

### EXTENDED ABSTRACT

# MiiEX'2024

# MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024 "EMPOWEREMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION"

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## MiiEX'2024

## MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024 "EMPOWEREMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION"

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**ABOUT MIIEX'24** 

INNOVATION, INVENTION, AND DESIGN

#### FOREWORD BY THE RECTOR OF UITM CAWANGAN MELAKA



Professor Ts. Dr. Mohd Rasdi bin Zaidi

Rector, Universiti Teknologi MARA (UiTM)

Cawangan Melaka

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honour for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

2024 is a special year where MIIEX 2024 emphasizes the development of special needs. As we know, special needs indicate a limitation in a person's ability to engage in and benefit from various aspects, such as daily activities and education. Hence, with the theme "Empowering Special Needs Through Invention and Innovation," it is a platform for industries, professionals, academicians, students, and communities to share their innovative ideas and products to increase accessibility for those with special needs.

The successful implementation of MIIEX '24 is our joint success. This event was supported by the Melaka state government through YB Datuk Fairul Nizam bin Roslan, the EXCO of Science, Technology, Innovation, and Digital Communication. I also want to express my

gratitude to Universitas Negeri Padang, Indonesia, Universitas Muhammadiyah, Makassar, Indonesia, the International Association of Economic and Businesses (IAEB), Universiti Sains Islam Malaysia, Ibnu Ummi Maktum Research Center (UMMI), USIM, and The Southeast Asia Minister of Education Organization Regional Centre for Special Educational Needs (SEAMEO SEN) as our co-collaborators for MIIEX 2024.

The collaboration from various parties in MIIEX '24 is a platform that will improve cooperation and interweaving among industries, professionals, academicians, students, and communities in shaping their potential in developing innovation products. This exposition also serves as a platform to cultivate and uphold the nation's innovation culture by presenting new ideas and research by young people, especially from academia and universities. Indirectly, MIIEX '24 will encourage all inventors towards empowering Science, Technology, Engineering, and Mathematics (STEM), especially in primary and secondary schools.

The new digital landscape also inspires more innovation and new ideas that contribute to various activities, such as business and industries. As a university that encourages "Research and Innovation," we aim to foster more innovative products that benefit scholars, industries, and communities, addressing issues to improve our present and future life.

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams, who are the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

### FOREWORD BY THE DEPUTY RECTOR (RESEARCH & INDUSTRIAL LINKAGES)



Associate Professor. Dr. Nur Hayati binti Abd Rahman

Deputy Rector (Research & Industrial Linkages), Universiti Teknologi MARA (UiTM) Cawangan Melaka

With much passion and privilege, let me warmly welcome all of you to the Melaka International Innovation Exhibition (MIIEX), UiTM Cawangan Melaka's flagship event. I firmly believe that events such as these demonstrate the gradual evolution of this platform in terms of its significance and its governing principles within the sphere of learning and the broader scholarly society.

The theme for this year, "Empowering Special Needs Through Invention and Innovation," strongly connects to our mission of using research and technology to make a positive impact on the world we live in. Besides enforcing the message of diversity, this theme also reaffirms our focus on creating products to improve the lives of people with disabilities (PWDs). Such innovations are vital as only through focused constructive changes can society become more sensitive to the needs of all members.

MIIEX allows researchers, students, and industry professionals to come together, share their innovative research, and develop viable research partnerships. It has been great to see the enthusiasm of the participants and the efforts they put into their projects, which can offer various social and economic benefits. This is why one can state that MIIEX is a great

opportunity for creating connections between the academic environment and industry, facilitating the implementation of innovative and promising projects.

Finally, I would like to express my sincere appreciation to all the members and supporters of the organizing committee, all the participants, sponsors, and everyone involved in preparing this event. I want to express my gratitude for your commitment and involvement, as the success of MIIEX and the development of an active culture of innovation in our university and beyond is partly owed to your support.

Thank you

#### FOREWORD BY THE PROJECT DIRECTOR



Dr Zulkefli bin Muhamad Hanapiyah Senior Lecturer

Assalamualaikum and Warmest Greetings,

It gives me a great pleasure, on behalf of the organizing committee, to welcome all participants and speakers to the Melaka International Intellectual Exposition 2024 (MIIEX '24) with the theme "Empowering Special Needs Through Invention and Innovation." We are honoured and pleased to welcome all participants to this biennial event.

MIIEX '24 is a platform that gathers experts from local and international industries, academia, scientists, researchers, and the community to contribute to the advancement of scientific and technological knowledge. This knowledge helps develop disruptive innovation products that improve daily activities for businesses and the community, especially those with special needs.

MIIEX '24 provides an atmosphere for inventors of all levels to gain new exposure and collaborate. Indirectly, this promotes a collaborative and innovative culture that focuses on cutting-edge technologies and new standards in technology and creativity.

MIIEX '24 is anticipated to serve as an arena for participants to acquire and disseminate revolutionary information on ideas and innovation. It is intended that the competition will expose the contestants' minds to the latest technologies and designs, aligning with the government's goal of encouraging innovation in Malaysia.

Finally, I want to compliment my fellow committee members on their amazing efforts, which were vital to the event's success. In addition, I want to thank our co-organizers, event sponsors, and participants. Optimistically, we hope that all new knowledge discovered, invented, or innovated will lead us toward future sustainability.

Thank you.

### FOREWORD BY MELAKA STATE EXCO OF SCIENCE, TECHNOLOGY, INNOVATION AND DIGITAL COMMUNICATIONS



#### YB Datuk Fairul Nizam bin Roslan

#### Melaka State Exco of Science, Technology, Innovation and Digital Communications

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honor for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

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This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams, who are the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

#### **MIIEX'24 ORGANISING COMMITTEE**

COMMITTEE	NAME
PATRON	PROFESOR DATUK DR SHAHRIN BIN
	SAHIB@SAHIBUDDIN
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	TECHNOLOGY, INNOVATION AND DIGITAL
	COMMUNICATIONS
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	MOHAMAD SHAFIEI AYUB
	MOHD ARIFF MUSTAFA
	FAHMI SAMSUDIN
	MOHD HAFIFI MOHD SUPIR
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	MOHD AZAHAR
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	RIDZUAN ADLI BIN AZIDIN
	WAN NUR KHALISAH SHAMSUDIN
JURY SELECTION AND	EN NORAZLAN ANUAL
MANAGEMENT	PN AFZAN NOR BINTI TALIB
	PN NUR HIDAYAH ZAINI
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	PN NUR HAZWANI BINTI MOHAMAD ROSELI
	PN GLADYS SEBI ENTIGAR
i.	

	PN NASHRAH BINTI TALIB
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REGISTRATION AND	DR. SITI FEIRUSZ BINTI AHMAD FESOL
PARTICIPATION	SITI RAMIZAH JAMA
	SITI NURSYAHIRA ZAINUDIN
	BUSHRA ABDUL HALIM
BIRO MEDAL & CENDERAHATI	PN SYUKURRIAH IDRUS
	SITI NAZIRAH BINTI OMAR
	RAFIDAH ABDUL AZIZ
	MASTURA AYOB
	INTAN LIANA BINTI SUHAIME
	DR NORASHIKIN ADAM
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	FAIQAH HAFIDZAH BINTI HALIM
	NORSHAHIDATUL HASANA BINTI ISHAK
	HAZRATI ZAINI
	KHAIRUL NURMAZIANNA ISMAIL
SPONSORSHIP	DR MOHD SYUKRI BIN ABDULLAH
PROGRAM BOOK, ABSTRACT &	DR MAIMUNAH JOHARI
PUBLICATION	PN MAYMUNAH ISMAIL
	PN NOR HALAWAH AHMAD
	PN AZIRA RAHIM
	NORLINDA TENDOT ABU BAKAR
	AFZAN SHAHILLA AMIR HAMZAH
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	DR MOHD SUFIEAN BIN HASSAN
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	DR SITI NUR IZYANDIYANA BINTI AB HADI
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	MUNIRAH BINTI MOHD JIDI
	MASLIZA BINTI MOHD RAZALI
TECHNICAL & VENUE	EN MAZ IZUAN BIN MAZALAN
	AFZAN SAHILLA BINTI MOHD AMIR HAMZAH
	MUHAMMAD FURQAN BIN AZHAR
	KHAIRUL AZHAR BIN LOCHMAN

#### **ABOUT MIIEX'24**

MIIEX'24 is an innovation competition annually organised by UiTM Melaka with the intention to bring together ideas and inspiration that could fit in for commercialization needs.

This event creates a platform for researchers to establish networking, partnership and opportunities to collaborate with industries.

#### **OBJECTIVES**

- Encourage and instil passion towards inventing and innovating among UiTM
   Cawangan Melaka staff, students and academicians of local and international higher education institutions;
- 2. Highlight distinguished talents of skilful inventors and exhibit intellectual products, inventions and innovations among local and private tertiary institutions, government and private agencies, including international participants;
- 3. Become an effective Business Matching platform for participating research products, matching industries and partnering government agencies;
- 4. Recognise, inspire and promote invention and innovation products to be patented and commercialized;
- 5. Increase passion towards inventing and innovating through research and boost interests of government and non-government agencies to obtain consultancy services from a line up experts of higher education institutions and UiTM Cawangan Melaka.

#### **THEME**

'EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION'

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#### **Aidqr Financial Bridge For Special Needs**

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#### Abstract

Wage reservation is the minimum wage for personal financing. The monthly cost of personal financing for the targeted group such as the Orang Kurang Upaya (OKU), generally more expensive. For example, medical cost and essential equipment like hearing tools for the hearing-impaired patient and fee for expertise visitation must be considered in their personal financing. With 674,548 total number of registered OKU in Malaysia for 2024 (Yamin, 2024), government agencies such as Jabatan Kebajikan Masyarakat (JKM) provide minimum allowance to the OKU. However, there is still a lack of data on the specific amount of minimum cost needed by the special need group. Furthermore, in Malaysia, several government agencies provide financial aid to the qualified OKU. Filling in personal details in the application forms are among the steps required. This may be a repetitive process if they need to apply for a new application. AidQr Financial Bridge for special needs is a system that offers a one-scan-away database that is equipped with different security methods for the special needs user, which aims as a comprehensive way to share details of the OKU such as their personal information and reservation wage per month. Subsequently, AidQr helps to facilitate the whole process to apply for financial aid and possibly job vacancy. The system is not only useful for personal individuals, but also to the recruiter who intends to hire the OKU in the organisation. Thus, within the framework of the system, it signifies that people can scan the QR code to know detailed information of special need groups without intermediaries.

Keywords: Wage reservation, OKU, AidQr Financial Bridge for Special Need, system, QR code.

#### 1. INTRODUCTION

A combination of QR codes has made it possible to take a revolutionary approach to improving accessibility and convenience especially for those who need assistance. With just a code scan and safe data protection, people may instantly access a world of information and services. According to the Persons with Disabilities Act, 2008, "OKU include those who have long term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society". People with disabilities or OKU frequently face a variety of challenges when providing the data. It is very difficult for people with impairments to communicate which makes it harder for them to manage the information very well. Other than that, the majority of people with disabilities have not been able to go to the bank independently because of the inability to fill in the information. As a solution, AidQr Financial bridge proposed a one-scan-away database for special needs group which provide a particular amount of their monthly cost such as medical cost and essential equipment in personal financing. This indicates a specific database for a group of OKU to maximize the wages standardized with their monthly cost of personal financing. Additionally, this system also helps to make it easy for the whole process in applying for the job vacancy or financial aid by sharing the information and personal details via scanning the QR code. Hence, AidQr Financial bridge for special needs provides an innovative connection between technological convenience and physical barriers by giving people with disabilities to provide immediate information that fits their needs.

#### 2. OBJECTIVE

The objective of this system is to provide a one-scan-away system to ease the process of filling in information for financial aid assistance and application of job vacancy. AidQr is design to use QR codes as a way of delivering help or assistance and serve as a link between special needs person who are in need of managing information for their personal financing. Accessible AidQr Financial Bridge provides people with disabilities convenience, financial records, personal details and safety.

#### 3. NOVELTY & INVENTIVENESS

To date, there is no system develop to cater the needs of special needs workers reflecting their individual requirements. Most agencies still use the traditional way of filling out forms which could be inconvenient for the OKU people.

#### 4. PRACTICALITY & USEFULNESS

This system can be used when they want to apply for financial aid or job vacancy. In this system, it not only can keep personal information but it also can keep personal documents such as birth certificate, pay slip and many more. For example, if the OKU need to apply for Elaun Pekerja Orang Kurang Upaya provided by Jabatan Kebajikan Masyarakat (JKM), there is no need for them to fill in the forms. All important information required is in the AidQR system. The AidQR code can be easily downloaded or it can be sent via email.

It makes it easier for both parties as the OKU person no need to repetitively write the details, while for the representative of agencies, information can be received in just a one-scan-away. Hence, it can save time for them to get immediate information. It is really useful for the individual and the potential employer and perhaps, the caretaker.

There is no need to worry about the risk of data leakage because in this system there are various security methods such as face id, voice recognition, password, or even fingerprint. The user is freely to choose which security method they want to ensure their information is safely stored in the system.

#### 5. CONCLUSION

It is important for us to provide comfortability to the OKU group in all aspects. AidQr Financial Bridge is able to help them in terms of collecting financial data and personal details that can be used at anytime and anywhere. This system also acts as a comprehensive way to share details of the OKU group. Thus, AidQr Financial Bridge serves as a helpful tool for special need group as AidQr is flexible, easy-to-use, and complete with a various kinds of security methods.

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