

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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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 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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Teddy Guardian

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Abstract

Violent crime ruined some communities' lives, especially to children, special - need kids, young adults and women. Consequently, some victim that affected by crime is highly potential to suffer from physical injury and psychological harm like traumatic disorder, identity disorder, anxiety, depression, bipolar, impaired memory, sense of helplessness, guilt and much more. This is due to the fact that there are several causes of this violent crime such as genetic predisposition, neurochemical abnormalities, and abuse or neglect experience. Some cases like hostage issues will lead to "stockholm syndrome" which causes the victim to have positive feelings towards their kidnapper over time. Therefore, this syndrome will reduce the victim's sense of danger. In order to address this issue, we designed a Teddy Guardian as a safety device in providing warning alarms to users when any possible violent outcome appears. Besides, this security device is equipped with GPS and camera that links to the Teddy Guardian customized application (apps). The novelty of this Teddy Guardian is the animal shape of a bear, a symbol of defense for the weak communities like children and women. As technological advancement, Teddy Guardian vision is to aid these communities to defend themselves effectively during emergencies. This smart device also comes with an affordable price, RM179 in which all types of social class can afford to have one. Moreover, this innovative product will be notable as a universal self-defense device in 2024 - 2025, meeting the industrial demand towards security purposes.

Keywords: Violent crime, Self-defense device, GPS, Camera, Apps

1. INTRODUCTION

In today's world, personal safety is a major priority for everyone. Anyone can face a challenge in a lot of aspects of their lives that can impact their well-being. Hence, the World Health Organization defined violence as the intentional use of physical force or against a group or community (World Health Organization. Violence. 2011). This crime could be affected to anyone, especially children, special needs children, young adults and women. Some people may experience violent crime like sexual violence, assault, robbery and murder. These crime scenes had been proved by one of the real cases like Nurin Jazlin, that had been kidnapped, raped and killed after she walked alone at night market (Hamid, Rashitha A. (18 September 2007). "Child found sexually assaulted and killed". *The Star*) With the increasing incidents of violence against people especially towards these groups, we have created a safety device called Teddy Guardian that comes in two designs that will be linked to customize personal safety apps that can be utilized on devices such as smartphones. This safety device allows customers to feel safe when they're going anywhere. Teddy Guardian is designed to be portable or travel friendly, making it easy to carry in a pocket, purse or can attach to backpack and lanyard due to their convenient size. The features are also easy to use and can offer benefits especially for some affected groups like children, special needs children, young adults and women. Customers can use these features during a threatening situation. Our main goal by creating Teddy Guardian is to prioritize customer safety and to make sure customers always stay safe in any situation.

2. OBJECTIVE

The main objective of creating a Teddy Guardian as a protection and safety product for women and children is to provide effective and comprehensive protection for them, taking into account their vulnerability to certain dangers and threats. Furthermore, this product aims to prevent and reduce risk through advanced technology and innovative safety features, reducing the risk of harm and crime that women and children may face. For instance, tools like GPS trackers or panic alarms can help them avoid dangerous situations or call for immediate help if needed. In addition, this product is designed to give women, children, and their families a sense of security and peace of mind. Additionally, by having access to reliable safety tools, they can feel more confident in unknown environments or potentially dangerous situations. Furthermore, promoting independence and awareness to providing physical protection, this product also aims to increase

the independence and self-awareness of women and children in the face of emergency situations. Other than that, self-defense training, situational awareness education, and community resources can help them respond appropriately in situations that threaten safety. In a nutshell, Teddy Guardian products for women and children aim to provide a holistic solution that not only protects them physically but also empowers them to react appropriately and take the necessary steps for their own safety.

3. NOVELTY & INVENTIVENESS

Teddy Guardian is a user-friendly self-defense device that operates as a safety alarm for users that are affected by crime. The novelty of this Teddy Guardian is the animal shape of a bear. Therefore, this shape is representative of remembering President Theodore Roosevelt who had refused to shoot the defenseless bear during a hunting trip, (Constance King, "The Century of the Teddy Bear, 1997). In fact, this Teddy Guardian shape is worthy as a symbol of defense for the weak communities like children and women. Plus, bear shape can be quite tricky to a criminal. Other than that, this self-instinct device is incompatible with other markets due to its unique features like GPS and camera that link to the Teddy Guardian application (apps). User's closest contact may utilize the GPS (Global Positioning System) in order to track the user's location with live footage when the user is in danger. Some suppliers provide knives and tasers that are illegal in certain countries, but Teddy Guardian is more ethical and much safer to use with all ages especially to children and special - needs kids like autistic children. Hence, there is no self-injury issue when the user is struggling to defend themselves from the criminal out here. Additionally, this safety device is provided with three methods to wear in which are keychain (bag or any item to hold), brooch (cloth) and lanyard (neck).

4. PRACTICALITY & USEFULNESS

Teddy Guardian is a safety device designed for all ages, equipped with a camera, alarm speaker, motion detection, and GPS. It takes up to 1 hour to charge and can be used for 4 to 8 hours. The Teddy Guardian helps its owner send an emergency signal to the saved contact, which can be activated automatically or manually. To activate the automatic feature, download the Teddy Guardian app on your smartphone and register your account using Google. Connect the Teddy

Guardian to your smartphone by opening Bluetooth and holding the "ON" button for 5 seconds. The Teddy Guardian application allows you to view live camera recordings, save video recordings, and see the live location connected to the GPS. The spy camera, placed in the bear's eyes, uses 4K HD recording and can record audio and live videos up to 64 GB depending on the SD card's gigabyte. Motion detection in the keychain uses a vibration motion sensor to detect unusual vibrations, such as speed, pressure change, and sound level. If there is any sign of unusual vibration motion, the Teddy Guardian ribbon (keychain) and ears (brooch) will activate a strong vibration, infrared light on, and a "Help Me" siren will be sounded. The Global Positioning System (GPS) detects accidents, losses, and dangerous situations, with a range of about 10 meters indoors and 30 meters outdoors. The app shows live location on devices that support this technology. The alarm speaker can be turned on manually by pressing the "ON" button repeatedly five times within 5 seconds or less. It will be activated automatically if trigger conditions are met, such as unusual movement, gunfire sounds, loud car crashes, or "Help Me" screams reaching 90 decibels or above.

5. CONCLUSION

In conclusion, Teddy Guardian is an ideal self-defense device for affected communities like children, special - need kids, young adults and women. Now, all people are able to defend themselves from violent crime without thinking about any demographic classification by bringing Teddy Guardian everywhere, especially when walking alone. Furthermore, this will be an effort to decrease the rate of violent crime in Malaysia such as the risk of children hostage will decrease in the future by applying Teddy Guardian brooch to children whenever they go and back from school. As a result, due to the high potential features, Teddy Guardian will lead the global market in order to support all special communities that has their own safety right as humanity right.

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