Agency for Science, Technology and Research
SINGAPORE
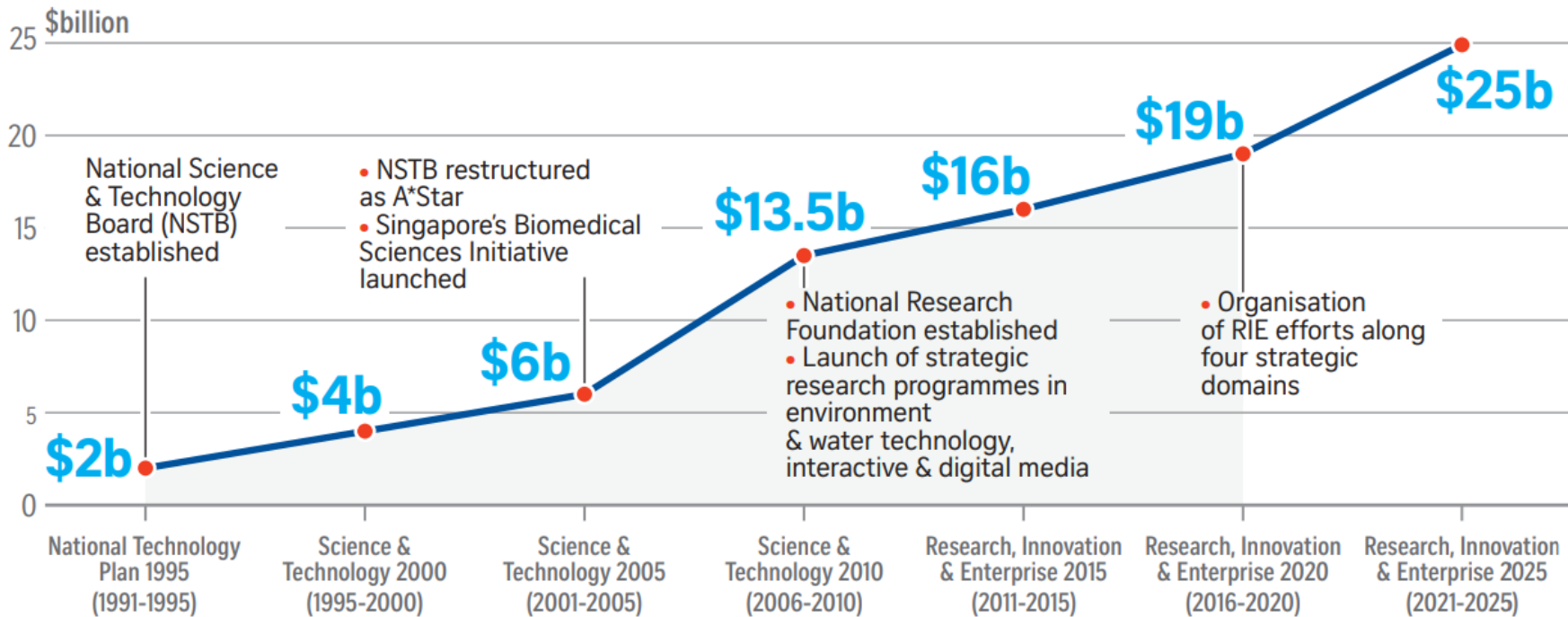
WEBINAR SESSION ON RIE2025 FUNDING INITIATIVES

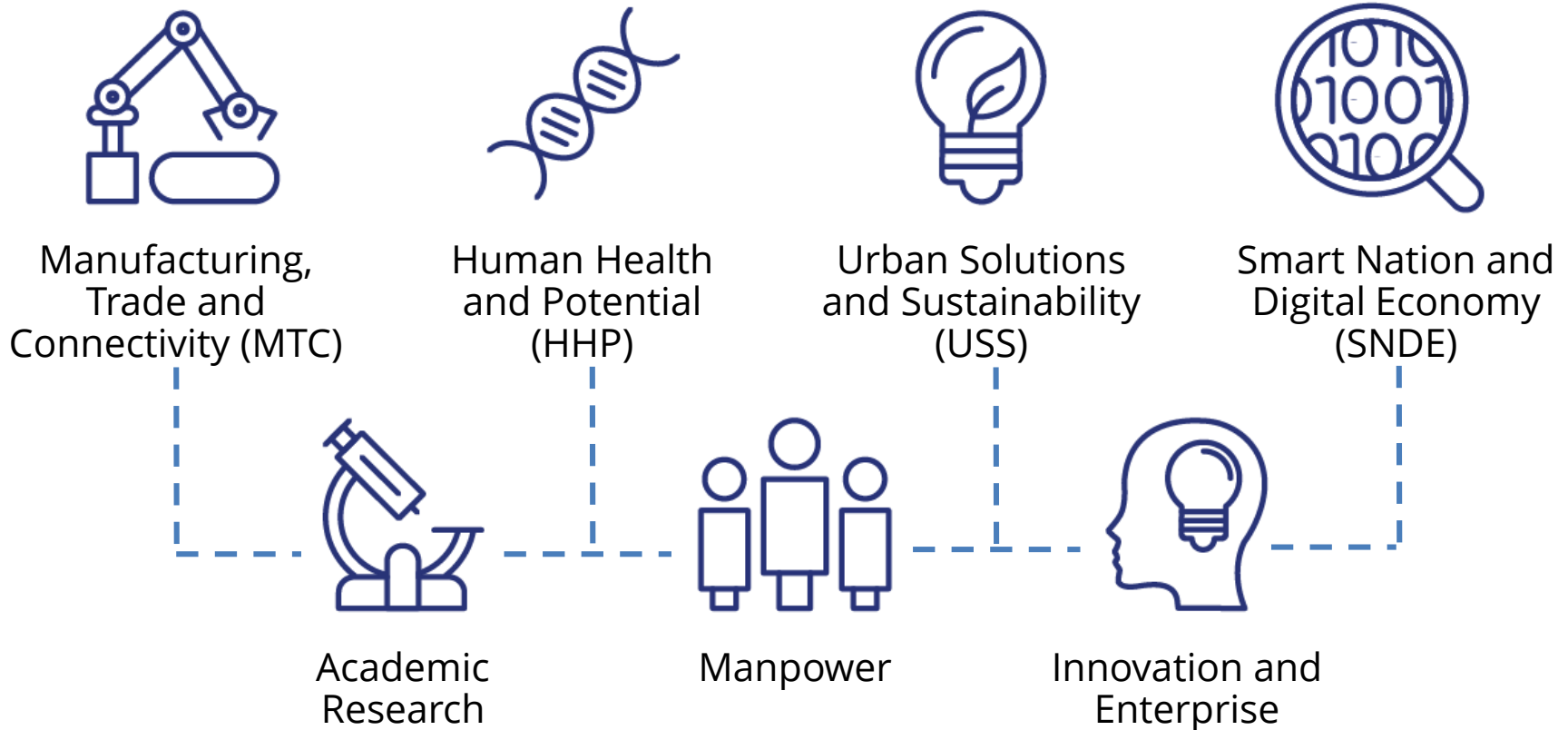**3 May 2021**

Office of Grants Administration

Agency for Science, Technology and Research
SINGAPORE

WELCOME ADDRESS

THREE DECADES: EVOLUTION OF SINGAPORE'S RESEARCH, INNOVATION & ENTERPRISE (RIE) LANDSCAPE

$billion

$2b
National Science & Technology Board (NSTB) established

$4b
- NSTB restructured as A*Star
- Singapore's Biomedical Sciences Initiative launched

$6b

$13.5b
- National Research Foundation established
- Launch of strategic research programmes in environment & water technology, interactive & digital media

$16b

$19b
- Organisation of RIE efforts along four strategic domains

$25b

National Technology Plan 1995 (1991-1995)

Science & Technology 2000 (1995-2000)

Science & Technology 2005 (2001-2005)

Science & Technology 2010 (2006-2010)

Research, Innovation & Enterprise 2015 (2011-2015)

Research, Innovation & Enterprise 2020 (2016-2020)

Research, Innovation & Enterprise 2025 (2021-2025)

Extracted from The Straits Times

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RIE2025: KEY STRATEGIES AND FRAMEWORK

Manufacturing, Trade and Connectivity (MTC)

Human Health and Potential (HHP)

Urban Solutions and Sustainability (USS)

Smart Nation and Digital Economy (SNDE)

Academic Research

Manpower

Innovation and Enterprise

MANUFACTURING, TRADE AND CONNECTIVITY (MTC)

Manufacturing

- Aerospace
- Energy & Chemicals
- Electronics
- Precision Engineering
- Marine & Offshore
- Food Manufacturing
- Biomedical Manufacturing

Trade

- Logistics
- Wholesale Trade

Connectivity

- Aviation
- Sea Transport
- Satellites

Advanced Materials

Advanced Manufacturing Processes

Digital Manufacturing

Robotics & Automation

Supply Chain Management

HUMAN HEALTH AND POTENTIAL

Pharmbio & Biotech	Medical Technologies
Population Health	Health Tech
Health Services Research	Precision Medicine
Longevity	Learning Capacity

* Non-exhaustive

STRATEGIC GOALS IN RIE2025

- Transform health system to deliver better health and healthcare outcomes

- Harness bio-accelerators to strengthen local ecosystem

- Advance Human Potential to support improvements in health, productivity, and learning capacity across an individual's life course

FUNDING INITIATIVES UNDER MTC, HHP & I&E

MTC
Individual Research Grant (IRG) & Young Individual Research Grant (YIRG)

MTC
Programmatic Funds

MTC & HHP
Industry Alignment Fund – Pre-Positioning Programme (IAF-PP)

I&E (Pan-Domain)
Industry Alignment Fund – Industry Collaboration Projects (IAF-ICP)

HHP
Singapore Therapeutics Development Review (STDR)

HHP
HP Early Life National Competitive Research Grants

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MTC PROGRAMMATIC FUNDS

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Overview

- Support long-term, capability-building projects that have the potential to deliver significant impact, typically beyond a five-year timeframe.

- These projects typically correspond to low Technological Readiness Levels (TRL) of 2-4.

- The implementation of the MTC Programmatic FI in RIE2025 will take into account the following considerations:
  - Identified themes should support longer term capabilities needed to realize MTC R&D plans, and have potential economic impact and/or strategic relevance to Singapore.
  - The FI will also support low TRL research in thematic, interdisciplinary areas, e.g. MedTech and Biomanufacturing.

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Overview

	Programmatic
Max. funding quantum (supports EOM, OOE, EQPT and Overseas Travel, and includes **30% indirect cost**)	PIs are encouraged to scope their proposals for either $5M or $10M, over a duration of 3 years.

Eligibility Criteria

A Programme Director should:

- Hold at least a 0.7FTE primary appointment in a Singapore publicly funded research or tertiary institution,

- Run a laboratory or research programme that carries out research in Singapore, and

- Have a track record of leadership ability in coordinating research programmes and providing mentorship to research team, as well as having productive research outcomes.

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Key Performance Indicators (KPIs)

Indicator	Definition	Data collection methodology
[KPI] No. of publications in the top 10% most highly cited journals	The top 10% most highly cited journals will be based on the CiteScore rankings maintained by Scopus. (https://www.scopus.com/sources.uri, titles in top 10 percentile, Source type Journals and Conference Proceedings).	Data reported via annual progress reports, mid-term reviews and final reports. Publications will be checked against the CiteScore list for the year of publication (e.g. a publication that is submitted in 2021 but published in 2022 will be checked against the 2022 CiteScore list).

Additional KPIs and TIs may be set at project level for tracking of outcomes.

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Key Performance Indicators (KPIs)

Indicator	Definition	Data collection methodology
[KPI] Number of unique conference abstracts accepted for oral presentations at top conferences	Abstracts accepted for presentation, either in a physical or online conference, excluding poster sessions. This KPI is for computer science / AI discipline only.	Data reported via annual progress reports, mid-term reviews and final reports. The list of top conferences will be obtained from NRF/AI.SG. Only the conference list will be used.

Additional KPIs and TIs may be set at project level for tracking of outcomes.

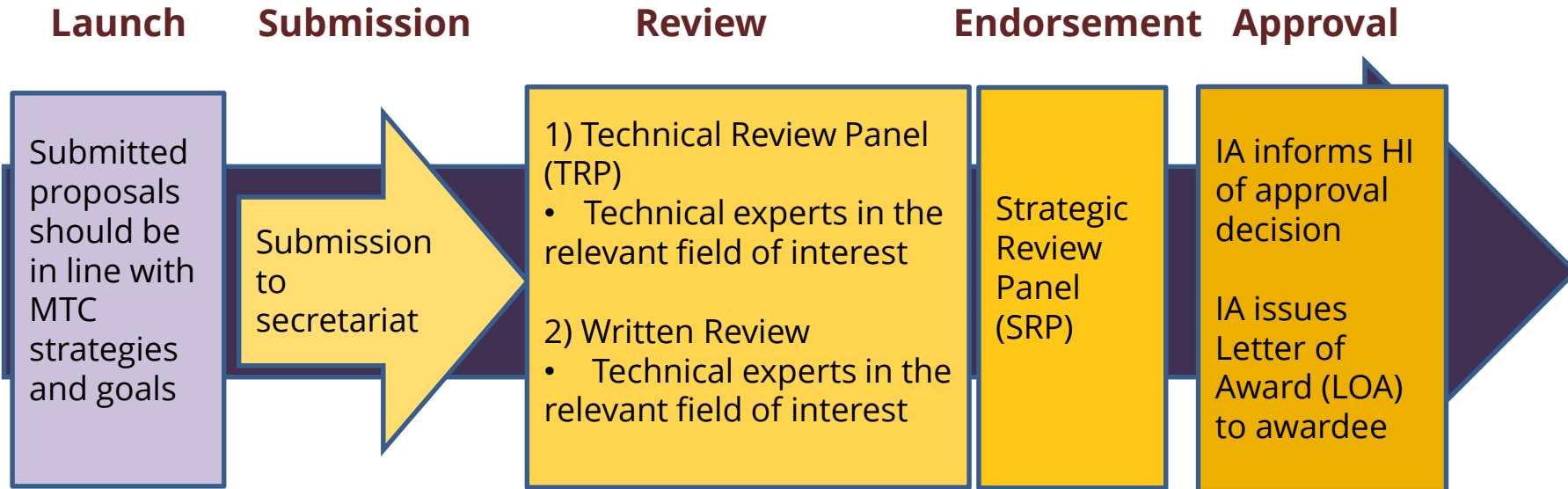CREATING GROWTH, ENHANCING LIVES

Application Process

- The MTC Programmatic FI will be implemented primarily through thematic calls and directed programme proposals.

- Applications <u>must</u> be <u>endorsed</u> by the applying Host Institution(s) prior to submission.

- All applications <u>must</u> be submitted through A*STAR (as Implementing agency) at programmatic_ame@hq.a-star.edu.sg
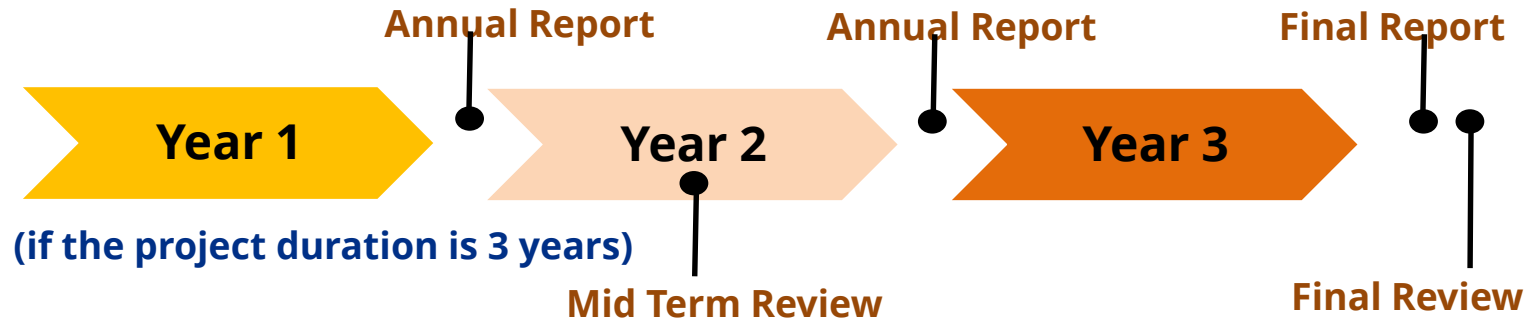
Evaluation Criteria

- Novelty and comparative advantage of the research approach.

- Proposed methodology and execution of the chosen approach.

- Potential scientific/technical impact based on the proposed deliverables.

- Reasonableness of the proposed budget amount requested, technical.

  milestones put forward and targeted key performance indicators.

- Competencies and international standing of the proposal team members.

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Evaluation Workflow

Launch

Submission

Review

Endorsement

Approval

Submitted proposals should be in line with MTC strategies and goals

Submission to secretariat

1) Technical Review Panel (TRP)
- Technical experts in the relevant field of interest

2) Written Review
- Technical experts in the relevant field of interest

Strategic Review Panel (SRP)

IA informs HI of approval decision

IA issues Letter of Award (LOA) to awardee

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Post Award Grant Management

- Follow the A*STAR Grants T&Cs and guidelines
- Yearly Progress Report <u>within two (2) months </u>from the end of the Financial Year
- Mid-Term and Final Review conducted approximately at the halfway mark and before the end of Term
- Final Report <u>within three (3) months </u>following the end of the Term
- FSOA <u>within six (6) months </u>from the end of the Term

Annual Report   **Annual Report**   **Final Report**

Year 1   **Year 2**   **Year 3**

(if the project duration is 3 years)

Mid Term Review   **Final Review**

OFFICIAL (OPEN) / NON-SENSITIVE

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Technology Readiness Level (TRL)

TRL	Description	Example
1	Basic principles observed	Scientific observations made and reported. Examples could include paper-based studies of a technology's basic properties.
2	Technology concept formulated	Envisioned applications are speculative at this stage. Examples are often limited to analytical studies.
3	Experimental proof of concept	Effective research and development initiated. Examples include studies and laboratory measurements to validate analytical predictions.
4	Technology validated in lab	Technology validated through designed investigation. Examples might include analysis of the technology parameter operating range. The results provide evidence that envisioned application performance requirements might be attainable.
5	Technology validated in relevant environment	Reliability of technology significantly increases. Examples could involve validation of a semi-integrated system/model of technological and supporting elements in a simulated environment.
6	Technology demonstrated in relevant environment	Prototype system verified. Examples might include a prototype system/model being produced and demonstrated in a simulated environment.

Technology Readiness Level (TRL)

TRL	Description	Example
7	System model or prototype demonstration in operational environment	A major step increase in technological maturity. Examples could include a prototype model/system being verified in an operational environment.
8	System complete and qualified	System/model produced and qualified. An example might include the knowledge generated from TRL 7 being used to manufacture an actual system/model, which is subsequently qualified in an operational environment. In most cases, this TRL represents the end of development.
9	Actual system proven in operational environment	System/model proven and ready for full commercial deployment. An example includes the actual system/model being successfully deployed for multiple missions by end users.

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