Meeting Record No. 5

March 27, 2012

Meeting on Discussion of Specifications

Meeting Room: DRVN

Title	Presentation on Specifications and discussion between DRVN and JICA study team			
Date	March 27, 2012		Time	14:00 pm
Place	Directorate for Roads of Vietnam (DRVN)			
Participants	DRVN	Ông Nguyễn Đức Cường Bà Đinh Thị Thanh Huyền Ông Thiều Đức Long Ông Đặng Công Chiến Ông Chu Văn Lương Bà Từ Minh Phương Ông Lê Văn Thạnh Ông Nguyễn Khánh Toàn Ông Quách Văn Khoa Ông Hoàng Việt Hà Bà Tạ Thị Thủy Bà Nguyễn Thị Hải Hà Ông Trịnh Xuân Sinh Ông Lưu Quang Tuấn Ông Đinh Duy Tiên Ông Nguyễn Văn Hoàn Ông Nguyễn Vũ Tuấn		
	PROJECT FOR CAPACITY ENHANCEMENT IN ROAD MAINTENANCE	Yasushi Aoki – Deputy Team Leader MORI, Hisashi Bhoj Ray Pantha – Road Database Expert Nguyen Dinh THAO (Interpreter)		
	PASCO Team Members	Yutaka KOKUFU - Team Leader Koroku SOMA Yoshiyasu TSUCHIYA Dr. Kazuya AOKI Nguyen Thi Dieu LINH (Secretary)		
Agenda	1) Explanation and discussion of Specifications 2) Discussion of Pavement Condition Survey Routes (RRMU2 National Roads) 3) Confirm of Collaboration Work, Schedule with DRVN members 4) Others			

SUMMARY

- Mr. Kokufu thanked DRVN members and guests for coming to the meeting today.
- Mr. Aoki made a brief presentation on Specifications.
- Mr. Luong confirmed all the survey routes with the survey team. The survey team requested another meeting with RRMU2 to confirm the route no.10 and no.38B.
- Mr. Tuan had some comments and requests
  - To avoid misunderstanding between the route number and route name, the survey team should use the definition of route name only.
  - In Vietnam the starting point from km 0 is usually placed on the left side and the

direction of upbound and downbound is opposite with the presented one.
    - The survey team should supplement some data in a road section. For example, in 100m, there should have data of field section or embankment, urban section or not.etc
- The survey team confirmed the question of Mr. Khoa that the survey team only collects data for road pavement. Other data of road management or other system are not included in their contract.
- Mr Tuan recommended the following points
    - to avoid unexpected problem, the survey team should conduct pilot survey for some routes and then expand for the whole national roads
    - it is necessary to give training to transfer technology to DRVN members before the survey. The project should support to make DRVN members understand about the technology transfer.
- Mr. Cuong requested the survey team to make clear about the detail work schedule and expenditure for the counterpart staff so that DRVN has a basis to assign suitable number of staffs to work full time with the survey team.
- Mr. Kokufu agreed that all comments and requirements of DRVN shall be reported to JICA if there is any information out of the contract between the survey team and JICA. He requested another meeting to explain more detail about the work schedule.
- Mr. Cuong requested a letter and handouts needed to be sent to DRVN before the next meeting.
- Meeting terminated around 5:30pm.
- The handout of the presentation on Specifications is attached with this minute of meeting.

Representative of DRVN

Nguyễn Đức Cường

Representative of The Survey Team

Yutaka KOKUFU

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World's Leading Geospatial Group

PAVEMENT DATA COLLECTION SURVEY
INCEPTION REPORT
- SPECIFICATIONS MEETING -

March 27, 2012

PASCO CORPORATION

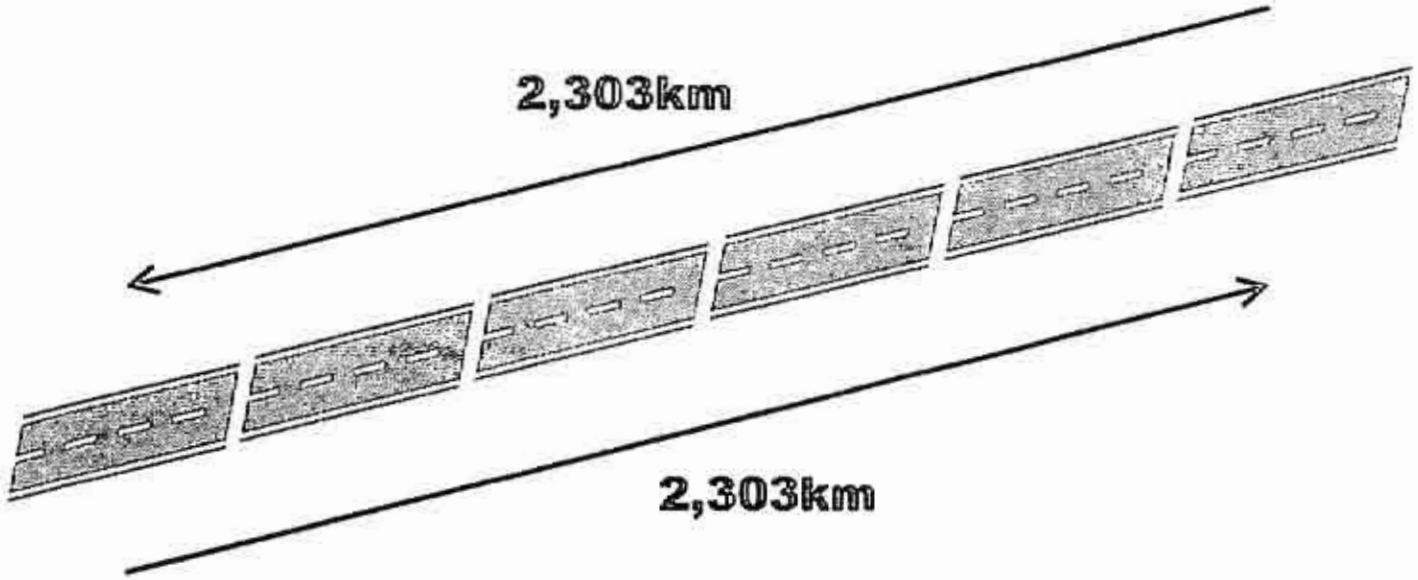
Agenda

1. Explanation and Discussion of Specifications
2. Discussion of Pavement Condition Survey Routes (RRMU 2 National Roads)
3. Confirmation of Collaboration Work Schedule and Members
4. Others

1.Specifications

Target Routes

- National Roads under the jurisdiction of RRMU2
  - 2,303km in both directions (4,606km)



Total survey length = 4,606 km

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Data items measured by Field Reconnaissance

- Road Attributes
  - Maintenance Company
  - Route Number
  - Branch Number
  - Route Name
  - Kilo-meter Post
  - Section length(m)
  - Analysis Area
  - Structure
  - Number of Lane (up-bound / down-bound)
  - Survey Lane Number
  - Surface Type

Definition of Data item

- Road attributes
  - Maintenance Company
    - Company name to manage the road for each section

CODE	Company Name
232	RRMC.232
236	RRMC.236
238	RRMC.238
240	RRMC.240
***	Hà Nội q.lý
~	~

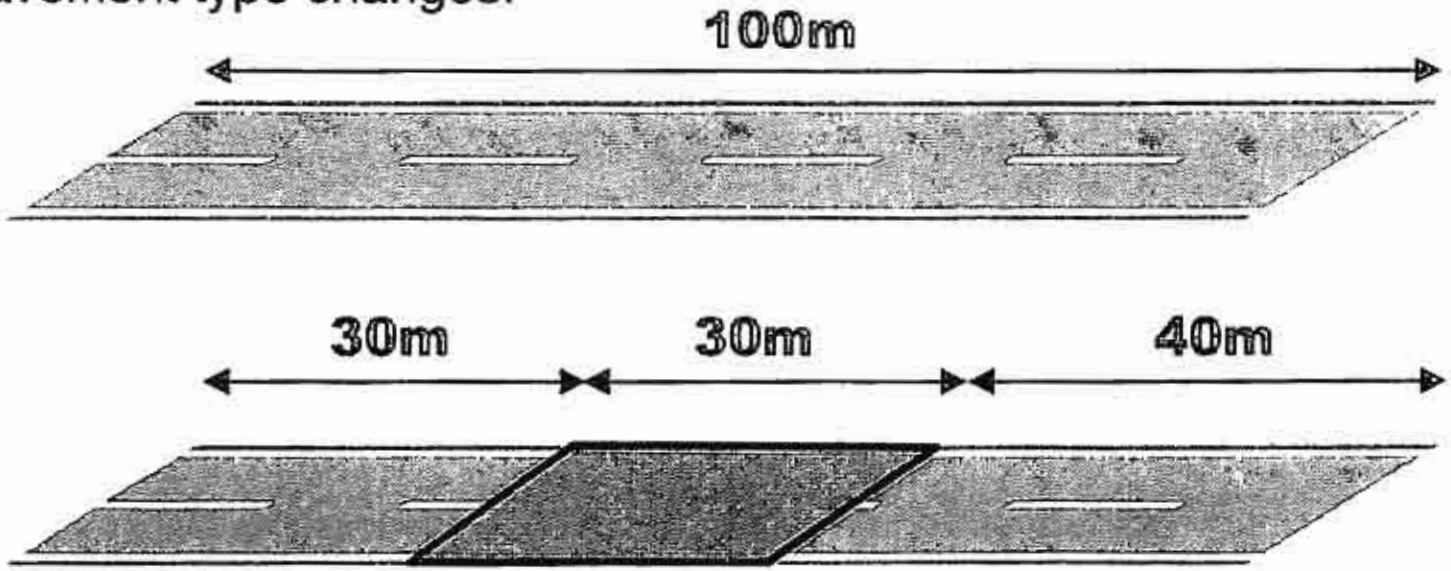
Definition of Data item

- Road attributes
  - Route Number / Branch Number / Route Name
    - Definition of the routes
      - Branch Number : When multi-route in the same route number

Route Number	Branch Number	Route Name	Route Number	Branch Number	Route Name
1	0	QL.1	18	0	QL.18
2	0	QL.2	37	0	QL.37
3	0	QL.3	38	0	QL.38
3	1	QL.3B	43	0	QL.43
4	0	QL.4E	70	0	QL.70
5	0	QL.5	279	0	QL.279
6	0	QL.6	?	0	HCM
10	0	QL.10	?	0	NBBN
15	0	QL.15	1	1	PVCG

Definition of Data item

- Road attributes
  - Kilo-meter Post / From(km,m) and To(km,m) / Section length(m)
- Evaluation unit length
  - 100m as general
  - Section is divided at the location with a bridge and Tunnel or where pavement type changes.



Bridge and Tunnel or different pavement type

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Definition of Data item

- Road attributes
  - Structure
    - With or without of structure within each section

CODE	Structure
B	Bridge
T	Tunnel
R	Rock Shed
C	Railway Crossing
I	Intersection
RB	Roundabout
V	Viaduct

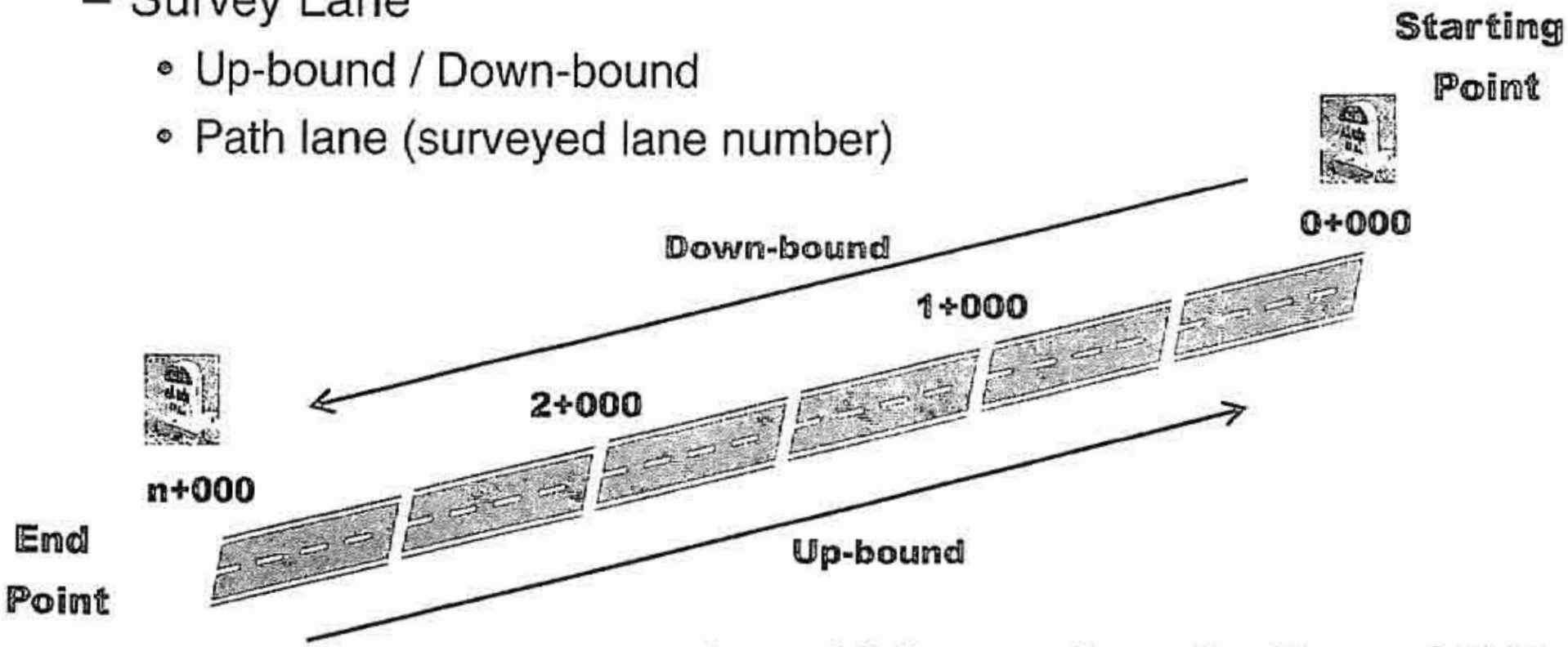
  - Intersection : at which main road (with traffic light or roundabout)

Definition of Data item

- Road attributes
  - Number of Lane
    - With a lane mark
      - Confirm the number of lane by visual check
    - Without a lane mark
      - Assume the number of lane(average width of one lane is 3.5m)

Definition of Data item

- Road attributes
  - Survey Lane
    - Up-bound / Down-bound
    - Path lane (surveyed lane number)



Direction which goes to a starting point is defined as Up-bound

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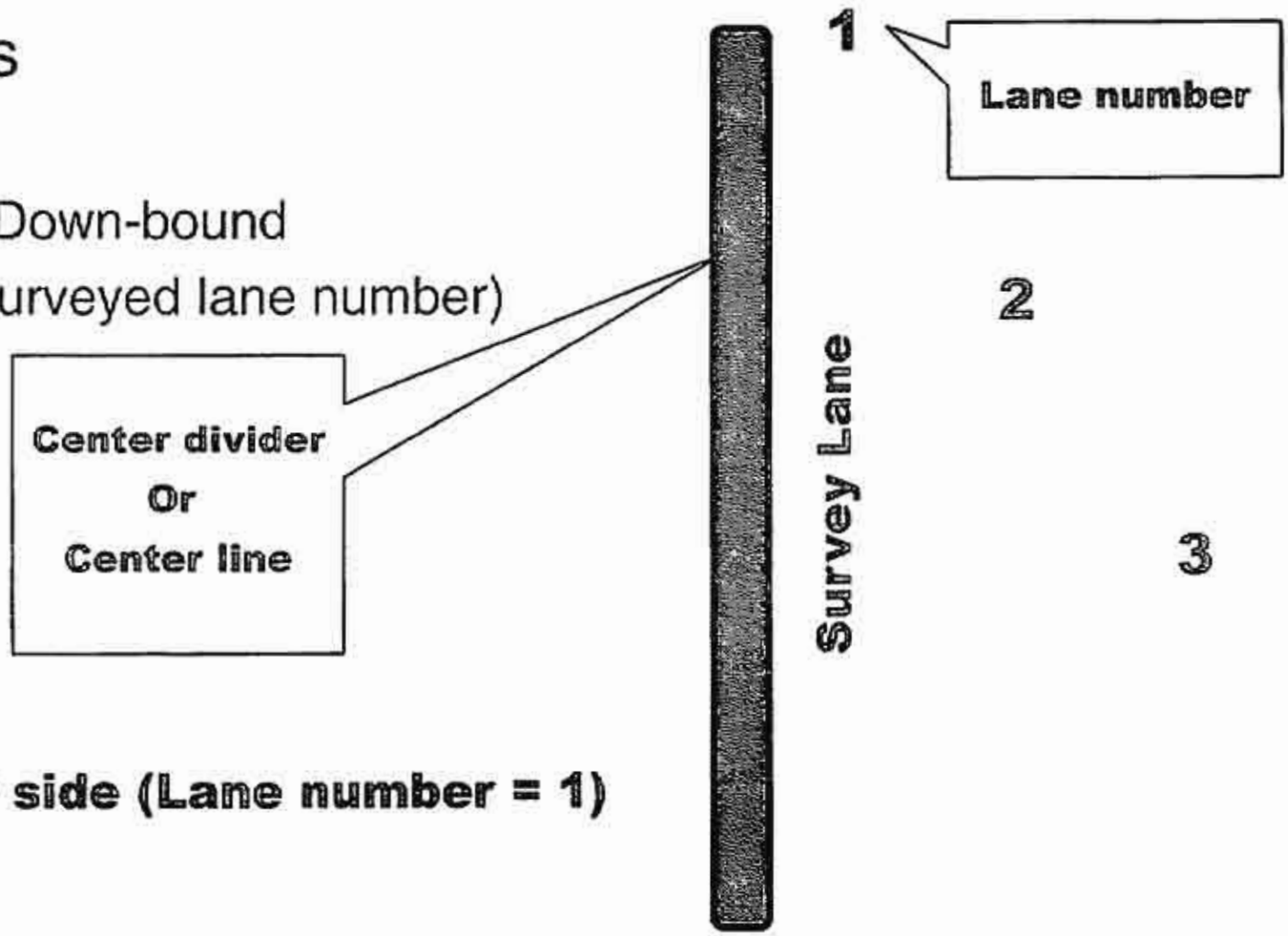
Definition of Data item

- Road attributes
  - Survey Lane
    - Up-bound / Down-bound
    - Path lane (surveyed lane number)



The lane of center side (Lane number = 1) is surveyed

Definition of Data item

- Road attributes
  - Surface Type
    - Confirmation of surface type by visual check
      - Asphalt Concrete
      - Cement Concrete
      - Un-paved

Data items measured by Pavement Condition Survey

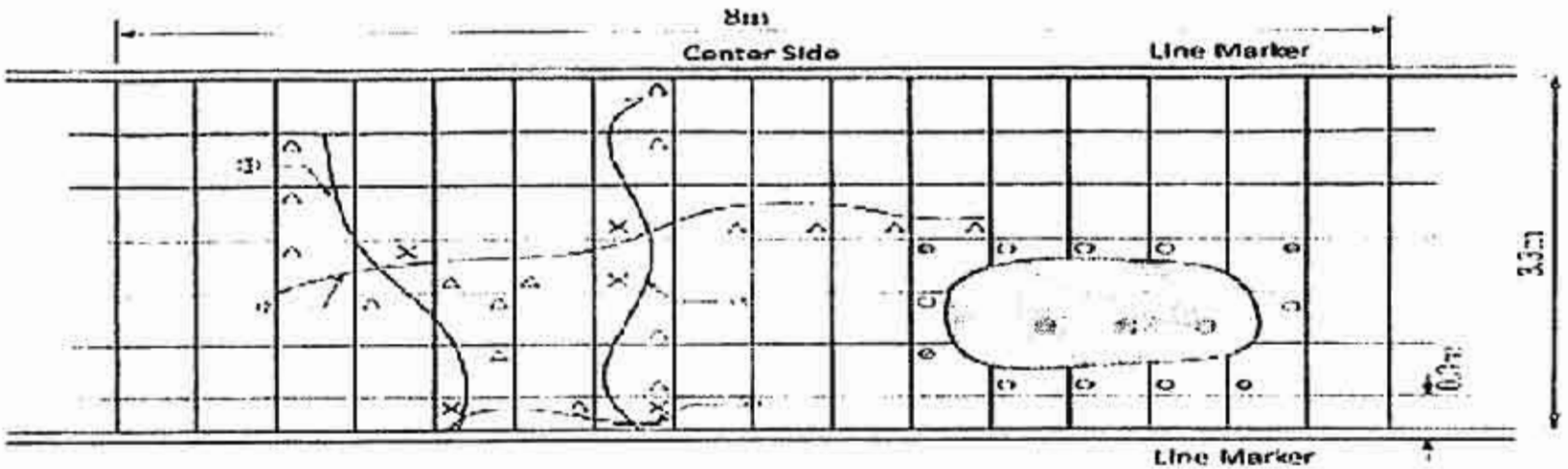
- Pavement conditions (Surface conditions)
  - Cracking ratio / Cracking length
  - Rutting Depth
  - IRI
  - Road images with GPS data

Definition of Data item

- Pavement conditions (Surface conditions)
  - Cracking
    - A road section is divided by grid and existence of a crack is checked by visual.
      - Two or more cracks (including Pothole)
      - One crack
      - Patch area

Definition of Data item

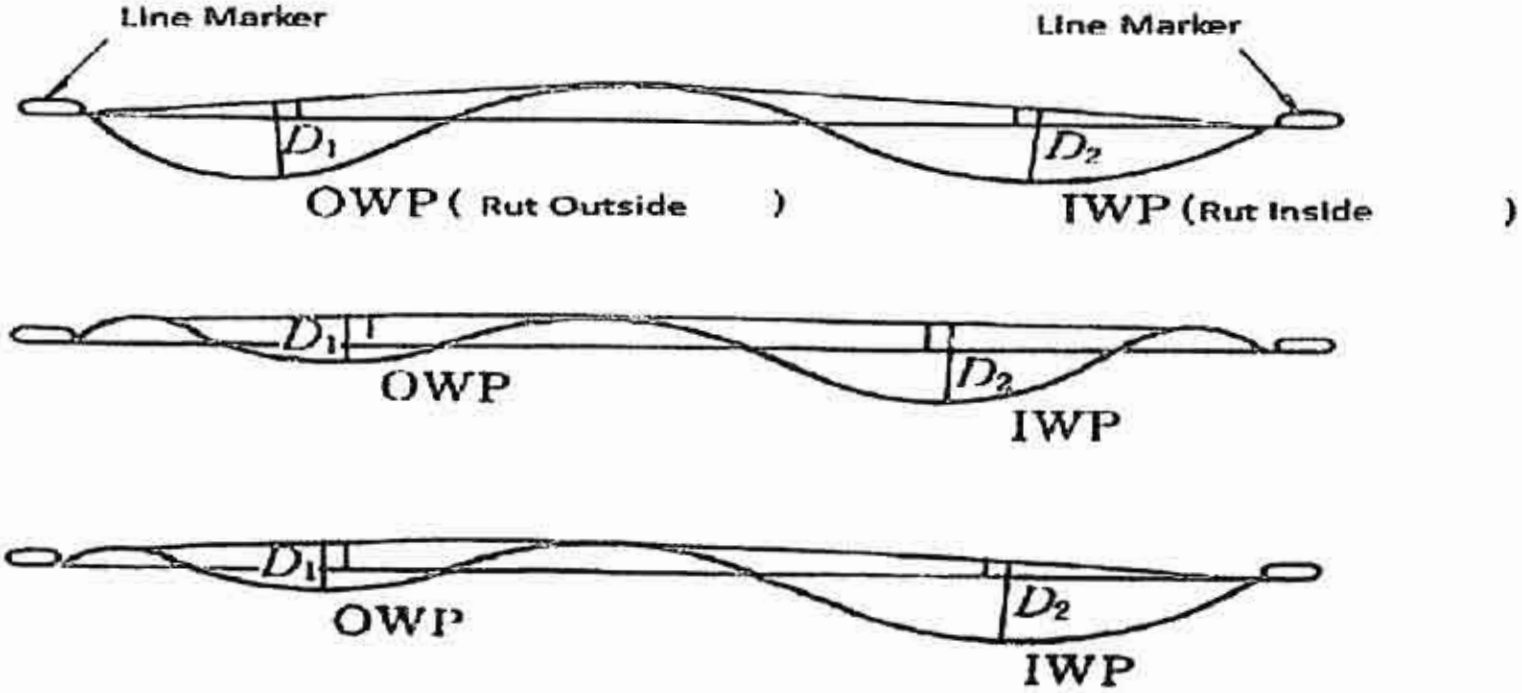
Example of survey section is 8 x 3.3m



Asphalt Pavement		
Crack area		
Two or more cracks	0.25m² x 3 grids = 0.75 m²	
	0.15m² x 2 grids = 0.30 m²	
One crack	0.15m² x 16 grids = 2.40m²	
	0.09m² x 1 grid = 0.09m²	
Patch area		
	0% - 25%	0m² x 4 grids = 0m²
	25% - 75 %	0.125m² x 8 grids = 1.00m²
	75 % or more	0.25m² x 3 grids = 0.75m²
Crack ratio = 5.29/26.4 x 100 = 20.0%		

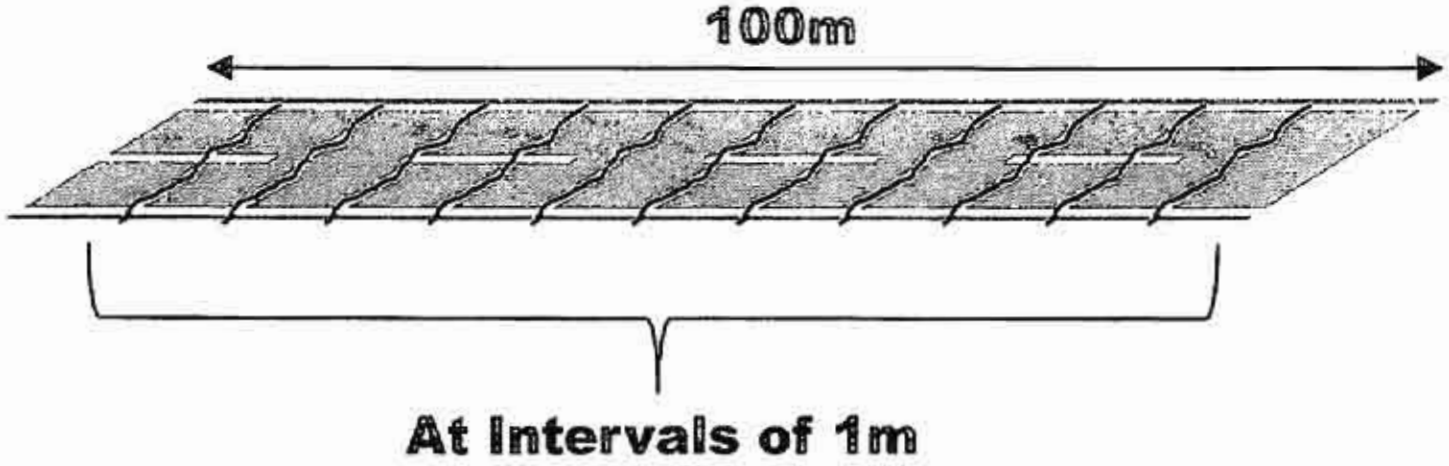
Definition of Data item

- Pavement conditions (Surface conditions)
  - Rutting Depth
    - When the convex in the middle of the lane is higher than the convex of both the shoulder and the center side lines, the values of the rut depth will be measured as D1 and D2 in millimeter



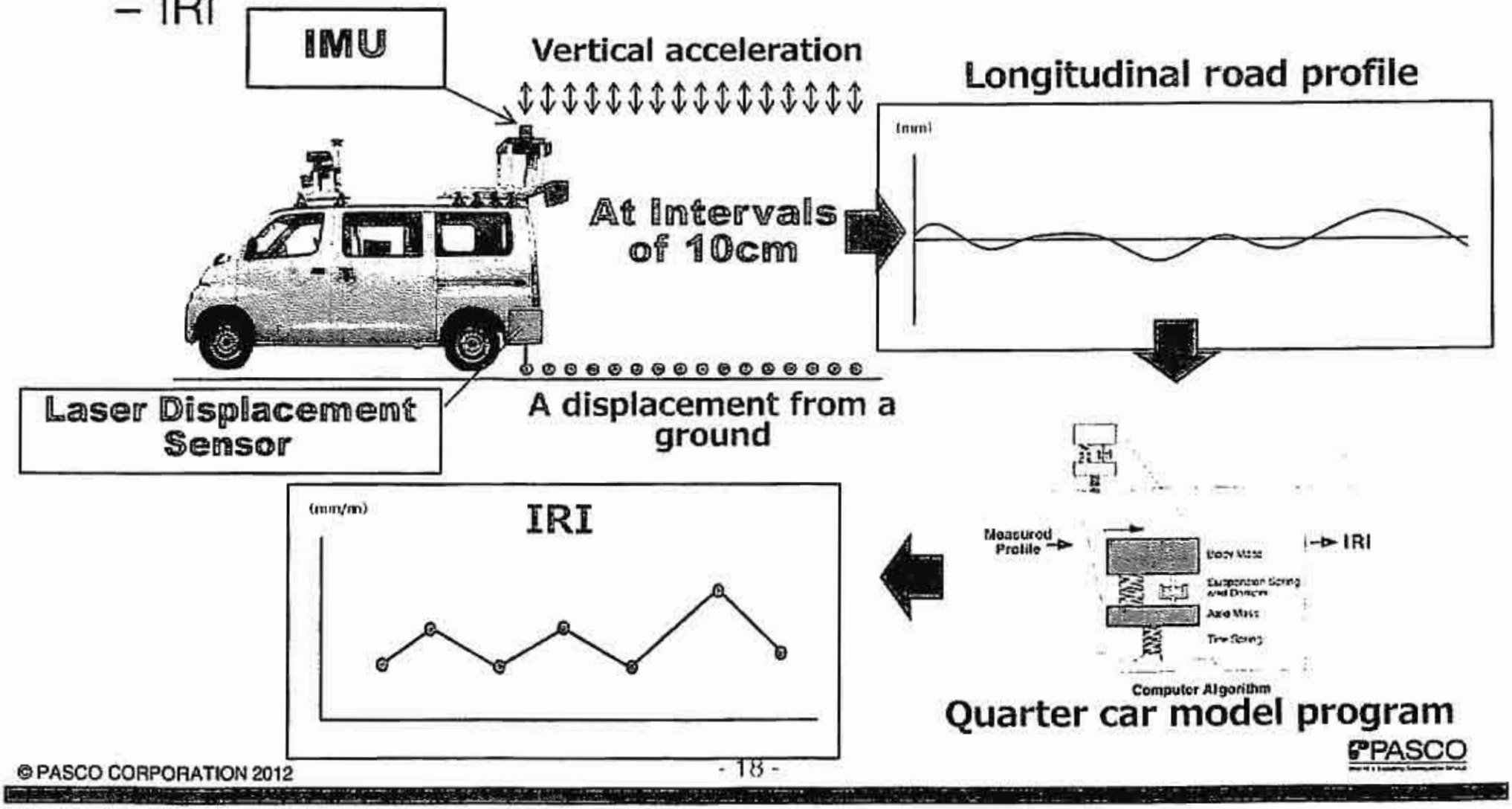
Definition of Data item

- Pavement conditions (Surface conditions)
  - Rutting Depth
    - Max Value
      - Maximum value of rutting volume within unit section
    - Average Value
      - Average value of rutting volume for all value within unit section



Definition of Data item

- Pavement conditions (Surface conditions)
  - IRI



Definition of Data item

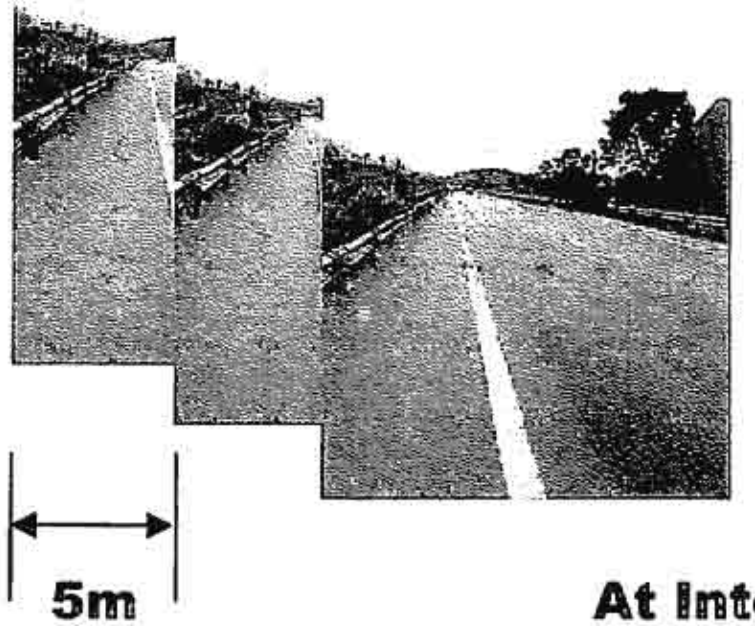
- Pavement conditions (Surface conditions)
  - IRI

Table 3 Surface Roughness Measuring Methods and IRI calculation Methods

Class	Surface Roughness Measuring Method	IRI Calculation Method
1	Rod and level survey	Measure the longitudinal profile with less than 250 mm interval by using rod and level survey. IRI is calculated by QC simulation.
2	Arbitral longitudinal profile survey devices	Measure the longitudinal profile by the arbitral longitudinal profile survey device . IRI is calculated by QC simulation.
3	RTRRMS (Response type road roughness meters)	Measure an arbitrary roughness index by RTRRMS. It changes into IRI using correlation equations.
4	Rating by surveyors' physical feeling and eye sight	IRI is obtained by surveyors' physical feeling and eye sight while in the vehicle.

Definition of Data item

- Pavement conditions (Surface conditions)
  - Road image with GPS data



At Intervals of 5m

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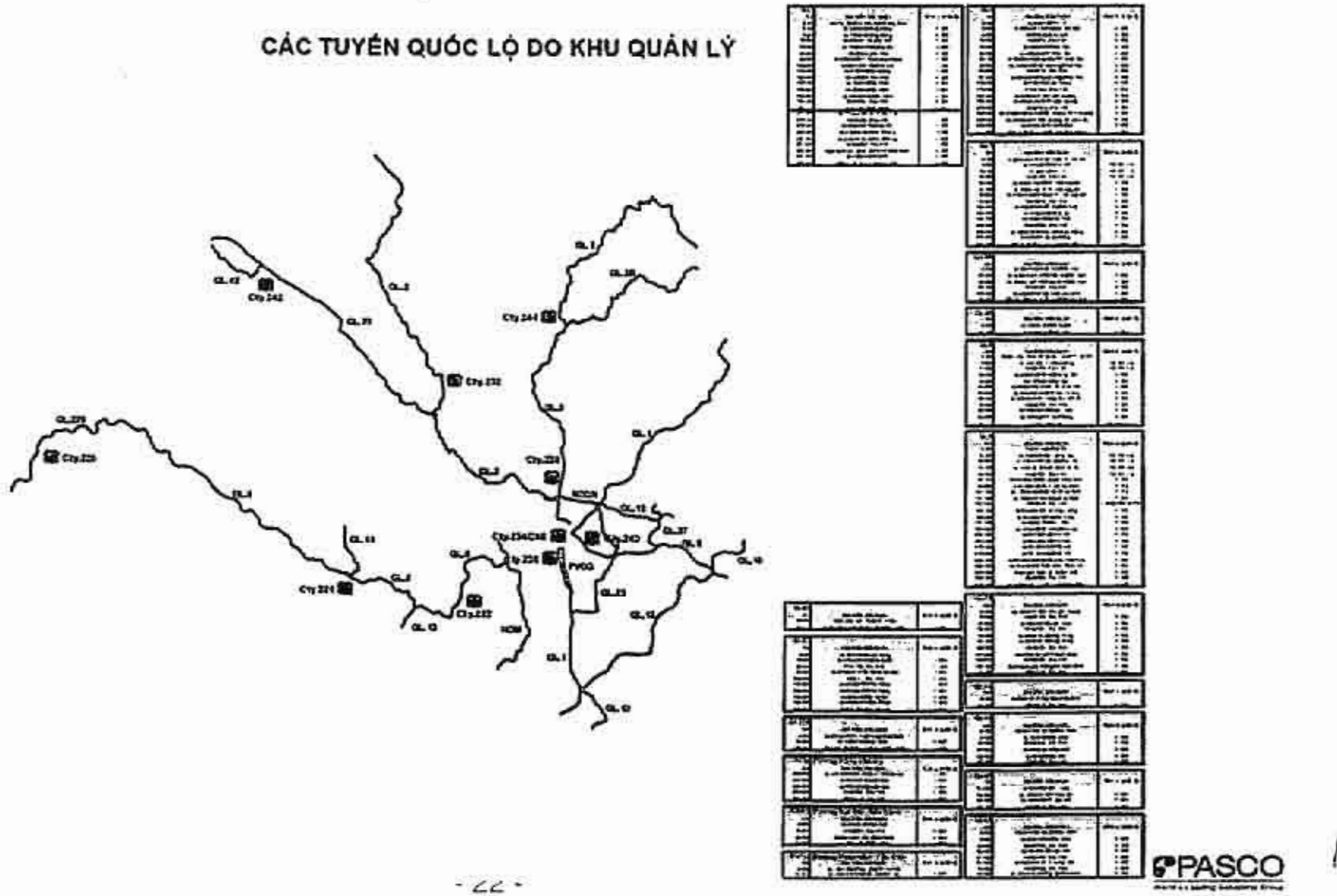
2. Pavement Condition Survey Routes

Confirmation of Target routes

- http://kqldb2.gov.vn/Upload/File-2.pdf



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3. Collaboration Work Schedule and Members

Collaboration Work Schedule and Members

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Descriptions
Field Reconnaissance											Two(2) persons 2 months **From RRMU2**
Pavement Condition Data Collection											One(1)person 5 months
Data Extraction and Analysis											Eight(8)persons 5 months

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DANH SÁCH ĐẠI BIỂU THAM DỰ CUỘC HỌP

Hà Nội, ngày 27 tháng 3 năm 2012

- **Chủ trì:** Ông Nguyễn Đức Cường
- **Nội dung:** báo cáo chủ đầu tư thuật = khảo sát
P.A.S.C.O báo cáo

STT	Họ và tên	Chức vụ	Ký nhận
1	Nguyễn Đức Cường	PVT - Vụ QLGT - (DHH) - PRSM.	
2	Phan Thị Thanh Nguyên	Vụ KHCN-MT-HTQT-DHH	
3	Thiều Đức Long	PVT - Vụ KHCN-MT-HTQT-PRSM	
4	Đặng Công Chiến	GĐ Trung Tâm Thông Tin	
5	Chu Văn Cường	PP QLGT - Viện QLGTBT	
6	Từ Minh Phương	CV P. QLGT - —	
7	Khoa	~~TVT - Vụ KCHT - ATGT~~	
8	Dr Bhoj Raj Pantha	Road Safety Engineering Technician	
9	Mr. Yasushi Aoki	- do -	
10	Higashi Hori	"	
11	Lê Văn Thiều	Tổng Hợp	
12	Yoshiyasu Tajima	PASCO	
13	Kazuya Aoki	"	
14	Yutaka Kokubu	"	
15	Kazuki Sawa	"	
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DANH SÁCH ĐẠI BIỂU THAM DỰ CUỘC HỌP

Hà Nội, ngày 27 tháng 3 năm 2012

- **Chủ trì:** ..... Ông Nguyễn Đức Chàng .....
- **Nội dung:** ..... báo cáo thẩm định kết quả lựa chọn nhà sản .....
..... PAS CD báo cáo .....
.....
.....

STT	Họ và tên	Chức vụ	Ký nhận
1	Nguyễn Khánh Toàn	CV Vụ TCHT	
2	Quách Văn Khuê	Vụ Trưởng Vụ TCHT	
3	Hoàng Việt Hà	Ban QLDA HTKT	
4	Đỗ Thu Thủy	CV - Vụ KHĐT	
5	Nguyễn Thu Hoài Hà	CV - Vụ KHĐT	
6	Trịnh Xuân Sinh	CV - Vụ KHĐT	
7	Lưu Quang Tuấn	CV TTTH&DB	
8	Đinh Duy Tiến	CV - TTTSTĐB	
9	Nguyễn Văn Thắng	CV - TT KT-ĐB	
10	Nguyễn Việt Phương	PGĐ - TT KT-ĐB	
11	Nguyễn Đức Thảo	Tica	
12	Nguyễn Thị Diệu Linh	Pasco	
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Meeting Record No. 6

April 3, 2012

Meeting on Confirmation of Survey Routes

Meeting Room: RRMU2

SURVEY ROUTE

1/- National Highway 1: Starting point from Huu Nghi Quan Border gate Km0 (in Lang Son province) going through Bac Giang, Bac Ninh to Ha Noi (intersection of National Highway no.5) then pass Thanh Tri Bridge to Phap Van. From Phap Van to Cau Gie (go through a new highway Phap Van-Cau Gie) go to the ending point Doc Xay Km285+400 (in Ninh Binh Province) before a tunnel, the administrative boundary of RRMU2 and RRMU IV which is a border line of two province Ninh Binh and Thanh Hoa;

From Phap Van, there is one additional road must be surveyed, that is a southern ringroad no.3 to Cau Dau.

2/- National Highway 2: Starting point from Km30+600 (roundabout in Vinh Yen city) then pass provinces of Vinh Phuc, Phu Tho, Tuyen Quang, Ha Giang to the ending point at Thanh Thuy border gate Km312+500 (border line of Vietnam and China).

3/-National Highway 3: Starting point from border line of Hanoi and Thai Nguyen Km33+300 (at the beginning of Da Phuc Bridge), then pass Bac Kan province, Cao Bang province to the ending point at Ta Lung border gate km344+436 (in the middle of Thuy Khau bridge).

There is an additional surveyed old road branch from Km333+524 - Km334+817: with the length of 1,2.93km in Phuc Hoa town.

4/-National Highway 3B: Starting from Bac Kan province at Xuat Hoa T-junction km0, then pass Lang Son province to the ending point at border gate of Vietnam and China named Canh Va (or Po Ma) km129.

Please note that this road is under construction of Rehabilitation Project which has an aggregate road from Km66+600-Km105 that make it very difficult to pass through. That is why this national highway 3B should not be surveyed.

5/-National Highway 4E: in Lao Cai province starting point from the T-junction Bac Ngam Km0/Km159 of national road no. 70 to the ending point at Km44+200 (the center of Lao Cai city) in which there is a road section from Km0-Km34+600: the road is in bad condition.

6/-National High way 5: Starting point from Km11+135 (at borderline of Hanoi and Hung Yen province) passing Hung Yen province, Hai Duong province and Hai Phong city to km 92+460 Quan Toan in Hai Phong city

7/-National Highway 6: Starting point from km38 (borderline of Hanoi and Hoa Binh province) passing through provinces of Hòa Bình, Sơn La, Điện Biên to the ending point at Tuan Giao T-junction Km383+207/Km0 of National Highway 279 (in Tuan Giao town).

There are some additional surveyed bypass:

- The old bypass road goes through the center of Hoa Binh city from Km70+800-Km78+300 (7,5km);
- The old bypass road in Sơn La mountain from Km323+800-Km328 (4,2km);
- The old bypass road in Pha Din mountain from Km384+700-Km398+500 (the old station is 13.610km).

8/- National Highway 10: Starting point from Km0/Km77 National Highway 18 (T-junction of the old Bí Chợ in Quang Ninh province, before Uong Bi town), passing Quảng Ninh province, Hai Phong city and provinces of Hai Duong, Thai Binh, Nam Dinh, Ninh Binh to the ending point at Km173+250 Đien Ho (borderline between Ninh Binh and Thanh Hoa.).

There is an additional surveyed road branch connecting National Highway 1 with Ninh Phuc port (6,4.14km).

9/- National Highway 15: in Hoa Binh province, starting point at km0 Tòong Đậu T-junction (cutting with Km131/National Highway 6) to the ending point Km20 (border line of Hoa Binh province and Thanh Hoa province).

10/-National 18: Starting point from Km0 (intersection with the old National Highway 1) in Bac Ninh city , then pass Bac Ninh , Hai Duong to the ending point at Km46+300 (border line of Hai dương province and Quang Ninh province).

11/- National Highway 37: located in Hai Duong province starting point from km61 (intersection with km58+400 of national highway 5 near Tien Trung station to the ending point at km 98+180 which is the border line between Hai Duong province and Bac Giang province.

12/- National Highway 38: Starting point from km0 in Bac Ninh city (intersection with the old national highway 1) then passing Bac Ninh, Hai Dương, Hung Yen (to km52 at Truong Xa T-junction, then no survey about 16km road of national highway 39 to Chợ Gạo intersection (km67+445), continue to survey from Cho Gao intersection to the beginning of Yen Lenh bridge toll station(Km69+762), then no survey the Yen Lenh bridge (because the bridge managed by BOT Yen Lenh company), then go to the ending point at Dong Van T-junction km85+505 which is an intersection with national highway 1.

13/-National Highway 43: in Son La province starting point from km26 (at the beginning of Vạn Yên ferry station) to the ending point Km79+715 (intersection with a new national highway 6).

14/- National Highway 70: Starting point from Phu Tho province km0 of T-junction Đoan Hung with km 109 of national highway 2, then passing Phu Tho, Yen Bai, Lao Cai provinces until the ending point at km 198+050 in the middle of Ho Kieu 2 bridge (borderline of Vietnam and China).

15/- National Highway 279: in area of Dien Bien province starting from Km0 (Tuan Giao T-junction) to the ending point at km116 of Tay Trang border gate (borderline between Vietnam and Lao).

16/- Route Noi Bai- Bac Ninh: starting point from Km-1-593 (intersection with national highway 2) pass Ha Noi and Bac Ninh province to the ending point at Km31+120 (intersection with the new national highway 1).

17/-Ho Chi Minh Route: starting from Km409 (Hoa Lac T-junction in Ha Noi) then passing Hoa Binh province to the ending point at Km503 (border line of Hoa Binh province and Thanh Hoa province).

18/- Phap Van-Cau Gie Route: starting point from Km181+570 to the ending point at Km213+608.

19/- National Highway 38B: starting point from Gia Loc intersection (Km9+900 of provincial road no.399 cutting with National Highway 37) then passing provinces named Hai Duong, Hung Yen, Ha Nam, Ninh Binh to the ending point at Anh Troi T-junction (Km20+800 of provincial road no.478 cutting with National Highway 12B, in Bai Dinh pagoda area): total length of 120km: this new road is established by provincial roads and district roads to become a highway in accordance with the Decision 1425/QĐ-BGTVT dated 30/6/2011 of the Ministry of Transport and Decision no. 1451/QĐ-TCĐBVN dated 08/9/2011 of DRVN.

Current status: Road section from Gia Loc intersection to Cho Gao intersection in Hai Duong province and Hung Yen province: 38 km can be surveyed thanks to the project has finished construction; Then, road section from Cho Gao pass Yen Lenh bridge: this is National Highway 38; after Yen Lenh bridge (Km74+890/National Highway 38) go into the bypass road (no survey due to no road here) then go along a provincial road no.492 – district road no.03 – provincial road no.492 – provincial road no.487 – National Highway 10 – provincial road no.486 – provincial road no.485 – National Highway 10 – Luong Van Thang road – National Highway 1 – Provincial road no.478. At present, there is no station along National Highway 38B due to RRMU2 is instructing two companies to make road registering file. *It is recommended that in order to survey this road RRMU2 must hurry up the progress of road registering to finish making stations in April 2012.*

Confirmed and signed on 3rd April 2012 by Mr. Chu Van Luong

Vice Director of Transport Management Division

RRMU2- DRVN

CÁC TUYẾN ĐƯỜNG KHẢO SÁT

1/- Quốc lộ 1: Điểm đầu từ cửa khẩu Hữu Nghị Quan Km0 (tỉnh Lạng Sơn) qua tỉnh Bắc Giang, Bắc Ninh đến TP Hà Nội (nút giao QL5) đi tiếp qua cầu Thanh Trì đến Pháp Vân. Từ Pháp Vân đi Cầu Giẽ (trùng đường khai thác tốc độ cao Pháp Vân-Cầu Giẽ) đi xuống đến điểm cuối Dốc Xây Km285+400 (tỉnh Ninh Bình) trước hầm, ranh giới Khu II và Khu IV trùng ranh giới của hai tỉnh Ninh Bình và Thanh Hóa;

Từ Pháp Vân có khảo sát một nhánh là đoạn đường Nam vành đai 3 đến Cầu Dậu.

2/- Quốc lộ 2: Điểm đầu từ Km30+600 (nút giao trong thành phố Vĩnh Yên) qua các tỉnh Vĩnh Phúc, Phú Thọ, Tuyên Quang, Hà Giang đến điểm cuối cửa khẩu Thanh Thủy Km312+500 (biên giới Việt Trung).

3/-Quốc lộ 3: Điểm đầu từ ranh giới TP Hà Nội và tỉnh Thái Nguyên Km33+300 (đầu cầu Đa Phúc) qua các tỉnh Bắc Kạn, Cao Bằng đến điểm cuối cửa khẩu Tà Lùng Km344+436 (giữa cầu Thủy Khẩu).

Trong đó có khảo sát 1 nhánh đường cũ thị trấn Phục Hòa từ Km333+524 - Km334+817: (1.293km).

4/-Quốc lộ 3B: Điểm đầu từ ngã ba Xuất Hóa Km0 (tỉnh Bắc Kạn) qua tỉnh Lạng Sơn đến điểm cuối cửa khẩu Canh Va (hoặc Pò Mạ) Km129 (biên giới Việt Trung). *Lưu ý đoạn này dự án cải tạo nâng cấp đang thi công, có đoạn đường đất cấp phối từ Km66+600-Km105 rất khó đi, không nên khảo sát.*

5/-Quốc lộ 4E: Đi trong địa phận tỉnh Lào Cai từ điểm đầu ngã ba Bắc Ngầm Km0/Km159 QL70 đến điểm cuối Km44+200 (trung tâm thành phố Lào Cai), trong đó đoạn từ Km0-Km34+600 đường xấu.

6/-Quốc lộ 5: Điểm đầu từ Km11+135 (ranh giới TP Hà Nội và tỉnh Hưng Yên) qua các tỉnh Hưng Yên, Hải Dương và TP Hải Phòng đến điểm cuối Km 92+460 (Quán Toan- TP Hải Phòng).

7/-Quốc lộ 6: Điểm đầu từ Km38 (ranh giới TP Hà Nội và tỉnh Hòa Bình) qua các tỉnh Hòa Bình, Sơn La, Điện Biên đến điểm cuối ngã ba Tuần Giáo Km383+207/Km0 QL279 (Thị trấn Tuần Giáo).

Trong đó có khảo sát các nhánh:

- Nhánh đường cũ đi qua trung tâm thành phố Hòa Bình từ Km70+800-Km78+300 (7.5km);

- Nhánh đường cũ đèo Sơn La từ Km323+800-Km328 (4.2km);
- Nhánh đường cũ đèo Pha Đin từ Km384+700-Km398+500 (lý trình cũ 13.610km).

8/- Quốc lộ 10: Điểm đầu từ Km0/Km77 QL18 (ngã ba Bí Chợ cũ thuộc tỉnh Quảng Ninh, trước thị xã Uông Bí), qua tỉnh Quảng Ninh, thành phố Hải Phòng và các tỉnh Hải Dương, Thái Bình, Nam Định, Ninh Bình đến điểm cuối Km173+250 Điền Hộ (ranh giới tỉnh Ninh Bình và tỉnh Thanh Hóa).

Trong đó có khảo sát 1 nhánh đường nối QL1 (Km268+800/QL1 sau cầu Vũng Trầm) với cảng Ninh Phúc (6.414km).

9/- Quốc lộ 15: Đi trong địa phận tỉnh Hòa Bình, điểm đầu từ Km0 ngã ba Tòong Đậu (giao nhau với Km131/QL6) đến điểm cuối Km20 (ranh giới tỉnh Hòa Bình và tỉnh Thanh Hóa).

10/-Quốc lộ 18: Điểm đầu từ Km0 (giao nhau với QL1 cũ) tại thành phố Bắc Ninh qua các tỉnh Bắc Ninh, Hải Dương đến điểm cuối Km46+300 (ranh giới tỉnh Hải dương và tỉnh Quảng Ninh).

11/- Quốc lộ 37: Đi trong địa phận tỉnh Hải Dương, điểm đầu từ Km61 (giao nhau với QL5 gần ga Tiền Trung) đến điểm cuối Km95+180 (ranh giới tỉnh Hải Dương và tỉnh Bắc Giang).

12/- Quốc lộ 38: Điểm đầu từ Km0 (giao nhau với QL1 cũ) tại thành phố Bắc Ninh, qua tỉnh Bắc Ninh, Hải Dương, Hưng Yên (đến Km52 ngã ba Trương Xá sau đó không khảo sát 16km do đi trùng với QL39 đến ngã tư Chợ Gạo (Km67+445), khảo sát tiếp từ ngã tư Chợ Gạo tiếp đến đầu Trạm thu phí cầu Yên Lệnh (Km69+762) sau đó không khảo sát cầu (thuộc Công ty BOT Yên Lệnh quản lý), đến điểm cuối là ngã ba Đồng Văn (giao nhau với QL1) Km85+005.

13/-Quốc lộ 43: Đi trong địa phận tỉnh Sơn La, điểm đầu từ Km26 (đầu bến phà Vạn Yên) đến điểm cuối Km79+715 (giao nhau với QL6 mới).

14/- Quốc lộ 70: Điểm đầu Km0 từ ngã ba Đoan Hùng tỉnh Phú Thọ (giao nhau với Km109/QL2) qua các tỉnh Phú Thọ, Yên Bái, Lào Cai đến điểm cuối là Km198+050 (giữa cầu Hồ Kiều 2 – biên giới Việt Trung).

15/- Quốc lộ 279: Đi trong địa phận tỉnh Điện Biên, điểm đầu từ Km0 (ngã ba Tuần Giáo) đến điểm cuối Km116 cửa khẩu Tây Trang (biên giới Việt Lào).

16/- Đường Nội Bài- Bắc Ninh: điểm đầu từ Km-1-593 (giao nhau với QL2) qua địa bàn TP Hà Nội và tỉnh Bắc Ninh, đến điểm cuối là Km31+120 (giao nhau với QL1 mới).

17/-Đường Hồ Chí Minh: Điểm đầu từ Km409 (ngã ba Hòa Lạc thành phố Hà Nội) qua tỉnh Hòa Bình đến điểm cuối là Km503 (ranh giới tỉnh Hòa Bình và Thanh Hóa).

18/- Đường Pháp Vân Cầu Giẽ: điểm đầu từ Km181+570 đến điểm cuối Km213+608.

19/- Đường Quốc lộ 38B: điểm đầu từ ngã tư Gia Lộc (Km9+900 ĐT.399 giao nhau với QL37) qua các tỉnh Hải Dương, Hưng Yên, Hà Nam, Ninh Bình đến điểm cuối ngã ba Anh Trỗi (Km20+800 ĐT.478 giao nhau với QL12B, khu vực Chùa Bái Đính): tổng số khoảng 120km: Đường mới được chuyển từ các đường tỉnh (ĐT), đường huyện (ĐH) thành QL theo Quyết định số 1425/QĐ-BGTVT ngày 30/6/2011 của Bộ GTVT và Quyết định số 1451/QĐ-TCĐBVN ngày 08/9/2011 của Tổng cục ĐBVN.

Hiện trạng: Đoạn từ ngã tư Gia Lộc đến ngã tư Chợ Gạo trên địa bàn tỉnh Hải Dương và Hưng Yên: 38.0km Dự án đã thi công xong, có thể khảo sát được; Tiếp từ Chợ Gạo qua cầu Yên Lệnh đi trùng QL38; từ sau cầu Yên Lệnh (Km74+890/QL38) đi theo tuyến tránh (chưa có đường) đi tiếp theo ĐT.492 - ĐH.03 – ĐT.492 - ĐT.487 - trùng QL10 - ĐT.486 - ĐT.485 - trùng QL10 – Đường Lương Văn Thăng – trùng QL1 – ĐT.478. Hiện tại chưa có lý trình theo Quốc lộ 38B do Khu đang chỉ đạo các Công ty 240, 248 lập hồ sơ đăng ký đường. *Kiến nghị để khảo sát tuyến này Khu II đẩy nhanh tiến độ đăng ký đường xong trong tháng 4/2012 .*

03/4/2012

Chu V Lưu

P.P. QLGT Khu II

Meeting Record No. 7

April 5, 2012

Meeting on Issues of Road Database

Meeting Room: DRVN

MINUTES OF MEETING

Activity No.	Activity 1 (Enhancement of Road Information Management)
Objectives:	To discuss on contemporary issues of road database
Date & Time:	5th April, 2012, 14:00PM to 16:30PM
Place:	DRVN Meeting Room (6th Floor)
Participants:	• DRVN: - Mr. Dong (Vice-Minister of MOT, PMU member, Member of WG-1 and WG-2) • JICA Project Team: - Mr. Aoki, Mr. Matsuda, Mr. Pantha, Ms. Trang and Ms. Quynh Anh • Pavement Condition Survey Team (PASCO Team): - Mr. Kokofu, Mr. Soma, and Ms. Linh
Handout Material:	PPT Handouts (Road Database)

I. Presentation of Mr. Pantha on Road Database

Mr. Pantha presented about road database structure, proposed database items, data required for Pavement Management System (PMS) and Pavement Monitoring System (PMoS) by using powerpoint slides. Mr Pantha also presented progress of Activity 1 so far and step-by-step work activity and responsibility of each side. Mr. Pantha also informed about issues related to minor repair work - patching (isolated repair work) in term of data gathering & inputting.

II. Discussion and Conclusions

Rightafter Mr. Pantha's presentation, discussion was started with the contents and conclusion as follows:

1. About road database structure:

- Mr.Dong confirmed that road database is one sub-component of Road Infrastructure Management Component that has been mentioned in the"Project on Transportation Information System for the Road Sector".
- About data items in Road Inventory Data: it is not so challenging for specifying the proper data items for agreement *(can be 50, 30 or others)*.
- However, the question to JICA Project Team is how should we start after making agreement for data items of Road Inventory. From Mr.Dong's opinion, <u>data</u>

collection for Road Inventory (1) should be started first, and Pavement condition survey/collection(2) should be be conducted later.It is also necessary to clarify responsibility of each side in data collection. If (2) will be conducted before (1), how to make PMS dataset and Road Inventory/Road database become compatible/reconciling because it seems be obvious of ir-reconciling/different station/chainage of one location in two datasets that may lead to the situation of ir-reconciling/inconsistentdata: PMS dataset& Inventory data (how sub-system likes PMS dataset can refer to the overall system like Road database ?). Remember that momently, there is no road database that can be regarded as the referred system for other new systems like PMS dataset and PMoS dataset in DRVN. The problem will be more critical in case JICA Project Team tries to use previous data (the lastest time-series data was collected in 2006 & 2007 for HDM-4 PMS and in 1999 & 2000 for RoSyBASE Road Inventory): since the last collection, there have been many changes of road inventory including the complicated change of road alignment that may lead to big difficulty of location referencing *(or road station/chainage, NH.6 is the typical case of large re-alignment due to comprehensive & large scale improvement including many new by-pass sections)*. If we do not update Road Inventory data, how to match PMS dataset and Road Inventory data/Road database ?

- *Conclusion:*

  - *Again, Mr. Dong strongly emphasized that Road Inventory updating must be the first priority. When updated Road Inventory will be available, other activities like Pavement Survey can be initiated.*
  - *Road database structure should be soon agreed.*
  - *Road Inventory updating should be soon studied (Mr. Pantha also did confirm).*
  - *There are some road inventory data items will be collected by Pavement Survey Team.*
  - *Besides formulating data systems (road information system, pavement information system), JICA Teams are requested to develop the operational manual & regulation of these information systems. The specification manual & regulation should include method of system operation, updating method/regulation & required frequencies of updating and method of data management/checking & verifying. (Mr.Pantha confirmed that it will be developed in this Project).*

2. About previous data:

- Based on requests of JICA Project Team, previous available data in DRVN had been provided to JICA Project Team (Ex. RoSyBase data, HDM-4 data, etc). The JICA Project Team is requested to soon comment properly & consistently, to

make right conclusion about such data (keep trying to ultilize previous data, stop analyzing/using previous data, etc).

- According to the presentation, you have checked previous data and there exist unhomogeneous, imcompatible& unconsistent situation with such data. Under such situation, JICA Project Team will keep checking the data or there is any solution & conclusion.

  - About such concern, Mr. Pantha confirmed that not all data in RoSyBASE database are unhomogeneous, imcompatible & unconsistent (only few data in few sections due to inputting error, not system error; the amount of inavailable data is about 5%). And it can be rectified by checking raw data.

  - Mr.Dong raised the question that in case of there is no raw data, what should be done ?

  - Mr. Pantha said that under the situation of no available raw data, it is out of his responsibility to specify the solution. In such case, WG-2 will discuss about the situation of missing raw data, the effects to prediction model then make conclusion. However, Mr.Pantha also mentioned about one solution based on his experience with HDM-4: if there is no data for some sections, default value can be used.

- *Conclusion:*

  - *Quickly reviewing previous data should be completed soon and JICA Project Teamis requested to comment properly & consistently, to make right conclusion about such data (keep trying to ultilize previous data, stop analyzing/using previous data, which items can be used/which items can not be used/which ones need being updated and how/who to update? etc).*

  - *Do not try much to find raw data of pavement condition because of high inavailability, poorly compartible and low reliable.*

  - *Any information/data formulated must be reliable.*

3. About gathering & collection of data for road inventory:

- Mr. Aoki confirmed that: JICA Project Team do not have allocated budget for data collection *(in this JICA Project, there is no budget for collection of Road Inventory data. There is budget only for one time of Pavement Survey (outsouced to PASCO)).*

- DRVN will consider to discuss with JICA for supplementation to PASCO Team's constract a new assignment of collection/updating Road Inventory data parallely with collection of pavement condition data. Under such situation, Road Inventory data and PMS dataset will be compatible & consistent.

4. About new PMS dataset collection:

- As to DRVN's requirement on updating Road Inventory data, Mr. Pantha said that it can be updated by data collected by PASCO Survey Team.

  - Mr. Kokufu *(Team leader of PASCO Survey Team)* confirmed that they will mostly focus on pavement data items *(such data items had been discussed and agreed with JICA Project Team)*, only very few road inventory data *(like Km post, locations of important structures: bridges/tunnels/intersections, number of road lanes)* will be collected. Mr.Dong deeply understands such methodology of pavement survey. He emphasized that data items will be collected *(mentions in the Inception Report)*cover all requirements of KATAHIRA Team.

- Mr.Dongworries about using inspection car for pavement survey. Later on, for surveying the whole national road network, it seems that DRVN has to use existing simple devices instead of inspection car *(or together with inspection car because only inspection car is insufficient for surveying national wide)*like IRI device, FWD device, Benkelman Beam, simple rutting measurement device,...for dataset preparation. DRVN would like to be confirmed that under such situation, developed PMS can be properly operable. Customization to Vietnamese conditions is also one request for database and PMS also. For example: in this project you will apply some indicators like FWD (Dynamic Defection) , automatic IRI/Rut depth,... but later on DRVN will use Benkelman Beam (Static Deflection), manual IRI/Rut depth,... In such case, proper recommendation should be proposed by JICA Project Team and PASCO Survey Team for such customization condition and non-homogeneous data between project approach and real application condition.

- *Conclusion:*

  - Survey information/data must be reliable.

  - JICA Project Team and PASCO Suvey Team were requested to specify conversion factors of data values that are measured by Inspection Car and other simple devices to ensure that different devices obtain equivalent data.Proper alternatives of survey equipments rather than the inspection car must be properly recommended by JICA Project Team and PASCO Suvey Team.

5. About PMS system:

- PMS system will be presented by JICA Project Team again for discussion about it. However, Mr.Dong also strongly emphasized that it is very difficult and too much time& energy consulming for using previous data to formulate one time-series PMS dataset. Other better solutions or alternatives must be pointed out*(ex. Assumtion or other new collection, etc)*.

- Mr.Pantha presented about the issue of Pavement History Data *(Imputting Template file had been prepared, pilot inputting for NH.38 had completed but there still exist many difficulties in formulating such Pavement History Data for one PMS dataset).*

  - Under such situation, DRVN requested for opinion/solution from JICA Project *Team (keep inputting all information including isolated minor repair? ignore isolated minor repair/any effect to the reliability of deterioration forecasting result ?).*

- Mr.Binh *(WG-2 Counterpart Team leader)* commented that based on JICA Project Team, it is impossible for making proper plan for big repair due to lacking of Pavement Strength data in the PMS dataset.

- *Conclusion:*

  - Mr.Dong confirmed his requirement for PMS model, it should be simple in operation and flexible for highly customized local conditions; the forecasting model should be reliable; the outputs are midterm maintenance plans and annual maintenance plans. In partly, PMS system can be used to support the management & maintenance works.

  - Mr.Dong also did inform about his discussion with Prof.Kiyoshi Kobayashi (Kyoto University) on Kyoto Model*(Mr.Binh from Dept of Planning & Investment did study about Kyoto Model after being oriented by Prof.K.Kobayashi and he pointed out that it is easy to understand, very clear about the system and the outputs as well as the corresponding required input. Conversely, in last presentation of JICA Project Team about PMS_WG-2, it was so difficult to understand what should we do, how to do).*Mr.Dong agreed to hold the intensive seminar of Kyoto Model that will be presented by Prof.K.Kobayashi in May or June in new building of DRVN.BothTeams will be invited to the seminar.

6. About requirement for collaboration:

- In terms of information system:

  - Road database/Road Inventory and other datasets being formulated in this Project must be compatible, consistent to each other. Moreover,JICA Project Team is also requested to taken into account of compatible & consistent requirements to other systems like VBMS.

  - There must be strong relation, intergration between Road Inventory data and PMSdataset in all terms of: *structure, data items, collection, conversion, updating, etc.*

- For the effective information sharing among all working groups in Vietnamese side, Mr. Aoki requested DRVN to assign a key person for sharing information in

Vietnamese side. From next week, there should be collaboration between PASCO Survey Team and Counterpart members; JICA Project Team will record such collaboration work everyday and weekly report to the key person; the key person has to share such information to all related members in Vietnamese side (ex, all 5 WGs, RRMU2, RTC-Central, RTC2,...)

- Mr. Dong confirmed that Mr. Cuong - Director of PMU will take responsibility of key person.

7. Other issues:

- DRVN will have meeting with JICA VN Office and Mr. Kanoshima (MLIT) to discuss about the significient issue of how to effectively achieve the objectives of the JICA Project. The outcomes of the meeting will be informed to the Teams.
- DRVN will also discuss with JICA about how the PASCO Team can help DRVN to collect inventory data.

On Behalf of DRVN	On Behalf of JICA Project Team	On Behalf of PASCO Survey Team

Meeting Record No. 8

April 23, 2012

Coordination Meeting on Field Reconnaissance

Meeting Room: RRMU2

Subject	Coordination Meeting			
Date	April 23, 2012		Time	10:00 am
Place	RRMU2 Office			
Participants	RRMU2	Mr. Tu – Director of Transport Management Division Mr. Tran Thanh Tung Mr. Nguyen Dai Nghia Mr. Nguyen Van Tuyen Mr. Tran Nam Duong Mr. Tu Minh Phuong		
	PASCO Team Members	Mr. Koroku SOMA Ms. Nguyen Thi Dieu LINH		
Agenda	1) Discussion on the problems of the first trip of field reconnaissance 2) Recommendations 3) Others			

SUMMARY

- Mr. Tu stated the purpose of holding a meeting to discuss about the trip of field reconnaissance to get the better results and cooperation. He said that after 2 weeks of field reconnaissance, if PASCO team find any problems, please raise the issues to discuss together and he also wanted to mention some problems.
- Mr. Soma stated that last week he found that around Hanoi, it was very heavy traffic. Then, he must assign one more person to be responsible for the safety of a team. And an additional person already joined Group 2 in a field reconnaissance.
- Mr. Tu said that Group 1 still does not have a person who is responsible for traffic control to ensure the safety of a survey team when they collect data (marking on the route). It is very dangerous and he request Pasco team to give solution. He advised that normally when a team had the survey on a route, there are 2 people wearing safe clothes with enough equipment doing the function of warning the danger for the team.
- Mr. Soma understood that the route in Group 1, the traffic is not too heavy, that is why an additional person to control the traffic for the whole team is in Group 2 only.
- Mr. Tu said that in Group 1, they need at least 2 people to control the safety of a team. In mountainous area, we imagine that, it is not heavy traffic but actually, the road is narrow and the traffic volume is high. Only 6 people in a survey team are not enough to protect the safety of the whole team.
- Mr. Tuan had some comments and requests
    - The survey team must assign clearly the duty of a traffic control person and give them enough equipment to warn the danger to protect the whole team. The traffic in Vietnam is very complicated and heavy, so you must give priority the safety of a team. These people must be trained how to do the traffic control, how to protect the safety of a team and cooperate with the other members in a team.
    - RRMU2 understands and make clear of their duty in a survey team is to guide the route for the team and contact with relevant agencies to solve the problems if any. They are not the members to directly collect the data of a survey.
    - From next trip, RRMU2 will assign 2 people to join each group. One person in transport management division of RRMU2 will join the team for the first day or two days, one technical person in a management company of who knows the route very well will go with the team all days.
    - Before going to each route, RRMU2 will contact directly management company

and relevant agencies to help the survey run smoothly.

- Mr. Soma agreed to assign 1 person for each group to do the duty of traffic control to ensure the safety of a team. RTC members and the Pasco team will do the survey. RRMU2 only informs the administrative boundary, guide the route and solve problems in a team with other relevant agencies.
- Mr. Soma thanked for Mr. Tu's arrangement.
- Mr. Tu confirmed again that if the route is short, they will start from Hanoi and go to province and comeback to Hanoi before going to another province. If the route is long and they find there is good accommodation in province, they can continue to come to other provinces before coming back to Hanoi.
- Mr. Tu added that the survey team should bring more equipment which provided to the safety control person and give it to other members in a team such as a driver because sometimes the driver is willing to help the team in controlling traffic although it is not a duty of a driver.
- Meeting terminated around 11:00am.

Representative of RRMU2

Representative of The Survey Team

Meeting Record No. 9

June 15, 2012

Meeting on Explanation and Discussion of Field Reconnaissance Report

Meeting Room: DRVN

Title	Explanation about Field Reconnaissance Report			
Date	June 15, 2012		Time	14:00 pm
Place	Directorate for Roads of Vietnam (DRVN)			
Participants	DRVN	Nguyễn Xuân Cường Phan Thanh Bình Nguyễn Nguyệt Nga Đinh Thị Thanh Huyền Quách Văn Khoa Nguyễn Khánh Toàn Trần Quốc Toàn Trịnh Xuân Sinh Nguyễn Hồng Thắng Nguyễn Vũ Tuấn Lê Văn Thanh Lưu Quang Tuấn Đinh Duy Tiên Trần Thanh Tùng Nguyễn Văn Tuyến		
	PROJECT FOR CAPACITY ENHANCEMENT IN ROAD MAINTENANCE	MORI, Hisashi Bhoj Ray Pantha – Road Database Expert Takuya TANAKA Nguyen Dinh THAO		
	PASCO Team Members	Yutaka KOKUFU - Team Leader Koroku SOMA Yoshiyasu TSUCHIYA Syoichi KITAGAWA Dr. Kazuya AOKI Joel F.CRUZ Dr. Chikakuni MAEDA Hideaki KUROSU Kensuke KIMURA TRAN Thanh Hai (Interpreter)		
Agenda	1) Progress Report of the Survey 2) Report of Field Reconnaissance Results 3) Discussion and Confirmation of Pavement Condition Survey Routes(RRMU 2 National Roads) from Field Reconnaissance Results 4) Confirmation of Collaboration Work Schedule and Members 5) Others			

SUMMARY

- Having listened to presentation and explanation about the Field Reconnaissance Report made by Mr. Kokufu, the detail progress and the issues defined during the field reconnaissance made by Dr. AOKI and Mr. Tsuchiya.
- Mr. Quang had some comments

- Request RRMU2 to demarcate the boundary managed by Bureau or RRMU2 to make sure the sections which have been handed over for Bureau management shall not be surveyed in detail in the 2nd step any more.
- It is necessary to separate or rearrange the overlapping sections, if it belongs to this route, means would not belong to another one such as the section on NH38 overlapped with NH39, NH38B overlapped with NH38, otherwise, the planning of road maintenance of RRMU2 may be interrupted.

- Mr. Binh had following questions
  - Is the traffic count item included in the scope work of PASCO?
  - We would like to make sure whether the survey vehicle would be transfer to RRMU2 for their survey in future after the survey is completed.
- Answer of PASCO (Mr. Kokufu and Dr. AOKI)
  - The traffic count is not included in the scope of works of our Survey Team.
  - Our Contract with JICA is for survey collection data only and this item is not included in our Contract, so you can ask JICA.
- Some Comments from DRVN
  - Can you make clarification for the analysis width for cracking (maximum) of 3.8m and for rutting (maximum) of 3.0m as indicated in the page 23 of your report?
  - The personnel assignment schedule should be made in more detail so that DRVN, RRMU2, RTC is able to assign their personnel.
- Answer of PASCO (Mr. Kokufu and Dr. AOKI)
  - It is confirmed the values of 3.8m and 3.0m for cracking and rutting, respectively, are the maximum analysis width of road.
  - The personnel assignment schedule is detailed in our separated Work Schedule for Collaboration Work and Technology Transfer, so please refer it for your detail information.
- Concluding remarks by DRVN
  - To assign RRMU2 and Group 1 to get consistence with PASCO about overlapping section to facilitate the road management and to make suitable plan for data collection.
  - PASCO and Group 1 to have mutual agreement about reference code to make better the data analysis.
  - PASCO to gradually provide with the survey results and data to Group 1 so that it is able to establish the DRVN's database.
  - As several discussions regarding the technology transfer, PASCO to transfer us the technology, software program for analysis, and equipment as well. So that after the project completion, we can assure the project is kept remained and effective. For this issue, I would request both Group 1 and Group 2 to have a dedicated meeting with PASCO and JICA.
  - On principle, we agree on the personnel to be provided for pavement condition survey (2 persons), data exaction and analysis (8 persons) and workshop (3 persons) as your request. To request PMU to work with PASCO to have a mutual agreement about personnel mobilization schedule in detail. The personnel to be assigned shall be taken from Group 1, Group 2, RRMU2 and RTC of DRVN. However, the best choice is a fix appointment of the personnel to be made by PASCO.
- Concluding remarks by PASCO
  - For Working Group 2: regarding the discussion for the issues with RRMU2, we would like to ask RRMU2 to have a technical meeting next week.
  - For Working Group 1: we request DRVN to provide us timely existing detail

pavement data information.

- Answer from DRVN
  - I agreed with PASCO's request about meeting with Group 1 and Group 2 from 25 to 29 of June 2012 and also requested these Groups to prepare and make available all the existing data to provide to PASCO.
- Meeting terminated around 4:00pm.

Representative of DRVN

Nguyen Thi Nguyet Nga

Representative of The Survey Team

Yutaka KOKUFU

Team Leader

JICA Project for Pavement Data Collection Survey

PAVEMENT DATA COLLECTION SURVEY

FIELD RECONNAISSANCERE RPORT

(Real Mini Surveying Vehicle)

June 2012

DỰ ÁN KHẢO SÁT THU THẬP DỮ LIỆU TÌNH TRẠNG MẶT ĐƯỜNG DANH SÁCH CÁN BỘ

TRUNG TÂM THƯƠNG MẠI DAEHA – 360 KIM MÃ, TẦNG 12

Yutaka KOKUFU
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[illegible]
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[illegible]
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[illegible]
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Syoichi KITAGAWA
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Dr. Chikakuni Maeda
Thiết lập & hiệu chỉnh xe khảo sát
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+84 (0)

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joel.cruz2@[illegible]
[illegible]
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Kohei SAKAI
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[illegible]
+84-(0)

Gaku SAITO
Cán bộ phân tích dữ liệu 3
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+84-(0)

Dr. Kazuya AOKI
Điều phối viên/Trợ lý kế hoạch khảo sát
[illegible]
+84-(0)123-347-1907

Kensuke KIMURA
Trợ lý hành chính
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Nguyen Thi Dieu LINH
Thư ký/Phiên dịch
[illegible]
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Field Reconnaissance Report

- Outline of the Survey
- Major Project Activities of Survey Team
- Progress of Field Reconnaissance
- Work Plan for Collaboration Works
- Request of Survey Team
- Remaining Works

1. Outline of the Survey

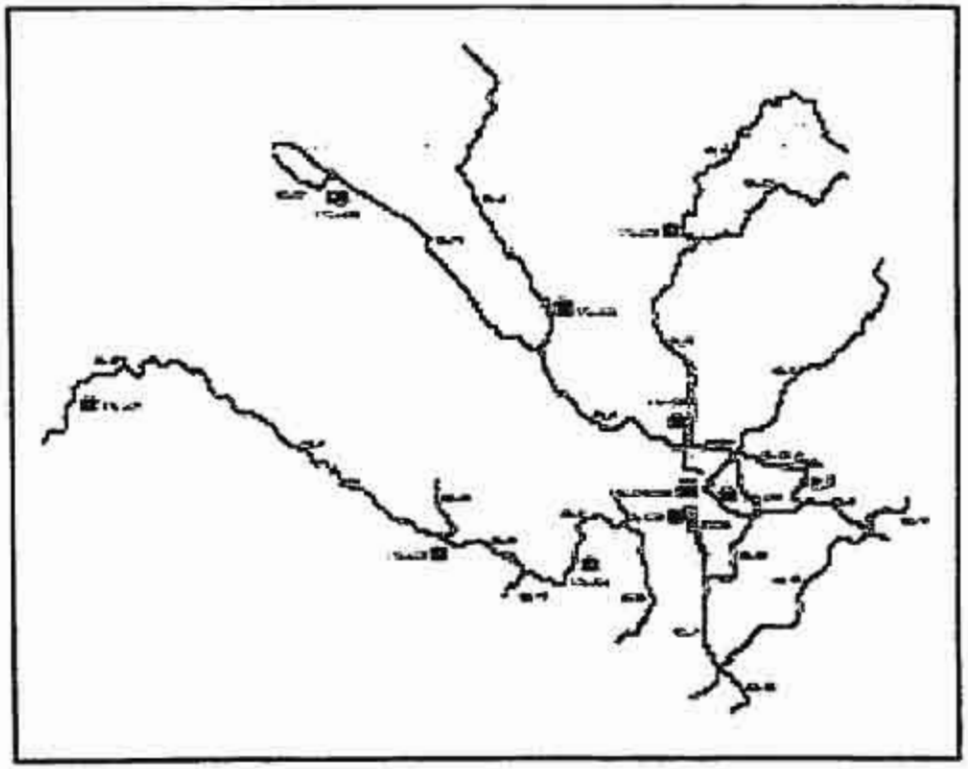
1.1 Objectives of the Survey

1. Preparation of Pavement Data File in Region 2

2. Technology Transfer

1.2 Scope of Works

1. Survey Route: RRMU 2 National Roads with a total length of 2,303km with both directions totaling 4,606km



1.2 Scope of Works

2. Technology Transfer:

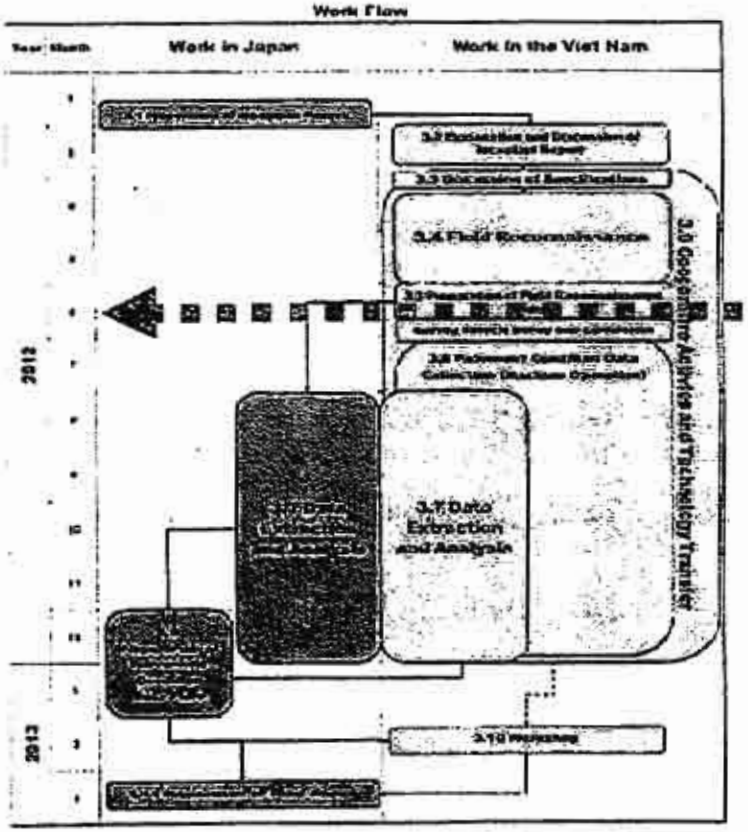
Target organization of technology transfer is the Directorate for Roads of Vietnam (DRVN) of the Ministry of Transport.

Target organizations to support for pavement data utilization are DRVN, the Planning and Investment Department, RRMU2 and RTC-CENTRAL.

1.3 Work Period

14 months from February 2012 to March 2013

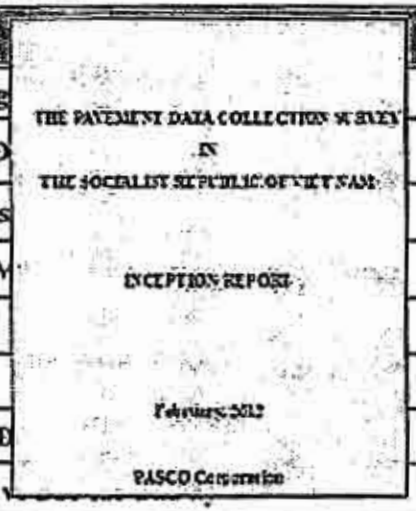
Project Work Flow



PRESENT!

2. CÁC HOẠT ĐỘNG DỰ ÁN CHÍNH CỦA ĐOÀN KHẢO SÁT

Ngày	Nhật trình	Vị trí
07/03/2012	Dự thảo Báo cáo Khởi đầu	Phòng họp. DRVN
09/03/ 2012	Họp Giải thích các Số liệu đầu ra trong	Văn phòng Đoàn Dự án JICA
15/03/2012	Họp Giải thích và Thảo luận Báo cáo Đ	Phòng họp. DRVN
16/03/2012	Họp Thảo luận Tiêu chí Kỹ thuật bản s	Văn phòng Đoàn Dự án JICA
22/03/ 2012	Họp Thảo luận File dữ liệu Điều kiện M	Văn phòng Đoàn Dự án JICA
27/03/ 2012	Họp Thảo luận Tiêu chí Kỹ thuật	Phòng họp. DRVN
03/04/ 2012	Họp Khẳng định các Tuyến khảo sát	Phòng họp. RTC
05/04/ 2012	Họp bàn về các Vấn đề Cơ sở Dữ liệu Đ	Phòng họp. DRVN
05/04/ 2012	Họp bàn thống nhất các Biên bản họp v	Phòng họp. DRVN
09/04/ 2012	Tóm tắt Kỹ thuật khảo sát thực địa	Văn phòng Đoạn Khảo sát JICA
10/04/ 2012 ~ 03/06/2012	Thực hiện chuyển giao công nghệ thông qua vừa học vừa làm trong quá trình khảo sát thực địa	Các đường thuộc RRMU2
23/04/012	Họp phối kết hợp về khảo sát thực địa	Phòng họp. RRMU2



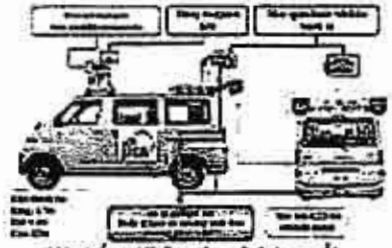
2. CÁC HOẠT ĐỘNG DỰ ÁN CHÍNH CỦA ĐOÀN KHẢO SÁT

Ngày	Nhật trình	Vị trí
07/03/2012	Đệ trình Báo cáo Đầu kỳ	Phòng họp, DRVN
[illegible]	[illegible]	[illegible]
15/03/2012	Họp Giải thích và Thảo luận Báo cáo Đầu kỳ	Phòng họp, DRVN
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
27/03/ 2012	Họp Th[illegible]	Phòng họp, DRVN
03/04/ 2012	Họp Kl[illegible]	Phòng họp, RTC
05/04/ 2012	Họp bà[illegible]	Phòng họp, DRVN
05/04/ 2012	Họp bà[illegible]	Phòng họp, DRVN
09/04/ 2012	Tóm tắ[illegible]	Văn phòng Đoạn Khảo sát JICA
10/04/ 2012 – 03/06/2012	Thực h[illegible] trình kl[illegible]	Các đường thuộc RRMU2
23/04/012	Họp ph[illegible]	Phòng họp, RRMU2

2. CÁC HOẠT ĐỘNG DỰ ÁN CHÍNH CỦA ĐOÀN KHẢO SÁT

Ngày	Nhật trình	Vị trí
07/03/2012	Đệ trình Báo cáo Đầu kỳ	Phòng họp, DRVN
09/03/ 2012	Họp Giải thích các Số liệu đầu ra trong Tiêu chí kỹ thuật bản thảo	Văn phòng Đoàn Dự án JICA
12/03/2012	Họp Giải thích và Thảo luận Báo cáo Đầu kỳ	Phòng họp, DRVN
16/03/2012	Họp Thảo luận Ti	Văn phòng Đoàn Dự án JICA
22/03/ 2012	Họp Thảo luận Fi	Văn phòng Đoàn Dự án JICA
27/03/ 2012	Họp Thảo luận Tổ	Phòng họp, DRVN
03/04/ 2012	Họp Khẳng định	Phòng họp, RTC
05/04/ 2012	Họp bàn về các V	Phòng họp, DRVN
05/04/ 2012	Họp bàn thống nh	Phòng họp, DRVN
09/04/ 2012	Tóm tắt Kỹ thuật	Văn phòng Đoạn Khảo sát JICA
10/04/ 2012 ~ 03/06/2012	Thực hiện chuyến trình khảo sát thụ	Các đường thuộc RRMU2
23/04/012	Họp phối kết hợp	Phòng họp, RRMU2

KHẢO SÁT THU THẬP DỮ LIỆU TÌNH TRẠNG MẶT ĐƯỜNG BÁO CÁO ĐẦU KỲ



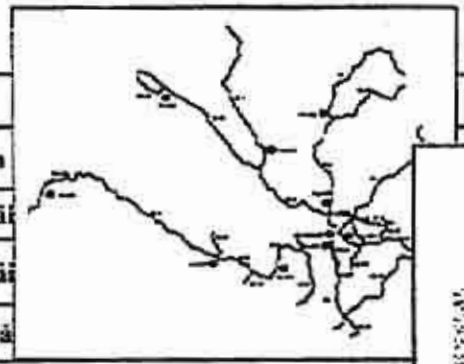
(Hệ thống Khảo sát mini thực tế)

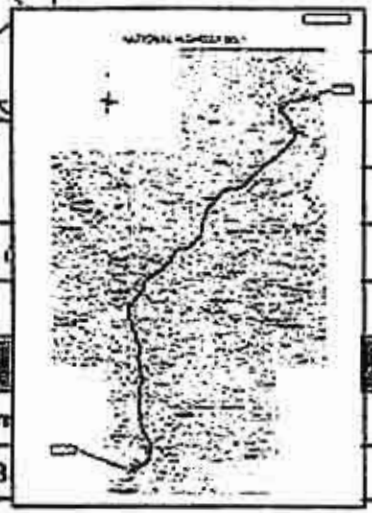
Tháng 3 2012

2. CÁC HOẠT ĐỘNG DỰ ÁN CHÍNH CỦA ĐOÀN KHẢO SÁT

Ngày	Nhật trình	Vị trí
07/03/2012	Đệ trình Báo cáo Đầu kỳ	Phòng họp, DRVN
09/03/ 2012	Họp Giải thích các Số liệu đầu ra t	Văn phòng Đoàn Dự án JICA
15/03/2012	Họp Giải thích và Thảo luận Báo c	Phòng họp, DRVN
16/03/2012	Họp Thảo luận Tiêu chí Kỹ thuật h	Văn phòng Đoàn Dự án JICA
22/03/ 2012	Họp Thảo luận File dữ liệu Điều ki	Văn phòng Đoàn Dự án JICA
27/03/ 2012	Họp Thảo luận Trên cơ sở kỳ th	Phòng họp, DRVN
03/04/ 2012	Họp Khẳng định các Tuyến kh	Phòng họp, RTC
05/04/ 2012	Họp bàn về các Vấn đề Cơ sở	Phòng họp, DRVN
05/04/ 2012	Họp bàn thống nhất các Biên t	Phòng họp, DRVN
09/04/ 2012	Tóm tắt Kỹ thuật khảo sát thụ	Văn phòng Đoạn Khảo sát JICA
10/04/ 2012 – 03/06/2012	Thực hiện chuyển giao công n; trình khảo sát thực địa	Các đường thuộc RRMU2
23/04/012	Họp phối kết hợp về khảo sát	Phòng họp, RRMU2

2. CÁC HOẠT ĐỘNG DỰ ÁN CHÍNH CỦA ĐOÀN KHẢO SÁT





Ngày		Vị trí
07/03/2012	Đệ trình	Phòng họp. DRVN
09/03/ 2012	Họp Giải	Văn phòng Đoàn Dự án JICA
15/03/2012	Họp Giải	Phòng họp. DRVN
16/03/2012	Họp Thả	Văn phòng Đoàn Dự án JICA
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[illegible]	[illegible]	[illegible]
05/04/ 2012	Họp bàn về các Vấn đề Cơ sở Dữ liệu Đườ	Phòng họp, DRVN
05/04/ 2012	Họp bàn thống nhất các Biên bản họp về B	Phòng họp, DRVN
09/04/ 2012	Tóm tắt Kỹ thuật khảo sát thực địa	Văn phòng Đoạn Khảo sát JICA
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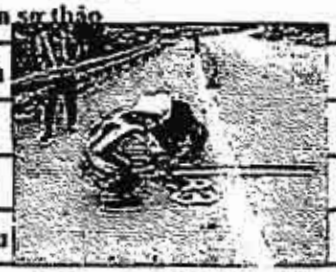
23/04/012	Họp phối kết hợp về khảo sát thực địa	Phòng họp. RRMU2

2. CÁC HOẠT ĐỘNG DỰ ÁN CHÍNH CỦA ĐOÀN KHẢO SÁT

Ngày	Nhật trình	Vị trí
07/03/2012	Đệ trình Báo cáo Đầu kỳ	Phòng họp, DRVN
09/03/ 2012	Họp Giải thích các Số liệu đầu ra trong Tiêu chí kỹ thuật bản thảo	Văn phòng Đoàn Dự án JICA
15/03/2012	Họp Giải thích và Thảo luận Báo cáo Đầu kỳ	Phòng họp, DRVN
16/03/2012	Họp Thảo luận Tiêu chí Kỹ thuật bản sơ thảo	Văn phòng Đoàn Dự án JICA
22/03/ 2012	Họp Thảo luận File dữ liệu Điều kiện Mặt đường	Văn phòng Đoàn Dự án JICA
27/03/ 2012	Họp Thảo luận Tiêu chí Kỹ thuật	Phòng họp, DRVN
03/04/ 2012	Họp Khẳng định các Tuyến khảo sát	Phòng họp, RTC
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
09/04/ 2012	Tóm tắt Kỹ thuật khảo sát thực địa	Văn phòng Đoạn Khảo sát JICA
10/04/ 2012 ~ 03/06/2012	Thực hiện chuyển giao công nghệ thông qua vừa học vừa làm trong quá trình khảo sát thực địa	Các đường thuộc RRMU2
23/04/012	Họp phối kết hợp về khảo sát thực địa	Phòng họp, RRMU2

2. CÁC HOẠT ĐỘNG DỰ ÁN CHÍNH CỦA ĐOÀN KHẢO SÁT



Ngày		Vị trí
07/03/2012	Đệ t[illegible] Nhật	Phòng họp, DRVN
09/03/ 2012	Họp [illegible] tron [illegible]	Văn phòng Đoàn Dự án JICA
15/03/2012	Họp [illegible] cáo	Phòng họp, DRVN
16/03/2012	Họp Thảo luận Tiêu chí Kỹ thuật bản sơ thảo	Văn phòng Đoàn Dự án JICA
22/03/ 2012	Họp T[illegible] kiện	Văn phòng Đoàn Dự án JICA
27/03/ 2012	Họp T[illegible]	Phòng họp, DRVN
03/04/ 2012	Họp K[illegible] sát	Phòng họp, RTC
05/04/ 2012	Họp b[illegible] liệu	Phòng họp, DRVN
05/04/ 2012	Họp bàn thống nhất các Biên bản họp về Báo cáo Đầu kỳ	Phòng họp, DRVN
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
23/04/012	Họp phối kết hợp về khảo sát thực địa	Phòng họp, RRMU2

2. CÁC HOẠT ĐỘNG DỰ ÁN CHÍNH CỦA ĐOÀN KHẢO SÁT

Ngày	Nhật trình	Vị trí
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15/03/2012	Họp Giải thích và Thảo luận Báo cáo Đầu kỳ	Phòng họp, DRVN
16/03/2012	Họp Thảo luận Tiêu chí Kỹ thuật bản sơ thảo	Văn phòng Đoàn Dự án JICA
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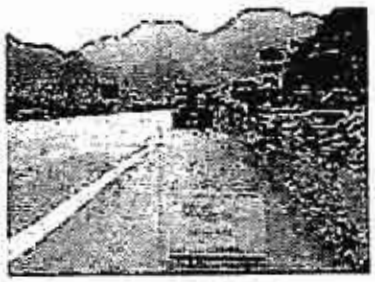
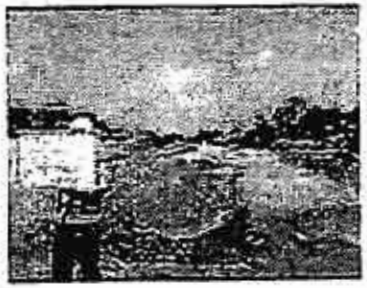
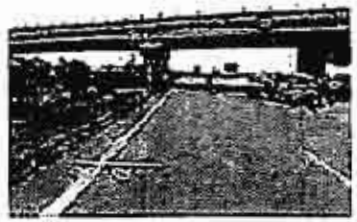
27/03/ 2012	Họp Thảo luận Tiêu chí Kỹ thuật	Phòng họp, DRVN
03/04/ 2012	Họp Khẳng định các Tuyến khảo sát	Phòng họp, RTC
05/04/ 2012	Họp bàn về các Vấn đề Cơ sở Dữ liệu Đường	Phòng họp, DRVN
05/04/ 2012	Họp bàn thống nhất các Biên bản họp về Báo cáo Đầu kỳ	Phòng họp, DRVN
09/04/ 2012	Tóm tắt Kỹ thuật khảo sát thực địa	Văn phòng Đoạn Khảo sát JICA
10/04/ 2012 – 03/06/2012	Thực hiện chuyển giao công nghệ thông qua vừa học vừa làm trong quá trình khảo sát thực địa	Các đường thuộc RRMU2
[illegible]	[illegible]	[illegible]

3. Progress of Field Reconnaissance



Group No.	Road Length (km) by RRMU2		Road Length (km) surveyed by the Survey Team	
	Down Bound	Down & Up Bound	Down Bound	Up Bound
Group 1	1,370.30	2,740.60	1,371.625	1,369.590
Group 2	962.30	1,924.60	989.015	989.860
Sub-Total	-		2,360.640	2,359.450
Total	2332.60	4,665.20	4,720.090	





4. KẾ HOẠCH HỢP TÁC VÀ CHUYỂN GIAO CÔNG NGHỆ CHỈNH SỬA CHI TIẾT

DỰ ÁN KHẢO SÁT THU THẬP DỮ LIỆU TÌNH TRẠNG MẶT ĐƯỜNG

TẠI

NƯỚC CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

KẾ HOẠCH HỢP TÁC VÀ CHUYỂN GIAO CÔNG NGHỆ CHỈNH SỬA CHI TIẾT

Tháng 5 năm 2012

Tập đoàn PASCO

1. Kế hoạch công tác

Kế hoạch công tác này được chuẩn bị cho Dự án Khảo sát Thu thập Dữ liệu tình trạng Mặt đường phù hợp với lịch làm việc và các phương pháp của Báo cáo Đầu kỳ. Công việc khảo sát bao gồm 1-1 Công tác Tiền Khảo sát Thực địa, 1-2 Khảo sát Tình trạng Mặt đường và 1-3 Phân tích Dữ liệu được trình bày trong bảng kế hoạch công tác sau đây.

Khối lượng công việc, lịch làm việc và kế hoạch nhiệm vụ cho công tác khảo sát được trình bày trong kế hoạch công tác này

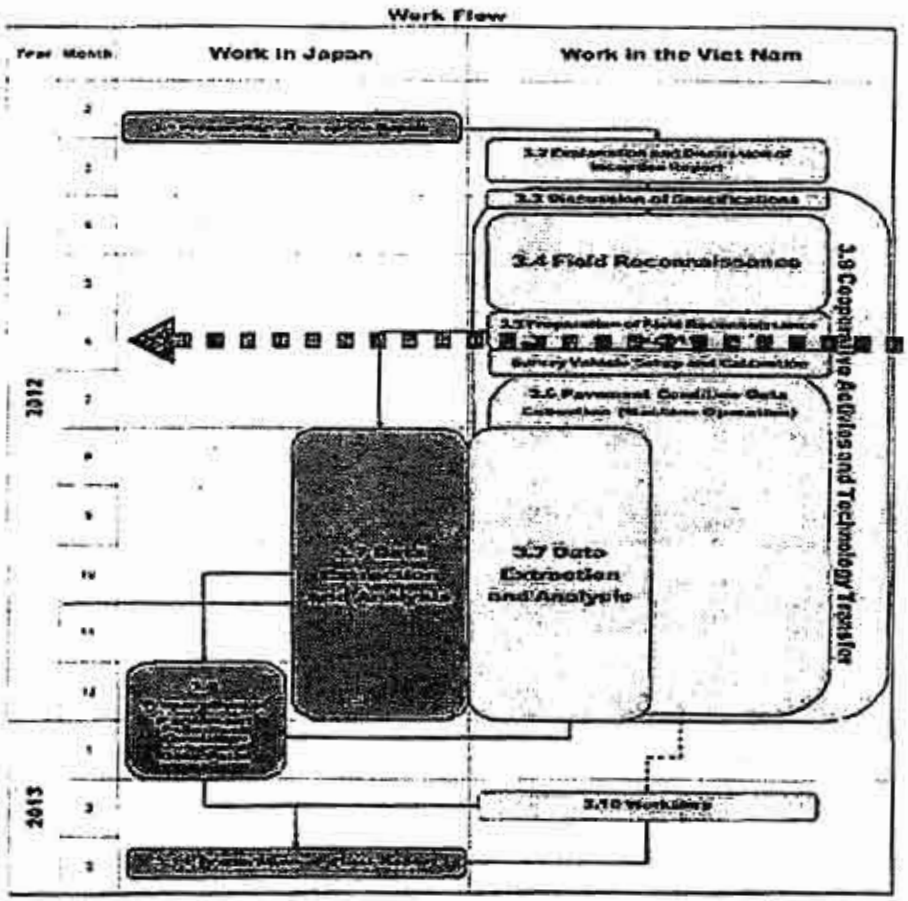
	2012									2013		
	4	5	6	7	8	9	10	11	12	1	2	3
1-1 Tiền Khảo sát Thực địa												
1-2 Khảo sát Tình trạng Mặt đường												
1-3 Phân tích Dữ liệu												

5. Requests from Study Team

Position	Number	Term
Pavement Condition Survey	Two (2) persons	Beginning of July,2012 to End of November,2012
Survey Extraction and analysis	Eight (8) persons	Beginning of July,2012 to End of December,2012
Support staff for the workshop on "General Methodology on the Utilization Condition Data (Planning/ Measurement / Analysis)"	Three (3) persons	Beginning of February,2013 to Middle of February,2013

6. Remaining Works

Overall Work Schedule



PRESENT!

6. Remaining Works

<Work in Vietnam>

- Pavement Condition Survey
- Data Extraction and Analysis
- Workshop on "General Methodology on the Utilization Condition Data (Planning/Measurement/Analysis)

<Work in Japan>

- Data Extraction and Analysis
- Preparation of Pavement Condition Data File
- Preparation of Final Report

PASCO
World's Leading Geospatial Group

PAVEMENT DATA COLLECTION SURVEY
- Field Reconnaissance Report -

June 15, 2012

PASCO CORPORATION

Contents

1. Progress of Field Reconnaissance
   - Discussion and Confirmation of Pavement Condition Survey Routes
   - Issues identified from Field Reconnaissance Results
2. Work Plan for Collaboration Works
   - Request of Survey Team
   - Remaining Work

1. Progress of Field Reconnaissance

Survey Routes

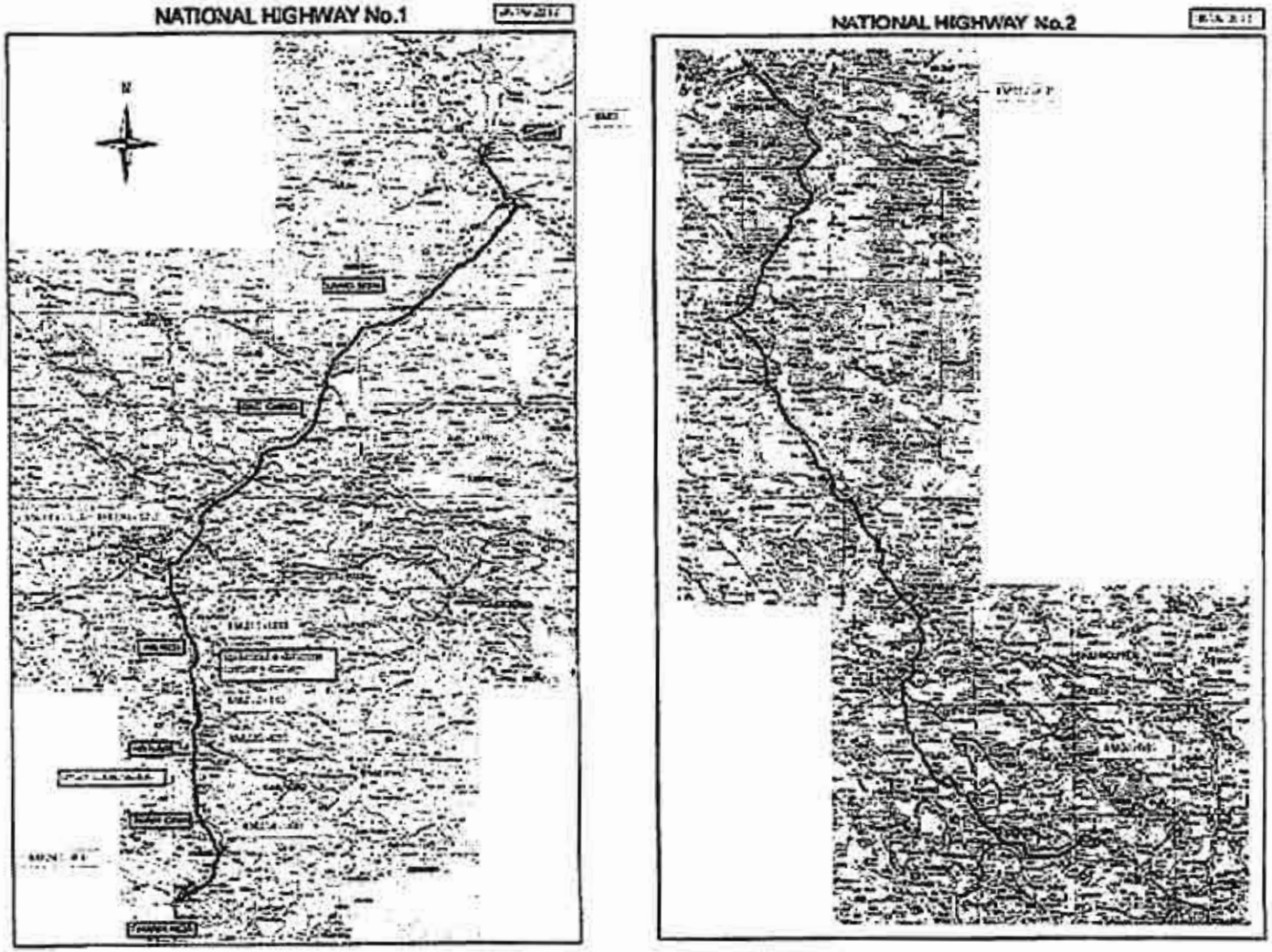
- Quantity of Planned, Estimated and Surveyed Road Length

	Road Length (km) planned by the Survey Team	Road Length (km) by RRMU2	Road Length (km) surveyed by the Survey Team
Down Bound	2,303	2,332.60	2,360.640
UP Bound	-	-	2,359.450
Total	**4,606**	**4,665.20**	**4,720.090**

Survey Routes (22 routes)

Route Name	Confirmed Road_Length (km)	Surveyed Road_Length		
		Down-bound Length(km)	Up-bound Length(km)	Down+Up (km)
National Highway 1	570.8	275.825	276.915	552.740
Southern Ring Road No.3 to Cau Dau	5.4	13.980	13.990	27.970
National Highway 2	563.8	275.015	274.145	549.160
National Highway 3	622.2	298.445	298.385	596.830
National Highway 4E	88.4	43.510	43.500	87.010
National Highway 5	162.8	81.705	81.715	163.420
National Highway 6	690.6	345.715	345.375	691.090
National Highway No.6-1 (The old bypass road)	0.0	7.940	7.925	15.865
National Highway No.6-2 (The old bypass road)	0.0	4.110	4.105	8.215
National Highway No.6-3 (The old bypass road)	0.0	13.740	13.845	27.585
National Highway 10	346.6	171.155	171.195	342.350
Connecting National Highway 1 with Ninh Phuc port	12.828	6.415	6.410	12.825
National Highway 15	40.0	20.045	19.985	40.030
National Highway 18	92.6	46.000	45.945	91.945
National Highway 37	74.4	34.795	34.780	69.575
National Highway 38	169	86.845	86.800	173.645
National Highway 43	107.4	53.340	53.400	106.740
National Highway 70	396.2	198.840	198.185	397.025
National Highway 279	232.0	110.925	110.740	221.665
Route Noi Bai - Bac Ninh	62.2	32.845	32.785	65.630
Ho Chi Minh Route	188.0	94.545	94.485	189.030
National Highway 38B	240.0	144.905	144.840	289.745
Total	4665.228	2361.640	2359.450	4720.090

Survey Routes (Updated Location Map)



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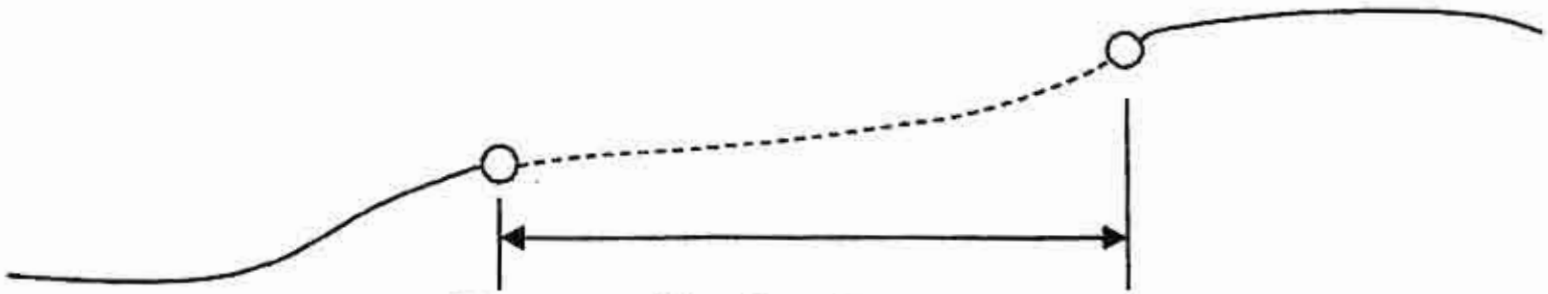
Issues identified from Field Reconnaissance Results

1. Overlapping administration sections
2. Overlapping administration sections
3. Narrow width sections
4. Analysis width

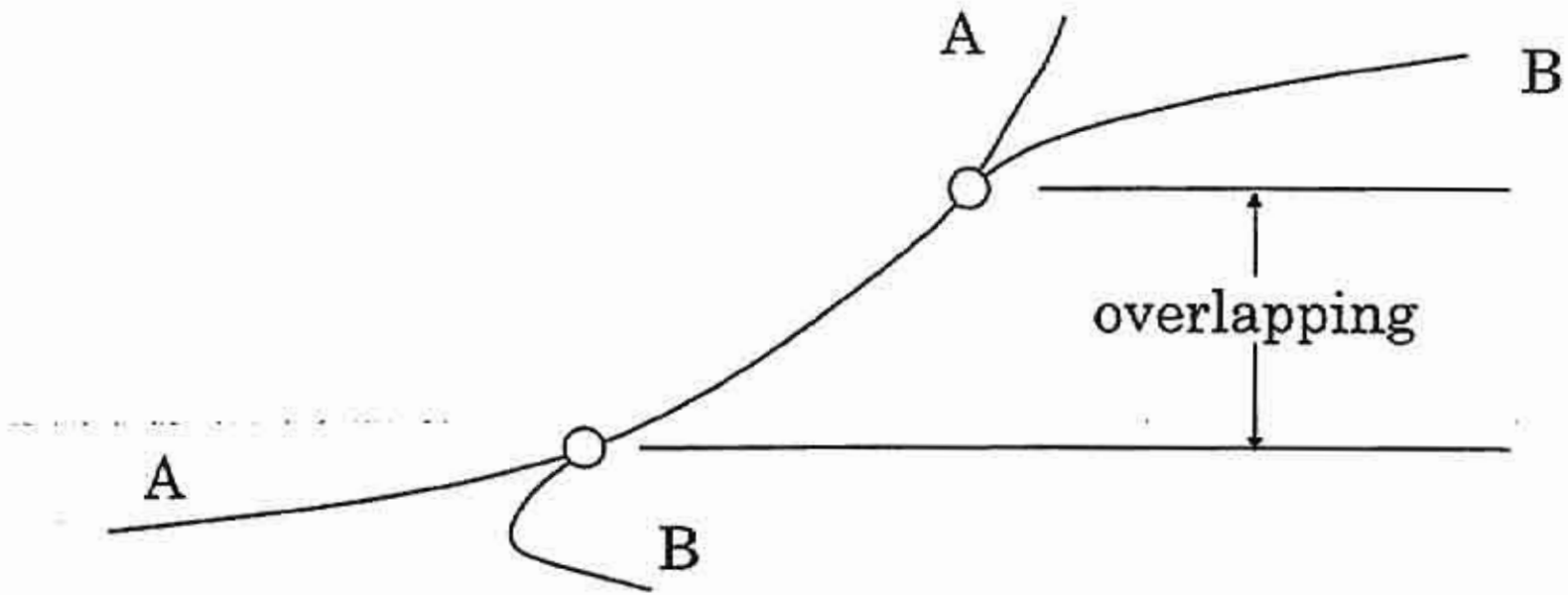
Issues identified from Field Reconnaissance Results

- **1)Non-continuous pavement section**
  - The non-continuous pavement sections exist where there is a difference in jurisdiction. In order to prepare a continuous database, jurisdiction names are written in a jurisdiction field as follows;
    - "Province" 84,920m 7sections
    - "Company" 18,510m 7sections
    - "under construction" 117,595m 18sections



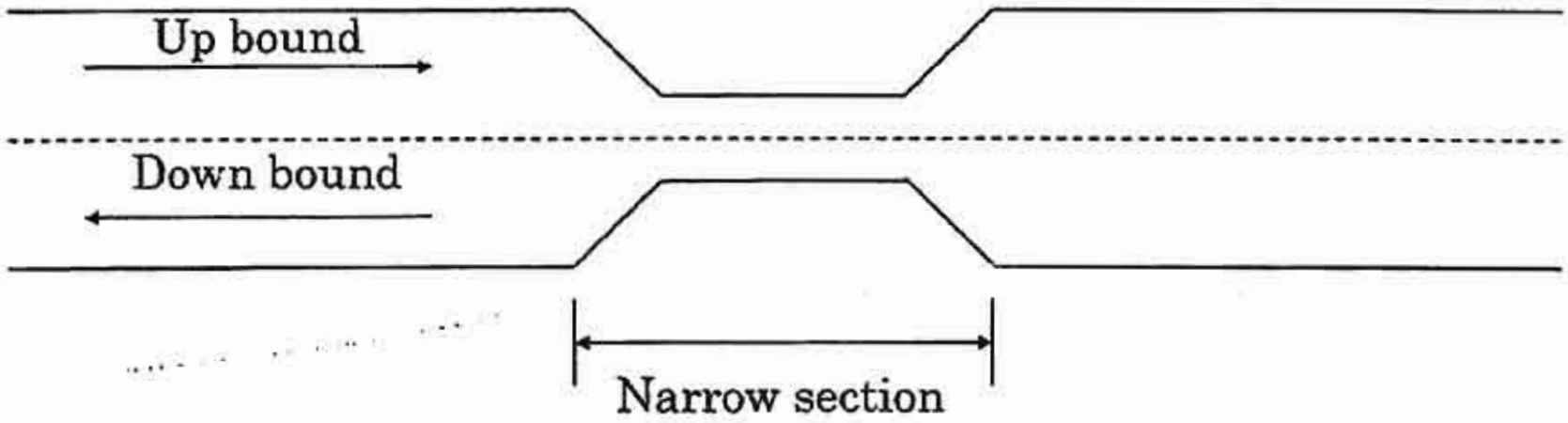
Issues identified from Field Reconnaissance Results

- **2)Overlapping administration sections**
  - In order to distinguish the overlapping administration sections, the word "overlapping" is written in the note field of overlapping administration sections.
    - "overlapping" 83,440m 12sections



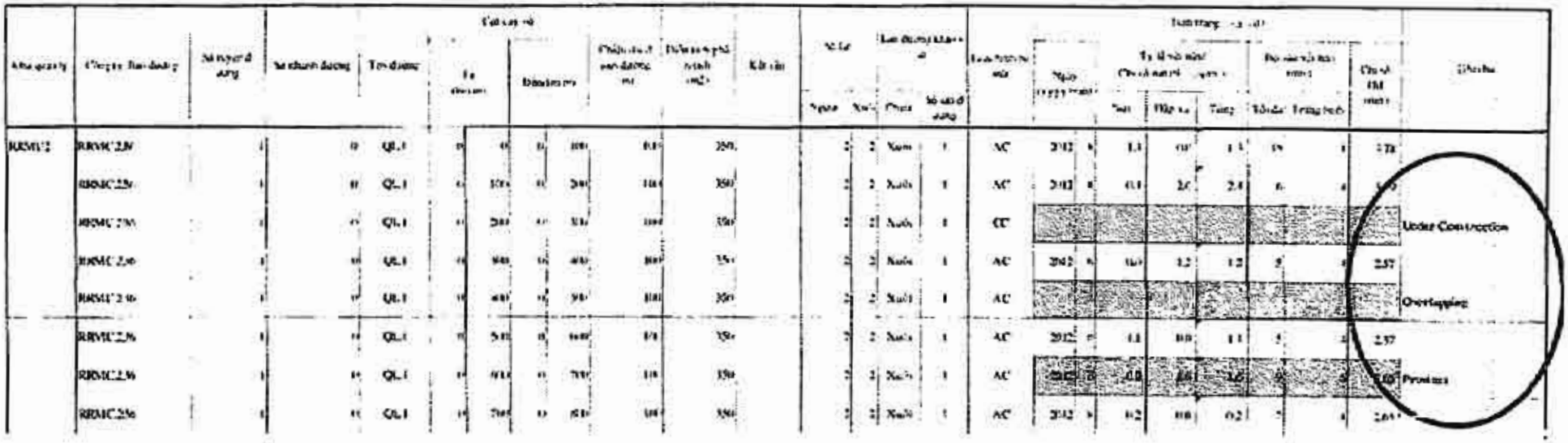
Issues identified from Field Reconnaissance Results

- **3)Narrow width sections**
  - There are road sections where width narrows to one lane partially. In order to distinguish those sections, the word "narrow section" is written in the note filed of UP bound record of those sections.
    - "Narrow section" 690m 6sections



Issues identified from Field Reconnaissance Results

- The data of all the sections is prepared
  - Basic Inventory data
  - To correspond when road structure changes in the future



Special case names are written in a note field

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Issues identified from Field Reconnaissance Results

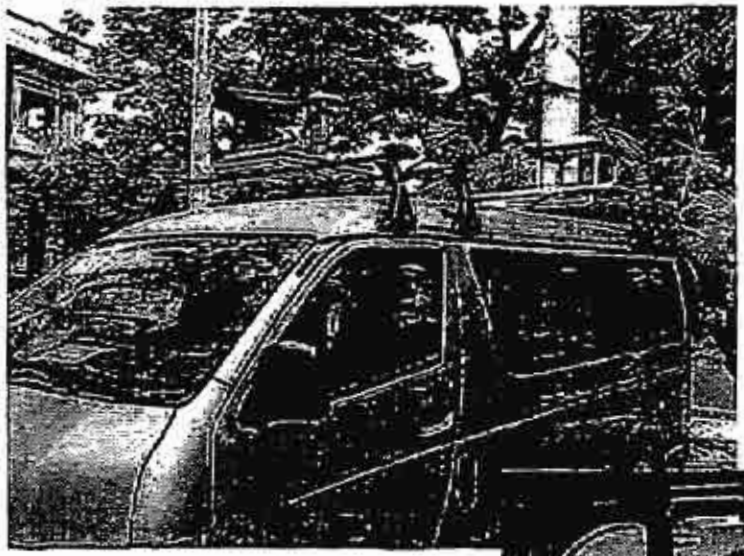
- **4)Analysis width**
  - It was found that there are sections where width is wide or sections without line marker. In this study, the analysis width are defined as follows:
    - Analysis width for Cracking (Maximum) : approximately 3.8m
    - Analysis width for Rutting (Maximum) : approximately 3.0m

2. Work Plan for Collaboration Works

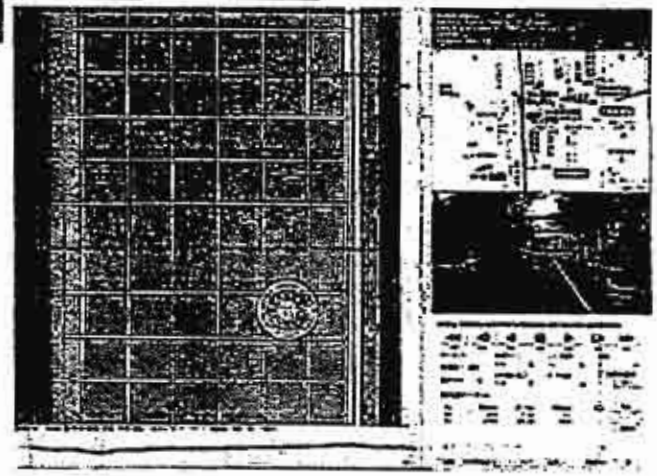
Collaboration Work Schedule and Members

- Remaining works (in Vietnam)
  - Pavement Condition Survey
  - Data Extraction and Analysis
  - Workshop on "General Methodology on the Utilization Condition Data (Planning/Measurement/Analysis)

Collaboration Work Schedule and Members



Pavement Condition Su



Data Extraction and Analysis

PASCO

Collaboration Work Schedule and Members

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Descriptions
Pavement Condition Data Collection		■	■	■	■	■				Two(2)persons 5 months Beginning of Jul. to end of Nov.
Data Extraction and Analysis			■	■	■	■	■			Eight(8)persons 5 months Beginning of Jul. to end of Dec.
Support staff for the Workshop									■	Three(3)persons 0.5 month Beginning of Feb. to Middle of Feb.

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PAVEMENT DATA COLLECTION SURVEY
- Technical Meeting -

June 27, 2012

PASCO CORPORATION

Agenda

1. Confirmation on issues identified from field reconnaissance
2. Confirmation on Pavement Condition Survey Routes
3. Confirmation of Collaboration Work
4. About comparison of IRI measurement data
5. Others

1. Confirmation on issues identified from field reconnaissance

Issues identified from Field Reconnaissance Results

- Revised places(4 places)
  - National highway No.6
    - Kilo-post location of end point : KM383+207
  - National highway No.3
    - Under construction (added) : From KM51+000 To KM63+100
  - National highway No.4E
    - Under construction (revised) : From KM34+550 To KM35+150
  - National highway No.10
    - Managed by Province (added): From KM0+000 To KM6+270
- About other sections
  - Confirmation of the sections which were commented at the previous meeting

2. Confirmation on Pavement Condition Survey Routes

Confirmation on Pavement Condition Survey Routes

- Final confirmation of survey route
  - Confirmation and agreement and of survey route
  - Reported to JICA
  - Starting of survey (from beginning of July)
- Survey methods
  - Surveyed for whole section including issues sections
  - Under construction
    - Surveyed only the paved sections

3. Confirmation of Collaboration Work

Collaboration Work Schedule and Members

- Collaboration Work(Survey and Analysis)
  - Pavement Condition Survey (2 persons)
    - Explanation and Training 4th July
    - Survey 9th July
  - Data Extraction and Analysis (8 persons)
    - Explanation and training 9th July
    - Analysis 16th July

4. About comparison of IRI measurement data

About comparison of IRI measurement data

- Comments at the previous meeting about comparison of IRI measurement data
  - Survey in this project / Real(PASCO)
  - RTC-C owns / ROMDAS

  - **IRI is measured by each measurement equipment on the same pavement section, and the result is compared**

- Issues
  - Detailed information about IRI measurement equipment owned by RTC-C
  - Extraction of the sampling sections for comparison of results (How many sample sections(length) we need to examine?)
  - Who operates ROMDAS?

4. Others

Others (Conclusion)

- Confirmation of survey route
  - Confirmation and agreement of survey route
    - The sign is required
  - Reported to JICA
  - Starts of survey from beginning of July
- Additional request
  - Introduction letter for field survey to send to relevant agensies

PAVEMENT DATA COLLECTION SURVEY

IN

THE SOCIALIST REPUBLIC OF VIET NAM

WORK SCHEDULE FOR COLLABORATION

WORK AND TECHNOLOGY TRANSFER

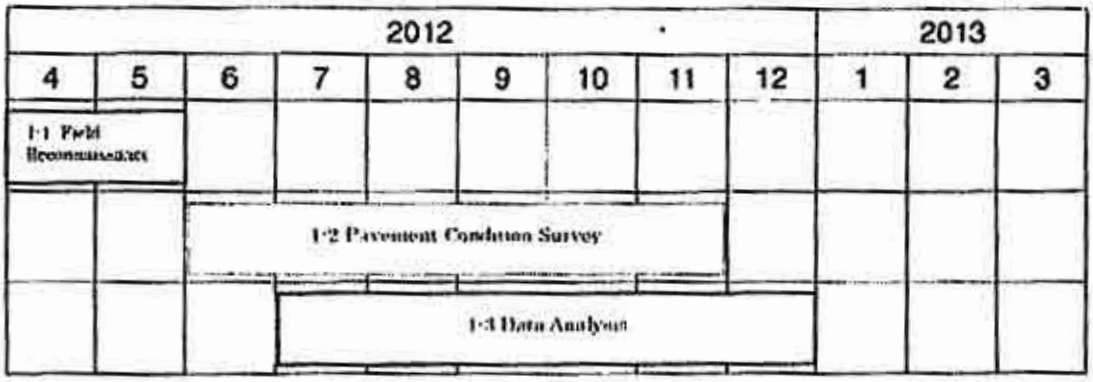
March 2012

PASCO Corporation

1. Work Plan

This work plan is prepared for the Pavement Data Collection Survey in accordance with the work schedule and methods of Inception Report. The survey work consists of 1-1 Field Reconnaissance, 1-2 Pavement Condition Survey and 1-3 Data analysis as shown in the following work plan table.

The work volumes, work schedule and Assignment schedule for the survey work are presented in this work plan.



1-2 Pavement Condition Survey

① Work Volume

Table of expected work volume

Route Name	From (km)	To (km)	S_Length (km)	Work days (50km/day)
National Highway 1	0.000	285.400	552.740	12
Southern ringroad No.3 to Cau Dau	159.535	174.520	27.970	1
National Highway 2	30.600	312.400	549.160	11
National Highway 3	33.300	344.405	596.830	12
National Highway 4E	0.000	44.200	87.010	2
Naional Highway 5	11.135	92.460	163.420	4
National Highway 6	38.000	383.205	691.090	14
National Highway No.6-1 (The old bypass road)	70.800	78.700	15.865	1
National Highway No.6-2 (The old bypass road)	323.835	328.000	8.215	1
National Highway No.6-3 (The old bypass road)	384.850	398.600	27.585	1
National Highway 10	0.000	173.250	342.350	7
Connecting National Highway 1 with Ninh Phuc port	0.000	6.370	12.825	1
National Highway 15	0.000	20.000	40.030	1
National Highway 18	0.000	46.300	91.945	2
National Highway 37	60.970	95.180	69.575	2
National Highway 38	0.000	85.005	173.645	4
National Highway 43	26.000	79.680	106.740	3
National Highway 70	0.000	198.410	397.025	8
National Highway 279	0.000	115.650	221.665	5
Route Noi Bai - Bac Ninh	-1.595	31.120	65.630	2
Ho Chi Minh Route	409.000	503.000	189.030	4
National Highway 38B	0.000	145.030	289.745	6
Total	-	-	4720.090	98

② Work Schedule

Table of work schedule

measure : 50km/day

Pavement condition Survey		July					August					September					October					November				
		25-30	2-8	9-15	16-22	23-29	30-31 1-5	6-12	13-19	20-26	27-31 1-2	3-9	10-16	17-23	24-30	1-7	8-14	15-21	22-28	29-31 1-4	5-11	12-18	19-25	26-30 1-3
1.Training of Pavement condition Survey																										
2.Pavement condition Survey																										
A. Name	Survey Length(km)																									
National Highway 3	326.030																									
National Highway 2	349.160																									
National Highway 6	691.090																									
National Highway No.6-1 (The old bypass road)	15.865																									
National Highway 15	48.630																									
National Highway 4A	108.740																									
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National Highway 70	397.025																									
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National Highway 1	562.740																									
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National Highway 5	163.420																									
Route Yen Bai - Nghe Anh	65.630																									
National Highway 37	69.878																									
National Highway 38	173.645																									
National Highway 38B	289.745																									
Total	4,720.050																									
3 Compilation of the Pavement condition Survey																										

③ Members

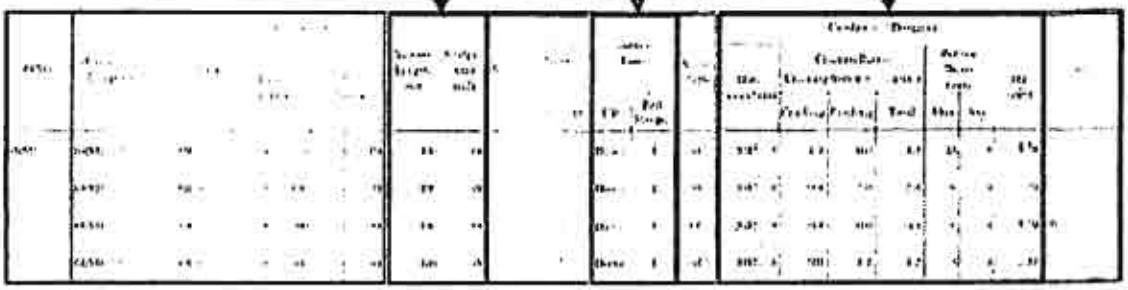
Pavement Condition Survey Members

Instructor	Syouichi KITAGAWA Yoshiyasu TSUCHIYA
Operator1	
Operator2	
Navigator	
Driver	Phạm Thế Hùng Phạm Thanh Tuấn
Interpreter	Đỗ Hồng Phong Phạm Quang Sơn

1-3 Data Analysis

Data Acquisition Item

Data Analysis



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National Highway No.6-2 (The old bypass road)	323.835	328.000	8.215	1
National Highway No.6-3 (The old bypass road)	384.850	398.600	27.585	1
National Highway 10	0.000	173.250	342.350	7
Connecting National Highway 1 with Ninh Phuc port	0.000	6.370	12.825	1
National Highway 15	0.000	20.000	40.030	1
National Highway 18	0.000	46.300	91.945	2
National Highway 37	60.970	95.180	69.575	2
National Highway 38	0.000	85.005	173.645	4
National Highway 43	26.000	79.680	106.740	3
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Ho Chi Minh Route	409.000	503.000	189.030	4
National Highway 38B	0.000	145.030	289.745	6
Total	-	-	4720.090	104

② Work Schedule

Table of work schedule

Analysis : 50km/day	Group1	July					August				September					October				November				December					
Data analysis		1	2-8	9-15	16-22	23-29	30-31 1-5	6-12	13-19	20-26	27-31 1-2	3-9	10-16	17-23	24-30	1-7	8-14	15-21	22-28	29-31 1-4	5-11	12-18	19-25	26-30 1	2-9	9-15	16-22	23-29	30 31
1 Training of Data analysis																													
2 Data analysis																													
R_Name	Survey Length(km)																												
National Highway 3	606.830																												
National Highway 2	549.160																												
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National Highway No.6-2 (The old bypass road)	9.270																												
National Highway No.6-3 (The old bypass road)	37.445																												
National Highway 279	281.665																												
National Highway 70	337.025																												
National Highway 4E	87.215																												
Total	2,741.215																												
3 Conclusion of data analysis																													

2nd,3rd of septemberNational holiday

Analysis : 50km/day	Group2	July					August				September					October				November				December					
Data analysis		1	2-8	9-15	16-22	23-29	30-31 1-5	6-12	13-19	20-26	27-31 1-2	3-9	10-16	17-23	24-30	1-7	8-14	15-21	22-28	29-31 1-4	5-11	12-18	19-25	26-30 1	2-9	9-15	16-22	23-29	30 31
National Highway 1	552.740																												
Southern Ring Road No.3 to Cau Dau	27.910																												
Connecting National Highway 1 with Main Project	12.825																												
Ho Chi Minh Route	183.630																												
National Highway 19	81.648																												
National Highway 10	347.350																												
National Highway 5	163.420																												
Route No.Bai - Bac Ninh	66.630																												
National Highway 37	69.575																												
National Highway 38	173.645																												
National Highway 39	283.745																												
Total	1,978.875																												
3 Conclusion of data analysis																													

2nd,3rd of septemberNational holiday

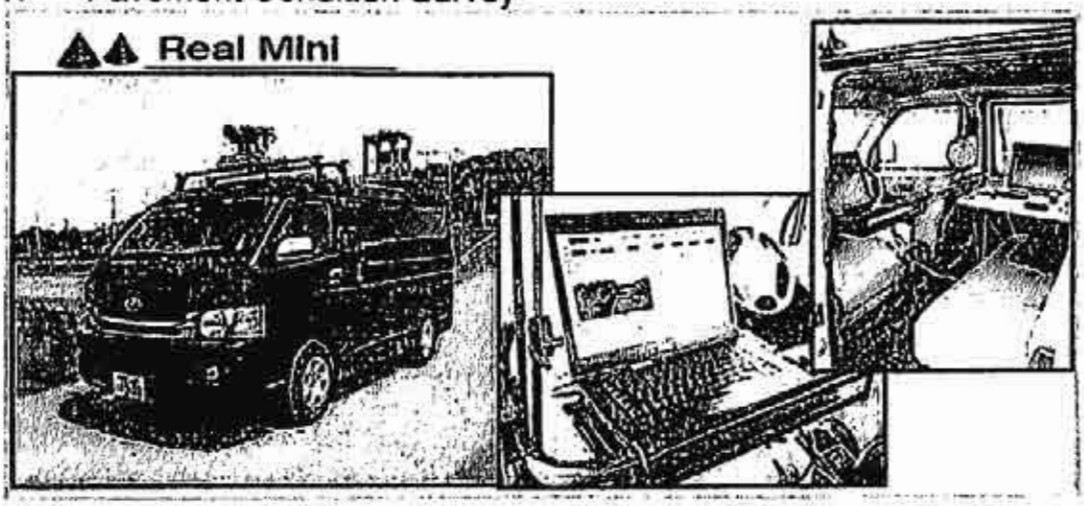
③ Members

Data Analysis(work in Vietnam)

Instructor	Joel F.CRUZ, Kohei SAKAI, Gaku SAITO
Operator 1	
Operator 2	
Operator 3	
Operator 4	
Operator 5	
Operator 6	
Operator 7	
Operator 8	
Interpreter	Đỗ Hồng Phong Phạm Quang Sơn

List of Equipments

1. Pavement Condition Survey



2. Data Analysis

Project for Pavement Data Collection Survey

Room No. 1208, 12th Floor, Daeha Business Center,
360 Kim Ma Street, Ba Dinh District, Hanoi, Vietnam
Tel. 84-4-3771-0662 Fax. 84-4-3771-0661

ATTENDANCE LIST FOR A TECHNICAL MEETING

ON JUNE 27 2012

Seq.	SURNAME AND GIVEN NAME	AGENCY	SIGNATURE
1	Ngô Khắc Dũng	Vụ KC.HT	
2	Quách Văn Khuê	VST	
3	Trịnh Xuân Sơn	Vụ KH-ĐT	
4	Vũ Anh Tuấn	Trung tâm KHĐT	
5	Lương Văn Minh	Vụ QLBT	
6	Trần Nguyên Hưng	Vụ KHCN	
7	Hoàng Ngọc Nhị	Khu QLĐB 2	
8	Tô Hoài Phương	Khu QLĐB 2	
9	Hoàng Việt Hải	Ban QLDA ICT-TCĐB	
10	Nguyễn Anh Tú	RRHV2	

Project for Pavement Data Collection Survey

Room No. 1208, 12th Floor, Daeha Business Center,
360 Kim Ma Street, Ba Dinh District, Hanoi, Vietnam
Tel. 84-4-3771-0662 Fax. 84-4-3771-0663

ATTENDANCE LIST FOR A TECHNICAL MEETING

ON JUNE 27 2012

SEQ.	SURNAME AND GIVEN NAME	AGENCY	SIGNATURE
1/	Mr. Ha...tha	JICA	
2/	Mr. Mori	–	
3/	Mr. Kanoshima	–	
4/	Mr. Tanaka	–	Tanaka
5/	Ms. Quynh Anh	–	
6/	Ms. Trang	–	
7/			

Project for Pavement Data Collection Survey

Room No. 1208, 12th Floor, Dacha Business Center,
360 Kim Ma Street, Ba Dinh District, Hanoi, Vietnam
Tel. 84-4-3771-0662 Fax. 84-4-3771-0663

ATTENDANCE LIST FOR A TECHNICAL MEETING

ON JUNE 27 2012

SEQ.	SURNAME AND GIVEN NAME	AGENCY	SIGNATURE
1	Đinh Thị Thanh Huyền	DP VN	
2	Nguyễn Đức Cảng	DP VN	
3	Kazuya Aoki	PASCO	青木一也
4	Koroku Sama	PASCO	相馬孝六
5	Mitsufumi Maeda	PASCO	前田光郁
6	Joel CRUZ	PASCO	
7	Nguyễn Thị Diệu Linh	PASCO	
8	Tomoko KIMURA	PASCO	木村