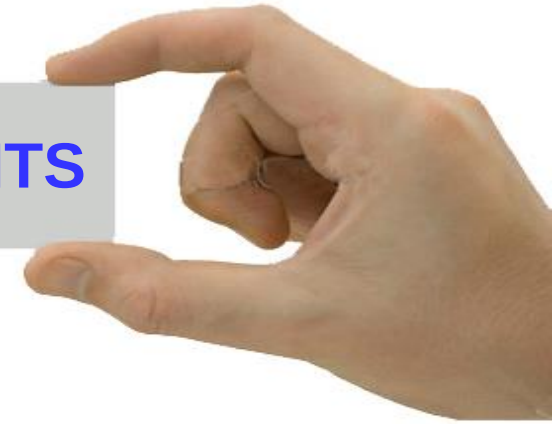
KURSUS MODULE 2 JKR MALAYSIA

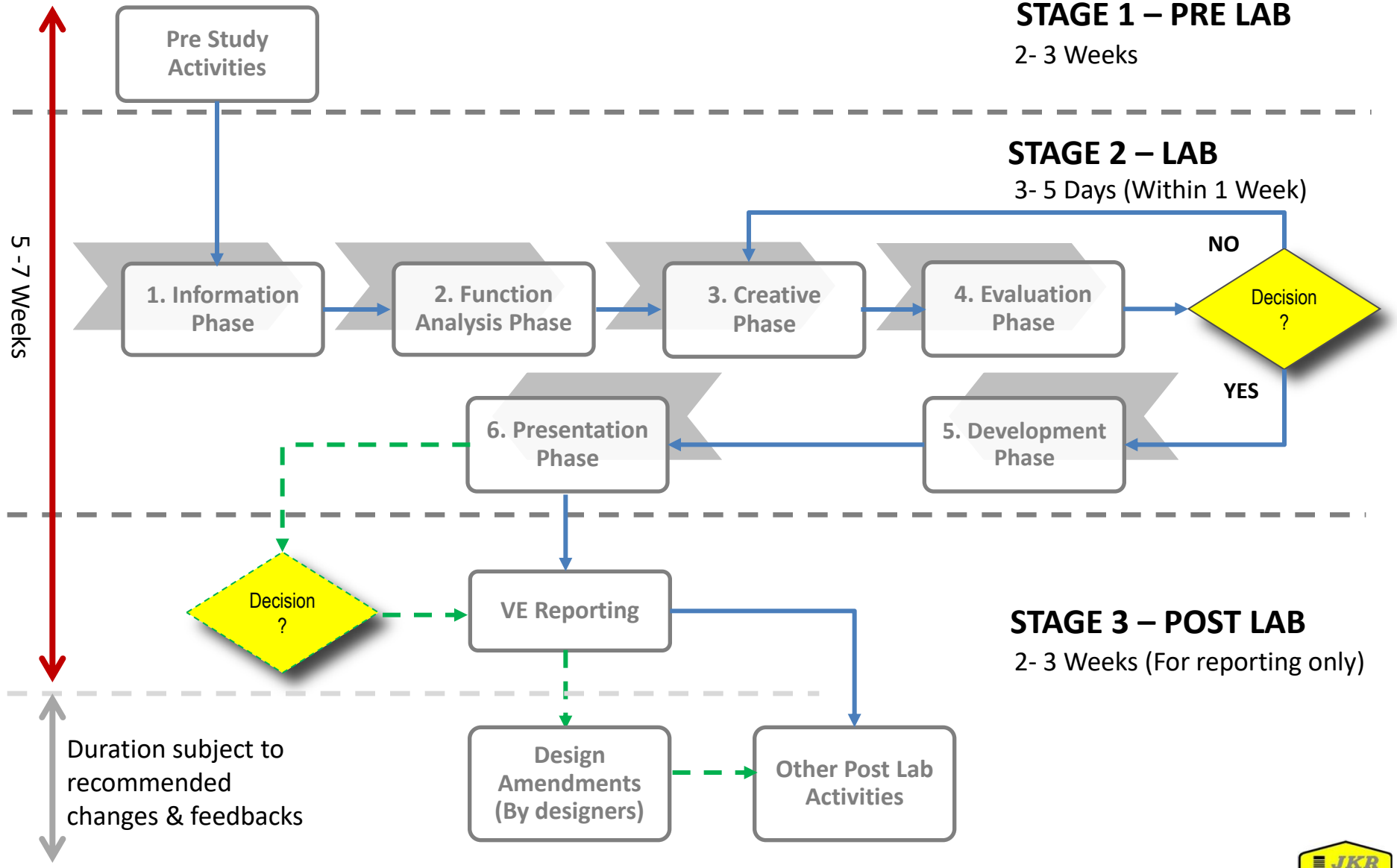
PRE – VE LAB/STUDY

LECTURE CONTENTS



- PRE LAB SIMULATION
  - Briefing
  - Hands-on Projects:
    - Infra
    - Building
  - Presentation of Gameplan

VE STUDY PROCESS



PRE LAB STAGE

The quality of VE study relies much on the quality of information gathered and prepared during pre study

PURPOSE : - Check project readiness for VE Study
- Gather and synthesize project information
- Plan and prepare for VE Lab activities

TIME FRAME: - 2 to 3 weeks (Subject to project readiness and sufficiency of information for conducting VE Lab)

MATERIALS:

- - Signed-off VA Lab Report (where applicable)
- Client needs and requirements
- Approved Project Brief including Schedule of Accomodation (SOA) and Gross Floor Area (GFA) for building project
- Drawings (latest reviewed drawings)
- Specifications
- Technical brief
- Technical report (traffic study, soil investigation, survey plan, feasibility study, EIA etc.)
- Relevant statistical data
- Approved project budget
- Project Cost Estimate-PDA (latest reviewed cost)
- Project Work Programme
- Project Risk Management Plan (if any)
- Relevant authorities requirement
- Minutes of Meeting

TOOLS & TECHNIQUES:

- VE Study Pre Requisite Form
- VE Study Pre Lab Checklist Form
- VE lab Participant Identification (A.C.I.D.Test) Form
- Client Value System (CVS)
- Function Analysis System Technique (F.A.S.T)
- Site Visit/Similar Facility Walk Through
- Cost Worth Index
- Others as required

Prior to VE lab, it is important for facilitators to identify, obtain and do desk study on relevant documents. Right tools and templates should be selected and prepared accordingly.

value management

Pre Lab Stage (VE)...

What are the activities ?

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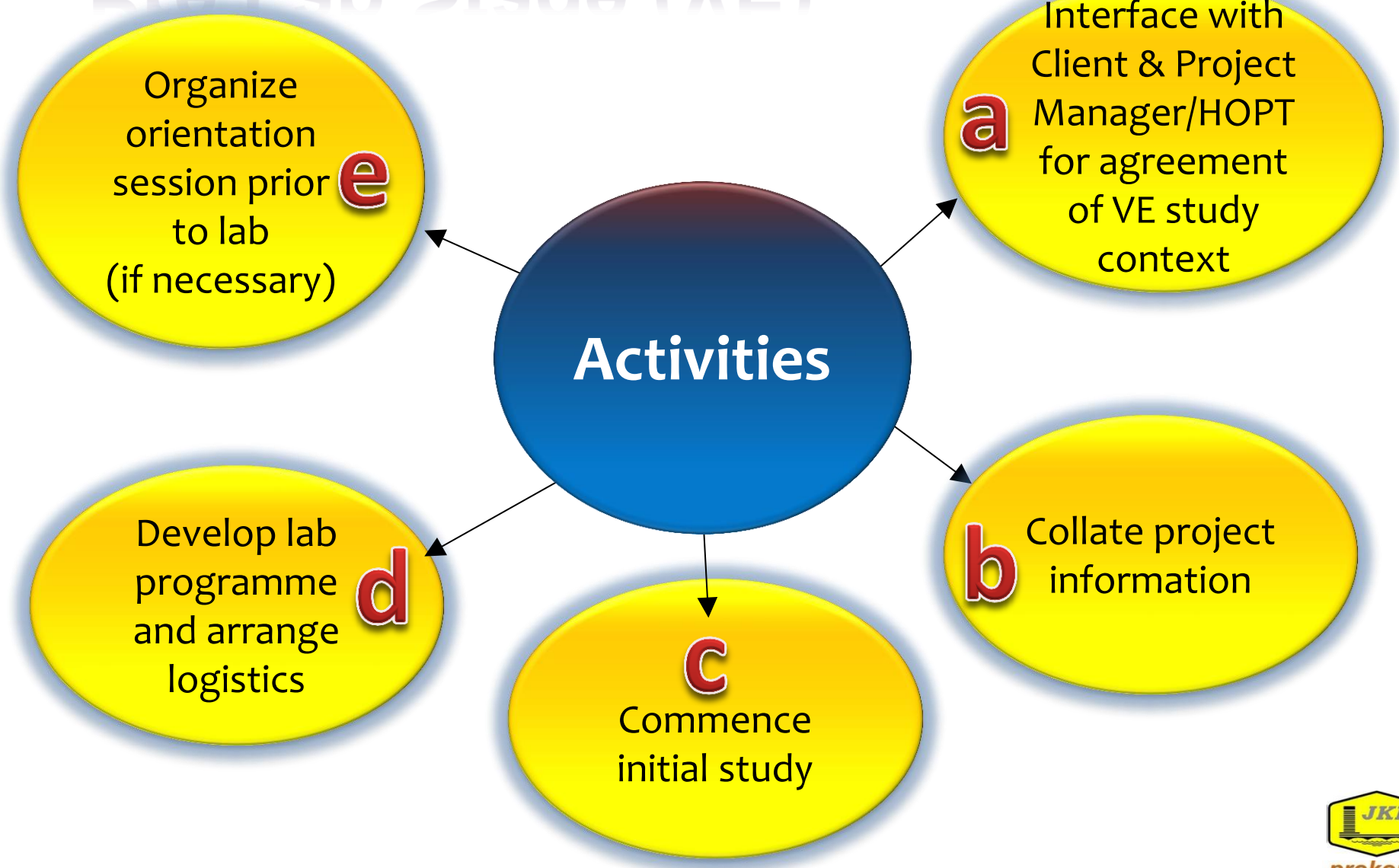
Pre Lab Stage (VE)

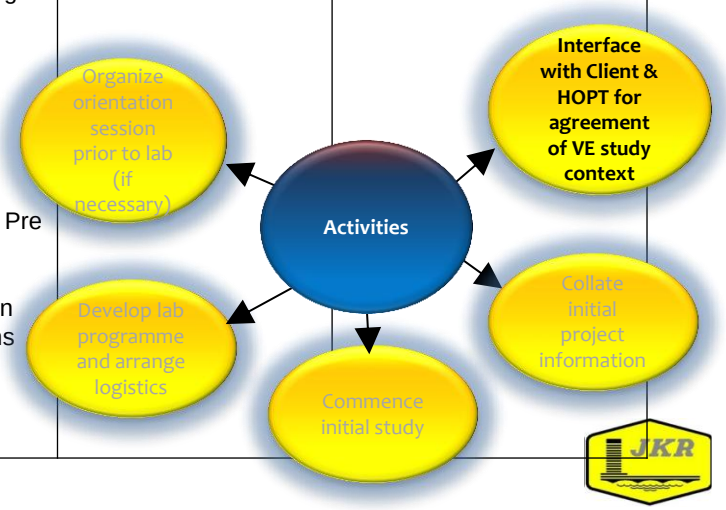


PRE LAB STAGE

FACILITATION EXERCISE OF PRE LAB STAGE

PRE LAB STAGE

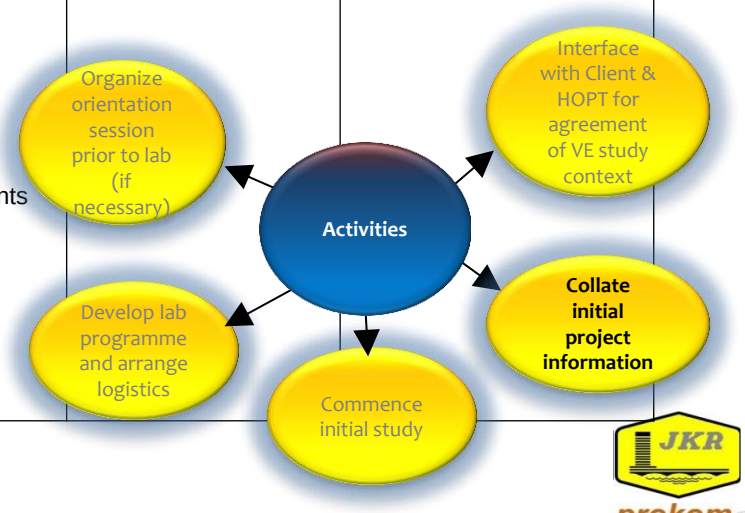
	Stage Activities	Tasks	Time Allowed	Tip Notes
A	**Pre Lab Stage Activities**			
a	Interface with Client and Project Manager / HOPT (JKR) *Note:* *PM - Project Manager* *HOPT - Head of Project Team (JKR)* *HODT - Head of Design Team (JKR)*	i. Upon receiving request for VE Study, you need to follow up with the Client / PM / HOPT (JKR) and arrange for an Initiation Meeting or discussion ii. During the meeting / discussion, you need to discuss and record the followings: - Project information and context - Status of project implementation, to check for readiness and VE Study timeline (use VE Study Pre Requisite Form) - VE Study objectives and expected VE Study outputs / findings / deliverables - Issues, implication and constraints of VE Study - Compliance and deviations (if any) of VA Study - Requirement for further VE Study (if necessary) - Logistics - date, itinerary, venue, budget - Composition of lab participants (use A.C.I.D. Test - VE Lab Participant Identification Form) - List of requirements for Pre Lab and VE Lab (use VE Study Pre Lab Checklist Form). iv. You are required to advise the Client / PM /HOPT (JKR) on any value issues to be resolved prior to lab such as deviations (scope and cost) from EPU for approval. In the event of such deviations apporoval from EPU is required.	2 to 3 hours	Where required, depending on urgency of VE Lab, the Initiation Meeting may be combined with Pre Lab Meeting - [see Task c.ii]



PRE LAB STAGE

FACILITATION EXERCISE OF PRE LAB STAGE

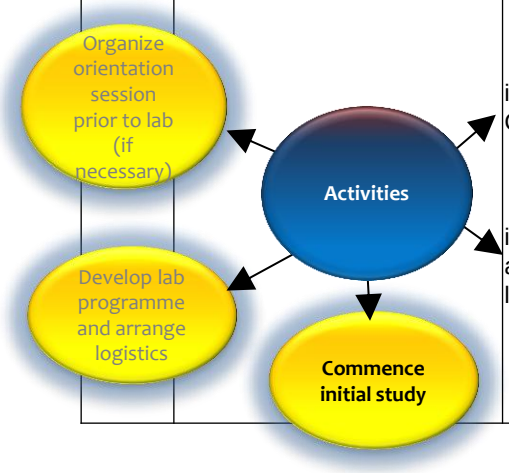
b	Collate project information	i. You will follow up with Client / PM / HOPT (JKR) / designers / HODT (JKR) to provide information and documents as follows (use VE Study Pre Lab Checklist Form): - Signed-off VA Lab Report (where applicable) - Client needs and requirements - Approved Project Brief including Schedule of Accomodation (SOA) and Gross Floor Area (GFA) for building project - Drawings (latest reviewed drawings) - Specifications - Technical brief - Technical report (traffic study, soil investigation, survey plan, feasibilility study, EIA etc.) - Relevant statistical data - Approved project budget - Project Cost Estimate-PDA (latest reviewed cost) - Project Work Programme - Project Risk Management Plan (if any) - Relevant authorities requirement - Others as required ii. You need to collect and compile information and documents (as listed above) for the purpose of pre study and lab.	1 - 2 weeks	Ensure the latest information and documents are provided and submitted



PRE LAB STAGE

FACILITATION EXERCISE OF PRE LAB STAGE

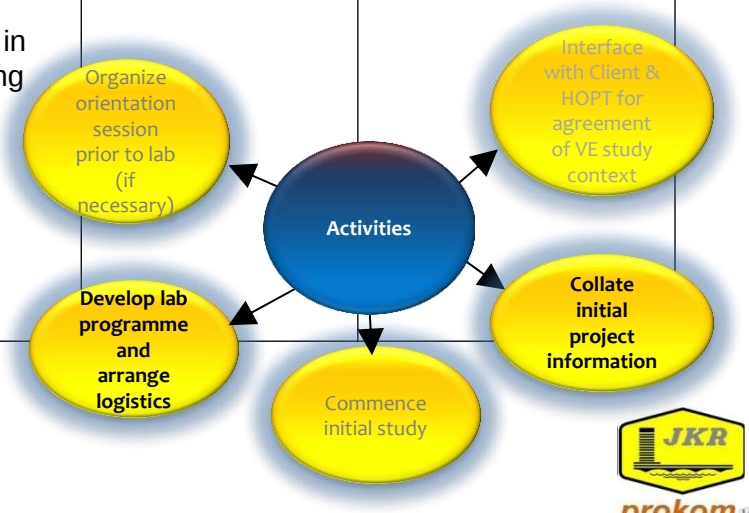
c	Commence initial study	i. You shall commence initial study covering the followings: - Study design proposal and quality requirements - Study project objectives and project outcomes - Study project functions and propose FAST Diagram - Identify and prioritize Client Value System (CVS) with client - Propose Space / Cost / Quality (or others) study model(s) - Check compliance or deviations (if any) of design proposal against VA recommendation - Any other initial study requirements	2 - 3 days of desk study (by Lead Facilitator); and half to 1 day (by Facilitation Team)	The initial study findings (by Lead Facilitator) will be shared with the Facilitation Team [See Task e.ii] - focusing on value issues [See Task a.iv]; identified value mismatches; and/or potential value improvement [See Task c.iv]
		ii. You need to conduct Pre Lab Meeting or further discussion; to understand the project design and/or to resolve specific value issues (e.g. Scope/Cost deviation from VA - [See Task a.iv]) involving Client, PM / HOPT, designers / HODT (JKR), authorities and others	Half to 1 day for meeting / discussion	Wherever required, Pre Lab Meeting may be combined with Initiation Meeting [See Task a. ii]; and it can also be repeated for in- depth study or to resolve specific issues
		iii. Wherever required, you need to visit project site together with Client, PM / HOPT, designers / HODT (JKR) and others	1-2 days for site visit (subject to location)	Consider ample travel time to any remote site location Feel and understand the project and design in relation to the site conditions
		iv. From initial study, you may identify possible value mismatches and/or potential value improvement which will be focused during lab		



PRE LAB STAGE

FACILITATION EXERCISE OF PRE LAB STAGE

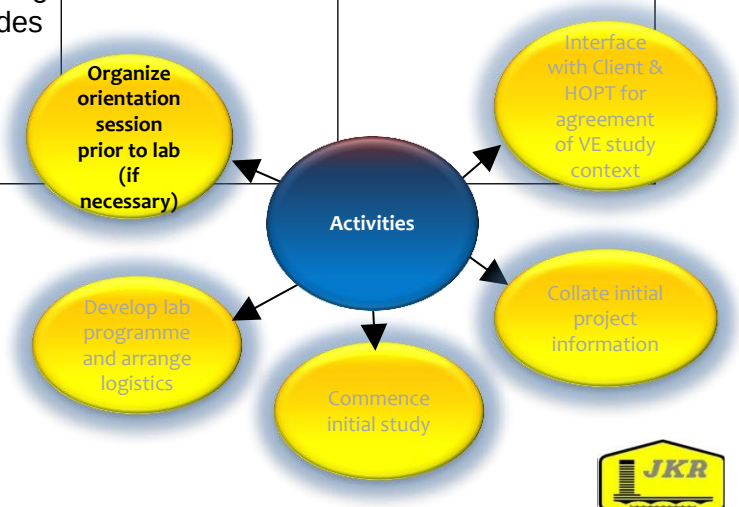
d	Develop lab programme and arrange logistics	i. You will prepare the followings for lab execution: - Develop lab agenda - Identify and appoint facilitation team - Identify lab tools and techniques - Identify and propose list of lab participants - Identify lab working groups and study scopes - Prepare lab kit / study materials (if necessary) - Set lab arrangement and requirement (room layout, equipment etc.) - (use VE Study Pre Lab Checklist Form) - Arrange travel logistics (ticket, accomodation etc.) ii. You need to advise Client / PM / HOPT (JKR) in preparing matrials, equipments and and arranging logistics for lab.	2 - 3 days	Keep close contact with client / PM / HOPT (JKR)



PRE LAB STAGE

FACILITATION EXERCISE OF PRE LAB STAGE

e	Organize orientation session (if necessary)	i. Wherever necessary, you may conduct orientation sessions for: - Facilitation team (a dedicated session) - you will share initial study findings, discuss and strategize lab execution with other team members - Project team / Lab participants (session may be conducted during Initiation Meeting / Pre Lab Meeting / Lab (Information Phase) - to use presentation slides for briefing on VE Study implementation.	Half to 1 day 30 minutes	VE Lab must be strategized according to the pre-determined VE Study Objectives and expected study outputs / findings [See Task a.iii]



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Levels of Value Study

PRE- BRIEF	BRIEFING	SKETCH PLANS	WORKING DRAWINGS	SITE OPERATIONS

LEVEL 1 : CONCEPT

LEVEL 2 : SPACES

ORGANISATIONAL STRUCTURE AND PROCESS ISSUES

LEVEL 3 : ELEMENTS

LEVEL 4 : COMPONENTS

BUILDING STRUCTURE ISSUES

JKR

prokom

levels of function analysis

Function analysis on products, services, components, systems etc. is to determine the characteristic action performed by them.

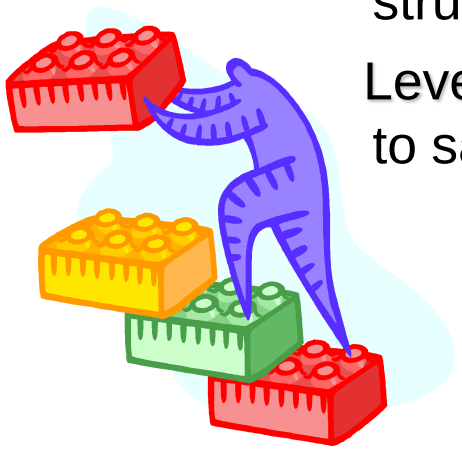
The construction orientated function analysis levels are:

Level 1 function – **Concept** – functions of the project or product as a whole especially when a built decision is made

Level 2 function – **Space** – functions of spaces within the project to represent a picture of the client's requirements

Level 3 function – **Elements** – functions of the building's structural form to fit in the space requirements

Level 4 function – **Components** – functions of components to satisfy the requirements of the elements



Source from: VM in Construction Projects - Kelly, Male & Graham (2004)

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Pre Lab Stage (VE)

PROJECT OBJECTIVES

"IF THE PRE STUDY INFORMATION STAGE IS CONDUCTED PROPERLY, THE FACILITATOR WILL BE WELL BRIEFED REGARDING ANY HIDDEN AGENDAS & POLITICS BEHIND THE PROJECT"

- Steven male et al-

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Pre Lab Stage (VE)

- Initial findings: trigger to investigation
  - Value mismatches
  - Cost dominant items

Value Mismatch

A FUNCTION MISMATCH:

An identified function that is unnecessarily been provided or not provided which does not align with the desired mission or deliverable.

USE FUNCTION ANALYSIS OR F.A.S.T.

A COST MISMATCH:

A calculated cost that is unnecessarily priced above the identified worth – the least cost to perform the required function.

USE COST / WORTH INDEX

A QUALITY MISMATCH:

Any deliverable that been provided does not align to the quality performance described or mentioned in the needs statement or project brief.

USE QUALITY MODELS OR STAR DIAGRAM

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Cost dominant items

Which elements first sight appear to be offering poor value for money

- **unreasonably expensive**
- **unreasonably inexpensive**

Attention to elements containing:

- **the largest proportion of the total cost**
- **Uncharacteristically expensive**

➢ Pareto's Law 80/20 Principals

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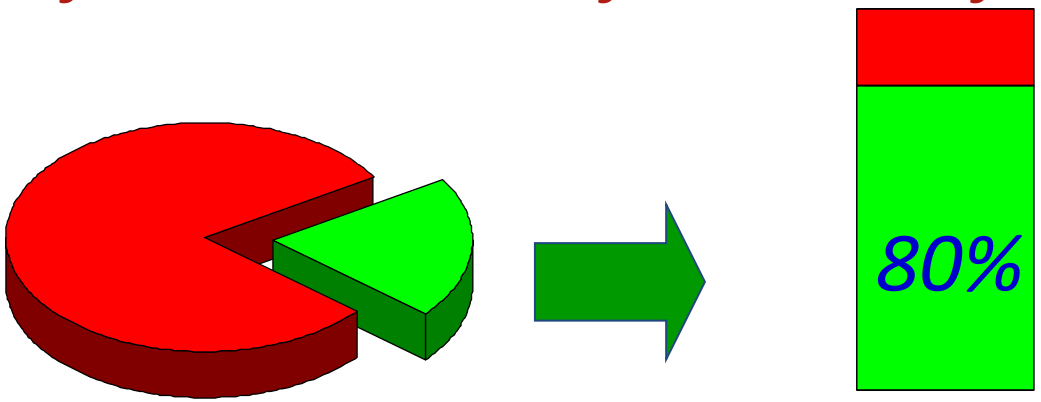
Cost dominant items

- Pareto's Law 80/20 Principals

80% of the cost comes from 20% of the components



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Withstanding this;

- elements appears to be offering reasonable value for money **can still be value engineered without loss of function.**

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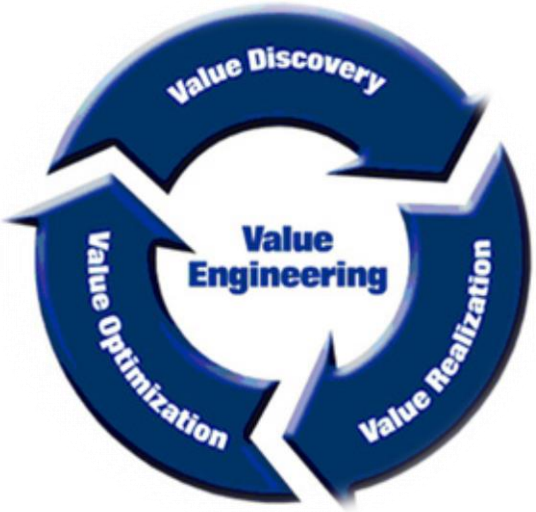
VM Study Models

COST MODEL

- P.D.A



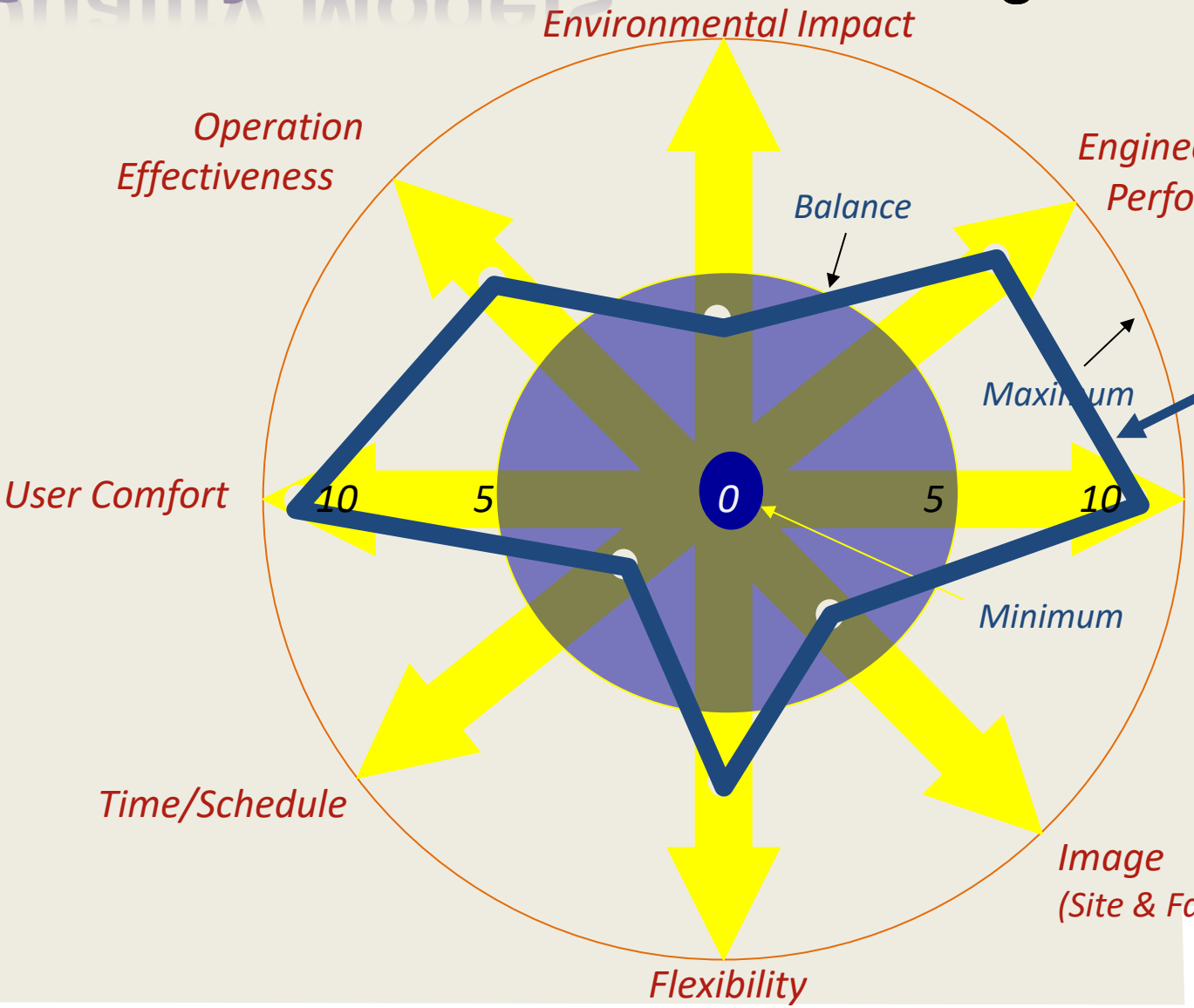
SPACE MODEL

- S.O.A

QUALITY MODEL

LIFE CYCLE COST MODEL

Quality Models or Star Diagram



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A.C.I.D Test

A	Authorise	Entities with executive authority to take decisions or resolve issues in lab
C	Consult	Experts who have to be consulted on particular aspects during lab
I	Inform	Entities who have to be informed on lab decisions (not to participate)
D	Do	Entities who have to carry out major tasks of lab recommendations

V . E . S T U D Y

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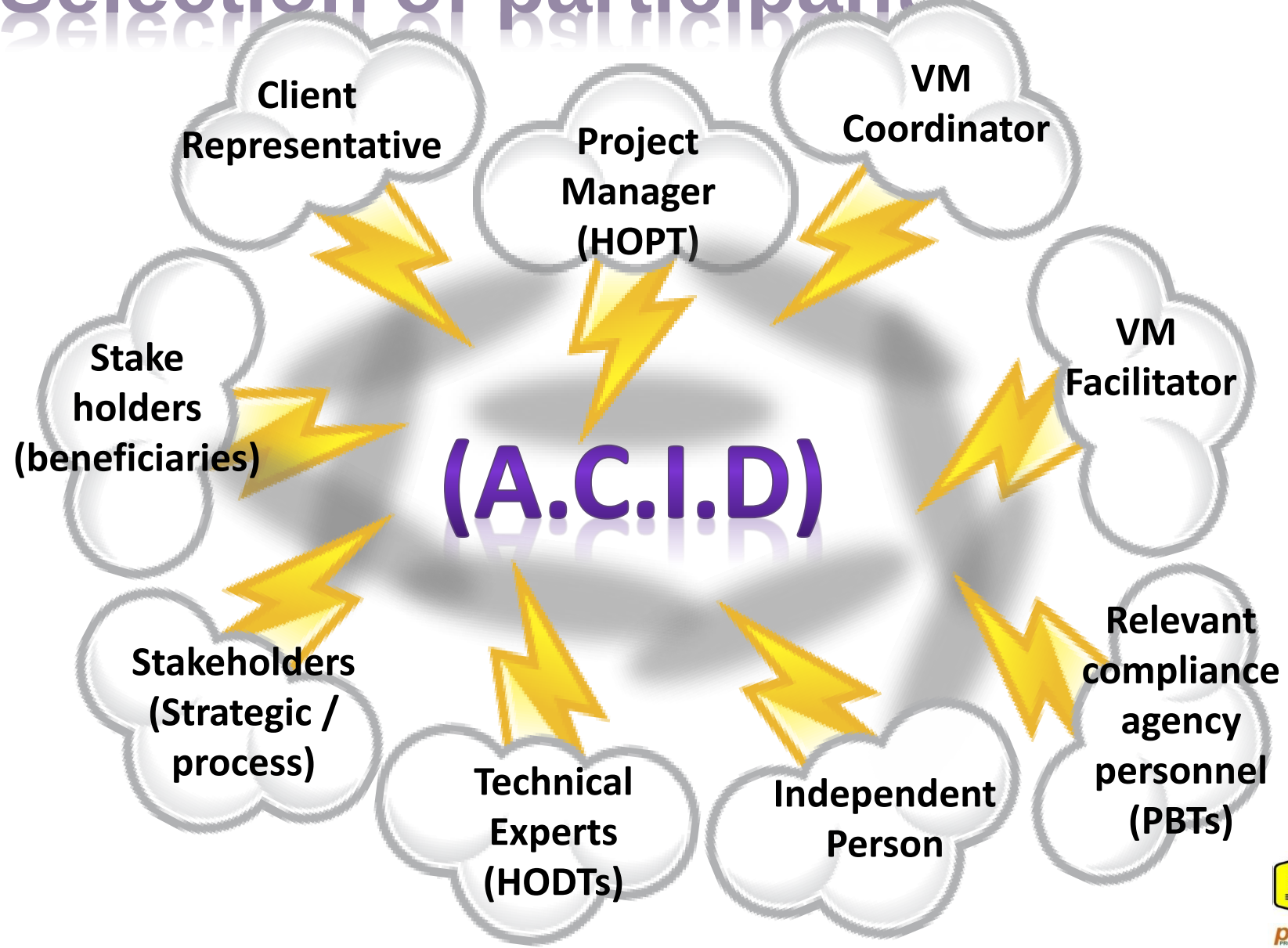
Selection of participants



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Selection of participants

It is Important 

Members who have;

- **Necessary coverage of experience to achieve VM Objectives.**
- **Appropriate responsibility & authority.**
- **Committed to working collaboratively.**

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Selection of group members

Should consider:

- **Personal commitment to interact openly.**

- **Willingness to collaborate in pursuing Best Value or Value for**  **.**

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Selection of group members

Should consider:

- **Receptiveness to New Ideas**

- **Commitment to active participation throughout all stages of the study**

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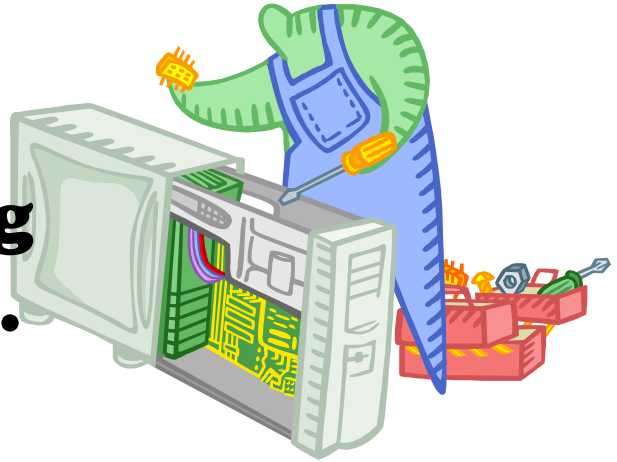
Selection of group members

Should consider:



- **Technical expertise fitting the project being studied.**

- **Knowledge & experience of the context & condition of the project.**

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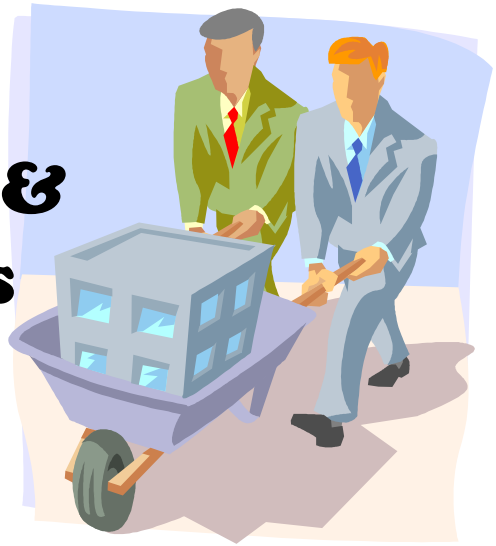
Selection of group members

Should consider:



- **Appropriate responsibility & authority to make decisions affecting the project.**

- **Be a credible representative of the respective participating group.**

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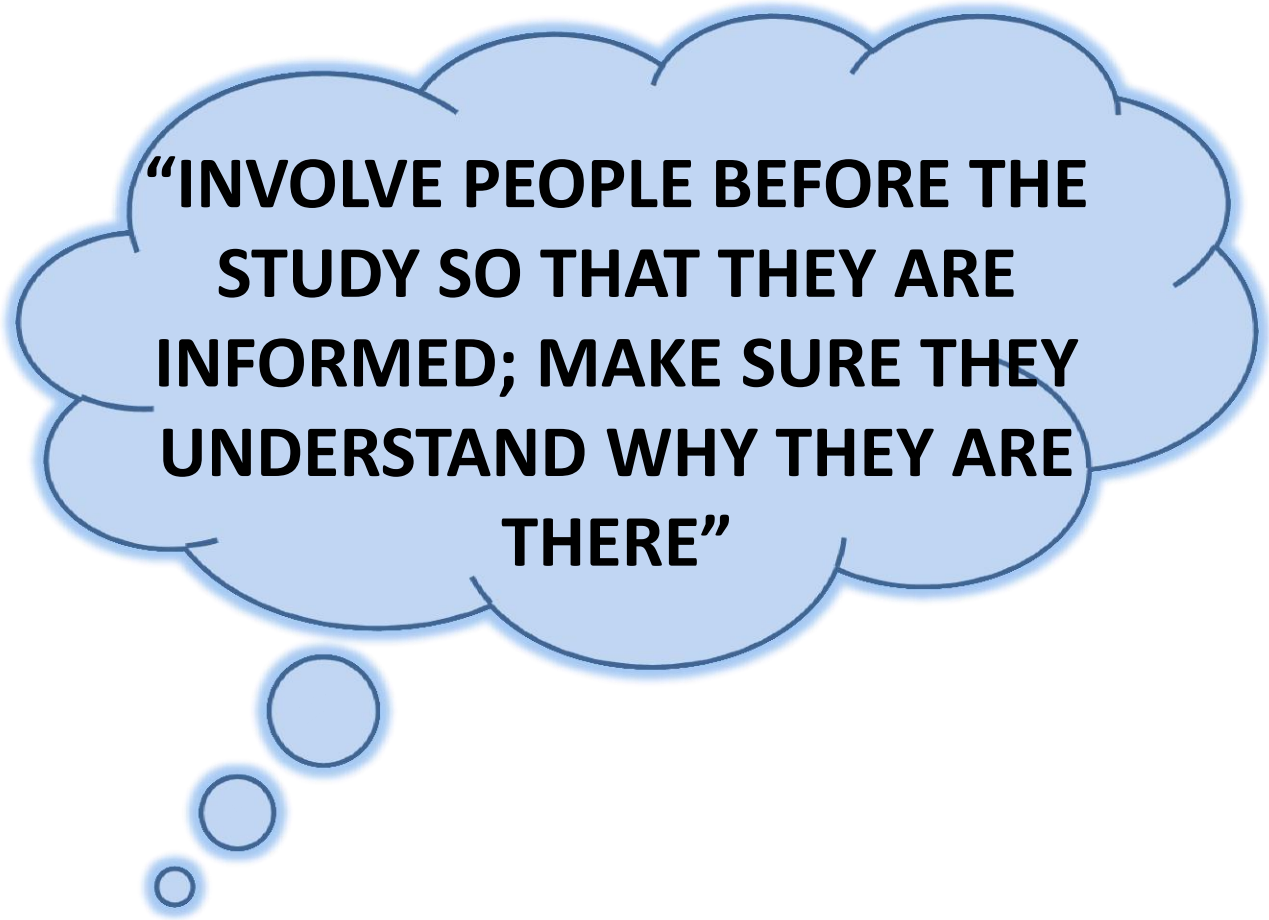
Pre Lab Stage (VE)



- Steven male et al-

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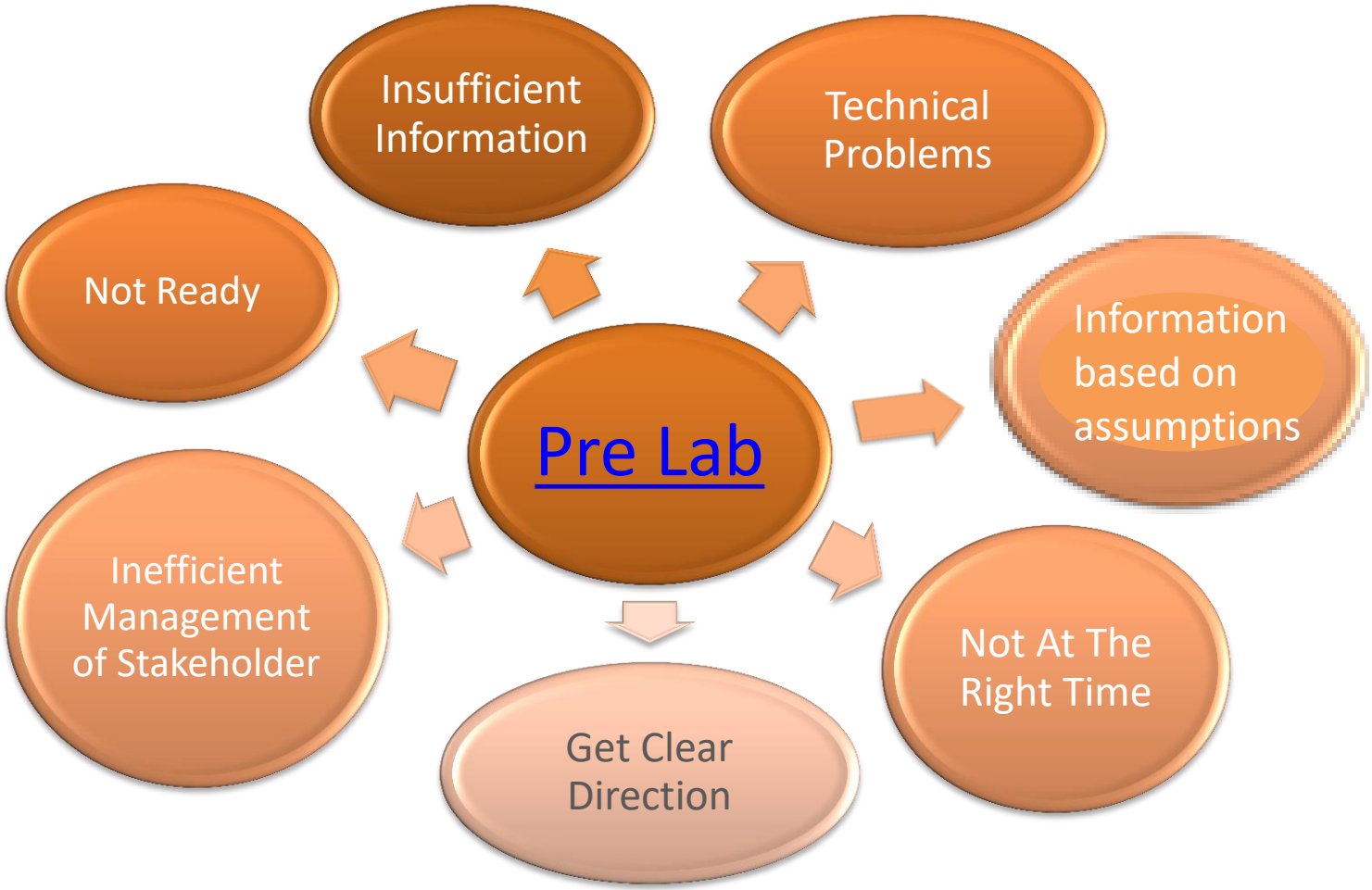
Pre Lab Challenges



3.0 PEMATUHAN TERHADAP VA

3.1 SEMAKAN PEMATUHAN REKABENTUK (PRA VE) BERBANDING VA CONTOH

PERKARA	KETETAPAN VA	SEMAKAN PEMATUHAN VA (REKABENTUK SEBELUM VE)	ULASAN PEMATUHAN / PERBEZAAN
SKOP PROJEK	• Pembayaran Premium Tanah • Pembinaan bangunan 4 tingkat dan 1 ½ tingkat parkir di besmen: • GFA Bangunan = 8,656 mps • GFA Parkir kereta/motosikal = 6,096 mps • Membina 216 unit ruang tempat kereta • Membina 360 unit ruang niaga & kiosk Nilai tambah: • Penempatan sementara bagi 279 peniaga Pekan Rabu dan 20 gerai makan • Menyedia tempat letak motosikal	• Premium Tanah telah dijelaskan. • Rekabentuk 4 tingkat bangunan dan 1½ tingkat besmen: • GFA Bangunan = 9,200 mps • GFA Parkir Besmen = 5,615 mps • 201 unit di besmen + 15 unit di luar bangunan = 216 unit • 320 unit ruang niaga termasuk kiosk Nilai tambah: • Penempatan sementara peniaga disediakan di sekitar lokasi asal • Tempat letak motosikal disediakan	• Telah mematuhi peruntukan bayaran sebagaimana PDA VA. • Bilangan tingkat bangunan dan besmen telah mematuhi VA, namun terdapat peningkatan Jumlah GFA Bangunan: • Peningkatan GFA Bangunan + 544 mps • Pengurangan GFA Parkir Besmen - 481 mps • Jumlah bilangan unit parkir disediakan sebagaimana VA. • Pengurangan 40 unit @ 11 % jumlah bilangan ruang niaga berbanding ketetapan VA (dari 360 Nos ke 320 Nos): • Pengurangan 2 unit @ 8 % Kedai Makan (dari 24 ke 22 Nos) • Pertambahan 63 unit @ 50% Kedai Besar (dari 126 Nos ke 189 Nos.) • Pengurangan 71 unit @ 43% Kedai Kecil (dari 162 Nos ke 91 Nos.) • Pengurangan 30 unit @ 62% Kiosk (dari 48 ke 18 Nos) • Keperluan penempatan sementara peniaga telah dipatuhi. • Keperluan tempat letak motosikal telah dipatuhi.
JUMLAH GFA	• 14,752 mps	• 14,815 mps	• Peningkatan marginal Jumlah GFA sebanyak 63 mps @ 0.42% berbanding ketetapan VA.
KOS PROJEK	Ketetapan Kos VA = RM 52,980,797.00 Kelulusan Siling UPE = RM 53,000,000.00	• Kos PDA (Rekabentuk Sebelum VE): RM55,500,500.00	• Peningkatan Kos Projek (Rekabentuk Sebelum VE) + RM2,500,500.00 atau + 4.72 % berbanding Siling UPE

3.0 PEMATUHAN TERHADAP VA

3.2 JUSTIFIKASI PERBEZAAN REKABENTUK (PRA VE) BERBANDING VA

PERKARA	PERBEZAAN REKABENTUK BERBANDING VA	JUSTIFIKASI PERBEZAAN

SKOP PROJEK	• Peningkatan jumlah GFA Bangunan sebanyak (+) 544 mps (dari 8,656 mps ke 9,200 mps)
	• Pengurangan jumlah GFA Parkir (-) 481 mps (6,096 mps ke 5,615 mps)
	
	• Pengurangan 40 unit @ 11 % dari jumlah keseluruhan bilangan ruang niaga berbanding ketetapan VA (dari 360 Nos ke 320 Nos) iaitu:
	  • Pengurangan 2 unit @ 8% Kedai Makan (dari 24 ke 22 Nos)
	  • Pertambahan 63 unit @ 50% Kedai Besar (dari 126 Nos ke 189 Nos.)
	  • Pengurangan 71 unit @ 43% Kedai Kecil (dari 162 Nos ke 91 Nos.)
	  • Pengurangan 30 unit @ 62% Kiosk (dari 48 ke 18 Nos)
		Antara justifikasi perbezaan skop adalah:
		• Peningkatan 63 unit bilangan Kedai Besar (saiz 15 – 16 mps) berbanding dengan pengurangan 71 unit Kedai Kecil (saiz 8 mps) sebagaimana keperluan sebenar pengguna menyebabkan peningkatan GFA Bangunan sekitar 440 mps hingga 490 mps.
		• Keperluan tambahan 2 tangga di ruang void bagi aliran pengguna yang lebih baik memberi peningkatan GFA Bangunan sekitar 62 mps.
		• Bilangan lot parkir yang direkabentuk menurut VA telah melibatkan pengurangan GFA dan perbezaannya dikontra dengan GFA Bangunan.
		
		• Maklumat (jumlah bilangan ruang niaga menurut pembahagian jenis kedai / zon) yang diberikan semasa VA tidak disahkan berdasarkan kepada data keperluan sebenar. Maka data ahli KPRASB yang disahkan membayar yuran keahlian secara tetap dan aktif mengikut jenis perniagaan berdaftar telah ditentusahkan oleh pihak Pengurusan KPRASB dan SKM melalui Lab VE (rujuk Lampiran Keperluan Pengguna KPRASB)

JUMLAH GFA	• Peningkatan marginal Jumlah GFA sebanyak 63 mps @ 0.42% berbanding ketetapan VA (dari 14,752 mps ke 14,815 mps)	• Peningkatan GFA (63 mps) adalah marginal iaitu ekoran pertambahan bilangan tangga menggantikan ruang void dan hasil dari proses mengoptimumkan konsep rekabentuk dan susunatur bangunan.
KOS PROJEK	• Peningkatan Kos (Rekabentuk Sebelum VE) + RM2,500,500.00 atau + 4.72 % berbanding Siling Kos UPE (Rujuk Bahagian 4.0 - Model Kos Kajian VE dan Lampiran Format PDA Perbandingan Kos VA dan Model Kos VE)	• Peningkatan kos signifikan bagi beberapa item yang tidak dikenalpasti semasa VA, antaranya; Provisional Sum (Flood Gate, Mechanical Fan), Miscellanious (Peralatan Sub Stesyen Sementara TNB, Aerohub Suppression System), Professional Fees dan beberapa item yang belum dikaji semula / disemak dengan kos yang lebih tepat / kos sebenar.

CONTOH

3.0 PEMATUHAN KETETAPAN VA

3.1 PEMATUHAN REKABENTUK SEBELUM VE

CONTOH

PERKARA	KETETAPAN VA	SEBELUM VE (DIREKABENTUK)	PERBEZAAN SEBELUM VE
KOS PROJEK:	RM 69,837,980.00 (Termasuk Kos TEM: RM8.4 Juta)	RM71,409,000.00	+ RM1,571,020.00 + 2.25%
JUMLAH GFA:	17,553 m.p.	18,157 m.p	+ 604 m.p (+ 3.44%)
BIL PENJAWATAN:	95 orang	95 orang	Sebagaimana VA
KAPASITI PESERTA:	Bilangan pelatih – 600 org Kapasiti asrama – 456 org	Bilangan pelatih – 600 org Kapasiti asrama – 456 org	Sebagaimana VA
SKOP PROJEK:	(Seperti Butiran di 3.2)	(Seperti Butiran di 3.2)	

3.0 PEMATUHAN KETETAPAN VA

3.2 PEMATUHAN SKOP PROJEK SEBELUM VE

CONTOH

BIL	KETETAPAN KAJIAN VA	PEMATUHAN REKABENTUK (SEBELUM VE)
1	Kerja-kerja piling, ground beam dan footing. * Tiada laporan SI semasa VA	Dipatuhi walaubagaimanapun keputusan SI masih belum terima.
2	Pembinaan bangunan pentadbiran, bengkel, makmal, bangunan akademik bagi akuakultur, hatceri, teknologi perikanan tangkapan, kejuruteraan laut serta kafetaria, surau, dewan serbaguna, penginapan pelatih dan bangunan sokongan.	Dipatuhi
3	Perolehan bahan TEM (tool, equipment, material), peralatan pembelajaran dan pengajaran, perabot dan kelengkapan bangunan. Kos TEM : RM8.4juta * Kos semasa VA adalah berdasarkan anggaran sahaja	Skop TEM dipatuhi. Setelah dikajisemula sebelum VE terdapat kenaikan pada kos TEM sebanyak RM14,600.00 (+0.17%)

3.0 PEMATUHAN KETETAPAN VA

BIL	KETETAPAN KAJIAN VA	PEMATUHAN REKABENTUK (SEBELUM VE)
4	Satu padang bola berumput dengan sistem subsoil.	Terminologi padang bola ditukar kepada padang riadah berumput dengan sistem subsoil disebabkan tidak menepati saiz, bentuk dan fungsi .
5	Satu gelanggang futsal pelbagai guna	Dipatuhi
6	Pagar asrama perempuan	Dipatuhi
7	Kemudahan OKU	Dipatuhi (ramp, tandas, parkir)
8	Raised floor di Navigation & Fishing Simulator Centre	Dipatuhi
9	Sistem Wifi	Dpatuhi
10	Sistem CCTV	Dipatuhi
11	Soket meja bilik mesyuarat	Dipatuhi CONTOH
12	Compound lighting LED	Dipatuhi

3.0 PEMATUHAN KETETAPAN VA

3.1 PEMATUHAN REKABENTUK SEBELUM VE

CONTOH

PERAKUAN KEPUTUSAN LAB VA (9 – 13 Januari 2012)

Kos Pembinaan : RM 117,000,000.00

Kos Pengambilan Balik Tanah : RM 5,000,000.00

Bil	Ketetapan KajianVA	Pematuhan Rekabentuk (Sebelum VE)
1	Rekabentuk persimpangan bertingkat jenis *trumpet* termasuk jambatan merentasi jajaran utama lebuh raya sebagai laluan kepada pengguna dari semua arah.	Rekabentuk persimpangan bertingkat jenis *trumpet* termasuk jambatan merentasi jajaran utama lebuh raya **(4 lorong 2hala – 3.65m x 4 = 14.6m lebar jalan)** sebagai laluan kepada pengguna dari semua arah.
2	Menyediakan Plaza Tol (14 lorong), Bangunan Pengawasan (833m2) dan kelengkapan berkaitannya.	Menyediakan Plaza Tol **(12 lorong)**, Bangunan Pengawasan (833m2) dan kelengkapan berkaitannya.
3	Menyediakan kemudahan lain seperti surau, tandas, wakaf dan *parking* untuk kegunaan awam.	Menyediakan kemudahan lain seperti surau, tandas, wakaf dan *parking* untuk kegunaan awam.

value management

Pre Requisite Form

JKR	**PENGURUSAN NILAI** **Pra Syarat Pelaksanaan Kajian VE**	Reference : JKR.VE.Pre.01 Page No : 1 Issue No : 1 Revision No : 0 Date : MAC 2012

PROJEK :	**RMK10/ RP :**
KEMENTERIAN PELANGGAN / SEKSYEN EPU:	
HOPT :	
HODT : DALAMAN / PERUNDING	

BIL	SOALAN PRA SYARAT	YA	TIDAK	CATATAN
1	Laporan Kajian *Value Assesment* (VA) telah dirujuk oleh HOPT/HODT (sekiranya VA dilaksanakan)	☐	☐	
2	*Client Brief* telah dikemukakan oleh Klien	☐	☐	
3	*Design Brief* dan SOA (Bangunan) telah disediakan	☐	☐	
4	Kerja-kerja awalan telah dilaksanakan (Cth: Kerja Ukur, S.I, dsb)	☐	☐	
5	KONVENSIONAL			
	• Bangunan - Rekabentuk Konsep telah disedia dan dikaji semula (*review*)	☐	☐	
	• Jalan - Rekabentuk Awalan telah disedia dan dikaji semula (*review*)	☐	☐	
6	REKA & BINA			
	• *Need Statement* telah disedia dan dikaji semula (*review*)	☐	☐	
7	Anggaran Kos Awalan telah disedia dan dikaji semula (*review*)	☐	☐	
8	Jika Kajian VA telah dilaksanakan;			
	• Pematuhan kepada ketetapan VA bagi skop projek dan GFA (Bangunan) * Nyatakan perbezaaan skop (jika ada)	☐	☐	
	• Pematuhan kepada ketetapan VA bagi peruntukan Kos Projek (RM) *Nyatakan jumlah varian (RM) (jika ada); dan *Nyatakan peratus varian (%) (jika ada)	☐	☐	RM: %:
	Catatan: Skop / kos projek perlu dikaji semula sekiranya berbeza / melebihi kos yang ditetapkan oleh VA			
9	Tarikh Tender telah ditetapkan; nyatakan tarikh	☐	☐	Tarikh:
10	Lain-lain:			

CATATAN:

1. Kesediaan untuk pelaksanaan Lab VE: SEDIA / BELUM SEDIA

2. Cadangan tarikh Pelaksanaan Lab VE:

SEMAKAN OLEH:	**TARIKH:**

value management

Selection of participants

JKR	**PENGURUSAN NILAI** **Penentuan Peserta Lab Kajian VE (A.C.I.D Test)**	Reference : JKR.VE.Pre.03 Page No : 1/2 Issue No : 1 Revision No : 0 Date : JUNE 2012

PROJEK : PROJEK NAIKTARAF JALAN RANAU KE TAMBUNAN FASA 2B

HOPT : CAW. LEBUHRAYA, JKR SABAH

AGENSI / KEMENTERIAN KLIEN: KEMENTERIAN KERJARAYA MALAYSIA

A - "AUTHORISE"	**Entities with executive authority to take decisions or resolve issues in lab**
C - "CONSULT"	**Experts who have to be consulted on particular aspects during lab**
I - "INFORM"	**Entities who have to be informed on lab decisions (not to participate)**
D - "DO"	**Entities who have to carry out major tasks of lab recommendations**

BIL	ENTITI	BAHAGIAN / JAWATAN (JIKA DIKENALPASTI)	TANDA (✓)				CATATAN
			A	C	I	D	
1	EPU	Seksyen Perkhidmatan Infra	X		X		
2	SPN	Seksyen Pengurusan Nilai	X		X		
3	KLIEN	Bhg Pembangunan & Penswastaan KKR	X	X			
4	USERS	JKR Sabah		X			
5	HOPT (PM)	Caw. Lebuhraya, Jkr Sabah		X		X	
6	PAKAR/HODT	Caw. Cerun, JKR Sabah		X			
		Caw. Jabatan , JKR Sabah		X			
		Cawangan Elektrik, Jkr Sabah		X			
		Ukur Bahan, Jkr Sabah		X			
7	PAKAR, JKR M'sia	Caw.Kejuruteraan Jalan		X			
		Caw. Kejuruteraan Cerun		X			
		Geoteknik Jalan		X			
8	PERUNDING	Jalan & Cerun		X		X	
		Alam Sekitar					
7	AUTHORITIES	TNB		X			
		TELEKOM		X			
		IWK		X			
		JAB BEK AIR / SYARIKAT AIR		X			
		MAJLIS PERB/ BANDARAYA		X			
		JPS		X			
		SYARIKAT TELEKOMUNIKASI		X			
8	FACILITATOR	PROKOM / JKR		X			

CONTOH BUTIRAN "CATATAN":
SKOP TUGAS / KEHADIRAN BAGI HARI @ SESI TERTENTU / BILANGAN PESERTA YANG DIPERLUKAN

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Pre Lab Checklist

JKR	**PENGURUSAN NILAI** **Senarai Semak Tindakan Pra Lab Kajian VE**	Reference : JKR.VE.Pre.02 Page No : 1/2 Issue No : 1 Revision No : 0 Date : MAC 2012

PROJEK :	
HOPT :	**TARIKH:**

BIL	PERKARA TINDAKAN	SEMAK	PIHAK T/JAWAB	SASARAN/ CATATAN
1.	**Sedia dan dapatkan kelulusan *Project Management Plan* (PMP)**	☐	Fasilitator	
2.	**Kemuka cadangan, bincang dan dapatkan persetujuan Klien dan/atau HOPT:**			
2a.	Mesyuarat Pra Lab VE – tarikh, tempat, masa dsb	☐	HOPT / Fasilitator	
2b.	Objektif Kajian VE	☐	Fasilitator	
2c.	Tempoh Lab VE dan agenda tentatif (jika ada)	☐	Fasilitator	
2d.	Tarikh / tempat / kos Lab VE	☐	Klien / HOPT	
2e.	Keahlian peserta Lab VE	☐	HOPT / Fasilitator	
2f.	*Level of Study* dan Skop Kajian VE	☐	Fasilitator	
2g.	Kebolehlaksanaan jangkaan penemuan Kajian VE	☐	Fasilitator	
2h.	Keperluan Lab VE II atau lab susulan	☐	Fasilitator	
2i.	Kenalpasti isu / implikasi / kekangan	☐	Klien / HOPT / Fasilitator	
2j.	Lain-lain:			
3.	**Sedia / kumpul maklumat dan/atau dokumen:**			
3a	Laporan Kajian *Value Assessment* (VA) (jika ada)	☐	Klien / Fasilitator	
3b	Jumlah Peruntukan dan Siling diluluskan	☐	Klien / HOPT	
3c	Brif Projek yang diluluskan terkini	☐	Klien / HOPT	
3d	*Schedule of Accomodation* (SOA) – Pojek Bangunan	☐	Klien / HOPT	
3e	Data statistik *occupancy* dan keperluan pengguna	☐	Klien / HOPT	
3f	Lukisan Rekabentuk Konsep / Awalan terkini	☐	HOPT / HODT	
3g	Senarai Kuantiti / Ringkasan Harga (jika ada)	☐	HOPT / HODT	
3h	Spesifikasi terkini	☐	HOPT / HODT	
3i	Kenalpasti keperluan Pihak Berkuasa	☐	HOPT/HODT	
3j	Preliminary Detailed Abstract (PDA) diluluskan terkini	☐	HOPT	
3k	Anggaran Kos terkini (jika ada)	☐	HOPT / HODT (QS)	
3l	Jadual Program Kerja terkini	☐	HOPT	
3m	Pelan Pengurusan Risiko (jika ada)	☐	HOPT	
3n	Lain-lain:			

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value management

Pre Lab Checklist

BIL	PERKARA TINDAKAN	SEMAK	PIHAK T/JAWAB	SASARAN/ CATATAN
4	**Laksana lawatan tapak bina (jika perlu)**	☐	HOPT / Fasilitator	
5	**Laksana Kajian Awalan dan sedia cadangan:**			
5a	Objektif Projek (*Project Objectives*)	☐	Fasilitator	
5b	Sistem Nilai Klien (*Client Value System*)	☐	Fasilitator / Klien	
5c	Kos Model (*Cost Model*)	☐	Fasilitator / HODT (QS)	
5d	Definisi Fungsi-fungsi Projek (*Project Functions*)	☐	Fasilitator	
5e	Lain-lain:			
6	**Laksana persediaan lab dan logistik:**			
6a	Agenda lab	☐	Fasilitator	
6b	Pelantikan ahli pasukan fasilitator	☐	Fasilitator	
6c	Kenalpasti ahli / peserta lab	☐	HOPT / Fasilitator	
6d	Surat jemputan ahli / peserta lab	☐	HOPT	
6e	Kumpulan kerja (*working groups*) dan skop tugasan	☐	Fasilitator	
6f	Persiapan tempat lab dan logistik berkaitan	☐	Klien / HOPT / Fasilitator	
6g	Persediaan bahan lab (*lab kit*)	☐	Fasilitator	
6h	Persediaan alatulis / perkakas / peralatan ICT	☐	HOPT / Fasilitator	
6i	Lain-lain:			
7	**Laksana sesi orientasi Pra Lab (jika perlu)**			
7a	Mesyuarat / taklimat Pra Lab kepada fasilitator	☐	Fasilitator	
7b	Mesyuarat / taklimat Pra Lab kepada peserta	☐	Fasilitator	
7c	Lain-lain:			

SEMAKAN OLEH :	**TARIKH:**

JKR

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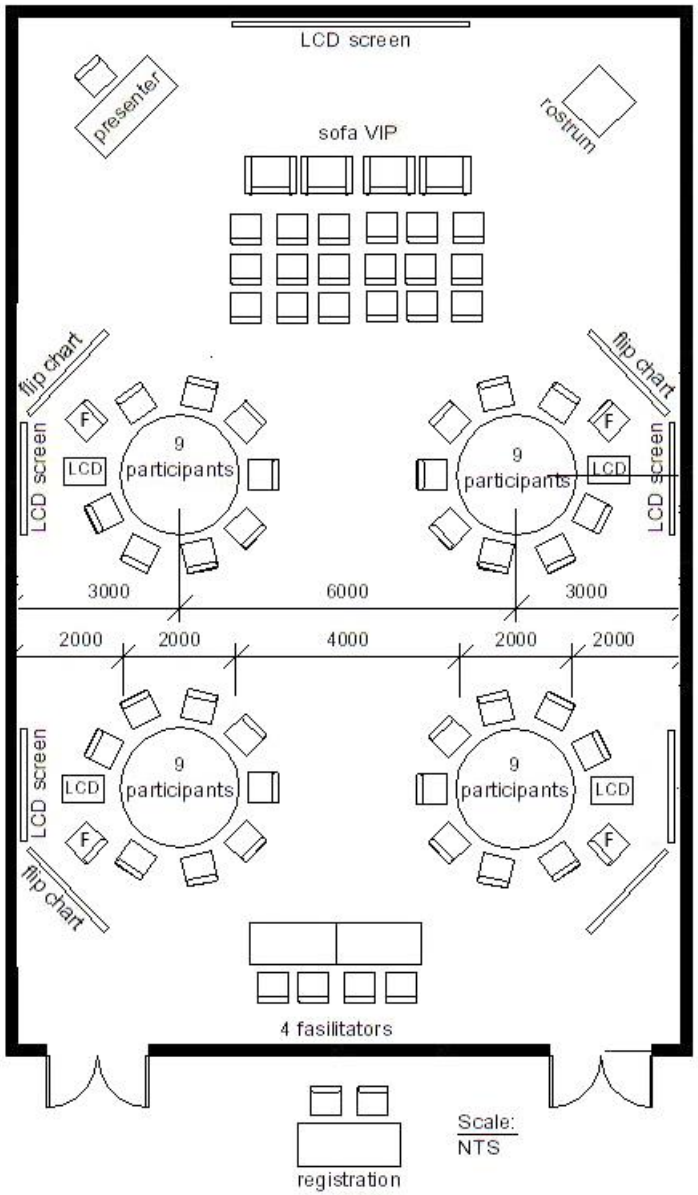
SENARAI KEPERLUAN DI LOKASI

BIL	KEPERLUAN	SEMAK	BILANGAN	CATATAN
1	Pencetak	☐		
2	*Flip chart*/ Papan putih(1 set setiap kumpulan)	☐		
3	Pen Marker papan putih(3 warna /setiap kumpulan)	☐		
4	Pemadam papan putih (1 set setiap kumpulan)	☐		
5	Meja Bulat Besar dan 8-9 kerusi setiap meja (1 set setiap kumpulan)	☐		
6	Microfon dan sistem bunyi (Wayarles/dinamik)	☐		
7	Projektor LCD (1 set setiap kumpulan dan fasilitator)	☐		
8	Komputer riba (1 set setiap kumpulan dan fasilitator)	☐		
9	Skrin Projektor dan meja untuk projektor (1 set setiap kumpulan dan fasilitator)	☐		
10	Meja pendaftaran dan 2 kerusi	☐		
11	Rostrum untuk perasmian/ sign off	☐		Sekiranya diperlukan oleh pihak tertentu
12	Meja untuk Fasilitator termasuk kerusi	☐		
13	Sofa untuk VIP (untuk perasmian/ sign off sahaja)	☐		
14	Kabel Elektrik (*Extension*)	☐		Mengikut keperluan peserta dan sentiasa disusun dan diikat dengan kemas

Pre Lab Checklist

SUSUNATUR PERABOT BAGI LAB VE



1.0 OBJEKTIF KAJIAN VE

- **Mengoptimumkan rekabentuk projek bagi memenuhi keperluan fungsi projek dan pengguna.**

- **Mengoptimumkan kos projek merujuk kepada peruntukan yang telah ditetapkan seperti di dalam laporan Kajian VA.**

- **Menambahbaik program kerja dan intergrasi pengurusan risiko.**

OBJEKTIF KAJIAN VE

CONTOH

- Mengoptimumkan rekabentuk projek selaras dengan objektif projek, keperluan skop dan fungsi.

- Mengoptimumkan kos projek menurut jumlah peruntukan kewangan yang diluluskan.
  (Jumlah menurut Ketetapan VA / Surat Kelulusan EPU dsb.)

- Menambahbaik pelan tindakan dan melaksanakan pengurusan risiko awalan.

7.0 SKOP KAJIAN VE CONTOH

TAHAP KAJIAN	SKOP KAJIAN KAJIAN SEMULA RUANG , VE ELEMEN & KOMPONEN
KUMPULAN A	• SENIBINA Blok Pentadbiran & Pengajian Akademik
KUMPULAN B	• SENIBINA Kafetaria, Surau, Dewan Serbaguna, Penginapan Pelatih dan bangunan sokongan • PERABOT
KUMPULAN C	• KERJA – KERJA MEKANIKAL & TEM
KUMPULAN D	• KERJA – KERJA ELEKTRIKAL
KUMPULAN E	• KERJA – KERJA AWAM & STRUKTUR • KERJA – KERJA LUAR

7.0 SKOP KAJIAN VE

TAHAP KAJIAN	SKOP KAJIAN		
	KUMPULAN A (MFS)	KUMPULAN B (MAL)	KUMPULAN C (RAG)
ELEMEN PROJEK	• SITE CLEARING • FENCING & GATE • EARTHWORK • GEOTECHNICAL WORK • PAVEMENT • ROADWAY APPROACH ON BOTH SIDES OF 14 LANES TOLL PLAZA CANOPY • ROAD MARKING & FURNITURE	• DRAINAGE WORKS • BRIDGES • TOLL PLAZA • INTERCHANGE LIGHTING & HIGHMAST • UTILITIES RELOCATION/NEW WATER MAIN • CONTRIBUTION CHARGES TO LOCAL AUTHORITIES • LAND ACQUISITION/ HANDOVER	• GENERAL ITEMS • LANDSCAPING • TRAFFIC MANAGEMENT • TESTING OF SOILS & MATERIALS • DILAPIDATION SURVEY • SURVEY WORK ALONG EXISTING ROAD FOR WATERMAIN
KOMPONEN PROJEK			

7.0 SKOP KAJIAN VE

7.1 SKOP KAJIAN VE MENGIKUT KUMPULAN LAB

TAHAP KAJIAN	SKOP KAJIAN				
	KUMPULAN A	KUMPULAN B	KUMPULAN C	KUMPULAN D	KUMPULAN E
PROJEK	Master Planning				• Strategic Issues • CVS • Risks • Action Plan
RUANG	SOA				
ELEMEN	Architectural	• Civil • Geotechnical • Structure	• Mechanical (PC Sum / Prov Sum)	• Electrical • ICT (PC Sum / Prov Sum)	Other PDA Items: • Other Prov Sums • VOP • Contributions • Miscellaneous • Prof Fees • Preliminaries
KOMPONEN					

4.0 MODEL KOS KAJIAN VE CONTOH

Item	HURAIAN (Description)	Ketetapan VA (RM)	Cost Model (RM)	Perbezaan%
	Construction Cost			
1	General Items	5,000,000.00	4,172,150.00	-16.6
2	Site Clearing	193,500.00	294,590.00	+52.2
3	Fencing & Gate	0.00	592,800.00	+100
4	Earthworks	9,671,400.00	18,495,720.00	+91.2
5	Geotechnical Works	1,000,000.00	19,094,000.00	+1,809.4
6	Drainage Works	11,850,000.00	6,642,875.00	-44
7	Pavement Works	6,300,000.00	21,733,882.50	+245
8	Roadway Approach on Both Sides of lanes Toll Plaza Canopy	11,600,000.00	0	-100
9	Road Marking & Furniture	2,760,000.00	3,227,100.00	+16.9
10	Bridges	32,748,200.00	26,301,625.00	-19.68
11	Toll Plaza	14,415,000.00	17,904,691.76	+24.2
12	Interchange Lighting & Highmast	5,500,000.00	4,872,550.00	-11.4
13	Landscaping	600,000.00	600,000.00	0
14	Traffic Management	1,260,000.00	1,500,000.00	+19.0
15	KTMB Flagging Charges & Wayleave Charges (OHLE)	2,000,000.00	2,000,000.00	0
16	Utilities Relocation / New Water Main	2,000,000.00	2,128,715.00	+6.44
17	Contribution Charges to Local Authorities	0.00	103,000.00	+100
18	Testing of soils & materials	0.00	50,000.00	+100
19	Dilapidation Survey	0.00	20,000.00	+100
20	Survey Work Along Existing Road for Watermain	0.00	0	0
	Total	**106,898,100.00**	**129,733,699.26**	**+21.36**
21	Professional Fees	10,101,900.00	10,101,900.00	0
	Cost Project	**117,000,000.00**	**139,835,599.26**	**+19.51**

4.0 MODEL KOS KAJIAN VE CONTOH

DESCRIPTION (PDA ITEMS)	VA COST (08 NOV 2013) (RM)	VE COST MODEL (RM)	NETT DIFFERENCE (-) / + (RM)	REMARKS: DIFFERENCE
PRELIMINARIES	2,110,776.00	2,041,074.00	(69,702.00)	Reviewed cost
PILING / FOUNDATION	3,443,000.00	3,443,000.00	0.00	
MAIN WORKS - BUILDING				
Building - 4 Storey	13,334,000.00	13,800,000.00	466,000.00	Increase of GFA
Building - 1 1/2 Storey Basement	7,235,952.00	6,665,005.00	(570,947.00)	Reduction of GFA
TNB Substation (Temp Building)	110,000.00	110,000.00	0.00	
Demolition Works	430,000.00	430,000.00	0.00	
Reconstruct Covered Walkway	10,000.00	10,000.00	0.00	
Mechanical Services	4,252,000.00	3,760,000.00	(492,000.00)	Reviewed cost
Electrical Installations	4,210,000.00	4,210,000.00	0.00	
Profit & Attendance M &E	253,860.00	239,100.00	(14,760.00)	Reviewed cost
EXTERNAL WORKS	1,900,795.00	1,350,795.00	(550,000.00)	Transfer from Prov Sum
PROVISIONAL SUM	925,000.00	2,755,000.00	1,830,000.00	Add Flood Gate; Add Mech Fan
VARIATION OF PRICES (VOP)	1,758,980.00	1,622,699.60	(136,280.40)	Reviewed cost
CONSTRUCTION COST	**39,974,363.00**	**40,436,673.60**	**462,310.60**	
CONTRIBUTION FEES	1,278,699.00	729,425.61	(549,273.39)	Reviewed cost
MISCELLANEOUS	304,000.00	1,116,000.00	812,000.00	Add SubStn Equipm; Add Aerohub System
Other Misc: Land Premium	5,000,000.00	5,000,000.00	0.00	Misc. items not rationalised to actual
Other Misc: Relocation of	1,900,000.00	1,900,000.00	0.00	
CONTINGENCIES	-	-	-	
PROFESSIONAL FEES / TAX	4,523,735.00	6,318,400.79	1,794,665.79	Increase of Prof. Fees
PROJECT COST	**52,980,797.00**			+4.72% cost increase against EPU Ceiling Cost
EPU CEILING COST / REVIEWED COST	**53,000,000.00**	**55,500,500.00**	**2,500,500.00**	

value management

Study Duration (JKR)

PRE LAB STAGE	**1 - 2 WEEKS PRIOR TO LAB**
LAB STAGE	3 - 4 DAYS LAB (WORKSHOP)
IMPLEMENTATION STAGE	1 – 2 WEEKS POST LAB FOR VE REPORT; AS SCHEDULED FOR VE IMPLEMENTATION

1. INFORMATION
2. FUNCTION ANA PHASE
3. CREATIVITY PHA
4. EVALUATION PH
5. DEVELOPMENT PH
6. PRESENTATION PHASE

"THE MORE TIME THAT IS SPEND ON PRE STUDY INFORMATION GATHERING & PREPARING , THE BETTER THE STUDY WILL BE"

- Steven male et al-

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17.0 LAMPIRAN

CONTOH

AGENDA LAB VE

Value management
Pre Lab Stage (VE)

CONTOH

1

AGENDA LAB VE

Date	Session		
	1st Morning	2nd Morning	Afternoon
	8.30am-10.30pm	11.00-1.00pm	2.30pm-5.00pm
10-June-13	Lab Briefing & Information Phase	Information / Function Analysis Phase	Function Analysis
11-June-13	Creative Phase	Creative Phase	Evaluation Phase
12-June-13	Development Phase	Development Phase	Presentation Phase

* 3 hari Siang

Value management
Pre Lab Stage (VE)

CONTOH

2

AGENDA LAB VE

Date	Session		
	Morning	Afternoon	Evening
	8.30am-1.00pm	2.30-5.00pm	8.30pm-10.30pm
13-May-13	Depart from KL	Site Visit	-
14-May-13	Lab Briefing & Information Phase	Information / Function Analysis Phase	Function Analysis
15-May-13	Creative Phase	Evaluation Phase	Evaluation Phase
16-May-13	Development Phase	Development Phase	Presentation Phase

* 3 hari Siang & Malam + Lawatan Tapak

Value management
Pre Lab Stage (VE)

CONTOH

3

AGENDA LAB VE

	MORNING	AFTERNOON	EVENING
DAY 1	INFORMATION PHASE	FUNCTION ANALYSIS PHASE	FUNCTION ANALYSIS PHASE
DAY 2	CREATIVITY PHASE	EVALUATION PHASE	DEVELOPMENT PHASE
DAY 3	DEVELOPMENT PHASE	DEVELOPMENT PHASE	PRESENTATION PHASE

* 3 hari Siang & Malam

Value management
Pre Lab Stage (VE)

CONTOH 4

AGENDA LAB VE

	MORNING	AFTERNOON
DAY 1	INFORMATION PHASE	FUNCTION ANALYSIS PHASE
DAY 2	FUNCTION ANALYSIS PHASE	FUNCTION ANALYSIS PHASE
DAY 3	CREATIVITY PHASE	EVALUATION PHASE
DAY 4	DEVELOPMENT PHASE	DEVELOPMENT PHASE
DAY 5	PRESENTATION PHASE	

* 5 hari Siang

AGENDA

CONTOH

(1) INFORMATION PHASE

	OUTPUTS **(RESPONSIBLE PARTY)**
• Arrival & Participants Registration	**(All participants)**
• Introduction & Team Building	**(All participants)**
• Confirm VE Study Objectives	• VE Study Objectives **(Faci)**
• Confirm VE Lab Agenda	• VE Lab Agenda **(Faci)**
• Study VA Lab Report	• Compliance VA Report **(PM (HOPT) /Faci)**
• Present Project Background Information:	• Project Background Information :
◦ Client Needs	◦ **(Client/ PM(HOPT))**
◦ Project Work Programme	◦ **(HOPT)**
◦ Design Proposal	◦ **(Consultants/HODTs)**
◦ Highlight Authorities requirements	◦ **(Lead Consultant/Authorities)**
• Validate:	• Project Objectives **(Faci)**
◦ Project Objectives	• Prioritized Client Value System **(Faci)**
◦ Client Value Systems	• Cost Model **(QS Consultant/ QS HODT)**
• Establish Cost Model	• VE Study Groups **(Faci)**
• Groupings (5 Groups):	
• Confirm spaces / elements / components to be studied	• Scope to be studied **(Groups)**
• Explore parameters and requirements of each selected elements / items	• *Information Phase Template* **(Groups)**
• Present (each group)	• Presentation **(Group Rep)**

AGENDA

CONTOH

(2) FUNCTION ANALYSIS PHASE

- Validate Project Functions
- Analyze functions for Spaces/ Element/ Components
- Analyze functions for Spaces/ Element/ Components
- Analyze function for Spaces/ Equipments- Process Flows/Operations & Adjacency
- Identify value mismatches
- Presentation of Function Analysis

- FAST Diagram **(Faci)**
- *Function Analysis Template sheet 1* **(Groups)**
- *Function Analysis Template sheet 2* (**Groups**)
- Presentation **(Group Rep)**

AGENDA

CONTOH

(3) CREATIVITY PHASE

- Generate ideas (options) to accomplish mismatches

- *Creativity Phase Template* **(Groups)**

(4) EVALUATION PHASE

- Categorize ideas for short listing of potential ideas
- Presentation of Generated & Potential Ideas

- *Evaluation Phase Template* **(Groups)**
- Presentation **(Group Rep)** & Consensus

AGENDA

CONTOH

(5) DEVELOPMENT PHASE

- Develop Shortlisted Ideas
  (All groups combined)
- Initiate Risk Management
- Review Project Work Programme
- Prepare Action Plan

- Presentation of recommended idea

OUTPUTS **(RESPONSIBLE PARTY)**

- *Development Phase Template* **(Groups)**

- *Risk Register* **(Faci)**
- Reviewed Work Programme **(PM (HOPT)/ Faci)**
- Action/Implementation Plan **(Faci/ All participants)**

- Presentation **(Group Rep)** & Consensus

AGENDA

CONTOH

(6) PRESENTATION PHASE

- Complete all VE Lab templates
- Prepare slides & VE Report

OUTPUTS **(RESPONSIBLE PARTY)**

- Completed Templates **(Groups)**
- Presentation Slides **(Faci)**

VM
"TRANSLATING ASPIRATIONS INTO PERFORMANCE"

Thank You