



(PART 2)

**VALUE MANAGEMENT (VM)
STUDY INTERVENTIONS
IN CONSTRUCTION
PROJECT LIFE CYCLE**

**KURSUS
PENGENALAN DAN
PENYELIAAN
PEMBINAAN
PROJEK JALAN**

**25 – 27 JANUARI 2021
CREaTE
JKR MALAYSIA**

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JUBP (SME VM)
UPN, CPAB
JKR MALAYSIA**

Value Opportunity

Value Opportunity Points

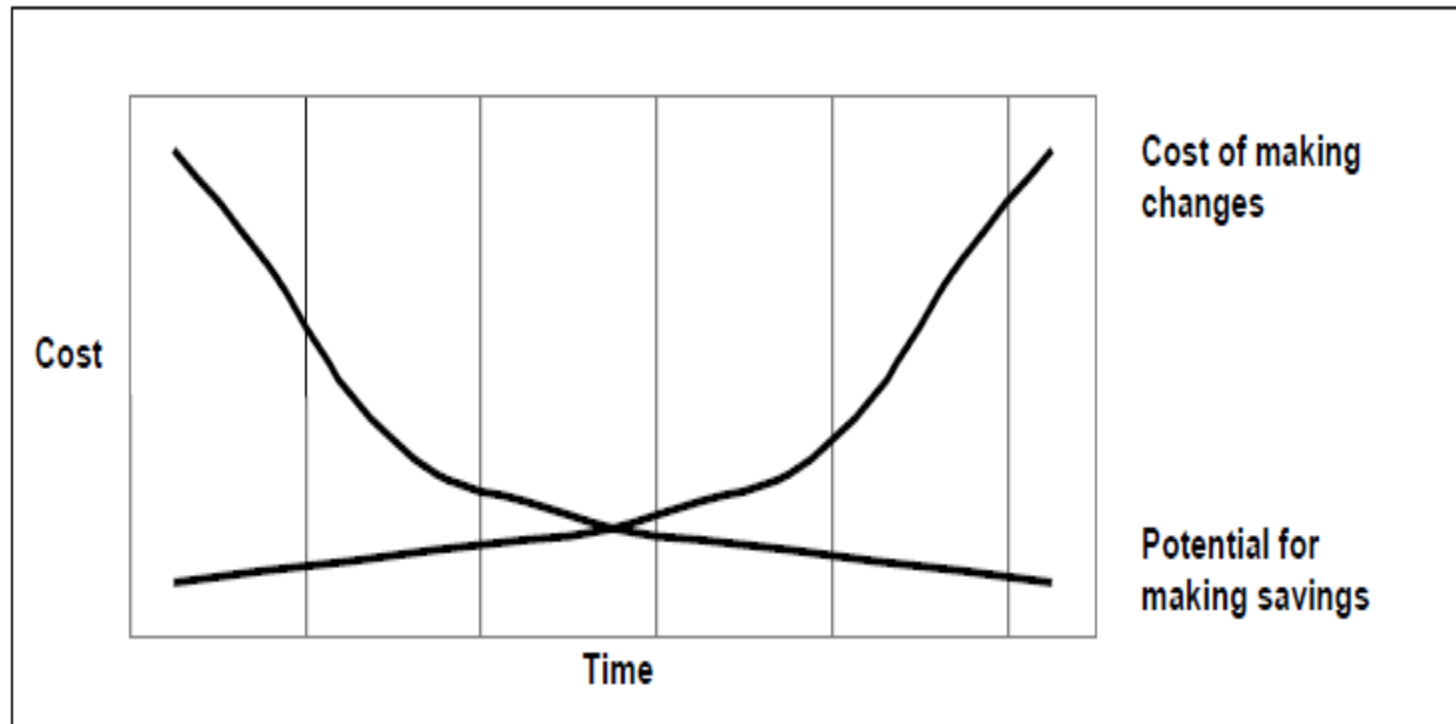
=

VM Study Interventions; or

**When is the most opportune or
beneficial timing for
VM study intervention
within construction project life cycle?**

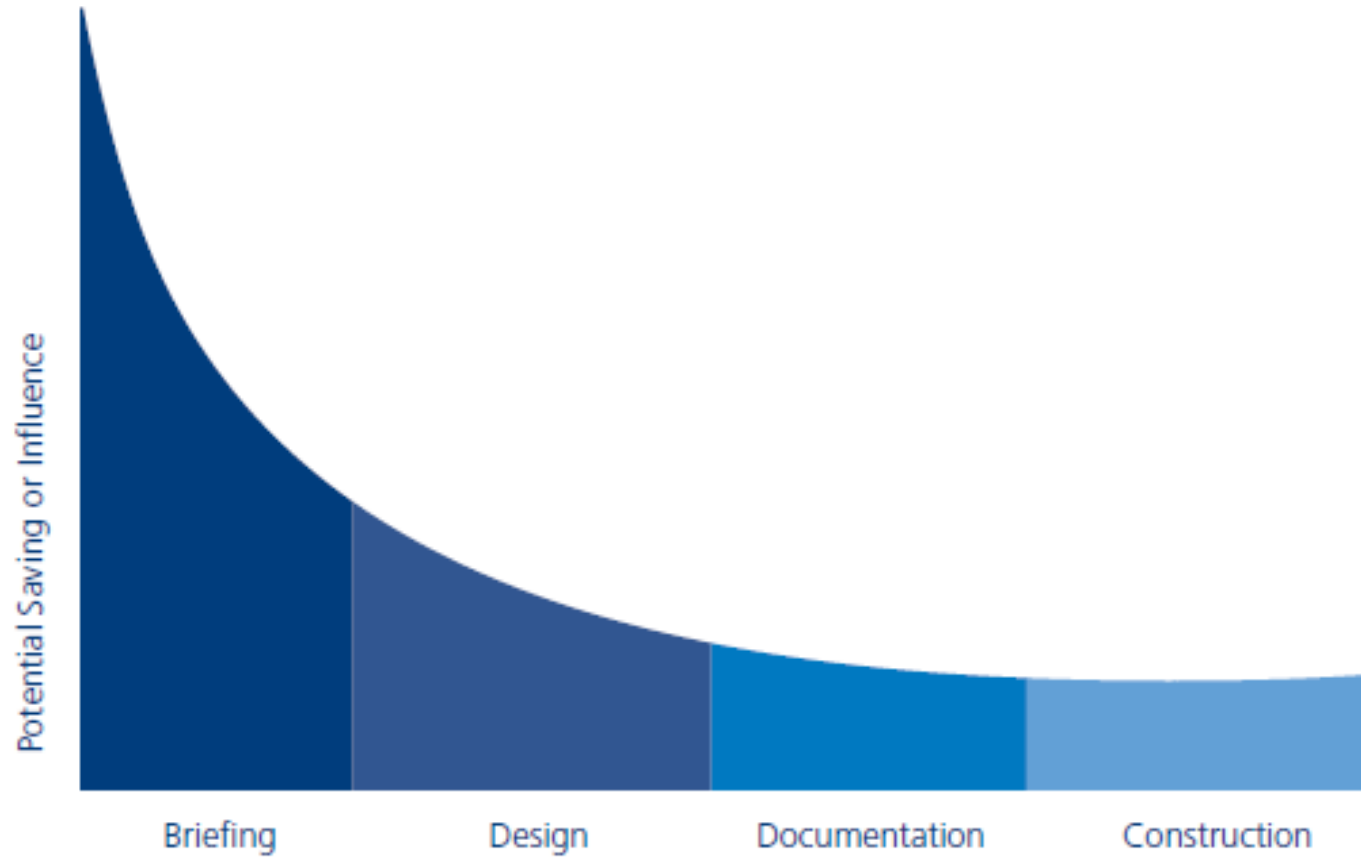


Value Potential (i)



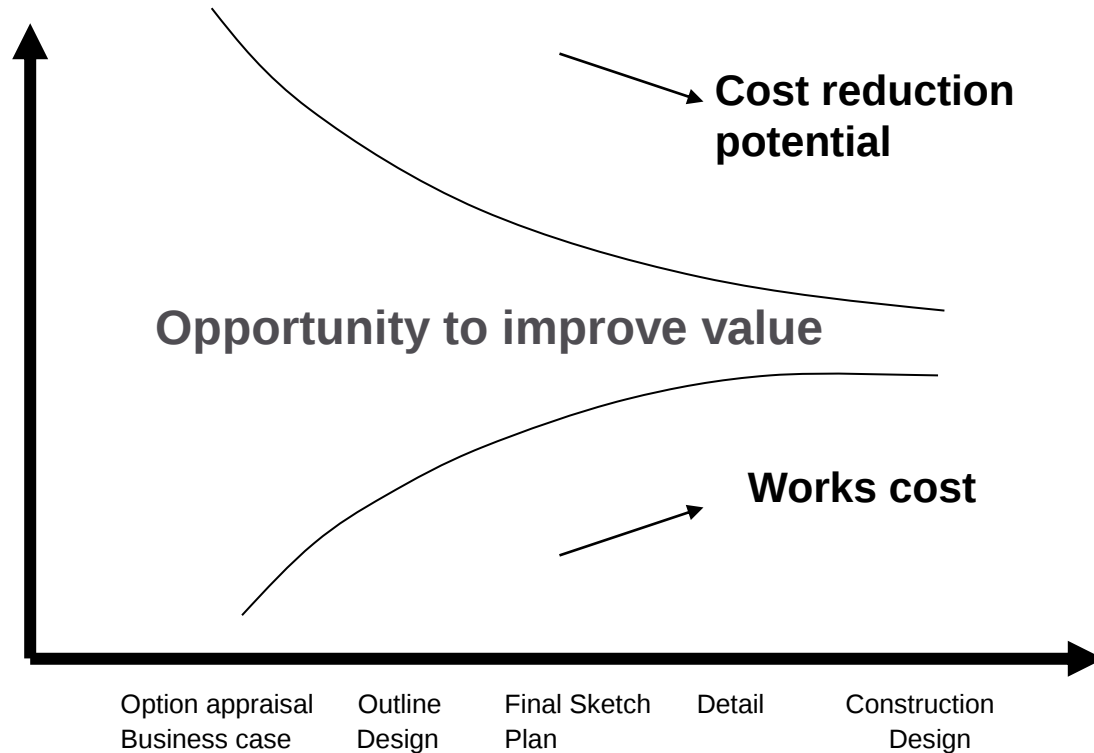
Source: *Total Asset Management : Value Management Guidelines*
New South Wales Treasury

Value Potential (ii)



Source: Value Management Guidelines Department of Housing & Works,
Government of Western Australia

Value Potential (iii)



Source: Guidance No.54 of H.M. Treasury of UK (CUP, 1996)

Value Potential (iv)



Source: Panduan Pelaksanaan Pengurusan Nilai Dalam Program/Projek Kerajaan,
Unit Perancang Ekonomi (EPU) JPM

Principle of VM Intervention

Value opportunities arise at points in the project life cycle when there is (or are):

- Unstructured problems occurs
- Need for strategic commitment
- Convergence of information of different parties
- Project viability uncertainty
- Need for technical commitment (design optimization)
- Need for capital commitment (cost optimization)

Rationale of VM Interventions

Right VM Interventions for maximizing project value ...

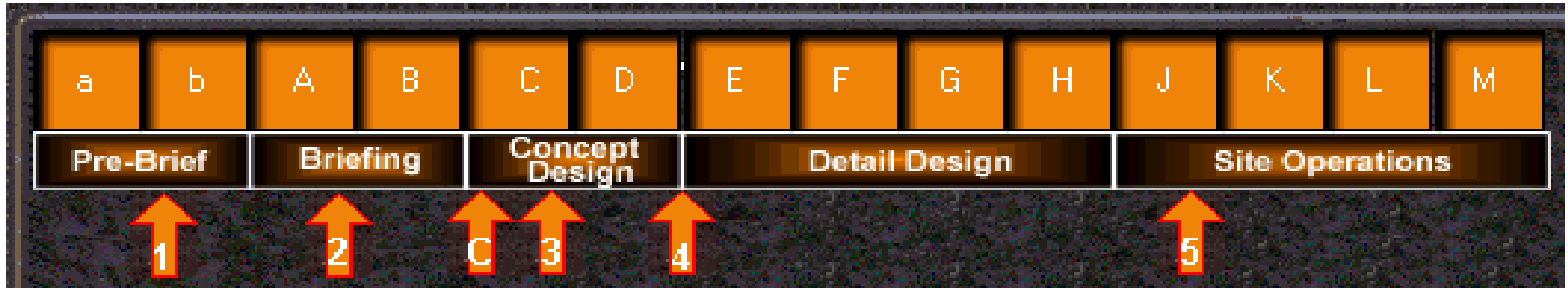
- Aligns with client's strategic needs & project objectives;
- Optimizes value variables (function, quality, time, risks etc.)
- Minimizes or eliminates unnecessary costs;
- Continuous value improvement throughout project lifecycle.

And to avoid inefficiencies ...

- Iterated processes / wasteful resources / abortive designs
- Cost and time for implementing changes / rectifications
- Demoralize team members / misconception about VM



VM Interventions Benchmark



VM Interventions in the RIBA Plan of Work:

Point 1: Strategic Briefing Study (or Pre Brief Workshop)

Point 2: Project Briefing Study (or Briefing Workshop)

Point C: The *Charette* (in the place of 'Point 1, 2 and 3')

Point 3: Concept Design Study / Workshop (or Outline Sketch Design Workshop)

Point 4: Detail Design Worksyop (or Final Sketch Design Workshop)

Point 5: Operations Workshop

Sources of VM Interventions based on RIBA Plan of Works :

- (i) *Re-Appraisal of VM Methodologies in Construction*, Male & Kelly (2007);
- (ii) *VM in Construction Projects*, Kelly, Male & Graham (2004) &
- (iii) *The VM Benchmark*, Male et al (1998)

VM Interventions Benchmark

VM Interventions

1. Strategic Briefing Study

2. Project Briefing Study

C. The Charette

3. Concept Design Workshop

4. Detail Design Workshop

5. Operations Workshop

Study Objectives

Strategic Brief to set on broad scope, purpose, overall budget & programme

Convert Strategic Brief into construction terms, outline budget & execution plan

Audit the brief and Concept Design to align with the strategic value systems

Review the brief and test design options towards the Concept Design

Fine tune the design through functional performance of elements and components

Convert the design into the construction operational programme

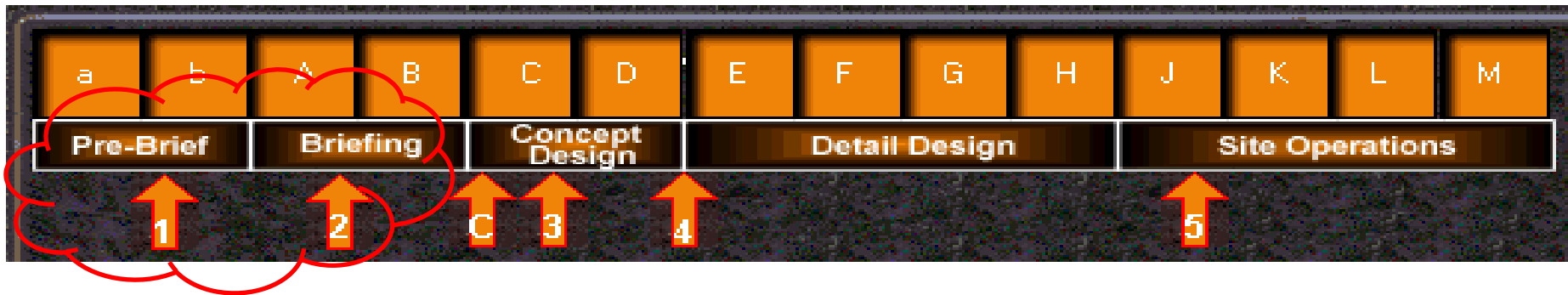
References :

- (i) Re-Appraisal of VM Methodologies in Construction, Male & Kelly (2007);
- (ii) VM in Construction Projects, Kelly, Male & Graham (2004) &
- (iii) The VM Benchmark, Male *et al* (1998)

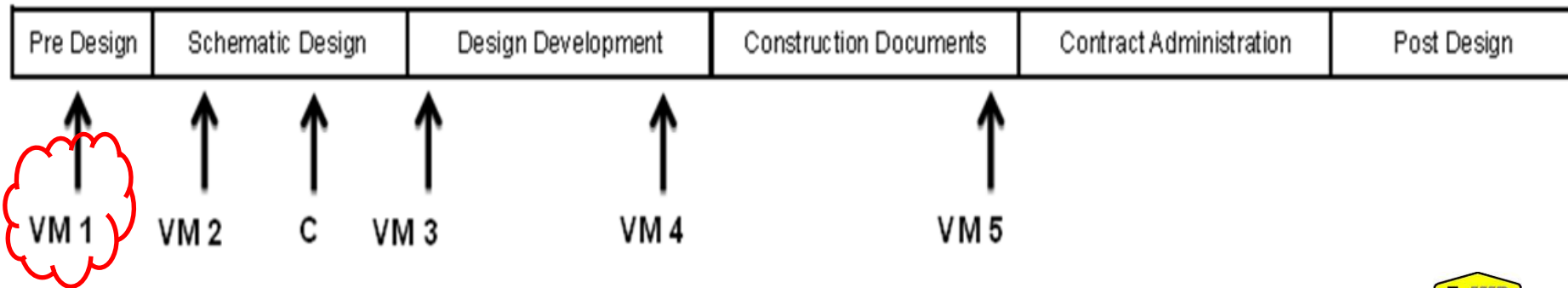


VM Interventions Comparison (i)

VM Interventions Benchmark (RIBA Plan of Work)

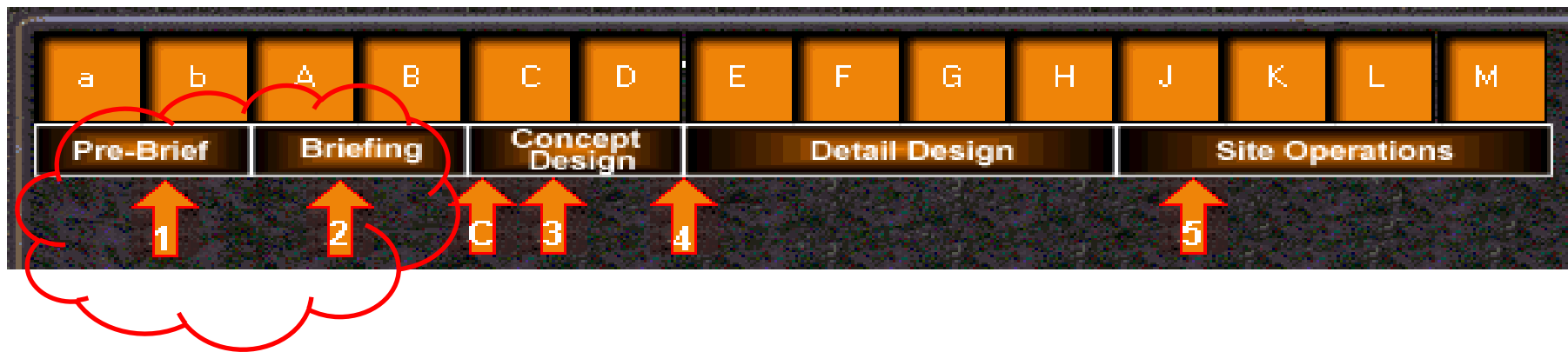


AIA (American Institute of Architects) Design Process (The VM Benchmark, 1998)



VM Interventions Comparison (ii)

VM Interventions Benchmark (RIBA Plan of Work)

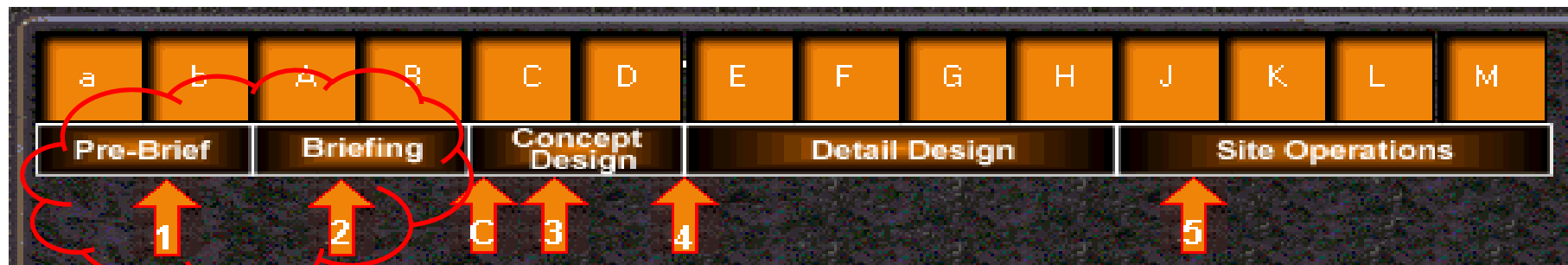


Institute of Value Management United Kingdom (IVM UK, 2009)

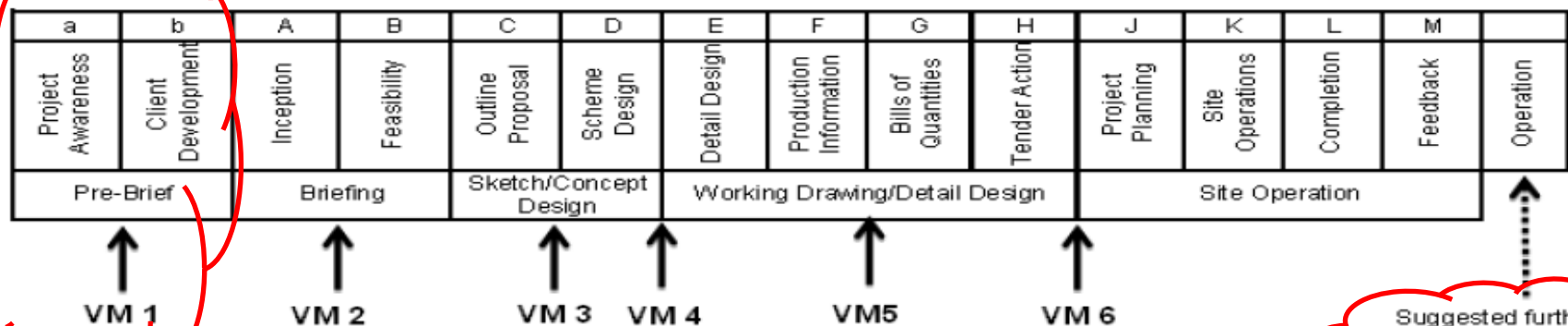
Strategy & Inception	Briefing	Concept Design	Scheme Design	Detailed Design & Construction	Handover	Use
VM0	VM1	VM2	VM3	VM4	VM5	VM6

VM Interventions Comparison (iii)

VM Interventions Benchmark (RIBA Plan of Work)

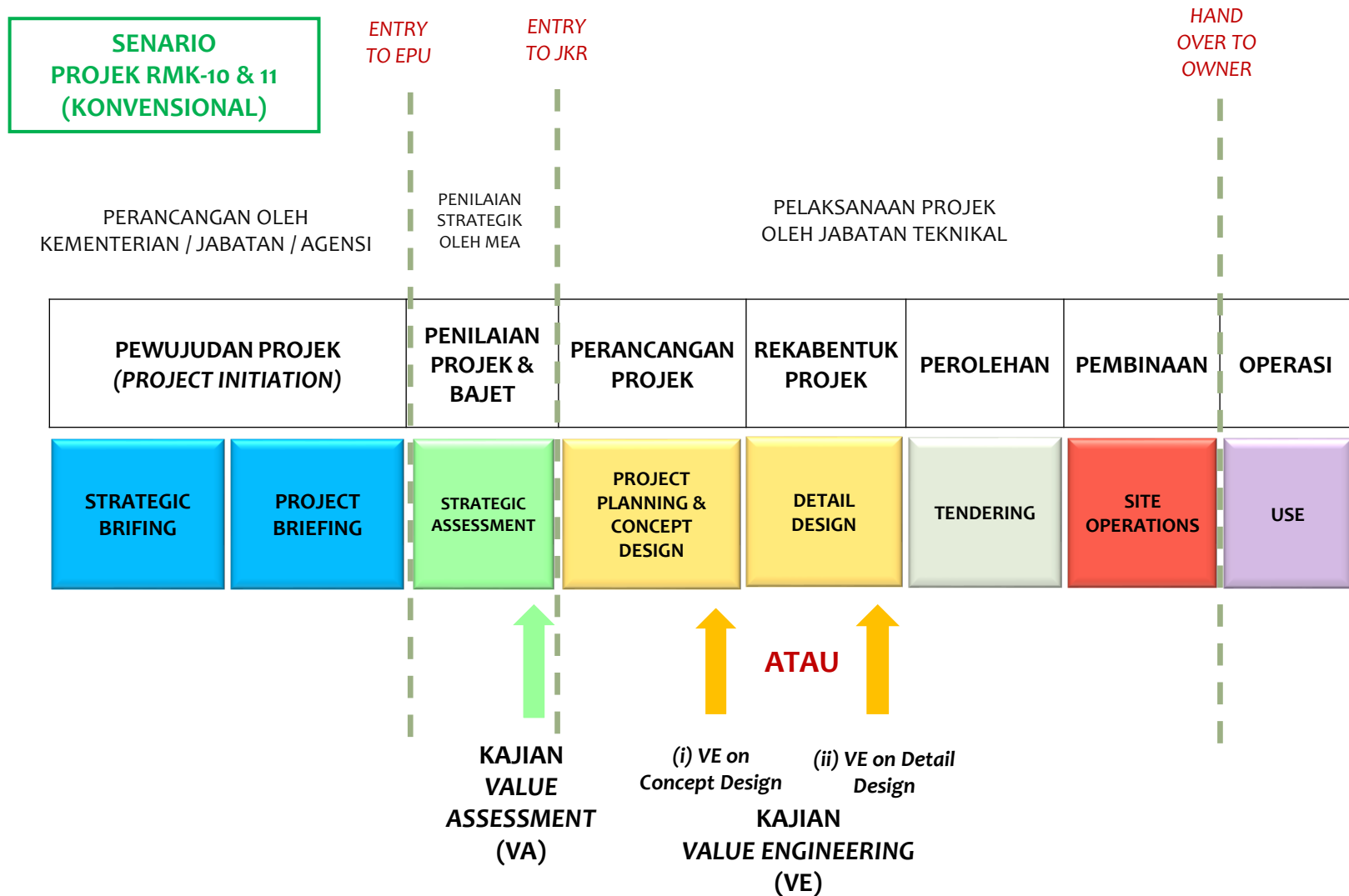


Prototype Guidelines of VM Application for The Malaysia Construction Industry (Aini Jaapar, 2007)

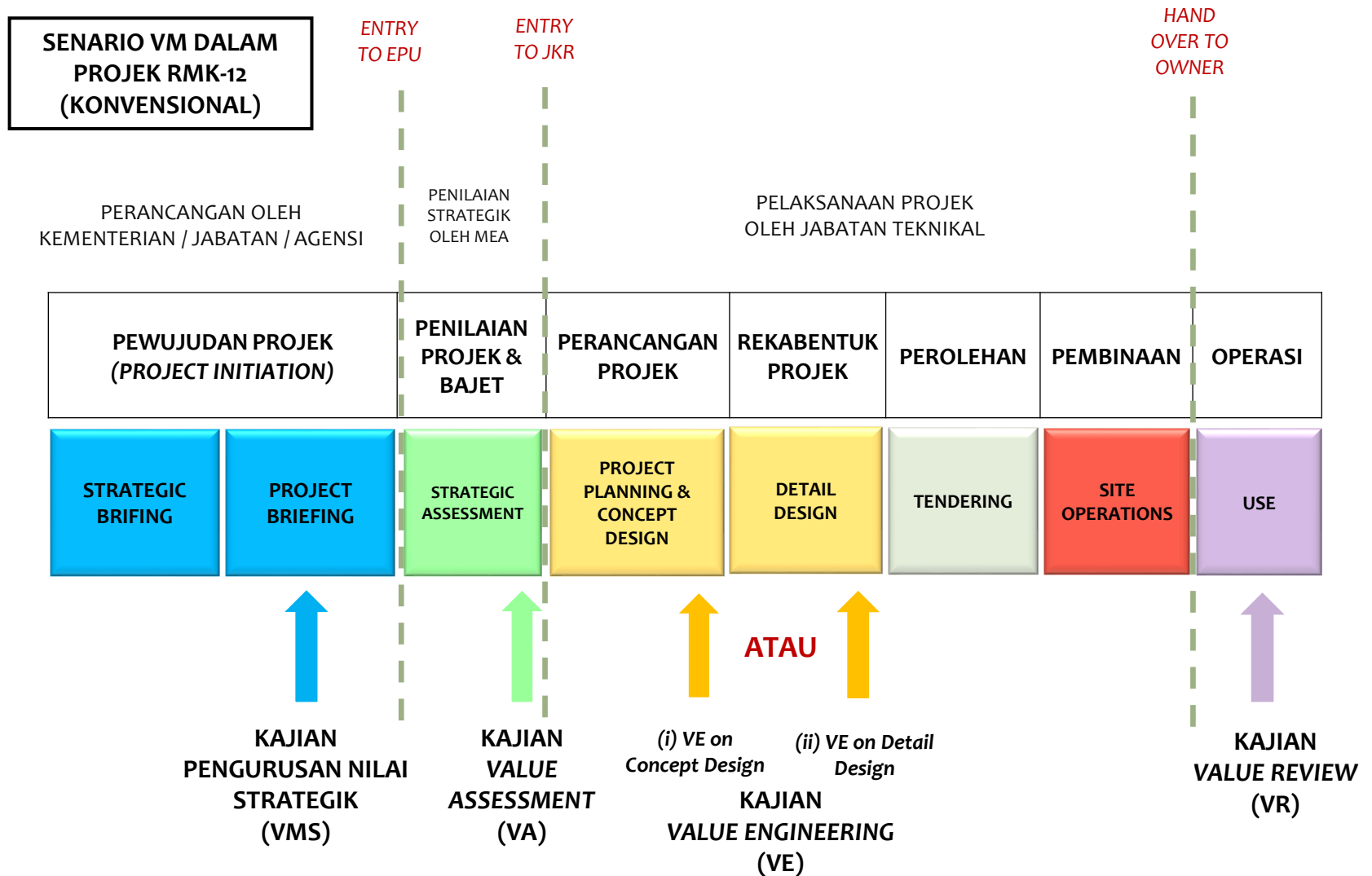


Suggested further VM development during post occupancy

INTERVENSI VM DALAM KITAR HAYAT PROJEK (RMKE-10 & 11)



INTERVENSI VM DALAM KITAR HAYAT PROJEK (RMKE-12)



KAJIAN VMS

JENIS KAJIAN VM	KAJIAN VM STRATEGIK (VMS)
PERINGKAT DALAM KITAR HAYAT PROJEK	SEMASA PEWUJUDAN PROJEK (OLEH KEM/JAB/AGENSI) • Semasa kem/Jab/Agensi menyedia permohonan projek; • Sebelum cadangan projek dikemuka kepada MEA
OBJEKTIF UTAMA KAJIAN	• Menentusah <i>viability</i> projek; • Memantapkan penentuan projek / Brif; Tapak dsb; • Menetapkan Kos Projek; • Memantapkan Strategi penyampaian projek
INPUT ASAS KAJIAN	• Asas justifikasi <i>viability</i>; • Brif Projek - Skop Projek; SOA & GFA (Bgn), Konsep pembangunan; Penentuan tapak; Status tanah dsb. • Anggaran Kos Projek; • Input berkaitan strategi penyampaian projek (Perolehan, Masa, Risiko)

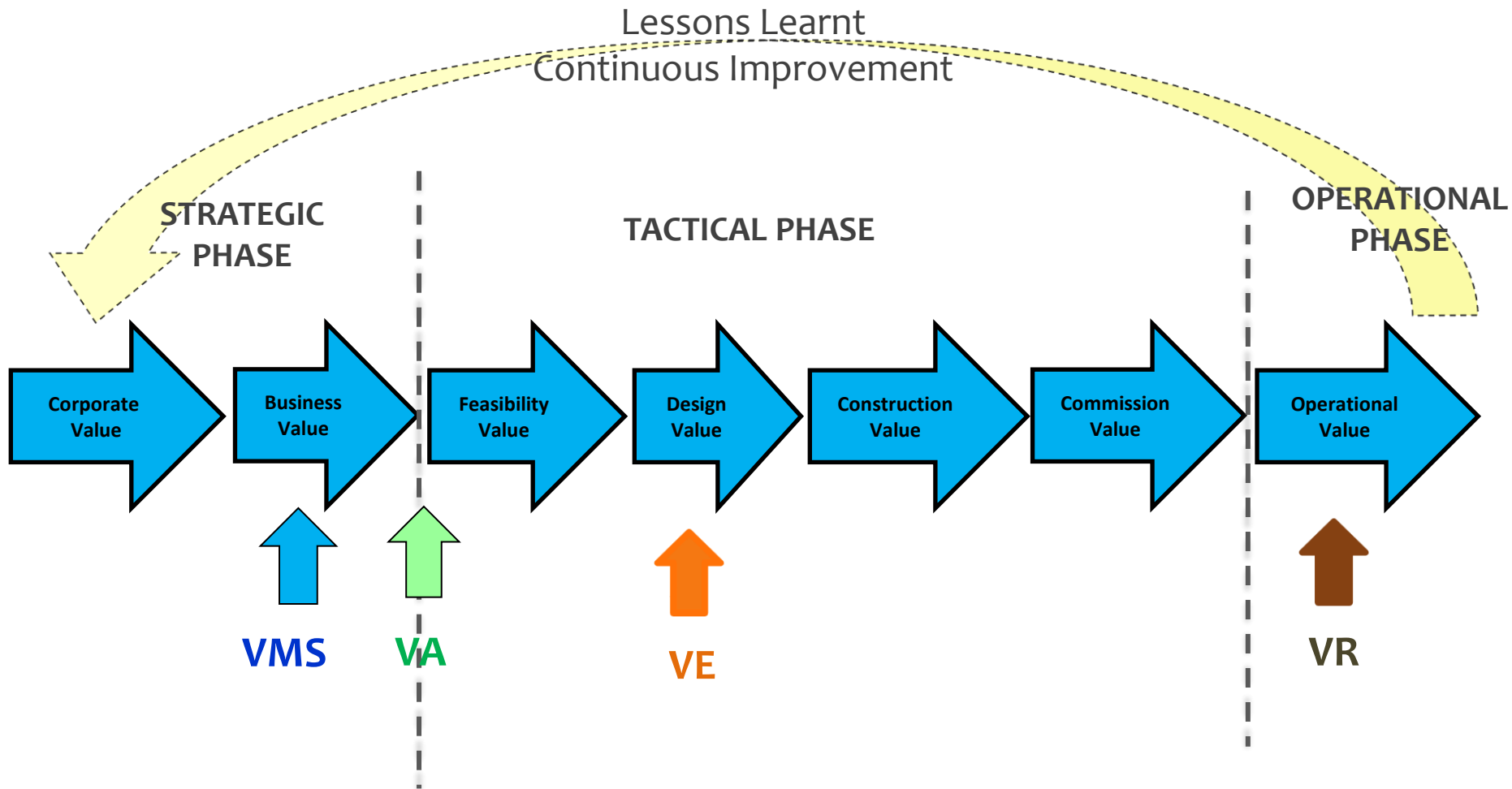
KAJIAN VA

JENIS KAJIAN VM	KAJIAN VALUE ASSESSMENT (VA)
PERINGKAT DALAM KITAR HAYAT PROJEK	PENILAIAN STRATEGIK (UPE, JPM) • Selepas kelulusan projek dan kelulusan bajet; • Sebelum pelaksanaan projek oleh Jabatan Teknik/ Agensi Pelaksana
OBJEKTIF UTAMA KAJIAN	• Menentukan Objektif dan Outcomes Projek • Memuktamadkan Skop* Projek, SOA & GFA (Bangunan)*; • Menetapkan Kos Projek (Bajet)*. (* Terhadap kepada ketetapan Skop & Kos Budget Screening)
INPUT ASAS KAJIAN	• Ketetapan Objektif Projek, Outcomes Projek; • Brif Projek - Skop Projek; SOA & GFA (Bangunan); Konsep pembangunan bagi opsyen tapak / jajaran yang ditentukan; dsb. • Anggaran Kos Projek; • Input penjadualan masa.

KAJIAN VE

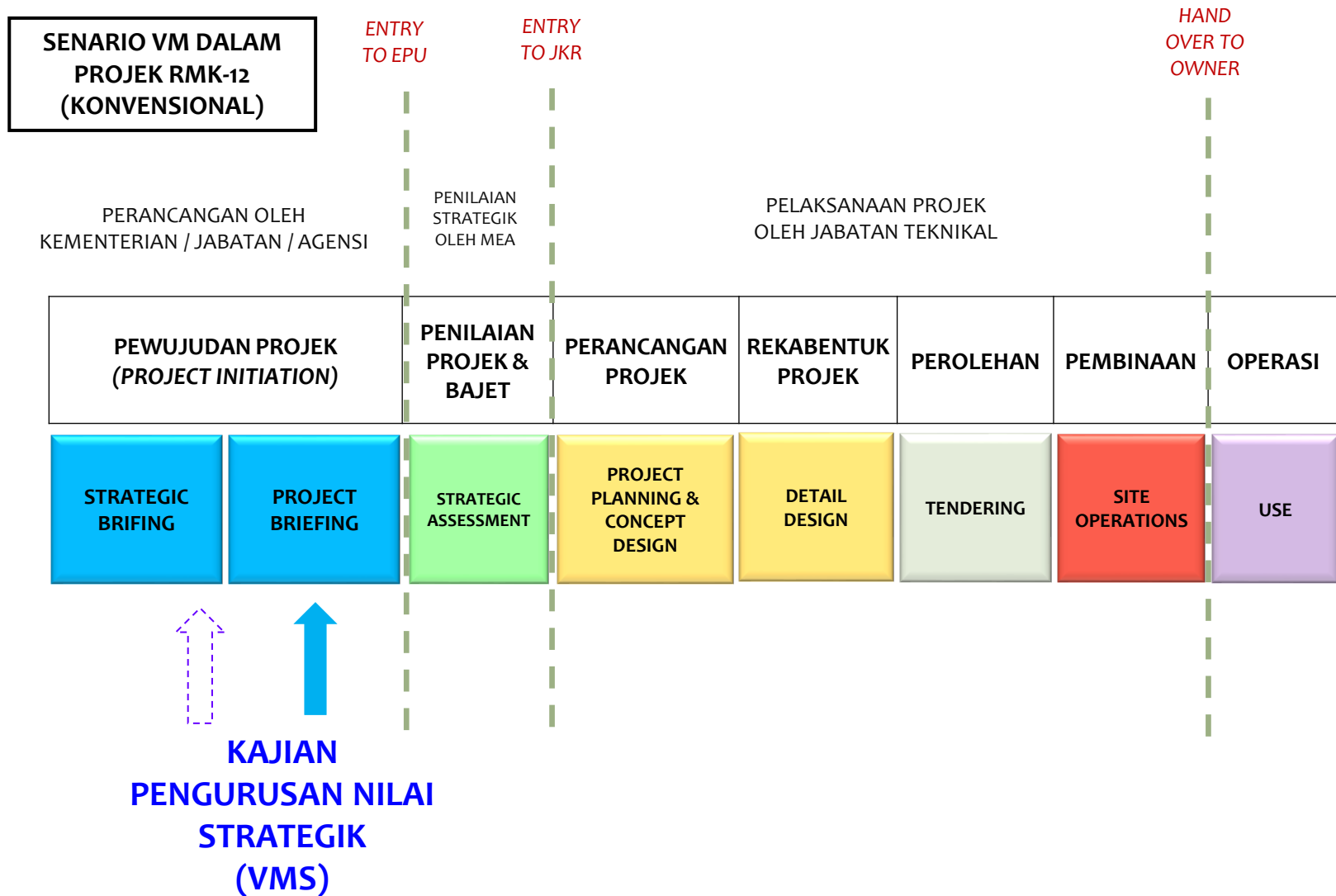
JENIS KAJIAN VM	VE ON CONCEPT DESIGN (OPSYEN i)	VE ON DETAIL DESIGN (OPSYEN ii)
PERINGKAT DALAM KITAR HAYAT PROJEK	FASA PERANCANGAN PROJEK - Semasa pembangunan Rekabentuk Konsep; - Sebelum Rekabentuk Konsep/Awalan disahkan (dipersetujui oleh klien)	FASA REKABENTUK PROJEK - Semasa pembangunan Rekabentuk Terperinci; - Sebelum projek sedia untuk ditender
OBJEKTIF UTAMA KAJIAN	- Optimumkan Fungsi, Kualiti, SOA/GFA (Bangunan) mengikut Skop* Projek; - Optimumkan Kos*. - Mendapatkan persetujuan klien terhadap Reka Bentuk Konsep (* Terhad kepada ketetapan Skop & Kos VA)	- Optimumkan Fungsi, Kualiti mengikut Skop, SOA/GFA (Bangunan); - Optimumkan Kos* (* Terhad kepada ketetapan Skop & Kos VA)
INPUT ASAS KAJIAN	- Rekabentuk Konsep dan <i>Master Planning</i>; - Skop Projek menurut VA; - SOA & GFA ditetapkan VA dan mengikut rekabentuk; - Kos Projek ditetapkan VA dan anggaran kos awalan projek berdasarkan r/bentuk; - Input penjadualan masa; pengurusan risiko, dsb..	- Rekabentuk Terperinci - Dokumen tender (deraf) - Skop Projek oleh VA; - SOA & GFA ditetapkan VA dan mengikut rekabentuk; - Kos Projek ditetapkan VA dan kos projek terkini (sebelum tender); - Input penjadualan masa; pengurusan risiko. dsb.

VM INTERVENTIONS WITHIN VALUE CHAIN MANAGEMENT (VCM)



Sumber Diagram: Kelly, Male & Graham, VM of Construction Projects (2004)

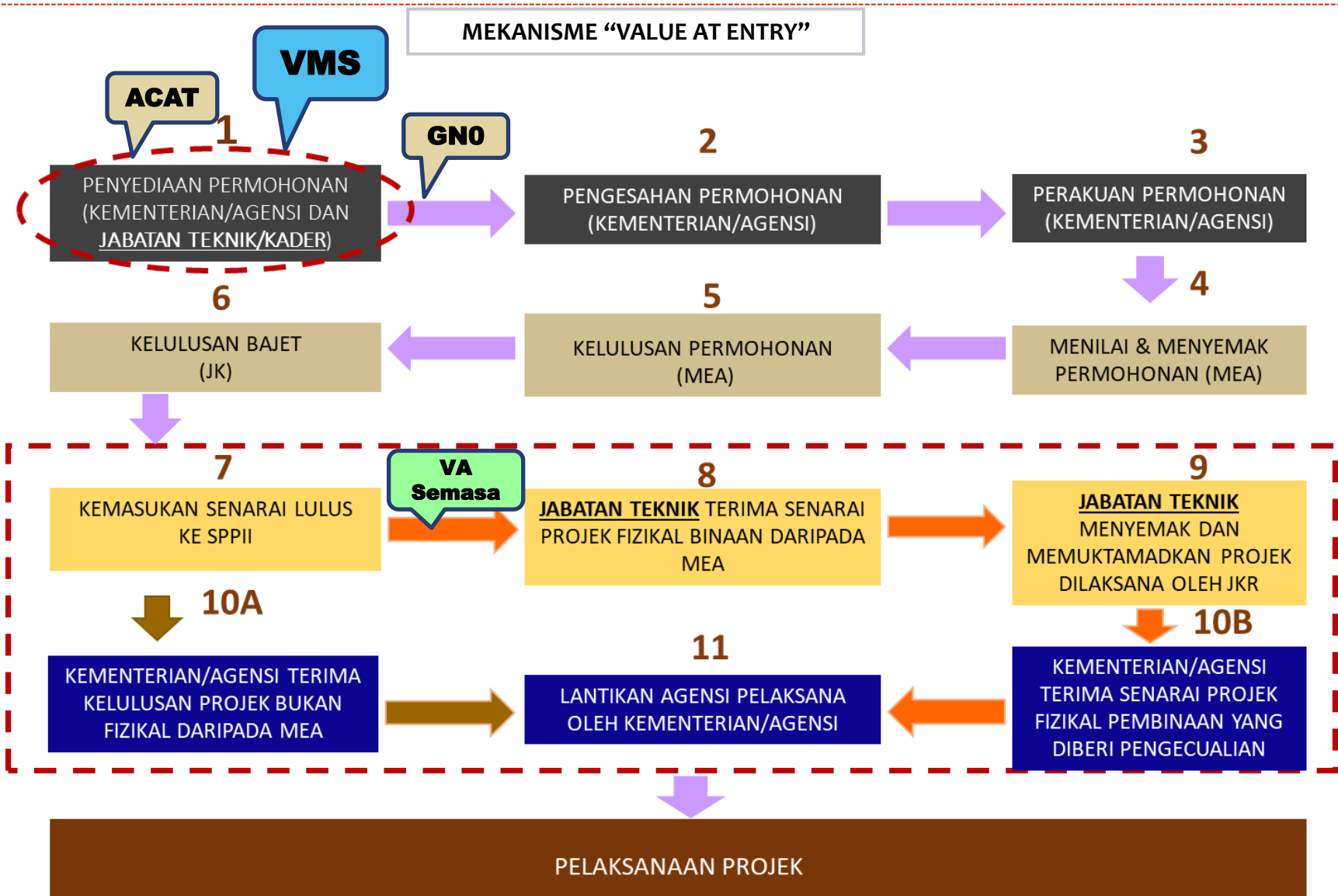
INTERVENSI VMS DALAM KITAR HAYAT PROJEK (RMKE-12)



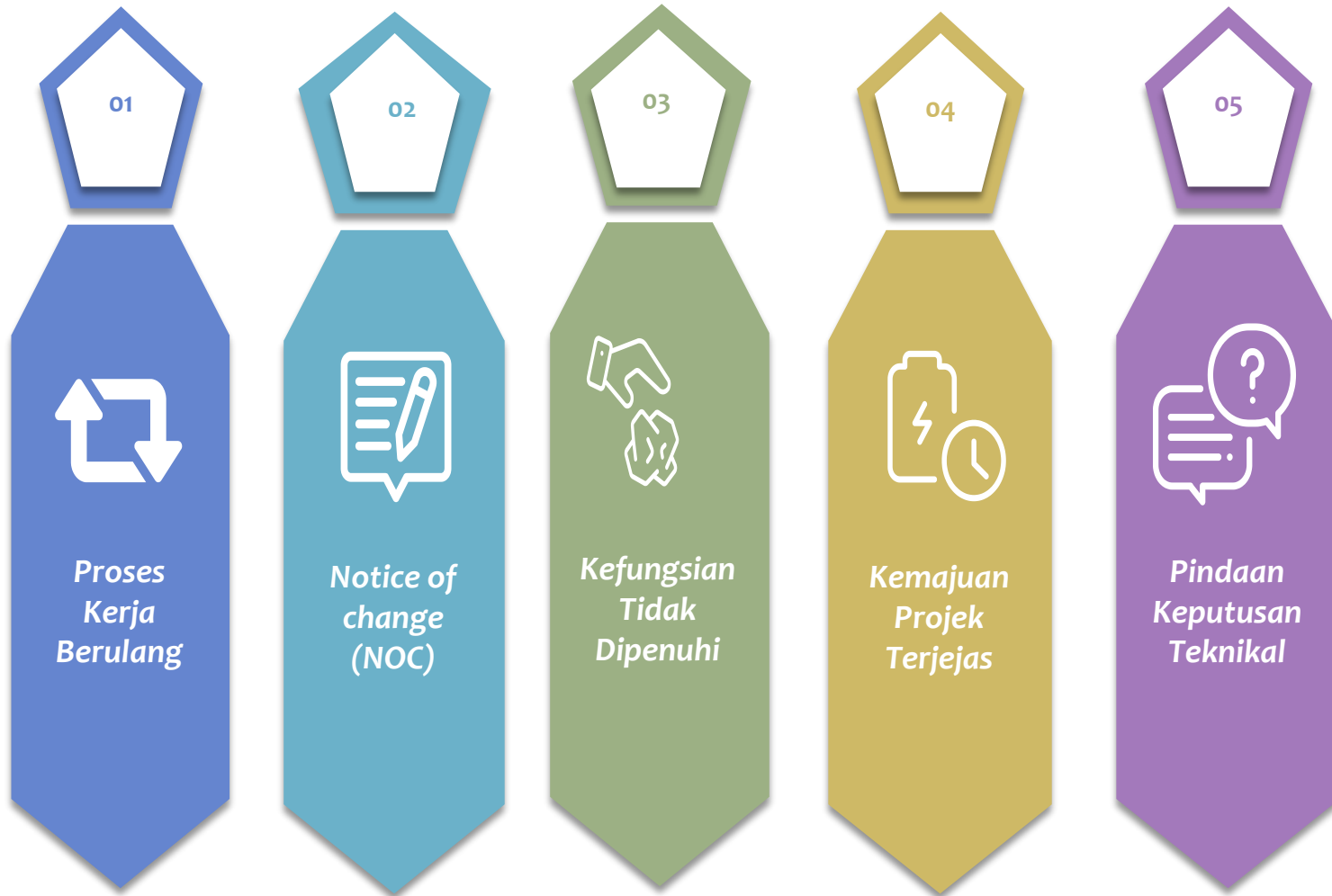
CIRI UTAMA KAJIAN VMS

- ❑ Salah satu inisiatif bagi mekanisme '**Value at Entry**' (selain ACAT dan GNo) di peringkat perancangan strategik oleh Kementerian / Jabatan / Agensi (Pemilik Projek / Pelanggan);
- ❑ Intervensi Kajian VM secara **strategik** dan **di awal kitar hayat program dan/atau projek**, selaras dengan amalan terbaik VM bagi merancang pencapaian nilai terbaik (*best value*) projek;
- ❑ Pelaksanaan **VMS diintegrasikan** dengan aktiviti pewujudan projek bagi tujuan permohonan cadangan projek dan bajet oleh Kementerian / Jabatan / Agensi Pelanggan kepada UPE, JPM.

VMS DALAM ALIRAN PELAKSANAAN PROJEK RMK-12



PERNYATAAN MASALAH TERHADAP VMS



RASIONAL KAJIAN VMS

Antara **isu utama semasa Pewujudan Projek** di peringkat perancangan oleh Kementerian / Jabatan / Agensi Pelanggan

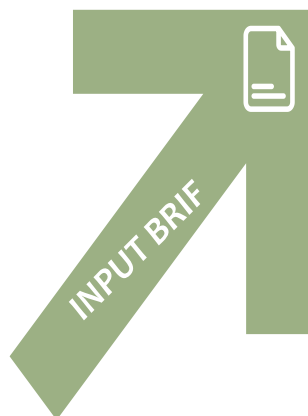
- ☐ Projek kurang daya maju atau justifikasi *business needs* dan *business case* kurang mantap
- ☐ Input brif projek yang kurang jelas dan kurang komprehensif
- ☐ Anggaran Kos Awalan projek yang kurang munasabah, tiada mitigasi terhadap risiko.
- ☐ Kelemahan perancangan/strategi penyampaian projek di semasa pewujudan projek

OBJEKTIF KAJIAN VMS

Menentukan daya
maju atau *viability*
projek



Memantapkan
penentuan projek
sebagai *input* Brif
Projek



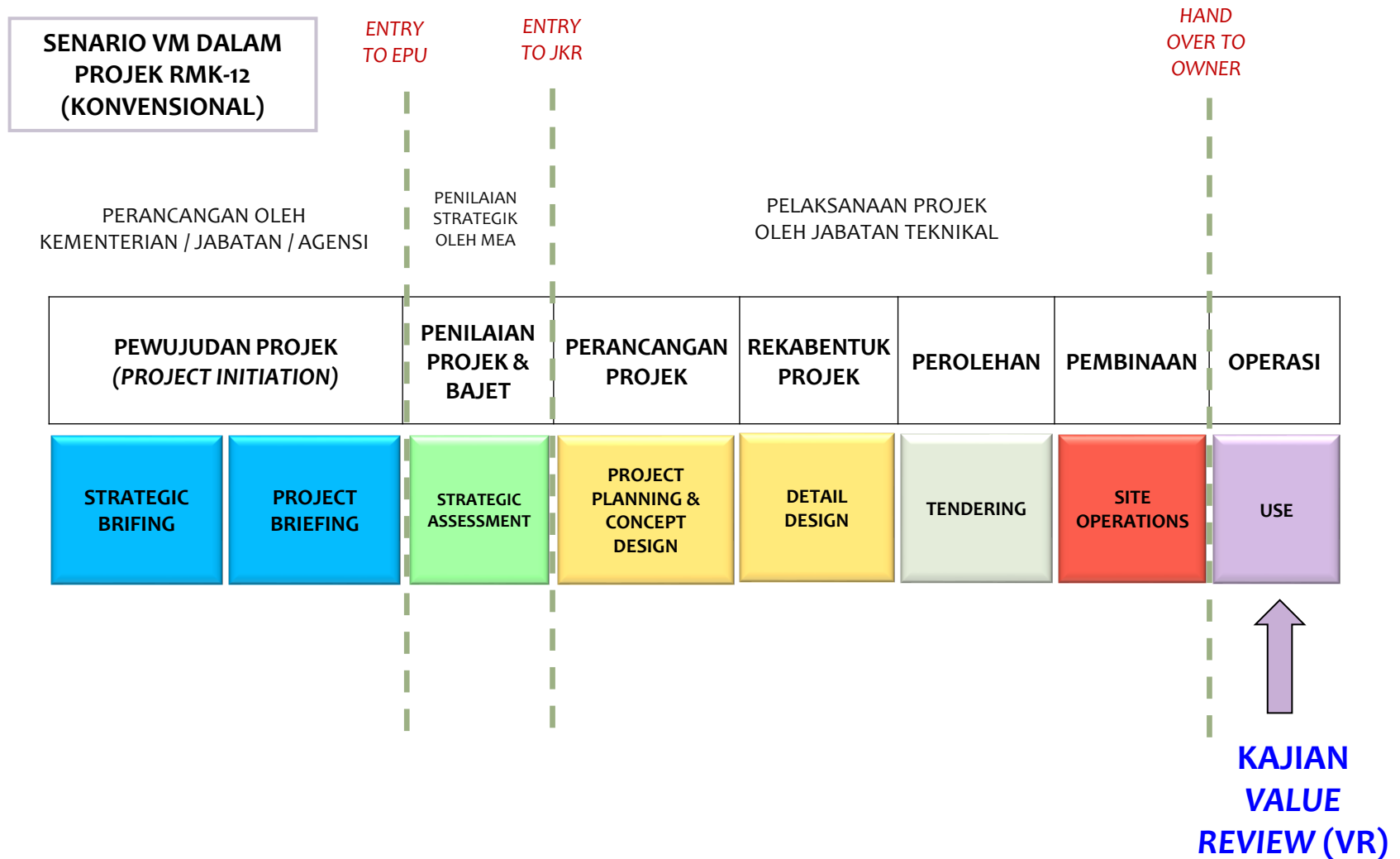
Menyelaras input
penetapan
Anggaran Kos
Awalan
projek



(Pilihan) menetap
atau
memantapkan
strategi
pelaksanaan
projek



INTERVENSI VR DALAM KITAR HAYAT PROJEK (RMKE-12)



KAJIAN VALUE REVIEW (VR)



“Assess achievement (project objectives & outcomes; manage lessons learnt; and implement continuous value improvement”

OBJEKTIF KAJIAN VR:

- ◆ Menilai pencapaian ketetapan strategik, prestasi penyampaian projek dan prestasi operasi projek telah siap (aset / fasiliti yang beroperasi);
- ◆ Mengurus iktibar dan pengajaran - *Lessons Learnt*;
- ◆ Mencadangkan penambahbaikan berterusan bagi projek akan datang dan aset /fasiliti yang sedang beroperasi.

SKOP KAJIAN VALUE REVIEW (VR)

Pencapaian ketetapan strategik:

- Ketetapan Objektif Projek dan Outcomes Projek;
- Fungsi Strategik;
- Sistem Nilai Klien (Strategik)
- Anggaran Kos Awalan Projek (VA);
- Pelan Tindakan / Jadual Masa (VA)
- Pelaksanaan Idea VA (Strategik);
- Lain-lain ketetapan Strategik.

1

Pencapaian prestasi penyampaian projek terhadap ketetapan teknikal:

- Penyampaian Skop Projek
- Penyampaian fungsi teknikal projek;
- Kos Projek (VE);
- Strategi Perolehan;
- Penjadualan Masa / Program Kerja
- Pelaksanaan Idea VE
- Lain-lain ketetapan Teknikal.

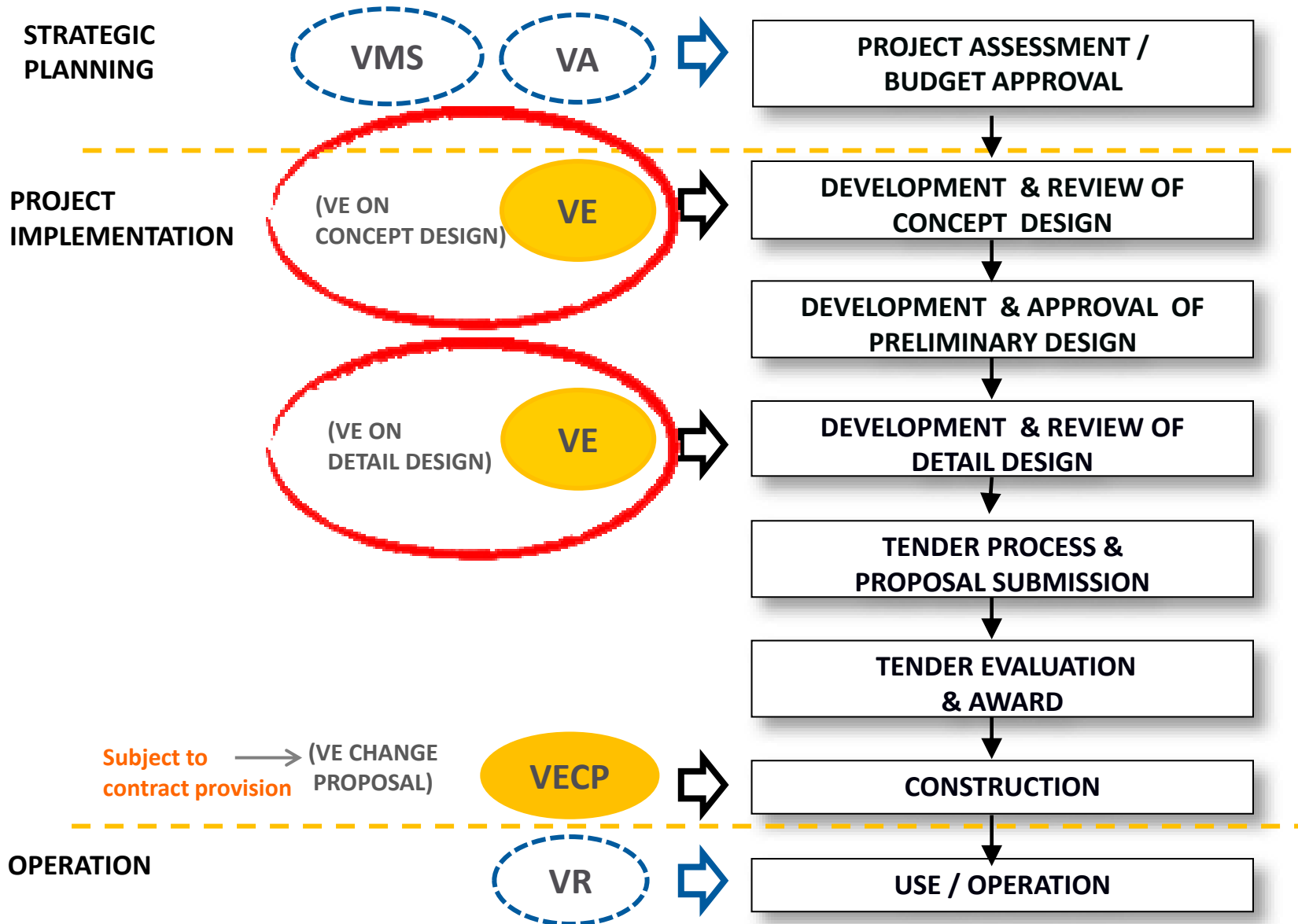
2

3

Prestasi operasi bagi projek siap yang diserahkan atau aset / fasiliti yang beroperasi:

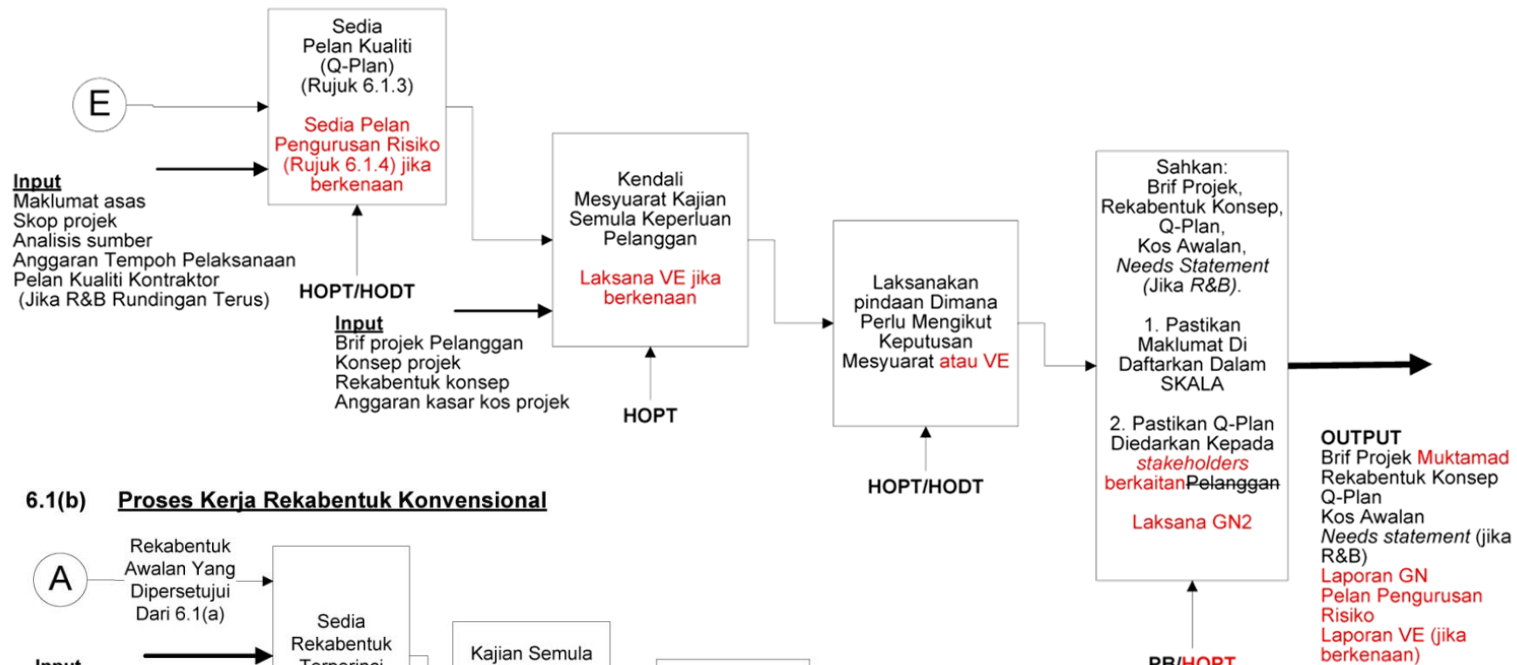
- Lokasi dan persekitaran;
- Rekabentuk Senibina, M&E; Kemasan dsb.;
- Susunatur Ruang & Aliran Kerja / Pengguna
- Kemudahan fasiliti;
- Kesihatan & Keselamatan
- Kebolehsenggaraan;
- Kos Operasi & Senggaraan

VE IN CONVENTIONAL PROJECTS

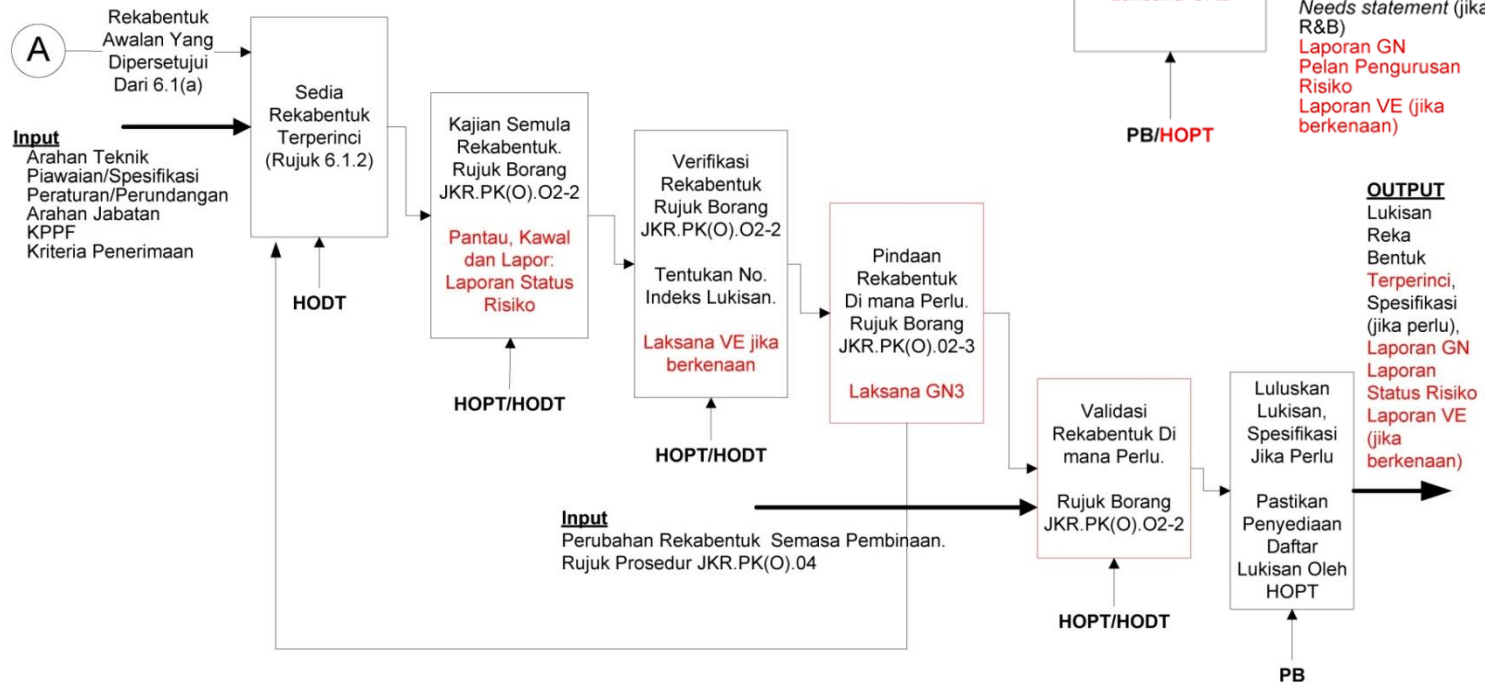


VE INTEGRATION IN SPB JKR WORKFLOW

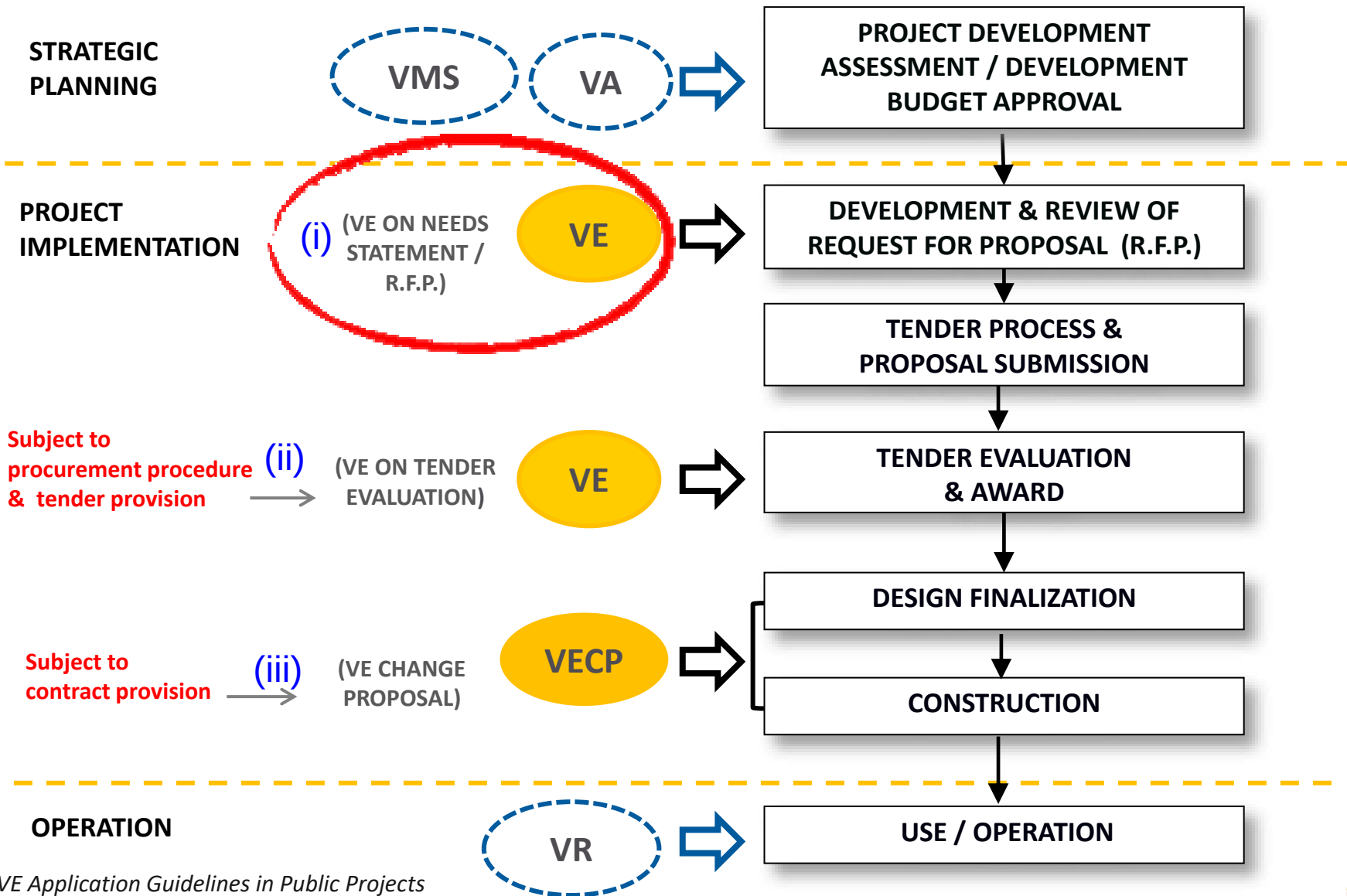
6.1(c) Proses Kerja Perancangan Pelaksanaan Projek



6.1(b) Proses Kerja Rekabentuk Konvensional



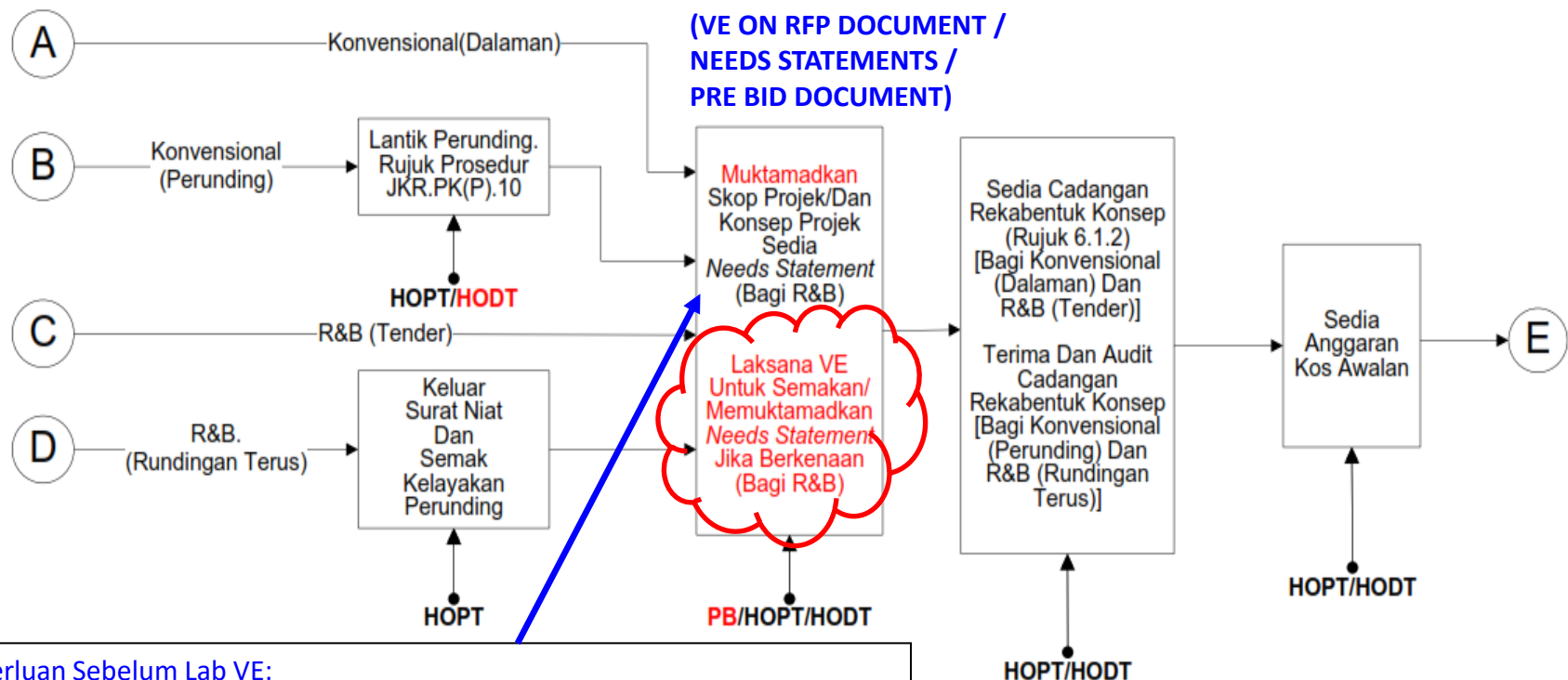
VE IN D&B / INTEGRATED PROCUREMENT SYSTEM



VE ON RFP INTEGRATION IN SPB JKR

SPB JKR.PK(O)01 – Peringkat Perancangan Perlaksanaan Projek
(Reka dan Bina) - VE bagi Memuktamadkan *Needs Statement* (Pra Bida/RFP)

6.1(b) Proses Kerja Perancangan Pelaksanaan Projek



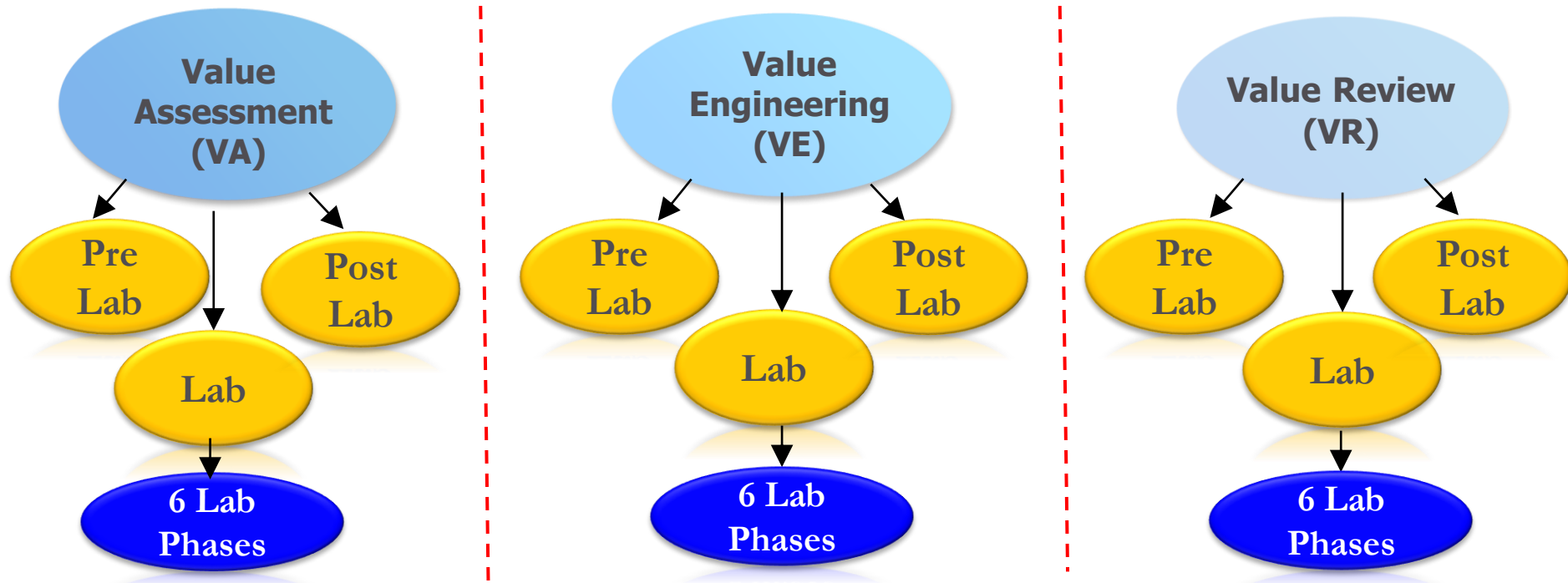
Keperluan Sebelum Lab VE:

- Agenda dalam mesyuarat koordinasi / perancangan untuk program Lab VE
- Membuat semakan kesediaan mengikut Pra Syarat Lab VE
- Senarai Semak Tindakan Pra Lab VE

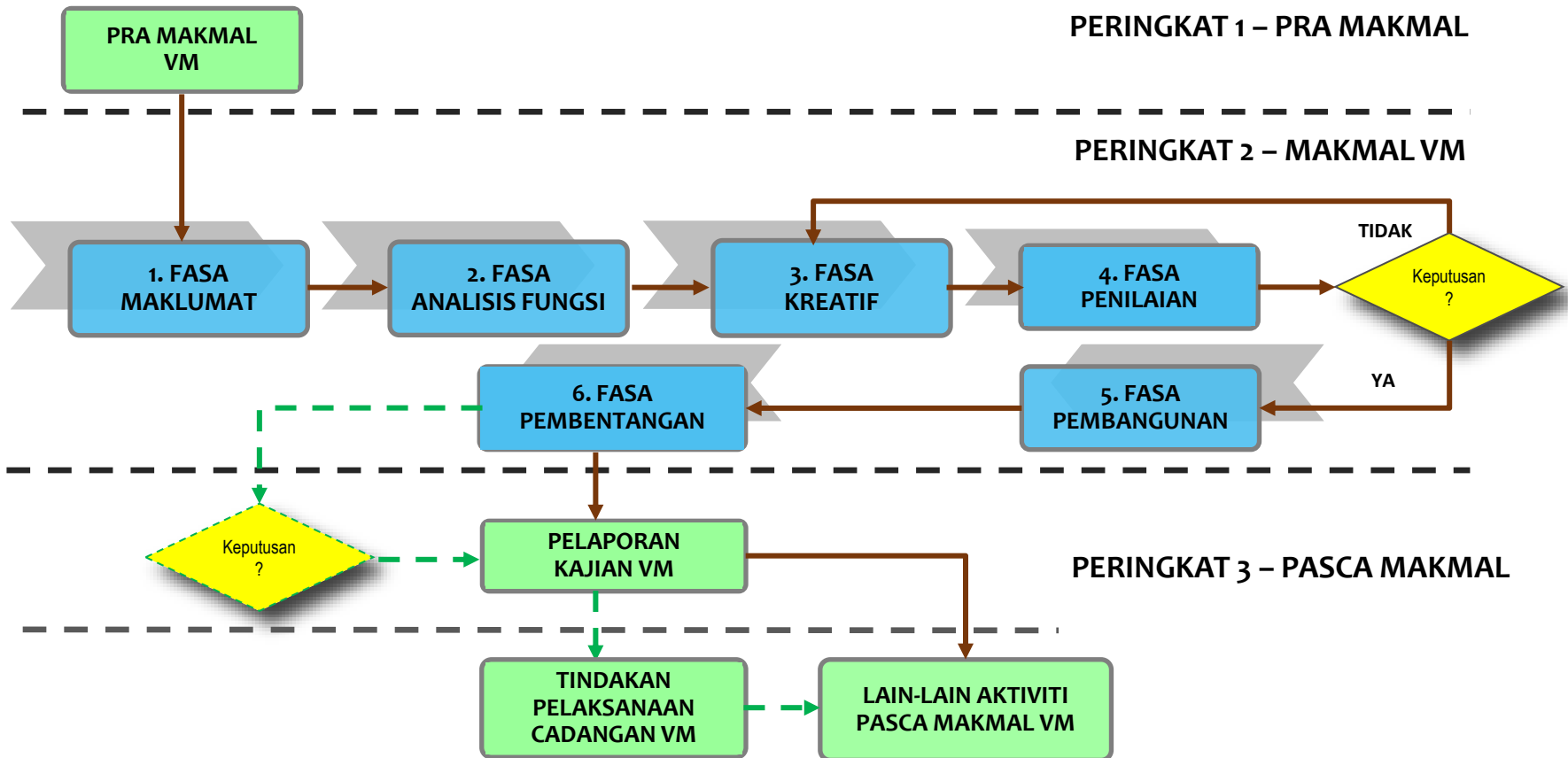
'VE ON RFP' STUDY IN D&B / INTEGRATED PS

- A value study intervention at **Pre Tender Stage**.
- Pro active study **on D&B tender basis document** (RFP Package / Pre Bid document / Needs Statement).
- Audit the RFP contents **to improve or incorporate value inputs**; i.e. quality, functionality, operationability, performance, sustainability, satisfaction, cost, time and other value variables.
- **Mitigates, eliminates or minimizes** ambiguities, misunderstandings, potential Non Conforming Requirements (NCRs), tender variances, variation orders (VOs), other contractual implications etc.
- **No conflict** with current government tender procedures (as outlined by MOF) or any contractual implications.

STRUKTUR PROSES SETIAP KAJIAN VM

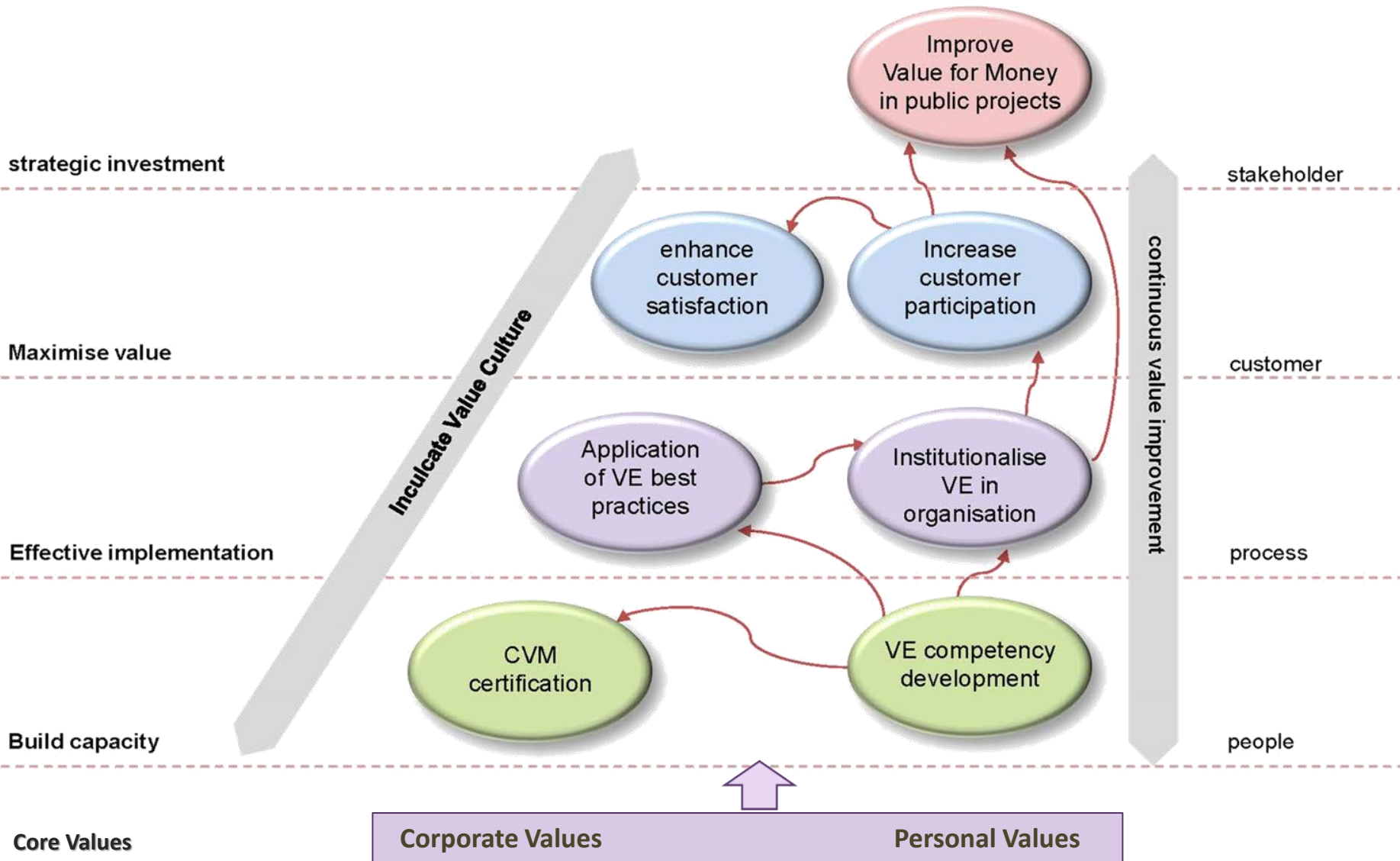


PROSES GENERIK KAJIAN VM (MENURUT PIAWAIAN VM)



--- Aktiviti oleh stakeholders atau pihak luar

VE IMPLEMENTATION FRAMEWORK (JKR)



(Source: VE Application Guidelines in Public Projects, 2013)

Bahagian Pengurusan Projek Kompleks. CPAB JKR

Our Vision

"To lead project management in Malaysia"

Our Initiatives

- ❖ 3PO (Portfolio,Program,Project)
- ❖ Project Management Toolkits
- ❖ Acquisition Categorisation (ACAT) Framework
- ❖ Project Health Check (PHC)
- ❖ Risk Management
- ❖ Strategi Perolehan Alternatif (SPAf)
- ❖ Gerbang Nilai (GN)
- ❖ Scheduling
- ❖ Project Management Competency
- ❖ **Value Management**
- ❖ Partnering
- ❖ VACCINE
- ❖ Enterprise Content Knowledge Management (ECKM)

FUNGSI UTAMA: Unit Pengurusan Nilai (UPN) CPAB JKR

- 1** Membangunkan sistem, proses, tools & techniques bagi pelaksanaan VM khususnya VE dalam projek kerajaan.
- 2** Membangunkan kompetensi dan program pensijilan bagi pengamal VM di JKR
- 3** Melaksana (*facilitation*) Kajian VM khususnya VE bagi projek Kerajaan (JKR dan Kementerian/Agensi lain)
- 4** Melaksana konsultasi kepakaran dan amalan terbaik bidang VM dalam sektor awam di dalam dan luar JKR



KURSUS VM (JKR)

- **Module 1 (Open to all - Awareness)**
 1. Understanding of Background & VM Principles
 2. Understanding of VM Body of Knowledge
 - a) VM Intervention points in project life cycle
 - b) 3 VM Study Stages
 - c) 6 VM Lab Phases
- **Module 2 (for Potential VE Facilitators)**
 1. Advance Understanding of VM Theories
 2. Understanding of VM Facilitation
 2. Application of VM / VE methodologies
 3. Simulation on VE Lab process
- **Module 3 & Coaching (for Lead / Group VE Facilitators)**
 1. Management of VE Study Programme
 2. Application of VE tools and techniques
 3. VE Facilitation Skills development



PROGRAM PENSIJILAN PENGURUS NILAI JKR MALAYSIA

Tahap, Definisi dan Gelaran yang relevan dengan Pensijilan Program Pengurus Nilai (*Value Manager*) JKR Malaysia

TAHAP	DEFINISI	GELARAN
3	KOMPETEN (<i>COMPETENT</i>)	QUALIFIED VALUE PRACTITIONER (QVP)
4	MAHIR (<i>PROFICIENT</i>)	REGISTERED VALUE MANAGER (RVM)
5	PAKAR (<i>EXPERT</i>)	CERTIFIED VALUE MANAGER (CVM)



**QUESTIONS ?
THANK U**