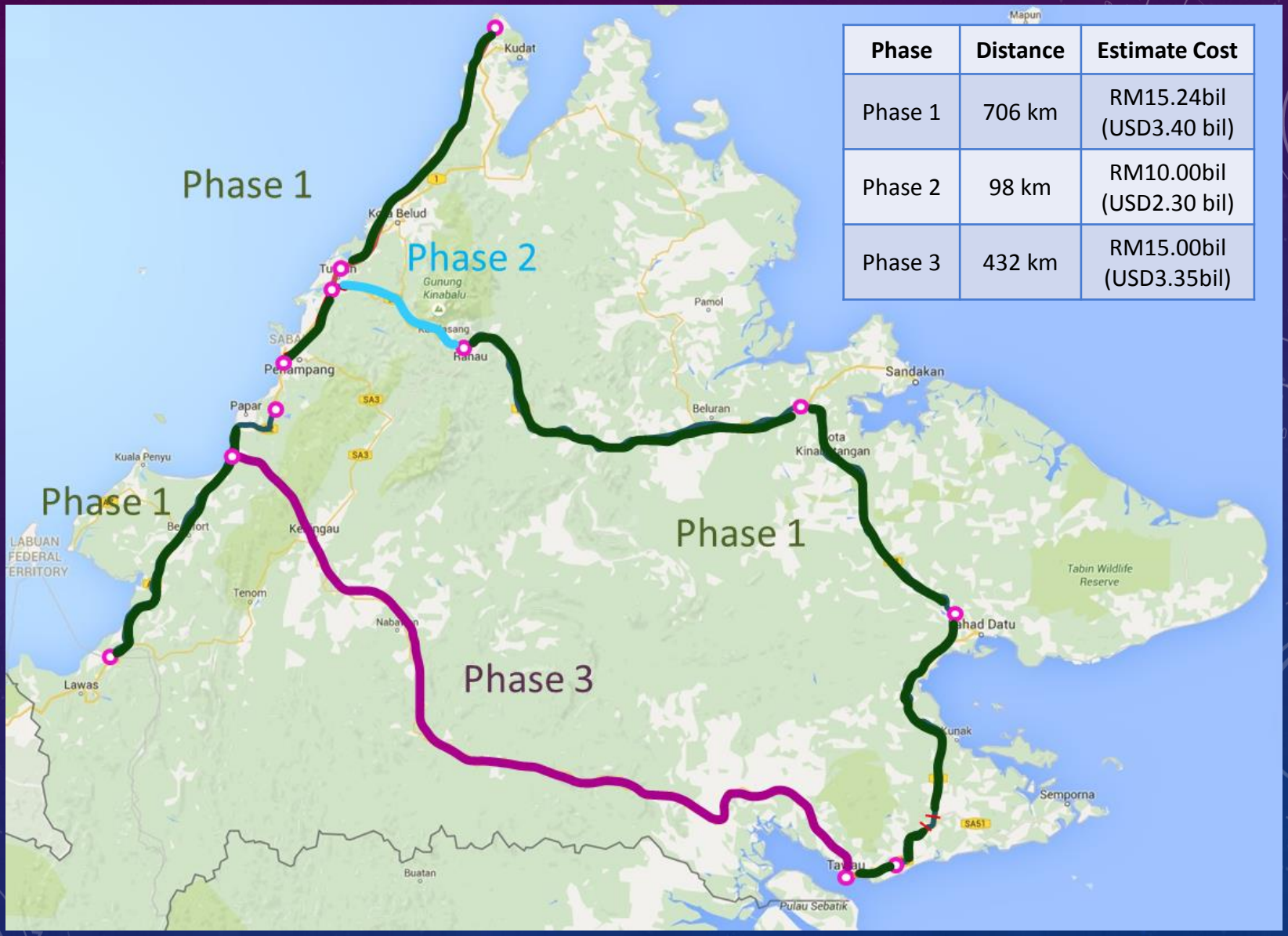
THE IMPLEMENTATION OF DIGITALIZATION IN PAN BORNEO HIGHWAY SABAH (PBHS) PROJECT

PAN BORNEO HIGHWAY SABAH, MALAYSIA. INTRODUCTION:

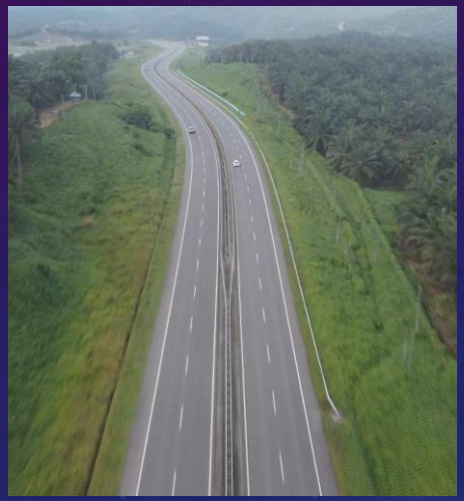
- Pan Borneo Highway Sabah (PBHS) is a multi-billion road infrastructure development project funded by the Malaysian Government to enhance road connectivity in the state of Sabah.
- PBHS will be implemented in three (3) phases totalling 1,236 kilometre.
- The scope of works:
  - Upgrading existing roads into 4-lane dual carriageway highway
  - New construction of 2-lane single carriage way
  - New construction of bridges
  - New construction of interchange

PAN BORNEO HIGHWAY SABAH PROJECT

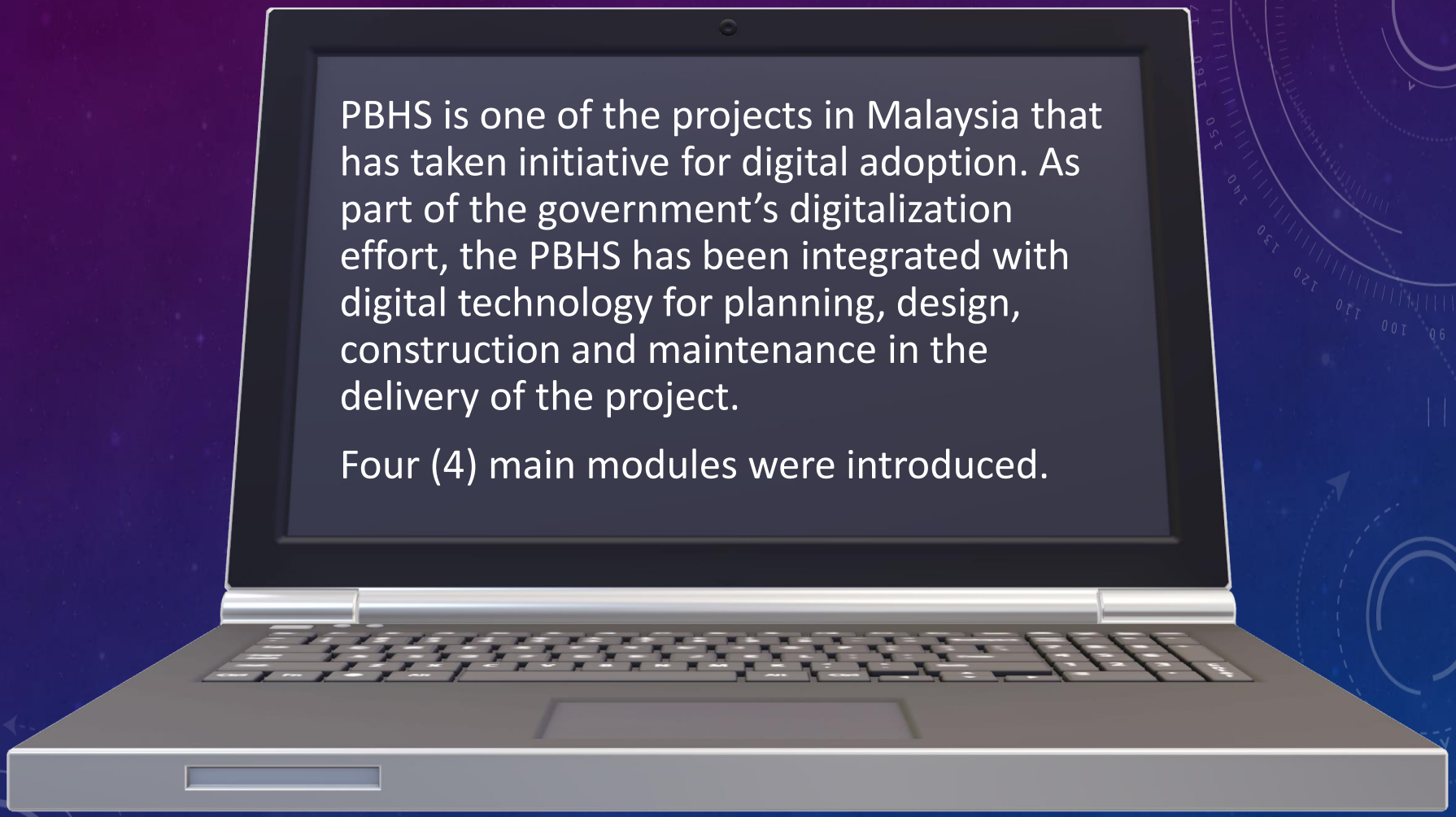


Phase	Distance	Estimate Cost
Phase 1	706 km	RM15.24bil (USD3.40 bil)
Phase 2	98 km	RM10.00bil (USD2.30 bil)
Phase 3	432 km	RM15.00bil (USD3.35bil)

PAN BORNEO HIGHWAY SABAH PROJECT



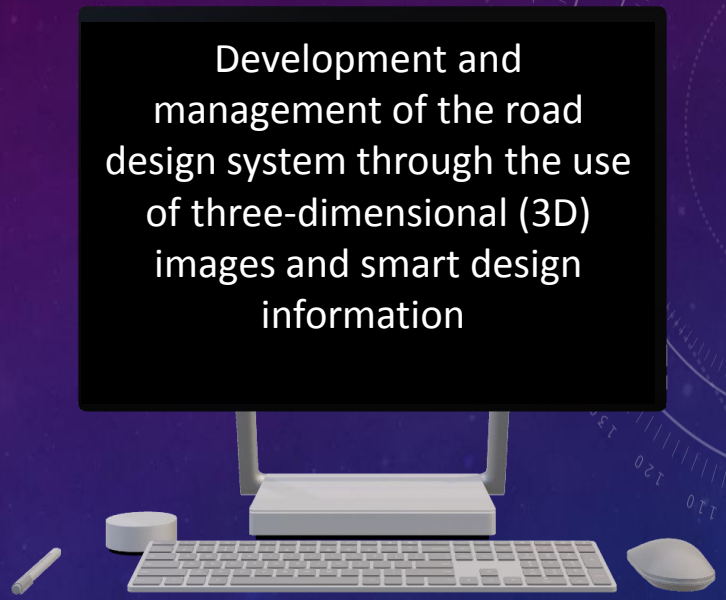
PBHS AND DIGITALIZATION



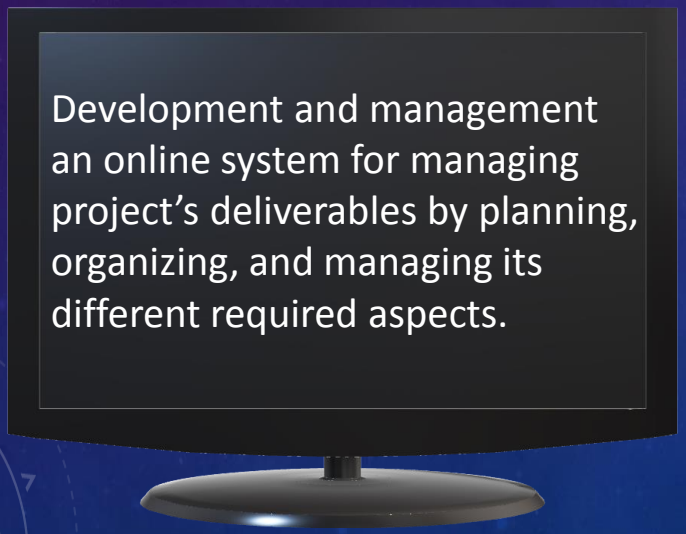
PBHS AND DIGITALIZATION TRANSFORMATION

Building Information Modelling (BIM)

Development and management of the road design system through the use of three-dimensional (3D) images and smart design information



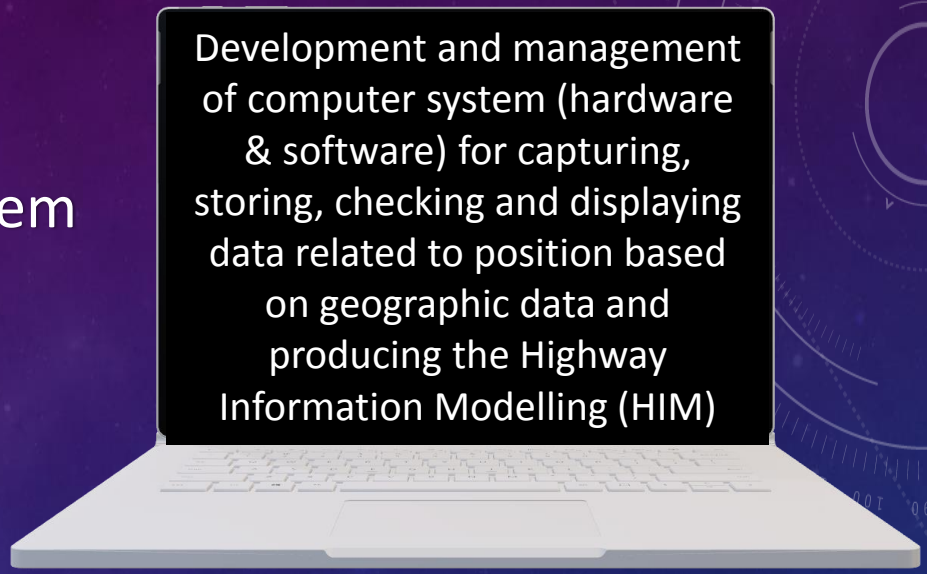
Development and management an online system for managing project's deliverables by planning, organizing, and managing its different required aspects.

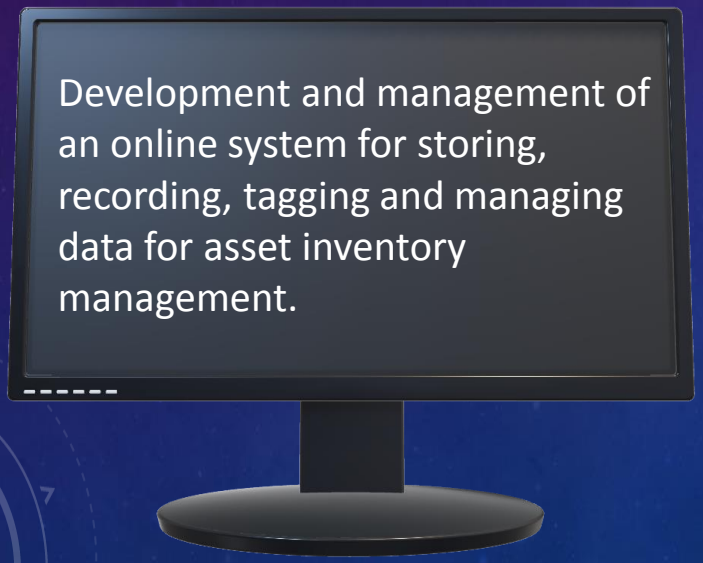


Project Management System (PMS)

PBHS AND DIGITALIZATION TRANSFORMATION

Geographical Information System (GIS)

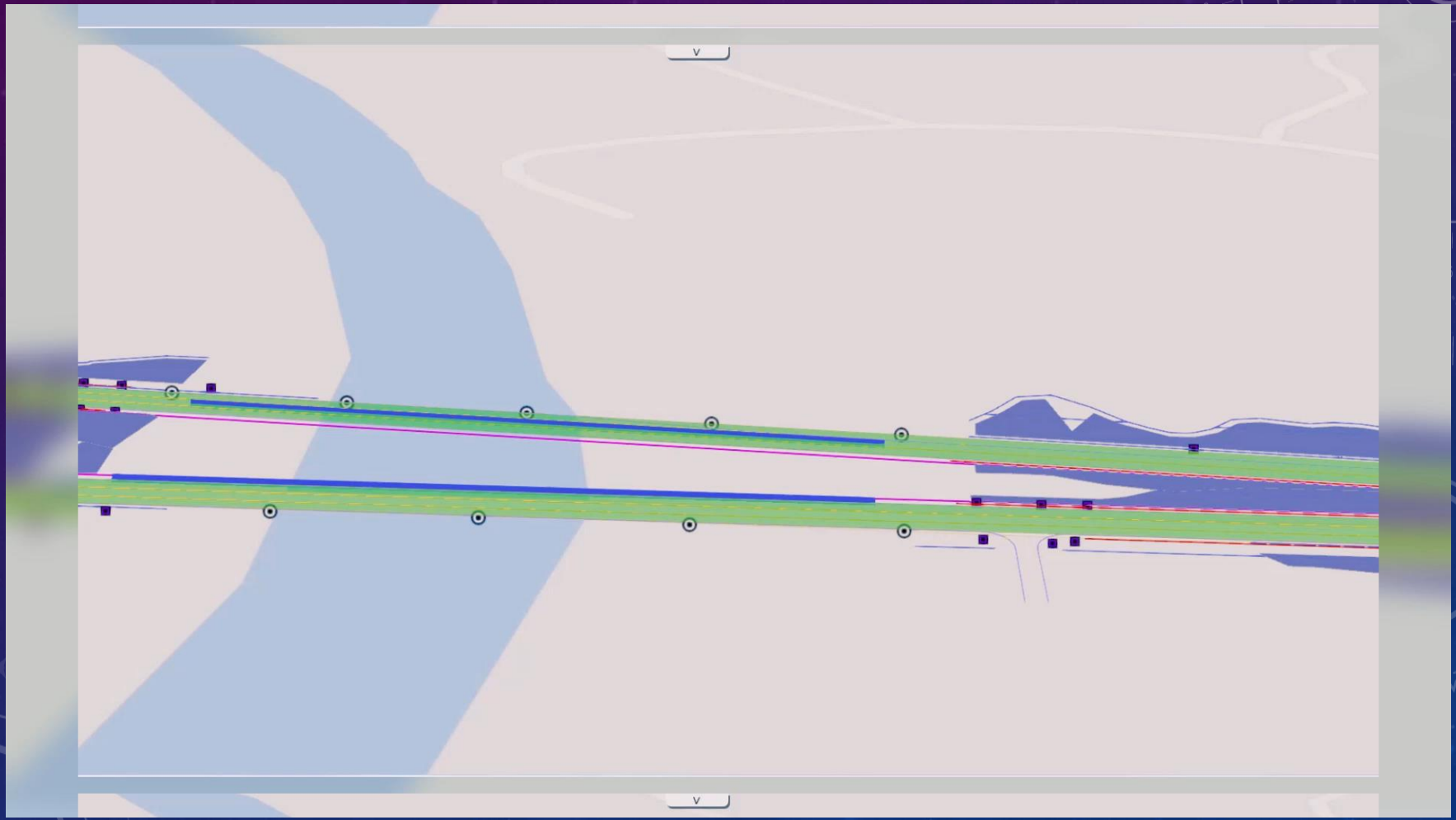




Asset Management System (AMS)

BUILDING INFORMATION MODELLING (BIM)

DEVELOPMENT AND MANAGEMENT OF THE ROAD DESIGN SYSTEM THROUGH THE USE OF THREE-DIMENSIONAL (3D) IMAGES AND SMART DESIGN INFORMATION.

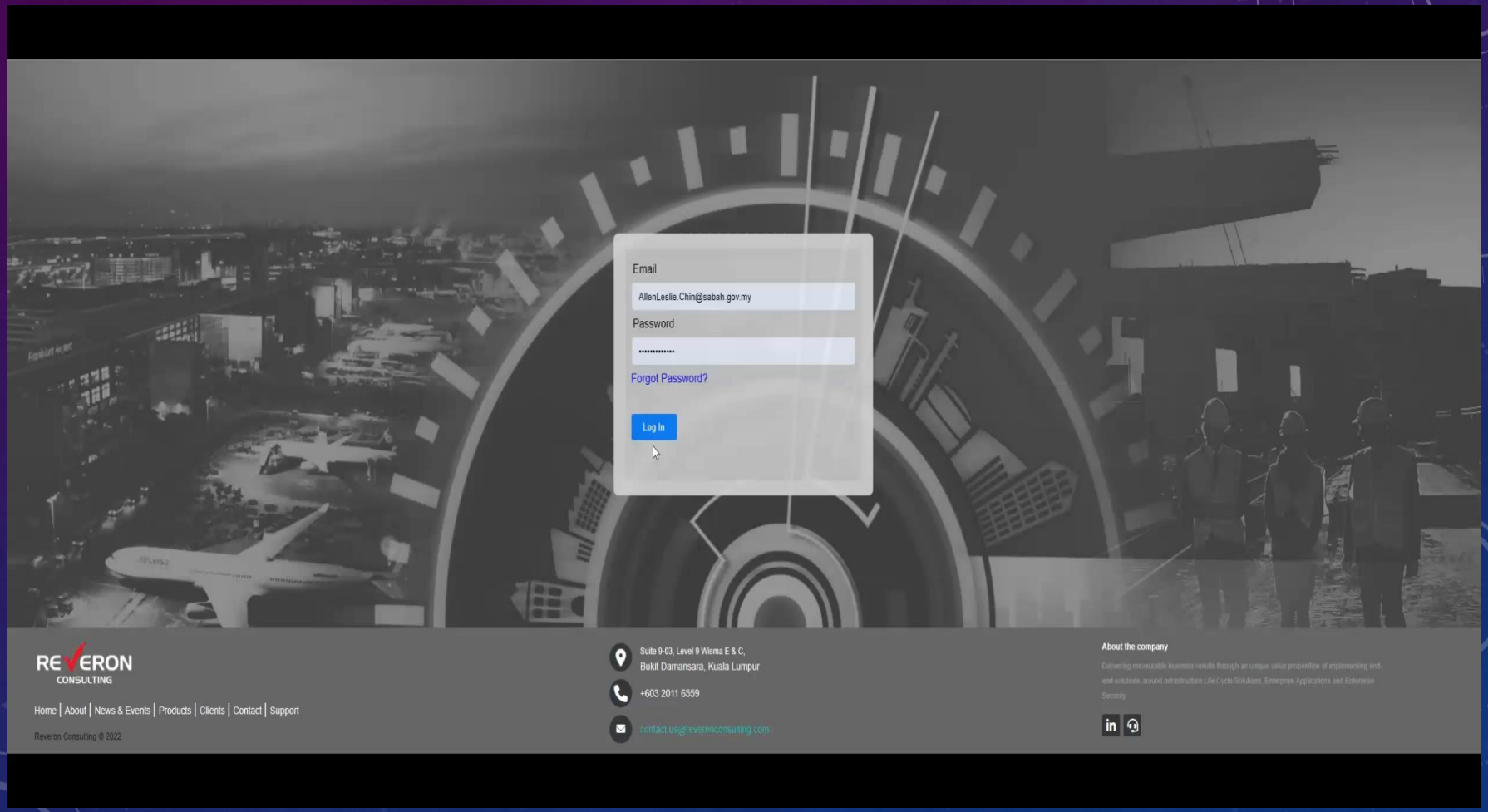


THE DIGITALIZED QUANTITY SURVEYOR AND BIM

Advantages	Disadvantages
Provide accurate measurements	Requires new skills and competencies in using BIM
Provide efficiency and quality of cost estimation	Require to keep up with the latest trends, technologies and best practices.
Reduce errors	Long term investment in software and computer resources
Enhance collaboration with other stakeholder based on one platform.	
Optimize resources (time, labour)	
Reduce workload and increase in accuracy	

PROJECT MANAGEMENT SYSTEM (PMS)

DEVELOPMENT AND MANAGEMENT AN ONLINE SYSTEM FOR MANAGING PROJECT'S DELIVERABLES BY PLANNING, ORGANIZING, AND MANAGING ITS DIFFERENT REQUIRED ASPECTS.



THE DIGITALIZED QUANTITY SURVEYOR AND PMS

Advantages	Disadvantages
Access to information at anytime via smart devices and internet	Data loss or theft
Keep track of budgets ie payments, variations, procurement	Reliance of technology: down time, network downtime
Keep track of timelines ie Date for Completion, EOT, payment schedule, validity of insurances.	Data leakage
Enhance collaboration with other stakeholder based on one platform.	Data protection
Keep track of project's progress	Overall security and safety
Improved process standardization by customized workflows and procedures.	

DIGITALIZATION TRANSFORMATION WHAT'S THE ISSUE!

- Although the project is adopting digital technology such as BIM, PMS, etc. Nonetheless, there are few draw backs which still prevent the adoption of technology.
  - Fear – starting the change process with humans, not technology.
    - Some are just happy doing work the same way – resistance to change.
    - Raising awareness on the benefit of digitalization
  - Lack of Expertise – need to have skilled employees who can carry on the process
    - ie setting up BIM services ie no specific department/individual to ensure implementation
  - Budget Constraints – "Its not cheap"
    - Initial cost to provide the infrastructure ie better computers, better software
    - Provide training to employees

THE DIGITALIZED WORLD

- Digitalization is coming – with or without you!
  - A - Adopt and embrace the change (digitalization)
  - Q - Quickly grab the opportunity – time is money
  - S -Securing knowledge and technology
  - A -Assuring productivity and success!

AQSA

THANK YOU!