EXECUTIVE SUMMARY

TITLE	:	**Smart Poultry Solution Programme (SPSP) Through Digital Technology Adoption**
OBJECTIVE	:	• To boost productivity through digital technology adoption for Agro-Food SMEs; and • To develop, deploy and documented a structured digital technology system (hardware and software) that can be used in arms that can remotely monitor and control the desired parameters at site remotely, with minimal human intervention.
DURATION	:	Activities Implementation: Feb – May 2021 Proof of Concept: Nov 2021
TOTAL COST	:	**RM36,000.00 (MPB-AFPN) + RM30,000.00 (APO)** **= RM72,000.00**
BUDGET	:	MPB – AFPN & APO Funding
RECOMMENDED BY	:	
COMMENT/ SIGNATURE BY PCT	:	

MALAYSIA PRODUCTIVITY CORPORATION (MPC)
PROPOSAL FOR BOARD OF MANAGEMENT

SMART POULTRY SOLUTION PROGRAMME (SPSP)
THROUGH DIGITAL TECHNOLOGY ADOPTION

1.0   Purpose

The purpose of this paper is to inform and seek approval from Board of Management (BOM) on Smart Poultry Solution Programme through Digital Technology Adoption with the total estimated cost of RM36,000.00 using the MPB-AFPN budget and RM30,000.00 using APO Funding.

2.0   Background

As land for agriculture becomes increasingly scarce, technology adoption has been the key driver to boosting agro-food yield and profitability around the world. Thus, to improve the awareness of technology applications in the agro-food subsector and support technological upgrades and modern farming techniques is needed, particularly among SMEs. With the rapid pace of the evolving technology, it continues to revolutionise how we live and how businesses operate, this is also known as the next era of technology which is the digital age. Hence Digital Productivity Nexus (DPN) has launched a campaign of Go B.I.G with Digital which is aimed to call upon all businesses to embrace a mindset change towards finding new breakthrough performance with digital technology adoption. Businesses must take charge, take risk, take pride in the digital direction of the respective business to boost productivity.

Thus, AFPN in collaboration with DPN and Machinery and Equipment Productivity Nexus (MEPN) agreed to embark this programme. The Smart Poultry Solution Programme (SPSP) is developed to tailor the technologies that are suitable for small local players with the efficient cost. Initially, the programme will embark on a case study on Internet of Things (IoT) for the poultry industry and later can be used in fertilizer irrigation tech, autonomous tractor, harvesting machine and so on. The impact of technology on productivity will be measured and tracked to extract key lessons for continuous improvements.

3.0   Team members

The team members for this project are as follows:

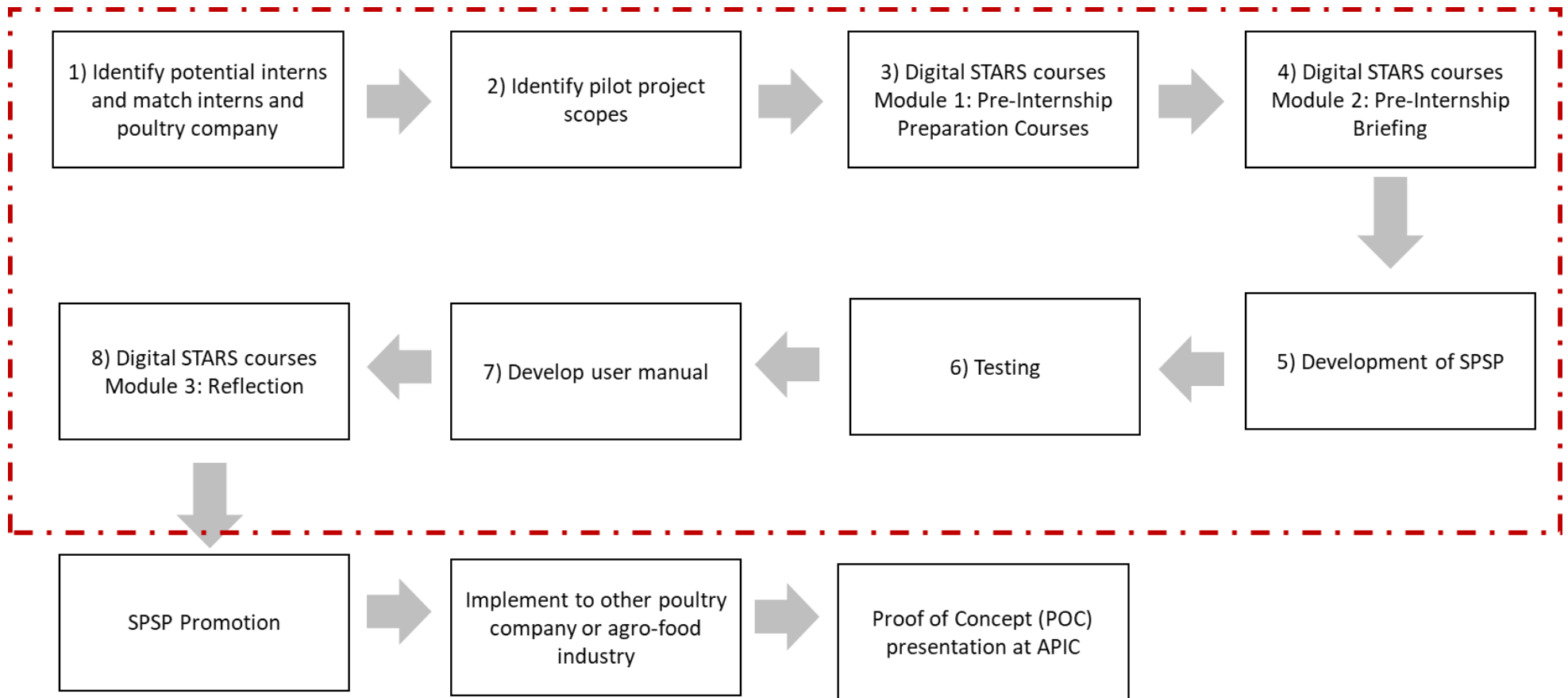|		
Project advisor	:	En Suhaimi Hamad
Project leader	:	Dr Mohamad Norjayadi Tamam
Team members	:	i. Dr Halimahton Sa'diah Let
		ii. Dr Mazlina Shafii
		iii. Safura Abdul Malek
		iv. Nur Fatimah Mohd Zaki
		v. Nurul Fatihah Mohd Azlan
		vi. Abdul Rahman Kamis
		vii.Digital STARS Intern (suitable digital background)
		viii. MPC MIT Team
Case study	:	Tube Ventures Sdn Bhd

4.0   Business model

Agricultural IoT that interpreted in this document is: Remote monitoring and remote control of existing farm equipment. The programme will try to ensure the existing equipment become smarter by connecting and controlling it from the cloud (Internet). This will help farmers to avoid micromanaging the farm and automate routine work whenever possible. An 8-hour day work can be shortening to 2-hours a day work, allowing a farmer to use time for other activity. The technology aims to ease the farmers in their daily task where they can monitor and manage their farm from home or wherever they are.

The programme will help to train a set of partially skilled people of differing background; that later can be absorbed to deploy this system elsewhere. Thus, Digital STARS an initiative under the DPN would be applied in this programme to address a shortage of digital talents and providing interns to the poultry farming industry via internship programme. Digital STARS aim to strengthen the collaboration between poultry farming industry, academia, government and community to reduce mismatch of talent supply and demand.

5.0 Implementation strategy

i. To select potential Digital STARS Interns from Higher Learnings Institution and match with the Poultry Farming Industry requirements.

ii. To do a proof of concept (PoC)/pilot study with one poultry house only.

iii. To focus on 3 types of censor which are ammonia level, water pressure level, and power consumption.

iv. To integrate both in-house parts (software) and off-the-shelf parts (hardware) to hasten development process. This will entail activities such as follows:
   a) Use commercially available microcontroller and microprocessor.
   b) Renting a webserver with CoAP/MQTT; that is physically in Malaysia.
   c) Develop own IoT Gateway technology or use existing development kits.
   d) Develop codes to connect to various APIs of relevant databases useful for agriculture.

v. To develop a one-stop dashboard for user to use (the development will be done by the interns together with industry expert and MPC team).

vi. To develop training module for the front office and back office administration. The module will also include information such as source code that can readily be transferred to future entity at moment notice.

vii. To roll out promotion plan to share the benefit of SPSP

viii. To implement the SPSP to other poultry company or agro-food industry

SPSP Implementation Strategy Framework

1) Identify potential interns and match interns and poultry company

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2) Identify pilot project scopes

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3) Digital STARS courses Module 1: Pre-Internship Preparation Courses

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4) Digital STARS courses Module 2: Pre-Internship Briefing

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8) Digital STARS courses Module 3: Reflection

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7) Develop user manual

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6) Testing

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5) Development of SPSP

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SPSP Promotion

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Implement to other poultry company or agro-food industry

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Proof of Concept (POC) presentation at APIC

*Note: ⌐⌐ **POC/**Pilot test period

6.0 Timeline

	Activity	Feb	Mar	Apr	May	Nov
i.	Identifying Digital STARS intern	■				
ii.	Engagement with industry players	■				
iii.	Identify pilot project scopes	■				
iv.	Digital STARS courses – Before Internship		■			
	1. Ethical Mindset and Professional Behaviours Course (1 ½ days)					
	2. Digital Technical Skills (4 ½ days)					
	3. Project Management (2 days)					
	4. Pre-Internship Briefing - Registered Organisations (1/2 days)					
	5. Pre-Internship Briefing – Supervisors (1/2 days)					
v.	Development of Smart Poultry Solution Programme		■	■		
vi.	Testing and Monitoring			■	■	
vii.	Develop user manual			■	■	
viii.	Digital STARS courses – After Internship				■	
	1. Reflection (1 day)					
ix.	PoC presentation at APIC					■

7.0 Estimated total cost

SPSP will utilize SPN-AFPN Budget and APO Funding as detail below:

SPN-AFPN BUDGET

#	ACTIVITY	COST PER UNIT (RM)	TOTAL (RM)
1.	Technical expert	RM400/hour x 4jam x 15 man-day	24,000.00
2.	User Manual (writer)	RM200/page x 30 page	6,000.00
3.	Promotional activities		
	• e-poster (two languages)	RM500 x 2 posters	1,000.00
	• Videos (3-5 minutes)	RM5000 x 1 video	5,000.00
		TOTAL	**36,000.00**

APO FUNDING

#	ACTIVITY	COST PER UNIT (RM)	TOTAL (RM)
1.	Hardware and Software*	1-unit x RM30,000	30,000.00
		TOTAL	**30,000.00**

Note:

i. The hardware and software cost will include purchasing of equipment, cost of labor for installation and subscription of server.

ii. The equipment should be registered as the property of MPC or the recipients.

8.0 Potential risk

The potential risk that have been identified are:

i.   Commitment from the company selected for the case study;

ii. Matching the student to fulfill the poultry company requirements; and

iii. SPSP is not working as planned.

9.0 Output

The output expected from the programme are as follows:

i) Proof of Concept

ii) Report on data extract from the monitoring

iii) User manual

10.0   Approval from BOM

The consideration and approval from the Board of Management (BOM) is sought to a Case Study on Smart Poultry Solution Programme (SPSP) in collaboration with DPN and MEPN with the total estimated cost of RM36,000.00 using the MPB-AFPN budget and RM30,000 using APO Funding.

Prepared by:	Checked by:	Approved by:
Nur Fatimah Mohd Zaki	**Safura Abdul Malek**	**Suhaimi Hamad**
Assistant Manager	Manager	Director
22 February 2021	22 February 2021	22 February 2021