Introduction of SDB

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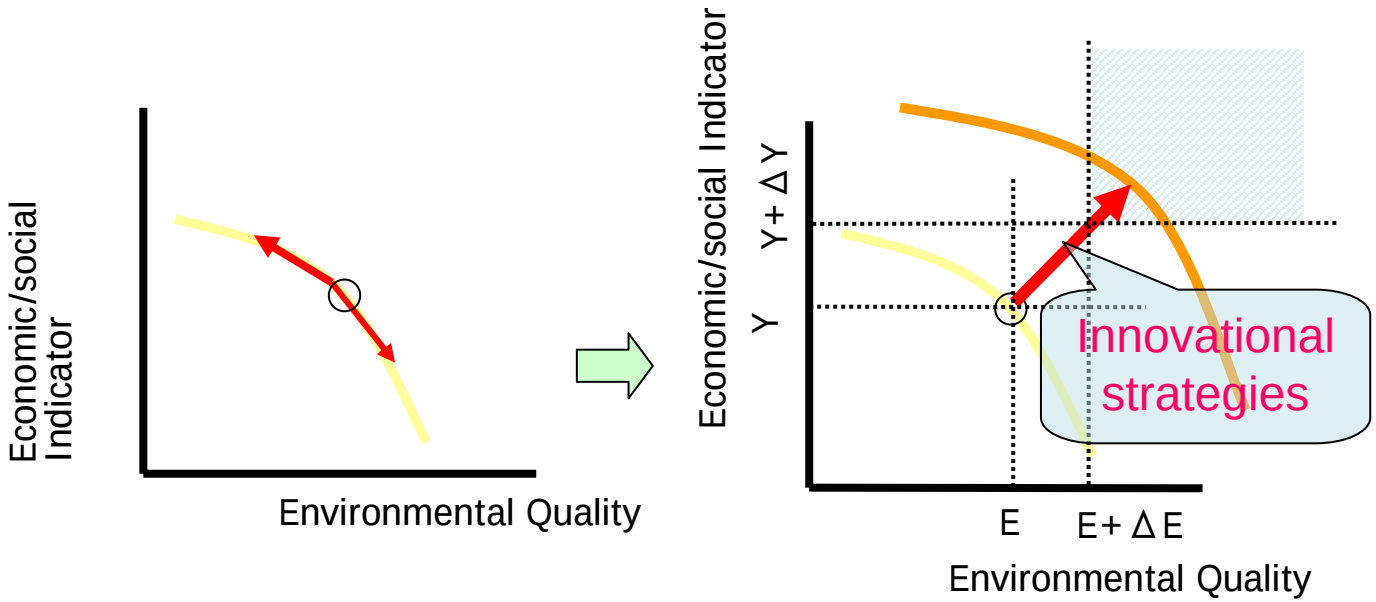
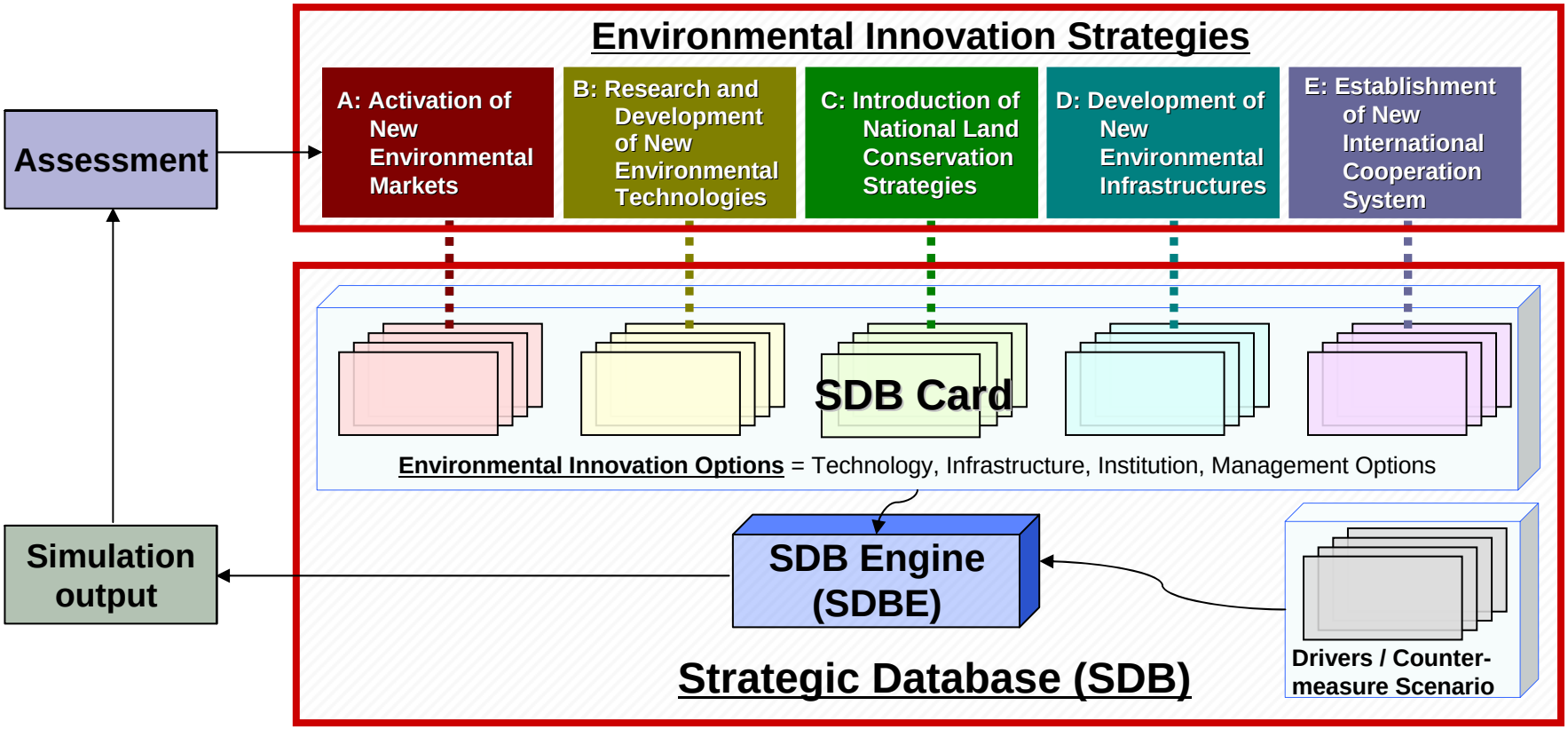
Necessity of innovation strategies



What is Strategic Database?



- Strategic database for the environmental policy decision is composed of tables of technologies, management, institutions, and scenarios, etc. and an integrated module part (Inference Engine, SDBE) where these data are integrated and analyzed.

Example of SDB Card [Advanced technology]

Hybrid vehicle

Environmental Option Data Sheet Sheet No.: 1

Outputs Database | Inputs Database

Option	Gasoline hybrid vehicle
Code	TR_HYBRID
Environmental Issue	[CC]: Climate Change
Sector	[TR]: Transporation sector
Description	A car with two different power units (motor and engine). Drive using the motor allows improved mileage, low noise, low exhaust emissions and so on. Since there is no need to provide special energy supply infrastructure like that required by electric cars for recharging, this represents a basic car technology that will lead to future fuel cell cars.
Technical Barrier	Since multiple power sources are used, the biggest issues are achieving a small, lightweight system, and reducing prices.
Social Barrier	
Secondary Effect	Generally contribute to reducing emissions of atmospheric pollutants such as NOx. Also reduce noise.

Basic Unit	Name	Value	Unit
	Unit	1	Unit

Operating Rate: 100.0 %

Output	Value	Unit	Reference
[TR_CAC]: Freight Trns. (Vehicle)		トンキロ	

Input	Value	Unit	Reference
[OLG]: Gasoline		kgoe/Year	

Installation Potential | Installation | Available Year: 1997 | Retirement Year: 9999 | Lifetime: 10 | Additional Manpowe: 0 | Alternative Option: TR_ELECTCR]: TR_LNG]: Natu TR_PETROCR]

URL Link | Contact Detail

Outputs Database | Inputs Database

Example of SDB Card [Infrastructure]

Public transportation priority system

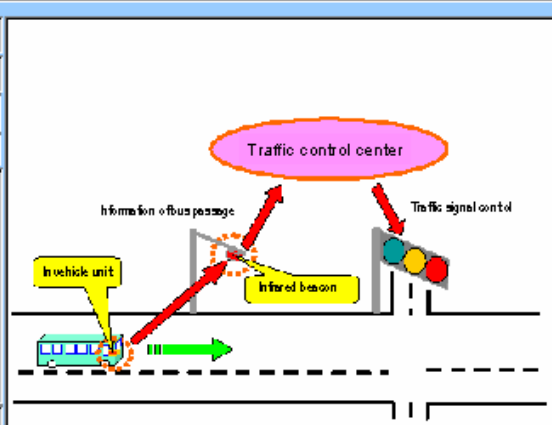
Environmental Option Data Sheet Sheet No.: 2

Outputs Database | Inputs Database

Technology	Public Transportation Priority System(PTPS)
Code	TR_PTPS
Environmental Issue	[CC]: Climate Change
Sector	[TR]: Transporation sector
Description	PTPS supports public transportation vehicles such as buses by giving them priority in transit. The traffic control center grasps the traveling situation of buses on the road by means of infrared beacons installed on the roads, and responds by creating dedicated/priority bus lanes, warning illegally traveling vehicles, executing priority traffic signal control, etc. Among the merits of this system are improved convenience for users, promotion of the use of mass public transportation, securing of regular bus operations, reduction of bus stopping times at traffic signals, reduction of illegal traveling in dedicated bus lanes, ensuring the safety of buses, etc.
Technical Barrier	
Social Barrier	
Secondary Effect	

Basic Unit	Name	Value	Unit

Operating Rate	100.0	%
Output		



Public Transportation Priority System

Example of SDB Card [Management]

Eco-driving : No idling

Environmental Option Data Sheet Sheet No.: 3

Outputs Database | Inputs Database

Technology	Eco-driving: No idling
Code	TR_ED_NIDL
Environmental Issue	[CC]: Climate Change
Sector	[TR]: Transporation sector
Description	Turning off the engine to prevent wasted energy when stopping to wait for passengers, or to unload luggage. Ten minutes of idling in a passenger car uses 130 cc of gasoline, while 1 hour of idling in a large diesel vehicle uses a maximum of 1,800 cc of fuel. In general, stopping idling when stopped for 5 seconds or more is thought to be effective.
Technical Barrier	
Social Barrier	
Secondary Effect	Contributes to reducing emissions of atmospheric pollutants.

Idling stop

Basic Unit	Name	Value	Unit

Operating Rate	100.0	%

Output

Example of SDB Card [Non-advanced technology]

Bicycle with rider induced

Environmental Option Data Sheet Sheet No.: 4

Outputs Database | Inputs Database

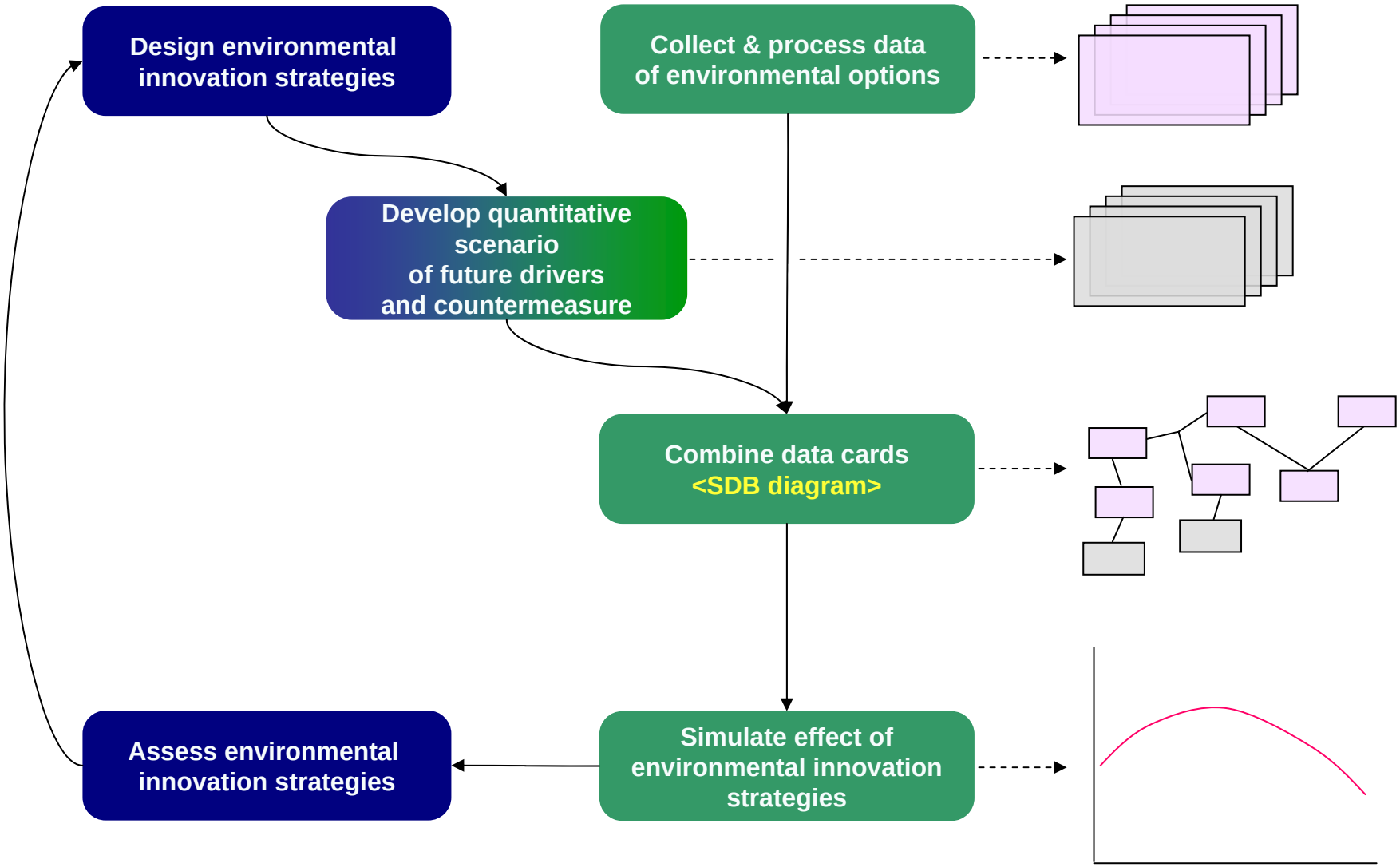
Technology	Bycle with induced forces
Code	TR_BIF
Environmental Issue	[CC]: Climate Change
Sector	[TR]: Transporation sector
Description	A bicycle that only goes faster each time it encounters a bump is hard to imagine but that is exactly what Kanak Das of Gujarat have achieved. Kanak's contraption features a transmission system that is actuated by terrain-induced forces and the rider's motional responses to them. Terrain-induced vibrations are coupled with the weight of the rider to propel the bicycle with the use of a spring and freewheel. A pinion actuates the free wheel, which receives a corresponding motion to that induced by the undulations of the road.
Technical Barrier	
Social Barrier	
Secondary Effect	

Basic Unit	Name	Value	Unit
	Unit	1	Unit

Operating Rate	100.0	%
Output		

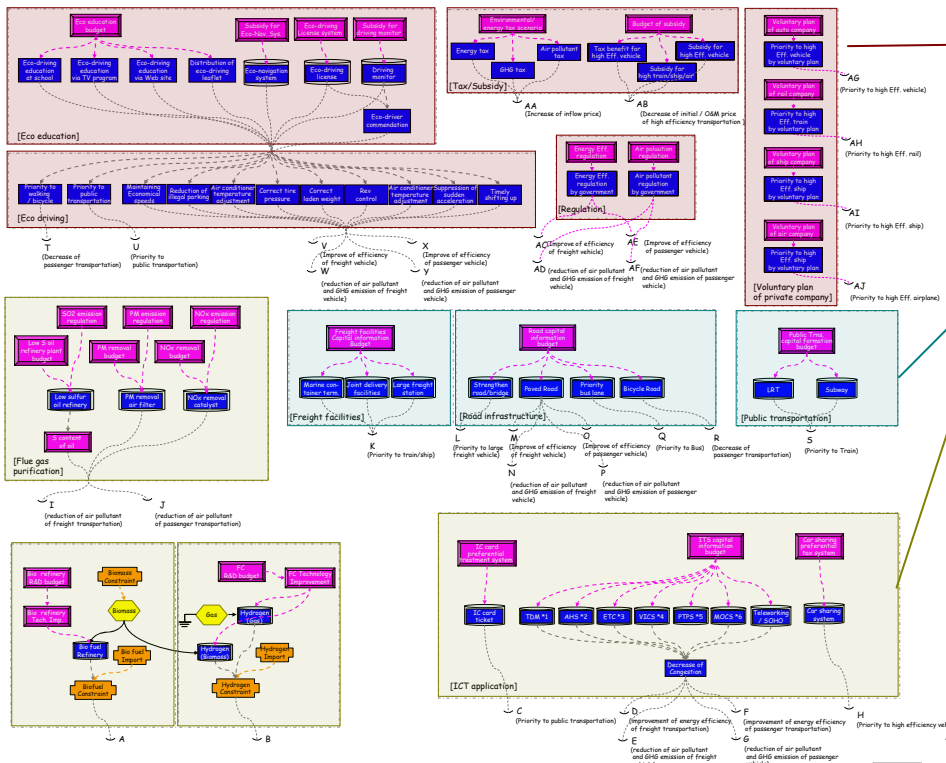
Bicycle with rider induced

Application of Strategic Database



SDB diagram: Transportation sector [Overview]

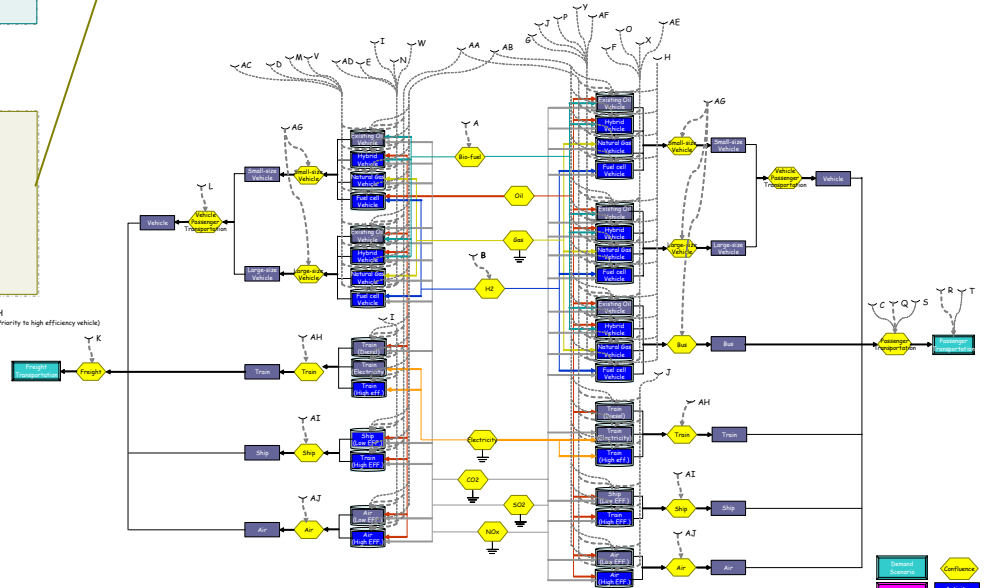
Transportation sector



A: Activation of New Environmental Markets

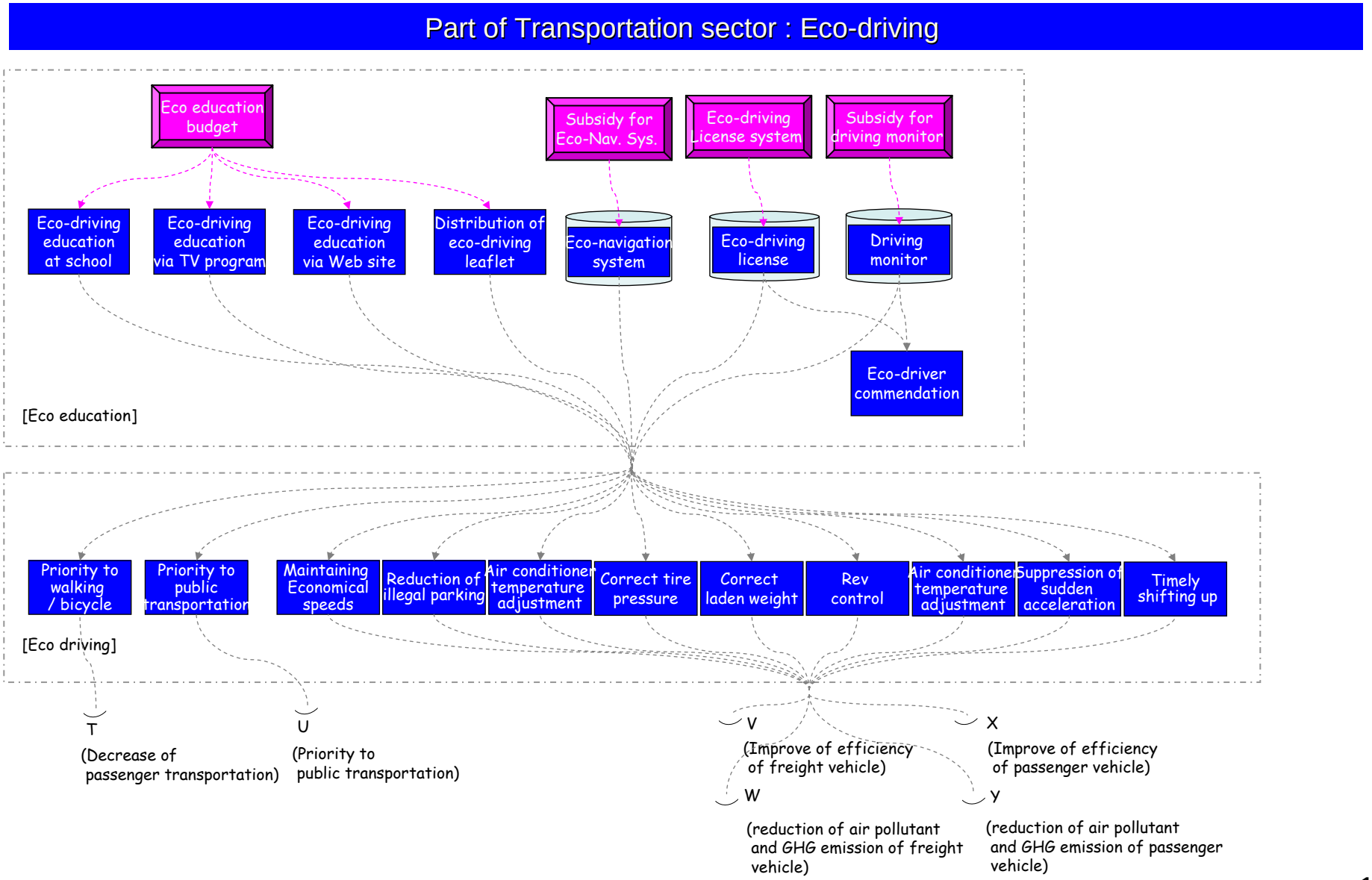
B: Research and Development of New Environmental Technologies

D: Development of New Environmental Infrastructures



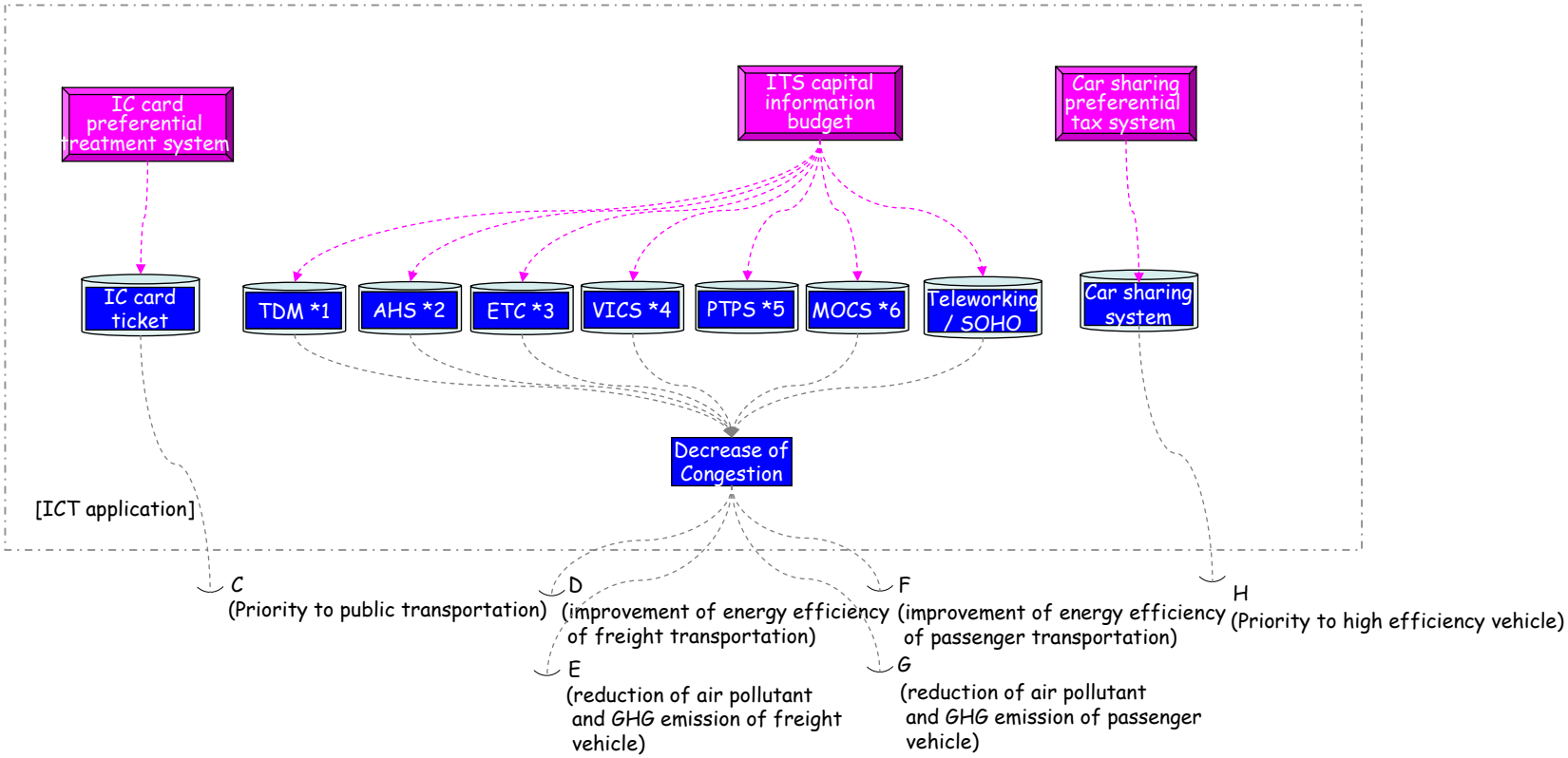
*1 TDM: Traffic Demand Management
*2 AHS: Advanced Cruise-Assist Highway System
*3 ETC: Electronic Toll Collection
*4 VICS: Vehicle Information and Communication System
*5 PTPS: Public Transportation Priority Systems
*6 MOCS: Mobile Operation Control Systems

SDB diagram: Transportation sector [Part 1]



SDB diagram: Transportation sector [Part 2]

Part of Transportation sector : Intelligent Transport System



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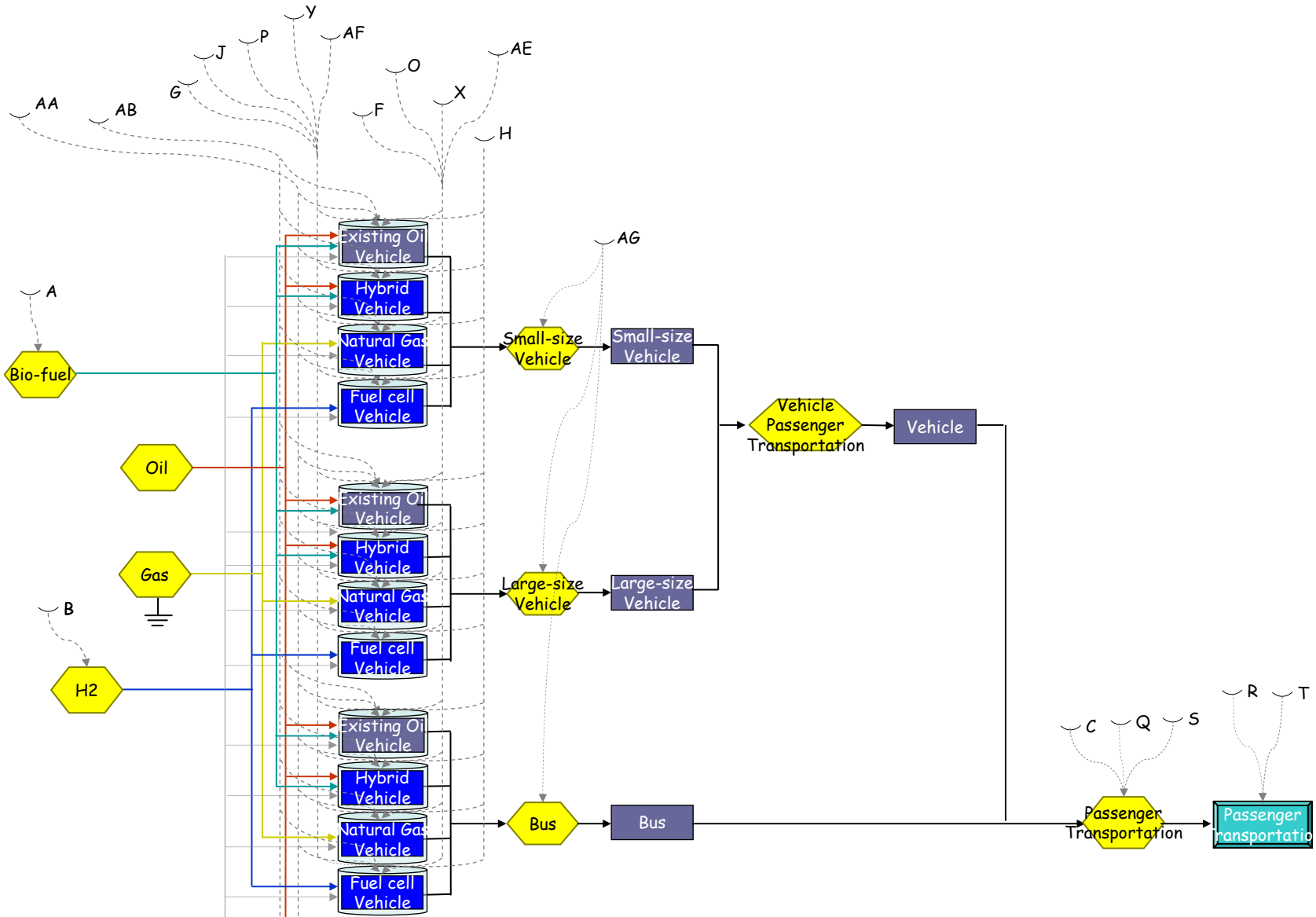
SDB diagram: Transportation sector [Part 3]

Part of Transportation sector : Passenger vehicle



Conclusion

- Innovation strategies are essential to achive MDG and national targets of economic, social, and environmental indicators simultaneously at early stage.
- SDB cards provide information regarding environmental options of technology, infrastructure, management and institution for stakeholders.
- SDB diagrams provides rough sketch of combination of environmental option. Innovation strategy should be design based on the diagram.
- SDB engine analyzes innovation strategies quantitatively from the aspect of environment improvement, social improvement and economical impact.

- We will continue to collect more environmental options which contribute to making innovational strategies in various fields.
- We will develop user friendly interface of SDB engine and diffuse the SDB as a support tool for policymaking though a training workshop.