

ENTREPRENEUR-IN-RESIDENCE AGREEMENT

THIS AGREEMENT is made on the 1st June 2026.

Between

1. A*STAR Research Entities (Co. Reg. No. 199702110H), acting through its Singapore Biodesign Programme Office, of 79 Ayer Rajah Crescent, #05-03, Singapore 139955 (hereinafter referred to as "SB")

And

2. Ms. Claudia Sim Tze Kee (NRIC No.: _____) of 26A Jalan Daud Singapore 419602 (hereinafter referred to as the "Specialist")

Recitals

- A. The Specialist has substantial skills, experience, expertise and abilities which may be useful to SB.
- B. SB wishes to and the Specialist has agreed to accept the appointment as Entrepreneur-in-Residence with SB and on the terms and conditions of this Agreement.

NOW IT IS HEREBY AGREED as follows: -

1. Services

- 1.1 SB engages the Specialist to assume the role of Entrepreneur-in-Residence for the duration stated in section 2 below. The terms of reference for this engagement are as specified in the attached Schedule and the Specialist agrees to undertake the tasks and activities outlined in the Schedule upon the terms and conditions set out below.
- 1.2 The relationship between the Specialist and SB is expressly acknowledged to be that of independent contractors on a fee for service basis and any alleged or suggested relationship of agency, partners, joint ventures, employer and employee or otherwise is by this Agreement expressly negated.

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- 1.3 Nothing in this Agreement shall be deemed to constitute the Specialist as the agent of SB or authorise the Specialist to (i) to incur any expenses on behalf of SB or its related corporations; (ii) enter into any engagement or make any representation or warranty on behalf of SB or its related corporations; (iii) pledge the credit or, or otherwise bind or oblige SB or its related corporations; or (iv) commit SB or its related corporations in any way whatsoever, without in each case obtaining SB's prior written consent.
- 1.4 As the Specialist is retained by SB as an independent contractor and not as an agent or employee, the Specialist shall not be entitled to receive from SB any right, benefit or payments made available to SB' employees generally.

2. Duration

- 2.1. This Agreement is for a period of eight (8) months, on a renewable basis, with effect from 01 June 2026 to 31st January 2027.

3. Engagement

- 3.1. During the term of this Agreement, the Specialist shall deliver all the project milestones as approved via the Singapore Biodesign Project Extension and set out in the Schedule hereto under this engagement, at such times and at such locations as SB may specify.
- 3.2. The Specialist shall undertake the tasks and undertakings under this engagement with all reasonable care and skill, and to the best of his ability.
- 3.3. The Specialist represents that he has the expertise, qualifications and necessary ability to undertake the tasks and undertakings required of him under this Agreement.
- 3.4. The Specialist warrants that he is not prevented by any obligations owed to a third party or otherwise in any way from undertaking his duties as Co-Curriculum Specialist with SB and the undertakings specified in the Schedule.

4. Fees and Benefits

- 4.1 SB shall pay to the Specialist a fee of Singapore Dollars Six Thousand Two Hundred (S\$6,200) on the 30th day of the month.
- 4.2 Save as expressly otherwise provided herein, the foregoing represents the all-

inclusive fee payable by SB to the Specialist and the Specialist shall not be entitled to receive any other payment, allowance, benefit, or bonus. The Specialist shall be liable for his own personal expenses incurred in the course of and in connection with the undertakings hereunder.

5. Expenses

- 5.1. SB shall reimburse the Specialist for out of pocket expenses in respect of hotel accommodation (where the Specialist is required to travel at the request of the SB), transportation, entertainment and other business related expenses reasonably incurred by the Specialist in connection with the tasks and activities outlined in the Schedule in accordance with the SB's scale of allowable expenses provided that on request the Specialist shall provide SB with such vouchers or other evidence of actual payment of such expenses as SB may reasonably require.

6. Termination

- 6.1. Either party, SB or The Specialist may terminate the Service Agreement at any time before the Agreement's end date by giving the other party one (1) month's written notice of termination.
- 6.2. Without limitation SB may by notice in writing immediately terminate this Agreement if the Specialist shall:
 - 6.2.1. be in breach of any of the terms of this Agreement which, in the case of a breach capable of remedy, shall not have been remedied by the Specialist within 7 days of receipt by the Specialist of a notice from SB specifying the breach and requiring its remedy;
 - 6.2.2. be incompetent, guilty of gross misconduct and/or any serious or persistent negligence in the provision of his services hereunder;
 - 6.2.3. fail or refuse after written instruction to provide the services reasonably and properly required of him hereunder;
 - 6.2.4. conduct himself in any manner which, in the reasonable opinion of SB, brings or is likely to bring SB into disrepute by association.
- 6.3. Upon the termination of this Agreement, the Specialist (or his personal representative as the case may be), shall immediately deliver up to SB all correspondence, reports, documents, specifications, papers, information (on whatever media) and property belonging to SB and work (including any report documentation or information on any media written or prepared by the Specialist in carrying out this engagement or any

other work which SB has requested that he undertake for it) which may be in his possession or under his control.

- 6.4. The termination of this Agreement, whatever the cause, shall not constitute unfair dismissal nor shall the Specialist be entitled to the payment of any compensation, redundancy payments or otherwise upon the occurrence of the same upon any termination of this Agreement following notice.

7. Confidential Information

The Specialist agrees to treat as secret and confidential and not at any time for any reason to disclose or permit to be disclosed to any person or otherwise make use of or permit to be made use of any unpublished information relating to SB or its related corporations' technology, or other know-how, business plans or finances or any such information relating to a subsidiary, supplier, customer or client of SB or its related corporations or in respect of the Programme where the information was received during the period of this Agreement. Upon termination of this Agreement for whatever reason the Specialist shall deliver up to the SB all working papers, computer disks and tapes or other material and copies provided to or prepared by him pursuant either to this Agreement or to any previous obligation owed to the client. The obligations of confidentiality herein shall extend to confidential information of the other members of the Programme, in particular, those members who are not SB' related corporations.

8. Intellectual Property Rights

- 8.1. All intellectual property rights (including patents, non-patentable processes, innovations, discoveries and inventions, copyrights, design rights, technical information or know-how and similar rights both in Singapore and abroad) arising in the course of or as a consequence of the Specialist undertaking the services or other work undertaken by the Specialist for the SB under this Agreement (hereinafter referred to as "IPR") shall belong to SB. The Specialist hereby assigns to SB, or as SB may direct, by way of future assignment all IPR immediately on their coming into existence. The Specialist shall (notwithstanding the prior termination of this Agreement for any reason) forthwith at the request of SB execute any document or do anything required by SB to vest in ii (or as it shall direct) the full legal title to such IPR and to enable it (or its nominee) to enjoy the benefit of such right.
- 8.2. The Specialist shall not, in the course of this appointment, infringe or carry out or omit to do any act for which SB or its related corporations would be held liable for infringement of third party intellectual property rights of which the Specialist is aware.

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9. Insurance, Tax and Other liabilities

The parties declare that it is their intention that the Specialist shall have the rights of a self-employed person and shall not be entitled to any pension, bonus or other fringe benefits from SB and it is agreed that the Specialist shall be responsible for all income tax liabilities and national or other insurance or similar contributions in respect of his fees. The Specialist agrees that SB shall be entitled to deduct from the fees due to the Specialist, withhold and pay over to the income tax authorities in Singapore the full sum of the estimated income tax payable by the Specialist if SB is obliged to do under local laws, regulations and practices.

10. Notice

Any notice required by this Agreement to be given by either party to the other shall be in writing and shall be served by sending the same by registered post or recorded delivery to the last known address of the other party and any receipt issued by the postal authorities shall be conclusive evidence of the fact and date of posting of any such notice.

11. Entire Agreement

This Agreement sets out the entire agreement of the parties and supersedes all prior agreements and understandings relating to its subject matter.

12. Undertakings by the Specialist

During the term of this Agreement, the Specialist will diligently perform all duties assigned to him by SB. Unless specifically approved, The Specialist will not undertake any other activity or accept other engagements, which may interfere with or detract from the performance of his duties under this Agreement or which lead to or might lead to any conflict of interest between The Specialist and the best interests of SB or the Programme or which might otherwise prejudice the undertakings to be carried out pursuant to this Agreement. Should any conflict of interest situation arise or where the interests of SB or any of SB' related corporations or the Programme may be compromised or have the appearance of being compromised, the Specialist agrees to raise these situations, immediately upon his knowledge of the same, to Assistant Chief Executive, Innovation & Enterprise (ACE I&E) and Asst. Prof Lee Phin Peng, SB Programme Director in order that it be reviewed and if necessary, monitored. The Specialist will be required to complete the Undertaking on Conflict of Interest upon acceptance of the Appointment.

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13. Assignment

This Agreement is for the personal services of the Specialist and the Specialist shall not transfer, assign or delegate the whole or any part of his obligations under this Agreement.

If at any time after the date of this Agreement the functions and operations of Client are assigned, merged, transferred into or otherwise form part of another organisation of A*STAR ("the New Entity"), such that the New Entity takes over the whole or substantially the whole of Client's operations, then it is agreed that this Agreement may, at the option of Client, be novated to the New Entity which will then assume all of Client's rights and obligations hereunder

14. Severability

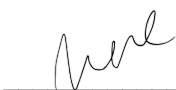
In the event that any of the terms contained herein are determined to be invalid or unenforceable to any extent, such term shall be severed from the body of this Agreement which shall continue to be valid and enforceable to the fullest extent permitted by the Governing Law.

15. Variations and Amendments

All variations or modifications in this Agreement shall only be binding if recorded in writing and signed by the Specialist and a duly authorised officer of SB.

16. Governing Law

This Agreement and its provisions shall be construed in accordance with the Laws of Singapore.



SIGNED by Ms. Irene Cheong
Assistant Chief Executive, Innovation & Enterprise, A*STAR

SIGNED by Ms. Claudia Sim

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SCHEDULE

Description of Responsibility Areas and Deliverables

The extract of the project deliverables expected from the Entrepreneur-in-Residence is as follows. Further details of the project are as provided in Annex A (SB Fellowship Project Extension Form):

#	Project Milestone / Deliverable	M1	M2	M3	M4	M5	M6	M7	M8
SETUP & INFRASTRUCTURE									
1	Equipment procurement and bench setup initiated; NMC MOU, LDV facility access, and bench-only ethics exemption confirmation requested; Research Engineer / RA / Intern recruitment initiated and filled by end of Month 1	•	•						
AIM 4 - BFF COMPUTATIONAL VALIDATION (Parallel track, Months 2–8)									
2	Aim 4 Phase 4A initiated: BFF integral and ICP model implemented in Python/MATLAB; Monte Carlo Doppler intensity dataset generated from Lucinskas et al. (2021) parameter space; tornado sensitivity analysis completed integration window, noise floor, sampling frequency and vessel compliance variability ranked by contribution to estimation error; dominant parameter(s) accounting for >30% of estimation error variance identified		•	•	•				
AIM 1 - PHANTOM FABRICATION & CHARACTERISATION (Months 1–5)									
3	Aim 1 underway: Phantom components ordered (DICOM-derived skull shell via Medairum; silicone dura membrane via ARRK); PVA-C freeze-thaw preparation initiated (minimum 5-cycle protocol); bench excitation-acquisition pipeline assembled and validated; Aim 2 NMC collaboration formally commenced via MOU	•	•	•					
4	Aim 1 underway (continued): All three phantom units fully assembled; CSF compartment hydraulic integrity confirmed; pressure transducer calibrated; brain simulant mechanically characterised by indentation and through-transmission; optimal formulation selected; LDV validation sessions booked and commenced			•	•				
5	Aim 1 complete: Full resonance dataset acquired (9 pressure levels × 3 runs × 3 phantom units = 81 recordings); LDV mode shape validation completed; phantom specification document and acquisition protocol finalised					•			
♦ GO / NO-GO GATE 1 - AIM 1 (Month 5) GO criteria: ≥10 reproducible resonance modes with CV < 10% AND statistically significant pressure-dependent shift in ≥3 modes (p < 0.05) NO-GO triggers: Gen 2 multi-material co-printed shell; alternative PVA-C concentration; extended freeze-thaw cycles									
AIM 2 - TQWT SIGNAL PROCESSING & CLASSIFICATION (Months 2–7, NMC Collaboration)									

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6	Aim 2 initiated: TQWT pipeline implemented in Python; Tier 1 core features (spectral centroid, f_1 , ring-down τ , Q factor, damping ratio ζ) extracted from Aim 1 phantom dataset; initial binary classification models trained (SVM, logistic regression, Random Forest) under leave-one-pressure-level-out CV								
7	Aim 2 advanced: TQWT parameter grid search completed (Q: 1–10, τ : 2–6); Tier 2 and Tier 3 features extracted; XGBoost continuous regression model trained; SHAP feature importance analysis completed identifying top-3 ICP-predictive features for Phase 2 wearable specification; Dr. Mo NMC sensor calibration certificates issued								
8	Aim 2 complete: FEM digital twin constructed and validated against phantom resonance data (frequency within 10%, Q factor within 20%); AI feature toolchain finalised; NMC calibration certificates issued; joint invention disclosure submitted to TTO								

NO-GO triggers: EMD/VMD decomposition alternatives; CNN deep learning escalation; bispectral phase-coupling features; extended TQWT hyperparameter search

	Aim 1 complete - NMC independent validation: (i) frequency band validation ($\geq 70\%$ signal energy in 500 Hz–7.5 kHz band); (ii) Q factor reference standard comparison ($r > 0.85$, bias $< 15\%$); (iii) FEM digital twin benchmark (frequency within 10%, Q factor within 25%); full prototype validation report prepared; Phase 2 hardware miniaturisation specification finalised								
9	Aim 3 initiated: Functional benchtop prototype assembled (piezoelectric actuator, MEMS accelerometer, 24-bit DAQ, Python real-time TQWT processing with 10-second classification update); robustness validation commenced: Condition 3A (6-hour continuous stability) and Condition 3B (sensor repositioning) underway						●	●	
10	Aim 3 robustness testing complete: Conditions 3C (ambient noise), 3D (pressure ramp tracking 0→30 mmHg over 60 min), and 3E (inter-phantom reproducibility across all 3 units) completed; at least 5 of 6 primary robustness outcome targets assessed; prototype transported to Dr. Mo NMC laboratory							●	●
11	Aim 3 complete - NMC independent validation: (i) frequency band validation ($\geq 70\%$ signal energy in 500 Hz–7.5 kHz band); (ii) Q factor reference standard comparison ($r > 0.85$, bias $< 15\%$); (iii) FEM digital twin benchmark (frequency within 10%, Q factor within 25%); full prototype validation report prepared; Phase 2 hardware miniaturisation specification finalised								●

NO-GO triggers: Sensor mounting fixture redesign; adaptive noise cancellation upgrade; extended phantom testing (+2 months, bridge funding requested)

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8

♦ GO / NO-GO GATE 4 - AIM 4 COMPUTATIONAL (Month 8)
GO criteria: Population-calibrated BFF MAE < 5 mmHg in ≥75% simulated subjects AND Bayesian fusion achieves ≥20% MAE reduction versus best single modality
NO-GO triggers: Hierarchical Bayesian model with adaptive individual-level calibration using 30-min initialisation window; Gaussian Process regression for non-linear ICP–BFF mapping

PROGRAMME CLOSE-OUT & TRANSLATION

14	Translation preparation: NHIC i2D / SBF Biomedical Phase 2 transition application drafted incorporating prototype demonstration video, NMC independent validation data, and Bayesian fusion computational results; peer-reviewed manuscripts finalised (vibroacoustic platform + BFF computational validation)								•	•
15	Final milestone review conducted; all programme deliverables confirmed complete; NHIC i2D / SBF Biomedical Phase 2 application lodged; peer-reviewed manuscripts submitted; Phase 2 engineering and miniaturisation programme initiated									•

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PAYMENT SCHEDULE FOR THE SPECIALIST, MS. CLAUDIA SIM

SB shall make payments to Ms. Claudia Sim in the manner specified below:

S/No	Schedule
1	Frequency: Monthly Basis (SGD6,200/month) Payment: 30th day of each month Agreed Amount: SGD6,200 per month
2	1 st Payment – 30 June 2026 Last Payment – 30 January 2027