DIGITALISATION AND ENVIRONMENTAL SUSTAINABILITY

SEMINAR BANDARAYA RENDAH KARBON

13 JULY 2023
BORNEO CONVENTION CENTER KUCHING

DIGITALISATION

"**Digitalisation** is about harnessing the power of **digital technologies** to transform **traditional** methods, systems, and processes into more efficient, flexible, and adaptable **digital solutions** that can support the evolving needs of individuals, businesses, and society as a whole"

ENVIRONMENTAL SUSTAINABILITY

"**Environmental Sustainability** refers to the collective efforts and practices aimed at **preserving and protecting** the Earth's **natural resources**, ecosystems, and biodiversity, while promoting the well-being and quality of life for both present and future generations."

WHY DIGITALISATION IS IMPORTANT IN ENVIRONMENTAL SUSTAINABILITY?

UNGC 10 PRINCIPLES
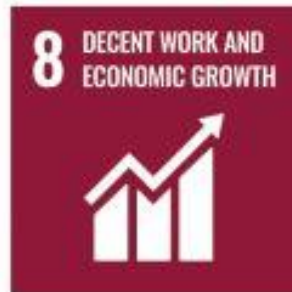
Human Rights
- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and

- Principle 2: make sure that they are not complicit in human rights abuses.

Labour
- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

- Principle 4: the elimination of all forms of forced and compulsory labour;

- Principle 5: the effective abolition of child labour; and

- Principle 6: the elimination of discrimination in respect of employment and occupation.

Environment
- Principle 7: Businesses should support a precautionary approach to environmental challenges;

Digitalization

- Principle 8: undertake initiatives to promote greater environmental responsibility; and

- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption
- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

DIGITALISATION GOAL IN ENVIRONMENTAL SUSTAINABILITY

Digitalization plays a crucial role in promoting a sustainable environment by enabling more efficient and effective **resource management** & reducing **waste and emissions**.

Here are some key ways in which digitalization contributes to environmental sustainability:

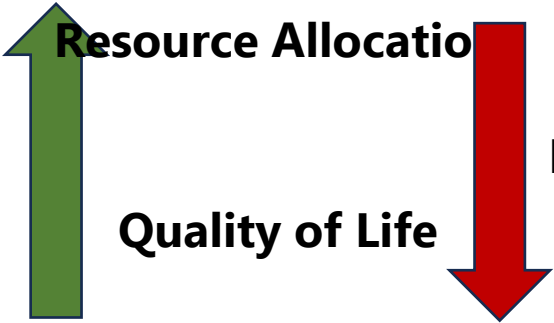| Resource Efficiency | Waste Reduction & Recycling | Environmental Monitoring & Management | Remote Work | Behavioural Change & Awareness |

SMART ENVIRONMENTAL SOLUTIONS

SMART CITIES

Data Collection

Data Analytics

Automation

SMART

Energy Efficiency

Urban Planning

Smart City

Transportation

Waste Management

KUCHING SMART CITY MASTER PLAN
2021

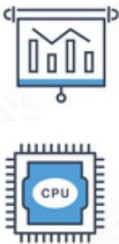A Roadmap to Realise Smart Kuching of the Future

Smart MIRI

Resource Allocation

Reduce Pollution

Quality of Life
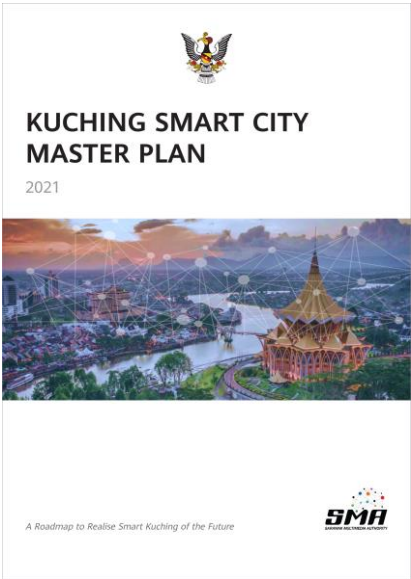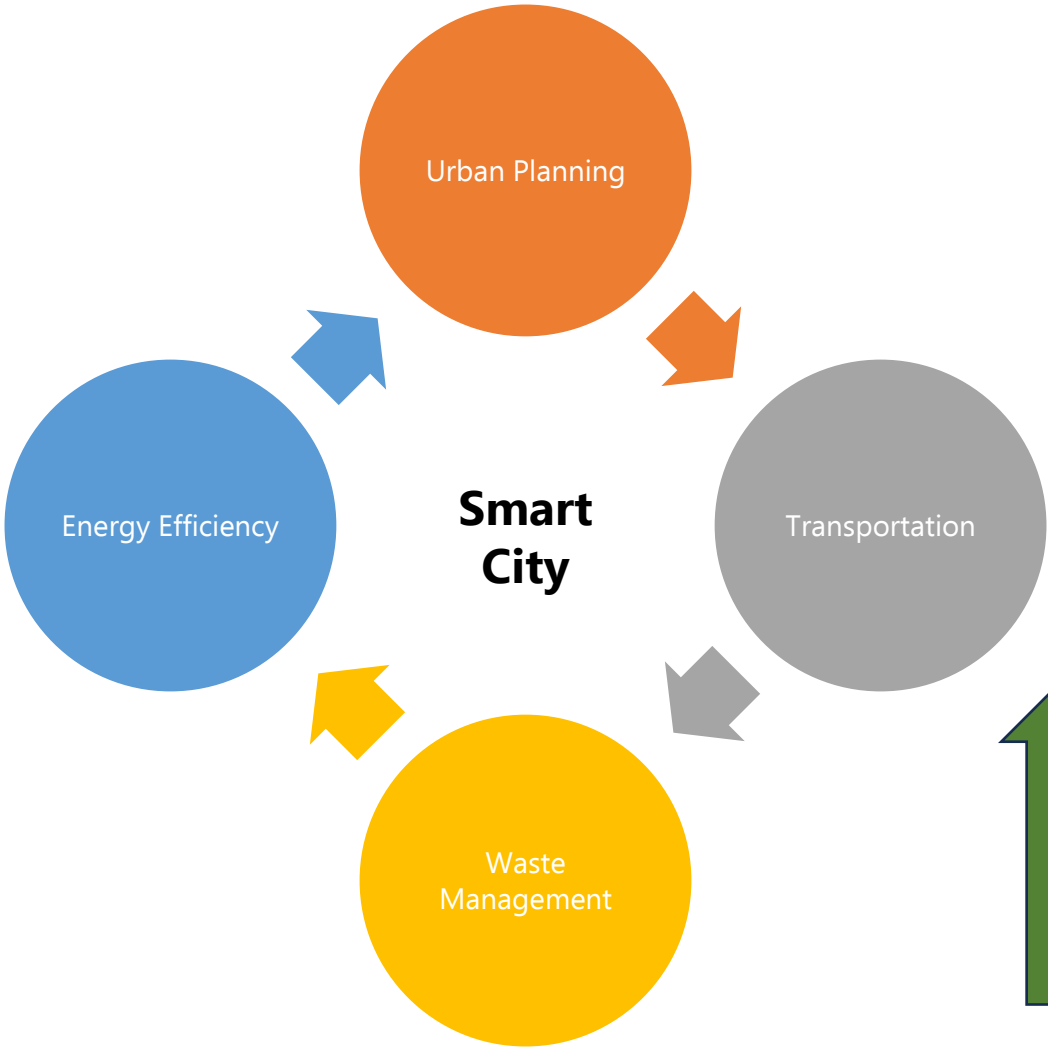
Use case: Tokyo Olympic 2021 medal creations from recycled material

Transportation & Logistic partners tracking and providing information about shipments

Minimum Viable Ecosystem

Mobile **Collection centers** creating a network

Banks to provide information about payment verification and execution of transaction

Regulators accessing the network to ensure Safety and Security standards are met. Provides compliance certificates

Processing Plant where the extracted materials and smelted and processed thereafter. Suppliers part of the ecosystem.

Represents industries participating in the consortium

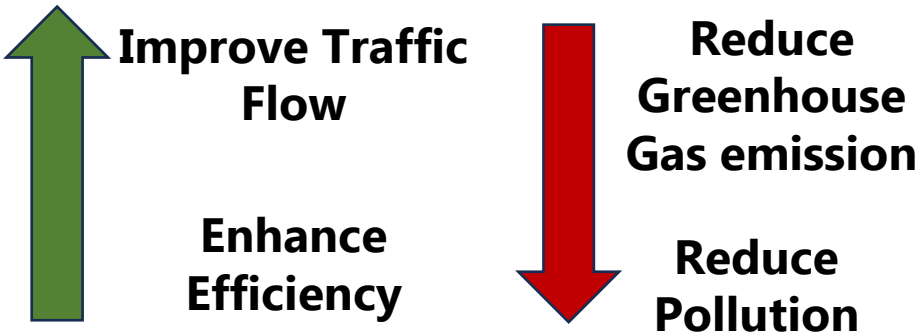Represents organizations participating in the external consortia

- **Blockchain** technology offers opportunities for **visibility**, through **transparency** and **traceability** capabilities across the supply chain.

- It offers the scope of **integration** with new technologies, including IoT sensors, drones, autonomous vehicles, automated fulfilment centers. This integration provides a synergistic benefit for the entire ecosystem.

Precision Agriculture - Use of sensors, drones, and data analytics to optimize farming practices, improve crop yields, and minimize resource usage

Weather Station

Drone Surveillance

Base Station

Irrigation System

Soil Moisture Sensor

Crop Yield

Smart Phone

App Control
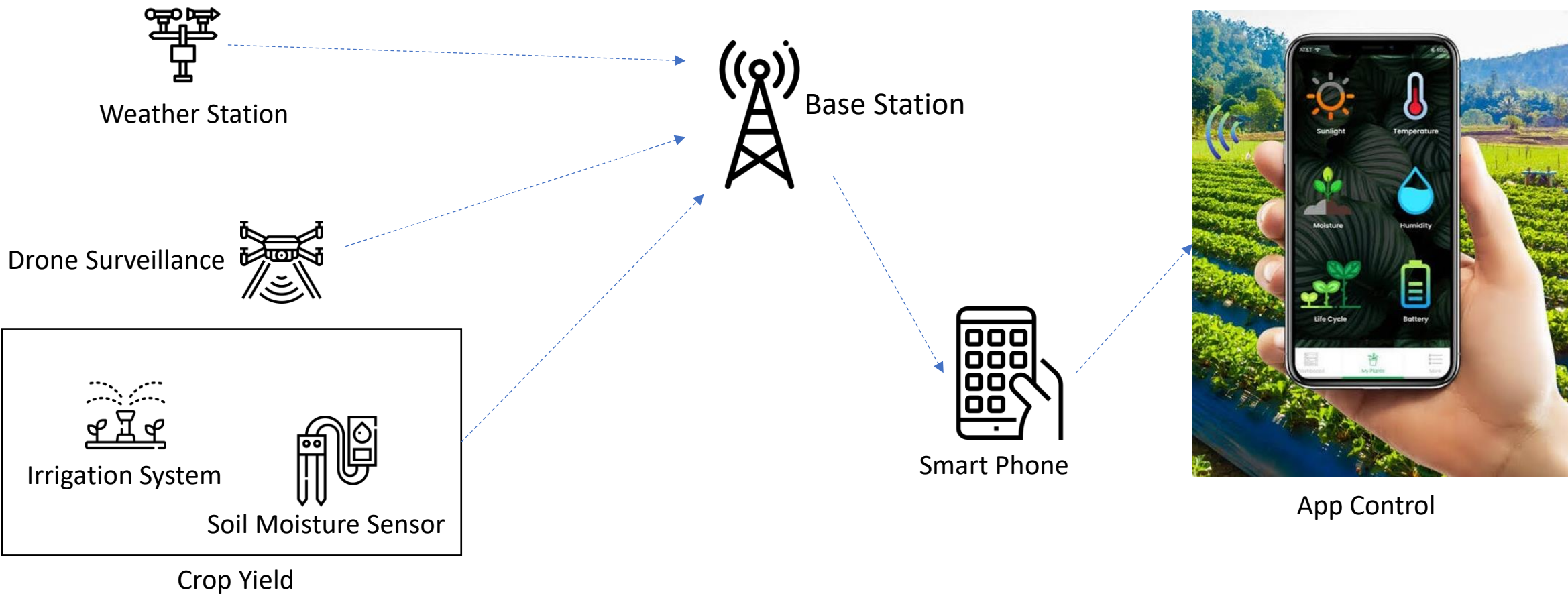
SUSTAINABLE TRANSPORTATION

Improve Traffic Flow

Enhance Efficiency

Reduce Greenhouse Gas emission

Reduce Pollution

EVs

Ride-sharing platform

Hydrogen ART

Hydrogen Bus

Advance Air Mobility

NEGATIVE IMPACT OF DIGITALISATION

NEGATIVE IMPACT OF DIGITALISATION ON ENVIRONMENT

The Negative

1. **E-waste:** The rapid advancement of digital technologies leads to shorter product life cycles, contributing to the growing problem of electronic waste.
2. **Energy consumption:** Increased digitalization requires more energy to power data centers, networks, and devices. If the energy is derived from fossil fuels, it can contribute to carbon emissions and climate change.
3. **Material extraction:** The production of digital devices relies on the extraction of raw materials, including rare earth minerals. Unsustainable mining practices can lead to habitat destruction, pollution, and social conflicts in mining regions.

Mitigations

1. **Green IT**: Encouraging energy-efficient design and operation of digital infrastructure, including data centers, servers, and devices.
2. **Circular economy:** Promoting the recycling and refurbishment of digital devices to reduce e-waste.
3. **Renewable energy:** Transitioning to renewable energy sources to power digital infrastructure.
4. **Sustainable supply chains:** Encouraging companies to prioritize sustainable sourcing and responsible mining practices for raw materials used in digital devices.
5. **Digital literacy and awareness:** Educating individuals and businesses about the environmental impacts of digitalization and promoting responsible digital behaviors.

By actively considering and implementing these measures, it is possible to minimize and balance the negative impacts of digitalization, ensuring that its benefits are achieved in a sustainable and responsible manner

SDEC IN DIGITALISATION & ENVIRONMENTAL SUSTAINABILITY

SARAWAK
DIGITAL ECONOMY
STRATEGY 2018 - 2022
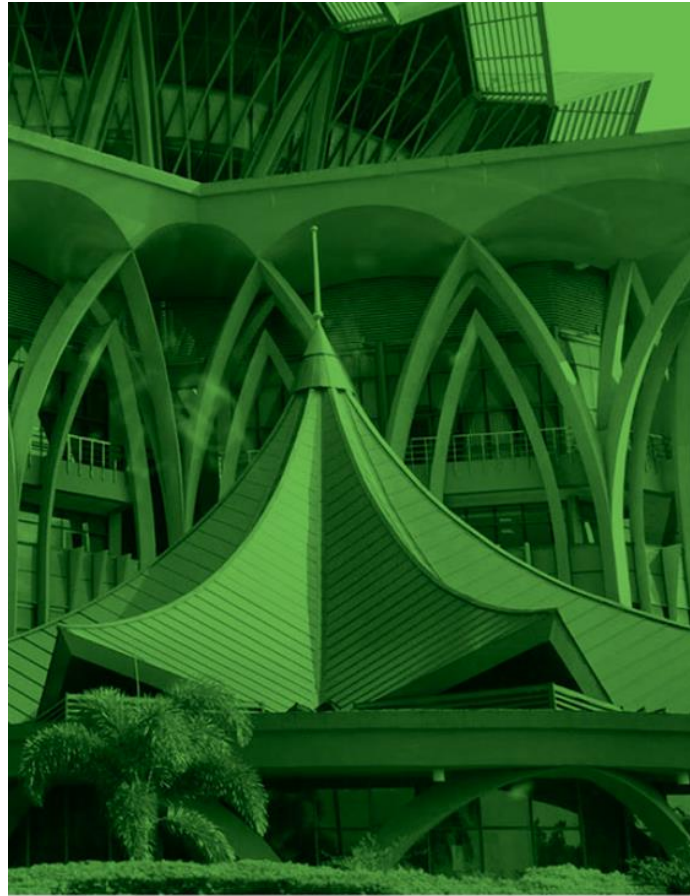
Post
COVID-19
DEVELOPMENT
STRATEGY
2030

SDEC MAIN ROLES

SDEC to be the Key Driver for the Private Sector Digital Economy

DIGITAL INFRASTRUCTURE

To implement, operate, and maintain Sarawak Digital Infrastructure. Currently operates **Sarawak Rural Broadband Network (MySRBN)** including interconnectivity, core network, backend and operating support system.

TECHNOLOGY SERVICES

Manage **SDEC Hybrid Cloud Solution (SDeCloud)** including hosting and cyber security, software verification and testing, corporate IT management, and managing system integrators and service partners.

RESEARCH AND PRODUCT DEVELOPMENT

Engage in **research, accelerate innovation and commercialisation of new IPs** into private and public sectors through the **Centre of Excellence** (COE - Open Lab, Testbeds, Living Labs).

DIGITAL ECONOMY PROJECT

Rollout of **economic sectors' commercial projects** in partnership with MNCs, SMEs, private sector and leverage on industry partnerships and experienced leadership to **accelerate digital transformation.**

INNOVATION AND ENTREPRENEURSHIP

To catalyse an inclusive **innovation ecosystem benefiting innovators, start-ups and digital entrepreneurs** through bespoke support, entrepreneurship education, investment facilitation, and **acceleration opportunities across the State-wide digital innovation facilities.**

CONSULTANCY

To capitalise on industry standard platforms in order to provide relevant consultancy services, including **digital and analytics consultancy** to the private sector & relevant agencies on digital economy.

SARAWAK DIGITAL PLAYER

DIGITALISING SARAWAK WITH BETTER CONNECTIVITY

MySRBN

- MYSRBN provide connectivity to rural area – promote Smart Farming, provide platform for Knowledge & Awareness of Environmental Sustainability

SMART TOWER

- SMART Tower Provide backbone to IoT network such as LoRaWan, Sigfox, NBioT TvWhitespace – increase usage of IoT application in environmental monitoring
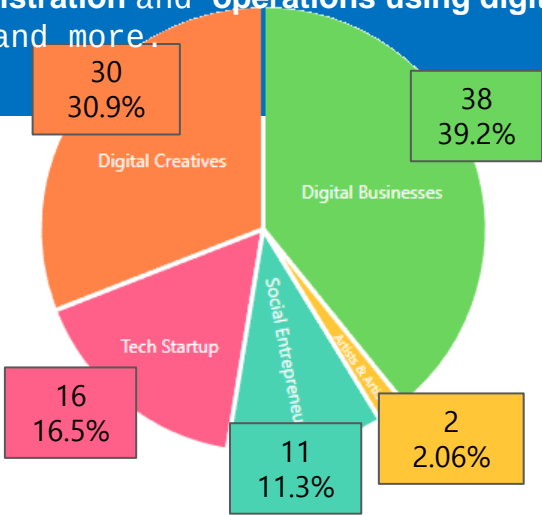

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DIGITALISATION & INNOVATION OPPORTUNITIES ACROSS SARAWAK

SDEC
Digitalising Sarawak

Key achievements in 2022:

10 Digital Innovation Hubs established across Sarawak

97 innovation, entrepreneurship & business digitalization programs conducted

3,777 individual participants trained

LAWAS
DIGITAL INNOVATION HUB

SibuDigital InnovationHub

MUKAH
YOUTH TRANSFORMATION AND INNOVATION CENTRE

S.i.C   SARIKEI INNOVATION CENTER

SERBA DIGITALX

MAKERAMAI MAKERSPACE

KUCHING

BETONG
DIGITAL INNOVATION HUB

KAPIT
DIGITAL INNOVATION HUB

SERIAN
DIGITAL INNOVATION HUB

SRI AMAN
DIGITAL INNOVATION HUB

All DIH runs programs ranging from **startup development** (business model canvas, innovation tools, hackathons, bootcamps etc.), **Tech Talent Development** (developers and programmers), **digital creatives** (photography, videography, digital editing, animation etc.), **business administration** and **operations using digital tools** and more.

30
30.9%
Digital Creatives

38
39.2%
Digital Businesses

Social Entrepreneu

Tech Startup

16
16.5%

11
11.3%

2
2.06%

Partner Facilities

DIGITAL COMMUNITY CENTRE

PEDi
Pusat Ekonomi Digital Keluarga Malaysia

PLUX

iCUBE INNOVATION

the grounds

HAUS

Digital Village.

DiVA Digital Village Accelerator Highlights

SINISANA

WEB3 IN FOOD AND AGRICULTURE
TFF CHALLENGE 2022 TOPICAL PRIZE

- Winner of MIHAS for **Most Innovative Services**, Winner of TFF x Cargill Topical Prize for Web3 in Food and Agriculture

NEUON ARTIFICIAL INTELLIGENCE

- Recipient of **Cradle's CIP 2022 grant**
- Winner of MOSTI's MyHackathon 2021
- Solution being pilot with JKR

TIMOGAH

TOP TEN INNOVATORS 2022
CONGRATULATIONS TO OUR WINNERS

- Emerged as **runner-up** under the Business Innovation category in the **2022 Global Shell LiveWIRE Top Ten Innovators Award**

PGMALL SDEC

SELL TO CHINA THROUGH JD.COM

📅 27 Jul 2022 (Wednesday) 🕙 10.00 AM ▶ WEBINAR

GUESTS OF HONOR

KHAIROOL ADZELAN AMAN
Ecosystem Development & Digital Innovation Manager, SDEC

JERRY NG
Chief Operating Officer, PGMall

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SCAN TO REGISTER

PART OF:

GODIGITAL SARAWAK

Initiated by MINTRED, powered by SDEC

MBAN MALAYSIAN BUSINESS ANGEL NETWORK SARAWAK CHAPTER

To date **110 high net worth** individuals have been trained, with **20 angel investors**

The Pillar of Strength — The Ancestors of Borneo

3 Animation shorts in **Digital Creative Pilot** led to 13 high skilled jobs i.e. Director, Producer, Composer, and winning 19 awards

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SDEC Shopee SARAWAK DIGITAL MALL

Partnership with Shopee that supported **7372** local sellers, generating **RM 17.5 Million** in sales

DIGITAL ECONOMY TESTBEDS & IR 4.0 PROTOTYPING LAB

CENTEXS, RAMPANGI
Smart City Testbed
Smart City Testbed focusing on the technology that can improve the quality of life for local communities. The following are the current major technologies in the Smart City Testbed:
- **5G technology**
- **Sigfox IoT Technology**

INDUSTRY 4.0 TESTBED & PROTOTYPING LAB

INDUSTRY 4.0 TESTBED

Industry 4.0 Testbed
Focusing on technology for showcases & educational purposes that can highlight the essential needs for manufacturing field.

IR4.0 PROTOTYPING LAB

IR 4.0 Prototyping Lab (Industrial Makerspace)
Researcher/Industrialist can do hands-on activity & study with the equipment & technology in Makerspace, for them to do further studies & research to enhance productivity & efficiency in manufacturing.

**SMART CITY TESTBED**

SARTECH, SEMENGGOH
Smart Agriculture Testbed
Will be located at Semenggoh, focusing on digital technologies that can fit into smart agriculture sector, complimenting Agriculture Research Centre's capability and capacity.

SMART AGRICULTURE TESTBED

Satellite Testbeds
Other similar testbeds established by universities in their own campuses or privately funded by other industry players in locations where certain economic sectors are thriving, can be connected and synergized as one of the players in the Sarawak Digital & Innovation Ecosystem

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SMART FARMING PRODUCT DEVELOPMENT
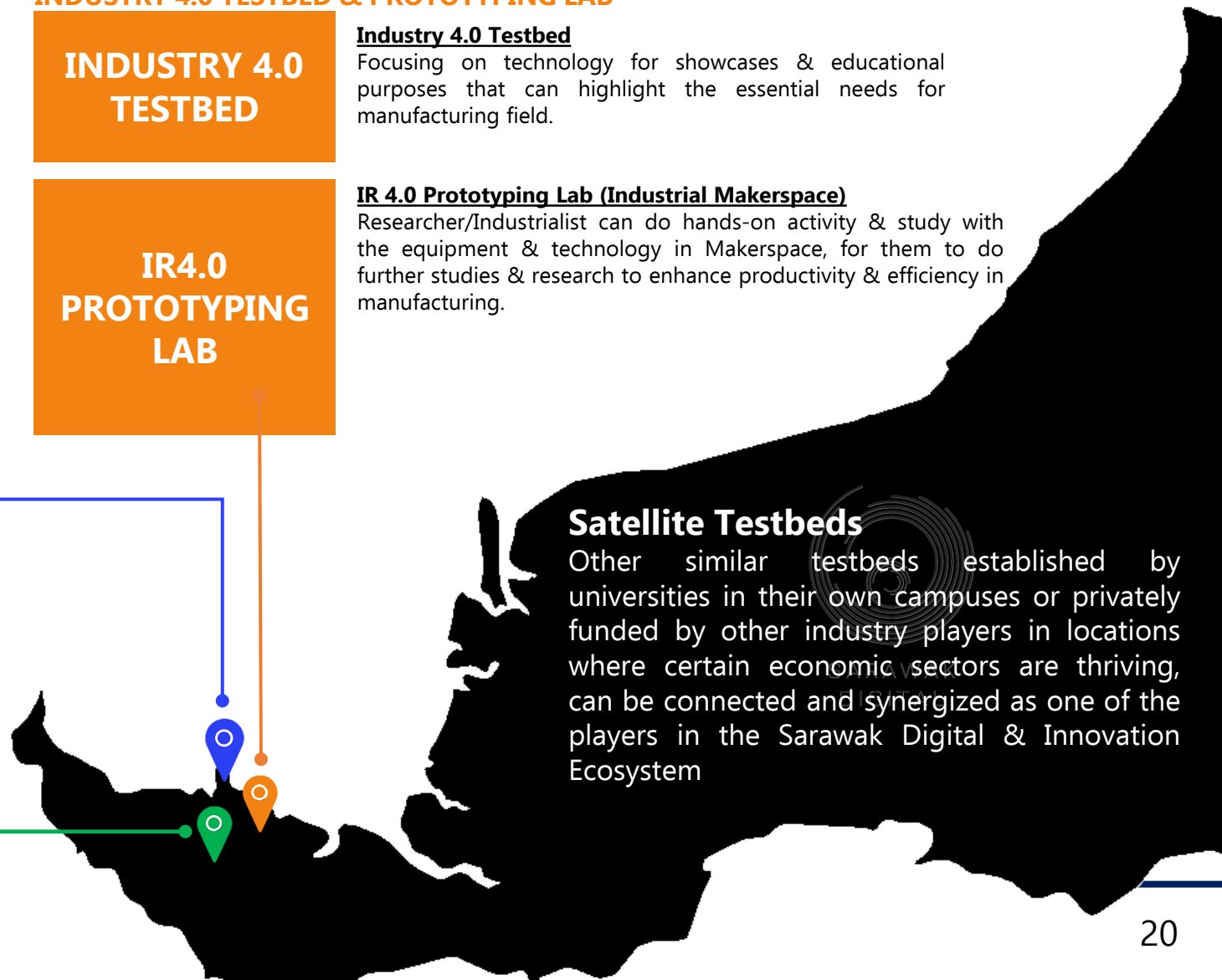
1. Precision & Discipline Agriculture Facility

SDEC Precision & Discipline Agriculture Facility (PDAF) is an end-to-end fully integrated high-tech agriculture platform for greenhouses and open-field

2. Smart Aquaculture Solution (SAS)

IoT technology & platform for SAS to perform remote monitoring and automation for fish fries production with AI capability
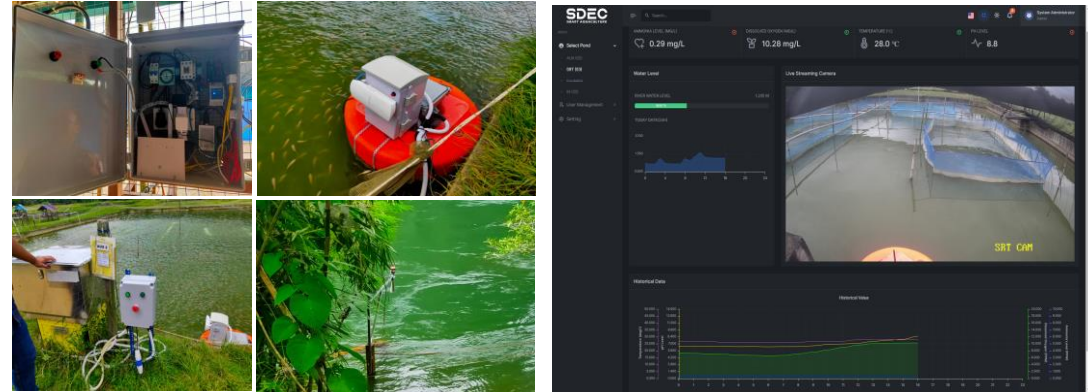
- Resource optimization & Increase Crop Efficiency
  - Reduce water waste
  - Reduce fertilizers & pesticides usage
    -> Reduce environmental pollution

e-Mobility
- EV charging app
- EV Charge Point Operator (CPO)
- EV vehichle rental

Border Security Patrol
- Drone surveillance
- Secured communication

RIMS for TROPI
- Research Information Management Systems (RIMS)

Smart Farming
- TKPM Rampangi
- Precision Farming, Centex Santubong

ABOUT WCIT 2023

First ever to be held in Kuching City, the capital for Sarawak, Malaysia's Borneo region, WCIT 2023 will witness world leaders, policy makers, academics and digital communities from science, technology, and the humanities field, converge to discuss existing challenges and approaches related to the digital age. This 27th installment of WCIT, guided by the principle of "Fulfilling the Promise of the Digital Age", is in line with Sarawak's digital economy blueprint.

DESTINATION

Sarawak is emerging as a leading digitised State within Southeast Asia (SEA). The region has seen an increase of 9.9% of digital communities, bringing the total number to 463 million (wearesocial, 2023). Diverse communities here are spending more time than ever before in virtual spaces, prospering innovation cultures and fostering inclusivity. This year's WCIT2023 will facilitate these dialogues, transformation and connecting Southeast Asia to the rest of the world.

WORLD CONGRESS ON INNOVATION & TECHNOLOGY 2023 SARAWAK

FULFILLING THE PROMISE OF THE DIGITAL AGE:

INNOVATION AND TECHNOLOGY DRIVING ECONOMIC PROSPERITY, SOCIAL INCLUSIVITY AND ENVIRONMENTAL SUSTAINABILITY

4 – 6 OCTOBER 2023

Borneo Convention Centre Kuching (BCCK) Sarawak, Malaysia

Follow us on

www.wcit2023.com

BE PART OF
WORLD CONGRESS ON INNOVATION & TECHNOLOGY

Register your interest NOW!

3 IMPACTFUL DAYS

2500+ DELEGATES
80+ COUNTRIES
200+ SPEAKERS

KEY TOPICS

CIRCULAR ECONOMY (CE) · DIVERSITY AND INCLUSIVITY · SUSTAINABILITY · 5G · SMART CITIES · GLOBAL ICT POLICY

Hosted By
Sarawak Government

Event Organiser · SDEC · SMA · sains
A Signature Event of · WITSA
Host Association · PIKOM
Supported By · BUSINESS EVENTS SARAWAK · TRIBE LEGACY SARAWAK CAMPAIGN · Sarawak State Secretary Office · Ministry of Tourism, Creative Industry & Performing Arts Sarawak · Ministry of Education, Innovation and Talent Development · Ministry of Utility and Telecommunication Sarawak

Synergising the

Ecosystem

SARAWAK DIGITAL

THANK YOU