe's tech partners a safe environment for fast experimentation and evaluation of digital solutions. It allows public healthcare entities and industry technology organisations to come together to quickly assess the viability and benefits of new solutions, and help move beyond proof-of-concepts and prepare for real-world deployment in the public healthcare system.

Upcoming new features will include synthetic data generation services and out-of-box infra setup platform for rapid development and ready-to-use API.

Read more on HX-IS - <https://www.healthx.sg/>

### **Zone 1.2: Cybersecurity Self-Attestation Portal**

The Cybersecurity Self-Attestation Portal (CSAP) is an online portal that leverages Large Language Model (LLM) capabilities, so that solution providers can self-assess their compliance with healthcare cybersecurity policies and enhance their understanding of public healthcare requirements. Users interact with the LLM-powered chatbot which offers clarification and explanation.

CSAP helps the industry bridge the information gap that exists around cybersecurity requirements, avoiding costly redesigns of solutions should they enter into a project with the Public Healthcare partners. It can also ingest other data sources to customise the self-attestation use case for the industry solution providers.

### **Zone 1.3: Health Empowerment thru Advanced Learning & Intelligent eXchange (HEALIX)**

HEALIX is the cloud-based analytics platform that consolidates existing data infrastructures hosted on different data centres from across Singapore's healthcare systems for data sharing, discovering and experimenting with new tools and techniques.

Housed on both the Government Commercial Cloud and Healthcare Commercial Cloud to ensure a seamless integration of actionable insights, the platform will be a repository of AI and machine learning (ML) models to enable better collaboration and the use of data analytics across public healthcare.

With access to HEALIX, public healthcare professionals can utilise up-to-date and consistent data which can accelerate their AI/ML project initiatives and drive better patient outcomes. They can also leverage HEALIX's range of tools and frameworks for developing and deploying AI/ML models, including pre-built algorithms and libraries, as well as custom development options.

To ensure the safe and responsible use of data, HEALIX has implemented a robust set of data security measures and encryption techniques aligned to Singapore government and industry frameworks. Both data in transit and data at rest are de-identified and encrypted according to

industry standard encryption protocols. Multi-level access controls are also in place to prevent data misuse or unethical application.

#### **Zone 1.4: Synapxe Tandem / In-Sync**

Synapxe Tandem is a GenAI platform enabling public healthcare professionals to explore, experiment, test and deploy GenAI applications at scale in a safe and secure environment. It has been rolled out to all public healthcare Institutions, including SingHealth, National Health Group and National University Health System.

The showcase will demonstrate the key capabilities from Tandem's three pillars, namely Discovery, Test Drive and Live. Discovery is a general-purpose productivity tool, Test Drive is a sandbox environment for testing and validating GenAI applications, and Live is for deploying and hosting GenAI applications for wider scaling.

In-SYNc, Tandem's first live application, was rolled out to Synapxe staff as a Knowledge Management AI-Assistant to enable quicker retrieval of company information.

#### **Zone 2.1: Amazon Web Services' Garnet Framework and Silver Wings Autostereoscopy Imagery**

Garnet Framework, built on AWS, aggregates open-source data from various sources into a dynamic knowledge graph for more effective decision-making visualised in a Digital Twin layout. Its real-time and geospatial capabilities allow seamless data consumption by any chosen visualisation platform. The framework integrates GenAI-powered interfaces, e.g., an integrated chatbot, enabling users to easily access insights and retrieve data from the knowledge graph.

Silver Wings Autostereoscopy imagery allows users to view images in 3D without the need to use any form of headgear or eyewear. Using eye tracking technology, users can view 3D images from a compatible tablet or screen for a more immersive visual experience. It is useful for training, doctor-patient communication, and pre-surgery visualisation and planning, creating an immersive and user-friendly experience.

#### **Zone 2.2: SoundEye Lasso Fall Detection**

The SoundEye Lasso Fall Detection is a collaboration between Singapore Christian Home (SCH) and SoundEye, facilitated through Synapxe's Call-for-Innovation Enabler, Health X. A contactless mobile

device that detects and prevent falls, it is a revolutionary monitoring system that can seamlessly switch between bed and chair settings.

This pilot prototype was tested at SCH to monitor residents in beds and wheelchairs. As a non-invasive monitoring technological solution, it can help improve the quality of life of ageing patients in the care system. The prototype was delivered within three months, and the solution is now in development for further hospital settings.

### **Zone 2.3: Health Kaki (Proof-of-Concept)**

Health Kaki, a collaboration between Ministry of Health, Health Promotion Board, Temus, Amazon Web Services and Synapxe, is a GenAI-enabled prototype that delivers personalised and actionable recommendations based on health goals discussed with family doctors during their Healthier SG consultations. The tailored health plan considers the individual's health profiles and preferences in proposing personalised exercise routines and dietary intake from reliable sources such as HealthHub. Furthermore, residents can interact with the GenAI to refine and personalise their lifestyle prescribed action plans, starting with diet and exercise.

### **Zone 2.4: Nervotec**

Previously featured at the HealthX Startups Day 2023 for its Remote photoplethysmography (rPPG) technology for vital signs reading and BP management, Nervotec's latest trial supports diabetic patients by measuring their haemoglobin A1c (HbA1c) levels in a quick, contactless way. By using any camera-equipped device, users can scan their facial features to get an instant reading of their HbA1c levels. This remote and non-invasive solution redefines the user's experience and is accessible to the masses, allowing for more efficient and convenient diabetics management.

Nervotec continues to innovate contactless solutions to empower users to manage their health.

### **Zone 2.5: AI-enabled Medical Imaging for Singapore Public Healthcare (AimSG)**

AimSG is a common AI Medical Imaging Platform. The open and vendor-neutral platform provides hospitals and primary care institutions access to a repertoire of AI models that can be deployed quickly and cost-effectively. It allows for "hot swapping" of AI models, so institutions can easily update or change models without being tied to specific hardware or software, reducing costs and enhancing operational efficiency. AimSG has successfully piloted a chest X-ray model at two



hospitals and will continue to operationalise AI imaging models across the clusters, showing its scale and adaptability to the needs of healthcare institutions.

### **Zone 2.6: Visual Pillbox (Proof-of-Concept)**

To address the complex needs of patients and their caregivers when it comes to medication adherence, Synapxe has partnered with Khoo Teck Puat Hospital, a member of the National Healthcare Group, to co-develop the Visual Pillbox. This technology leverages multi-lingual GenAI to enable pharmacists to easily create a medicine intake schedule with visually intuitive infographics for patients to follow. This tool is especially helpful for patients and their caregivers with complex medication regimes to manage their medications, it has recently completed its proof-of-concept phase.