THE MASTER PLAN STUDY
ON
THE INTRODUCTION OF
INTELLIGENT TRANSPORT SYTEMS (ITS)
IN
BENGALURU AND MYSORE
IN
INDIA

February 2014

JICA Study Team

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1. Study Background

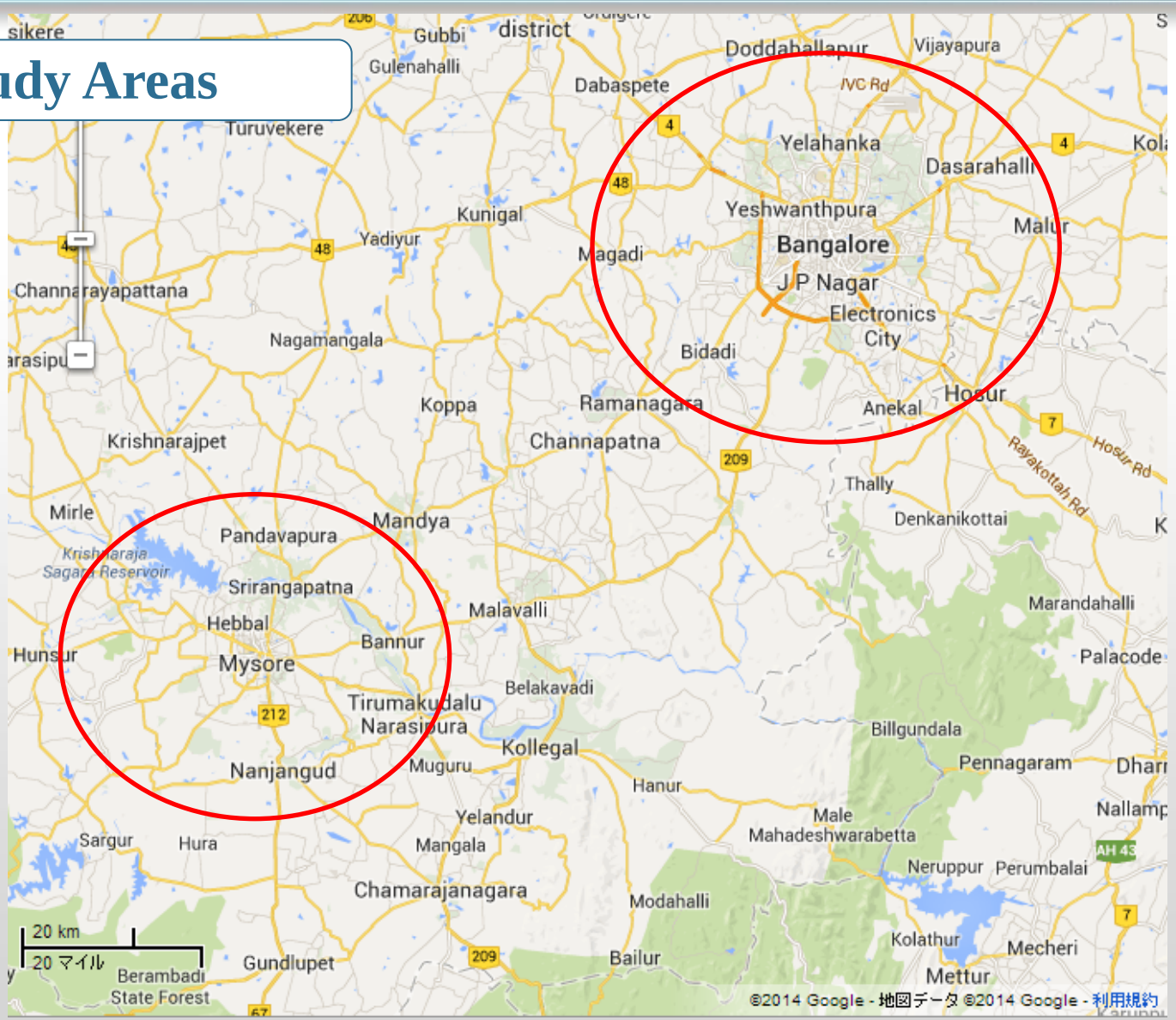
- **Increase in Traffic with Rapid Urbanisation**
- **Road and Transport Infrastructure Not Catching up Increasing Traffic**
- **Chronic Congestion in City**
- **Individual ITS Planning but Not Sufficient Coordination**
- **Peripheral Ring Road Under Planning**
- **ITS Seminar in Bengaluru in March 2012, and ITS Counterpart Programme in Japan in February 2013**

ITS Master Plan Study

Agreed Between Urban Development Department, Gov. of Karnataka and JICA

2. Study Area

Study Areas



3. Expected Goals of Study

- **Traffic congestion will be reduced by improving traffic flow on the road network including PRR realised by ITS**
- **Usage of public transport will grow through ITS enhancements**
- **Proper planning and implementation of road infrastructure development and traffic management will be realised by utilisation of quantitative data on traffic**

4. Study Outputs and Major ITS Components for Consideration

Study Outputs

1) ITS Master Plan for Bengaluru Metropolitan Area

2) ITS Master Plan for Mysore

3) Basic Design Concept of Prioritised ITS Items for Bengaluru

4) Capacity Building

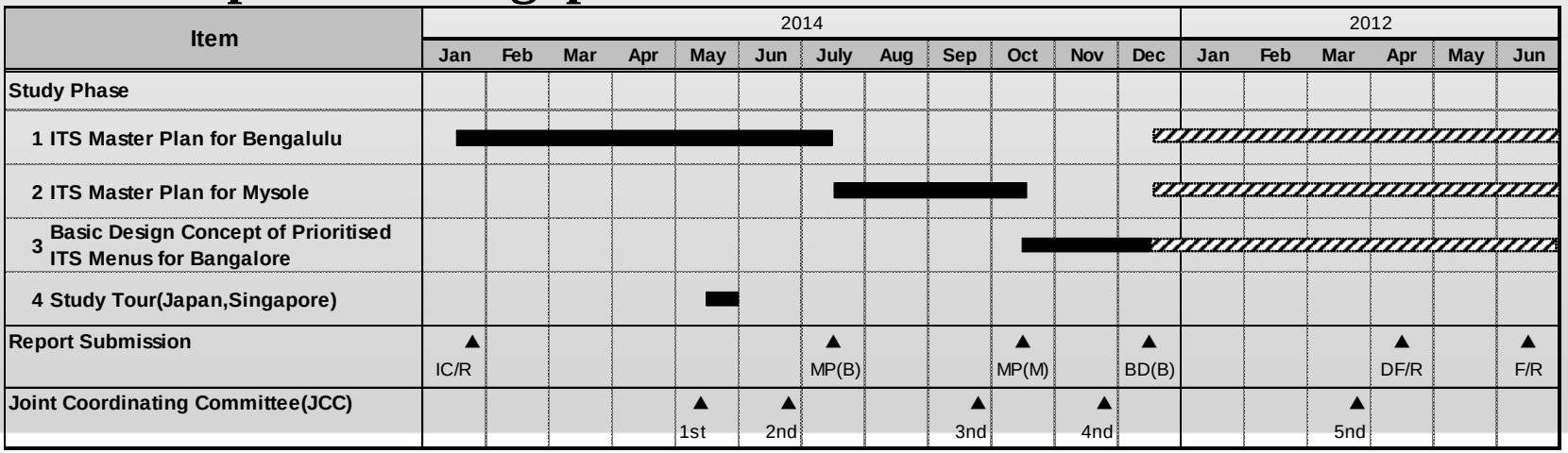
Major ITS Components for Consideration of Study

- **ITS in the City for Traffic Management**
- **ITS for Peripheral Ring Road in Bengaluru**
- **Electronic Road Pricing**
- **Common Card**

5. Overall Work Schedule and Milestones

- **Study Period:** **January 2014 – June 2015**
- **Three (3) Phases:**
  - **I. Mid July 2014: ITS Master Plan for Bengaluru Metropolitan Area**
  - **II. Mid October 2014: ITS Master Plan for Mysore**
  - **III. Mid December 2014: Basic Design Concept of Prioritised ITS Projects (services) for Bengaluru Metropolitan Area**
- **Study Tour**

  Japan and Singapore



6. Study Members and Study Team Structure

Core Members

1. **Hiroya TOTANI: Team Leader/Traffic Management Planning**
2. **Noboru KONDO: ITS Planning 1 (City ITS)**
3. **Seiya MATSUOKA: ITS Planning 2 (Peripheral Ring Road ITS)**

Experts

4. **Ryuichi OIKAWA: Transport Planning/Demand Forecast**
5. ***** *** : Congestion Charging System**
6. **Shinichiro MIYAKAWA : Common Card System**
7. **Shinji HATANO: ITS Design1**
8. **Eiji WAKATSUKI: ITS Design 2 /ITS Planning Support**
9. **Denichiro YAMADA: ITS Operation 1 (City ITS)**
10. **Yasuyuki MATSUMOTO: ITS Operation 2 (Peripheral Ring Road ITS)**
11. **Hiroshi KANEKO: Economic and Financial Analysis**
12. **Michio ISEKI: Cost Estimate/Coordination**

7. Report Submission

Report Name	Submission Date	Number of Copies to be Submitted
Inception Report	January 2014	30 copies in English (10 for JICA)
ITS Master Plan for Bengaluru Metropolitan Area	Mid July 2014	30 copies in English (5 for JICA)
ITS Master Plan for Mysore	Mid October 2014	30 copies in English (5 for JICA)
Design Concept	Mid December 2014	30 copies in English (5 for JICA)
Draft Final Report	Mid April 2015	30 copies in English (5 for JICA) 30 summaries in English (5 for JICA)
Final Report	Mid June 2015	40 copies in English (10 for JICA) 40 summaries in English (10 for JICA) 10 summaries in Japanese

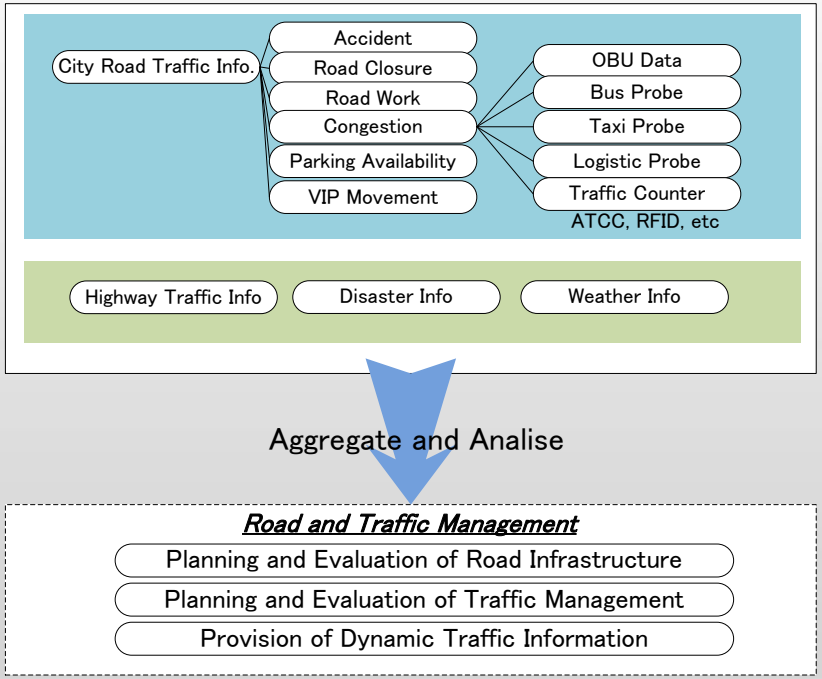
8. Major Issues

- **Increase in Traffic and Road Transport Infrastructure**
- **Ineffective Use of Data Necessary for Proper Road and Traffic Management**
- **Lack of Comprehensive Approach for ITS Planning**
- **Fast Implementation of ITS**
- **Many Stakeholders**

Policy 1: Effective Use of Road and Traffic Data for Appropriate Road Traffic Management

- Quantitative Comprehension of Traffic Conditions
- Aggregation and Utilisation of Data and Information Necessary for Road Traffic Management and Users

Road Traffic Information: Collection, Accumulation and Analysis

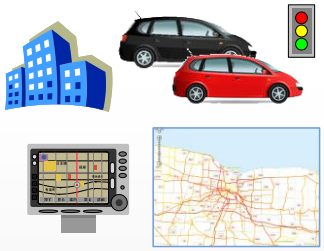


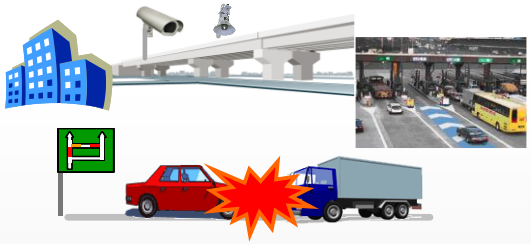
Policy 2: Traffic Control Using ITS

Major Points of Considerations of ERP

- **Technical alternatives such as RFID / DSRC**
- **Utilisation of collected OD data for road and traffic management**
- **Area consideration for effective charging**
- **Organisational considerations including establishment of a new organisation for sustainable operation and management**
- **Effective utilisation of collected fees such as for operation and maintenance of ITS facilities**
- **Necessary legislation measures**

Policy 3: Integration of ITS





Rail

Road/Traffic

Highway

Railway Information

Congestion Info.

OBU Data

Signal Information

Expressway Info

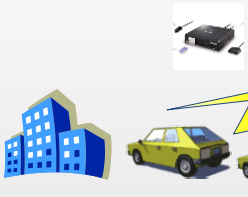
Bus

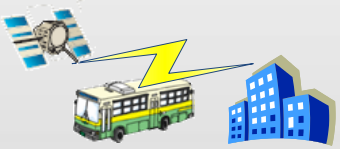
Bus Information

ITS Control Center

Taxi Probe

Taxi





Logistic Probe

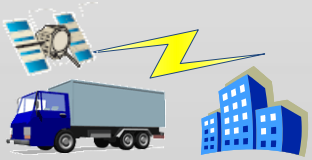
Affected Information

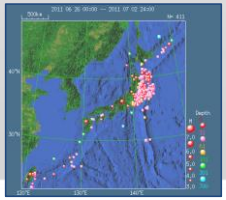
Weather Informaion

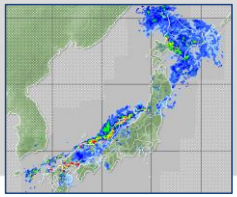
Logistics

Disaster Info.

Meteorological Info.







Policy 4: Phased ITS Implementation

1) Phase 1

- **Establish mechanism to collect/utilise essential data and information in a limited area, including possibility of new centre**

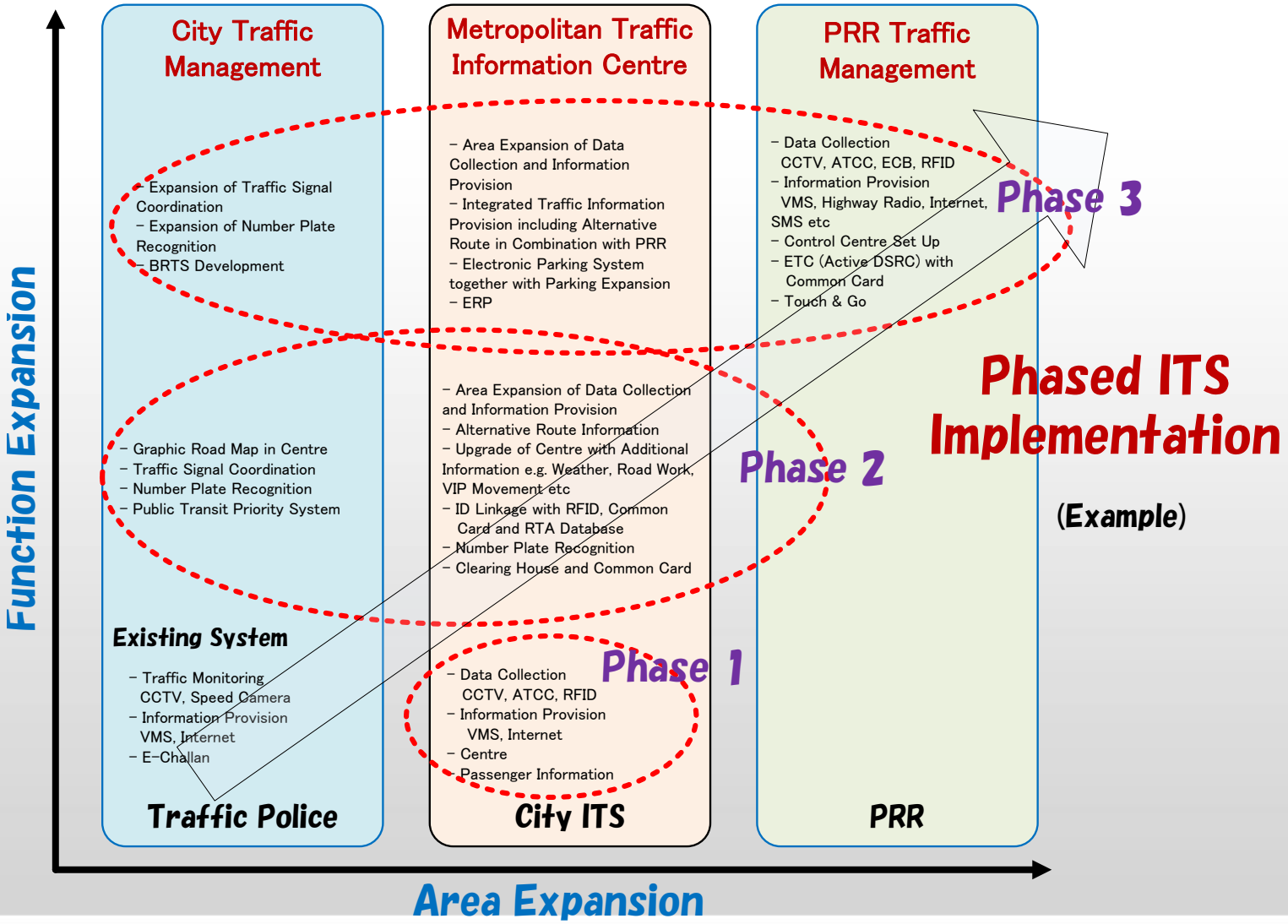
2) Phase 2

- **Expansion of target area to Outer Ring Road, in view of the connection points with the major radial roads and other major roads**
- **Upgrade of the functionality of the system prepared in Phase 1**

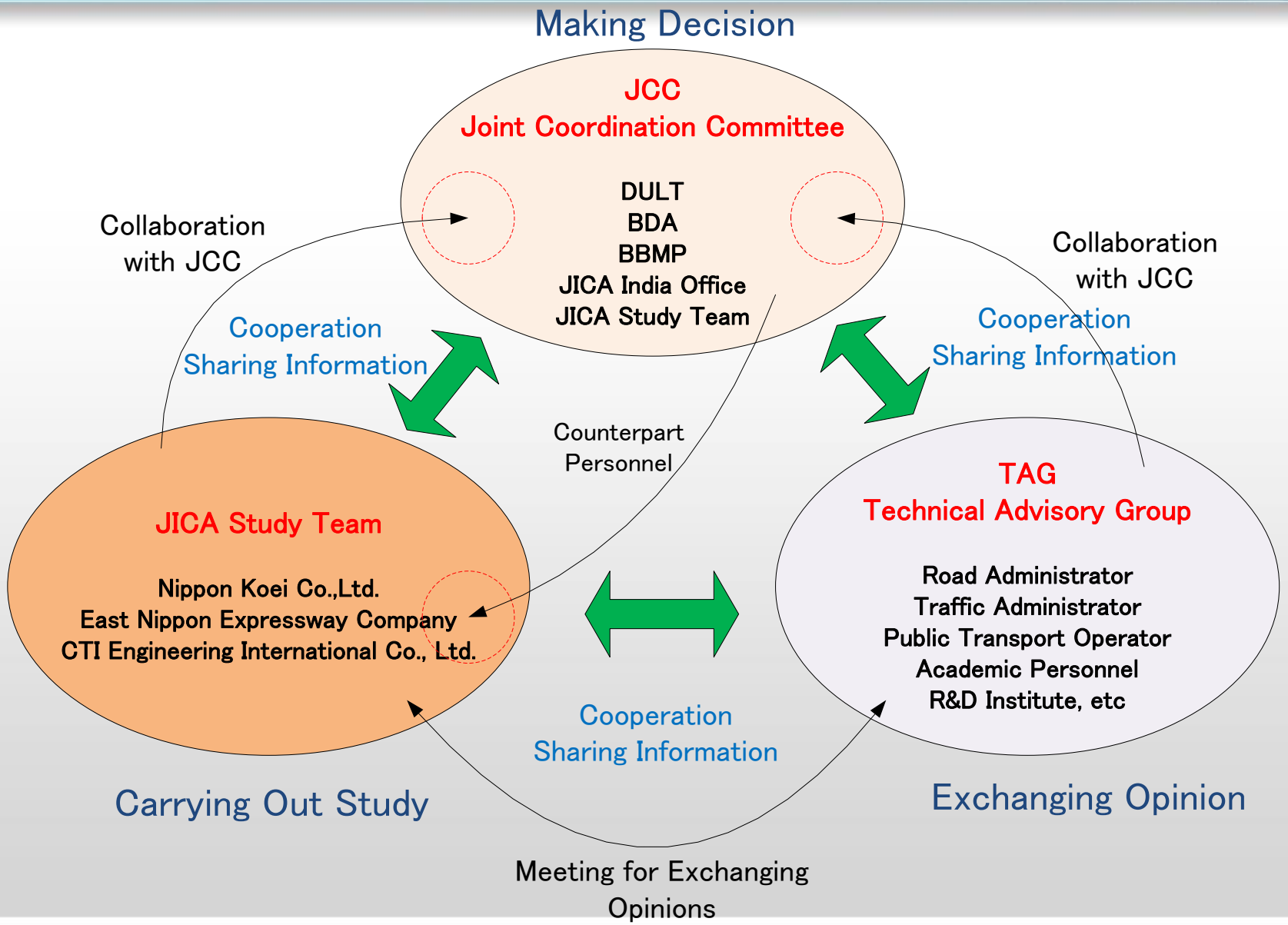
3) Phase 3

- **Expansion of target area to Peripheral Ring Road, and integration of City ITS and Peripheral Ring Road ITS**
- **Realisation of Wide Area Metropolitan Traffic Information**

Image of Phased ITS Implementation



10. Study Implementation Structure



Thank You