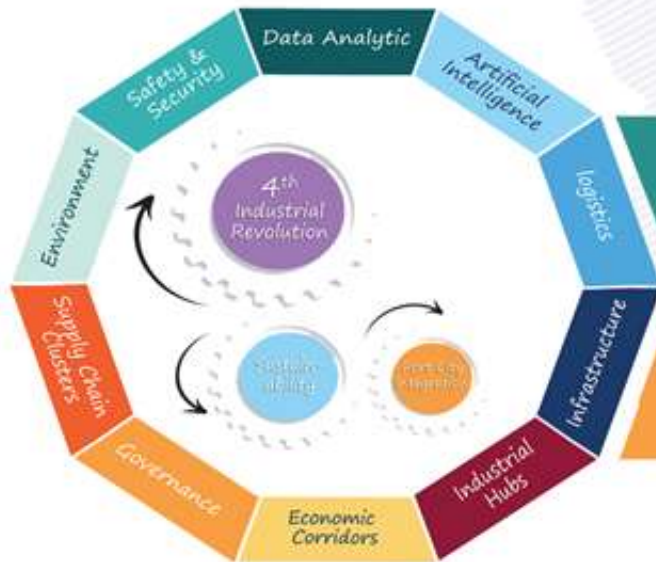




الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري
Arab Academy for Science, Technology & Maritime Transport



The International Maritime Transport and Logistics Conference “Marlog 9”
Impacts of the Fourth Industrial Revolution on Port-City Integration
“World Port Sustainability Program Aspects”



PORT-CITY INTEGRATION TOWARDS SUSTAINABLE PORT-CITY ECOSYSTEM
CONSIDERING INDUSTRY 4.0: A CASE STUDY OF ISKANDAR, MALAYSIA

By: DR. MOHAMMADEHSAN TORABIZADEH
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Netherlands Maritime University College (NMUC)

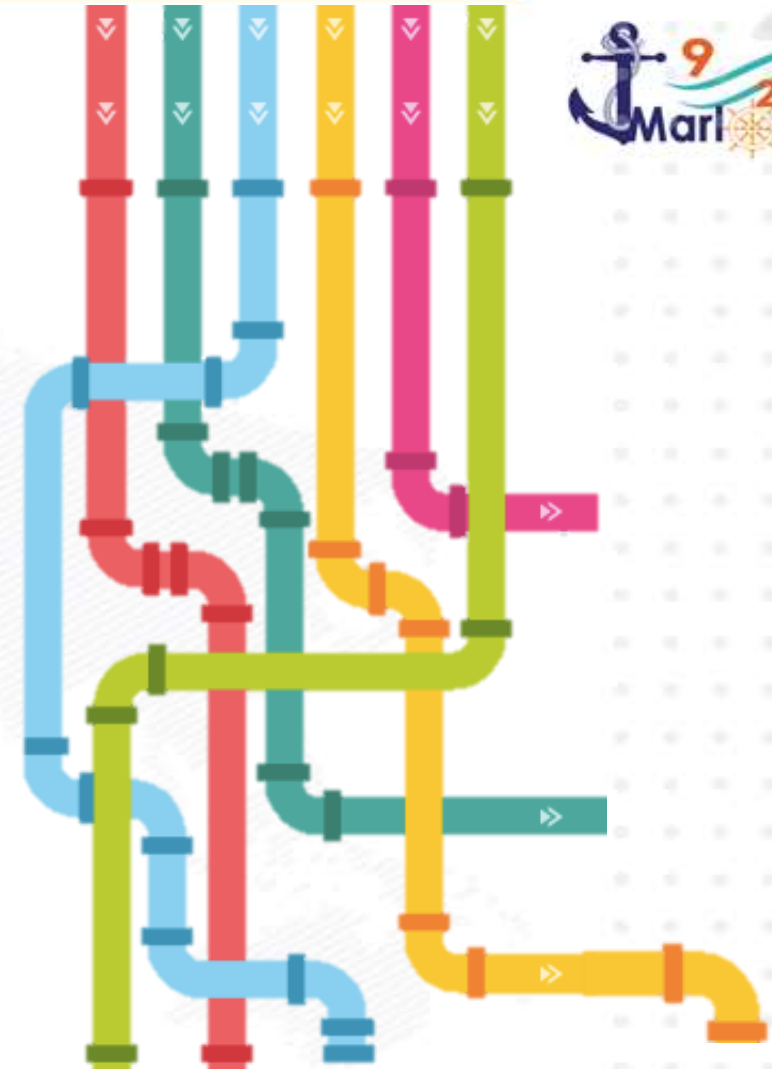
10-12- October, 2020



PORT-CITY INTEGRATION TOWARDS SUSTAINABLE PORT-CITY ECOSYSTEM CONSIDERING INDUSTRY 4.0: A CASE STUDY OF ISKANDAR, MALAYSIA

Content:

- Introduction
- Port City Integration & IR4.0
- Challenges Faced by Port Authority
- Importance of Maritime Industry in Malaysia and Port of Tanjung Pelepas
- Roadmap Towards Sustainable Port-City Ecosystem
- IR4.0 & Sustainability
- Summary

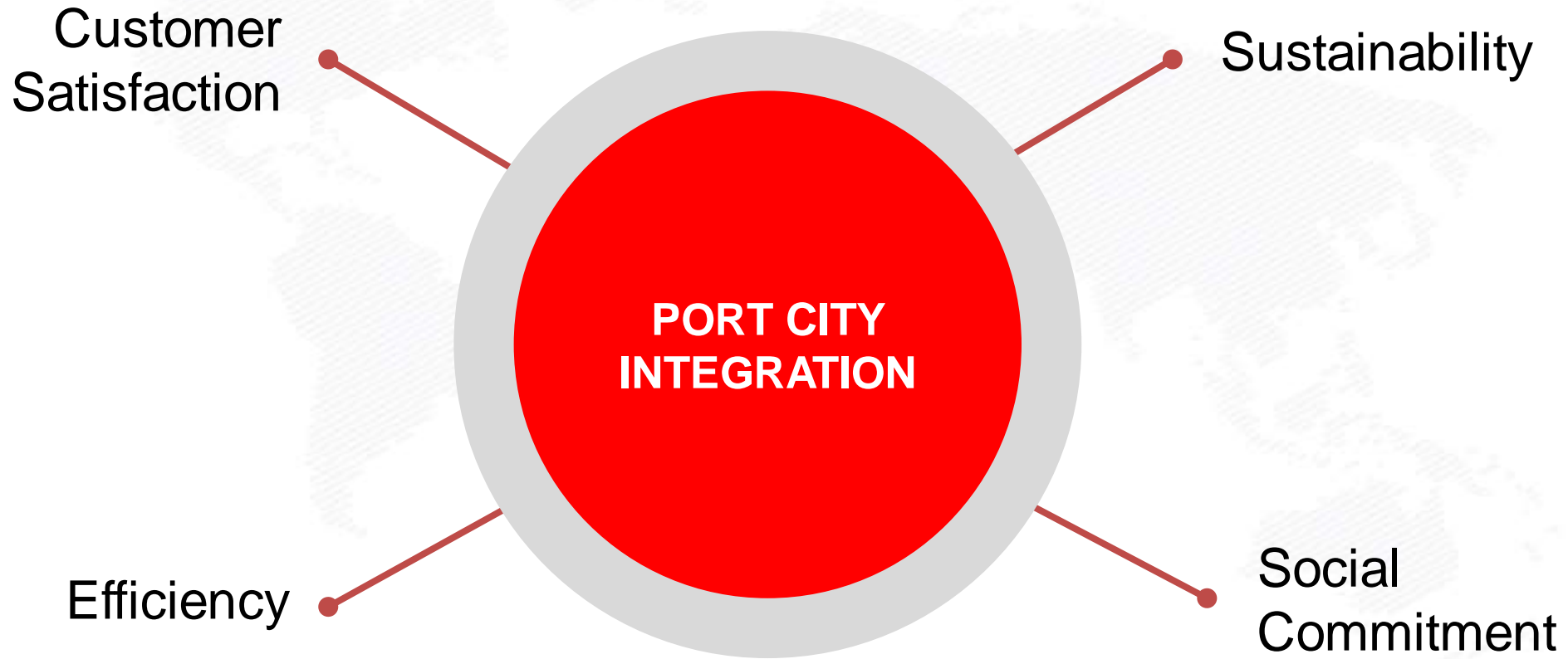


INTRODUCTION

- Studies show that port-city integration is a multifaceted concept.
- IR 4.0 is based on data which affect people move, work, communicate.
- IR 4.0 , port-city integration and real-time interconnection



PORT-CITY INTEGRATION & IR 4.0



CHALLENGES FACED BY PORT AUTHORITY

What is the road map towards implementing sustainability into port-city integration?



INTERNAL AND EXTERNAL FORCES



METHODOLOGY

- Focusing on four main factors
- Interview with key players
- Case study: Port of Tanjung Pelepas (PTP) , Johor, Malaysia



IMPORTANCE OF MARITIME INDUSTRY IN MALAYSIA & PTP

- Malaysia is the four best connected economy among Asian countries
- PTP is located at the confluence of the main east-west shipping lanes.
- PTP offers shipping lines minimal deviation time of 45 minutes

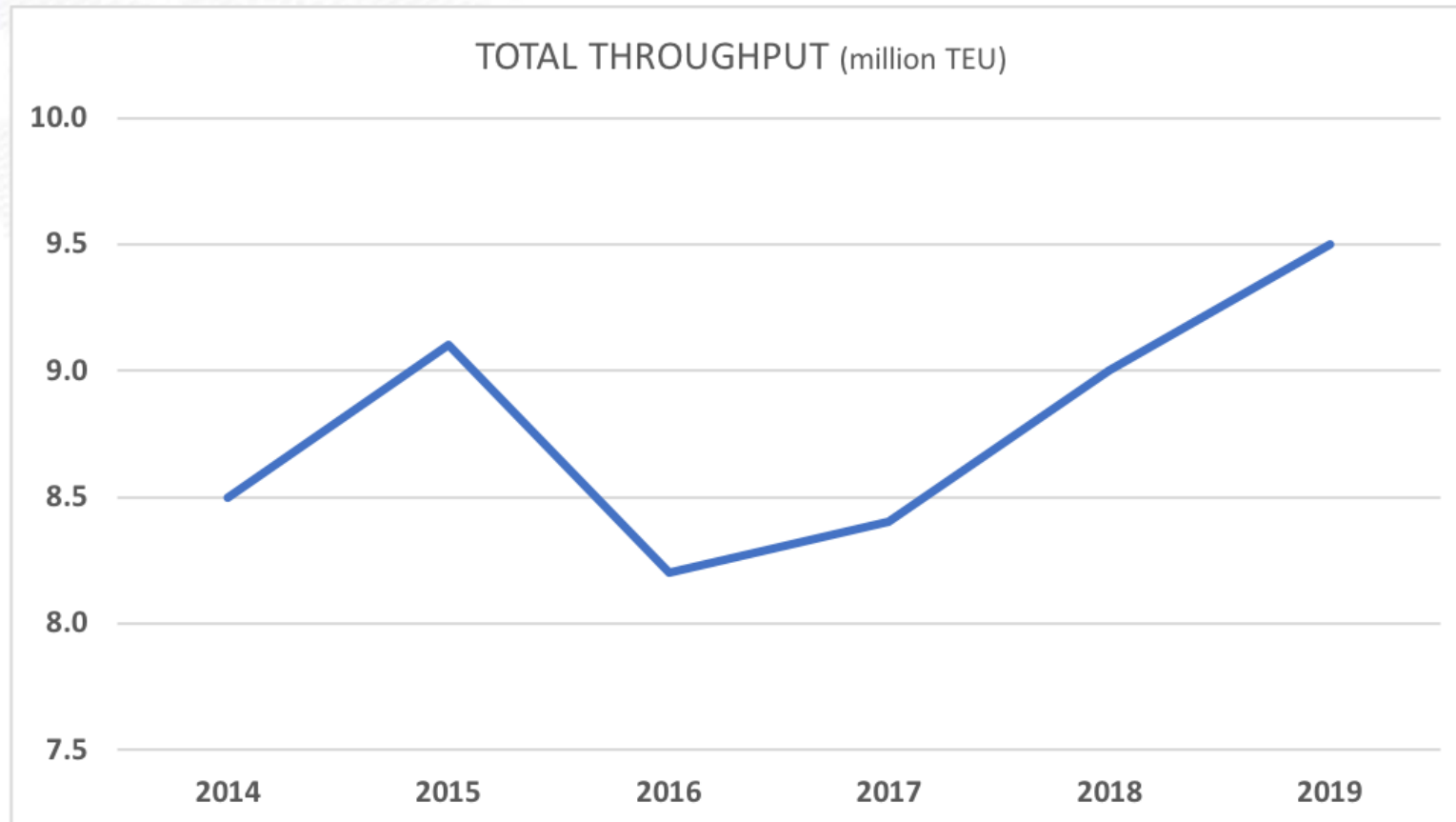


IMPORTANCE OF MARITIME INDUSTRY IN MALAYSIA & PTP

- PTP has 14 linear berths, totaling 5.04 km
- 58 super panama cranes
- Out of 58, sixteen have a 24-boc outreach catering for next generation of Triple-E size vessels.



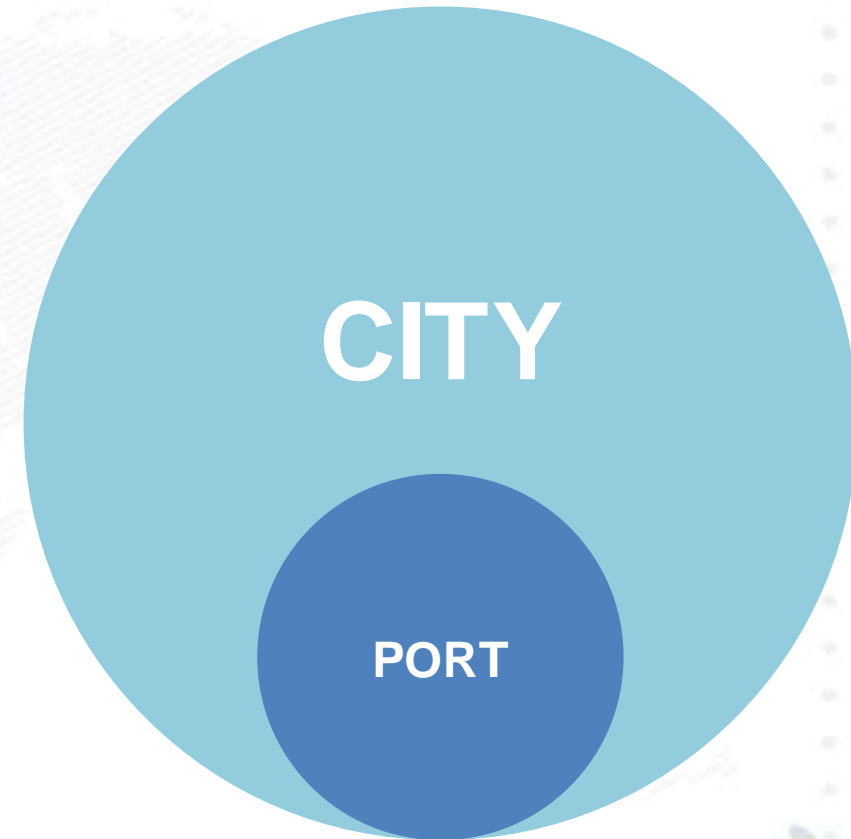
PTP THROUGHPUT



Source : Authors

ROADMAP TOWARDS SUSTAINABLE PORT-CITY ECOSYSTEM

- Conventional port-city integration; cons & pros
- Sustainable port-city ecosystem
- Actions taken by PTP authority towards achieving sustainable port-city ecosystem



CLOUD

- Terminal Wide Wireless Broadband Mobile Network
- 5G communication in Malaysia
 - Telekom Malaysia Berhad (TM) has begun a live 5G transmission in Langkawi on the 5th December 2019
 - TM has launched the Iskandar Puteri Data Center

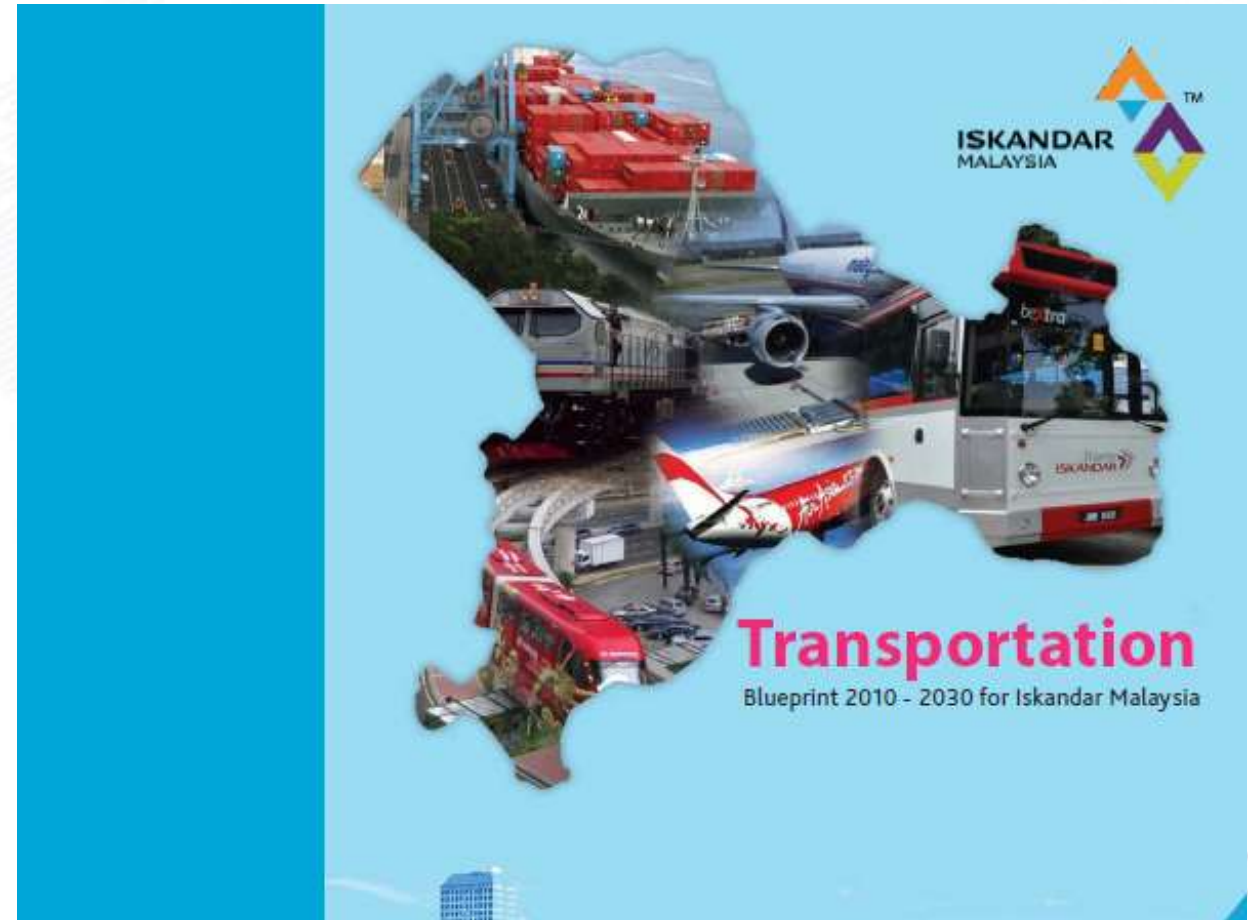


ISKANDAR PUTERI DATA CENTER

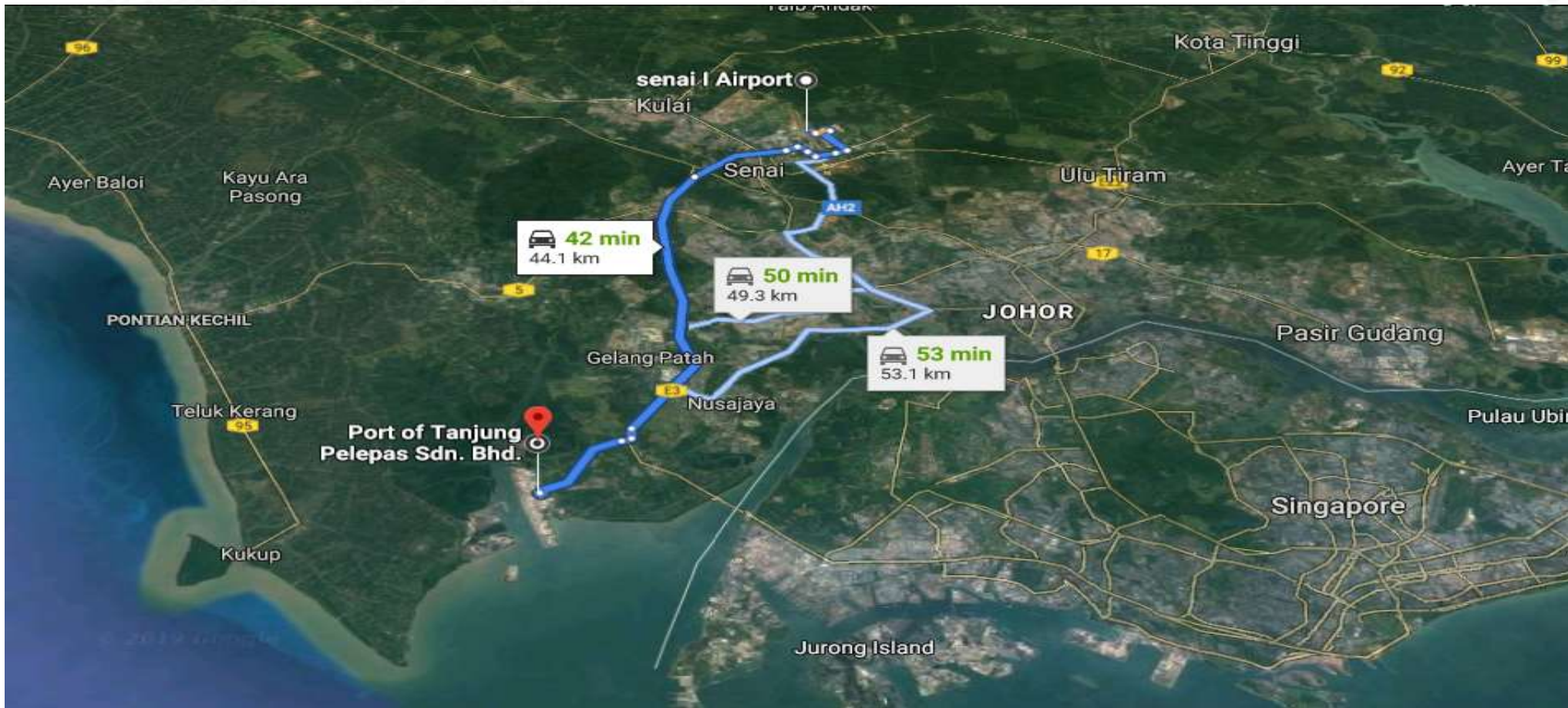


TRANSPORTATION BLUEPRINT: PHYSICAL CONNECTIVITY

- Hinterland transportation
- Urban transportation

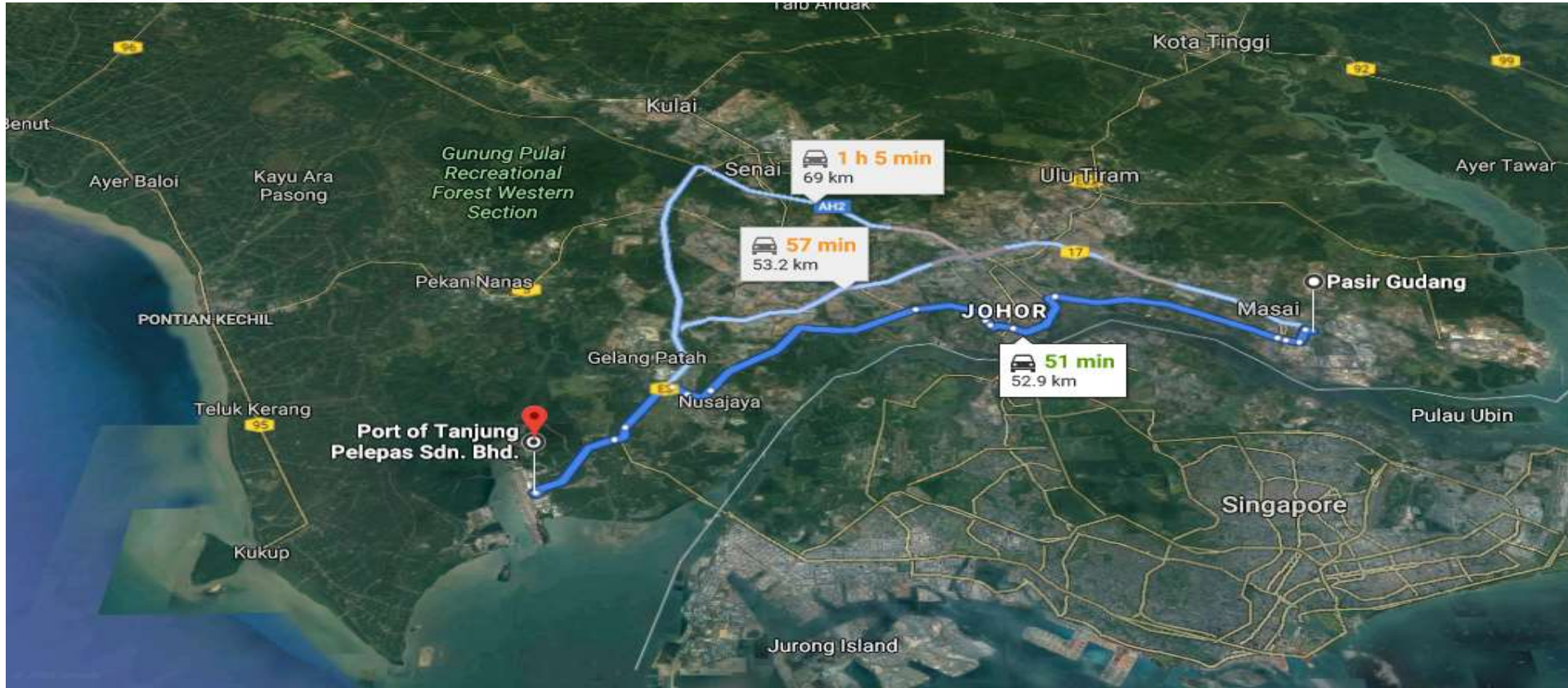


PHYSICAL CONNECTIVITY



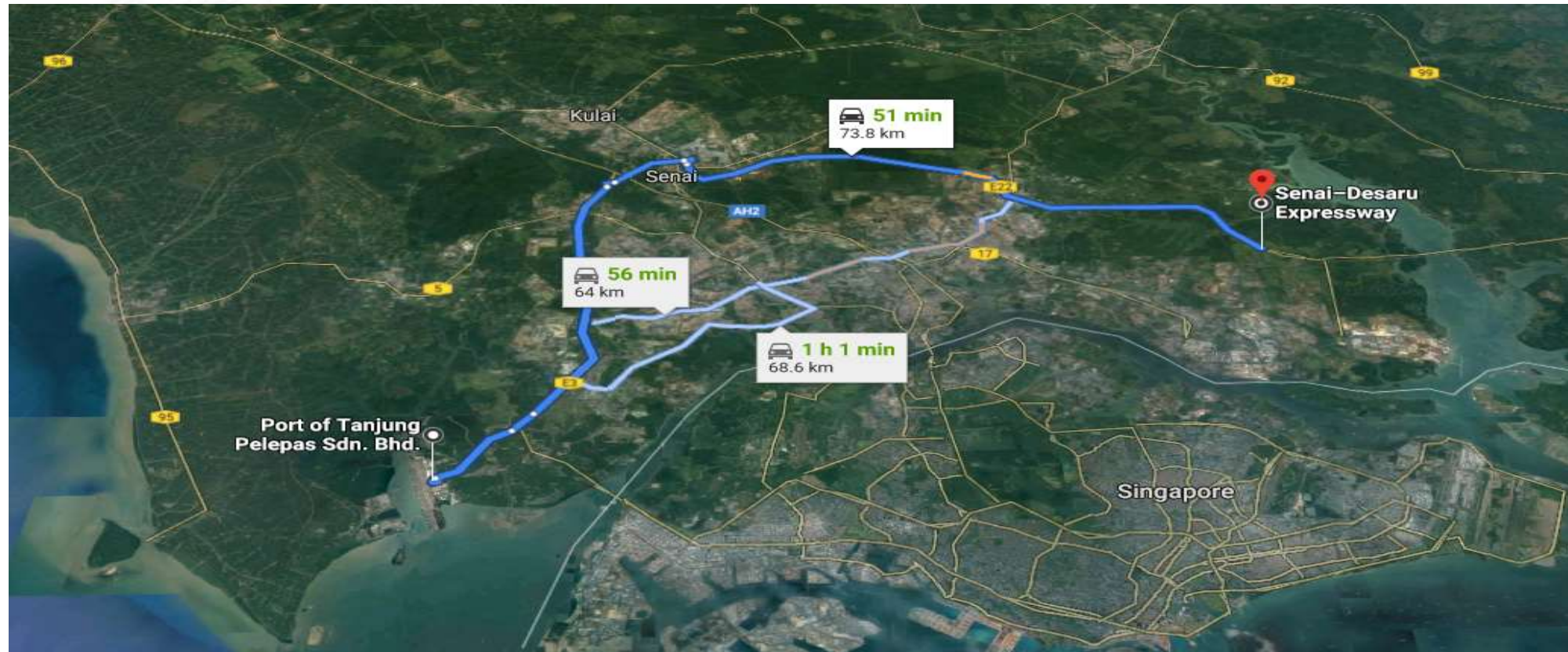
Senai Airport to PTP (Source: Google Map)

PHYSICAL CONNECTIVITY



PTP to Pasir Gudang
via
Lebuhraya Sultan Iskandar (EDL) (Source: Google Map)

PHYSICAL CONNECTIVITY



PTP to Pasir Gudang
via
Desaru-Express-Way (Source: Google Map)

RAILWAY FROM THAILAND TO JOHOR BAHRU



Gemas-Johor Bahru electrified double-tracking project
(Source: Google Map)

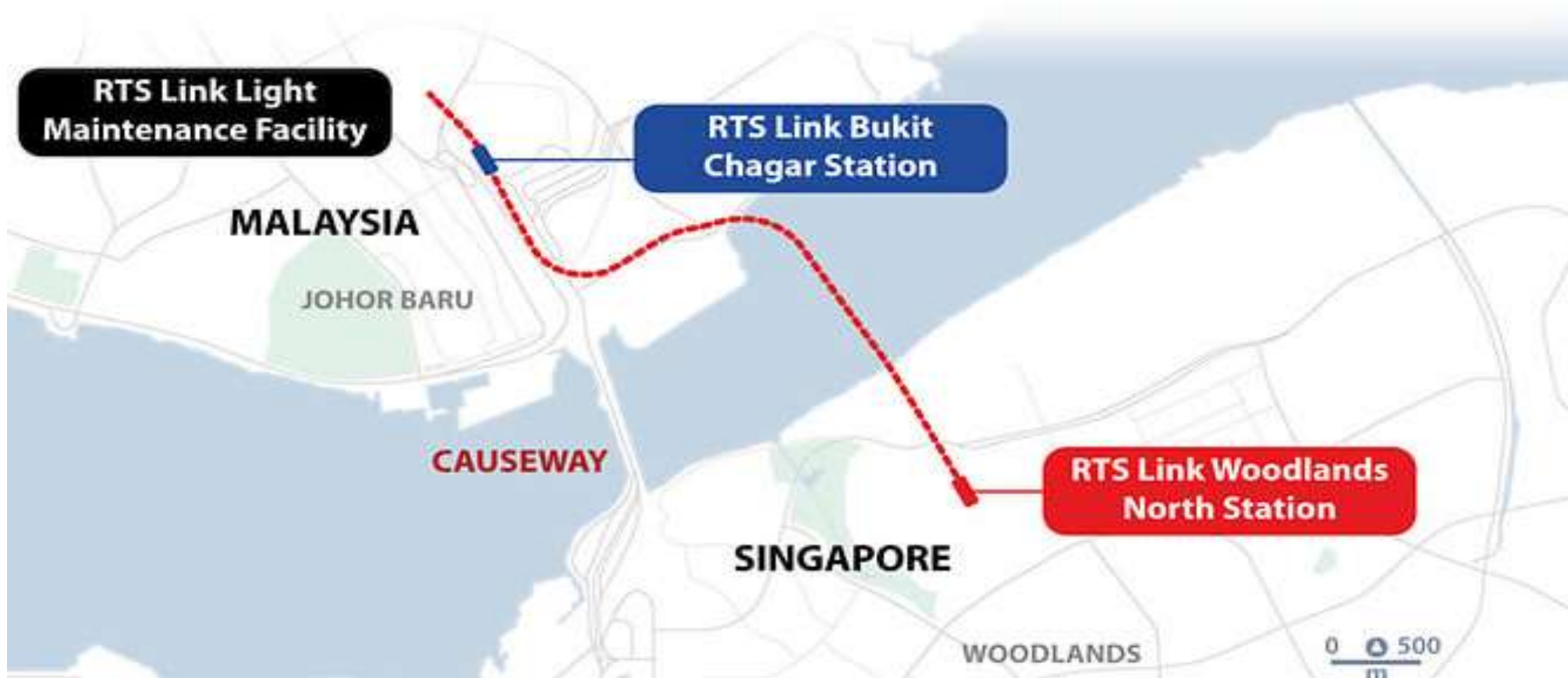
CONNECTIVITY WITH FREE TRADE ZONE (FTZ)



- Two Integrated Logistics Centers (ILC):
 - Nusajaya ILC (2015)
 - Kota Masai ILC (2015)
 - Seelong ILC (2025)
 - Ulu Tiram ILC (2025)



COMMUTER MOVEMENT ENHANCEMENT



Johor Bahru- Singapore Rapid Transit System (RTS)
Source: CNA



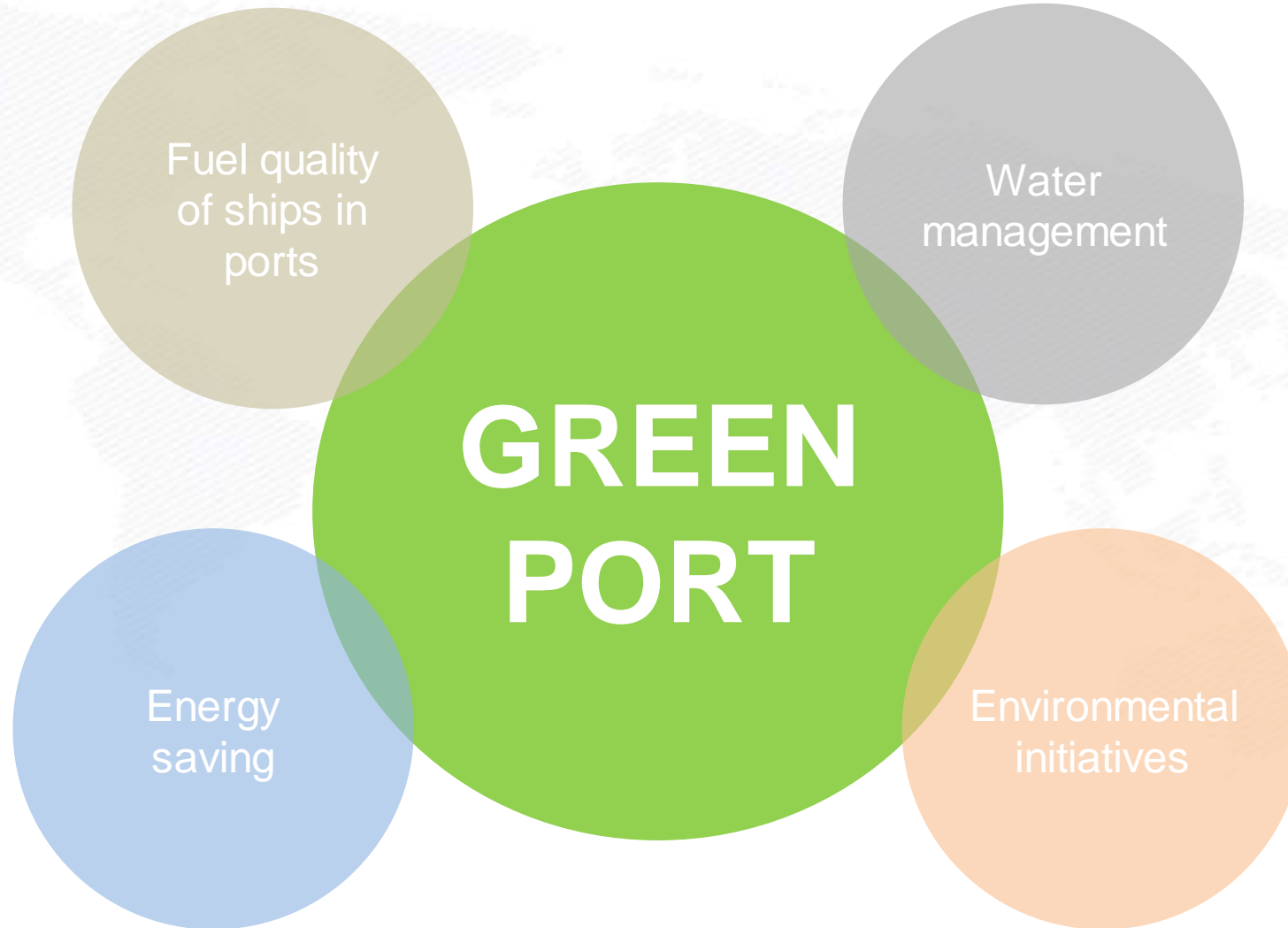
ENVIRONMENTAL BLUEPRINT

Aims:

- Achieving sustainable forms of development and land use
- Preserving and protect the biodiversity of Iskandar Malaysia
- Protecting all environmentally sensitive areas
- Promoting and enhancing air quality



GREEN PORT POLICY



PTP AWARDED AS GREEN PORT/TERMINAL OF THE YEAR



Source: The Iskandarian

IR 4.0 & SUSTAINABILITY

- Big data
- IoT and Real-time data
- Blockchain



SOCIAL CONTRIBUTION

- Wealth generation
- Wealth sharing
- Resource optimization

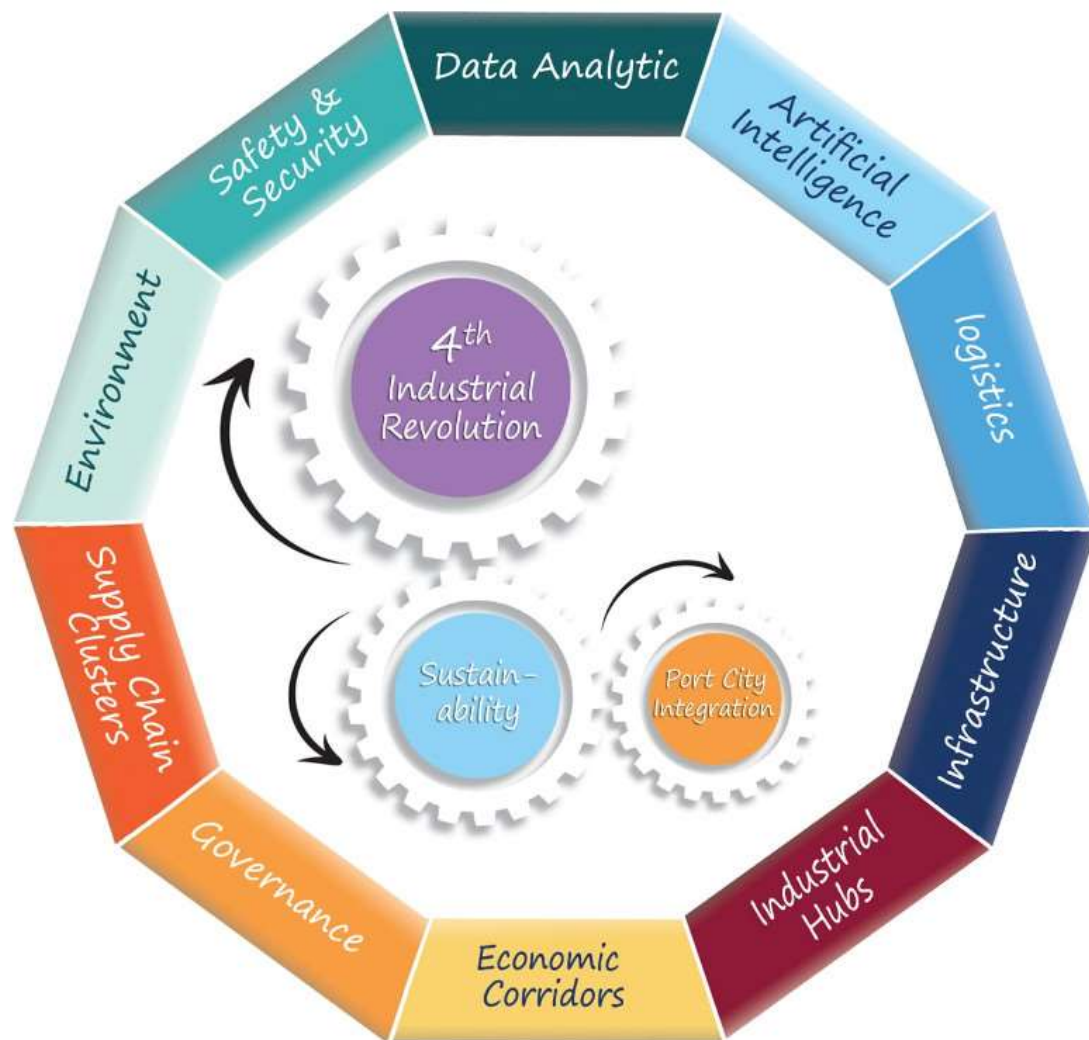


SUMMARY

- To compete with rivals, ports have to move towards sustainable port-city ecosystem
- To achieve sustainable port-city ecosystem implementing IR 4.0 is necessary.



THANK YOU



** Formerly known as Netherlands Maritime Institute of Technology*