

국외출장 결과보고서

기 간: 2023. 9. 5. ~ 2023. 9. 9.

출장지: 스리랑카

윤태관 부연구위원

출장자: 백정한 부연구위원

박지은 연구원

국토연구원



국토인프라연구본부

I. 출장개요

1. 출 장 자: 스리랑카 콜롬보

2. 출장기간: 2023.09.05.~2023.09.09.

3. 출 장 자

소속	직급	성명	비고
국토인프라연구본부	부연구위원	윤태관	
국토인프라연구본부	부연구위원	백정한	
국토인프라연구본부	연구원	박지은	

4. 출장목적 : 스리랑카 도로교통 DB MP 의견 수렴 및 중간 보고

II. 출장일정

일정 (요일)	출발지	도착지	업무수행내용	접촉예정인물 (직책포함)
09.05(화)	인천	싱가폴	인천 출발(10:50) - 싱가포르 도착(16:00)	
	싱가폴	콜롬보	싱가폴 출발(20:10) - 콜롬보 도착(21:30)	
09.06(수)			RDA MP 관련 미팅(1) - 도로교통 DB 마스터플랜 의견 수렴 - 중간보고회 발표자료 검토 중간보고회 발표자료 수정 및 보완	RDA RDA
09.07(목)			프로젝트 중간보고회 개최	MoTH RDA
			RDA MP 관련 미팅(2) - 도로교통 DB 마스터플랜 의견 수렴	
09.08(금)			RDA MP 관련 미팅(3) - 도로교통 DB 마스터플랜 의견 수렴	RDA
			스리랑카 KOICA 사무소 방문 및 출장결과 보고	KOICA
09.09(토)	콜롬보	인천	콜롬보 출발(01:10) - 방콕 도착(06:15) 방콕 출발(09:50) - 인천 도착(17:35)	

III. 수행사항

1. 스리랑카 MP 관련 RDA 미팅(1)

■ 일정 및 장소:

2023년 9월 6일(수) 10:00 ~16:00, 스리랑카 RDA 도로개발청 회의실

■ 참석자:

〈스리랑카 측: 7명〉

- RDA : D.A.S.Jayasekera (Director Planning), K.Chandrakumare(Director IRSTM), P.R.D Fernando (Additional Director), G.S.L Gunasekera (Senior Database Network Administrator), D.A.P.Padmaie(Additional Director), L.N.Palihawadana(Engineer), C.Abeygunawardhana(Engineer)

〈한국 측: 4명〉

- 국토연구원 : 윤태관 부연구위원, 백정한 부연구위원, 박지은 연구원
- 네이버시스템 : 양지혜 PAO

■ 주요내용

- 9차 파견 착수 공유(윤태관 PM 진행)
- MP 관련이슈
 - MP 보고서 관련 RDA에서 요청한 수정사항 반영본 설명
 - RDA 세부 피드백을 통한 수정 사항 논의
 - 개발도상국 DB 구축사례 및 조직도 등 질의진행
- 중간 보고 관련 이슈

회의사진



참석자 명단

KOICA Mission- Enhancement of National Traffic Database and Capacity Building project

Date 6th Sep Time 9:30 10:00 AM

Venue Conference Room, Planning Division

Attendance sheet

#	Name	Designation Organization	Signature
01.	D A S Jayasekera	Dis. Planning	q-p.
02.	K.Chandekumar	Dis. Planning Project Coordinator	Q.
03	BAEK, JUNGHAN	KRIHS	BAEK JH
04	Tackum Yoon	KRIHS	Yoon Tackum
05	Jieun Park	KRIHS	Park Jieun
06.	G S L Suresekera	Sr. Database Network Administrator	Suresekera G.S.L.
07.	D. A. P. Padma	Asst. Director (Planning)	Padma D.A.P.
08	C. Abeygunawardena	Engineer (Planning)	Abeygunawardena C.
09	L. N. Palihawadana	Engineer (Planning- RPA)	Palihawadana L.N.
10	Ji hye Yang	PAO	Yang Ji hye
11.	P. R. D. Fernando	Asst. Director Planning Div	Fernando P.R.D.

2. MoTH 중간보고회

■ 일정 및 장소:

2023년 9월 7일(목) 10:00 ~13:30, 스리랑카 RDA 도로개발청 회의실

■ 참석자:

〈스리랑카 측: 9명〉

- RDA : M.M.P.K. Mayadunne(Secretary), L.V.S. Weerakoon(Director General), S.S. Mudalige(Director General (Planning)), W.H.K.D.B. Rathnayake(Director (Planning)), D.A.S.Jayasekera (Director Planning), P.R.D Fernando (Additional Director), G.S.L. Gunsekera(Senior Network Administrator), H.C.N. Silca (TSA(IRSTM)), W.G.A.D.Dharmarh(Engineer IRSTM)

〈한국 측: 4명〉

- 국토연구원 : 윤태관 부연구위원, 백정한 부연구위원, 박지은 연구원
- 네이버시스템 : 양지혜 PAO
- KOICA : 김명진 소장, 김현정 대리, Himanthi 대리

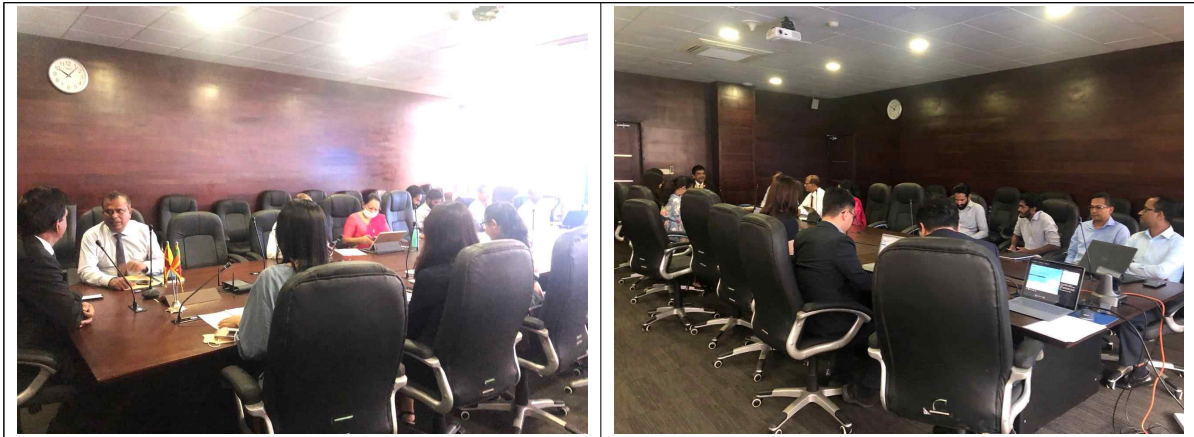
■ 주요내용

● PM의 전체 사업 수행사항 공유

● 사업 수행 관련 질의

- RDA의 차관이 법적 틀에 관한 질문
- 해당 사업의 지속성에 관하여 질문, 유지 예산에 대하여 질문
- MP 완료 이후 이해관계자들과 질의응답을 가질 시간이 필요하다 하였으나, 본 MP는 현재 단계에서 마무리 지어야 일정 지연이 없다고 PMC에서 설명했고, 이미 1차 워크샵에서 이해관계자에게 MP에 대해 설명했다고 RDA가 부연설명함

회의사진



참석자 명단

KOICA Mission- Enhancement of National Traffic Database and Capacity Building Project
 Date 7th of Sep Time 10:00 AM
 Venue Conference Room, Planning Division

#	Name	Designation Organization	Signature
1	HS Kim	KOZA	HS Kim
2	Hyunjeong Kim	KOICA	Hyunjeong Kim
3	Himanshi Sumantapain	Assistant Manager	Himanshi Sumantapain
4	Jieun Park	KRIHS	Jieun Park
5	Junghun Baek	KRIHS	Junghun Baek
6	Taekun Yoon	KRIHS	Taekun Yoon
7	M.H.P.K. Mayaden	Sec.	M.H.P.K. Mayaden
8	S.S. Muthiga	Ds/Planning	S.S. Muthiga
9	L.V.S. Weeraman	De/RAA	L.V.S. Weeraman
10	D.A.S. Jayasekera	Dir. Planning	D.A.S. Jayasekera
11	W.H.K.D.B. Rajapakse	D/Planning	W.H.K.D.B. Rajapakse
12	H.C.N. Silva	TJA (BPM)	H.C.N. Silva
13	W.G.D. Thararat	Eng.(TRSM)	W.G.D. Thararat
14	P.R.D. Fernando	Asst. Director Planning Div	P.R.D. Fernando
15	G.S.L. Gunasekera	Snr. Database Network Administrator	G.S.L. Gunasekera
16	Ji mye Yang	PAO	Ji mye Yang

3. 스리랑카 MP 관련 RDA 미팅(2)

■ 일정 및 장소:

2023년 9월 7일(목) 14:00 ~16:30, 스리랑카 RDA 도로개발청 회의실

■ 참석자:

〈스리랑카 측: 7명〉

- RDA : D.A.S.Jayasekera (Director Planning), P.R.D Fernando (Additional Director),
G.S.L Gunasekera (Senior Database Network Administrator), B.H.A.
Mendis(Engineer), L.N.Palihawadana(Engineer), C.Abeygunawardhana(Engineer)

〈한국 측: 4명〉

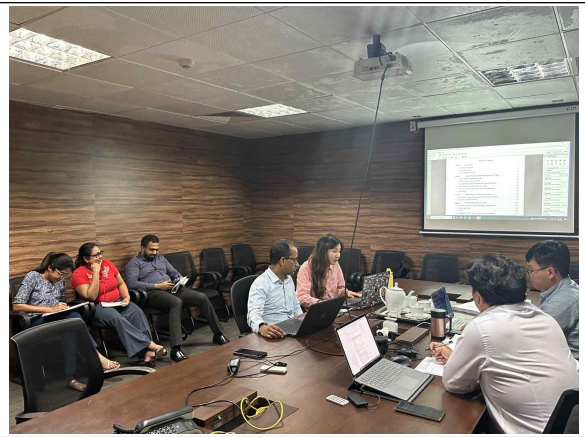
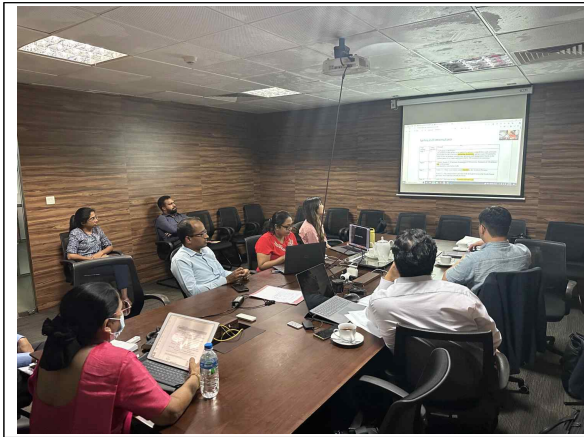
- 국토연구원 : 윤태관 부연구위원, 백정한 부연구위원, 박지은 연구원
- 네이버시스템 : 양지혜 PAO
- KOICA : 김현정 대리

■ 주요내용

● MP 관련 논의

- RDA에서 8월 11일에 PMC가 제출한 마스터플랜 최종보고서에 대해, 중간보고서 보완 요청사항을 모두 잘 반영하였으며, 내용 측면에서는 문제 없다고 함
- RDA에서 그 외 오타, 오래된 정보, 포맷, 지역명 등 사소한 수정에 대해 두개 파일을 프레젠테이션하며 하나씩 설명함
- PMC는 RDA에서 제공한 의견에 대해 수정가능하며, 관련 파일 두개를 수령함 ([Sri Lanka] Traffic DB Masterplan_final report_230811_submit(Dimuthu), KOICA_Masterplan_Comments_version_03)
- 그 외 업데이트 필요한 그림, 현재 계획 중인 고속도로 사업 리스트 등은 향후 RDA가 제공할 예정임
- 수원국에서 최근에 연구한 데이터 제공을 통한 MP 내용 수정 요청

☐ 회의사진



☐ 참석자 명단

KOICA Mission- Enhancement of National Traffic Database and Capacity Building Project
Date 4th of Sep Time 2:00 PM
Venue Conference Room, Planning Division

#	Name	Designation	Organization	Signature
	DAS Jayashree	EDA		
	Tackwan Yoon		KRINS	
	Junghon Bae		KRINS	이정환
	Jieun Park		KRINS	
	Ji-hye Yang	PAO		양지혜
	L. N. Palihawadana	RDA - Planning Engineer		
	B. H. A. Mendis	RDA - Planning Engineer		At Mendis
	C. Fleugunawarchana	RDA - Planning Engineer		
	A. S. L. Gunaratne	Siv. Database Networks Admin		
	P. R. D. Fernando	Asst. Director Planning Div, RDA		

4. 스리랑카 MP 관련 RDA 미팅(3)

■ 일정 및 장소:

2023년 9월 8일(금) 10:00 ~11:00, 스리랑카 RDA 도로개발청 회의실

■ 참석자:

〈스리랑카 측: 7명〉

- RDA : D.A.S.Jayasekera (Director Planning), K.Chandrakumare(Director IRSTM), P.R.D Fernando (Additional Director), G.S.L Gunasekera (Senior Database Network Administrator), D.A.P.Padmauie(Additional Director), L.N.Palihawadana(Engineer), C.Abeygunawardhana(Engineer)

〈한국 측: 3명〉

- 국토연구원 : 윤태관 부연구위원, 백정한 부연구위원, 박지은 연구원
- 네이버시스템 : 양지혜 PAO

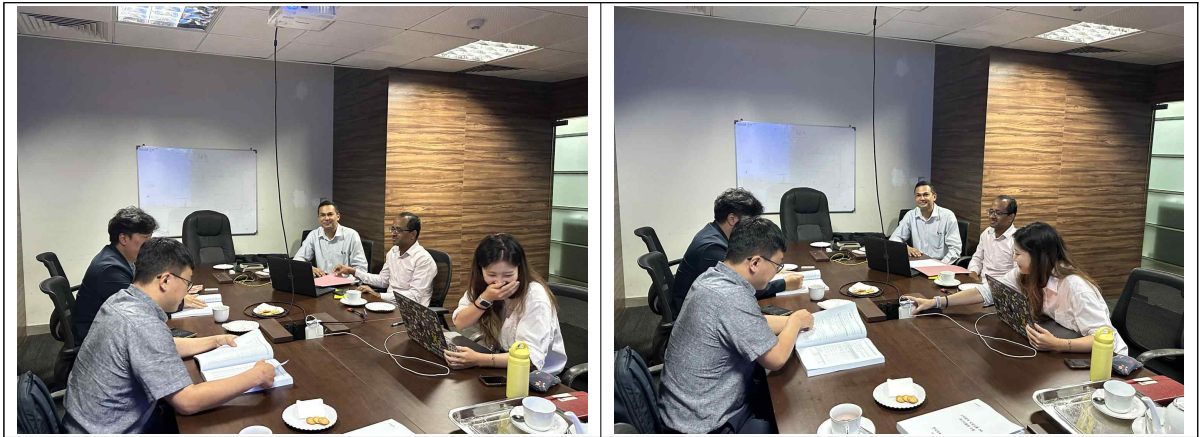
■ 주요내용

● MP 관련이슈

- 마스터플랜 세부 수정안 논의
- RDA가 최종보고서(안) 피드백 사항 전체 제시
- 각 장에 대한 정리 사항 전체적으로 제시 요청
- 단어의 모호성에 대해 수정 요청
- 수원국에서 최근에 연구한 데이터 제공을 통한 MP 내용 수정 요청

● MP 보고서 관련 외부 전문가 멘션 요청

회의사진



참석자 명단

KOICA Mission- Enhancement of National Traffic Database and Capacity Building Project
 Date 08/01/2023 Time 10:00 AM
 Venue Conference Room, Planning Division

#	Name	Designation Organization	Signature
	P. R. D. Fernando	Asst. Director RDA	
	G. S. L. Gunasekera	Sr. SpA RDA	
	Taekwan Yoon	KRIHS	
	Junghwan Baek	KRIHS	
	Jieun Park	KRIHS	
	B.H.A. Mendis	Engineer - Planning RDA	
	L.N. Paliwardena	Engineer - Planning RDA	
	C. Abeygunawardhana	Engineer - Planning RDA	
	Ji Hye Yang	PAO	

5. 스리랑카 KOICA 사무소 방문 및 출장결과 보고

■ 일정 및 장소:

2023년 9월 8일(금) 13:00 ~15:30, 스리랑카 KOICA 사무소

■ 참석자:

〈한국 측: 6명〉

- 국토연구원 : 윤태관 부연구위원, 백정한 부연구위원, 박지은 연구원
- 네이버시스템 : 양지혜 PAO
- KOICA : 김용환 부소장, 김현정 대리

■ 주요내용

- 9차 파견 착수 공유(윤태관 PM진행)
- MP 회의 진행사항 보고
 - MP 관련 후속조치
 - 오타 및 지명 같은 마이너한 부분에 대해 RDA의 정보를 받아서 업데이트 예정
 - KTDB의 KPI관련 부분 확인 후 RDA에 이메일 예정
 - 추후 사업이 끝난 후, 제안한 산하기관의 조직도와 업무조장 범위는 업데이트해서 추가 예정
 - 외부기관 평가 일정 조율
 - 개발도상국 DB 구축사례 및 조직도 등 질의진행

■ 회의사진



IV. 별첨

□ 별첨1. 스리랑카 중간보고회 PPT

KOICA

Enhancement of National Traffic Database and Capacity Building Project of Sri Lanka

Interim Report: 7th Sep. 2023

neighbor system **KRIHS** **KECC**

KOICA

Contents

Enhancement of National Traffic Database and Capacity Building Project of Sri Lanka

- CHAPTER 01 Project Overview
- CHAPTER 02 Project Management
- CHAPTER 03 Project Outputs & Activities

CHAPTER 01 Project Overview

1) Project Outline

Project Enhancement of National Traffic Database and Capacity Building Project of Sri Lanka

Period 01/01/22 ~ 11/30/25 (4 yrs) Target Area Sri Lanka's National Arterial Road Network, including the Colombo Metropolitan City (CMC) area	01 Project Hosts - KOICA - Ministry of Transport & Highways - RDA	02 Project Consortium - Neighbor System, Inc. - KRIHS - KECC	03 Budget Total : 4 million USD	04 Outputs - Traffic DB Masterplan - Capacity building - Standardized traffic and O/D survey methodology - Automated traffic DB system - Traffic demand forecasting
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CHAPTER 01 Project Overview

1) Project Outline

Project Enhancement of National Traffic Database and Capacity Building Project of Sri Lanka

Period 01/01/22 ~ 11/30/25 (4 yrs) Target Area Sri Lanka's National Arterial Road Network, including the Colombo Metropolitan City (CMC) area	01 Project Hosts - KOICA - Ministry of Transport & Highways - RDA	02 Project Consortium - Neighbor System, Inc. - KRIHS - KECC	03 Budget Total : 4 million USD	04 Outputs - Traffic DB Masterplan - Capacity building - Standardized traffic and O/D survey methodology - Automated traffic DB system - Traffic demand forecasting
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Project Management

1) Project progress

50.4%

Interim Report

Planned Changed Completed

Lx-1	Specific Commitments for Project Implementation	Lx-2	Monitoring Indicators & Detailed Activities	Start	Plan End	Extended Status	2022				2023				2024				2025			
							1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
1	Developed Masterplan (KORBS)	1-1	Road traffic DB Analysis	1-Jan-22	30-Jan-22	100%																
		1-2	Establishing traffic survey strategy	1-Mar-22	31-Dec-22	100%																
		1-3	Establishment of the foundation for traffic investigation	1-Apr-22	31-Mar-23	100%																
		1-4	Establishment of DB construction plan	1-Aug-22	31-Aug-23	00.2%																
2	Sri Lanka public officers who receive capacity building training (KORBS)	2-1	Manager level training	1-Oct-22	31-Dec-22	100%																
		2-2	Professional & technical level training	1-Jul-23	30-Sep-23	Not Started																
3	Standardized Traffic and OD Survey Methodology (KFC)	3-1	Traffic survey methodology standard	1-Jan-22	31-Mar-23	34.4%																
		3-2	OD survey methodology standard	1-Jan-22	31-Dec-24	39.3%																
		3-3	Traffic, OD, Network police survey	1-Jan-22	30-Sep-23	33.0%																
4	Traffic Demand Forecasting System which is Developed and Utilized (KFC)	4-1	Traffic demand analysis	1-Nov-21	30-Nov-23	24.7%																
		4-2	Local capacity building program	1-Apr-24	30-Nov-25	Not Started																
5	Automated Traffic DB System (NS)	5-1	SL-TDBMS System Requirement Analysis	1-Feb-22	31-Jan-24	100%																
		5-2	SL-TDBMS System S/W Design	1-Sep-22	30-Nov-23	82.7%																
		5-3	SL-TDBMS System Implementation	1-Oct-23	30-Apr-24	Not Started																
		5-4	SL-TDBMS System Test & Verification	1-Jan-24	30-Jan-24	Not Started																
		5-5	SL-TDBMS System Pilot Operation & Management	1-Jul-24	30-Jan-25	Not Started																
6	Business Management and Performance Management (NS)	6-1	Project Management	1-Jan-22	31-Dec-23	36.0%																
		6-2	Performance Management	3-Mar-22	31-Dec-24	44.4%																
		6-3	H/W Equipment Bidding	1-Jan-22	31-Dec-24	44.0%																

Project Outputs & Activities

1) Traffic DB Masterplan establishment

Period	2022				2023				2024				2025			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Milestone																
	Interim report submission (31 Dec 2022)				Final report submission (31 Aug 2023)											

Work progress

- Dec. 2022: Interim report submission in IPM (KICA system)
- Apr. 2023: Interim report submission in Eng. to RDA
- May 2023: Review and Feedback from RDA
- Jun. 2023: Received final comments on interim report from RDA
- Aug. 2023: Submitted the final report which addressed RDA comments

- No issues
- In the 9th dispatch (5-7 Sep. 2023), RDA and PMC are discussing on the final report

Issues/ Discussions

Future plans

- PMC will revise the final report based on the discussions
- Other parts will refer the Masterplan report if needed
- [RDA] Follow the roadmap and prepare to do the key initiatives

- National Traffic Database Masterplan of Sri Lanka
- Current status and technology prospects of Sri Lanka
- Traffic DB construction case studies
- Traffic DB Masterplan in Sri Lanka
- Key promotional task roadmap, financing priority and strategies

Final outputs

Project Management

2) Completed works

Lx-1	Specific Commitments for Project Implementation	Lx-2	Monitoring Indicators & Detailed Activities	Monitoring Indicators	Major Outputs	Targets	Actuals	Remaining Works
1	Developed Masterplan (KORBS)	1-1	Road traffic DB Analysis	No. of Masterplan report	Masterplan inception Report	1	1	Completed
		1-2	Establishing a traffic survey strategy		Masterplan interim Report	1	1	Completed
		1-3	Establishment of the foundation for traffic investigation		Masterplan Final Report	1	1	Reviewing & Reflecting RDA's Feedback
		1-4	Establishment of DB construction plan					
2	Sri Lanka public officers who receive capacity building training (KORBS)	2-1	Manager level training	No. of Times & Persons	No. of traffic DB & capacity building training training	2	1	The manager-level training was finished in Nov. 2022.
		2-2	Professional & technical level training		No. of public officers who completed traffic DB capacity building training training	24	0	9 managers in MoTHW and RDA were participated in the training programs.
3	Standardized Traffic and OD Survey Methodology (KFC)	3-1	Traffic survey methodology standard	No. of Guideline Documents & Pilot Survey Result Report	No. of established traffic survey and OD survey guidelines	2	0	On progress, it will be shared with RDA within 2023/24 before the selection of professional institutions training program.
		3-2	OD survey methodology standard					
		3-3	Traffic, OD, Network police survey		No. of traffic survey/OD police survey results report	2	0	
4	Traffic Demand Forecasting System which is Developed and Utilized (KFC)	4-1	Traffic demand analysis	No. of Forecasting system & guidelines	No. of developed traffic demand forecasting system provided	4	0	Inter-AD will be provided at completion of DBM equipment delivery.
		4-2	Local capacity building program		No. of traffic demand analysis guidelines	1	0	The guidelines will be shared in one month before starting local capacity building program.
5	Automated Traffic DB System (NS)	5-1	SL-TDBMS System Requirement Analysis	No. of system provided (Traffic DB Operation Management System)	Development Planning & Requirement Analysis Document	2	2	Completed and they will be used by system building team in this year.
		5-2	SL-TDBMS System S/W Design		ARD, DRD, SWCD, IFD, UX/UD, TPD, etc.	6	0	On progress, it will be finished by 2024 by system building team.
		5-3	SL-TDBMS System Implementation		SL-TDBMS System	1	0	On progress, it will be completed in 2024 with system verification with system building team.
		5-4	SL-TDBMS System Test & Verification		Test & Verification Result Report	1	0	
		5-5	SL-TDBMS System Pilot Operation & Management		Operation & Maintenance Guidelines and User Manuals	3	0	Not started
6	Business Management and Performance Management (NS)	6-1	Project Management	Project Management Reports	Monthly Report, MoM, Dispatching Report & Workshop Reports, etc.	N/A	N/A	1st workshop for reviewing M-Practices report was completed.
		6-2	Performance Management		MAE Reports (Baseline & Final)	4	1	Baseline survey planning & evaluation are completed and then final MAE first report sustainability report will be finished by 2023.
		6-3	H/W Equipment Bidding		Bidding Documents & H/W Delivery Verification Report	2	1	The H/W procurement planning was established and will be finished within 1Q/2024.

Project Outputs & Activities

1) Traffic DB Masterplan establishment; Vision, goals and strategies

Establishing road traffic DB to support rational and efficient decision making to promote balanced national development and economic growth in Sri Lanka

Vision

Comprehensive, Innovative, and Sustainable road traffic DB implementation to support Sri Lanka's economic growth

- A guide to the future of Sri Lanka road traffic database system -

Goal



Strategy



Project Outputs & Activities

1) Traffic DB Masterplan establishment; Roadmap for key promotional tasks

Category	Key promotional task	~ 2025			2026 ~ 2030					After 2030
		1Y	2Y	3Y	1Y	2Y	3Y	4Y	5Y	
National level data collection and integration	Establishment of legal basis for regular traffic survey									
	Efficient traffic survey strategy									
	Relevant data collection/connection and traffic survey advanced innovation strategy									
Road traffic data standardization and increased reliability	Road traffic DB standardization and integration									
	Efficiency improvement by producing high value-added information									
Data management and storage	Efficient data management									
	Secure data storage									
Data analysis and utilization	Establishment of legal basis for data utilization									
	Provision of timely road traffic DB									
	Advancement of DB analysis management support system									
Strategies for securing sustainability of traffic DB	Operation of an organization dedicated to road traffic DB									
	Enhancement of center functions and operational efficiency									
	Advancement of National Road Traffic DB Center									
Legal framework	Enactment of the Transportation System Efficiency Act									
	Enactment of road traffic DB information disclosure laws									
	Establishment of road traffic DB related guidelines									

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Project Outputs & Activities

2) Capacity Building (Invitation Trainings)

Period	2022				2023				2024				2025			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Milestone							We are here									
	High level officer training Oct. - Nov. 2022								Working group level training							

Work progress

• 31st Oct. ~ 9th Nov. 2022 (10 days): High-level officer invitation training

• The 2nd training is supposed to be held in 2023 and we agree to postpone the schedule after having knowledge and insights through KECC outputs

• Need to select the most appropriate participants for the working group level training.

• Need to hear the requirements (desirable lectures, site visit, S/W training, and others) for the working group level training.

Issues/Discussions

Future plans

• After KECC provides outputs about traffic and Q/D survey, the working group level invitation training will be held with the knowledge and insights from the participants.

• Capacity building
– High-level officer
– Working group level

Final outputs

Project Outputs & Activities

2) Capacity Building (Invitation Trainings); High-level officer training

1) Overview

Category	Description
Training period	2022.10.31. ~ 2022.11.09.
Locations	Seoul, Anyang, Sejong
Participants	Total 9 persons (1 person was not participated due to health problem)
Organizer	KRIHS

2) Training modules

- Module I. Korean ITS and Mobility: Understanding Korea's ITS introduction background and standardization system, understanding smart city details (traffic, safety, disaster, and city crime prevention) using AI, experiencing public transportation transfers and KTX
- Module II. Road traffic DB: Understanding KTDB construction cases and traffic big data construction methods, benchmarking cases by visiting the traffic big data center
- Module III. Traffic Demand: Quantitative/visual effect analysis through demand analysis through traffic demand modeling practice and establishment of intermittent and continuous flow traffic conditions through VISSIM program practice
- Module IV. Korean cultural experiences: Enhancement of understanding of Korean culture by visiting major tourist attractions through watching Nanta Cooking Performance, experiencing Gyeongbokgung Hanbok, and using city tour buses

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Project Outputs & Activities

2) Capacity Building (Invitation Trainings); High-level officer training



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Project Outputs & Activities

3) Standardized traffic and O/D survey methodology

Period	2022				2023				2024				2025			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Milestone							Work start phase									

Work progress

- Apr. 2022: Traffic & OD survey requirement analysis by RDA
- Mar. 2023: Consultation on the selection of traffic & OD survey target area
- May. 2023: 1st Internal Meeting about traffic & OD survey
- Jul. 2023: 2nd Internal Meeting about traffic & OD survey
- ~ now: On progress in Traffic & O/D Pilot survey methodology report

- Selection of target area for OD survey (Western Province)
- OD survey using mobile applications for RDA 100 officials : 4Q 2023

Issues/Discussions

Future plans

- O/D pilot survey will be started in 4Q 2023
- Behavior analysis survey and traffic distribution survey
- After conducting a pre-survey of RDA officials, PMC will start pilot survey
- Based on the pilot survey results, PMC will establish basic data for traffic demand analysis in Sri Lanka

- Traffic pilot survey plan
- Traffic pilot survey result report
- Traffic survey and O/D survey guideline
- Network GIS file (electric)
- Traffic, O/D, Network Survey Result report

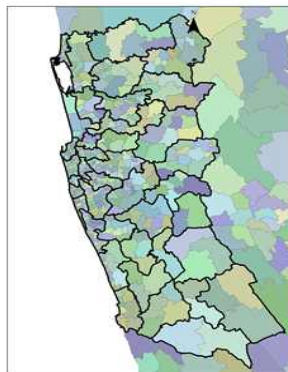
Final outputs

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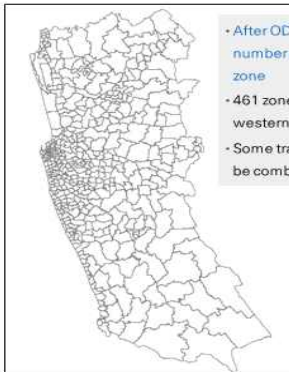
Project Outputs & Activities

3) Standardized traffic and O/D survey methodology

Western province by DS division



Traffic Analysis Zones (TAZ) in Western Province : 461 zones



- After OD survey, KECC will check number of the optimal traffic analysis zone
- 461 zones is too much zones in western provinces
- Some traffic analysis zones will can be combined

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Project Outputs & Activities

3) Standardized traffic and O/D survey methodology

O/D survey for Behavior analysis

: Around 1,000 ~ 2,000 samples

Characteristic of Household

- Household members, Monthly income
 - Type of Home (Permanent), Number of rooms
- #### Personal Characteristics
- Gender, Age, Occupation
 - Possession of Vehicles

1. Household Information 01. Number of household members (adult household) 02. Number of people (non-adult household) 03. Monthly Income (in LKR) 04. Type of Home (Permanent/Temporary) 05. Number of rooms (Permanent/Temporary) 06. Type of Home (Permanent/Temporary) 07. Number of rooms (Permanent/Temporary) 08. Type of Home (Permanent/Temporary) 09. Number of rooms (Permanent/Temporary)	2. Personal Information 10. Gender 11. Age 12. Occupation 13. Possession of Vehicles 14. Type of Home (Permanent/Temporary) 15. Number of rooms (Permanent/Temporary) 16. Type of Home (Permanent/Temporary) 17. Number of rooms (Permanent/Temporary) 18. Type of Home (Permanent/Temporary) 19. Number of rooms (Permanent/Temporary)
--	--

O/D survey for traffic distribution

: Around 20,000 samples

Origin

- Address, Type of trip, Departure time, Mode choice
 - Vehicle Occupancy, etc.
- #### Trip purpose and payment

1. Origin 01. Address 02. Type of trip 03. Departure time (in AM/PM) 04. Mode of transport 05. Vehicle occupancy (in number) 06. Trip purpose and payment 07. Payment of charges 08. Mode of transport 09. Amount of charges (in number)	2. Transfer Point (if applicable) 10. Address 11. Type of trip 12. Departure time (in AM/PM) 13. Mode of transport 14. Vehicle occupancy (in number) 15. Trip purpose and payment 16. Payment of charges 17. Mode of transport 18. Amount of charges (in number)	3. Destination 19. Address 20. Type of trip 21. Departure time (in AM/PM) 22. Mode of transport 23. Vehicle occupancy (in number) 24. Trip purpose and payment 25. Payment of charges 26. Mode of transport 27. Amount of charges (in number)
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Project Outputs & Activities

4) Local training

Period	2022				2023				2024				2025			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Milestone							Work start phase									

Work progress

- Apr. 2022: Traffic demand forecasting program requirement analysis by RDA
- TransCAD, VISSIM, Cube, etc.
- Mar. 2023: Consultation on determining a VDF function
- ~ now: On progress in Traffic demand forecasting

- Field survey for VDF function decision : 4Q 2023
- 13 types of road type classification in Sri Lanka

Issues/Discussions

Future plans

- Local capacity building program : 2Q 2025
- Training for Manager and Operators
- User Training
- Online education

- Traffic demand analysis guideline
- Traffic demand analysis program purchase plan
- Traffic demand analysis inspection result report
- Current and future traffic demand characteristics analysis report
- Traffic demand analysis working model

Final outputs

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4) Local training

Overview of Traffic demand forecasting program (TransCAD)



Road Type classification

BPR Function

It is based on the theory that the link's travel time increases in proportion to the v/c ratio based on the free-flow travel time

$$T_a = T_a^0 [1 + \alpha(v/c)^\beta]$$

T_a = Travel time of Link a

T_a^0 = Free-flow travel time of Link a

v/c = Traffic volume / Capacity

Estimate to VDF function survey method

1. Manual counting survey
 - Check peak hour by 13 survey points
2. Video recording survey
 - 4-hour video recording survey including peak hours
 - The free-flow speed was assumed to be the speed at off-peak hour
3. Video recording analysis
 - Analysis of traffic volume and speed during peak and off-peak hour
 - Calculation of Free-flow travel time and travel time for a specific section
4. Estimation of VDF and review
 - Calculation of optimal α, β value by 13 road categories

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5) Automated traffic DB system

Period	2022				2023				2024				2025			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Milestone			1st Dispatching	2nd Dispatching	1st Work Shop	2nd Dispatching	3rd Dispatching	4th Work Shop	3rd Dispatching							
	Inception Preparation		System Requirement Analysis		S/W Design & System Development				System Integration, Installation & Test / Verification				Pilot O&M Service Support			

Work progress

- Aug. 2022: 1st System Requirement Analysis (As-is analysis)
- Nov. 2022: 2nd System Requirement Analysis (To-be model establishment)
- Feb. 2023: Attended the 1st workshop to present the basic concept of SL-TDBMS system
- July 2023: Conducted H/W preliminary survey activities with the PC company
- ~ now: On progress in S/W design activities (AD, DB, SWCD, IFD, LUXUID, TDP)

- RDA needs coordinate the SATRA company to obtain detailed information of SL-TDBMS database
- RDA needs to facilitate required services like INTRANET/INTERNET networks provided by SLT
- RDA needs to check and review design concept of SL-TDBMS (Look&Feel)

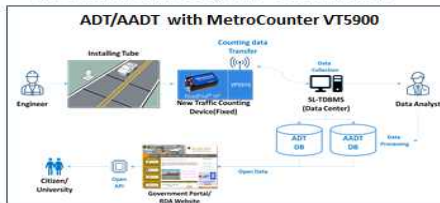
Issues/Discussions

Future plans

- SL-TDBMS S/W design will be completed in 4Q 2023
- SL-TDBMS development will be completed in 2Q 2024 including system installation and verification as well as user training & education
- Invitation training program for professionals will include SL-TDBMS operation and management
- Pilot Traffic & O/D survey will be incorporated with SL-TDBMS O&M service
- SL-TDBMS S/W design outputs (AD, DB, SWCD, IFD, LUXUID, TDP)
- SL-TDBMS system with inclusion of interfaces with PRDA, CMC, etc.
- Traffic survey equipment maintenance capability (VDS, MetroCounter, MCC devices, etc.) using facility management functions in SL-TDBMS
- SL-TDBMS system maintenance capability & resources

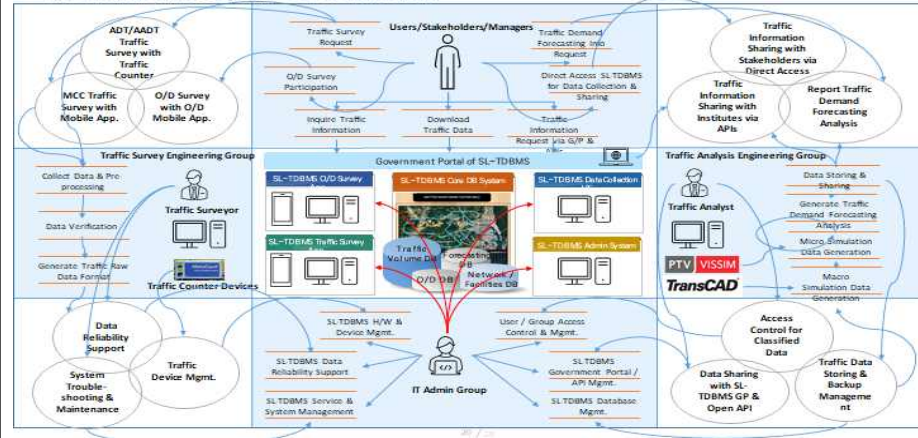
Final outputs

5) Automated traffic DB system – Data Collection



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5) Automated traffic DB system – User Context Model



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Road Development Authority

SRAMS (Sri Lanka Road Asset Management System)

RIS
RIMS
SRAMS
RIMS
RIMS
RIMS
RIS
RIS
RIS

TIS/TRA Information System
RIS(Road Information System)

- Automatically upload system to system

Data Gathering System

DB Link

Data Upload (CSV/XLS/JSON etc)

System upload

Integration DB

Traffic/Road Information

Asset Information

Static Information

Traffic Analysis

Road Development Authority

RDA control and manage the data in the Integration DB

Columbo Municipal Council

CMC manage data which is loaded by CMC

Province RDA

PRDA manage data which is loaded by PRDA

System upload by MCC / CD Survey with Mobile Devices

System upload by MCC with MicroCounter Device

Period	2022				2023				2024				2025			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Milestone					Bidding Preparation	Select Bidder	1 st Preliminary Dispatching	WHS Warehousing	Domestic Verification	2 nd H/W Installation Dispatching	3 rd VDS Installation Dispatching					
									H/W Procurement & Shipment	Install H/W	VDS Installation & Integration					
Work progress	- December 2022: Started for bidding documents preparation - March 2023: Bidding document preparation (Traffic Eq, IT Eq & S/W, TransCAD) - May 2023: Bidding program to select a bid contractor - June 2023: Select the bid contractor - July 2023: Conduct the preliminary survey to inspect local condition												Future plans			
	- RDA needs approval on H/W item & specification with minor change request - RDA needs to obtain official permission from CMC to install VDS pole & bars - RDA needs to make sure to bear all costs for the custom clearing and cargo usage when all H/W arrives at the port in Sri Lanka - RDA needs to coordinate SLT to support fiber optic cable connection between VDS installation location and RDA building												- Procure traffic equipment, H/W equipment and commercial S/W in 3Q 2023 - Conduct domestic verification of all H/W equipment in Oct. 2023 - Shipping all H/W to Colombo city in Nov. 2023 - Arrive at RDA building after custom clearance in Jan. 2024 - Install traffic equipment (VDS, IT H/W & S/W in Jan. 2024			
Issues/Discussions	8 locations: 16 VDS cameras & VDS center system - Traffic Survey Equipment (20 MetroCounter (VTS90Q, 15 Mobile Devices) 4 copies of TransCAD - Verified IT H/W & S/W for SL – TDMS system - User Manuals and O&M Guidelines												Final outputs			

The figure displays four screenshots of the VDS Monitoring software interface, arranged in a 2x2 grid. Each screenshot shows a map of a road network with various data overlays and charts.

- Top-left screenshot:** Titled "VDS Monitoring". It shows a map with a red line indicating a specific route. On the left, there are three charts: "Level of Traffic Stress", "Level of Service", and "Average Delay". A pop-up window displays "Average Delay" data for a selected segment.
- Top-right screenshot:** Titled "MCC on Demand Traffic Survey". It shows a map with a red line indicating a specific route. On the left, there are three charts: "Level of Traffic Stress", "Level of Service", and "Average Delay". A pop-up window displays "Average Delay" data for a selected segment.
- Bottom-left screenshot:** Titled "MetroCounter Traffic Survey". It shows a map with a red line indicating a specific route. On the left, there are three charts: "Level of Traffic Stress", "Level of Service", and "Average Delay". A pop-up window displays "Average Delay" data for a selected segment.
- Bottom-right screenshot:** Titled "Data Upload from CMC/PRDA". It shows a table with columns for "Date", "Time", "Location", "Speed", "Volume", and "Delay". The table contains multiple rows of data, indicating successful uploads.

No.	Item	Number
1	L3 Switch	2 nos.
2	L2 Switch (Core)	2 nos.
3	Uplink	1 nos.
4	VDS Center System	1 Set
5	VMS Server	1 nos.
6	Image Analysis Server	1 nos.
7	Operation Terminal	1 nos.
8	Backup Server	1 nos.
9	Backup Device 50TB	1 nos.
10	SLT DBMS VMS/WAS Server	2 nos.
11	SLT DBMS DB Server	2 nos.
12	SAV Switch	1 nos.
13	SAV Storage Box & Disk	1.93TB X 24GB
14	4U Rack Standard Rack	1 nos.
15	4U 6B Switch	1 nos.
16	UPS	1 nos.
17	UPS Battery Pack	1 nos.
18	Server Rackcase 7UW	7 nos.
19	Operation PC Monitor 50W	5 nos.
20	Back up SW	1 nos.
21	RAID SW	1 nos.
22	1U Rack Operation PC	1 nos.
23	Mobile Devices (Tab + Handset)	10 x 5 ~ 15
24	VDS Cameras + Local Control Box	7 X 2 + 1 = 15
25	VDS Pole Installation	7 X 2 + 1 = 15
26	Fiber Optic Cable Connection	15 nos.
27	Portable Micro Counter VTR600	20 nos.
28	TRANSCAD	400nos. (network clocks)

Project Outputs & Activities

6) H/W & S/W equipment: Traffic survey equipment

No.	Item	Number
1	1/3 Switch	2 nos.
2	1/2 Switch (SS)	2 nos.
3	Powerail	1 nos.
4	VDS Carrier System	1 Set
5	VMS Server	1 nos.
6	Image Analysis Server	1 nos.
7	Operation Terminal	1 nos.
8	Backup Server	1 nos.
9	Backup Device (LTO)	1 nos.
10	SL DBMS VIDE-WAS Server	1 nos.
11	SL DBMS DB Server	2 nos.
12	LAN Switch	2 nos.
13	LAN Storage Box & Disk	1 Set/1 TB x 24GB
14	40-inches Standard Rack	1 nos.
15	WPA & Switch	1 nos.
16	UPS	1 no. x 30
17	UPS Battery Pack	1 nos.
18	Server Vaccine S/W	7 nos.
19	Operation PC Vaccine S/W	5 nos.
20	Backup s/w S/W	1 nos.
21	HA S/W	1 nos.
22	SL Backup Operation PC	1 nos.
23	Image Device (7TB + Internal)	1 no. x 30
24	VMS Camera + Local Control Box	8 nos. x 1 no.
25	VMS Proc Installation	1 nos. x 1 no.
26	VMS Client Camera Connection	7 no.
27	Portable Monitor (15-in) x 1600D	20 nos.
28	TRANSAC	40nos.

VDS Installation Locations



CHAPTER

Project Outputs & Activities

6) H/W & S/W equipment VDS Actions & Controls by Fault Types

Fault Type		Cause and inspection items	remark	
System		Communication error	• Check communication cables, test line intervals • Check operation PC system setting status • Check the communication port • Check the status of server settings	N/A
		Field control	• Communication abnormality check • Server to Field Controller Program Version Management • Verifying Server Program Settings	N/A
		Data processing error	• Verify Center Server Program System Settings • Center to Field Controller Program Version Management • Center Server DB Program Initialization	N/A
Local		Iron structure abnormality	Visual inspection of the exterior (traffic accident, etc.) to restore the structure in case of malfunction	N/A
		Communication error	• Check modem for operation • SLT cooperation interval test	N/A
		Unable to Boot	• CMOS Check and System Reset	N/A
		Vehicle detection error	• Check and reset program • Check and replace communication cable status	N/A

Project Outputs & Activities

6) H/W & S/W equipment VDS Traffic Survey Functions & Features



CHAPTER

Project Outputs & Activities

6) H/W & S/W equipment H/W Delivery Schedule

[illegible]

□ 별첨2. 스리랑카 출장결과보고 PPT





Masterplan Final Report

Purpose of dispatch (September 6th (Wed.) ~ September 8th (Fri.) 2023)

- Share the review comments about the Traffic DB Masterplan final report
- Present the detailed descriptions about the Traffic DB Masterplan final report
- Finalize the Masterplan as scheduled
- Directions how to revise the Masterplan

Signature

Dr. Taekwan Yoon
Project Manager
Korea Research Institute for Human Settlements
Republic of Korea

Signature

Mrs. Darshika Jayasekera
Director Planning
RDA / MOTHW
Sri Lanka



Masterplan Final Report

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Signature

Mrs. Darshika Jayasekera
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Sri Lanka



Mission Outputs

Major Topics	Discussions	Remark
Chapter 3.	• KTDB case is useful and relevant to this project. • Other foreign case studies cover not only database (e.g. road asset management) but survey methods. • There is no previous case about traffic DB in developing countries. • RDA asked about KPI of KTDB.	• PMC needs to revise the chapter based on two files that RDA provided.
Chapter 4.	• RDA requested the organization chart for the dedicated traffic DB center. • RDA requested the qualification and responsibilities on the human resources.	• PMC needs to revise the chapter based on two files that RDA provided.
Chapter 5.	• RDA asked about the priority and budget and PMC provided the detailed descriptions.	• PMC needs to revise the chapter based on two files that RDA provided.
Chapter 6.	• PMC will improve the conclusion after addressing all comments.	• PMC needs to revise the chapter based on two files that RDA provided.