

MELAKA
INTERNATIONAL
INTELLECTUAL EXPOSITION

MIIEX'24

12 JUNE '24

Dewan Taming Sari,
Universiti Teknologi MARA Caw. Melaka,
Kampus Alor Gajah, Melaka

*"Empowerment of Special
Needs through Invention
& Innovation"*

**EXTENDED
ABSTRACT**

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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UiTM Cawangan Melaka

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78000 Alor Gajah

Melaka Bandaraya Bersejarah

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MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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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 Umami 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 (MIIEEX), 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.

MIIEEX 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 MIIEEX 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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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
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	BUSHRA ABDUL HALIM
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	FAIQAH HAFIDZAH BINTI HALIM
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	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

1. 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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Talkback Balance Checker

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Abstract

The user experience has become a central concept in technology design and innovation. Many technological advancements have been made to reduce or remove obstacles that affect those with impairments. The term assistive technology (AT) refers to tools, hardware, and software. It's critical that site designers and developers understand how assistive technology meets the needs of those with impairments. A lack of visual perception brought on by neurological or physiological conditions is called blindness. The primary issue with our product is that blind individuals lack the ability to immediately check their bank account, thus they are more vulnerable to scams when transacting with others or making online payments. Lives are practically at danger because of this misery. The idea to create and produce talkback balance checkers emerged as a result of this. This product's goal is to make it simple for blind users to swiftly and safely check their bank account balance when transacting, without having to worry about being deceived by ultrasonic devices. The device is also more secure because of the system of thumbprint that can only be accessed by the user. The proposed work contains a friendly user, cheap, and simple radio communication system that is effortlessly and designed to support the mobility of both visually impaired and blind people in a specific area.

Keyword: Blindness, Scammer, Innovation, Ultrasonic Devices, Thumbprint

1.INTRODUCTION

In this era, technology has been upgraded to the next level which can give a lot of benefits to the user, but certain people did not get the benefit. For example, blind people cannot check their own balance on the bank which can lead them to get scammed or cheated. Blind people are remarkably resilient people who use their other senses to perceive and comprehend their surroundings despite being blind. They frequently face particular obstacles and hurdles on their life's journey, but what sets them apart is their extraordinary adaptability and tenacity. In Malaysia, shows that 537,000 over 33.94 million people with disabilities were registered according to a United Nations human rights expert. However, it is estimated that this is unrepresentative of the true number as many individuals in Malaysia often deny the presence of disability. The prevalence of blindness in Malaysia is 1.2% of the disabled population. From this amount, about 1/16 blind people live and survive alone. It will lead them easily to get scammed or cheated.

2.OBJECTIVE

It was created to assist blindness to detect their account bank balance without using an auto teller machine. Talkback balance checkers are designed to make their daily life easier and to avoid

them from being scammed when making online payments or transactions to others. How this product functions are it will read the balance account when they insert the card bank into the device, and they can hear the sound thru the provided speaker. Talkback balance checker is not only used to check account bank balance, but it's also set up with thumbprint security for one user and cannot be shared with others, so scammers can't access the device.

3.NOVELTY & INVENTIVENESS

Talkback balance checker was created to aid blind people to know their own balance in an account. This product is financial friendly and also economical for standards of living of people with disabilities, and also facilitates blind people in properly managing their financial living without the help of others. Talkback balance checkers have benefited the blind people due to their novelty and inventiveness in the product that featured a voice talkback that will tell the consumer's account balance in their account. Talkback balance checker also does not have such product produced locally. Thus, this talkback balance checker also has features that's different from other products such as thumbprint security to ensure customer's account safety. The other features also include that the customer needs to click a button in order to hear their account balance.

4.PRACTICALITY & USEFULNESS

To ensure that the product could fulfil the objective to help blind people, this product is expected to provide people with disabilities, specifically blind people to acknowledge their own balance in an account bank since the existing machine ATM cannot tell blind people their own balance money in the bank. This product is really helpful to blind people who don't want any company when going to the bank.

5.CONCLUSION

To sum up, talkback balance checkers are a good technology for blind people to check their balance in an account. It is useful for them so that they can identify their balance and will not get scammed from others. This product is also user friendly, so that they can use it on their own because only one person can access the system and they can follow the instructions to set up their bank accounts via the speaker by pressing the button. It's very convenient for blind people that live alone and do not have anyone to accompany them.

REFERENCES

Ramendran, C. (2023, July 12). *Even the blind are not spared by scammers*. The Star. <https://www.thestar.com.my/news/nation/2023/07/12/even-the-blind-are-not-spared-by-scammers>

Online, S. (2022, October 13). Dr Noor Hisham: Prevalence of blindness is 1.2% of country's population. *The Star*. <https://www.thestar.com.my/news/nation/2022/10/13/dr-noor-hisham-prevalence-of-blindness-is-12-of-country039s-population>.

Disability:IN. (2024, January 22). *Malaysia* - *Disability:IN*. <https://disabilityin.org/country/malaysia/#:~:text=In%202019%2C%20only%201.6%20per.deny%20the%20presence%20of%20disability>.