



# STEMPA GUIDEBOOK

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# Purpose

This guidebook supports practitioners managing multi-party project agreements under STEMPA. It is written for researchers, research administrators, legal teams, and contracts management professionals across participating public sector institutes, and is designed to be used as a practical reference throughout the alignment discussions.

It outlines structured frameworks for aligning project agreements, escalation protocols, and pre-aligned positions on key issues such as foreground intellectual property ownership, data ownership, and revenue sharing. Checklists, templates, and reference materials are provided to help teams navigate discussions more confidently, reduce delays, and complete project agreements within the mandated timeline.

# INTRODUCTION



The Shorten Time to Execute Multi-party Project Agreements (STEMPA) initiative is an ecosystem-wide solution that simplifies negotiations, reduces delays, and establishes clear and consistent terms across participating institutes for major public grant-funded research programmes under the Human Health and Potential (HHP) domain.

# 1.1

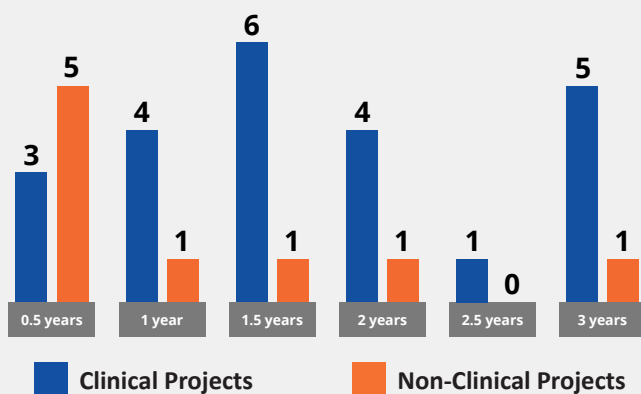
## Why STEMPA

Research collaborations in Singapore have often been slowed by prolonged negotiations, unclear governance, and misaligned expectations between participating institutes.

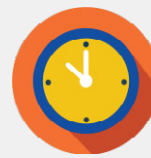
For researchers, this can delay project start dates and erode momentum. For operational and administrative colleagues, this results in repeated negotiation cycles and significant workload pressures.

An analysis of projects funded by the Research, Innovation and Enterprise (RIE) 2020 shows that more than half required over one year to execute project agreements (PAs). Clinical projects were particularly affected, taking approximately three times longer to complete agreement execution than non-clinical projects. Ten projects exceeded two years.

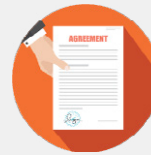
Time Taken to Execute Project Agreements



Distribution of time required to execute PAs for RIE2020-funded research projects, highlighting the significantly longer timelines for clinical projects.



**58%** of Research, Innovation and Enterprise (RIE) 2020 projects\* took more than a year to execute a project agreement.



Clinical projects take **3 times longer** to finalise project agreements.

\*Funded by the Open Fund – Large Collaborative Grant (OF-LCG) and Industry Alignment Fund – Pre-Positioning Programme (IAF-PP).

Delays in finalising PAs lead to inefficiencies, wasted resources, and increased risks related to governance, intellectual property, and data management.

## THE WASTAGE



### Inefficiencies and Wasted Resources

- Most negotiations take years, wasting manpower and funds.
- Raise barriers to entry for research in Singapore.
- Higher project costs.

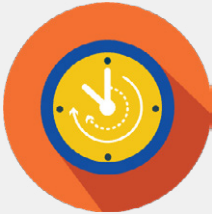
### Lost Opportunities and Risks

- Industry partners require speed. Long timelines hinder future collaboration.
- Cutting-edge research risks becoming slowed down.
- Lack of governance raises risks around intellectual property (IP), data, and sample use.

Protracted negotiation timelines result in inefficiencies, wasted resources, lost opportunities, and risks.

## 1.2 What STEMPA Resolves

STEMPA achieves efficiency through mandated timelines and shared negotiation best practices. It also establishes pre-aligned positions on key issues across participating institutes. These are supported by governance mechanisms that enable timely resolution of contentious issues when alignment cannot be reached within the project team.



### FASTER TURNAROUND

Mandated four-month timeline for submitting project agreements.

(See more in [Section 1.4](#))



### BEST PRACTICES TO STREAMLINE ALIGNMENT

Practical guidance for managing project agreements, including templates, checklists, and reference materials to streamline discussions. There is a Standing Escalation Committee for resolution of impasses.

(see more in [Chapter 2](#))



### ECOSYSTEM ALIGNMENT & GOVERNANCE

Ecosystem pre-aligned positions on IP, data, and revenue sharing.

(see more in [Chapter 3](#))

*STEMPA brings about three tangible benefits for institutions and project teams.*



# 1.3

## The Team Behind STEMPA

The STEMPA Initiative was established under the direction of the Human Health and Potential (HHP) executive committee (EXCO).

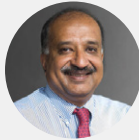
It is the result of a collaboration across institutions in Singapore, including the three public healthcare clusters, institutes of higher learning, Agency for Science, Technology and Research (A\*STAR) and Consortium for Clinical Research and Innovation, Singapore (CRIS) units. Representatives from research, legal, and contracts management functions across these institutions have worked together to identify the causes of PA delays and develop the recommendations set out in this guidebook.

Grantor agencies, including the National Medical Research Council (NMRC) and the Office of Grants Administration under A\*STAR, have also been closely involved as observers of the STEMPA process.

All STEMPA recommendations have been endorsed by the HHP EXCO and senior leadership of Singapore's public sector institutions.

In summary, STEMPA represents a national commitment to shorten the time required to execute multi-party PAs for the public healthcare sector.

### Co-Chairs



Prof Ranga Krishnan



Mr Suresh Sachi

### Steering Committee & Work Group



### Observers



### Secretariat



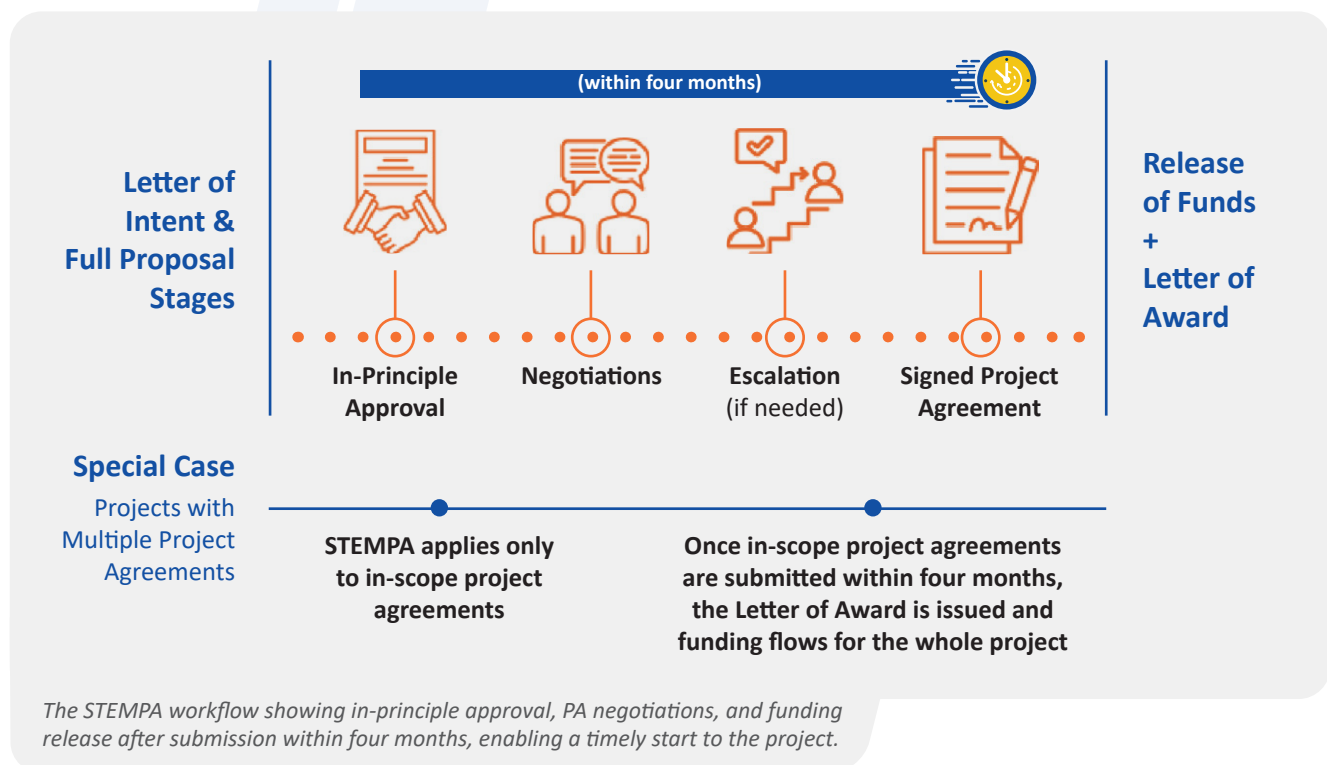
Governance and stakeholder groups involved in the development of STEMPA.

## 1.4 What Has Changed: Clearer Workflow with a Four-Month Project Agreement Timeline

STEMPA sets out clear steps and timelines to guide projects from proposal to launch, with a clear requirement to submit in-scope PAs within **four months**. The timeline is necessary to support early alignment on project agreements, enabling timely issuance of the Letter of Award (LOA) and release of funds.

In conventional grant workflows, selected or approved proposals would receive a LOA and funding after the Letter of Intent and Full Proposal stages. There was no required deadline for submitting PAs.

STEMPA introduces a different approach. For major grants under the HHP domain, selected proposals will receive in-principle approvals instead of immediate LOAs. PA discussions will then begin at this stage and must be completed within four months. Once all in-scope PAs are submitted, the LOA is issued and funding is released. The four-month requirement for in-scope PAs applies even where a project includes additional out-of-scope agreements.



### Illustrative Example

If a project receives in-principle approval on 1 January 2027, all in-scope PAs must be executed and submitted to the grantor by 30 April 2027. Once the in-scope PAs are submitted within this four-month timeline, the LOA will be issued and funding will flow, allowing the project to commence.

# 1.5

## What is Covered

STEMPA applies to a defined set of public sector research grants under the HHP domain. The diagram below summarises what falls within STEMPA's scope, what is excluded, and how cases involving multiple PAs are handled.

### When and where does STEMPA apply?

With effect from FY2026 (i.e. RIE2030), STEMPA applies to projects and programmes funded by:

- NMRC OF-LCG
- Future version of the HHP IAF-PP

### What is in scope?

- PAs between Singapore public sector institutions

### What is out of scope?

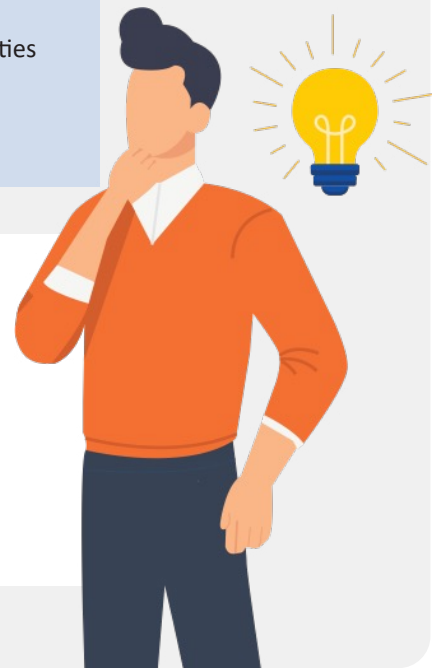
- PAs involving:
  - Private sector or industry partners
  - Foreign institutions or entities
- Clinical trials and clinical trial agreements

### How does STEMPA work for projects with multiple PAs?

- STEMPA applies only to in-scope PAs
- All in-scope PAs must be submitted within four months

Once the in-scope PAs are submitted within the timeline:

- LOA is issued
- Funding flows for the entire project, including out-of-scope components



*The scope of STEMPA.*

The following case studies illustrate how STEMPA's scope applies in practice.



## Illustrative Case Study 1

In a hypothetical HHP Industry Alignment Fund – Pre-Positioning Programme (IAF-PP) project, there is one PA to be signed among the participating Singapore public sector institutes.

As the PA falls within STEMPA's scope, it must be signed and submitted to the grantor within four months for funds to flow and the Letter of Award (LOA) to be issued.



## Illustrative Case Study 2

In a hypothetical programme funded by the Open Fund – Large Collaborative Grant (OF-LCG), there are five thematic projects, each with a PA to be signed among relevant institutions.

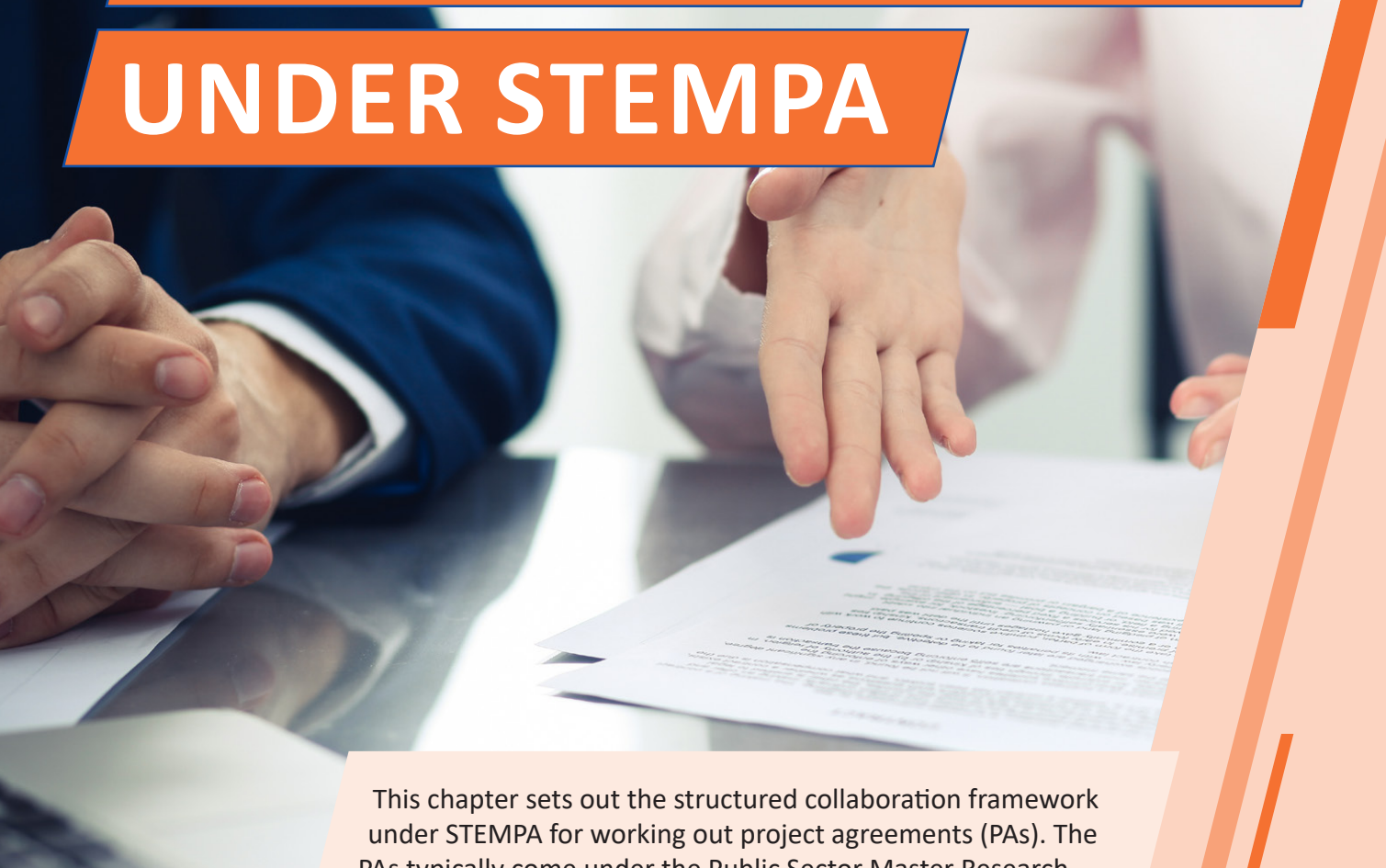
The table below outlines the five thematic projects and whether they come under STEMPA.

Theme Number	Description	Institutions Involved In Signing PA	PA Within Stempa's Scope?
1	Multi-omics profiling of patient samples for biomarkers discovery	<ul style="list-style-type: none"> <li>✦ A hospital or specialist centre under SingHealth</li> <li>✦ A hospital under National University Health System (NUHS)</li> <li>✦ A hospital under NHG Health</li> <li>✦ An A*STAR Research Institute (RI)</li> </ul>	Yes.
2	AI and predictive modelling	<ul style="list-style-type: none"> <li>✦ National University of Singapore (NUS)</li> <li>✦ Nanyang Technological University (NTU)</li> <li>✦ Duke-NUS</li> <li>✦ A*STAR RI</li> </ul>	Yes.
3	Mechanistic study of regional microenvironmental determinants of drug resistance	<ul style="list-style-type: none"> <li>✦ A hospital/specialist centre under SingHealth</li> <li>✦ XXX Medical College from another country</li> <li>✦ YYY University Hospital from another country</li> </ul>	No, as it involves foreign institutes in execution of PA.
4	Development of novel platforms and therapeutics assets with clinical trial	<ul style="list-style-type: none"> <li>✦ A SingHealth hospital</li> <li>✦ A diagnostics company</li> <li>✦ A biotech company</li> <li>✦ A pharmaceutical company</li> </ul>	No, as it involves a clinical trial, as well as industry partners for execution of the PA.
5	Socioeconomic study and community outreach programmes development	Multiple hospitals across Singapore public sector institutions	Yes.

All in-scope PAs (i.e. from Themes 1, 2, and 5) must be submitted within the required four-month timeline for the LOA to be issued and funding to flow for the entire OF-LCG programme.

This example shows that only PAs involving Singapore public sector institutions and falling within STEMPA's scope are subject to the four-month timeline.

# ALIGNING PROJECT AGREEMENTS UNDER STEMPEA



This chapter sets out the structured collaboration framework under STEMPEA for working out project agreements (PAs). The PAs typically come under the Public Sector Master Research Collaboration Agreement (PS MRCA). Chapter 2 explains how participating institutes should work together to align PAs, manage timelines, and address issues constructively, so that PAs can be executed within the mandated timeframe.

## 2.1 Roles and Responsibilities

STEMPA clarifies the roles of the Host Institute, participating institutes, and Lead Negotiators. The clarity of roles supports coordinated discussions, timely decision-making, and effective issue resolution throughout the alignment process.



### Host Institute

The Host Institute for each project is specified in the in-principle approval letter. It is the institute of the project's lead Principal Investigator (PI). The Host Institute leads the project agreement discussions, issues the term sheet, coordinates meeting schedules, and prepares the draft project agreement.



### Participating Institute

The legal entity participating in the project.



### Lead Negotiator

Each institute, whether the Host Institute or a participating institute, must appoint a Lead Negotiator. The Lead Negotiator is authorised to represent the institute's positions and is responsible for key aspects of the project, including project scope, data, intellectual property and commercialisation, and legal review.

### Special Case

Duke-NUS will be considered a separate participating institute and will appoint its own Lead Negotiator, even though it is part of the National University of Singapore (NUS).

*Roles and responsibilities of the Host Institute, participating institutes, and Lead Negotiators in aligning PAs under STEMPA.*



## 2.2 Meeting Cadence

To support steady progress, meetings related to the PA should be scheduled upfront, at recommended intervals of two weeks. The Host Institute coordinates the scheduling of these meetings. This is to avoid delays caused by scheduling constraints.

The standard framework anticipates up to eight meetings within four months of the in-principle approval (IPA). Fewer meetings may be scheduled, but do note that substantive negotiations should ideally conclude within three months of the issuance of the IPA.

The fourth month should primarily be reserved as a period for the final drafting of the PA and, where necessary, the escalation of unresolved issues. No extension will be granted beyond four months except in exceptional circumstances.

## 2.3 Identify Potential Areas of Contention Early

Participating institutes are encouraged to surface their positions early, particularly on issues that commonly require more time to resolve.

**Annex A** provides a checklist of potential contentious issues. Practitioners may use this as a starting point to identify areas that may require further discussion or clarification.

STEMPA has established five pre-aligned positions on key issues to support alignment across participating institutes. These positions should be treated as standardised terms for in-scope grant schemes and need not be renegotiated. They are:



**Foreground intellectual property ownership**



**Revenue sharing from commercialisation of foreground intellectual property**



**Foreground data ownership**



**Data sharing governance and controls**



**No data-related indemnities, warranties, and liability caps**

Refer to [Chapter 3](#) for details.



## 2.4 Parallel Discussions

Parallel discussion tracks should be established to address specialised issues, rather than taking them sequentially. This allows smaller teams to focus on specific technical or functional issues, supports more focused discussions, and helps to avoid delays caused by scheduling constraints. It also enables project teams to discuss and resolve issues in parallel.

In parallel discussions, each track should have its own meeting schedule. However, all tracks must aim to complete their discussions by the sixth meeting.

The Lead Negotiator remains accountable for alignment behalf of their participating institute, even where discussions are delegated to specialised teams.



### Illustrative Case Study 1

#### Managing Parallel Discussions

In a hypothetical multi-institute project, the participating institutes may hold different positions on three main issues: data security requirements, the breakdown of revenue sharing, and the treatment of indemnities and liability caps.

To support clearer and more focused discussions, the Host Institute could propose establishing parallel discussion tracks under the STEMPA framework:



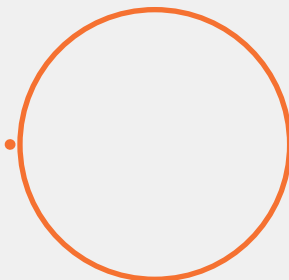
#### Track 1 – Data Security

Technical representatives and data protection officers would meet separately to define the appropriate safeguards and align on the data classification and security measures required by each participating institute.



#### Track 2 – Revenue Sharing

Research office and finance representatives would work together to assess each participating institute's contributions, determine their relative weightage, and propose a fair revenue-sharing model.



#### Track 3 – [Placeholder]

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Each track would maintain its own meeting schedule, but all three groups would report their progress to the respective Lead Negotiators. This would enable technical, financial, and legal issues to advance simultaneously, while ensuring that accountability remains with the Lead Negotiators. This structured approach could help the project team reach alignment more efficiently.

## 2.5 Activating the Standing Escalation Committee

The Standing Escalation Committee (SEC) provides a structured and senior-level pathway for addressing issues that cannot be resolved through working-level discussions.

The SEC comprises senior leaders from each participating institute:



### Illustrative Case Study 1

In a hypothetical Open Fund – Large Collaborative Grant (OF-LCG) project, the discussion may involve multiple participating institutes: Agency for Science, Technology and Research (A\*STAR)'s Genome Institute of Singapore (GIS) and Bioinformatics Institute (BII), the Cardiovascular Disease National Collaborative Enterprise (CADENCE) under the Consortium for Clinical Research and Innovation, Singapore (CRIS), Duke-NUS Medical School, National University of Singapore (NUS), National Cancer Centre Singapore (NCCS), and Singapore General Hospital (SGH).

As the project could span participating institutes from A\*STAR, CRIS, Duke-NUS Medical School, NUS and SingHealth, the following SEC members would be activated:



The Host Institute's Lead Negotiator would coordinate with these SEC members to convene an escalation meeting if the project team cannot reach alignment on key issues.

By only involving the SEC members from the participating institutes directly represented in the project, the escalation process remains focused, efficient, and aligned with STEMPA's principle of resolving issues at the appropriate senior level.

### 2.5.1 Trigger

If issues remain unresolved during the third month or by Meetings 4 to 5, whichever is earlier, preparations for escalation should begin.

The Lead Negotiator of the Host Institute notifies all parties and initiates the involvement of the SEC.

### 2.5.2 Procedure

The Lead Negotiator of the Host Institute informs the other Lead Negotiators by Meeting 4 or by the start of the third month, whichever is earlier, that escalation will proceed if matters are unresolved by the next meeting.

To notify SEC, the Lead Negotiator should send an email to the relevant SEC members<sup>1</sup> with the subject tag “[STEMPA Standing Escalation Committee]”. The email template is provided at **Annex B1**, and the issues summary template is at **Annex B2**. The relevant STEMPA Steering Committee Research representatives at **Annex B3** should be looped in (cc-ed) as well.

The Host Institute then schedules the escalation meeting with the Personal Assistants of the relevant SEC members. Lead Negotiators of each participating institute should give an in-depth briefing to their respective institute’s SEC member before the escalation meeting.

### 2.5.3 Use of the Escalation Mechanism

The escalation pathway under STEMPA supports the timely resolution of issues that cannot be resolved through working-level discussions. By escalating such matters early and in a structured manner to the Standing Escalation Committee, project teams enable senior-level decisions to be made promptly, so that all participating institutes can meet the four-month project agreement submission timeline.

Where material issues remain outstanding but have not been escalated through the Standing Escalation Committee, grantors may view these circumstances unfavourably when considering any requests for extensions to the four-month timeline. Project teams are therefore encouraged to use the escalation mechanism to support timely alignment and project commencement.



<sup>1</sup> Contact information for SEC members may be found here: <https://www.sgdi.gov.sg/search-results>.

## 2.6 Summary of Workflow

### STEP 1

#### Identification of Host Institute and Lead Negotiators

- Upon or even before in-principle approval (IPA), the Host Institute for the project must be identified.
- Lead Negotiators of each participating institute are to be identified.

### STEP 2

#### Establish Cadence of Meetings

- Upon IPA, all meetings to discuss the project agreement should be scheduled upfront to drive discussions in a timely manner.
- Host Institute is to drive the organisation of meetings.
- Parallel discussions should be established if there are issues that require a different set of domain experts or decision makers.

### STEP 3

#### Pre-Meeting Preparation

- Host Institute's Lead Negotiator should draft a Project Workplan, based on the grant proposal, to support discussion at Meeting 1.
- All Lead Negotiators should identify possible areas of contention and align within their respective participating institutes before Meeting 1.

(Refer to [Annex A](#) for a checklist of common contentious issues.)

### STEP 4

#### Project Agreement Alignment Across Institutions

- Within three months of IPA issuance, substantive discussions should conclude. This includes finalisation and initiation of signing for execution.
- Pre-aligned positions and template clauses, as found in the project agreement template annexed in the grant IPA letter, may be used to support alignment and drafting.

### STEP 5

#### Escalation to the Standing Escalation Committee (if required)

- Escalation to the STEMPA Standing Escalation Committee is not required for all project agreements. It is initiated only if unresolved issues remain after internal alignment efforts and structured discussions.
- If such issues persist by the third month after IPA, project parties should first exhaust their internal escalation pathways. The Host Institute's Lead Negotiator may then proceed to activate the Standing Escalation Committee, following the protocols outlined in Annexes [B1](#), [B2](#), and [B3](#).

### STEP 6

#### Project Agreement Execution and Submission

- After in-scope project agreements are submitted to the grantor within four months, the Letter of Award is issued and funding flows for the whole project.

# PRE-ALIGNED POSITIONS



STEMPA simplifies discussions on project agreements through ecosystem-wide, pre-aligned positions on five key contractual and governance issues, as shown in the diagram below. These five positions are endorsed by all participating institutes. In particular, the following three out of five pre-aligned positions are mandated and integrated into grant conditions, and must be adopted in the PAs:



**Foreground intellectual property ownership**



**Foreground data ownership**



**No data-related indemnities, warranties, and liability caps**

By eliminating the requirement to renegotiate foundational terms for every project, STEMPA enables participating institutes to focus on project-specific issues. Standard clauses are provided to support consistent and immediate adoption.

The diagram below illustrates STEMPA's five pre-aligned positions, serving as a quick-reference guide for practitioners, while the following sections do a deeper dive into each of these positions.



#### **FOREGROUND IP OWNERSHIP\***

- Ownership based solely on inventive contribution
- Alignment with international and national principles
- The Public Sector Master Research Collaboration Agreement (PS MRCA) Factsheet at [Annex C](#) provides clarity on inventive and non-inventive contributions



#### **REVENUE SHARING FROM COMMERCIALISATION OF FOREGROUND IP**

- Both inventive and non-inventive contributions recognised for revenue sharing from commercialisation of Foreground IP



#### **FOREGROUND DATA OWNERSHIP\***

- Data belongs to those who collect, generate, and/or enhance it
- Non-owner contributors retain access rights
- The Data Collaboration Dictionary defines data-related actions that confer ownership based on collection, generation, or enhancement



#### **DATA SHARING GOVERNANCE & CONTROLS**

- The STEMPA Data Sharing Guidebook sets out agreed governance principles and operational controls for the secure sharing, management, and use of healthcare data
- The Data Sharing Guidebook also provides harmonised operational templates, such as Data/Sample Request Forms and the Third-Party Access Terms and Conditions



#### **NO DATA-RELATED INDEMNITIES, WARRANTIES, & LIABILITY CAPS\***

- Delineates responsibilities with regard to data (e.g. contributors, repositories, and users)
- No inclusion of warranties, indemnities, and liability caps in project agreements
- Established pathway to resolve data breaches or other data-related incidents

*\*These terms and conditions will be mandated as part of the grant requirements.*

*A summary of STEMPA's five pre-aligned positions.*

## 3.1 Foreground Intellectual Property Ownership



**STEMPA Pre-Aligned Position 1:  
Foreground intellectual property ownership is  
determined solely by inventive contribution.**

Following international guidelines, Singapore's National Intellectual Property (IP) Protocol, and the Public Sector Master Research Collaboration Agreement (PS MRCA), public sector institutions in Singapore have aligned on a core principle: **foreground IP (FIP) ownership is determined solely by inventive contribution.**

This FIP ownership position is mandated through the grant conditions of schemes under STEMPA. All projects funded under such schemes must adopt this position.

Non-inventive contributions, such as providing key data or samples, are recognised through revenue sharing. This clarity removes a major source of delays in project agreement discussions.

For guidance on what constitutes inventive and non-inventive contributions, refer to the PS MRCA Factsheet in Healthcare (**Annex C**), developed by the National IP Working Group (IPWG) secretariat and supporting agencies.

## 3.2 Revenue Sharing from Commerciali- sation of Foreground Intellectual Property



**STEMPA Pre-Aligned Position 2:  
All inventive and non-inventive contributors  
will be recognised through revenue sharing.**

This pre-aligned position confirms that both inventive and non-inventive contributions should be recognised through revenue sharing of proceeds from commercialisation of FIP.

The ecosystem will reference the PS MRCA Factsheet in Healthcare (**Annex C**) to guide what qualifies, e.g. data, software, or facilities provided by institutions. These assets contribute significant value even if they do not generate new IP.



## 3.3 Foreground Data Ownership



**STEMPA Pre-Aligned Position 3:**  
Ownership of data by collection, generation, and/or enhancement. Non-owner contributors to the data to have access rights.

For projects under STEMPA, the ecosystem-wide, pre-aligned position of ownership for data generated in multi-institute research collaboration agreements in the public sector is as follows.

Ownership of Research Data by Participation in Collection, Generation and/or Enhancement

Data collected, generated, and/or enhanced through the research (“research data”) shall be owned in equal and undivided shares based on each participating institute’s activities in:

- Collection of new data;
- Generation of new data from contributed data; or
- Enhancement of contributed data.

This means that participating institute(s) own only the data that they helped to create, whether solely or jointly:

- |                                                                                                                                                                   |                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Where <b>one participating institute</b> collected a dataset, that institute <b>owns the collected dataset</b>.</li> </ul> | <ul style="list-style-type: none"> <li>Where <b>multiple participating institutes</b> collected the dataset, they <b>jointly own the collected dataset</b>.</li> </ul> |
| <ul style="list-style-type: none"> <li>Where <b>one participating institute</b> generated new data, that institute <b>owns the generated data</b>.</li> </ul>     | <ul style="list-style-type: none"> <li>Where <b>multiple participating institutes</b> generated the data, they <b>jointly own the generated data</b>.</li> </ul>       |
| <ul style="list-style-type: none"> <li>Where <b>one participating institute</b> enhanced existing data, that institute <b>owns the enhanced data</b>.</li> </ul>  | <ul style="list-style-type: none"> <li>Where <b>multiple participating institutes</b> enhanced the data, they <b>jointly own the enhanced dataset</b>.</li> </ul>      |

If an institute did not take part in a specific activity, it does not own the data that came from that activity. However, they may have access rights and may also be granted other rights as stated in the project agreement.

### Additional Notes on the Data Ownership Principle

#### Joint Ownership:

Research data is owned in equal and undivided shares by all participating institutes that directly contributed to the collection, generation, or enhancement of the research data. This is akin to joint tenancy in property law, with no specific shares allotted to individual owners.

#### Subject Data Exception:

Data collected directly from patients (“subject data”) shall be owned as stipulated by patient consent forms and the relevant hospital policy, if there is a conflict with the general principle above.

#### For Pre-Existing Data and/or Samples:

Contributors of pre-existing datasets or samples, considered as “background” data or samples, will retain ownership (or control) of their contributed “background” data or samples. They will not be owners of new and/or derivative research data but will have access rights or other rights as granted by the project agreement.

#### Enhancements and Derivative Data:

The ownership of enhancements is joint among institutions involved in the enhancement. The original data owner’s rights are preserved. Any rights or claims to derivative datasets are subject to the ownership and licensing terms of the underlying data.

## 3.4 Data Sharing Governance and Controls

### 3.3.1 Data Collaboration Dictionary

Building on the pre-aligned position on data ownership, STEMPA introduces a Data Collaboration Dictionary (DCD) (**Annex D**). This is a practical tool to support the consistent real-world application of the STEMPA data ownership principle.

The DCD provides a standardised vocabulary and common benchmark for discussions on research data ownership, which helps to:

- Reduce friction by clarifying terminology, roles, and expectations.
- Enable participating institutes to clearly define and apply ownership positions.
- Support structured discussions on whether specific data-related activities confer ownership or access rights.



#### STEMPA Pre-Aligned Position 4: Reference of the Data Sharing Guidebook for data sharing governance and controls

To support consistent and responsible data sharing across the ecosystem, a STEMPA Data Sharing Guidebook was developed. This guidebook articulates accepted governance principles and operational controls for secure sharing, management, and use of healthcare data. It clarifies Singapore's healthcare data-sharing requirements for multi-party research collaborators from both healthcare and non-healthcare institutions.

Healthcare data is subject to stringent legal, ethical, and institutional obligations (e.g. the Personal Data Protection Act, Ministry of Health (MOH)'s HealthTech Instruction Manual, Human Biomedical Research Act, and other healthcare-specific policies). These can create operational complexity for researchers and administrators working across multiple institutions. The Data Sharing Guidebook provides clear, practical guidance on how to meet these obligations in real-world research settings. Key features include guidance on:

- Using anonymised and de-identified data, including MOH-aligned standards and risk-mitigation approaches
- The role of Trusted Third Parties (TTPs) in supporting data treatment
- Data lifecycle controls, covering preparation, transfer, storage, retention, and secure disposal
- Access governance, including approval pathways
- Managing data incidents
- Compliance considerations when navigating applicable regulations, policies, and standards
- The general data sharing approval workflow adopted by public healthcare institutions

The Data Sharing Guidebook also provides harmonised operational templates, such as Data/Sample Request Forms and the Third-Party Access Terms and Conditions.

*The STEMPA Data Sharing Guidebook will be made available for download on the [STEMPA website](#) when it is finalised.*

## 3.5 No Data- Related Indemnities, Warranties, and Liability Caps



**STEMPA Pre-Aligned Position 5:**  
No contractual data-related indemnities, warranties, and liability caps. A formal pathway for resolving liabilities as a result of data-related incidents is instituted based on established data responsibilities.

The STEMPA position is that there should be no contractual data-related indemnities, warranties, or liability caps for the major grant-funded multi-institutional public-sector research collaborations and project agreements.

This approach is grounded in governance rather than contractual risk transfer, and requires the establishment of:

- Clear and well-defined responsibilities of participating institutes involved in data collaborations; and
- A structured data incident resolution process to manage incidents consistently and fairly.

Accordingly, this section of the STEMPA Guidebook sets out the following:

1. Data Responsibilities Framework, documenting the roles and responsibilities across the data lifecycle; and
2. Data Incident Resolution Pathway, that prioritises good-faith resolution among participating institutes based on documented responsibilities. Escalation to governance bodies occurs only where consensus cannot be reached and material implications arise. This may include escalation to the Standing Escalation Committee and where necessary, the HHP EXCO Co-Chairs.

Together, these measures provide participating institutes with a clear, consistent, and principled mechanism for managing data incidents within the STEMPA framework, while supporting trust, accountability, and sustained collaboration.

### 3.5.1 Data Responsibilities Framework

To operationalise this governance-based approach, a Data Responsibilities Framework (**Annex E**) is set out below to document, at a guiding level, the roles and responsibilities of participating institutes involved in data collaborations within the scope and duration of a multi-party research project in the public sector.

This framework identifies the responsibilities of key data management actors that handle, access, or oversee research data during the project period. The responsibilities outlined reflect good data governance practices across the data lifecycle as typically encountered in multi-party research collaborations.

The framework supports participating institutes to:

- Clearly establish and document roles within a collaboration;
- Align expectations on accountability and good data governance practices; and
- Support consistent assessment of responsibilities in the event of a data incident.

### 3.5.2 Data Incident Resolution Pathway

In line with the STEMPA position that **there shall be no contractual data-related indemnities, warranties, or liability caps**, participating institutes are expected to manage and resolve data-related incidents through defined responsibilities and governance mechanisms, rather than contractual risk-shifting.

This section sets out a structured, tiered pathway for resolving data incidents arising from multi-party research collaborations under STEMPA. The pathway prioritises good-faith resolution among participating institutes, with escalation mechanisms activated only where necessary.

This pathway aims to:

- Provide clear, practical steps for participating institutes to follow when a data incident occurs; and
- Guide the design of project agreements and operational processes that align with STEMPA governance expectations.

#### Guiding Principles

- **Participating institutes should first seek to resolve data-related incidents among themselves**, by referring to the responsibilities documented in the project agreement, which are guided by the Data Responsibilities Framework set out in this Guidebook (see **Annex E**).
- Escalation beyond the participating institutes is to be used **only where resolution cannot be reached and there are significant material or monetary implications**.

#### Step 1 – Incident Detection and Institution-Level Resolution

Any participating entity that becomes aware of a data breach, misuse, unauthorised access, loss of data, or data integrity concern must report the incident promptly to the other affected participating institutes.

As a first step, the affected participating institutes should:



A Assess the incident jointly.

B Determine responsibilities by referring to the project agreement and the Data Responsibilities Framework.

C Attempt to agree on remedial actions, mitigation measures, and responsibility allocation among themselves.

Most data incidents are expected to be resolved at this level through cooperative engagement and reference to pre-agreed roles and responsibilities.

**Note:** The following steps are triggered only if Step 1 does not result in resolution and there are significant material or monetary implications to the participating institutes.

## Step 2 – Activation of the Standing Escalation Committee

Where the participating institutes are unable to reach consensus, and the incident has significant impact or cost implications, the matter may be escalated to the Standing Escalation Committee (SEC).

Key features of the SEC:



Comprises senior leaders of participating institutes (e.g. Group CEOs and CEOs) – see [Section 2.5](#) for the list of SEC members.



Only relevant members from affected institutes are convened for a specific incident.



Decisions are made by consensus, wherever possible.

## Step 3 – Independent Review and Investigation

Where appropriate, the SEC may appoint an independent investigator or auditor to assess:



The cause and scope of the incident.



The data affected and potential consequences.



Whether responsibilities under the Data Responsibilities Framework (at [Annex E](#)) were fulfilled.

This provides an objective basis for decision-making and supports trust across institutes.

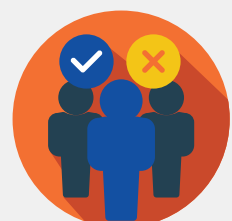
## Step 4 – Determination of Liabilities and Remedial Actions

Based on the investigation, the SEC will review the facts, determine responsibility by referring to documented roles and responsibilities, and assess any required damages, costs, or remedial actions. Decisions at this stage are focused on accountability and remediation, rather than punitive outcomes, and aim to support the continued integrity of the collaboration ecosystem.



## Step 5 – Further Escalation if Consensus Cannot Be Reached

If the SEC cannot reach consensus, the matter will be escalated to a higher authority, such as the HHP EXCO Co-Chairs, for final determination. This ensures that unresolved issues can be addressed decisively while preserving institutional alignment and governance integrity.



# SUPPORT AND CONTACTS



Each participating institute is its first point of contact for project agreement matters under STEMPA. You may approach your institute's research office, industry development or technology business office, or project managers if you need support. They will coordinate internally and escalate the issue to the STEMPA Secretariat if necessary.

For questions relating to the application or interpretation of STEMPA, you may also contact your appointed STEMPA Champions or Liaisons listed below.

Institution	Support and Contacts
A*STAR	<p><b>Project Agreement Support</b> Industry development or technology business teams, or project managers</p> <p><b>STEMPA Implementation</b></p> <p><b>STEMPA Champion</b> Dr Lisa Ooi Assistant Chief Executive, BMRC</p> <p><b>STEMPA Liaisons</b> Ms Ng Meijia, Director, BMRC Heng Wangxing, Assistant General Counsel, Legal Division</p>
CRIS	<p><b>Project Agreement Support</b> Business development, business operations, or admin representative.</p> <p><b>STEMPA Implementation</b> SCRI Email: ncb@scri.cris.sg</p> <p><b>STEMPA Champion</b> Dr Eugene Gan Senior Director for Operations, SCRI</p> <p><b>STEMPA Liaison</b> Ms Lim Chew Gin, Assistant Director, National Coordinating Office, SCRI</p>
Duke-NUS	<p><b>Project Agreement Support</b> Departmental Business Managers or the Contracts and Industry Engagement Team Email: contracts@duke-nus.edu.sg</p> <p><b>STEMPA Implementation</b></p> <p><b>STEMPA Champion</b> Dr Sumita Anant Associate Dean, Research Administration</p> <p><b>STEMPA Liaison</b> Mr Teh Hoe Leng, Director, Sponsored Research</p>
NHG Health	<p><b>Project Agreement Support</b> Institutional Research Offices</p> <p><b>STEMPA Implementation</b> Translational Research Office at NHG Group Research &amp; Innovation Email: nhggroup.tro@nhghealth.com.sg</p> <p><b>STEMPA Champion</b> A/Prof Jimmy Lee Group Chief Research &amp; Innovation Officer</p> <p><b>STEMPA Liaison</b> Ms Heiny Tan, Deputy Director, Translational Research Office, Group Research &amp; Innovation</p>

NTU	<p><b>Project Agreement Support</b> School or College research administrators Additional contracting resources are available on NTU ServiceNow under LSONline: Templates.</p> <p><b>STEMPA Implementation</b></p> <p><b>STEMPA Champion</b> Prof Lim Kah Leong Associate Vice President, Biomedical and Life Sciences Email: assocvp-bls@ntu.edu.sg</p> <p><b>STEMPA Liaison</b> Dr Willie Koh, Director, Research Integrity &amp; Ethics Office Email: D-RIEO@ntu.edu.sg</p>
NUHS	<p><b>Project Agreement Support</b> Institutional Research Offices, or NUH Partnership and Contract Office Email: partnership@nuhs.edu.sg</p> <p><b>STEMPA Implementation</b></p> <p><b>STEMPA Champion</b> A/Prof David Tan Group Director, Partnerships and Innovation NUHS Research &amp; Innovation Office</p> <p><b>STEMPA Liaison</b> Mr Dennis Koh, Senior Assistant Director, Research Office</p>
NUS	<p><b>Project Agreement Support</b> Central Research Office Email: iep-admin@nus.edu.sg</p> <p><b>STEMPA Implementation</b></p> <p><b>STEMPA Champion</b> Mr George Loh Associate Vice President of Strategic Partnership</p> <p><b>STEMPA Liaison</b> Ms Madelyn Ho, Deputy Director, Industry Engagement &amp; Partnership</p>
SingHealth	<p><b>Project Agreement Support</b> Institutional Research Admin Offices</p> <p><b>STEMPA Implementation</b> The Institutional Research Admin Office may reach out to SingHealth Office of Research's Research Collaboration team. Email: res.collab@singhealth.com.sg</p> <p><b>STEMPA Champion</b> Prof Gemmy Cheung Director, Translational Clinical Research Singapore Eye Research Institute</p> <p><b>STEMPA Liaison</b> Dr Lye Whye Kei, Director, SingHealth Intellectual Property Ms Josephine Ng, Deputy Director, SingHealth Office of Research</p>

To learn more about STEMPA, visit our website at [www.stempa.sg](http://www.stempa.sg).

For matters requiring escalation to the STEMPA Secretariat, please reach us at [stempa\\_secretariat@stempa.sg](mailto:stempa_secretariat@stempa.sg).

# FREQUENTLY ASKED QUESTIONS



## A. Scope and Applicability



### **Q1** Does STEMPA apply to non-research programmes or other innovation grants?

No. STEMPA currently applies only to projects funded under the Open Fund – Large Collaborative Grant (OF-LCG) and is being considered for the upcoming version of the Industry Alignment Fund – Pre-Positioning Programme (IAF-PP) under Research, Innovation and Enterprise (RIE) 2030.

Other programmes may choose to adopt STEMPA positions voluntarily, but there are currently no plans to extend STEMPA to other grant schemes.

Any future expansion will be reviewed based on implementation experience and stakeholder feedback.

### **Q2** Does STEMPA cover research collaboration agreements with industry or foreign academic institutions? What about clinical trials, including investigator-initiated trials or industry-sponsored trials?

No. STEMPA does not apply to agreements involving industry partners, non-Singapore academic institutions, or clinical trial agreements.

The acceleration of clinical trial agreements is being addressed separately under Singapore Clinical Research Infrastructure.

Only project agreements involving Singapore public sector institutions under applicable STEMPA grant schemes are subject to the four-month timeline and pre-aligned positions.

### **Q3** Is STEMPA applicable to institutions listed in the Public Sector Master Research Collaboration Agreement (PS MRCA)?

In general, yes. Institutions covered under the PS MRCA (Schedule 1) typically fall within the public sector institutions to which STEMPA applies.

### **Q4** Will STEMPA timelines apply retroactively? For example, if negotiations began in September 2025 and STEMPA takes effect in April 2026, when must the project agreement be concluded?

No, STEMPA does not apply retroactively. It applies only to projects awarded under grant calls from FY2026 onwards, i.e. projects awarded on or after 1 April 2026.

Projects awarded before FY2026 may continue negotiations under existing frameworks, with no mandated deadline for conclusion.

## B. Workflow and Timelines



### **Q1** What happens if the four-month deadline is missed?

Funding release is contingent on the submission of all signed in-scope project agreements within four months. Failure to meet the deadline may result in loss of funding. Exceptions will be considered only where strong justification is provided and best efforts have demonstrably been exhausted, such as escalation to the Standing Escalation Committee, or in exceptional circumstances such as a pandemic. All exception requests are subject to stringent review and approval at the grantor's discretion.

### **Q2** Is the four-month timeline part of the grant period?

No. The four-month timeline applies to the period between In-Principle Approval and the issuance of the Letter of Award.

**Q3** How does STEMPA integrate with ethics or Institutional Review Board timelines?

STEMPA governs project agreement execution and runs in parallel with ethics or Institutional Review Board (IRB) approvals. While these processes are separate, early initiation of both is strongly encouraged to avoid delays. Agreements linked to clinical trials may fall outside STEMPA's scope. In multi-project programmes, funding may proceed once all in-scope project agreements are submitted within the deadline, even if a clinical trial agreement remains pending IRB approval.

**Q4** Who monitors adherence to the four-month timeline?

All participating institutes, including their Lead Negotiators, are jointly responsible for adhering to the timeline. Grantor agencies will monitor compliance for the purposes of Letter of Award issuance and funding disbursement, e.g. the National Medical Research Council for Open Fund – Large Collaborative Grant (OF-LCG) projects.

**Q5** What benefits do clinicians and Principal Investigators gain from the four-month timeline?

The timeline reduces delays to funding access and project commencement. It also ensures that governance risks associated with unresolved agreements are addressed before project execution begins.

**Q6** How are participating institutes affected if they are not the Host Institute or lead Principal Investigator?

The four-month deadline applies to the entire project, regardless of host status. Participating institutes should engage early with the Host Institute's Lead Negotiator, respond promptly to alignment requests, and activate internal escalation channels where necessary.

**Q1** Q1: Are project agreement templates provided?

Yes. Clauses supporting STEMPA's pre-aligned positions are provided. These may be issued together with the In-Principle Approval letter, made available through grantors, hosted on the STEMPA website, or included as annexes to this guidebook. **[Placeholder: Final distribution mechanism to be confirmed.]**

**Q2** Q2: Were legal teams across institutions involved in developing the pre-aligned positions and clauses?

Yes. Legal representatives from all three public healthcare clusters, institutes of higher learning, and the Agency for Science, Technology and Research (A\*STAR) are part of the STEMPA Steering Committee and working groups. Other supporting resources were similarly developed through cross-institutional consultation.

## C. Templates and Clauses



**Q3** How do STEMPA's pre-aligned positions differ from the Public Sector Master Research Collaboration Agreement?

The Public Sector Master Research Collaboration Agreement (PS MRCA) remains the baseline agreement template for public sector collaborations.

While some positions, such as foreground intellectual property ownership, are consistent with the PS MRCA, STEMPA introduces additional mandated positions, including data ownership, based on analysis of common negotiation bottlenecks.

Unlike the PS MRCA, which is non-binding and may be varied on a case-by-case basis, selected STEMPA positions are mandated through grant conditions for applicable schemes.

The four-month deadline helps to ensure timely alignment and project execution.

**Q4** Will the Public Sector Master Research Collaboration Agreement clauses be updated to incorporate STEMPA positions?

At this stage, STEMPA clauses apply only to Open Fund – Large Collaborative Grant (OF-LCG) projects and potentially, the revised Industry Alignment Fund – Pre-Positioning Programme (IAF-PP). Incorporation into the Public Sector Master Research Collaboration Agreement (PS MRCA) will be considered separately, as the PS MRCA applies across multiple technology domains beyond healthcare and biomedical research.



# Acknowledgements

The STEMPA Secretariat extends its appreciation to the many organisations and committees whose contributions supported the development of the STEMPA Guidebook.

We wish to record our thanks to the following groups for their collective expertise and guidance:



## STEMPA Steering Committee, STEMPA Workgroups, and Observers from the Grantor Agencies

For their direction, insights, and recommendations, which shaped the pre-aligned positions and informed the implementation framework under STEMPA.



## IP Working Group Secretariat and supporting agencies

For granting permission to reference and incorporate the Public Sector Master Research Collaboration Agreement Factsheet in Healthcare, and for their continued collaboration on matters relating to intellectual property principles and ecosystem alignment.



## STEMPA Champions and Liaisons, and supporting offices

For supporting STEMPA communication efforts to prepare the ecosystem for adoption.



## STEMPA Early Access Exercise participants

For providing ground-level perspectives and practical feedback that contributed to refining STEMPA resources.



## Partner agencies across Singapore's public research, healthcare, and innovation ecosystem

For their ongoing support in advancing the alignment and implementation efforts that underpin the STEMPA initiative.

# Annexes

## Annex A

### Checklist for Potential Contentious Issues

This checklist is meant to identify frequently encountered areas of contention and should not be taken as exhaustive. Parties should also flag any other substantive points that may face disagreement, so that these can be identified early and addressed as potential areas of contention.

- 1. Your Institute's position on IP ownership:**
  - Ownership solely by inventorship. (Default/mandated pre-aligned position)
  - Other (please elaborate)
- 2. Your Institute's position on data ownership:**
  - Ownership by collection, generation and/or enhancement. Non-owner contributors to the data to have access rights. (Default/mandated pre-aligned position)
  - Other (please elaborate)
- 3. Your Institute's position on revenue sharing:**
  - All inventive and non-inventive contributors to be recognised through revenue sharing. (Default/mandated pre-aligned position)
  - Other (please elaborate)
- 4. Your Institute's position on the breakdown of revenue sharing:**
  - Breakdown of revenue sharing to be determined later on.
  - Other (please elaborate)
- 5. For Data Providers: What is the sensitivity classification of the data that you will be sharing?**
  - Unrestricted
  - Other (please elaborate)
- 6. For Data Providers: What are the technical or procedural security requirements that Data Recipients will need to abide by?**  
(Please elaborate.)
- 7. For Data Providers: Have you received approval from all relevant authorities within your Institute to share the data? If the data is from an existing registry, have all necessary approvals to share this data been obtained?**
  - Yes  No
- 8. For Data Providers: Does a risk assessment need to be done on the sharing of data for the project?**
  - Yes  No
- 9. What are the indemnities and liabilities/liability caps that should be established for this project?**
  - No contractual data-related indemnities, warranties, and liability caps. A formal pathway for resolving liabilities as a result of data-related incidents is instituted. (Default/mandated pre-aligned position)
  - Other (please elaborate)
- 10. Have the necessary offices/officers relevant to this project agreement been notified (e.g. Research Office, Legal, Data Protection/Privacy, Cybersecurity, and/or Finance)?**
  - Yes  No

## Annex B

# Resources for Escalating Issues to the Standing Escalation Committee

## Annex B1 – Email Template

**Subject:** [STEMPA Standing Escalation Committee] <Project Title>

**To:** <Relevant SEC members>

**Cc:** <Lead negotiators of all parties>

Dear members,

I am writing to activate the Standing Escalation Committee for the following project and to request that an escalation meeting be convened.

### **Project Details**

*Project Title*

<enter>

*Grant Type*

<enter, e.g. OF-LCG>

*Host Institute*

<enter>

*Parties Involved*

<list all institutes participating as legal entities>

### **Issues for Escalation**

A summary of the issues that we would like to escalate is attached.

### **Upcoming Meeting**

We will keep you informed of the date, time and venue when the meeting details have been confirmed.

Thank you.

<Name>

Lead Negotiator, <Host Institute>

## Annex B2 – Template for Summary of Issues for Escalation

This template is to be inserted into the email or attached as a Word document when writing to the SEC.

### Summary of Issues for Escalation **Sample**

S/N	Issue	Position		
		Institute A	Institute B	Institute C
1	Indemnification of data providers by data recipients.	Data recipients to fully indemnify data providers.	Data recipients to be responsible for any failure on their part to follow stated security protocols only.	No indemnifications.
2	Liability caps.	Enter text.	Enter text.	Enter text.

### Summary of Issues for Escalation **Template to use**

S/N	Issue	Position		
		Institute A	Institute B	Institute C

### Lead Negotiators

Institute	Name and Designation	Email Address
(Host Institute should be listed first.)		

## Annex B3 – Standing Escalation Committee and Institutional Steering Committee Research Representatives

S/N	Standing Escalation Committee Members	Steering Committee Research Representatives
1	CEO   A*STAR	Lisa Ooi (Lisa_Ooi@a-star.edu.sg)
2	CEO   CRIS	Eugene Gan (eugene.gan@scri.cris.sg)
3	Dean   Duke-NUS	Patrick Tan (gmstanp@duke-nus.edu.sg) Teh Hoe Leng (hoeleng.teh@duke-nus.edu.sg)
4	Group CEO   NHG Health	Benjamin Seet (ben.seet@nhghealth.com.sg)
5	Provost   NTU	Ernst Kuipers (ernst.kuipers@ntu.edu.sg) Lim Kah Leong (kahleong.lim@ntu.edu.sg)
6	CEO   NUHS	Chng Wee Joo (mcdccwj@nus.edu.sg)
7	Provost   NUS	Chng Wee Joo (mcdccwj@nus.edu.sg)
8	Group CEO   SingHealth	Lim Soon Thye (lim.soon.thye@singhealth.com.sg) Enny Kiesworo (enny.k@singhealth.com.sg)

Relevant SEC members would be the SEC members from participating institutes that are involved in the project agreement under negotiation. For example, if the project involves A\*STAR, NHG Health and NUS, only the SEC members of these institutes would be activated.

The contact information for SEC members and their Personal Assistants can be found at <https://www.sgdi.gov.sg/search-results>.

# Annex C

## Public Sector Master Research Collaboration Agreement Factsheet in Healthcare

### Collaborating Better Together in Healthcare: The Singapore Public Sector Organisations Master Research Collaboration Agreement

Published by IP Working Group Secretariat and Supporting Agencies June 2023

IP Working Group Secretariat



*The IP Working Group was formed at the direction of the Research, Innovation and Enterprise Strategy Committee to support the implementation of the National IP Protocol. Public agencies may reach out to the IP Working Group via the Secretariat at [ipwg@ipos.gov.sg](mailto:ipwg@ipos.gov.sg)*

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## A. Introduction

The Singapore Public Sector Organisations Master Research Collaboration Agreement (MRCA), issued by the Ministry of Finance under the Finance Circular Minute M6/2018, allows public-sector organisations to initiate research collaborations on pre-agreed terms with less hassle.

This Factsheet has been developed to help the public healthcare community understand the following applications of the MRCA:

- The MRCA ensures that your existing Intellectual Property\* (Background IP) and other in-kind contributions in research collaboration projects remain yours and continue to be protected;
- The MRCA also recognises your technical guidance and expertise as an inventive contribution; and
- The MRCA allows you to share the commercialisation revenue in return for your contributions to these research projects.

*\*Intellectual Property (IP) refers to creations of the mind which can be protected by law through patents, trade marks, designs, copyright and other IP rights.*

## B. Your Background IP and Other Contributions Remain Yours and are Protected



Any party can contribute in various ways to a research collaboration project. These contributions may include Background IP and other in-kind contributions such as tissue samples, facilities, equipment, manpower, etc.

Under the MRCA, each party remains the owner of its Background IP and its in-kind contributions to a research collaboration project. The other parties involved in the project only receive a limited right to use a party's Background IP and in-kind contributions to conduct the research collaboration project. A party's Background IP and its in-kind contributions are protected and the other parties cannot use them for any other purpose without the contributor's agreement.

## C. Your Technical Guidance and Expertise can be Recognised as an Inventive Contribution

Under the MRCA, the default position is that IP created in the course of a research collaboration project (Foreground IP) is owned according to each party's inventive contributions.

Foreground IP that is created by the inventive contributions of:

- ♦ *only one* Project Party would belong to that Project Party *solely*
- ♦ *several* Project Parties would belong to those Project Parties *jointly*

Project Parties may expressly agree otherwise in the applicable Project Agreement on how the ownership of Foreground IP should be determined, if so required by the special circumstances of the research project. However, it is advisable to maintain the position provided in the MRCA as explained above, since the purpose of the MRCA is to streamline and accelerate research collaborations amongst public agencies with minimal need for further negotiations.

*Inventive Contribution is defined in the MRCA as any intellectual contribution which brings about the creation of IP, whether patentable or not, made or to be made by a Project Party in a Project in accordance with the relevant Project Agreement. Inventive Contributions in the MRCA can include contributions such as technical guidance and expertise provided by any Project Party depending on the degree and extent of such technical guidance and expertise furnished and shall be agreed between the Project Parties.*

Intellectual input that shapes the creation of the Foreground IP such as to identify important patterns in the data or discount noise within the data can be recognised as "technical guidance and expertise". These contributions, which are more than a mere transfer of data or tissue samples, could be recognised as inventive contributions and translate into ownership of the Foreground IP. As an illustration from patent law, technical guidance and expertise that conceives the invention claimed in the patent would also result in the contributor being named as an inventor.

## D. Your Contributions are also Recognised When Commercialisation Revenue is Shared

In addition, all parties that contribute towards a research collaboration project, regardless of the form of contribution, are entitled to a share in the commercialisation revenue attributable to Foreground IP that arises from that research project, in proportion with their respective contributions.

This recognises all forms of contributions, even non-inventive contributions, as the Foreground IP may not have been created without all these contributions.

### Case Study

A\*STAR's Institute for Infocomm Research (I2R) and National Healthcare Group's National Skin Centre (NSC) entered into a research collaboration in September 2020.

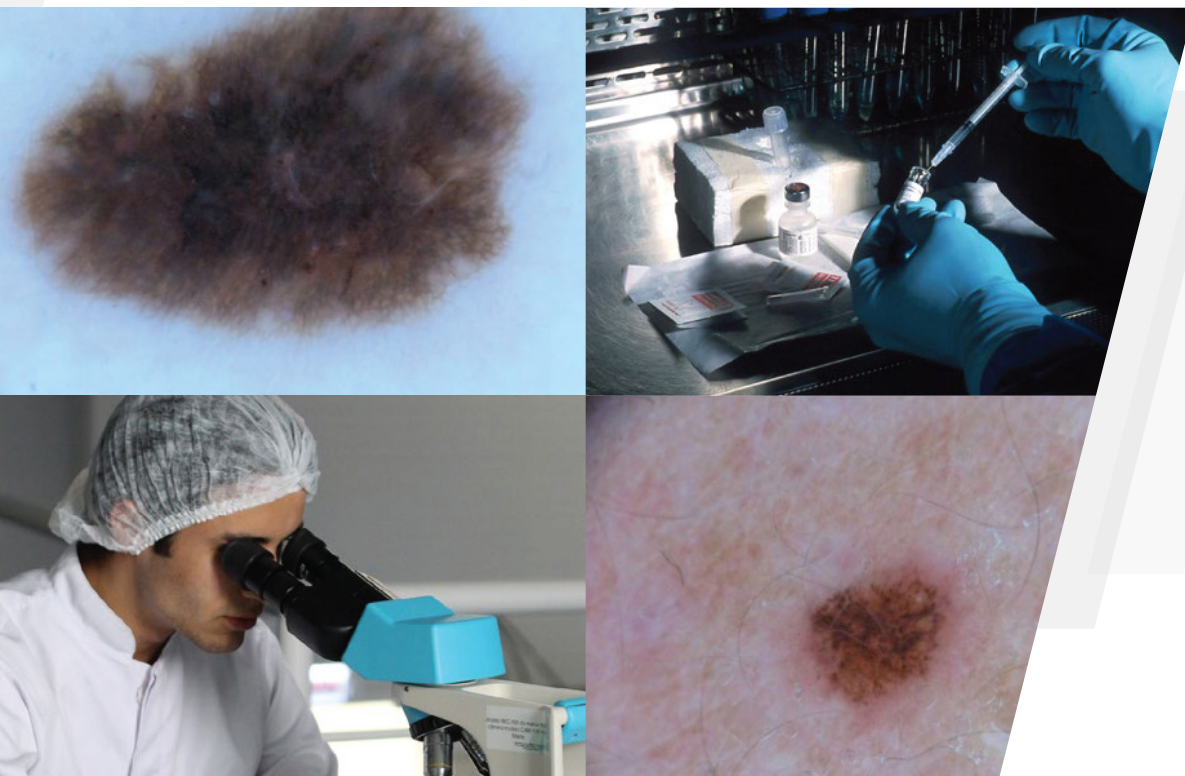
They leveraged the MRCA's project agreement template and concluded the agreement without requiring any changes to the template's IP provisions. The project was to jointly develop an artificial intelligence software platform to aid in the diagnosis of melanoma (a type of skin cancer) through real-time analysis of suspicious skin lesions.

In the project, clinicians from NSC not only contributed anonymised images of skin lesions to the project, they also contributed valuable clinical knowledge on asymmetry, colour features and annotation of all the images which trained the AI algorithm developed by I2R to analyse the likelihood of melanoma being present based on images of suspicious skin lesions. These technical guidance and expertise from NSC were recognised as NSC's inventive contributions, and both NSC and I2R jointly-owned the Foreground IP.

The project was completed within 12 months. The IP and commercialisation lead appointed at the end of the project and NSC (via Centre for Medical Technologies and Innovations (CMTi) which is the technology transfer arm of NHG) managed to clinch a deal with an industry party to license the Foreground IP about seven months after the completion of the project, benefitting both I2R and NSC, and the public through a potential new healthcare product.

The ownership of clinical knowledge and anonymised annotated images of skin lesions continues to belong to NSC while the base AI algorithm developed by I2R continues to belong to I2R.

However, the specific AI software platform for the diagnosis of melanoma is jointly owned by I2R and NSC and licensing proceeds are shared by both joint owners.



## E. Key Takeaways

The MRCA recognises different types of contributions in the manner summarised below.

<b>Types of Contribution</b>	<b>Inventive Contribution</b> This refers to any intellectual contribution which brings about the creation of IP including technical guidance and expertise	<b>Non-Inventive Contribution</b>
<b>Examples</b>	<ul style="list-style-type: none"> <li>• Creating an invention</li> <li>• Writing new software code</li> <li>• Devising a new algorithm</li> <li>• Identifying relevant data or tissue samples and discounting noise in the data and samples in the project</li> <li>• Identifying patterns in data</li> <li>• Training software to interpret the data</li> </ul>	<ul style="list-style-type: none"> <li>• Cash</li> <li>• Facilities</li> <li>• Data</li> <li>• Software</li> <li>• Tissue samples</li> </ul> <p><i>Note: A contributing party will continue to own its non-inventive contribution and will not lose its ownership.</i></p>
<b>Means of Recognition</b>	<ul style="list-style-type: none"> <li>• Ownership of Foreground IP</li> <li>• Share in the commercialisation proceeds</li> </ul>	<ul style="list-style-type: none"> <li>• Share in the commercialisation proceeds</li> </ul>

To find out more about the MRCA, public agencies may refer to **Instruction Manuals - Singapore National Intellectual Property (IP) Protocol For Publicly Funded R&D** (<https://go.gov.sg/im-snipp>).

Alternatively, public agencies may contact the IP Working Group via the Secretariat at [ipwg@ipos.gov.sg](mailto:ipwg@ipos.gov.sg).

## Annex D

# Data Collaboration Dictionary

The Data Collaboration Dictionary (DCD) provides participating institutes with a common vocabulary and shared reference point for discussions and negotiations relating to research data ownership.

### Usage Assumptions and Boundaries

- **Scope of Application:** The DCD applies to multi-institutional clinical research projects within STEMPA's scope, including projects funded under the Open Fund – Large Collaborative Grant and, where applicable in future, the Industry Alignment Fund – Pre-Positioning Programme under the Research, Innovation and Enterprise (RIE) 2030 framework. It provides illustrative examples of commonly encountered data-related activities to support consistent and transparent recognition of contributions by participating institutes.
- **Application of Ownership Principles:** The DCD must be read together with, and applied consistently with, the data ownership principles and clarifications set out in [Section 3.3](#). This includes the treatment of joint ownership, subject data, pre-existing data, and enhanced or derivative data.
- **Non-Exhaustive Reference:** The activities and examples set out in the DCD are illustrative and non-exhaustive. They are intended to guide assessment of the nature and significance of contributions in a given collaboration, and do not replace the need for project-specific consideration.
- **Service Provider Rule:** Where a data-related activity is performed by a paid service provider engaged by a participating institute, the service provider does not acquire ownership of any new or derivative data arising from that activity. Unless otherwise agreed, ownership of both the original data and any resulting data vests in the participating institute that engaged the service provider.
- **Commercialisation is Out of Scope:** The DCD does not prescribe commercialisation arrangements, revenue-sharing mechanisms, or downstream exploitation terms. These matters remain subject to separate agreements and applicable institutional policies.

**Table 1: Data-Related Activities that Confer Ownership**

Activities that Confer Ownership	Specific Activities (Descriptions and Examples in Table 3 below)	Remarks on Ownership
Collection	1. <b>“First-level” data creation</b> – Collection of any new data that did not previously exist and are gathered specifically for the research collaboration.	Ownership of new datasets or biological samples vests <b>solely in the participating institutes performing the collection.</b>
Generation	2. <b>Data generation</b> – Generation of new data derived from contributed data (“First-level” or pre-existing data) or materials such as biological samples or raw images.	Ownership of data generated from contributed data or materials vests <b>solely in the participating institutes that generated the new data.</b>  Participating institutes that contribute data or materials but are not involved in the generation of new data do not own the newly generated dataset; however, they will be granted access to it, and the underlying ownership of the original data and materials remains preserved.
Enhancement  Applying creativity, ingenuity, and intellectual effort to the data curation in ways that increase the value of the data.	3. <b>Data analysis</b> 4. <b>Data enrichment</b> 5. <b>Data mining</b> 6. <b>Data generated by predictive modelling</b>	Ownership of enhancements or derivative datasets vests <b>solely in the participating institutes performing the enhancement.</b>  Participating institutes that contribute data but are not involved in the enhancement do not own the newly generated dataset; however, they will be granted access to it, and the underlying ownership of the original data and materials remains preserved.

**Table 2: Data-Related Activities that Do Not Confer Ownership**

	Specific Activities (Descriptions & Examples in Table 3 below)	Remarks on Ownership
Activities that DO NOT Confer Ownership	7. <b>Data merging/integration</b> 8. <b>Data labelling/tagging</b> 9. <b>Data conversion</b> 10. <b>Data cleaning</b> 11. <b>Data validation</b> 12. <b>Data sorting</b> 13. <b>Data storage/hosting</b> 14. <b>Data transfer</b> 15. <b>Data deletion/destruction</b>	<b>Ownership should not be conferred to the participating institutes</b> that perform any of these activities, instead, ownership continues to reside with the original data source provider(s).

**Table 3: Descriptions & Examples of Data-Related Activities**

No.	Activity	Description	Examples of Activity (Non-Exhaustive)
<b>Activities that Confer Ownership</b>			
1	<b>“First-level” data creation</b>	“First-level” data creation refers to the initial collection or recording of raw data that is “close to source” within the context of a research project or collaboration. It is the foundational step where new, original data is generated for the first time directly from research subjects, experiments, or clinical activities through the execution of a research protocol. Such data arises as the primary output of study procedures, assessments, interventions, or measurements carried out specifically for the project, and is not derived, transformed, or processed from pre-existing datasets.	<p><i>Collecting laboratory test results generated from patient samples (e.g. blood, urine, tissue) taken specifically for the research protocol.</i></p> <p><i>Recording clinical measurements or observations obtained during study visits (e.g. vital signs, imaging scans, physiological readings) that are newly produced for the project.</i></p> <p><i>Capturing assessment or outcome data arising directly from study interventions or procedures (e.g. questionnaire responses, functional tests, clinical scores) conducted as part of the collaboration.</i></p>
2	<b>Data generation</b>	Data generation refers to any process that creates new datasets using “first-level” or pre-existing data with a significant level of originality to make it sufficiently different from the original data set (i.e. such data is not merely cleaned, classified, etc).	<p><i>Deriving structured feature datasets from raw inputs (e.g. converting raw imaging files, waveforms, or biosignals into newly constructed feature tables intended for downstream research use).</i></p> <p><i>Generating simulated or synthetic datasets based on contributed data or samples (e.g. creating statistically representative synthetic patient datasets to support method development or validation).</i></p> <p><i>Producing derived biological or molecular datasets from contributed samples (e.g. generating transcriptomic, proteomic, or metabolomic datasets from contributed biological samples where the resulting dataset did not previously exist).</i></p>
3	<b>Data analysis</b>	Data analysis refers to: (i) any direct interpretation of data using the Performer’s knowledge and expertise, or (ii) the application of any statistical, computational, and/or machine learning techniques, using the Performer’s knowledge and expertise, in order to draw new insights, trends and/or conclusions from data.	<p><i>Creating novel visualisations or illustrations derived from one or more datasets, where the visualisation reflects the Performer’s analytical choices, interpretation, or expert insight.</i></p> <p><i>This excludes outputs that can be automatically reproduced using standard, widely-available data analysis or visualisation tools without requiring meaningful intellectual effort, specialised modelling, or methodological innovation.</i></p>

4	<b>Data enrichment</b>	Data enrichment refers to any process of transforming existing datasets using additional information from: (i) other sources, or (ii) machine-generated data, which results in a material increase in utility, accuracy, interpretability, or research value in such datasets	<i>Synthetic data generation.</i> <i>Ontology mapping.</i>
5	<b>Data mining</b>	Data mining refers to the extraction of usable data and identification of patterns or relationships from large datasets, where new and non-obvious knowledge from the source dataset is generated.	<i>Identifying gene-disease associations from genomic datasets.</i> <i>Predicting patient outcomes based on electronic health records (EHRs).</i> <i>Discovering biomarkers for early disease detection.</i>
6	<b>Data generation by predictive modelling</b>	Data generation by predictive modelling refers to the creation of new datasets (such as forecasts, risk scores, or predicted outcomes) produced as outputs of predictive models applied to existing data.	<i>Producing risk stratification datasets from existing clinical or administrative data.</i> <i>Using predictive or statistical models to generate datasets of predicted probabilities for clinical or biological outcomes (e.g. likelihood of disease progression, treatment response, or adverse events).</i> <i>Computing predictive scores or indices from multi-variable input datasets.</i>
<b>Activities that DO NOT Confer Ownership</b>			
7	<b>Data merging/integration</b>	Data merging/integration refers to any process of combining data from existing datasets without adding additional data to the source datasets.	<i>Integrating Electronic Health Records across hospitals.</i>
8	<b>Data labelling/tagging</b>	Data labelling/tagging refers to grouping or categorising data by assigning labels or tags to data.	<i>Medical data labelling – simple categorisation.</i>
9	<b>Data conversion</b>	Data conversion refers to changing the format, file type, or encoding of data without altering its content, combining it with other data, or adding new information.	<i>Converting DICOM files to other formats.</i>
10	<b>Data cleaning</b>	Data cleaning refers to any process of fixing or removing incorrect, corrupted, incorrectly formatted, duplicate, or incomplete data within a dataset.	<i>Removing incorrect or duplicate data.</i> <i>Filling in missing data.</i> <i>Converting or harmonising data formats.</i> <i>Resolving data inconsistencies.</i>
11	<b>Data validation</b>	Data validation refers to the process of checking data for accuracy, completeness, and/or compliance with predefined rules or formats, and making adjustments to data from one or more sources to align the datasets with each other.	<i>Validating that specimen IDs entered into a database match the barcodes on physical samples.</i>

12	<b>Data sorting</b>	Data sorting involves the straightforward arrangement of data into an order that allows easier understanding or analysis, without generating significant new knowledge from the source data.	<i>Sorting patient records by age or diagnosis date.</i> <i>Ordering gene expression values for visualisation.</i> <i>Organising clinical trial results by treatment group.</i>
13	<b>Data storage/hosting</b>	Data storage/hosting refers to providing infrastructure for the secure retention, access, and delivery of data without modifying, analysing, or processing the data.	<i>Hosting data on local or cloud servers.</i>
14	<b>Data transfer</b>	Data transfer refers to transferring data between storage systems without: (i) modifying its content or structure; or (ii) interpreting such data.	<i>Transferring raw sequencing data from a sequencing facility to a research lab's storage server.</i>
15	<b>Data deletion/destruction</b>	Data deletion/destruction refers to the permanent removal or destruction of data from a system or storage medium.	<i>Software deletion of (unusable or expired) datasets (e.g. secure erasure software, data overwriting, cryptographic erasure).</i> <i>Degaussing</i> <i>Physical destruction of storage devices.</i>

## Annex E

# Data Responsibilities Framework

To operationalise the approach set out in [Section 3.5](#), STEMPA introduces a Data Responsibilities Framework to clearly document, at a guiding level, the roles and responsibilities of participating institutes involved in data collaborations within the scope and duration of a multi-party research project in the public sector.

This framework identifies the responsibilities of key data management actors that handle, access, or oversee research data during the project period. The responsibilities outlined reflect good data governance practices across the data lifecycle as typically encountered in multi-institutional research collaborations.

### Usage and Scope

- This framework is **non-exhaustive** and is intended to serve as a **guiding reference**, rather than a prescriptive or definitive allocation of responsibilities.
- Participating institutes should use this framework to **identify, contextualise, and document relevant roles and responsibilities** for their specific collaboration, taking into account the nature of the project, data flows, and institutional arrangements.
- The framework is intended to inform and support the **formal documentation of roles and responsibilities**, including through project agreements or other governing documents for the research collaboration.
- Where appropriate, participating institutes may adapt, refine, or supplement the responsibilities set out below, provided that such arrangements remain consistent with the STEMPA-endorsed data ownership and governance principles.

The table below aims to support participating institutes to:

- Clearly establish and document roles within a collaboration;
- Align expectations on accountability and good data governance practices; and
- Support consistent assessment of responsibilities in the event of a data incident.

### Overarching Responsibilities

All institutions participating in STEMPA research projects have the following responsibilities:

1. Review data risks periodically for the stipulated data lifecycle.
2. Ensure that access to data is strictly restricted to authorised parties through appropriate access controls.

## Specific Responsibilities

Role/ Activities	Definition	Key Responsibilities	Non-Exhaustive Examples of Failures in Accountability in Data Incidence	Parties Performing Such Roles/Activities
<p><b>Data Contributor</b></p>	<p>Participating institute that supplies or shares data for the research project.</p>	<ul style="list-style-type: none"> <li>• Conduct lawful collection, generation, enhancement or obtaining and providing data through other means (e.g. in-licensing, or already having rights to existing data) of data for the research project</li> <li>• Obtain necessary approvals (including assessment of data classification and associated security requirements, risk assessment) for data sharing and transfer</li> <li>• Apply appropriate de-identification before transfer.</li> <li>• Maintain data quality and integrity.</li> <li>• Perform due diligence to ensure proper transference and checking credentials of recipient(s)</li> <li>• Provide data related requirements (to user/ custodian) to comply to</li> </ul>	<ul style="list-style-type: none"> <li>• Failure to de-identify prior to sharing.</li> <li>• Poor data transfer protocol without risk assessment</li> </ul>	<p><i>To be identified in Project Agreement</i></p>

<p><b>Data User</b></p>	<p>Participating institute accessing, receiving and/ or using data for approved research purposes.</p> <p>Link to activities in the Data Collaboration Dictionary (Chapter on Data Ownership): Participating institutes may be involved in the following data-related activities as part of the research:</p> <ul style="list-style-type: none"> <li>• Data analysis</li> <li>• Data enrichment</li> <li>• Data mining</li> <li>• Data generation by predictive modelling</li> <li>• Data merging/ integration</li> <li>• Data labelling/ tagging</li> <li>• Data conversion</li> <li>• Data cleaning</li> <li>• Data validation</li> <li>• Data sorting</li> <li>• Data deletion/ destruction</li> </ul>	<ul style="list-style-type: none"> <li>• Use data strictly for purposes stipulated in the Project Agreement (PA) / Research Collaboration Agreement (RCA).</li> <li>• Follow best practices and standardised protocols in handling data</li> <li>• Prevent onward sharing without written consent from the data owner(s).</li> <li>• Notify Data Contributor or Custodian promptly in case of breach or suspected misuse.</li> <li>• Ensure personnel accessing data have completed relevant data protection and ethics training.</li> <li>• Apply appropriate local security controls equivalent to those required by the contributor (e.g., encrypted storage, controlled access).</li> </ul>	<ul style="list-style-type: none"> <li>• Using data beyond agreed scope.</li> <li>• Sharing with third parties without approval.</li> <li>• Lack of comparable safeguards leading to data leakage.</li> </ul>	<p><i>To be identified in Project Agreement</i></p>
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<p><b>Data Custodian<sup>2</sup></b></p>	<p>Participating institute responsible for storing, securing, and providing controlled access to data, in particular, for datasets from multiple data contributors. Inclusive of providing tools for data analysis and other means of using data.</p> <p><i>Note: Data Custodian may or will likely also play the role of Data User in doing activities e.g. data cleaning, data deletions/ destruction, data merging, etc.</i></p>	<ul style="list-style-type: none"> <li>• Provide secure storage and encryption.</li> <li>• Manage user access rights according to requirements of Data Contributors and approved uses</li> <li>• Providing and qualifying tools/pipelines used for data analysis, etc</li> <li>• Maintain audit logs of data use.</li> <li>• Ensure compliance to data protection and management guidelines throughout data lifecycle, and ensure data integrity and quality during data sharing.</li> <li>• Notify Data Contributor promptly in case of breach or suspected misuse.</li> <li>• Ensure personnel accessing data have completed relevant data protection and ethics training.</li> <li>• Apply appropriate local security controls equivalent to those required by the contributor (e.g., encrypted storage, controlled access).</li> </ul>	<ul style="list-style-type: none"> <li>• Breach due to poor access control.</li> <li>• Loss of data due to inadequate backup.</li> <li>• Increasing data risk due to the lack of plan for data lifecycle.</li> <li>• IT system error or lack of cyber protection, even if it is vendor’s oversight.</li> </ul>	<p><i>To be identified in Project Agreement</i></p>
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# The STEMPA Manifesto


## Accelerating Research. Empowering Progress.

STEMPA is our commitment to making public sector research in Singapore faster, clearer, and more impactful.

Through standardised frameworks and strong support, STEMPA empowers teams to focus on what truly matters: solving real-world problems.

This is a collective step forward and we invite all partners to support and champion its implementation.

If you have any questions or need further clarification, please contact the STEMPA Secretariat.

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