



**MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION
SURUHANJAYA KOMUNIKASI DAN MULTIMEDIA MALAYSIA**

DIGITAL SOCIETY RESEARCH GRANT 2023

APPLICATION GUIDELINE CYCLE 2, AUGUST 2023

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DSRG

DIGITAL SOCIETY RESEARCH GRANT

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SECTION 1: ABOUT THE DIGITAL SOCIETY RESEARCH GRANT

1.1 Introduction

- 1.1.1. The Malaysian Communications and Multimedia Commission (MCMC) Digital Society Research Grant (DSRG) was conceived to contribute toward enhancing necessary information resources and in line with changing community expectations as we navigate the transition towards a sustainable digital civil society.
- 1.1.2. In meeting these aspirations, beyond the provisioning of infrastructure and communications services, there is a corresponding imperative that users possess the knowledge, skills and attitudes to harness the potential of digital media and communications effectively. Accordingly, digital media literacy has increasingly become a key competency for citizen and user participation across the economy and society in the twenty-first century. This requirement has become exceedingly clear in the wake of the pandemic, which has heightened our dependence on digital technologies.
- 1.1.3. An important consideration that underpins MCMC's initiatives has been to ensure that all Malaysians equally share the access and benefits of the Information Age. More than ever, coherent and intelligent insights are required to address inequitable opportunity, access, knowledge, and skill issues. The efforts must be directed at ensuring the readiness and resilience of communities as the nation strives to overcome the challenges wrought by a global pandemic.
- 1.1.4. The research outcomes should nonetheless align with National Policy Objectives to promote a civil society where information-based services will provide the basis of continuing enhancements to the quality of work and life post-pandemic, even as we manage the realities of life today.
- 1.1.5. In addressing the research gaps, research outcomes aim to support the strategies and initiatives under the various ongoing National Plans. These include the Malaysia Digital Economy Blueprint (MyDIGITAL), the National 4th Industrial Revolution (4IR) Policy, the Twelfth Malaysia Plan (RMK-12) and the Malaysian Budget of 2023.

1.2 Objective

1.2.1. This grant aims to grow the evidence base necessary for the nation to optimise the advancements made in communications infrastructure and service deployment. This base will assist the development of policy, programmes, and interventions to promote the inclusion and participation of all population segments as the nation transitions towards being a fully digitally connected and informed society.

1.3 Frequency

1.3.1. For 2023, two (2) cycles of Call for Proposals (CFP) were planned, where the first cycle was issued on 1 March 2023 and the second cycle was issued on 1 August 2023, respectively.

1.4 Research Focus Areas

1.4.1. The research proposals are guided by the following two (2) Focus Areas:

- i. Digital Citizenship & Cyberwellness (DCC): Aims to elicit research clarifying regulatory and developmental gap areas influencing participation, positive uptake and wellness in an increasingly digitally dependent world; and
- ii. Digital Inclusion (DI): Seeks to clarify regulatory and developmental gaps in areas related to factors that impede equality of access and challenge the paradigm of ensuring that no one is left behind or is deprived of digital connectivity and its benefits.

Table 1 – Framework for DSRG Research Focus Areas

DSRG Research Focus Areas	
<p>Digital Citizenship and Cyberwellness (DCC)</p> <p style="text-align: center;"><u>Sub Focus Area</u></p> <ul style="list-style-type: none"> i. Competencies and literacies ii. Risks and potential harm iii. User rights and protection iv. Consumer experience and protection v. Awareness and self-regulation vi. Adoption vii. Interventions viii. Programme evaluation, assessment, and impact ix. Policy and regulatory implications x. Validation and improvement xi. Communication strategies 	<p>Digital Inclusion (DI)</p> <p style="text-align: center;"><u>Sub Focus Area</u></p> <ul style="list-style-type: none"> i. Empowering productive use of services for "at-risk and excluded groups" ii. Access to health and assisted living services iii. Adoption iv. Interventions v. Programme evaluation, assessment, and impact vi. Policy and regulatory implications vii. Validation and improvement viii. Communication strategies

1.4.2. For DSRG 2023 Cycle 2, interested researchers are invited to submit project proposals on one of the ten (10) research titles below:

Table 2 - List of Guided Research within the Digital Citizenship and Cyberwellness (DCC) and Digital Inclusion (DI) Categories

No.	Code	Research Title	Research Category and Gap/Developmental Area
1.	DCC-1	A Comparison of Consumers' Awareness, Perception, Intention and Participation of E-Waste Recycling Amongst Rural and Urban Malaysian Users	The research falls within the Guided Research Category. It addresses the gap areas pertaining to adopting e-waste recycling and other sustainable usage practices.
2.	DCC-2	Enhancing Digital Media and Information Literacy in Malaysia: A Framework and Roadmap for <i>Klik Dengan Bijak</i> Initiative	The research falls within the Guided Research Category. It addresses the gap area pertaining to competencies and literacies in digital media and information literacy, focusing on developing a framework and roadmap for the KDB initiative.

No.	Code	Research Title	Research Category and Gap/Developmental Area
3.	DI-1	Free-To-Air Channel: Uses, Motivation and Gratifications of Users in the Northern Region of Peninsular Malaysia	The research falls within the Guided Research Category. It addresses the gap areas pertaining to the state of adoption of Free-To-Air (FTA) television platforms and channels amongst Malaysian users located throughout the northern region of Peninsular Malaysia.
4.	DI-2	Feasibility of Resource Sharing in Courier Industry – An East Malaysia Outlook	The research falls within the Guided Research Category. It addresses the gap area pertaining to resource-sharing model among postal and courier operators in Sabah and Sarawak.
5.	DI-3	Assessment of Primary Healthcare Accessibility in Rural Areas	The research falls within the Guided Research Category. It addresses the gap areas pertaining to Primary Healthcare (PHC) provision in rural areas lacking geo-addresses in Malaysia.
6.	DI-4	Big Data in the Telecommunications Sector in Malaysia: Leveraging Geospatial Data for Optimisation and Decision-Making	The research falls within the Guided Research Category. It addresses the gap areas pertaining to the validation and improvement of geospatial data utilisation for network performance, coverage, and resource allocation in the telecommunications sector in Malaysia.
7.	DI-5	Enhancing Malaysia's Postcode System: A Geospatial Solution for Improved Precision and Efficiency	The research falls within the Guided Research Category. It addresses the gap area pertaining to how geospatial solutions can play a role in increasing the accuracy of postcodes in Malaysian addresses.
8.	DI-6	A Study on the Demand for Mobile Services in Sparsely Connected Remote Areas Across Malaysia	The research falls within the Guided Research Category. It addresses the gap areas pertaining to the demand for mobile services and Internet in rural areas and the communities' spending power for connectivity services.

No.	Code	Research Title	Research Category and Gap/Developmental Area
9.	DI-7	Exploring the Impact of Artificial Intelligence Adoption in the Communications and Multimedia Industry	The research falls within the Guided Research Category. It addresses the gap areas pertaining to the adoption of AI and its impact on the C&M industry (telecommunications, broadcasting, postal and courier sectors).
10.	DI-8	Factors Promoting and Hindering the Implementation of Pick-Up and Drop-Off Services Related to Courier Services Deployed at <i>Pusat Ekonomi Digital</i> in Sabah	The research falls within the Guided Research Category. It addresses the gap area pertaining to the adoption and deployment of innovative courier services via MCMC's PEDis in supporting e-commerce services.

1.4.3. The above research titles are categorised as Guided Research, where the predetermined Research Objectives (ROs) are to be achieved with researchers expected to propose a research design incorporating suitable theoretical or conceptual frameworks, development of research questions, research instruments and methodology.

1.4.4. For further information on the gap area, targeted research subjects, research problem and context, and desired research aims and objectives, please refer to **Appendix 1**.

1.5 Duration of Project

1.5.1. The term of a project is up to nine (9) months, including six (6) months of research activities until the submission of the research report at the end of the sixth month. The flow of the six (6) month project period can be referred to in Figure 2 in Section 3.

1.5.2. All research must commence within two (2) weeks of signing the Letter of Award (LOA) and stamping¹ the same. The project shall be completed according to the duration and deadlines stipulated in the LOA. Applicants shall indicate the project duration in the proposal, including each phase of work.

1.6 Grant Amount

1.6.1. The grant amount shall depend on the type and scope of the research project and subject to the guidelines herein and may be of a sum of up to Ringgit Malaysia ten thousand (RM10,000).

1.7 Matching Grant/Additional Fund

1.7.1 Researchers can source matching grants/additional funds from their universities or other funding bodies for the expenses not covered by DSRG or as additional funding for their projects.

¹ Stamping will be performed by MCMC.

SECTION 2: APPLICATION PROCESS AND PROCEDURES

2.1 Eligibility Criteria

2.1.1. The grant is open to a full-time academic faculty member in schools of communications, social sciences, humanities or related fields of private and public institutions of higher learning (IHLs). Each proposal must have a Lead Researcher, subjected to the general terms and conditions for granting.

2.1.2. The following rules apply to the applicant:

- i. Lead Researcher must hold a doctoral degree;
- ii. Lead Researcher must have an appointment with a local IHL for (at least) the duration of the proposed research project;
- iii. The salary of the researcher(s) cannot be financed from this grant;
- iv. The researcher(s) may request the grant on her/his behalf and on behalf of any possible project consortium; and
- v. The researcher(s) is responsible for research and financial matters.

2.1.3. Researcher(s) can only submit one (1) proposal as the Lead Researcher within this call, and each researcher can act no more than twice as an applicant (as Lead Researcher or co-researcher).

2.1.4. The research team must comprise at least two (2) researchers (a Lead Researcher and a co-researcher). Researcher(s) in professions other than academia are allowed to be part of the research team to complement the expertise and with the expectation that the product of the research will contribute to the broader body of knowledge on the topic specified.

2.2 Research Proposal

2.2.1 The form is available for download in the MCMC website.

2.2.2 The research proposal must also consider and include a contingency plan for disruptions to mitigate such risks. Any requests for extension of project deadlines are discouraged, and all reasonable attempts must be made to preserve the timely completion of deliverables.

2.3 Expenditure Details

2.3.1. Remuneration and Allowances

The wages and allowance are only for temporary and contract personnel directly engaged in the project. The period of employment and hourly/monthly rate for the research assistant(s) must be clearly stated and justified.

2.3.2. Travel and Transportation

Only travel expenses (domestic) directly related to the project are claimable.

2.3.3. Rental

Only rental expenses for building space, equipment, transportation and any other item(s) directly related to the project are claimable.

2.3.4. Research materials and supplies

Only extends to expenses for research materials and supplies directly related to the project, such as books, magazines, computer software, photocopying, printing, binding, filming, consumables (stationeries, etc.), charges from postage, telephone, fax and other expenses necessary to complete the project. The purchase of mobile phones is not claimable.

2.3.5. University Management Fees

Payment made to Lead Researcher's IHL to conduct this research (if required).

2.3.6. Special Services

Translation, license for Grammarly², incentives for data collection, data gathering and processing costs are claimable.

2.3.7. Proofreading and editorial services

Payment made specifically for qualified proofreading services for the research report and project manuscript. This expenditure is not to be used as payment to research members.

2.3.8. Conference

Specifically, to defray conference costs for the Lead Researcher to acquire related knowledge on research or disseminate research findings. Limited to not more than ten (10) percent of the total grant amount or maximum RM1,000, whichever is lower.

² Please note that license from Grammarly is renewable on a yearly basis. The disbursement from the grant can be only used for the license procured during the six (6) months of research activities.

2.3.9. *Publication*

Specifically, to defray costs for publications in relevant academic, indexed and/or peer-reviewed journals. It is limited to not more than RM2,000.

2.4 **Proposal Submission**

2.4.1. The RMC-verified proposal(s) may be submitted in English or Malay and shall be presented clearly and submitted together with the following:

- i. Curriculum vitae of the Lead Researcher and team member(s) involved;
- ii. Certified true copies of the highest academic certificates; and
- iii. Other relevant materials to support the proposal.

2.4.2. The electronic copy of the proposal and other documents should be emailed to the Secretariat with '**DSRG 2023/2 SUBMISSION**' in the subject line and addressed to dsrg@mcmc.gov.my **no later than 5:00 pm, Thursday, 31 August 2023.**

2.4.3. An acknowledgement receipt will be sent once the Secretariat has received the proposal. Those who have submitted the proposals and have NOT received an email confirmation within a week should contact the Secretariat.

2.4.4. All applicants are advised to adhere to the stipulated requirements. Submissions that do not follow the criteria will risk being disqualified from consideration. **Submissions received after the deadline will not be considered.**

2.5 **Evaluation of Proposals**

2.5.1. The proposals will be evaluated by the DSRG Technical Panel based on open competition and merit and taking into consideration the following criteria:

- i. *Quality*: Rationale and justification are presented coherently and logically within the research focus and key growth areas. Ethical considerations have also been identified and addressed;
- ii. *Impact of research*: The research problem analysis identified an opportunity to contribute to implementing or evolving one or more MCMC policies or initiatives. The proposed study is also

potentially significant for offering new insights into the subject area and other relevant sectors;

- iii. *Alignment to internal requirement:* The need and relevancy of the research in contributing towards departmental specific works and potentially provides valuable and relevant data for the knowledge base;
- iv. *Suitability of applicant:* The degree to which the researchers have the experience, expertise, skills and knowledge in the proposed area of research and with the proposed methodology to accomplish the stated aims of the project; and
- v. *Feasibility:* The appropriateness of the proposed activities, methods, planned activities and resources to accomplish the project within the timeframe stated. The proposal also identifies the project's challenges and measures to overcome those challenges.

2.5.2. The Lead Researcher may be invited to present their proposal to the Technical Panel as part of the evaluation process.

2.6 Award/Rejection of Proposals

2.6.1. The various factors contributing to the poor suitability of submitted proposals include the following aspects:

- i. Researcher(s) do not understand MCMC's role and functions, thereby submitting proposals outside of MCMC's regulative scope or too remote in impacting key regulatory partners or stakeholders;
- ii. The proposed research is based on the study of research questions with existing high research work and publications and does not provide new insights, value or new knowledge;
- iii. Research scope may not be feasible given the grant amount and limited duration allowed for under the DSRG;
- iv. Researchers' expertise does not match the research field of the proposal and/or lacks past research experience in the proposed area of study;
- v. The literature review and theoretical and/or conceptual frameworks underpinning a proposed study were not included; and
- vi. Submissions were of non-research proposals, such as the prototype or application development.

2.6.2. The Technical Panel reserves the right to consider any other factors it may deem relevant in the evaluation process. The Technical Panel also reserves the right to reject proposals that do not meet the submission and evaluation criteria.

2.6.3. Successful applicants will be informed via email. The Technical Panel may suggest changes to the proposals, including cost/funding, scope, and research timelines. The successful applicant must sign the Letter of Award (LOA) and re-submit it to the Secretariat to indicate the acceptance of the grant and the terms and conditions thereof.

2.7 Submission, Evaluation and Award Process Timeframe

2.7.1. An overview of the DSRG 2023, Cycle 2 timeframe is as tabulated below:

Table 3 – DSRG 2023, Cycle 2 Timeframe

No.	Process	Tentative Date*
i.	Issuance of Call for Proposal	1 August 2023
ii.	Deadline for submissions	5:00 pm, 31 August 2023
iii.	Information session with researchers	The second week of August 2023
iv.	Evaluation process	The first week of September 2023 – The second week of October 2023
v.	Notification period	Third week of October 2023
vi.	Execution of LOA	Fourth week of October 2023
vii.	Project commencement	The first week of November 2023

**Timeline may be affected by public holidays in September 2023 and October 2023*

2.7.2. Figure 1 below shows the flowchart for the submission, evaluation and award process of DSRG.

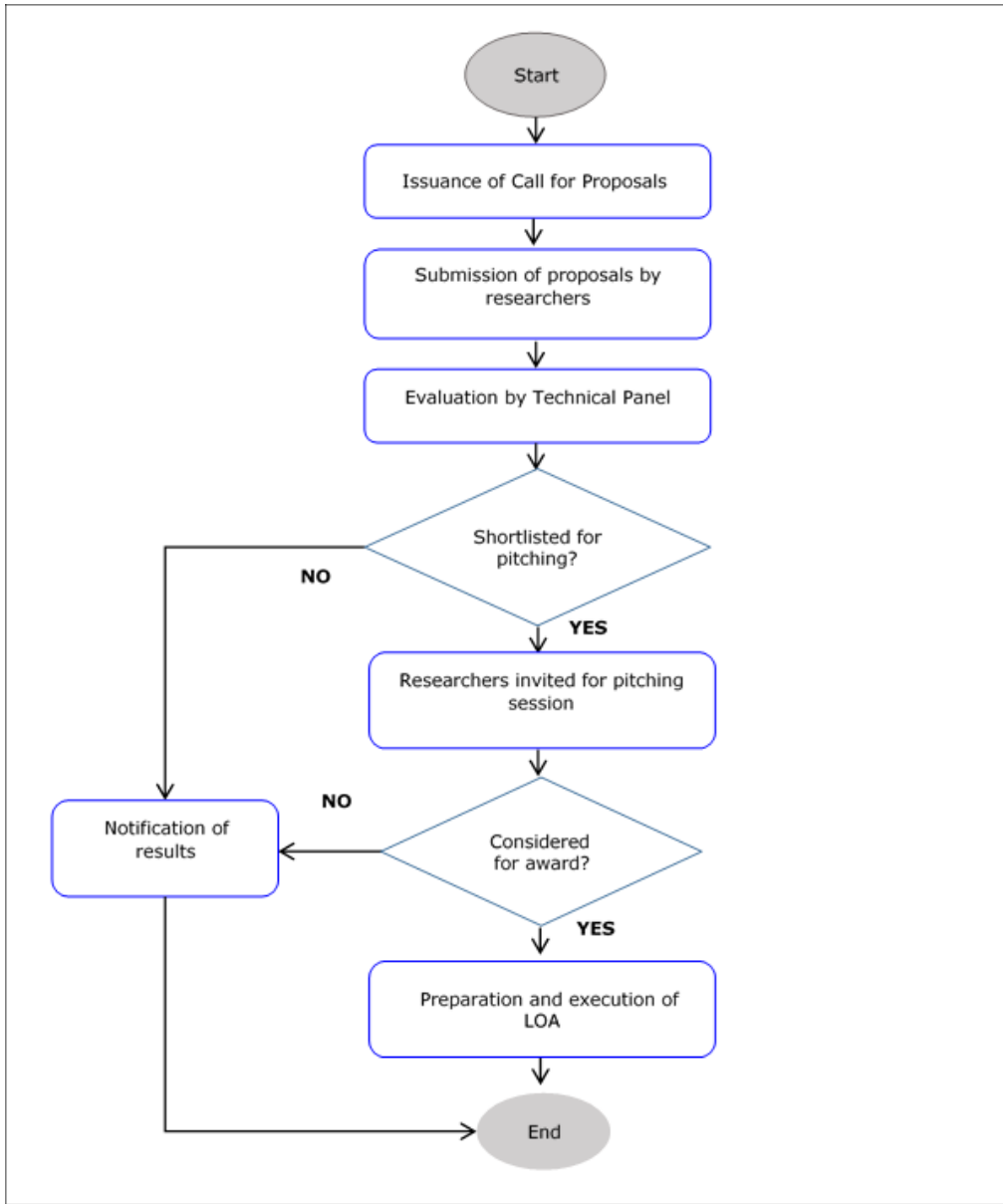


Figure 1 – Process Flow Chart for Submission, Evaluation and Award of DSRG

SECTION 3: PROJECT IMPLEMENTATION AND MONITORING

3.1 Disbursement of Funds

3.1.1. The grant will be disbursed according to the following schedule:

Table 4 – Grant Disbursement Schedule

No.	Disbursement phase	Description	Quantum (%)
i.	First disbursement	Upon proper execution and stamping of the LOA ³	50
ii.	Second disbursement	Upon submission of the verified Interim Report, subject to the satisfaction of the Commission <i>(disbursement subject to Researcher's request)</i>	40
iii.	Final disbursement	Upon submission of the verified Research Report and no later than one (1) month after the completion of research activities, subject to the satisfaction of the Commission <i>(disbursement subject to Researcher's request)</i>	10

3.2 Submission of Reports and Project Manuscript

3.2.1 Interim Report (IR)

- i. The Lead Researcher is responsible for successfully implementing the project according to agreed timelines and for the timely submission of the IR. It is required for the IR to be submitted promptly (not more than 7 days) upon achieving 50% of project completion;
- ii. The IR is to be submitted together with the financial status update as per the templates provided by the Secretariat; and
- iii. The reports will be evaluated against the deliverables to determine whether the project is on track and whether the conditions for disbursement are met.

3.2.2 Research Report (RR)

- i. The RR must be submitted within seven (7) days after research activities are completed (by the end of the 6th month) as per the templates provided by the Secretariat. The RR shall include (but is not limited to) the following:

³ Stamping will be performed by MCMC.

- Abstract;
- Introduction;
- Research Objectives (ROs);
- Literature Review;
- Methodology;
- Findings;
- Direct outputs of the research;
- Achievements based on the original ROs;
- Implications and recommendations for regulatory and policy considerations; and
- Recommendations for future research.

3.2.3 Project Manuscript⁴

- i. The project manuscript will be published in MCMC's research publication known as Media Matters;
- ii. The project manuscript is required to be submitted as per the templates provided by the Secretariat after the RR is approved;
- iii. Researchers who have conducted the research and submitted the reports in Malay shall translate and submit the project manuscript in English.

3.2.4 Financial Report (FR)

- i. The FR is to be submitted within three (3) months after the research completion date and submission of RR, with a verified financial statement from the IHL, as per the templates provided by the Secretariat.

3.3 Dissemination of Findings

3.3.1 The MCMC may elect to publish and distribute all or portions of the research report and/or project manuscript without restriction.

3.3.2 The researcher(s) will be invited to present their findings at MCMC meetings/seminars/symposiums. They may be invited to participate in media engagement activities arranged by MCMC as a spokesperson for the research project.

⁴ The project manuscript is an abridged version of the Final Research Report which will be published as part of MCMC's Media Matters.

3.4 Project Closure Notification

3.4.1 An acknowledgement receipt of project closure will be sent to the Lead Researcher once the requirement for proper project closure and conditions, such as satisfactory submissions of reports and financial statements, are met.

3.5 Project Implementation and Monitoring Process Flow

3.5.1 An overview of the project implementation and monitoring process is provided in Figure 2 below:

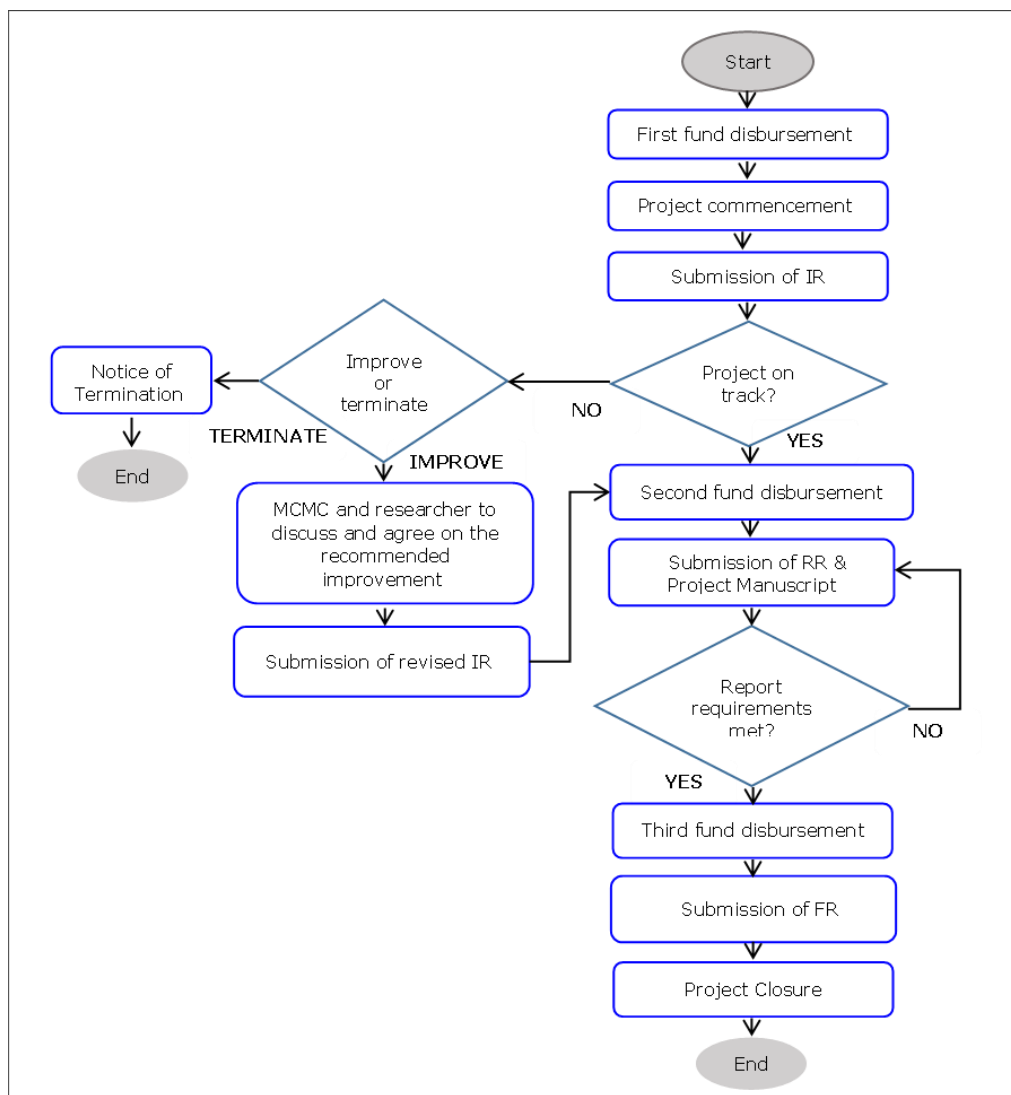


Figure 2 - Process Flow Chart for Project Implementation and Monitoring

SECTION 4: INTELLECTUAL PROPERTY

4.1 Intellectual Property (IP)

4.1.1 Ownership and management of IP, royalties and any other fees received by the institution resulting from the findings or outputs of the research, such as licensing of the IP or any other forms of commercialisation, shall be governed per the agreed terms and conditions outlined in the LOA.

4.2 Publishing Rights

4.2.1 The MCMC is entitled to publish the research reports in any form deemed fit for education or knowledge transfer. Notwithstanding, the Lead Researcher is required to contribute through publishing and presenting research findings in local or international events/media, subject to the prior approval of the MCMC. Copies of all publications are to be submitted to the Secretariat.

4.2.2 The Lead Researcher shall denote and acknowledge the source of research funding and support for the project and the contribution of the various entities.

-End of the Document-

**APPENDIX 1:
DSRG 2023 CYCLE 2 RESEARCH TITLES**

Framework for DSRG Research Focus Areas

FOCUS AREA 1: DIGITAL CITIZENSHIP AND CYBERWELLNESS (DCC)

Sub Focus Area:

- i. Competencies and literacies
- ii. Risks and potential harm
- iii. User rights and protection
- iv. Consumer experience and protection
- v. Awareness and self-regulation
- vi. Adoption
- vii. Interventions
- viii. Programme evaluation, assessment, and impact
- ix. Policy and regulatory implications
- x. Validation and improvement
- xi. Communication strategies

FOCUS AREA 2: DIGITAL INCLUSION (DI)

Sub Focus Area:

- i. Empowering productive use of services for "at risk and excluded groups"
- ii. Access to health and assisted living services
- iii. Adoption
- iv. Interventions
- v. Programme evaluation, assessment, and impact
- vi. Policy and regulatory implications
- vii. Validation and improvement
- viii. Communication strategies

List of Guided Research within the Digital Citizenship and Cyberwellness (DCC) and Digital Inclusion (DI) Category

No.	Code	Research Title	Research Category and Gap/Developmental Area
1.	DCC-1	A Comparison of Consumers' Awareness, Perception, Intention and Participation of E-Waste Recycling Amongst Rural and Urban Malaysian Users	The research falls within the Guided Research Category. It addresses the gap areas pertaining to adopting e-waste recycling and other sustainable usage practices.
2.	DCC-2	Enhancing Digital Media and Information Literacy in Malaysia: A Framework and Roadmap for <i>Klik Dengan Bijak</i> Initiative	The research falls within the Guided Research Category. It addresses the gap area pertaining to competencies and literacies in digital media and information literacy, focusing on developing a framework and roadmap for the KDB initiative.
3.	DI-1	Free-To-Air Channel: Uses, Motivation and Gratifications of Users in the Northern Region of Peninsular Malaysia	The research falls within the Guided Research Category. It addresses the gap areas pertaining to the state of adoption of Free-To-Air (FTA) television platforms and channels amongst Malaysian users located throughout the northern region of Peninsular Malaysia.
4.	DI-2	Feasibility of Resource Sharing in Courier Industry – An East Malaysia Outlook	The research falls within the Guided Research Category. It addresses the gap area pertaining to resource-sharing model among postal and courier operators in Sabah and Sarawak.
5.	DI-3	Assessment of Primary Healthcare Accessibility in Rural Areas	The research falls within the Guided Research Category. It addresses the gap areas pertaining to Primary Healthcare (PHC) provision in rural areas lacking geo-addresses in Malaysia.

No.	Code	Research Title	Research Category and Gap/Developmental Area
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7.	DI-5	Enhancing Malaysia's Postcode System: A Geospatial Solution for Improved Precision and Efficiency	The research falls within the Guided Research Category. It addresses the gap area pertaining to how geospatial solutions can play a role in increasing the accuracy of postcodes in Malaysian addresses.
8.	DI-6	A Study on the Demand for Mobile Services in Sparsely Connected Remote Areas Across Malaysia	The research falls within the Guided Research Category. It addresses the gap areas pertaining to the demand for mobile services and Internet in rural areas and the communities' spending power for connectivity services.
9.	DI-7	Exploring the Impact of Artificial Intelligence Adoption in the Communications and Multimedia Industry	The research falls within the Guided Research Category. It addresses the gap areas pertaining to the adoption of AI and its impact on the C&M industry (telecommunications, broadcasting, postal and courier sectors).
10.	DI-8	Factors Promoting and Hindering the Implementation of Pick-Up and Drop-Off Services Related to Courier Services Deployed at <i>Pusat Ekonomi Digital</i> in Sabah	The research falls within the Guided Research Category. It addresses the gap area pertaining to the adoption and deployment of innovative courier services via MCMC's PEDis in supporting e-commerce services.

DCC-1 – A Comparison of Consumers' Awareness, Perception, Intention and Participation of E-Waste Recycling Amongst Rural and Urban Malaysian Users

- A. Research Area: Adoption of sustainable communications technology usage amongst Malaysian users
- B. Focus Area: Consumer awareness, perception and adoption of sustainable e-waste recycling practices
- C. Research Sponsor: Technology Development Department, Technology and Standards Division
- D. Contact person for queries on this research area:
Encik Mohd Shamsul Izuan bin Che Musa, Assistant Director, Technology Development Department, shamsul.musa@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap areas pertaining to adopting e-waste recycling and other sustainable usage practices.
- F. The research targets the following two categories of communications device users:
 - a. Urban users located nationwide; and
 - b. Rural users located nationwide.

Research Problem/Context

Since the introduction of mobile broadband technology in 2009, the use of smartphones and mobile devices continues to rise; in 2010, only 14% of total mobile phone users used smartphones⁵ ⁶ compared to 94.8% in 2021. Typically, a smartphone or any other mobile device has a lifespan of two to three years before it requires replacement due to physical damage, lack of security and software updates, and outdated hardware⁷. Once the devices are no longer used, most users would either keep their old devices or dispose of them with other

⁵ MCMC Handphone Users Survey 2010, p. 19 accessed on 5 July 2023 at <https://www.skmm.gov.my/skmmgovmy/files/attachments/HPUS%202010.pdf>

⁶ Smartphone definition - a mobile handset with a touchscreen display that is used as the person's primary phone device, but enables access to advanced Internet-based services and performs many of the functions of a computer, including having an operating system capable of downloading and running applications, also those created by third-party developers. ITU Expert Group on Household Indicators (EGH) Background Document 3 Proposal for a definition of Smartphone, 2 Sept 2017 accessed on 5 July 2023 at <https://www.itu.int/en/ITU-D/Statistics/Documents/events/egh2017/EGH%202017%20background%20document%203%20-%20Definition%20of%20smartphone.pdf>

⁷ How Long Does a Smartphone Last? [2023] Simo Elalj, CEO of RefurbMe, 28 Mar, 2023 accessed on 5 July 2023 at <https://www.refurb.me/blog/how-long-does-a-smartphone-last-replacement-cycle>

ordinary household waste. As materials used in smartphones, such as lead, cadmium and mercury, cannot decompose naturally and are hazardous to health and the environment, it is important to ensure that mobile devices are properly disposed of when no longer in use.

KITAR: *Peranti Lama, Nafas Baharu* (previously known as "Mobile e-Waste: Old Phone, New Life") is an initiative by MCMC that was initially launched on August 2015 and was re-launched as KITAR on November 2022. KITAR is MCMC's response to ITU's Resolution 79 adopted at the World Telecommunication Standardization Assembly (WTSA 12) on e-Waste management, as well as a complement to the Department of Environment's (DOE) initiatives concerning household e-waste management in Malaysia. KITAR's main objective is to advocate the importance of environmentally safe disposal and recycling of end-of-life (EOL) mobile devices.

Research Aims

The research is expected to build upon the insights on MCMC's E-Waste Management Initiative reported in MCMC's Hand Phone Users Survey 2021⁸. The current study will examine consumers' awareness, perception, intention and participation in general e-waste recycling practices, specifically via KITAR recycling bins at Pusat Ekonomi Digital (*PEDi*) across Malaysia. The findings of the study will be used as feedback and input to strengthen the KITAR programme in the future.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 – To analyse the awareness and perception level of Malaysian urban and rural users on mobile e-waste recycling;
- ii. RO 2 – To analyse the intention and motivation of Malaysian urban and rural users on using mobile e-waste recycling;
- iii. RO 3 – To explore the methods, platforms and practices of the Malaysian urban and rural users on mobile e-waste recycling generally and via the KITAR programme; and
- iv. RO 4 – To provide recommendations on improving awareness and participation in mobile e-waste recycling amongst Malaysian users.

⁸ MCMC Handphone Users Survey 2021 (HPUS 2021) 4 July 2022, accessed on 7 July 2023 at <https://www.mcmc.gov.my/skmmgovmy/media/General/pdf2/FULL-REPORT-HPUS-2021.pdf>

DCC-2 – Enhancing Digital Media and Information Literacy in Malaysia: A Framework and Roadmap for *Klik Dengan Bijak* Initiative

- A. Research Area: Internet safety and educational initiatives
- B. Focus Area: Developing a digital media and information literacy framework and roadmap for the *Klik Dengan Bijak* (KDB) initiative.
- C. Research Sponsor: Community Programme Department, Community Development and Management Division
- D. Contact person for queries on this research area:
Puan Saidatul Ashikin Abu Hassan, Director II, Community Programme Department, saidatul.abuhassan@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap area pertaining to competencies and literacies in digital media and information literacy, focusing on developing a framework and roadmap for the KDB initiative.
- F. The research targets the following groups:
 - i. Internet users of all age groups in Malaysia; and
 - ii. KDB implementers;
 - iii. Policy makers; and
 - iv. Researchers

Research Problem/Context

Since 2012, MCMC has been actively creating awareness and educating the public about Internet safety and managing risks and threats online through its *Klik Dengan Bijak* (KDB) initiative.

KDB has reached more than 8 million audiences over the years through various programmes, activities, and social media content. Despite its decade-long nationwide implementation at the federal, state, and community levels by the assigned KDB implementers, the initiative currently lacks a well-defined framework and roadmap that serves as a strong foundation to guide its implementation effectively.

While KDB operates proactively to protect Internet users from online risks and threats, the content has been reactive in nature. In order to remain relevant and impactful, MCMC recognises the need to develop a framework that could help to equip Internet users with essential knowledge and skills. This framework will focus on fostering information literacy skills that empower individuals to effectively

source, verify, analyse, and utilise information for their own benefit and the benefit of their communities. These information literacy skills are vital for safeguarding individuals across various types of online and offline risks and threats.

Research Aims

The research aims to contribute to the development of a new digital media and information literacy framework and a roadmap for KDB in Malaysia that will serve as a beacon for its implementation in educating Internet users of all age groups in Malaysia to use the Internet positively, productively, and responsibly while reducing risky online behaviours.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 – To provide the current overview of Malaysia's media/digital media and information literacy landscape, and analysis using appropriate tools including the SWOT analysis;
- ii. RO 2 – To conduct a comparative study of at least three (3) frameworks and roadmaps of digital media and information literacy initiatives implementation strategies at local and international levels;
- iii. RO 3 – To propose a framework for Malaysia's digital media and information literacy national initiative; and
- iv. RO 4 - To propose a 5-year national initiative strategic implementation roadmap including recommendations on relevant stakeholders and strategic collaborations.

DI-1 – Free-To-Air Channel: Uses, Motivation and Gratifications of Users in the Northern Region of Peninsular Malaysia

- A. Research Area: Addressing the Digital Divide by delivering inclusive digital services.
- B. Focus Area: Indicator of acceptance and adoption of digital television technology within the Northern region of Peninsular Malaysia.
- C. Research Sponsor: Broadcasting Industry Development Department, Digital Ecosystem Development Division
- D. Contact person for queries on this research area:
Encik Tham Yoong Cheong, Director II, Broadcasting Industry Development Department, yctham@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap areas pertaining to the state of adoption of Free-To-Air (FTA) television platforms and channels amongst Malaysian users located throughout the Northern region of Peninsular Malaysia.
- F. The research targets the following FTA users located in the Northern region of Peninsular Malaysia:
 - i. FTA users in Perlis;
 - ii. FTA users in Kedah;
 - iii. FTA users in Penang;
 - iv. FTA users in Perak; and
 - v. Small Medium Enterprises in the Northern region (to provide input on regional content and advertisement on FTA TV at an affordable price).

Research Problem/Context

In line with Malaysia's National Digitalisation Broadcasting Project, MCMC completed the Analogue Switch Off (ASO) of terrestrial FTA broadcasts on 31 October 2019, with all Malaysian television broadcasts switched to digital TV (DTV) using the DVBT-2 digital format. The switch to DTV is accompanied by various benefits, including superior image resolution, enhanced audio quality, HD television, and the potential for interactive services. Additionally, DTV offers a broader range of channels compared to analogue terrestrial TV, enabling the delivery of targeted regional content through regional broadcasts.

MCMC would like to attain information on FTA TV viewership on digital TV platforms to gauge the connectivity of digital TV among the audience and to narrow the country's digital divide amongst urban and remote areas, allowing equal access to

information with TV broadcasting services. Previously, MCMC had researched television users, motivation and gratifications of users in Sabah in 2021, followed by Sarawak and East Coast regions in 2023. MCMC also has access to data on television audience management metrics provided by a third-party research company but limited to certain parts of Peninsular Malaysia. As such, expanding the research to the Northern region is necessary.

This study will focus on the Northern region and is expected to identify and investigate the motivational factors driving audiences to access digital TV. MCMC and the industry can better understand broadcasting development and content provision by understanding content preferences and viewer behaviour in this area. This study will serve as a valuable reference for regional broadcasting trials or the creation of targeted content by region.

Research Aims

The research is expected to explore and investigate the issues, capture the main features of FTA channels' viewers, and provide a market context and perspective. The outcome should facilitate a better understanding of consumption patterns and motivations behind using FTA channels in the Northern region of Peninsular Malaysia. In relation to the potential provisioning of specific regional content, the research findings are also expected to gauge the audiences' preference for targeted content by region.

The research results will provide inputs on the following:

- i. Audience preference on FTA TV broadcasting services;
- ii. FTA contents according to the audience preference;
- iii. User experience and perception of DTV connectivity; and
- iv. User spending behaviours of disposable income in relation to television advertising.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs) and research questions (RQs):

- i. RO 1 – To identify the usage pattern of FTA TV among the audience in the Northern region;
 - *RQ 1 – To understand the factors contributing to Set-Top-Box (STB) ownership and usage.*
 - *RQ 2 – To identify the motivational factors of FTA TV users.*
 - *RQ 3 – To understand the receptivity and acceptance of FTA TV users to regional programmes/local dialect/local-specific content.*

- ii. RO 2 – To identify the gratification level of FTA TV among audiences in the Northern region;
 - *RQ 1 – To understand user preferences and appreciation towards having Northern local dialect/local-specific content on FTA TV.*
- iii. RO 3 – To identify the demographic profile of the audience and content preference; and
 - *RQ 1 – To examine the relationship between usage patterns, motivational factors, and gratification level of FTA TV.*
 - *RQ 2 – To examine FTA TV user spending patterns with respect to their disposable income.*
 - *RQ 3 – To examine FTA TV user spending patterns in relation to advertising on different types of FTA TV channels (i.e. national vs regional content).*
- iv. RO 4 – To provide general recommendations to promote FTA TV viewership and positive responses to content and advertising amongst users.

DI-2 – Feasibility of Resource Sharing in Courier Industry – An East Malaysia Outlook

- A. Research Area: Malaysian postal, courier, and delivery industry and *Posmen Komuniti* programme
- B. Focus Area: Resource sharing models that cut across all delivery and logistics management activities, and the postal and courier industry in Sabah and Sarawak
- C. Research Sponsor: Central Monitoring Office 2, Central Monitoring Division
- D. Contact persons for queries on this research area:
 - i. Ahmad Faishal Hadi Che A Latif, Head, Central Monitoring Office 2, faishal.latif@mcmc.gov.my
 - ii. Muhammad Ashraf Zulkapli, Director, Central Monitoring Office 2, mdashraf.zulkapli@mcmc.gov.my
 - iii. Nur Ellina Ishak, Deputy Director, Central Monitoring Office 2, ellina.ishak@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap area pertaining to the resource-sharing model among postal and courier operators in Sabah and Sarawak.
- F. The research targets courier service providers, logistics and supply chain experts, and consumers who have benefitted from the *Posmen Komuniti* programme.

Research Problem/Context

Pelan Accelerator Kurier Negara (PAKEJ) is a five (5) year plan (2021 – 2025) that aims to provide wider coverage, access and greater flexibility to users; enhance the quality of service to provide a seamless customer experience; and support the projected e – commerce industry growth. Pillar 1 of PAKEJ lists “Asset Sharing and Collaboration with *Posmen Komuniti*” as one of its initiatives to achieve industry sustainability.

In 2010, MCMC collaborated with Pos Malaysia Berhad to introduce *Posmen Komuniti*, a programme under the Postal Transformation Plan in Sabah and Sarawak. A *Posmen Komuniti* plays the role as a last-mile delivery for remote areas; he or she picks up letters and parcels in a post office in the nearest township and delivers them to the recipients residing in their village.

Through PAKEJ, MCMC envisioned that collaboration between *Posmen Komuniti* and other courier companies could contribute towards improved quality of service, reachability, and sustainability of courier operators who provide services in rural areas of Sabah and Sarawak. Currently, *Posmen Komuniti* only delivers mail and parcel for Pos Malaysia Berhad. Although there is an opportunity to leverage on the services provided by *Posmen Komuniti* on a resource-sharing basis, there are no uptakes from other courier operators due to conditions/requirements imposed by Pos Malaysia Berhad. We are of the view that the right resource-sharing model for the courier industry has not been explored and therefore translates into high operating costs in rural areas.

Research Aims

The research aims to better understand the feasibility of resource sharing and its barriers and opportunities towards improving the quality of service and reachability of courier service in Sabah and Sarawak.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 - To provide a comparison study between courier industry resource-sharing models in other countries;
- ii. RO2 - To study the impact and benefits of resource sharing between multiple courier operators;
- iii. RO3 - To recommend approaches in promoting resource sharing among multiple courier operators; and
- iv. RO4 - To recommend suitable resource-sharing models for the courier industry in Malaysia.

DI-3 – Assessment of Primary Healthcare Accessibility in Rural Areas

- A. Research Area: Assessment of challenges in providing primary healthcare (PHC), especially in locating emergency cases occurring in rural areas in Malaysia that lack geo-addresses.
- B. Focus Area: Geo-addresses, Primary Healthcare (PHC), rural population in Malaysia, Impact Network Analysis (INA), Geographical Information System (GIS) and strategies in delivering effective addressing system.
- C. Research Sponsor: Geospatial Application Services and Analytics Department, Geospatial and Data Management Division
- D. Contact person for queries on this research area:
Puan Siti Rafidah Ahmad Fuad, Head, Geospatial Application Services and Analytics Department, siti.rafidah@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap areas pertaining to PHC provision in rural areas lacking geo-addresses in Malaysia.
- F. The research targets the following groups:
 - i. PHC providers in Malaysia; and
 - ii. Rural populations in Malaysia.

Research Problem/Context

Primary healthcare (PHC) accessibility is a multifaceted and complex concept, dependent upon the characteristics of both the population in need of services and the healthcare delivery system. PHC accessibility can also be classified into potential and realised delivery of services based on whether actual utilisation data of the services is incorporated (realised) or based solely on the characteristics of the services offered (potential).

One of the important concerns is the non-identical address of the rural population, where these populations face greater difficulty in gaining PHC services. Addresses are critical, especially during the provisioning of emergency services. For example, an ambulance takes longer to reach a destination due to failing to locate a rural caller's address.

Every location should have a traceable address that points towards an exact location. Therefore, it is imperative that this research highlights the importance of developing local geo-addresses in increasing the accessibility of PHC services and improving the rural population's livelihood.

Research Aims

The research aims to provide an evaluation of the impact and importance of geo-addresses on the provisioning of PHC services in rural areas in Malaysia through the Impact Network Analysis (INA) and Geographical Information System (GIS) tools.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 - To provide a benchmark on key strategies from international experiences to improve access to PHC services among rural populations;
- ii. RO 2 - To identify the challenges PHC services face in locating rural addresses, especially during the provision of emergency services in Malaysia;
- iii. RO 3 - To identify and analyse the impact of geo-addresses through Impact Network Analysis (INA) and Geographical Information System (GIS) tools;
- iv. RO 4 - To propose feasible key strategies in delivering effective health care services in rural areas through the addressing system based on the identified challenges and international benchmarking.

DI-4 – Big Data in the Telecommunications Sector in Malaysia: Leveraging Geospatial Data for Optimisation and Decision-Making

- A. Research Area: Big Data
- B. Focus Area: Geospatial Data Utilisation in Malaysia's Telecommunications Sector
- C. Research Sponsor: Geospatial Network Data Management and Coordination Department, Geospatial and Data Management Division
- D. Contact person for queries on this research area:
 - i. Puan Noraziah Suliman, Head of Department, Geospatial Network Data Management and Coordination Department, noraziah.suliman@mcmc.gov.my
 - ii. Encik Ts. Md Ali Imran Zakaria, Deputy Director, Geospatial Network Data Management and Coordination Department, imran.zakaria@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap areas pertaining to the validation and improvement of geospatial data utilisation for network performance, coverage, and resource allocation in the telecommunications sector in Malaysia.
- F. The research targets the following groups:
 - i. Telecommunications service providers; and
 - ii. Local and international bodies (e.g., ITU, APEC etc.)

Research Problem/Context

The telecommunications sector in Malaysia has experienced remarkable growth, driven by the Government's *Pelan Jalinan Digital Negara* (JENDELA) initiative. JENDELA began in 2020, intending to improve the quality of digital infrastructure and services across the country. It has met its Phase 1 objectives⁹ by bridging the digital divide and reinforcing the digital transformation to enable all Malaysians, regardless of location or social status, to ride the wave of new opportunities as the nation marches further into the digital economy.

Despite significant progress, the challenge of accurately identifying and providing network coverage to the remaining 3% of populated areas remains, particularly

⁹ MCMC, JENDELA Phase 1 (September 2020 - 31 December 2022) Concluding Report, 1 June 2023, accessed on 14 July 2023 at <https://myjendela.my/Sitejendela/media/Doc/JENDELA-Phase-1-Concluding-Report.pdf>

in remote and interior regions with challenging geographical conditions. In the upcoming Phase 2 of JENDELA, one of the focuses will be providing coverage for the last 3% of populated areas, ensuring that all Malaysians have access to Internet connectivity by the end of 2025¹⁰. Therefore, this study is crucial to explore the potential of utilising geospatial data to accurately determine the extent of network coverage, particularly in reaching the remaining 3% of the populated areas in Malaysia.

Research Aims

This research aims to explore and investigate the utilisation of geospatial data to improve network performance, coverage, and resource allocation in the telecommunications sector in Malaysia.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 – To examine the present state of geospatial data usage in the telecommunications sector in Malaysia, focusing on optimisation and decision-making potential;
- ii. RO 2 – To explore advanced geospatial data analysis techniques, such as machine learning, spatial modelling, and data fusion, to glean insightful information for the telecommunications sector in Malaysia;
- iii. RO 3 – To develop methodologies for integrating and analysing diverse geospatial datasets, such as topography, land use, population density, and infrastructure, to optimise network planning and resource allocation;
- iv. RO 4 – To evaluate the efficacy of geospatial data-driven techniques for improving network performance, coverage, and quality of service; and
- v. RO 5 – To identify challenges associated with using geospatial data in telecommunication networks, such as data quality, privacy concerns, and scalability, and propose solutions to overcome these obstacles.

¹⁰ Ibid.

DI-5 – Enhancing Malaysia's Postcode System: A Geospatial Solution for Improved Precision and Efficiency

- A. Research Area: Geospatial technology and Malaysian Postcode System
- B. Focus Area: Utilisation of geospatial solutions in improving the accuracy of postcodes and mapping in Malaysia.
- C. Research Sponsor: Geospatial Performance and Compliance Department, Geospatial and Data Management Division
- D. Contact person for queries on this research area:
Ms. Norhafiza Ali Hanafiah, Assistant Director, Geospatial Performance and Compliance Department, norhafiza.hanafiah@mcmc.gov.com
- E. The research falls within the Guided Research Category. It addresses the gap area pertaining to how geospatial solutions can play a role in increasing the accuracy of postcodes in Malaysian addresses.
- F. The research targets license holders under the Postal Services Act 2012, geospatial technology companies, relevant government agencies, application developers and the public.

Research Problem/Context

Through the power granted under the Postal Services Act 2012 (PSA 2012), MCMC is responsible for overseeing and regulating Malaysia's postal and courier services. Section 57 (1) of PSA 2012 states that "the Commission shall be vested with the development, control, implementation, maintenance, and management of the postcode and addressing system in Malaysia." The Malaysia postcode system has served as a fundamental tool for mail delivery and addressing nationwide. However, several challenges and limitations hinder its ability to provide accurate and precise location information, particularly at the individual unit level. The details of the problem statement regarding the current postcode system are as follows:

- a) Limited Granularity: The current postcode system lacks granularity, making it challenging to pinpoint specific addresses accurately. Postcodes often encompass broader areas, hindering precision at the individual unit level.
- b) Inconsistent Boundaries: The postcode boundaries do not consistently align with administrative or geographical divisions. This inconsistency can lead to confusion and difficulty in assigning and geolocating the addresses.

- c) Rapid Urbanisation and Development: As Malaysia undergoes rapid urbanisation and development, new addresses and areas are being established, which may not be adequately covered by the existing postcode system.
- d) Incomplete or Outdated Data: Ensuring accurate and up-to-date address data is crucial for an effective postcode system. However, the current database may be incomplete or outdated, impacting mail delivery and location-based services.

Research Aims

The research aims to explore the feasibility of enhancing current Malaysia's postcode system using geospatial solutions for improved precision and efficiency. The research outcome will assist MCMC in developing the National Address System (NAS).

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 - To conduct a comparative study with other countries implementing geospatial solutions in their addressing system;
- ii. RO 2 - To explore the potential of enabling the existing postcode system to accurately pinpoint the exact location of an address using geospatial data;
- iii. RO 3 - To explore the possibility of integrating standalone platforms or applications embedded with maps through geospatial solutions; and
- iv. RO3 - To recommend the viable geospatial solution to complement Malaysia's rapid urbanisation and development.

DI-6 – A Study on the Demand for Mobile Services in Sparsely Connected Remote Areas Across Malaysia

- A. Research Area: Connectivity in remote areas and the *Jalinan Digital Negara* (JENDELA) initiative.
- B. Focus Area: Mobile services versus Internet connectivity in remote areas.
- C. Research Sponsor: Commercial Infrastructure Department, Infrastructure Planning and Management Division
- D. Contact persons for queries on this research area:
Ts. Allah Ditha Khan Abdul Rim, Director, Commercial Infrastructure Department, aditha.khan@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap areas pertaining to the demand for mobile services and Internet in rural areas and the communities' spending power for connectivity services.
- F. The research targets the community in the identified remote areas representing the 3% populated areas with no Internet coverage.

Research Problem/Context

Pelan Jalinan Digital Negara (JENDELA) plan was formulated to provide broader coverage and better quality of broadband experience for the Rakyat whilst preparing the country for 5G technology. Phase 1 (2020 – 2022) targets of 96.9% mobile 4G coverage in populated areas, 35 Mbps speed, and 7.5 million premises passed were met. MCMC is currently working towards meeting Phase 2 (2023 – 2025) targets, which involves addressing the remainder of the digital divide not covered under Phase 1 by utilising satellite connectivity and other fit-for-purpose technologies.

As 100% Internet coverage in populated areas is one of the targets for JENDELA Phase 2, MCMC aims to address the remaining 3% (minus the 96.9% coverage achieved in Phase 1). However, the remaining 3% comprises almost 3,000 remote locations across Malaysia, where infrastructure rollout costs are exceptionally high compared to urban and suburban areas. In ensuring effective resource allocation and planning, it is crucial to identify if there is demand for mobile services among the population in the remaining 3%, especially since providing only Internet connectivity without mobile service will lower the implementation cost by five (5) times.

Research Aims

The research aims to identify if the population in the remaining 3% still require mobile service or if Internet (Wi-Fi) connectivity is sufficient for their day-to-day activities.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 - To validate the need for mobile service in the remaining 3% of the populated areas;
- ii. RO 2 - To explore if Internet connectivity (Wi-Fi) is sufficient in the remaining 3% of the populated areas;
- iii. RO 3 - To identify the maximum price the user is willing to pay for Internet (Wi-Fi) service; and
- iv. RO 4 - To identify and recommend the most crucial service and application required by the communities in the remaining 3% of the populated areas.

DI-7 – Exploring the Impact of Artificial Intelligence Adoption in the Communications and Multimedia Industry

- A. Research Area: Artificial Intelligence (AI)
- B. Focus Area: Impact of AI adoption within the Communications and Multimedia (C&M) industry.
- C. Research Sponsor: Planning Department, Strategic Planning Division
- D. Contact person for queries on this research area:
 - i. Puan Zaihasriah Zahidi, Deputy Director, Planning Department, zaihasriah.zahidi@mcmc.gov.my
 - ii. Puan Zethy Suhaidah Zainudin, Assistant Director, Planning Department, zethy.zainudin@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap areas pertaining to the adoption of AI and its impact on the C&M industry (telecommunications, broadcasting, postal and courier sectors).
- F. The research targets the following groups in the C&M industry:
 - i. Telecommunications sector service providers
 - ii. Broadcasting sector service providers; and
 - iii. Postal and Courier sector service providers.

Research Problem/Context

In recent years, Artificial Intelligence (AI) has reached a point where it is no longer limited to theoretical concepts or experimental research. Instead, proven, real-world solutions leveraging AI technologies are actively being implemented across industries. The rapid development of AI-based applications has become a valuable and transformative tool, revolutionising how businesses and organisations operate.

AI has demonstrated its potential to optimise operations, enhance customer experiences, and foster innovation in various industries. The regulator needs to take proactive action to understand the opportunities, risks, and implications associated with AI adoption and to address regulatory and ethical considerations related to AI that may affect the industry and customers.

In 2021, the financial regulator in Malaysia, Bank Negara Malaysia has, conducted a study on the potential use cases and associated risks of AI in Malaysia's financial

system¹¹. This study provided valuable insights to ensure the regulatory landscape governing and promoting AI's responsible use. In 2022, the capital market regulator in Malaysia, the Securities Commission (SC) has published a public consultation on a proposed regulatory framework regarding the use of AI and Machine Learning (ML)¹². The framework aims to address the management of technology risks, data management, and principles for the adoption of AI and ML.

As the regulator of the Communications and Multimedia (C&M) industry, the Malaysian Communications and Multimedia Commission (MCMC) is continually keeping abreast with the development of AI that can potentially impact the industry and consumers. Therefore, conducting a similar study for the C&M industry is essential, including for telecommunications, broadcasting, postal and courier sectors. This aligns with the National Policy Objective of the Communications and Multimedia Act 1998, to regulate for the long-term benefit of end users, and to promote a high level of consumer confidence in service delivery from the industry.

Research Aims

The research aims to examine the current state of AI adoption and practice in the C&M industry, specifically focusing on safeguarding consumer rights and ensuring responsible and ethical use of AI.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 – To identify AI use cases and applications that have been deployed or are planned to be deployed within the C&M industry;
- ii. RO 2 – To examine challenges, opportunities and potential impacts of AI adoption in the C&M industry;
- iii. RO 3 – To benchmark other regulators' initiatives in other countries in governing and promoting the use of AI; and
- iv. RO 4 – To recommend regulatory and ethical considerations for using AI for the C&M industry.

¹¹ Bank Negara Malaysia, Artificial Intelligence in the Malaysian Financial System: Opportunities, Risks, and the Way Forward, Financial Stability Review: Second Half 2022, accessed on 12 July 2023 at https://www.bnm.gov.my/documents/20124/10150236/fsr22h2_en_box1.pdf

¹² Securities Commission Malaysia, Public Consultation Paper No. 1/2022 Proposed Regulatory Framework On Technology Risk Management, Securities Commission, September 2022, accessed on 12 July 2023 at <https://www.sc.com.my/api/documentms/download.ashx?id=f163d47d-04c7-4c43-923a-b179a3cb94cf>

DI-8 – Factors Promoting and Hindering the Implementation of Pick-Up and Drop-Off Services Related to Courier Services Deployed at Pusat Ekonomi Digital in Sabah

- A. Research Area: National e-commerce coverage and availability
- B. Focus Area: Expansion of e-commerce services leveraging community-based digital services and access network.
- C. Research Sponsor: E-Commerce Department, Postal, Courier and E-Commerce Services Division
- D. Contact person for queries on this research area:
 - i. Encik Tukefli Khazali, Head of E-Commerce Department, tukefli.khazali@mcmc.gov.my
 - ii. Puan Siti Aina Fatehah Mohd Bakhtiar, Assistant Executive, E-Commerce Department, aina.bakhtiar@mcmc.gov.my
- E. The research falls within the Guided Research Category. It addresses the gap area pertaining to the adoption and deployment of innovative courier services via MCMC's PEDis in supporting e-commerce services.
- F. The research targets the following groups:
 - i. Postal, Courier and PUDO service providers;
 - ii. PEDi managers, staff, members and the surrounding community; and
 - iii. Potential business owners, sellers and individuals likely to utilise PUDO-enabled services/facilities.
 - iv. Other relevant stakeholders including e-commerce platforms, PEDi management companies and telecommunication companies.

Research Problem/Context

Pelan Accelerator Kurier Negara (PAKEJ) has set ambitious aspirations for improving the courier industry for both the Rakyat and Industry Players, with the following True North: Delivering Quality of Service and Seamless Coverage to all Malaysians sustainably to support the projected E-Commerce Industry growth from 7 parcels per capita to 30 parcels per capita by 2025¹³.

Based on the total parcel volume for 2022, there is a need for intervention in Sabah to increase the national parcels per capita, especially for rural areas. One

¹³ MCMC, National Postal and Courier Industry Lab (NPCIL) Summary Report, 5 June 2021, accessed on 13 July 2023 at https://www.mcmc.gov.my/pakej/mypakej/media/Documents/MCMC_PAKEJ_NPCIL-Report.pdf

key initiative identified under this plan is the provision and availability of Pick-Up and Drop-Off (PUDO) services at *Pusat Ekonomi Digital* (PEDi) throughout Sabah. It is envisaged that this will spur e-commerce adoption and create a heightened demand for courier services.

Research Aims

This research aims to identify the factors promoting and hindering adoption and potential solutions for the courier service providers to effectively deploy PUDO services at PEDi and recommend suitable PEDi for PUDO deployment in Sabah.

Research Objectives

Researchers are invited to submit proposals guided by the following overarching research objectives (ROs):

- i. RO 1 – To identify the factors contributing to the effective deployment of PUDO services at PEDi centres located in Sabah by courier service providers;
- ii. RO 2 – To provide recommendations for the courier service providers to deploy PUDO services at PEDi centres located in Sabah effectively; and
- iii. RO 3 – To identify and recommend suitable PEDi centres in Sabah for courier service providers to deploy PUDO services.