



PVI MALAYSIA PRIVATE VEHICLE INSPECTION SDN BHD –



The Malaysia Project in Partnership with

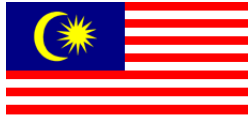
MAHA Maschinenbau Haldenwang GmbH & Co. KG

Tan Bee Heng, Ben

Haldenwang, 15.06.2016

Country Profile - Malaysia

1



Malaysia – Position in the world



- **Approx. 330.000 sq km**
(Germany: 357.092 sq km)
- **Inhabitants: approx. 31 Mio.**
(Germany: 81,7 Mio.)
- **Vehicle population: approx. 24 Mio.**
(Germany: approx. 59 Mio.)
- **Road network: approx. 144.403 km**
(Germany: 230.000 km)
- **Time Zone: CET (MEZ) + 6**

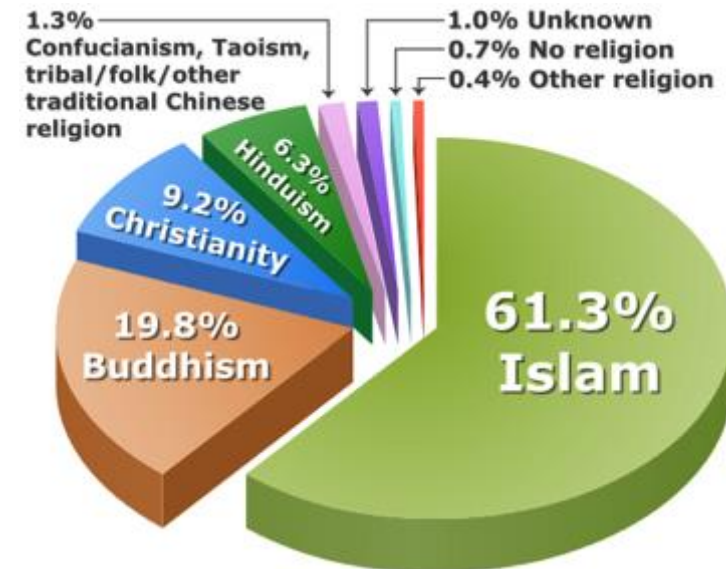
Approx. 6 Mio live in East Malaysia (approx. 20% of whole population) – an area that covers approx. 60% of Malaysia's territory.

Country Profile - Malaysia

2



- Shared borders with Thailand and Singapore in West Malaysia and Brunei and Indonesia in East Malaysia
- Independence from British rule since 31st August, 1957
- Second most populated Muslim country behind Indonesia in Asia Pacific region



- Malaysia economy is one of the most competitive in Asia with GDP growing an average of 6% annually
- Main industries are the petroleum and LNG producer, electronic equipment, tourism and the largest producers of palm oil

Country Profile - Malaysia

3



- Capital city: Kuala Lumpur
- 13 states – including 3 Federal Territories (FT)
- West Malaysia – 11 States – 2 FT
- East Malaysia – 2 states – 1 FT
- Majority 50.1% Malays
 - 22.6% Chinese
 - 11.8% Indigenous
 - 6.7% Indian
 - 8.8% other
- 80% of total Population in West Malaysia
- GDP per Capita: \$25,833 (42th)
- Currency : Ringgit (RM) (MYR) 4.6 to 1 EUR
- Top 5 largest cities
 - Kuala Lumpur – 1.5 mio
 - Johor – 0.91 mio
 - Perak – 0.71 mio
 - Shah Alam – 0.67 mio
 - Petaling Jaya – 0.63 mio



Malaysia - Economy



The Petronas Towers house the headquarters of the national oil company Petronas and are the tallest twin-towers in the world.



A Proton car. Malaysia is the only country in Southeast Asia which manufactures indigenously designed automobiles.



Kuala Lumpur (KL), the main economic Centre of Malaysia.

Background Information

Existing: vehicle tests for commercial vehicles (Puspakom) – now the introduction of periodical inspection for private vehicles ⇒ 21 Mio. additional vehicles (50% motor bikes)

- MAHA partner:   ↔  ↔ 

- MAHA Haldenwang Malaysia Sdn Bhd
 ↔ 
- Project start: Expected 01.08.16
- Project end (Rollout): 24 months 01.08.2018
- No. stations: approx. 170
- No. test lanes: 700 (400 LDV / 300 MC) + 15 MSR 500 4WD
- Mobile units: approx. 5 units

Background Information

pvimalaysia a local Private Limited company supported by a Foreign Direct Investment (FDI) group to finance the complete project to set up the total infrastructure, supply and install a fully computerized inspection system, with a centralized database system including Testing and certification of all Vehicle Examiner.

MAHA is the sole equipment supplier for this project.

- First initial Project Discussion : September 2012 – Automechanika Show
- First proposal submitted: December 2012
- Initial Total Project Investment : 1.4 billion Ringgit (318 mio Euro)
- Total MAHA project Value: 32 mio Euro
- Complete roll out: In 24 months
- First VIC Expected: within 6 months
- Testing Frequency: Yearly
- Estimated Yearly revenue: 200 mio Euro
- Inspection Fees Car - 90 RM (20.45 EUR) M/C – 30 RM (6.8 EUR)
- Estimated no of inspection per year 8 mio passenger and 8 mio motorcycle

Roles and Responsibilities

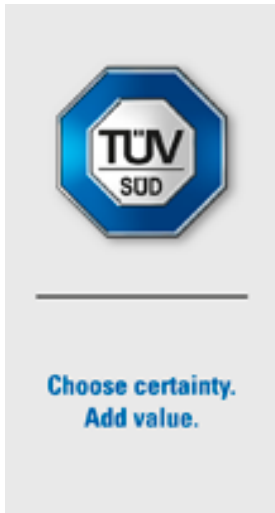


- Supply complete Test lanes equipment and VIMAS software
- Provide Project Management to PVI Malaysia
- Defining exact scope of supply
 - Technical specification of test equipment (including software adaptations)
 - Shipping modalities
 - Construction planning
- Contract design (with PVI Malaysia and MAHA Malaysia Dealer – Newera)
- Foundation of MAHA Malaysia
- Project planning (Schedule.- , Process.-, Milestones.-, Breakdown structure.-, ...)



- Planning for installations & After-sales service
 - Recruiting technicians - 15 to 20 new hire
 - Training team members in Malaysia and Newera Technical Service Team
 - Establish Service Hot Line

Roles and Responsibilities



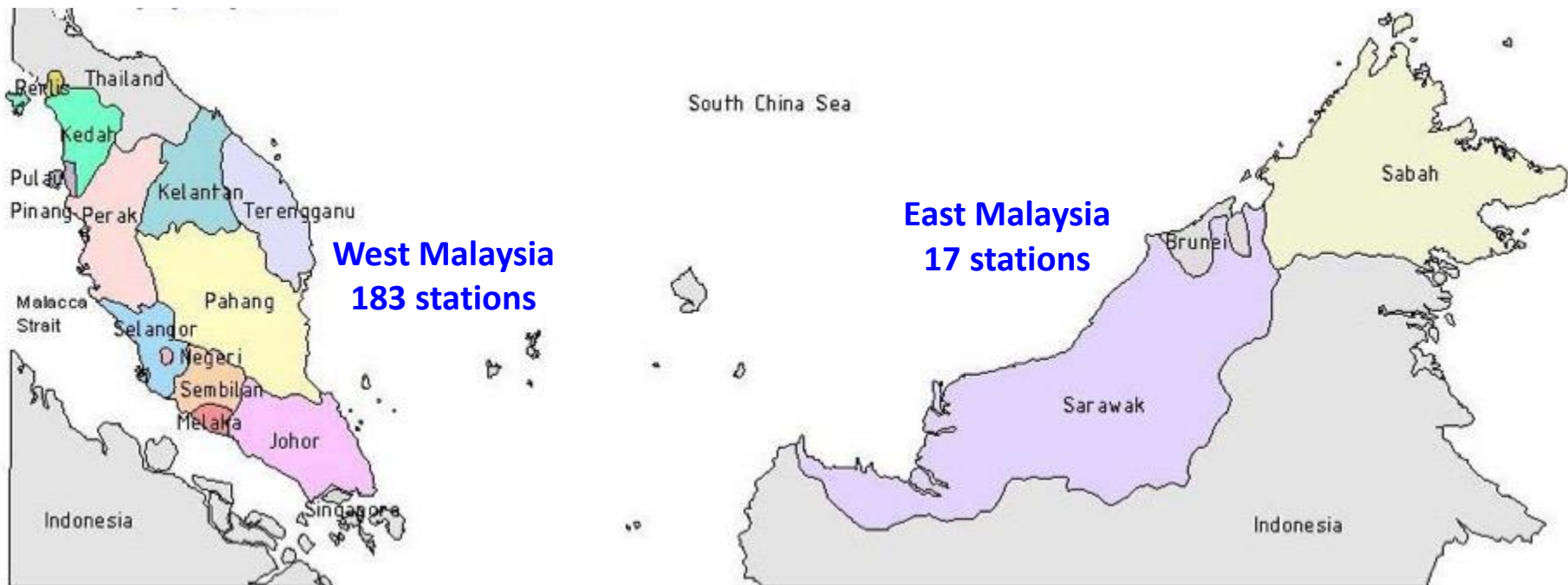
- Provide training and certification of Vehicle Examiners only.
- They are not the PTI operators but partners with PVI Malaysia.
- Continuous training and certification to existing and new Vehicle Examiners
- Project training planning (Schedule.- , Process.-, Milestones.-, Breakdown structure.-, ...)
- Yearly audit on Vehicle Examiners inspection process and certification
- Planning and Assistance to PVI Malaysia
 - Provide Recruiting guidelines for Vehicle Examiners
 - Established local Training team members in Malaysia
 - Establish Standard Operation Procedures and guidelines for Training course
- Project will be supported by TUV SUD PSB Singapore and Malaysia office with TUV SUD Germany assistance

Installation and Service

- Education and training for technicians in Malaysia (*approx. 15 to 20 new Service Technician from MM*)
- Installations by MAHA China team. Supported by AutoTec for the first installations, peaks, and commissioning (*as in Turkey-Project*)
- Setup of a technical hotline by MAHA Malaysia

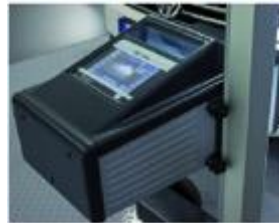
Challenges:

- Installations in 1 ½ year
- Training of Vehicle Inspectors
- Service 2x year
- Calibration 1x year
- Repairs



Test Lane Equipment for Passenger Vehicle (LDV) and Motorcycle (MC)

Headlight Tester
Model: MLT 3000



Emission Tester
Model: MET 6.1 (MC)
MET 6.3

Sound Level Meter
Model: 3M – SE402



Radio Touchscreen
Model: FTS 2016

Test Lane Equipment for Passenger Vehicle (LDV) and Motorcycle (MC)

Roller Brake Tester
Model: MBT2450 / MBT 1000



Side Slip Tester Model:
MINC I / MINC III



Shock Absorber Tester
Model: MSD 3000



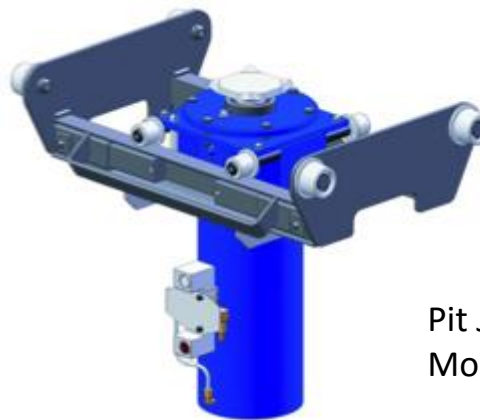
Tire Thread Measurement
Device
Model: TM 1000

Test Lane Equipment for Passenger Vehicle (LDV)

Play Detector for Cars
Model: PMS 3/X-PIT



Scissors Lift
Model: DUO CM 4.2U



Pit Jack
Model: MGH-L 3.5/45

Proposed Equipment

13



Single Roller Dynamometer for Passenger Vehicle (LDV)

Single Roller Dynamometer for Cars
Model: MSR 500 4WD



Emission Tester
Model: MET 6.3



Cooling Fan
Model: AIR 7

Proposed Equipment

14



Mobile Test Lane for Passenger Vehicle (LDV)

Single Roller Dynamometer for Cars
Model: MLT 15



Side Slip Tester
Model: MINC I



Shock Absorber Tester
Model: MSD 3000



Roller Brake Tester
Model: MBT2450



Tire Thread
Measurement Device
Model: TM 1000



Play Detector for Cars
Model: PMS 3/X



Headlight Tester
Model: MLT 3000

Emission Tester
Model: MET 6.3



Sound Level Meter
Model: 3M – SE402



Radio Touchscreen
Model: FTS 2016



- We are recommending the latest version of the EUROSYSTEM Software and the Emission viewer for MET (MES).
 - For LDV inspection the German testing procedures will be used, for MC inspection the testing procedures from Singapore will apply.
- ⇒ Integration of testing procedures from Singapore (STA / VICOM, Eurosystem V. 7.20) into the latest version of the EUROSYSTEM and Emission Software (MES) for the MET



- As this is a greenfield project, PVI Malaysia currently does not have a back-end management software. VIMAS is recommended for the integration of all the test centers with the 5 modules available to them.
- Evaluation of the MAHA offer for a solution is critical for their final decision for VIMAS or a management software of an other supplier.

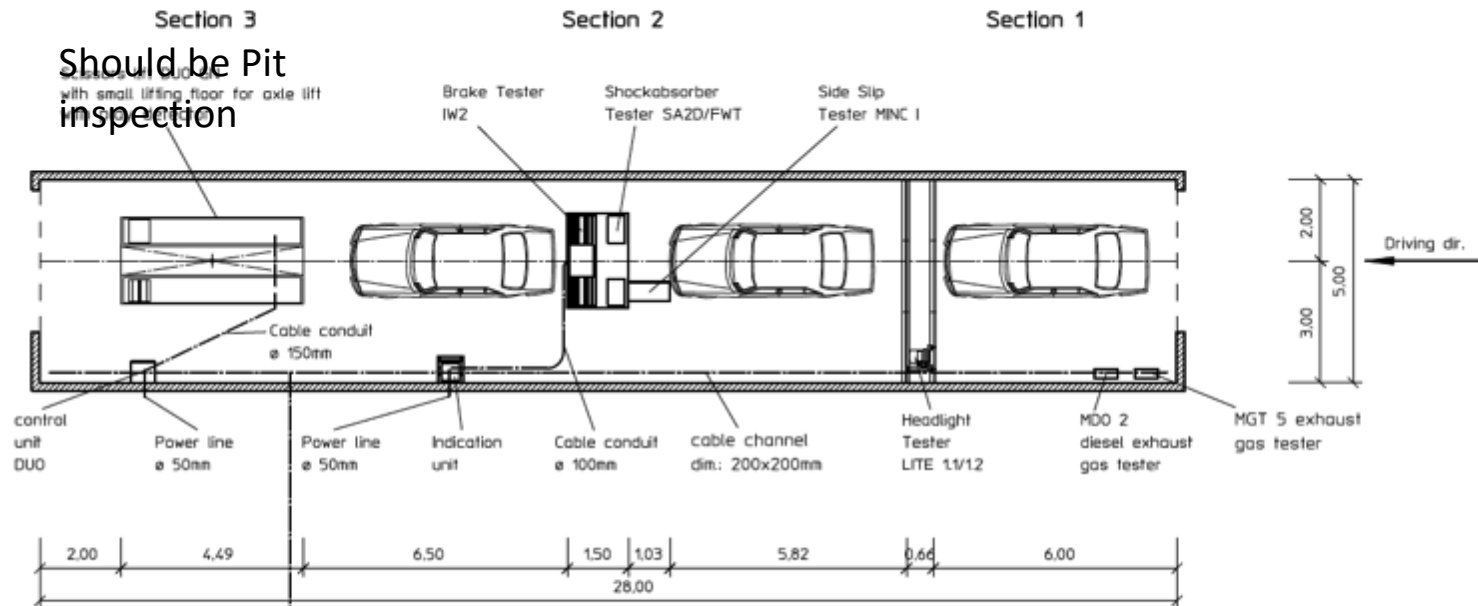
Proposed LDV Positioning Layout

16



For main Satellite Inspection Centers with pit inspection
With 6 / 4 LDV and 4 MC test lanes

Technical data sheet No. 932.1
Positioning suggestion
Testing lane underfloor with 3 sections.

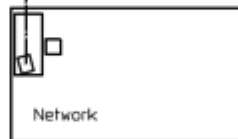


Attention:
For installation of more than two testing lanes we recommend to place data and current forwarding cables in separate cable conduits.

All dimensions to be checked

Attention: Order up-to-date data sheets before beginning of construction.

Compare lift and testing lane with the order.



All dimens. in m	Maße ohne Toleranzangabe nach DIN ISO 2768-mK		Schutzvermerk nach DIN 34 beachten!		Maßstab 1:100	Gewicht		
			Datum	Name	Betreuer	MAHA-Positionierungsvorschlag Prüfstraße mit 3 Sektionen (DUO GN)		
			Beart:	Grf.	Kommision			
			Gepr.				Zeichnungsnummer	
			Nachr.					P-00488
					1			
Indication: Our positioning proposals are only recommendations, which are not binding. We cannot be held liable that the installation of testing and lifting devices as well as of other products according to this proposal allows effective and trouble-free application.		A 4571	02.12.2002	Puc.				
Originalgröße der Zeichnung: A3		Zust. Änderung	Datum	Na	Ursprung	Ers. f. Ers. d.		

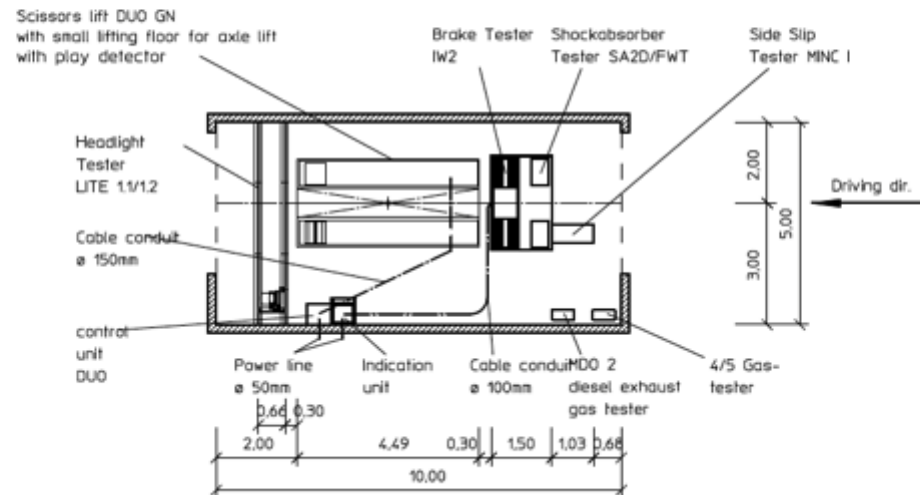
Proposed LDV Positioning Layout

17



For Mini Satellite Inspection Centers with
scissors lift configuration
with 2 LDV and 1 / 2 MC test lanes

Technical data sheet No. 931.1
Positioning suggestion
Testing lane underfloor



Attention:

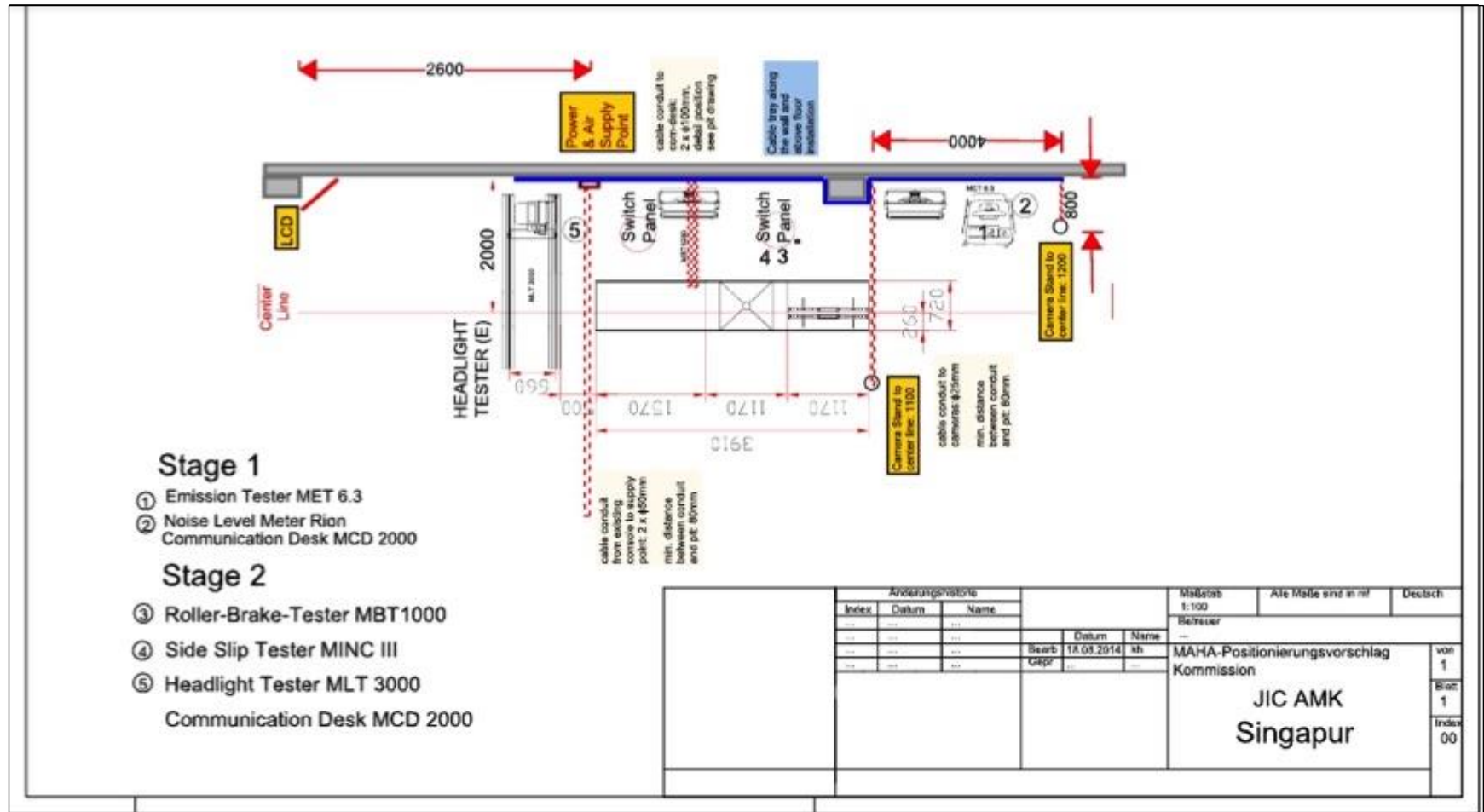
For installation of more than two testing lanes we recommend to place data and current forwarding cables in separate cable conduits.

All dimensions
to be checked

Attention: Order up-to-date data sheets
before beginning of construction.

Compare lift and testing lane
with the order.

All dims. in m Indication: Our positioning proposals are only recommendations, which are not binding. We cannot be held liable for the installation of testing and lifting devices as well as of other products according to this proposal allows effective and trouble-free application.	Maße ohne Toleranzangabe nach DIN ISO 2768-esk		Schutzvermerk nach DIN 34 beachten!		Maßstab 1:100	Gewicht
					Betreiber Grf.	
					MAHA-Positionierungsvorschlag	
					PKW Annahmeprüfstraße mit DUO GN	
					Kommission	
				Zeichnungsnummer		Blatt
				P-00487		1
				Ers. f.		Ers. d.
Originalgröße der Zeichnung: A3		Zust.	Änderung	Datum	Na	Ursprung



Proposed no of Test lanes for Passenger Vehicle (LDV) and Motorcycle (MC)

	Total no of Centers	No of LDV lanes	Total	No of MC lanes	Total	No of MSR500 Dyno	Mobile Test Lane (MTL)
Main Satellite Centers	10	6	60	4	40	10	5
with Pit inspection for LDV lanes	10	4	40	4	40	5	
total	20		100		80	15	5
Mini Satellite Inspection Centers	70	2	140	2	140	0	
with Scissors Lift for LDV lanes	80	2	160	1	80		
total	150		300		220	0	
Total	170		400		300	15	

- All 13 states including 2 Federal Territories will have a main Satellite center including 1 MSR 500 Dyno and the top 5 cities will have 1 additional main Satellite center.
- MTL will be located 3 in West Malaysia and 2 in East Malaysia.
- Total no. of centers - 170
- LDV test lanes - 400
- MC test lanes - 300

Questions & Answers

MAHA Maschinenbau Haldenwang GmbH & Co. KG
Hoyen 20 • 87490 Haldenwang

Tan Bee Heng, Ben

REGIONAL SALES DIRECTOR, ASIA PACIFIC

Phone +49 8374 585 171

Fax +49 8374 585 497

Mobile +65 9628 7582

Mail beeheng.tan@maha.com.sg