Minutes of Meeting

The 30th Meeting of Thailand – Malaysia Joint Evaluation Team

on Golok River Mouth Improvement Project

30 November – 1 December 2016
Bangkok, Thailand

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AGENDA 1: OPENING ADDRESS

Mr Thanar Suwattana, the leader of the Thai delegates, welcomed the Malaysian delegates to the 30th Meeting of Malaysia – Thailand Joint Evaluation Team (JET) on Golok River Mouth Improvement Project on 30th November to 1st December 2016.

Both sides introduced their delegates and the list of delegates is as shown in APPENDIX A. The Thai side presented the proposed agenda for the Meeting. The Meeting agreed to proceed according to the proposed agenda as shown in APPENDIX B.

AGENDA 2: MATTERS FOR INFORMATION

2.1 Integrated River Basin Management (IRBM) Plan for Golok River

The Malaysian side reported that based on minutes of JET29 and JTWG34:-

(a) The amendments to the principal Agreement shall be by way of a supplementary Agreement or a new Agreement.

(b) Malaysian side working committee is still working on the amendments to the principal Agreement. The first draft on the amendments to the principal Agreement is not ready to be discussed.

(c) The first draft on the amendments to the principal Agreement will be presented in the 31st JET meeting.

AGENDA 3: MATTERS FOR CONSIDERATION

3.1 Report on Monitoring and Evaluation of Golok River Mouth

The 2016 pre-monsoon survey was carried out by the Malaysian side in October 2016, as shown in APPENDIX C. It was observed that sedimentation area on the Malaysian side and erosion area on the Thai side has decreased respectively compared to the post-monsoon survey (April 2016). This is an unexpected phenomenon in which the river mouth is normally observed to be open after monsoon and closed before monsoon.

The sedimentation area (where bed level is shallower than -3m MSL within the navigation channel) was observed to have decreased by 38% which decreased from 24,644m^2 (April 2016) to 15,369m^2 (October 2016). The total sedimentation volume was observed to have decreased by 49% which decreased from 13,173m^3 (April 2016) to 6,764m^3 (October 2016).

The deepest bed level at the river mouth was observed to be -3.1m MSL, located at the navigation channel; the observed bed level was deeper than previous survey which was observed to be -2.6m MSL (April 2016).

The deepest bed level around tip of Thai breakwater is observed to be -4.9 m MSL which may lead to instability of Thai breakwater; however, the level is shallower compared to the previous survey.

In general, the river mouth is observed to be dynamic over the years, where accretion is observed in some years and erosion is observed in other years. Hence, the Meeting agreed that the pre- and post-monsoon conditions at the Golok River Mouth should be monitored closely in the future. Besides, the Meeting acknowledged the potential impact of wave direction, tidal prism and sediment transport towards the phenomenon of sedimentation / erosion at the Golok River Mouth. This phenomenon should be understood for future planning and implementation works.

3.2 Maintenance Dredging of Golok River Mouth

As agreed in the JET 25, JTWG 32 and JSC 14, the maintenance dredging is required based on the following criteria:

(1) When the cross section area of the river mouth between Thailand and Malaysia breakwater tip is blocked up to 30% (for drainage purpose); or

(2) When the bed level of the river mouth is at -2.0 m MSL or shallower (for navigation purpose);

The sediment patterns are to be monitored for at least 2 consecutive monsoon seasons in order to identify the need of maintenance dredging.

<u>Section across Thai breakwater and Malaysian breakwater</u>

The pre-monsoon survey (October 2016) as shown in APPENDIX D showed that:

(a) The sedimentation area was approximately 5.0%, which is less than the dredging criteria (30% of area blockage).

(b) It is observed that part of the river mouth is shallower than -2m MSL on the Malaysian side. However, the average sea bed level at the river mouth is at -3.1m MSL, which is deeper than the dredging criteria (-2.0m MSL).

(c) Maintenance dredging is not required based on the pre-monsoon survey.

The Meeting agreed that based on the results of the post-monsoon (April 2016) and pre-monsoon (October 2015) surveys, the river mouth was not affected by sedimentation since it did not meet the dredging criteria. Hence, there is no need for the maintenance dredging of Golok River Mouth at the time being.

The Malaysian side proposed that there should be a minimum width for vessel to navigate inside the channel for both side. The Meeting agreed that the Malaysian side to proposed the required width for safe navigation of vessel within the channel in the next JET meeting.

3.3 Protection Work of Transit Point B

The Thai side presented the results of numerical modelling taking into account the existing condition and the proposed Thai breakwater condition for existing, oval shape and hexagonal shape protection works around Transit Point B. Based on the numerical

modelling results, the Thai side suggested hexagonal shape protection works around Transit Point B. However, the results shall be confirmed by physical modelling.

The summary of the results of numerical modelling is as shown in APPENDIX E.

The Meeting is informed that the physical model works for the protection work of Transit Point B and rehabilitation and protection works at Golok River Mouth has started since August 2016. The Thai side informed that 24 scenarios on 2D physical model and 32 scenarios on 3D physical model will be tested and the results will be discuss in the second Joint Technical Meeting before it is presented to the JET Meeting. However, the second Joint Technical Meeting was rescheduled to middle of January 2017 due to unforeseen circumstances. Therefore, the results will be presented in the next JET Meeting.

The revised road map for physical modelling works is as shown in APPENDIX F.

3.4 Rehabilitation and Protection Works at Golok River Mouth

The Thailand side informed that the Environmental Impact Assessment (EIA) study will be delayed by three (3) months due to environmental process and it is expected to be completed by March 2017. It is expected that the EIA approval will be delayed three (3) months.

The Malaysian side informed that consultant for detailed design of additional dyke will be appointed by January 2017 and the detailed design period will take approximately twelve (12) months.

The revised schedule of work for both sides is as shown in APPENDIX G.

3.5 Mutual Calibration of Rating Curve at Cableway Station

In 2016, eleven (11) gauging measurements were done monthly except in January 2016 measurements were done on two occasion. The gauging measurements are as shown in APPENDIX H. Refer to the minutes of JET29, it is agreed that the mutual rating

curves of 2015 will be used until a new mutual rating curves is developed by end of 2016.

3.6 Real Time Monitoring System and Joint Website for Golok River Basin

Existing Telemetering stations and joint web site

The Thai side informed that the online and backup data on Thai Joint web site (http://hydro-8.com/Golok) does not tally because the figure on the online data only shows the water level reading taken at 6.00am of a given day whilst the backup data are the daily average taken from the rating curve.

The Thai side observed that the new Thai Joint website i.e. http://hydro-8.com/Golok is not linked to the Malaysian Joint web site. Hence, the Meeting agreed that Malaysian side to check and rectify the shared data on the Malaysian Joint web site.

The Thai side informed that there are differences in the velocity measurement method as well as difference in datum level used for the gauging works. These differences have caused inconsistency in the discharge value. The Meeting agreed that the officer in charge from both sides shall check and rectify that the measurement method used to conform to the agreed method in JET21 and for the datum elevation used to conform to the datum agreed in JET24.

The Malaysia side have requested the information regarding the coordinate for T11 and the level at Sg Golok station (X.119A). The Thai side informed that they have fly the TBM reading from T11 to Rantau Panjang Bridge. Those information will be given to Malaysian side.

New Telemetering stations and joint website

The Meeting is informed that the setup and testing of data collection for 6 new telemetering stations in Thailand and 3 new telemetering stations in Malaysia is completed. The revised schedule for new telemetering stations is as shown in APPENDIX I.

AGENDA 4: OTHER MATTERS

4.1 Road Map for Joint Implementation Works

The meeting is informed that the joint implementation works are as follows:

(a) The pre- and post-monsoon bathymetry survey will be done tentatively by April and October respectively;
(b) The Feasibility and EIA study by Thai side will be delayed by three (3) month due to environmental process and expected to be completed by March 2017;
(c) Mutual gauging will be performed every month in year 2017;
(d) Both side will share data of new telemetering station on Joint website from April 2017;
(e) Malaysian side will present the first draft on the amendments to the principal Agreement in the next JET meeting.

The Meeting agreed that the road map for joint implementation works as shown in APPENDIX J.

4.2 Date and venue for next JET meeting

The meeting proposed the date and venue for the next JET meeting is as follows:

Date: April / May 2017
Venue: Johor Bahru, Malaysia.

AGENDA 5: MATTERS TO BE REFERRED TO THE JTWG

Matters for Information

1. Report of Monitoring and Evaluation of Golok River Mouth
2. Maintenance Dredging of Golok River Mouth
3. Protection Work at Transit Point B
4. Rehabilitation and Protection Works at Golok River Mouth
5. Mutual Calibration of Rating Curve at Cableway Station
6. Real Time Monitoring System and the Joint Websites for Golok River Basin

Other Matters

Integrated River Basin Management (IRBM) Plan for Golok River

AGENDA 6: ADOPTION OF MINUTES OF THE MEETING

The Meeting agreed to adopt the minutes of meeting of the thirtieth Meeting of Thailand – Malaysia Joint Evaluation Team on the Golok River Mouth Improvement Project.

(Mr. Thanar Suwattana)	(Mr. Mohd Sor Bin Othman)
Co-Chairman	Co-Chairman
Joint Evaluation Team, Thailand	Joint Evaluation Team, Malaysia

APPENDIX A

THE 30TH MEETING OF MALAYSIA – THAILAND JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

LIST OF THAI DELEGATES

1.		Name Designation Department Contact no. Email	Mr. Thanar Suwattana Director Bureau of Project Management Royal Irrigation Department Thailand +668-4700-0540 suwattana2810@gmail.com
2.		Name Designation Department Contact no. Email	Mr. Prinya Kamolsin Expert on Irrigation (Hydraulic Engineering) Bureau of Research and Development Royal Irrigation Department Thailand +66 847005339 prinyakamolsin@yahoo.com
3.		Name Designation Department Contact no. Email	Mr. Chalermchai Treenarin Director Narathiwat Provincial Irrigation Project Royal Irrigation Department Thailand +667351-1485 clc_treenarin@yahoo.com
4.		Name Designation Department Contact no. Email	Mr. Kanchadin Srapratoom Director Foreign Project Management and International Affairs Division, Bureau of Project Management Royal Irrigation Department Thailand +662 241 2688
5.		Name Designation Department Contact no. Email	Mr. Arthon Suttigarn Director Project Planning Division 4 Bureau of Project Management Royal Irrigation Department Thailand +662 241-2680

APPENDIX A

THE 30TH MEETING OF MALAYSIA – THAILAND JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

LIST OF THAI DELEGATES

6.		Name Designation Department Contact no. Email	Mr. Chumlarp Tejasen Director Project Planning Division 2 Bureau of Project Management Royal Irrigation Department Thailand +662 241-2680
7.		Name Designation Department Contact no. Email	Mr. Tawat Seenual Surveyor Survey and Engineering Bureau Marine Department +66 81597 5487
8.		Name Designation Department Contact no. Email	Mr. Abdultoleb Hemhoh Senior Irrigation Engineer Golok River Basin Operation and Maintenance Project Regional Irrigation Office 17 Royal Irrigation Department 0-7353-8040-1
9.		Name Designation Department Contact no. Email	Mr. Attapan Diloksopon Civil Engineer, Professional Level Bureau of Project Management Royal Irrigation Department Thailand +6680 270 9997 atdplk@gmail.com
10.		Name Designation Department Contact no. Email	Mr. Piriya Thumyago Foreign Relations Officer Bureau of Project Management Royal Irrigation Department Thailand +6690 527 5545 piriya_rid@yahoo.com

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THE 30TH MEETING OF MALAYSIA – THAILAND JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

LIST OF THAI DELEGATES

11.		Name Designation Department Contact no. Email	Mr. Wasin Phutphat Irrigation Engineer, Practitioner Level, Practitioner Level Bureau of Project Management Royal Irrigation Department +662 241 2363

APPENDIX A

THE 30TH MEETING OF MALAYSIA – THAILAND JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

LIST OF MALAYSIAN DELEGATES

1.		Name Designation Department Contact no. Email	Mr. Mohd Sor bin Othman Deputy Director Division of Coastal Zone Management Department of Irrigation and Drainage Malaysia +6019 2333720 msor@water.gov.my
2.		Name Designation Department Contact no. Email	Ir. Tajudin bin Sulaiman Deputy Director Division of River Basin Management Department of Irrigation and Drainage Malaysia +6012 2233314 tajudin@water.gov.my
3.		Name Designation Department Contact no. Email	Mrs. Norizan binti Abdul Aziz Deputy Director Division of Water Resources Management and Hydrology Department of Irrigation and Drainage Malaysia +6019 2333712 norizan_aziz@water.gov.my
4.		Name Designation Department Contact no. Email	Mr. Mohd. Zulkifli Bin Ahmad Deputy Director Department of Irrigation and Drainage Kelantan +6013 9182344 mohdzulkifli@water.gov.my
5.		Name Designation Department Contact no. Email	Ms. Carine Wong Koh Yin Engineer Division of Coastal Zone Management Department of Irrigation and Drainage Malaysia +6012 2198032 carine@water.gov.my

APPENDIX A

THE 30TH MEETING OF MALAYSIA – THAILAND JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

LIST OF MALAYSIAN DELEGATES

6.		Name Designation Department Contact no. Email	Mr. Ahmad Ikhwan bin Abdul Wahid Engineer Division of Coastal Zone Management Department of Irrigation and Drainage Malaysia +6013 6093085 ahmadikhwan@water.gov.my

APPENDIX B

THE 30TH MEETING OF MALAYSIA – THAILAND JOINT EVALUATION TEAM (JET) ON THE GOLOK RIVER MOUTH IMPROVEMENT PROJECT

PROPOSED AGENDA

AGENDA 1: OPENING SESSION

AGENDA 2: MATTERS FOR INFORMATION

2.1 INTEGRATED RIVER BASIN MANAGEMENT (IRBM) PLAN FOR GOLOK RIVER

AGENDA 3: MATTERS FOR CONSIDERATION

3.1 MONITORING AND EVALUATION OF GOLOK RIVER MOUTH

3.2 MAINTENANCE DREDGING OF GOLOK RIVER MOUTH

3.3 PROTECTION WORK AT TRANSIT POINT B

3.4 REHABILITATION AND PROTECTION WORKS AT GOLOK RIVER MOUTH

3.5 MUTUAL CALIBRATION OF RATING CURVE AT CABLEWAY STATION

3.6 REAL TIME MONITORING SYSTEM AND THE JOINT WEBSITE FOR GOLOK RIVER BASIN

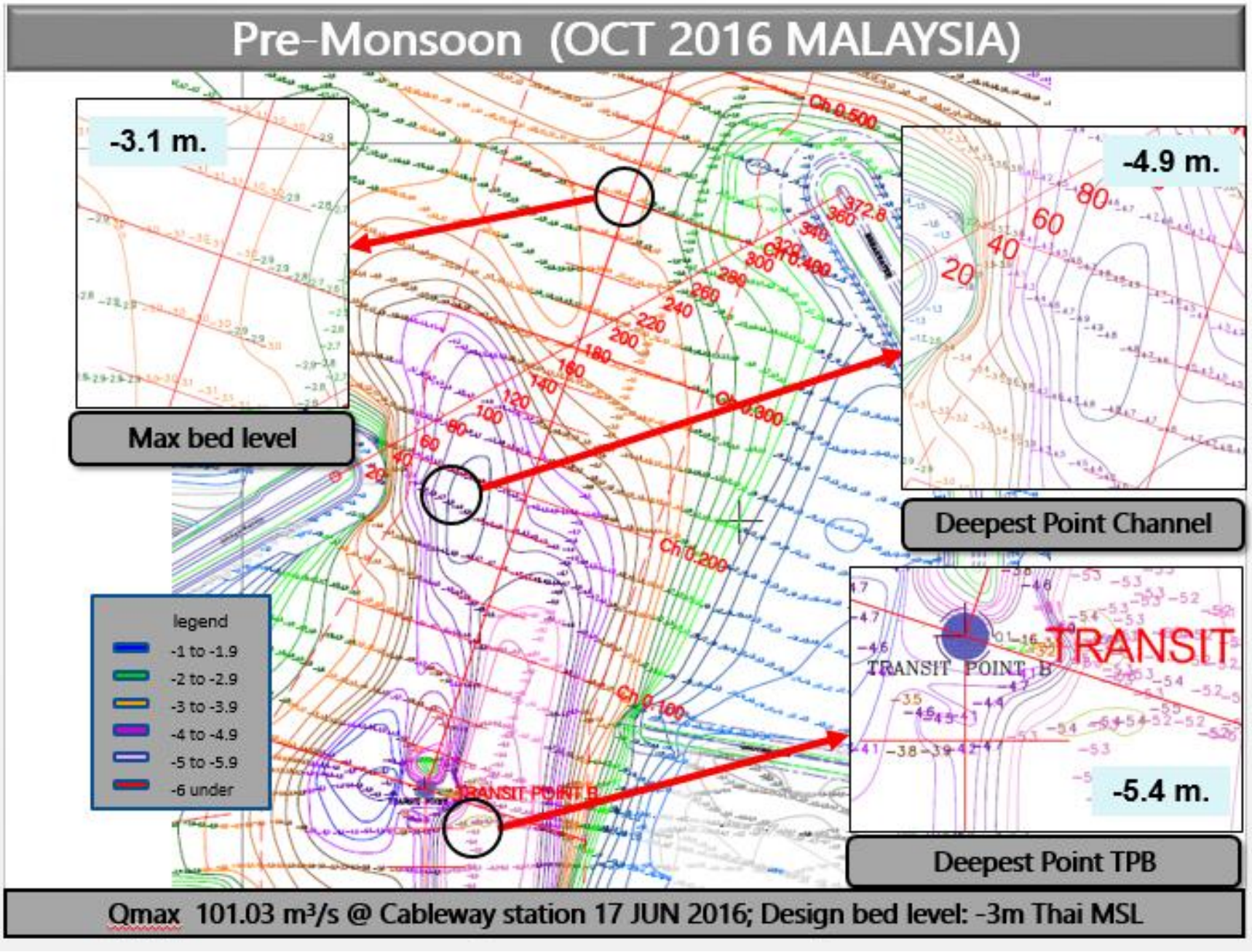
AGENDA 4: OTHER MATTERS

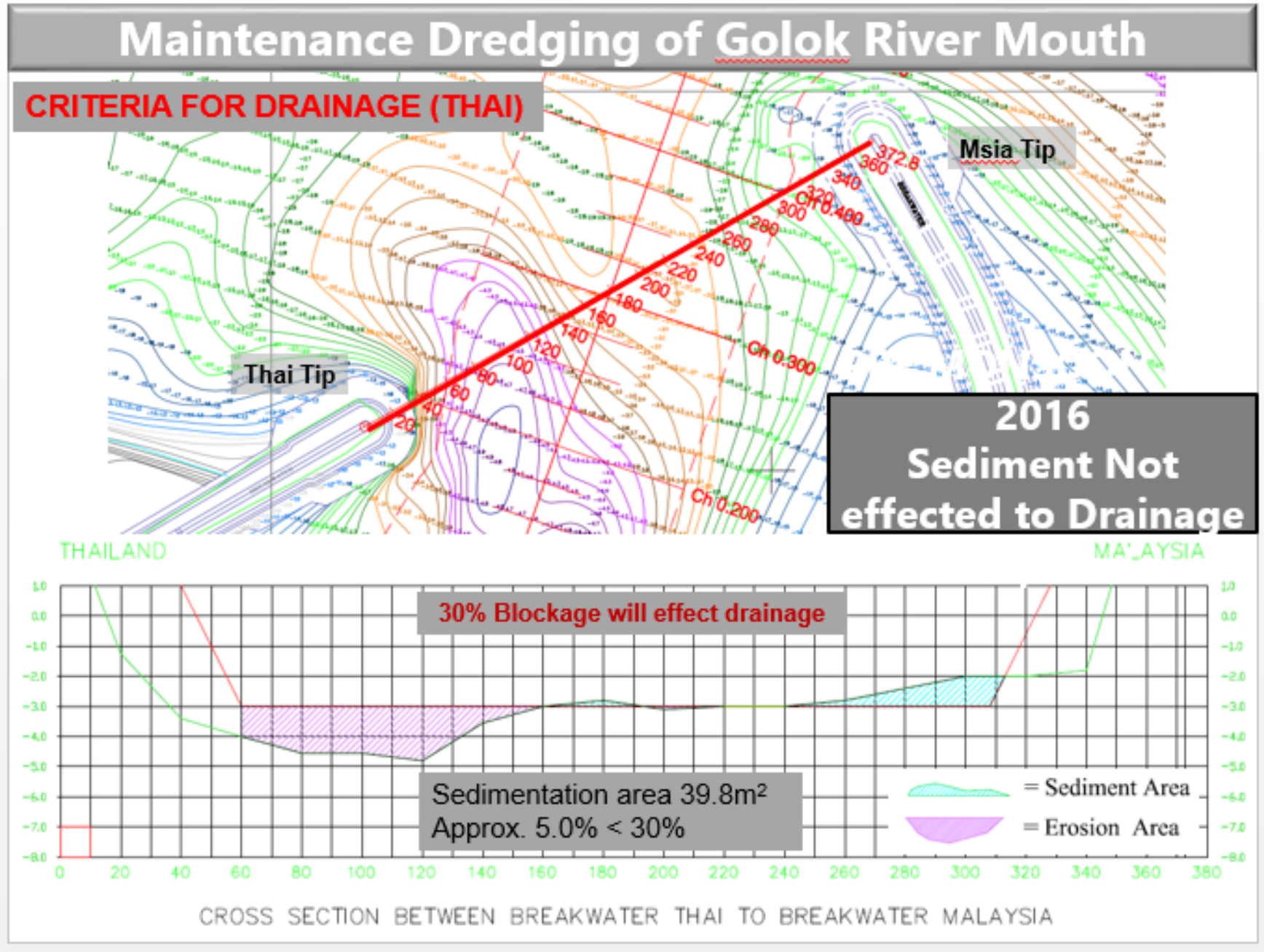
4.1 ROAD MAP FOR JOINT IMPLEMENTATION WORKS

4.2 DATE AND VENUE FOR NEXT MEETING

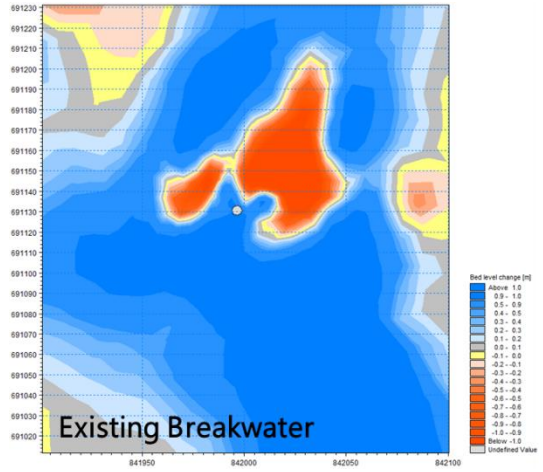
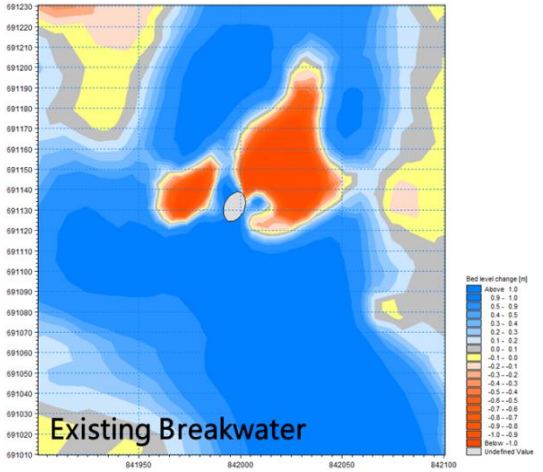
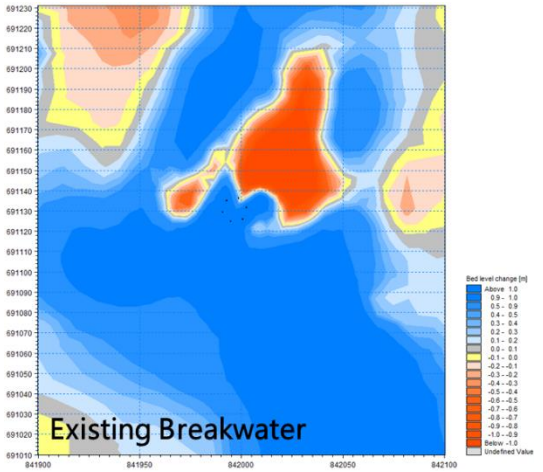
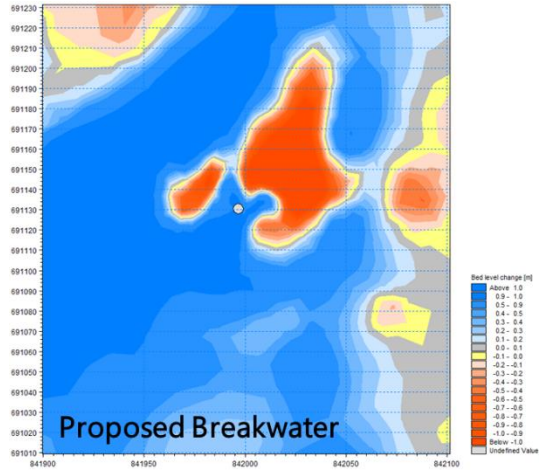
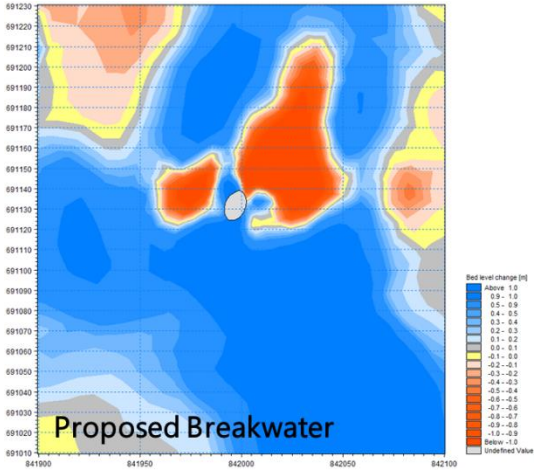
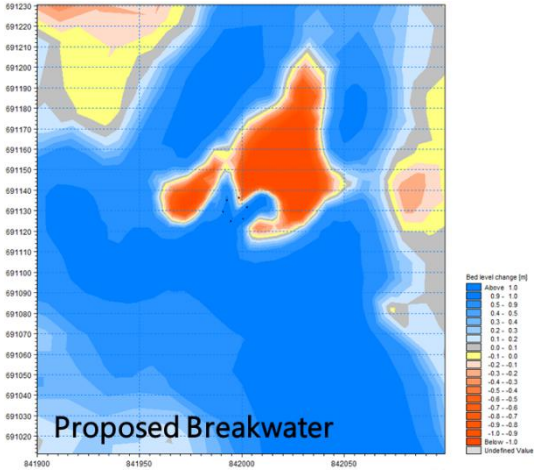
AGENDA 5: MATTERS TO BE REFERRED TO JTWG

AGENDA 6: ADOPTION OF MINUTES OF MEETING


Pre-Monsoon (OCT 2016 MALAYSIA)
-3.1 m.
Max bed level
-4.9 m.
Deepest Point Channel
-5.4 m.
Deepest Point TPB
TRANSIT
TRANSIT POINT B
legend
-1 to -1.9
-2 to -2.9
-3 to -3.9
-4 to -4.9
-5 to -5.9
-6 under
Ch 0.500
Ch 0.400
Ch 0.300
Ch 0.200
Ch 0.100
Qmax 101.03 m³/s @ Cableway station 17 JUN 2016; Design bed level: -3m Thai MSL

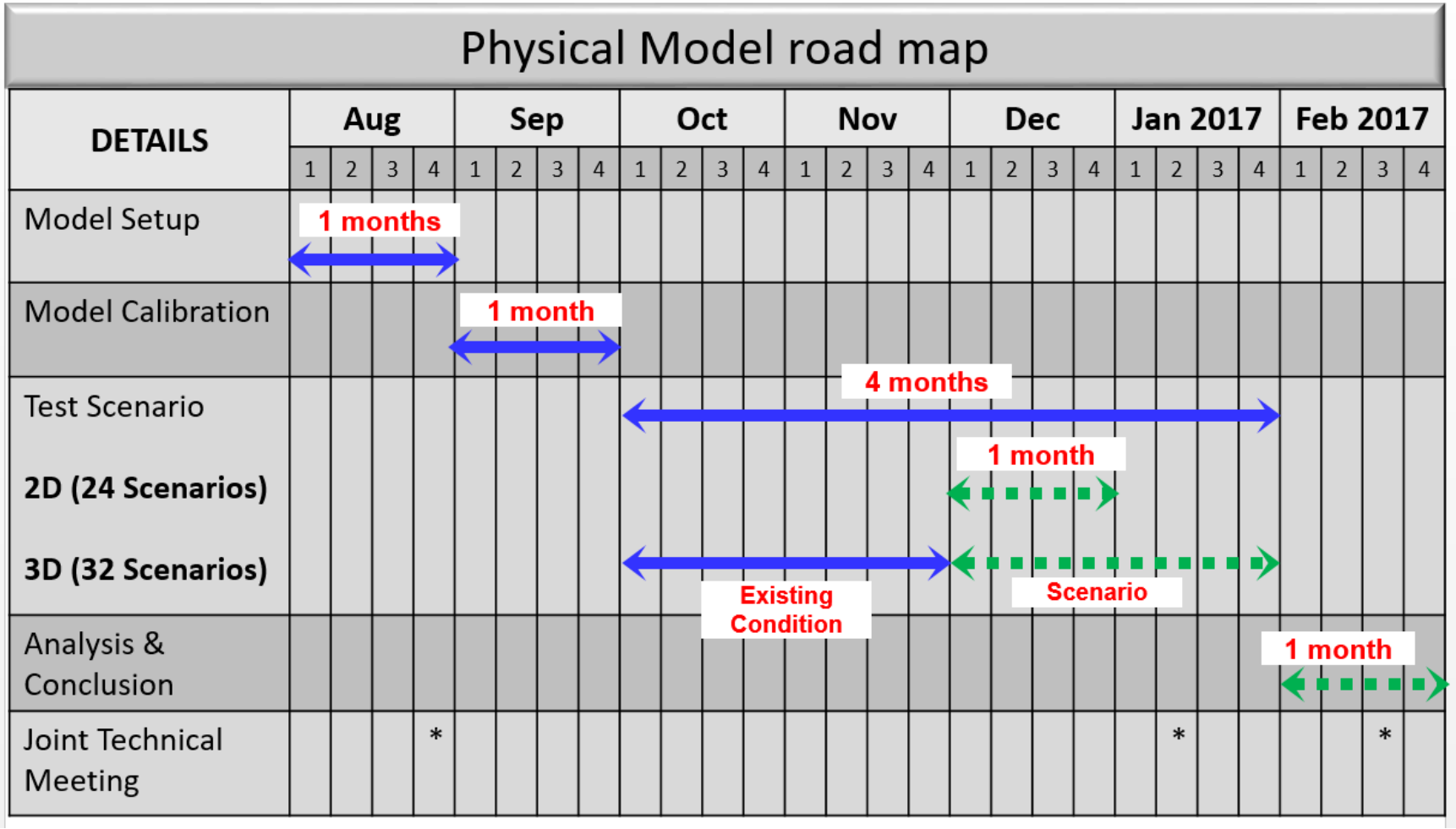

Maintenance Dredging of Golok River Mouth
CRITERIA FOR DRAINAGE (THAI)
Msia Tip
Thai Tip
Ch 0.400
Ch 0.300
Ch 0.200
2016
Sediment Not
effected to Drainage
THAILAND
MALAYSIA
30% Blockage will effect drainage
Sedimentation area 39.8m²
Approx. 5.0% < 30%
= Sediment Area
= Erosion Area
CROSS SECTION BETWEEN BREAKWATER THAI TO BREAKWATER MALAYSIA

APPENDIX E

	Existing Protection Works Around Transit Point B	Oval Shape Protection Works Around Transit Point B	Hexagonal Shape Protection Works Around Transit Point B
Existing breakwater			
Proposed breakwater (extension)			

Note:

1. Figures showed the summary of the results of numerical modelling presented in JET30.
2. The finalized numerical model results are subjected to changes (if any) that will be reported in the detailed design report.


Physical Model road map
DETAILS
Aug
Sep
Oct
Nov
Dec
Jan 2017
Feb 2017
1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4
Model Setup
1 months
Model Calibration
1 month
Test Scenario
4 months
2D (24 Scenarios)
1 month
3D (32 Scenarios)
Existing Condition
Scenario
Analysis & Conclusion
1 month
Joint Technical Meeting
*
*
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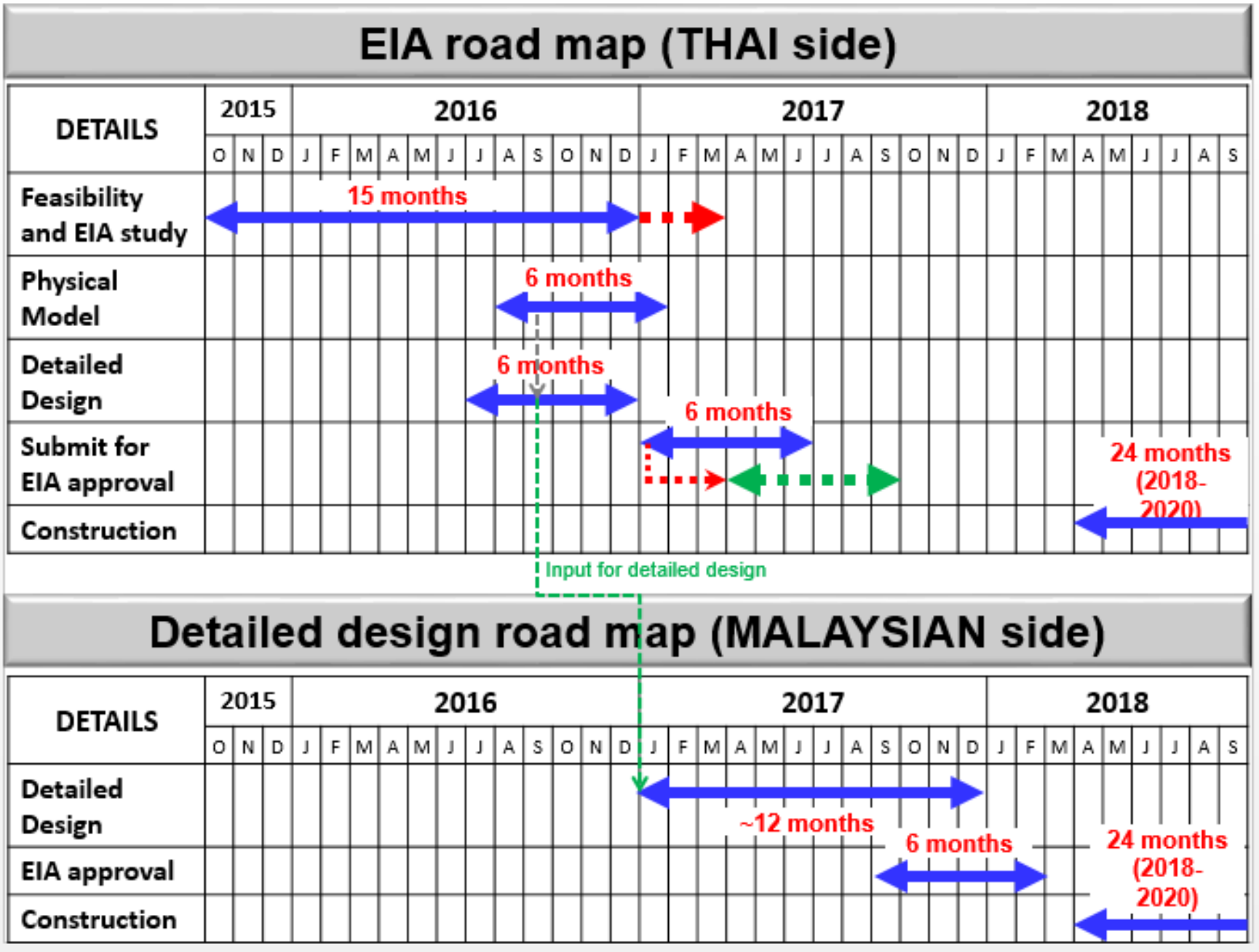
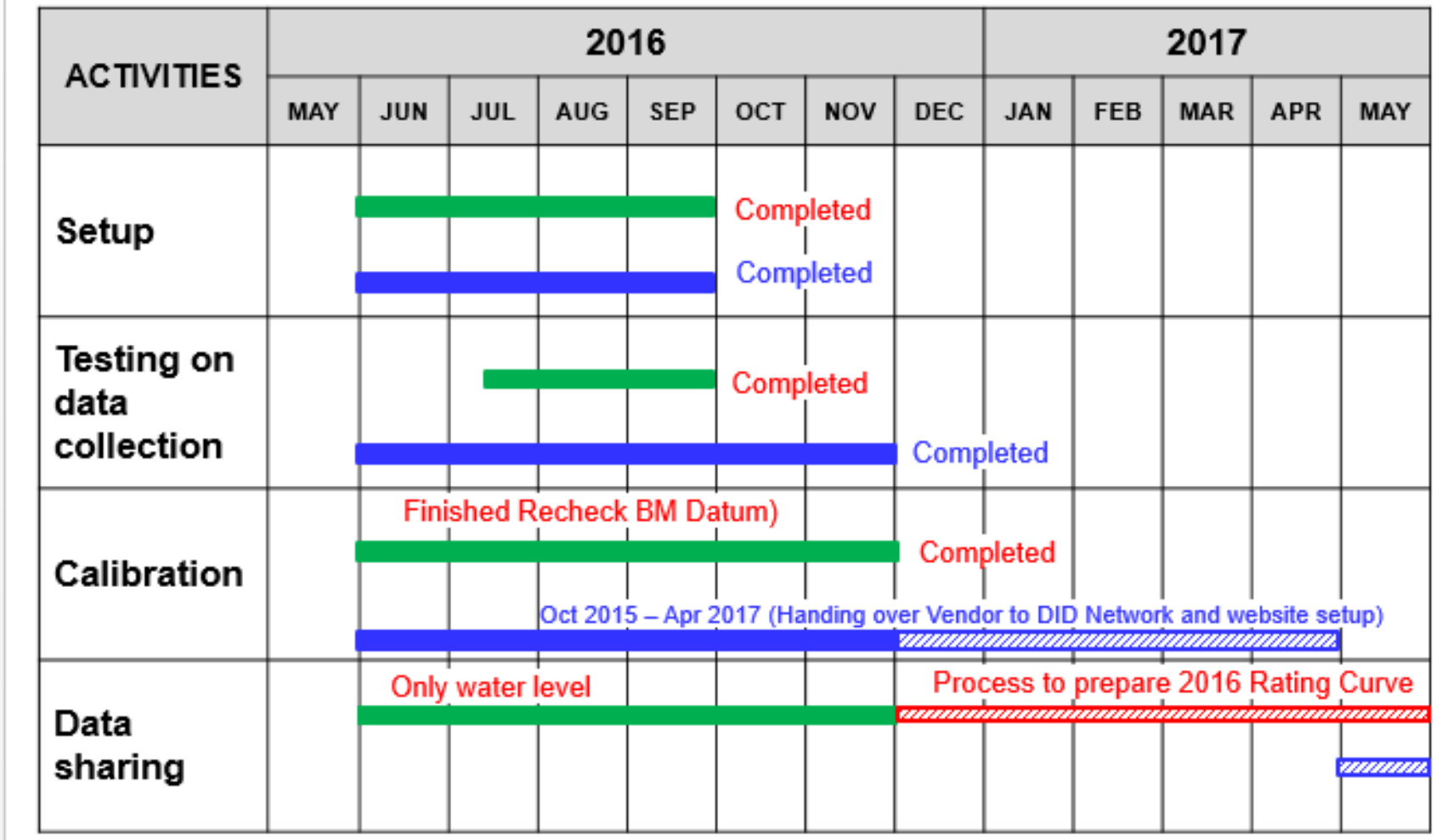

EIA road map (THAI side)
DETAILS
2015
2016
2017
2018
O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S
Feasibility and EIA study
15 months
Physical Model
6 months
Detailed Design
6 months
Submit for EIA approval
6 months
24 months (2018-2020)
Construction
Input for detailed design
Detailed design road map (MALAYSIAN side)
DETAILS
2015
2016
2017
2018
O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S
Detailed Design
~12 months
EIA approval
6 months
24 months (2018-2020)
Construction

Mutual gauging 2016				
Date	**Level (m)**	**Discharge, Q (m3/s)**	**Area, A (m2)**	**Velocity, V (m/s)**
28-Jan-16 (11am)	7.63	168.507	224.15	0.752
28-Jan-16 (3pm)	7.93	290.844	243.62	1.194
29-Feb-16	4.40	33.743	81.254	0.415
24-Mar-16	3.36	5.964	44.116	0.135
28-Apr-16	2.88	1.097	11.159	0.098
25-May-16	3.03	3.462	37.476	0.092
27-June-16	5.50	32.010	84.579	0.378
28-July-16	5.27	56.997	111.764	0.51
18-August-16	3.585	12.784	51.326	0.249
26-September-16	3.655	12.844	52.746	0.244
27-October-16	4.405	33.711	77.424	0.435

Progress of new telemetering station



Road Map for Joint Implementation Works