

Public Transportation System

- Structured Analysis

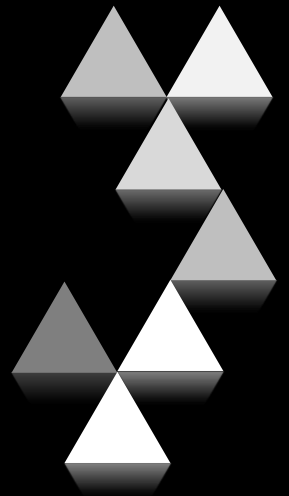
TEAM4 - NucleaR

200910814 강기웅

201214146 김남형

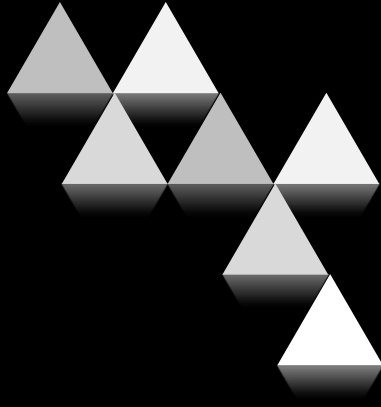
201214147 박현승

201214151 정재명





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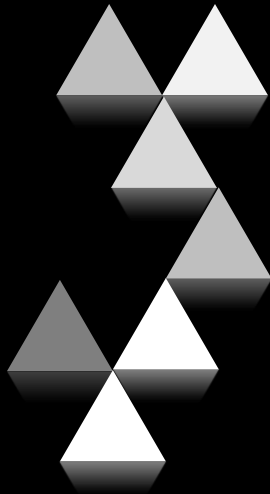
**Chapter1 : System Context Diagram
& Data Flow Diagram Lv0**

Chapter2 : Data Flow Diagram Lv1

Chapter3 : Data Flow Diagram Lv2

Chapter4 : Data Flow Diagram Lv3

Chapter5 : Q&A





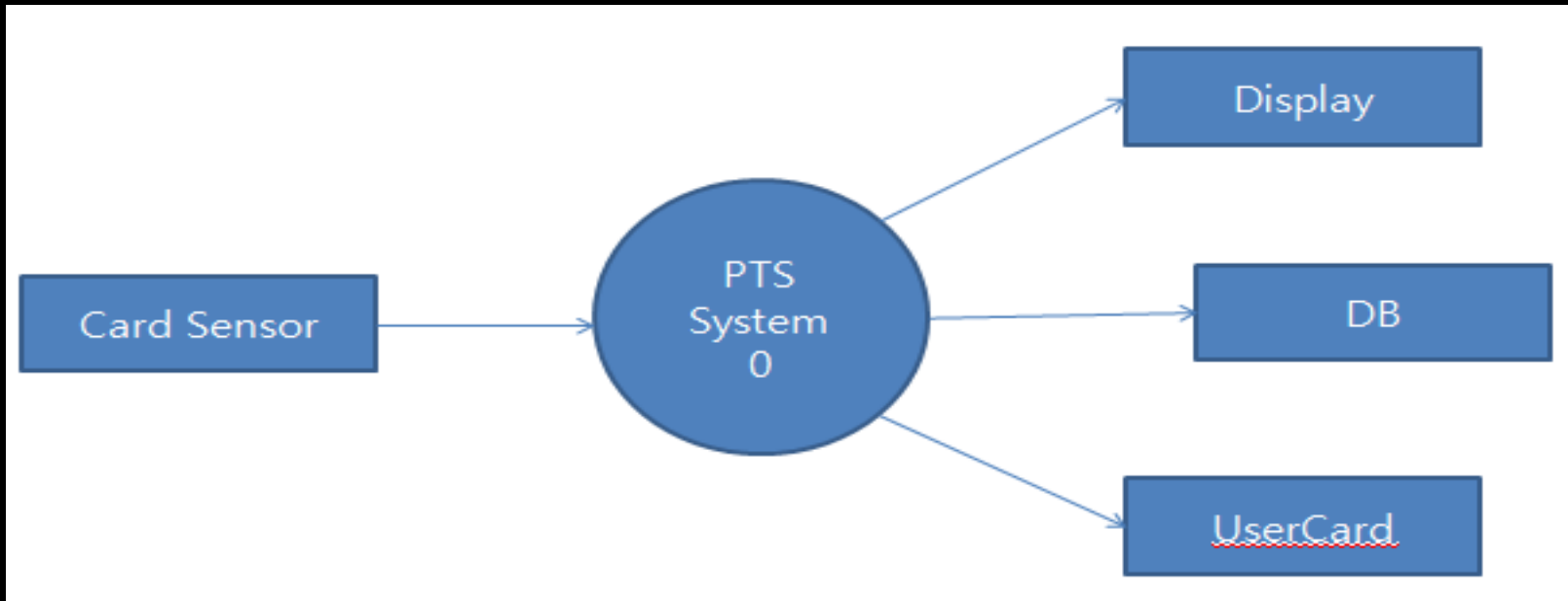
Chapter

1

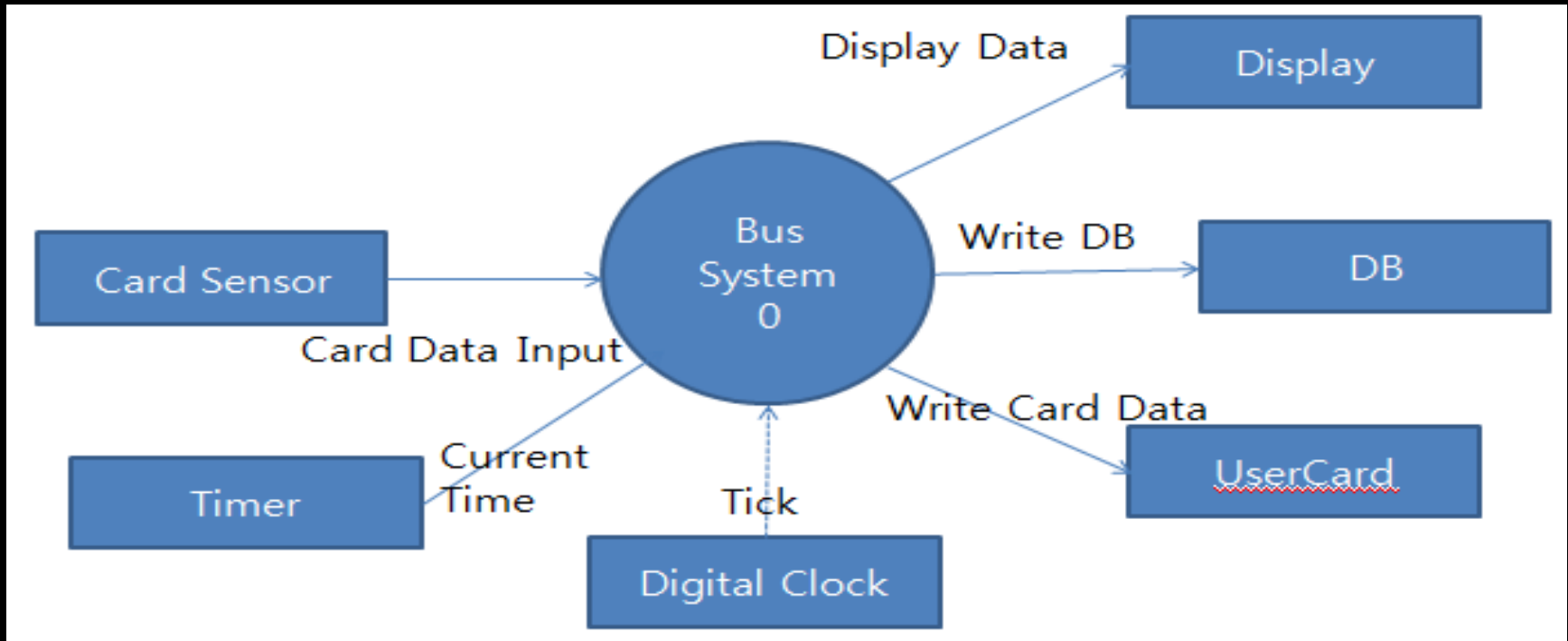
PTS Event List

Input / Output Event	Description
Card input	Card Data Input
Display	Current Information/status Display
DB	Write terminal data in <u>textfile</u>
Card Data output	Card data output (write)

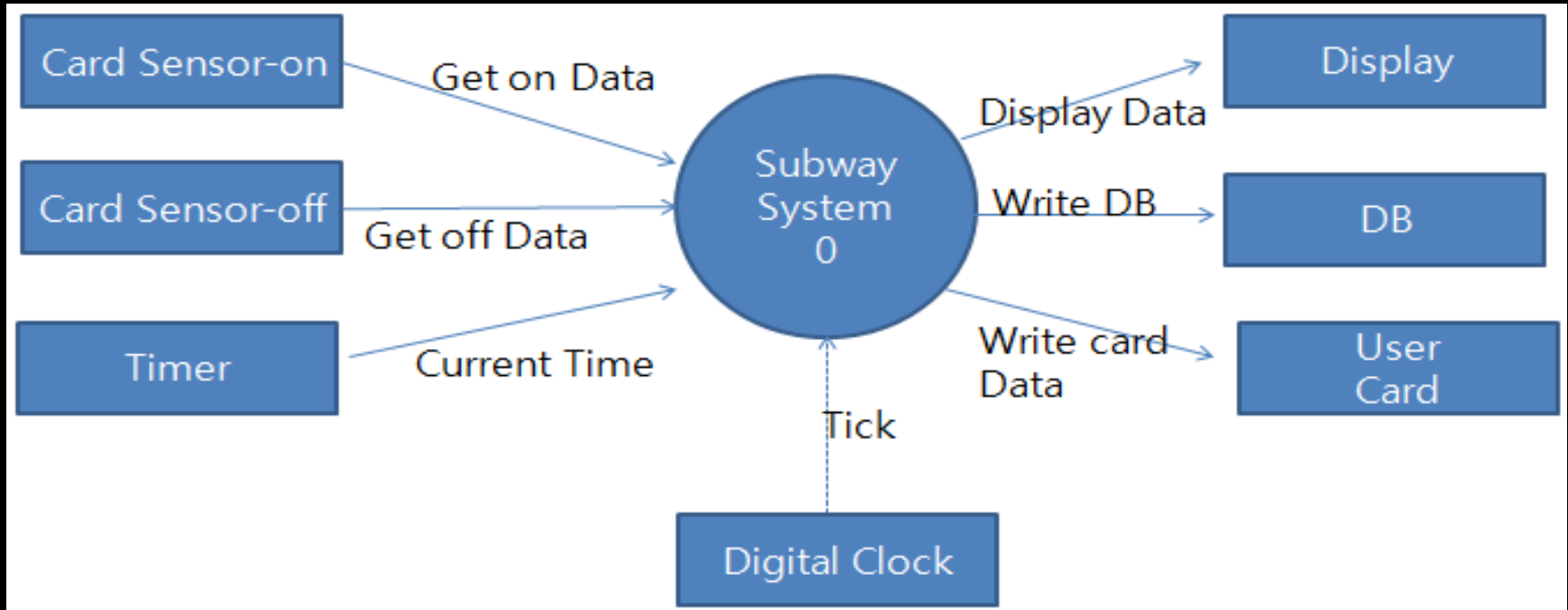
PTS System Context Diagram



Bus Terminal DFD Lv0



Subway Terminal DFD Lv0

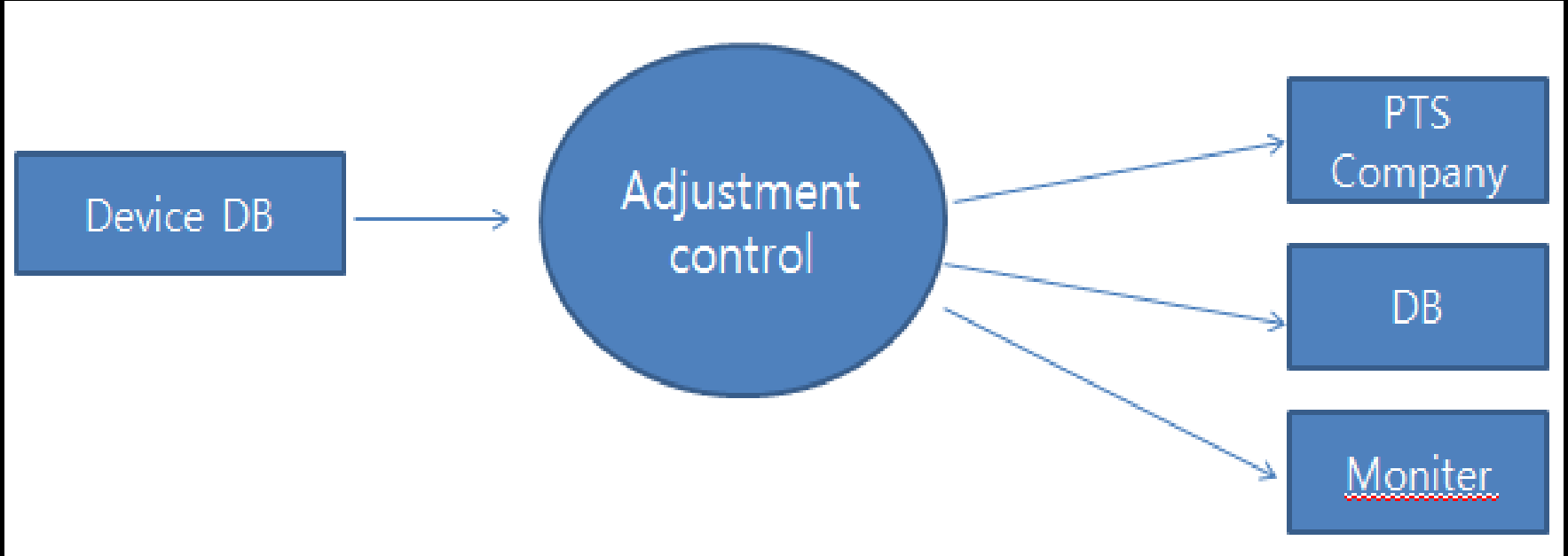


정산시스템 Event List

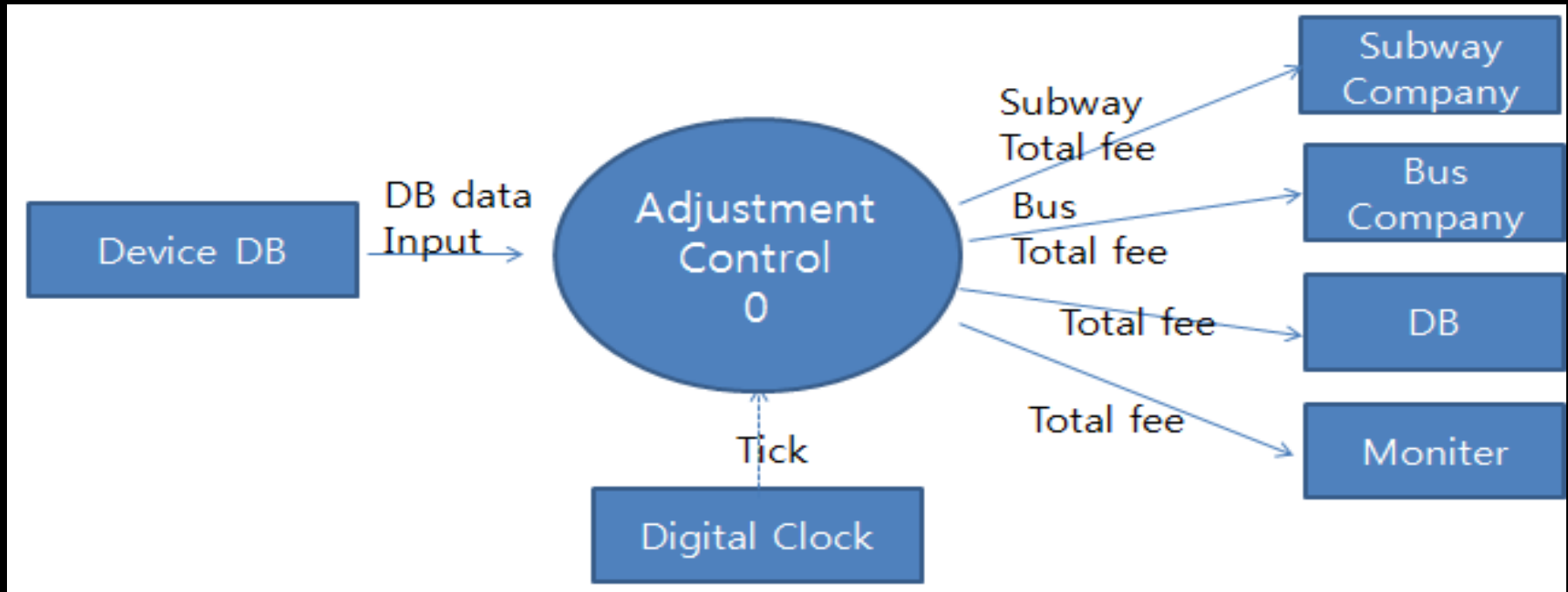
Input / Output Event	Description	Format/Type
Device DB Input	Device Data Input	String
Fee	PTS Company에 정산된 요금을 보낸다.	String
DB	정산결과를 DB에 저장	String
Display	Total Fee Display (write)	String

정산시스템

System Context Diagram



정산시스템 DFD Lv0

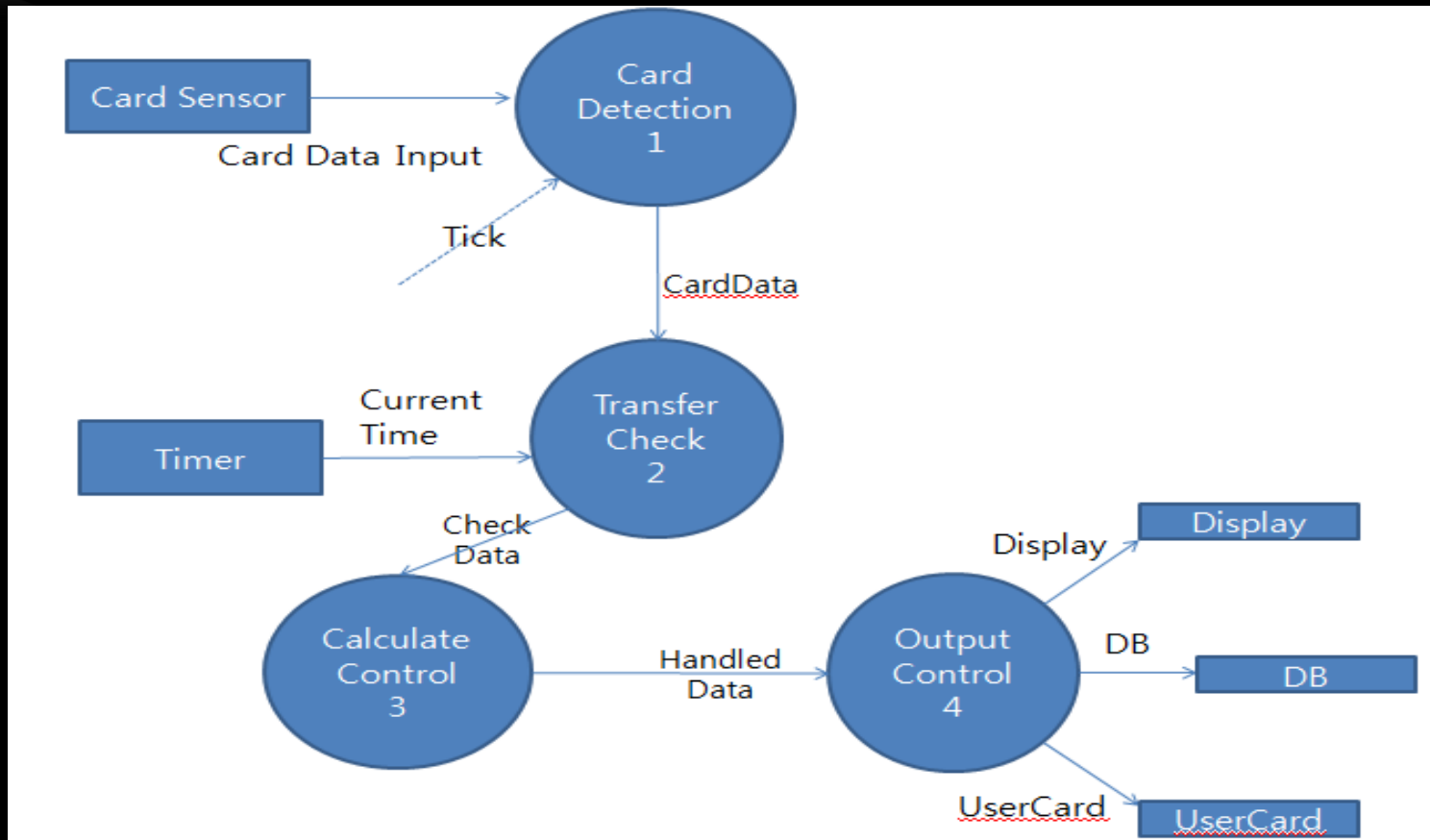




Chapter

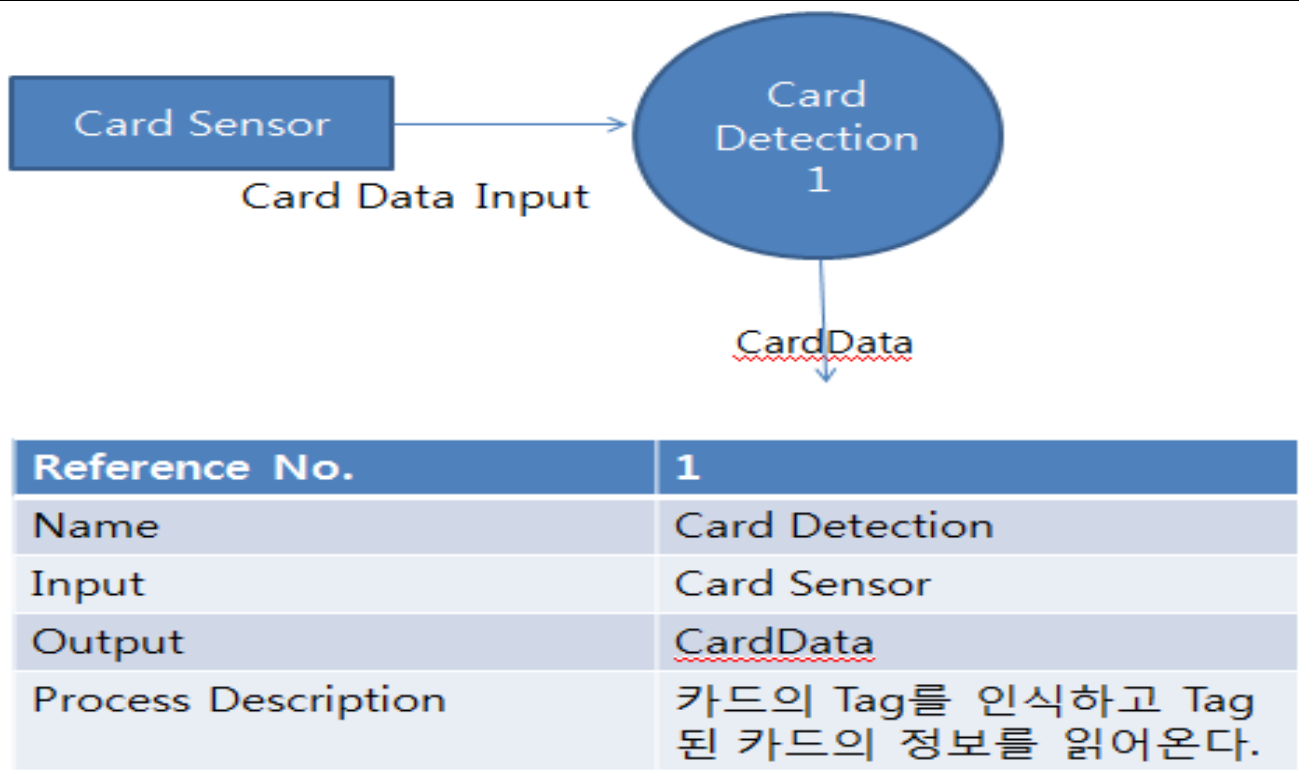
2

Bus Terminal DFD Lv1



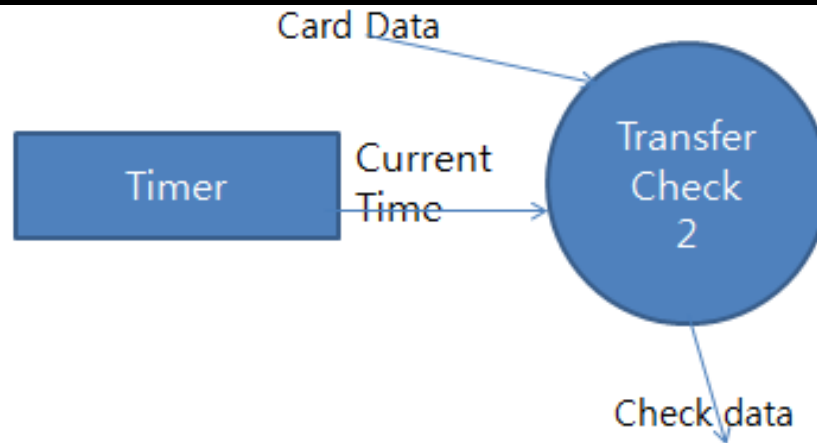
DFD Lv1

- Process Specification



DFD Lv1

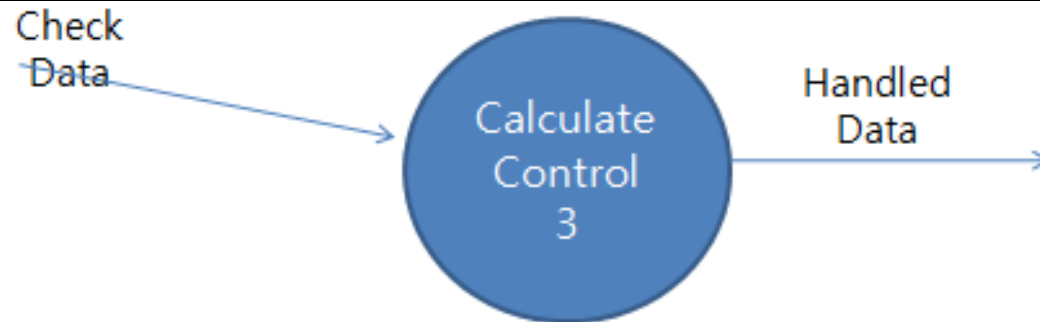
- Process Specification



Reference No.	2
Name	Transfer Check
Input	Card Data , Current Time
Output	Check Data
Process Description	Current Time과 Card Data를 이용, 환승 여부를 판단하여 요금계산에 필요한 정보를 포함한 Check data를 출력한다.

DFD Lv1

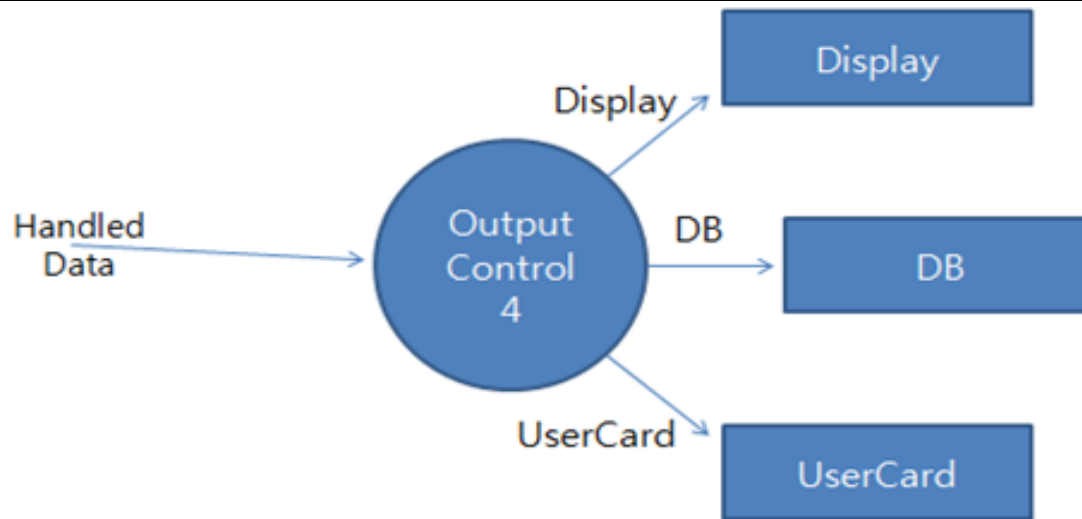
- Process Specification



Reference No.	3
Name	Calculate Control
Input	Check Data
Output	Handled Data
Process Description	Check Data를 받아 요금계산을 수행하는 프로세스. 계산이 수행된 후 출력을 위해 가공된 Handled Data를 출력한다.

DFD Lv1

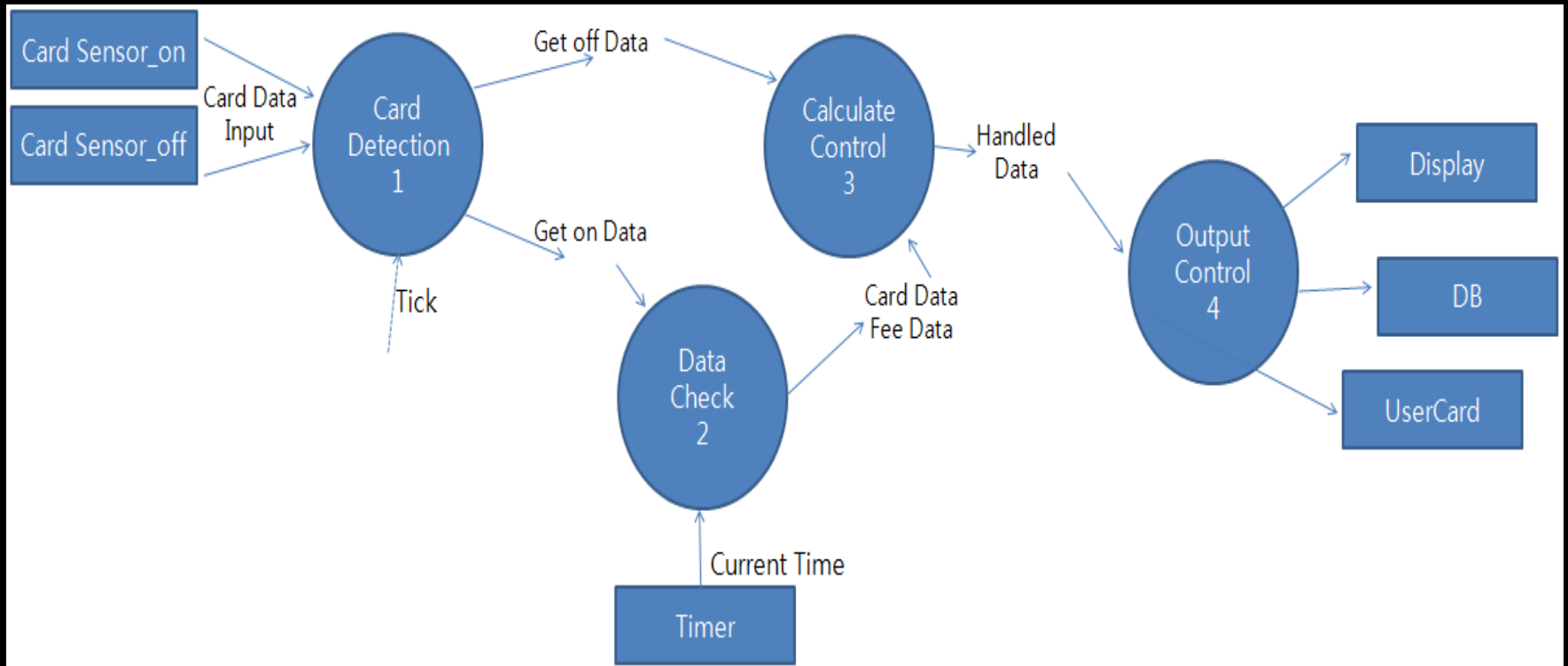
- Process Specification



Reference No.	4
Name	Output Control
Input	Handled Data
Output	Display Data, DB Data, UserCard Data
Process Description	선행 프로세스들을 거치며 처리된 정보의 출력 과정을 수행한다.

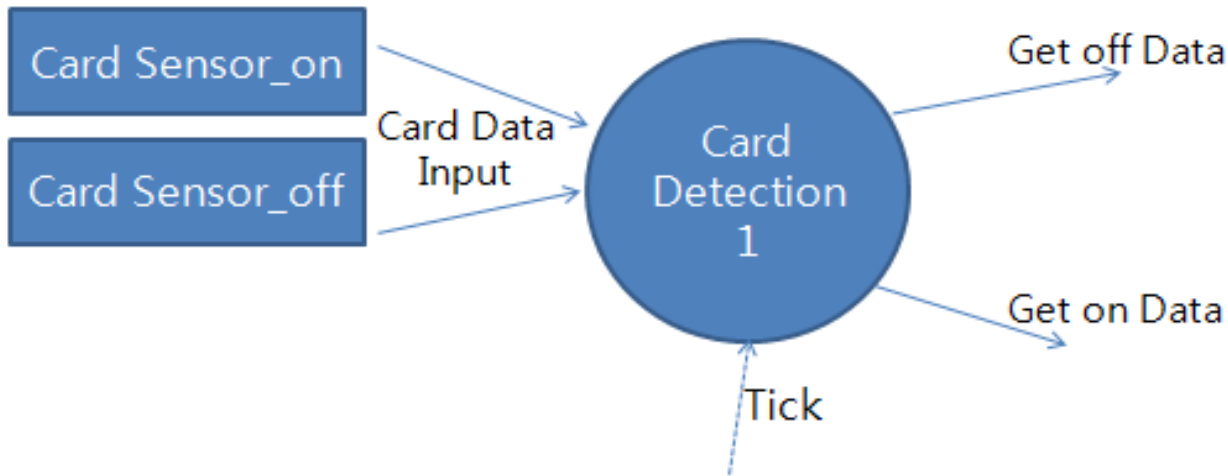
Chapter 2

Subway Terminal DFD Lv1



DFD Lv1

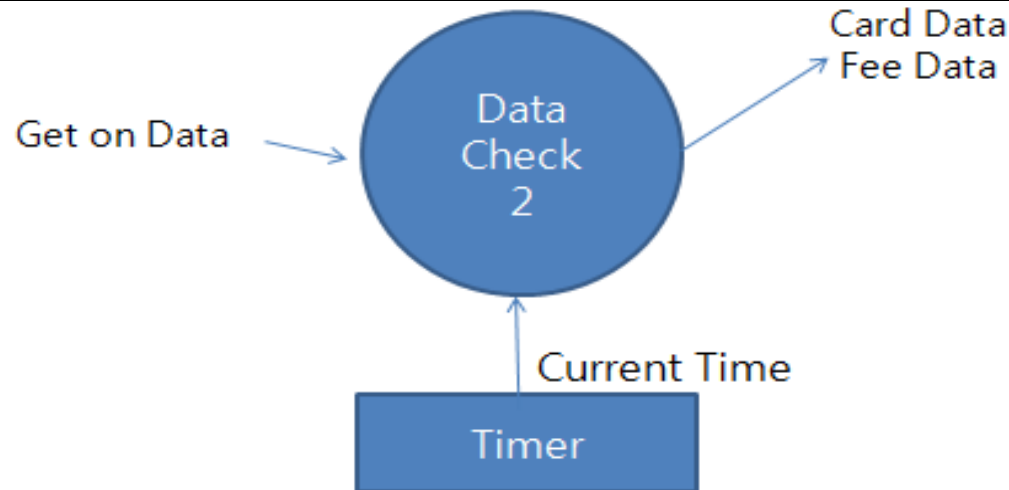
- Process Specification



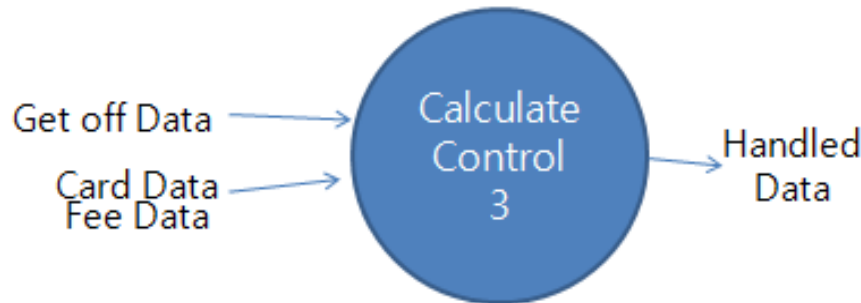
Reference No.	1
Name	Card Detection
Input	Card Data
Output	Get on Data, Get off Data
Process Description	승/하차 Tag Sensor에서 인식되어 읽어들이는 Data를 Get on Data와 Get off Data로 분류하여 전송

DFD Lv1

- Process Specification



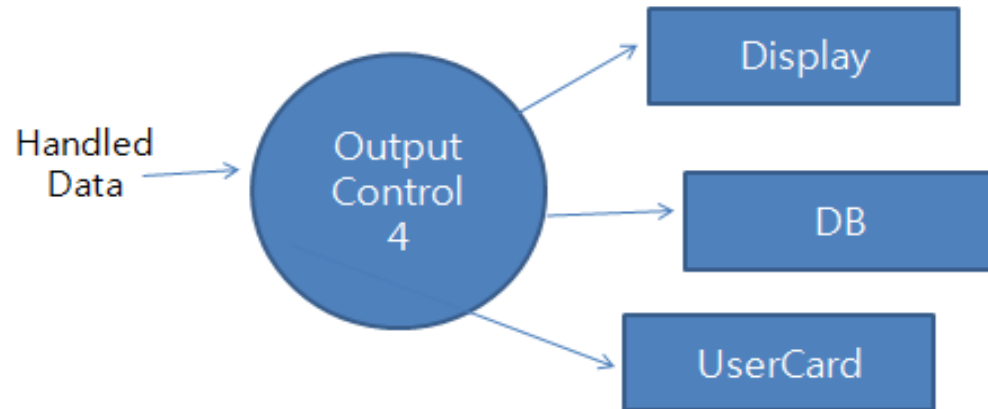
Reference No.	2
Name	Data Check
Input	Get on Data, Current Time
Output	Card Data, Fee Data
Process Description	Get on Data와 Current Time을 통해 해당 user의 PTS 이용 상황을 체크한다. 그 후 적합한 Fee Data를 생성하여 Card Data와 함께 전송한다.



Reference No.	3
Name	Calculate Control
Input	Get off Data or Card Data&Fee Data
Output	Handled Data
Process Description	Get off Data와 Card Data&Fee Data 중 하나의 Input만 들어온다. 들어온 Data로 요금계산을 수행하고 그 결과를 출력하기 위해 가공된 Handled Data를 생성,전송한다

DFD Lv1

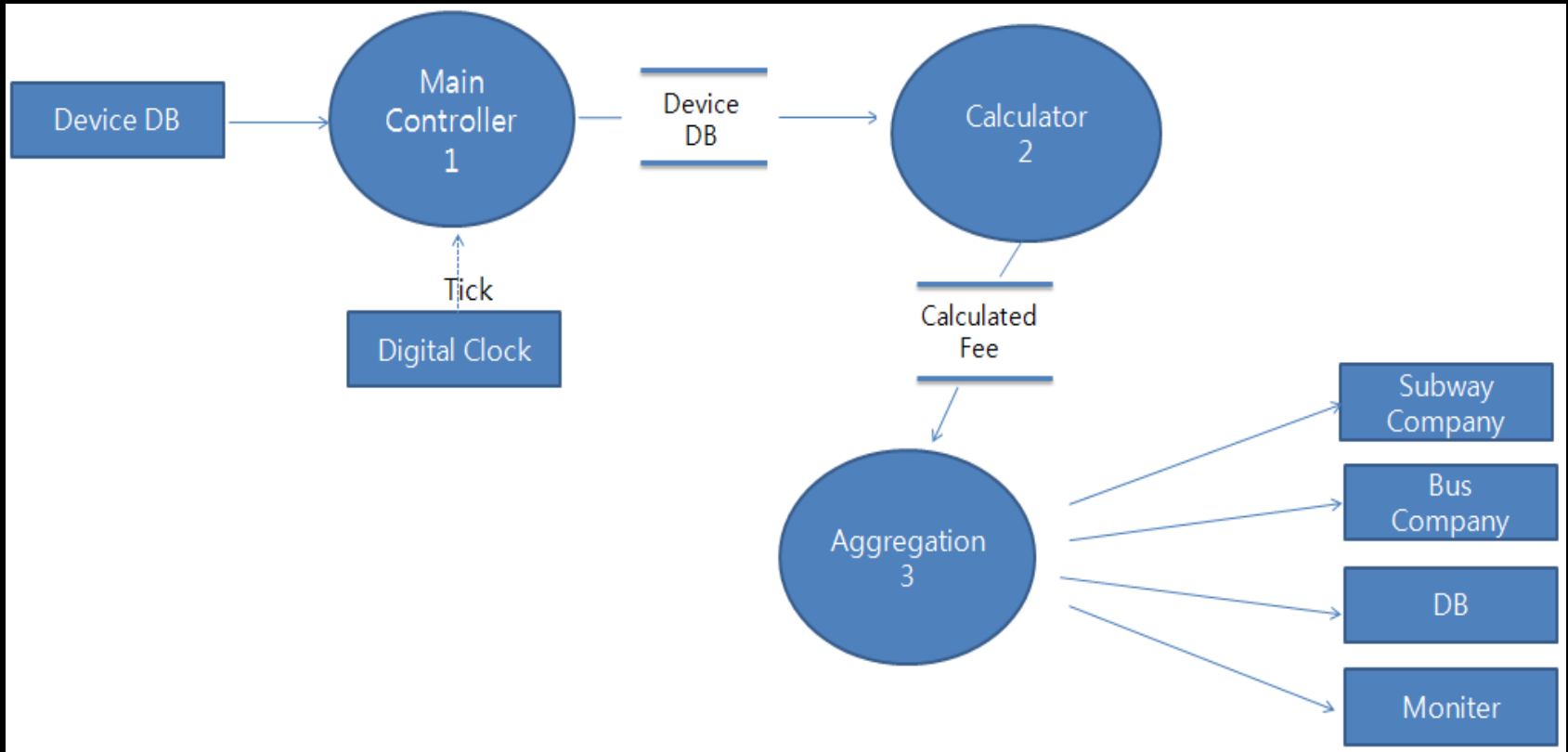
- Process Specification



Reference No.	4
Name	Output Control
Input	Handled Data
Output	Display, DB, Usercard
Process Description	선행 프로세스들을 거치며 처리된 결과가 저장된 Handled Data를 바탕으로 출력 과정을 수행한다

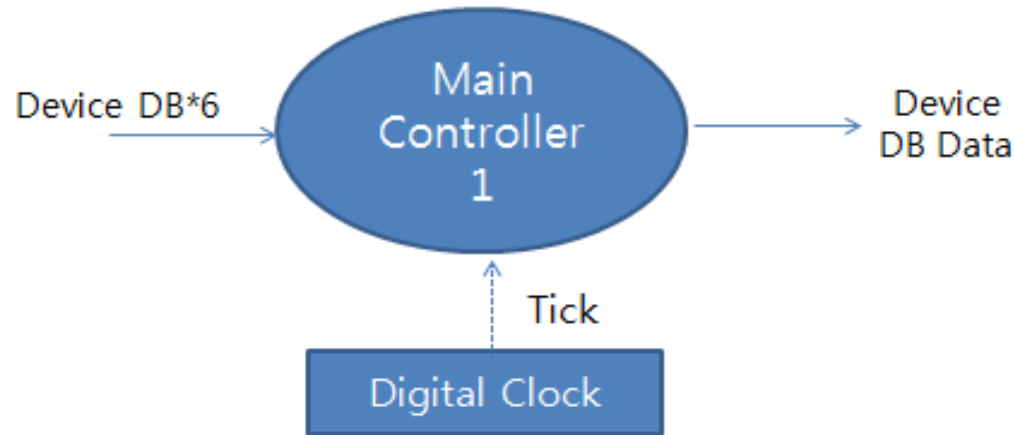
정산시스템

Terminal DFD Lv1



DFD Lv1

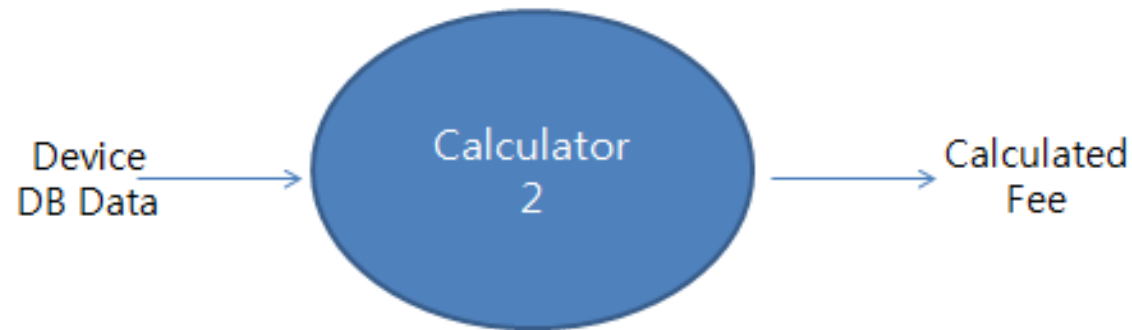
- Process Specification



Reference No.	1
Name	Main Controller
Input	Tick, Six Database of Devices
Output	Device DB Data
Process Description	Tick을 통해 3분의 시간이 흐른 것을 인지하면 5개 지하철역, 1개 버스역의 DB를 읽어와서 Calculator로 전송

DFD Lv1

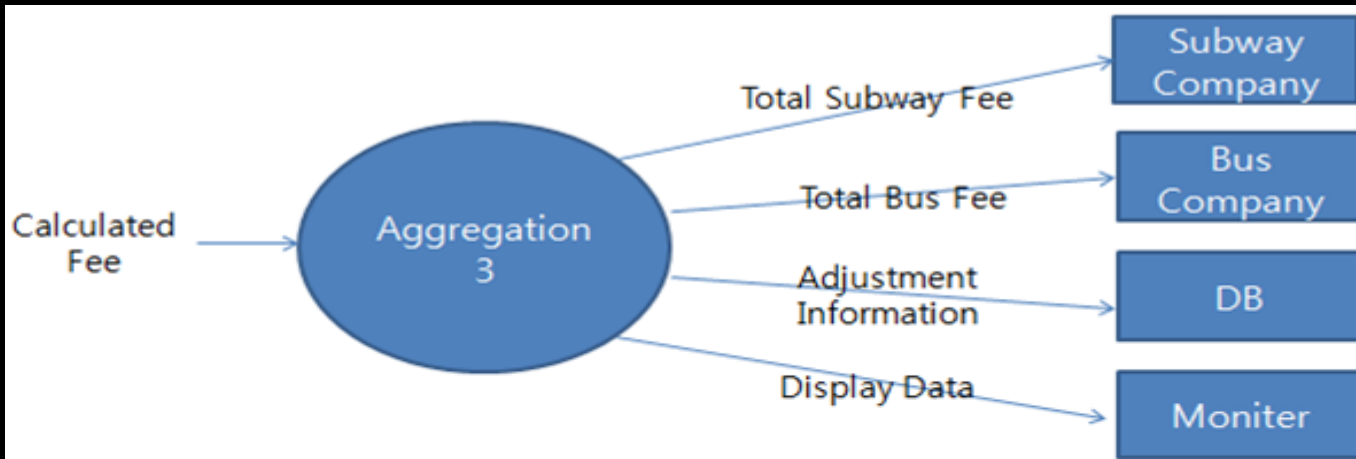
- Process Specification



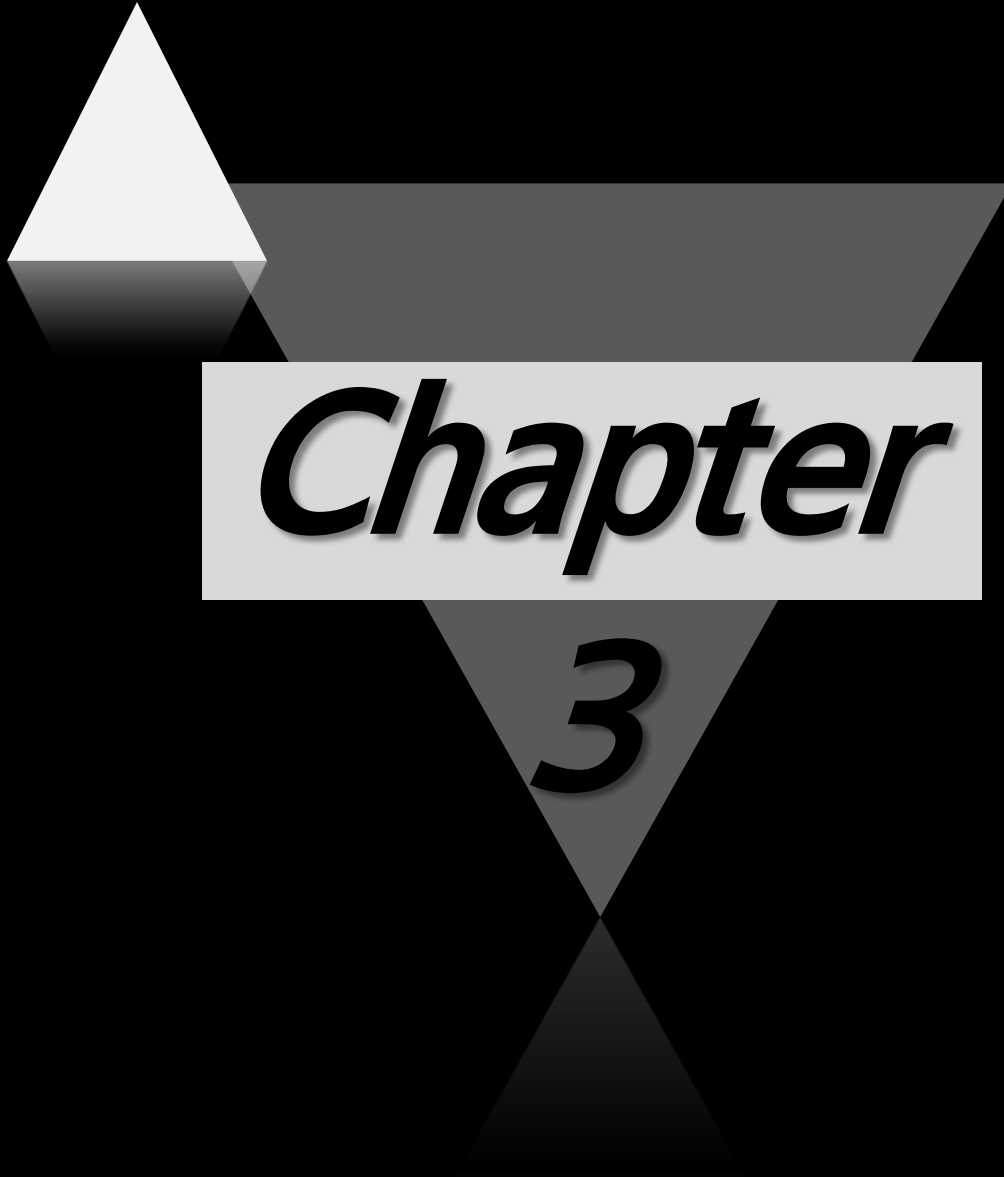
Reference No.	2
Name	Calculator
Input	Device DB Data
Output	Calculated Fee
Process Description	Device DB Data를 통해 요금정산 프로세스 수행 후 계산 된 요금을 Aggregation으로 전달.

DFD Lv1

- Process Specification



Reference No.	3
Name	Aggregation
Input	Calculated Fee
Output	Total Fee(To. Each PTS Company) Adjustment Information, Display Data
Process Description	계산된 요금정보를 통해 각 PTS 회사별 요금을 합산하고 전송한다. 그 후 DB와 Moniter에 관련 정보를 출력한다

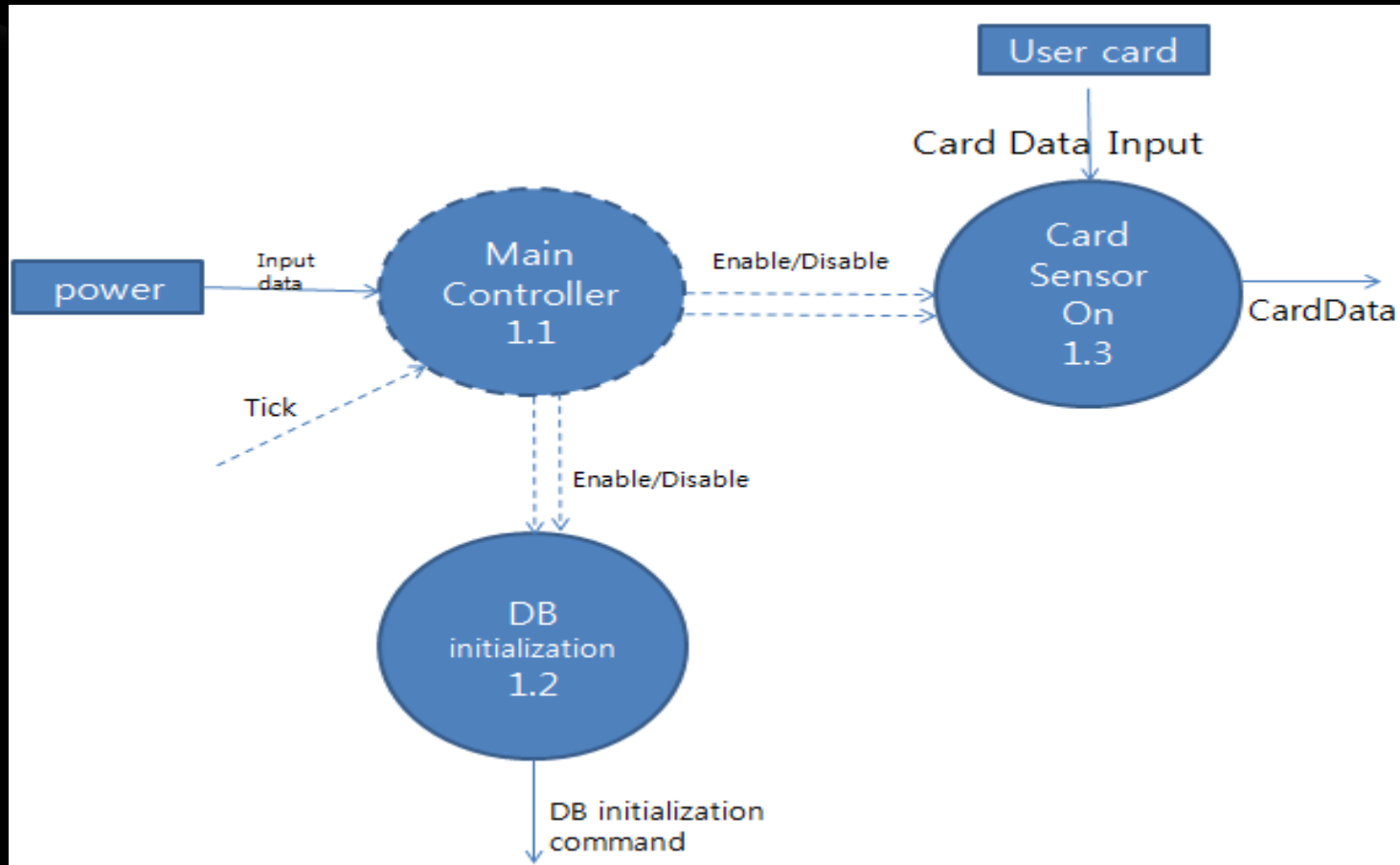


Chapter

3

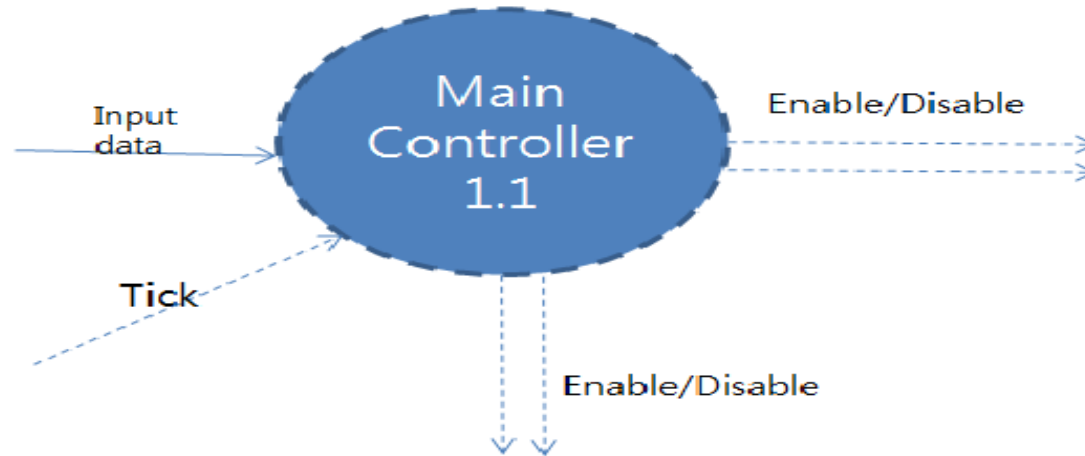
Chapter 3

Bus Terminal DFD Lv2 - Card Detection



DFD Lv2

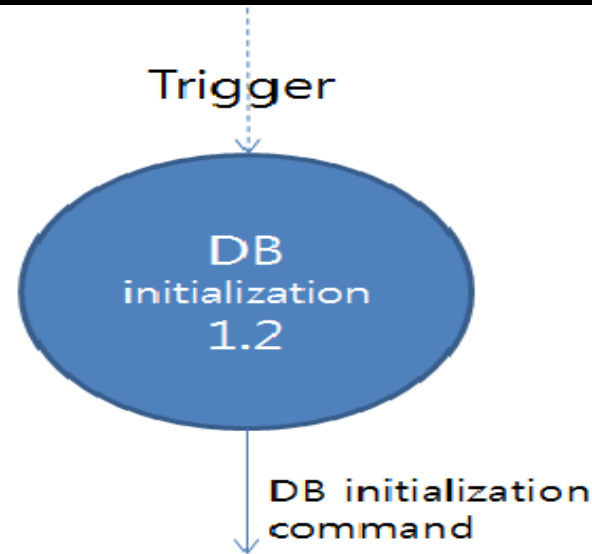
- Process Specification



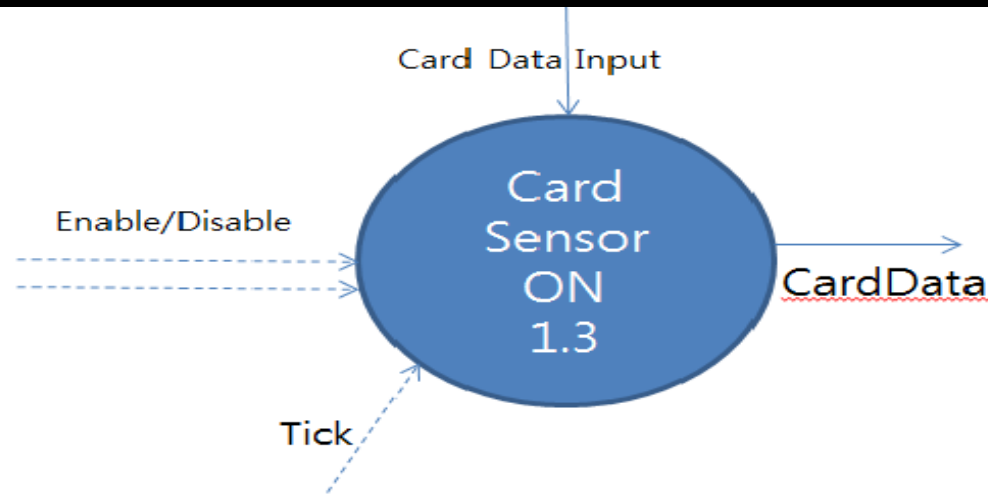
Reference No.	1.1
Name	Main Controller
Input	Input Data, Tick
Output	Enable/Disable
Process Description	Power Input 이 들어오면 DB Initialization 을 Enable시키고 <u>CardSensorOn</u> 에 Enable 를 보낸다 그 후 180Tick 이 지나면 <u>CardSensorON</u> 을 disable시킨다.

DFD Lv2

- Process Specification



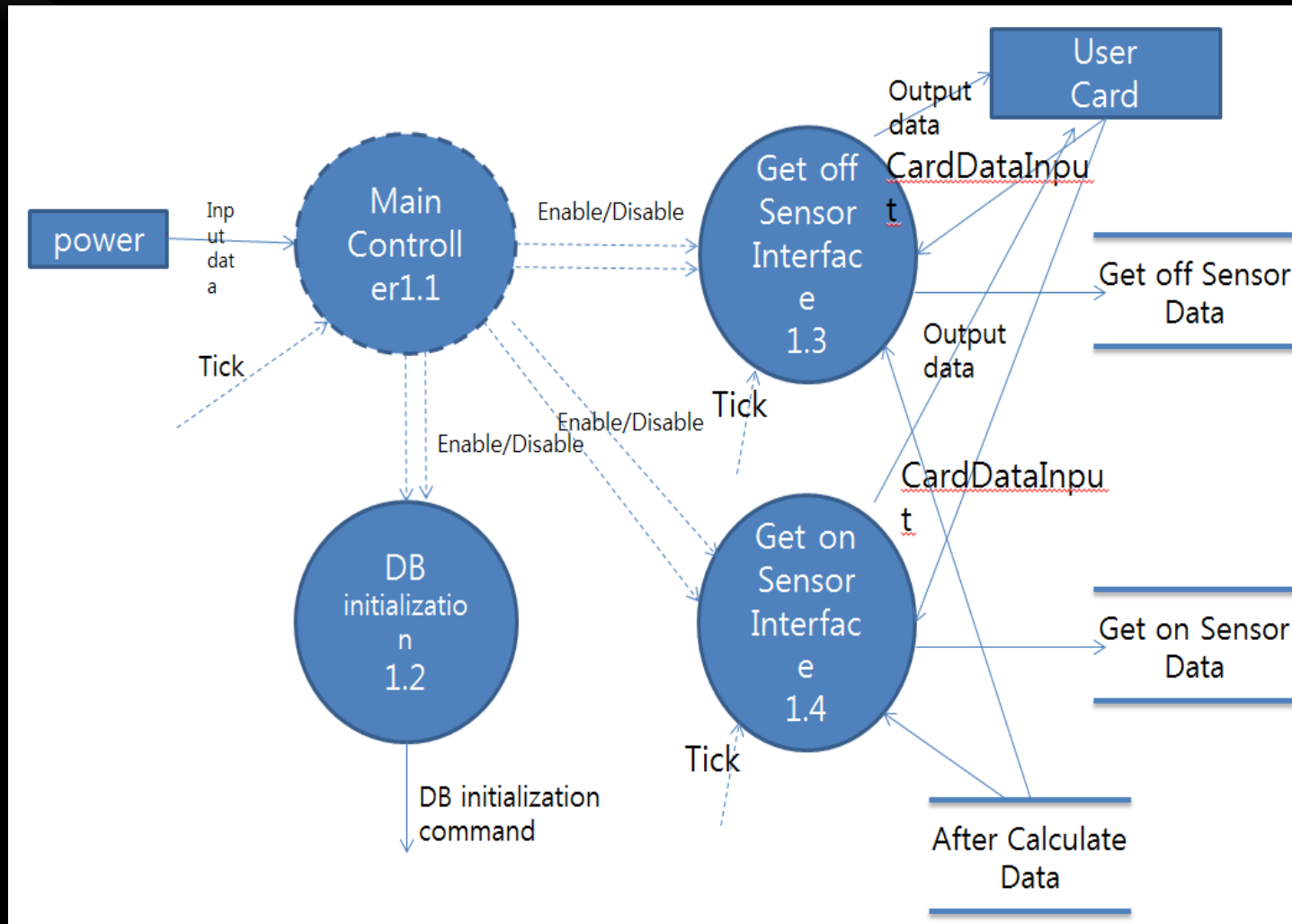
Reference No.	1.2
Name	DB Initialization
Input	Trigger
Output	DB initialization command
Process Description	<u>MainController</u> 에서 DB initialization 요청을 받아 DB를 초기화한다.



Reference No.	1.3
Name	Card Sensor ON
Input	Trigger, Enable/Disable, <u>CardData</u> Input
Output	<u>CardData</u>
Process Description	Enable신호를 받고 1Tick이후에 <u>CardSensor</u> 를 ON시킨다. (1Tick은 DB 초기화 시간)

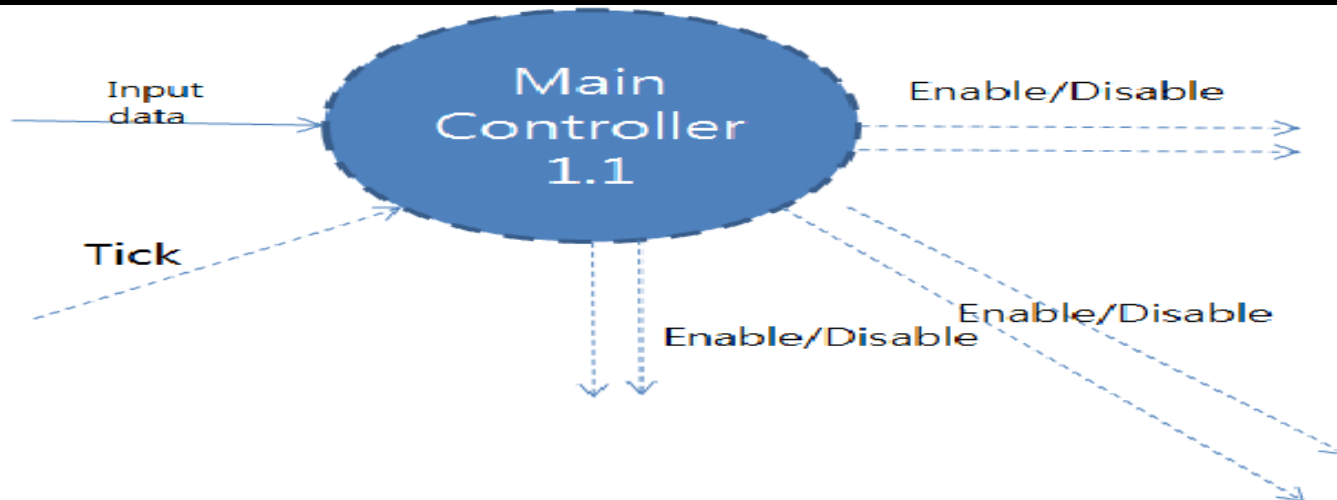
Chapter 3

Subway Terminal DFD Lv2 - Card Detection

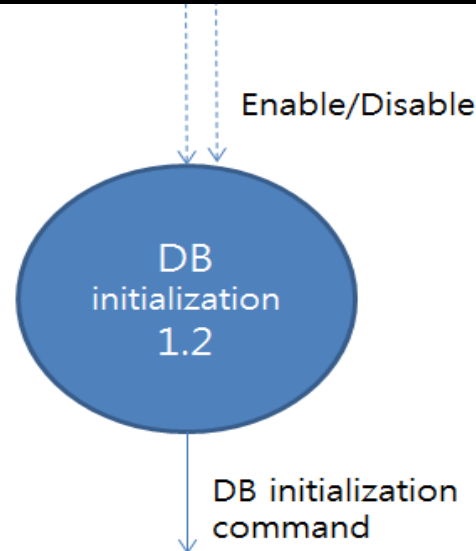


DFD Lv2

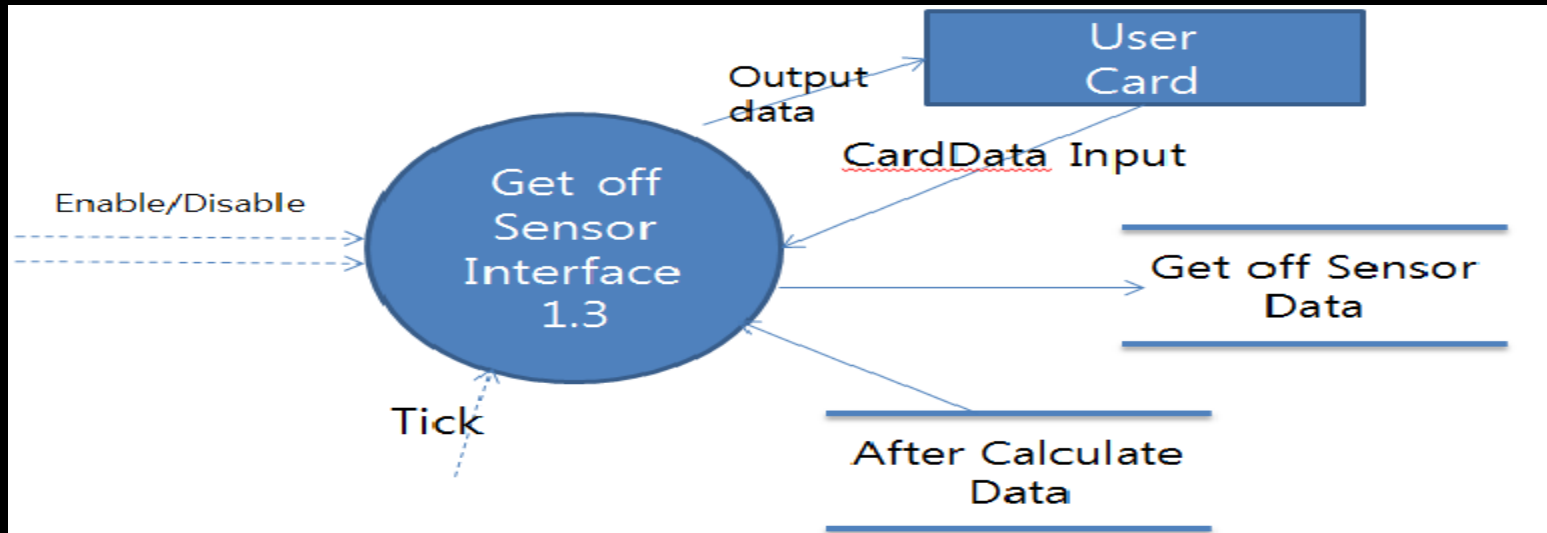
- Process Specification



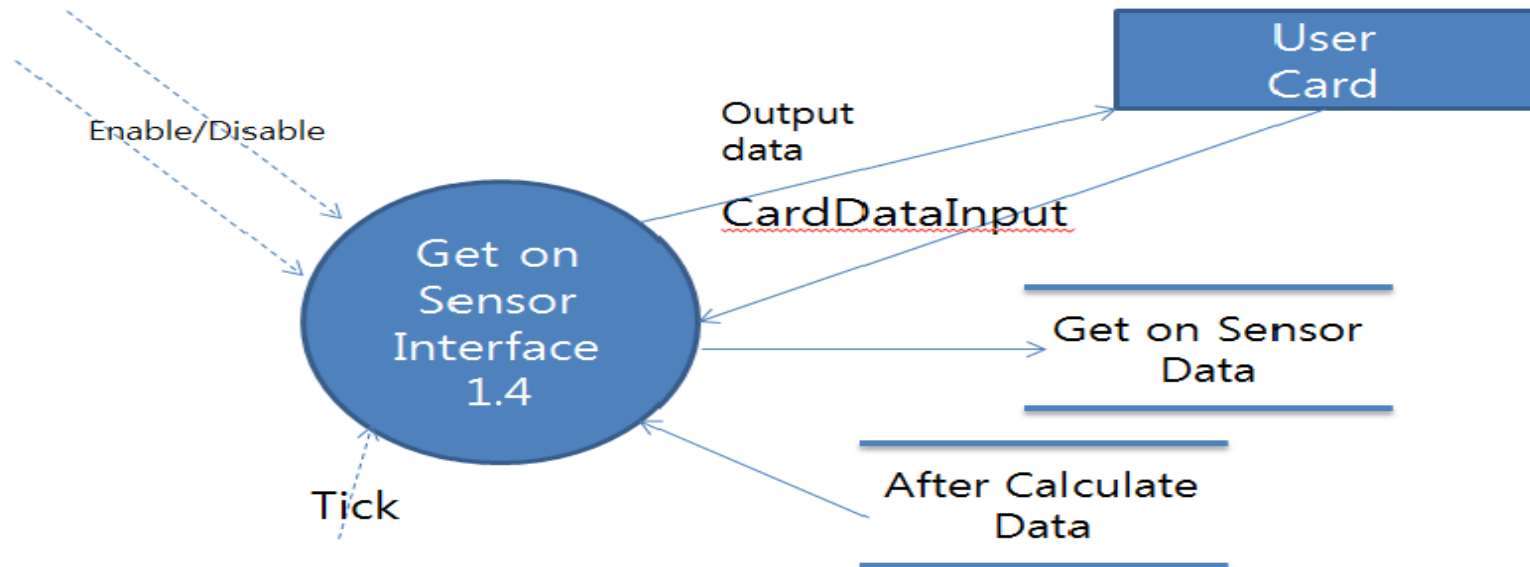
Reference No.	1.1
Name	Main Controller
Input	Input Data, Tick
Output	Enable/Disable
Process Description	Power Input 이 들어오면 DB Initialization 을 Enable시키고 <u>CardSensor</u> 에 Enable를 보낸다 그 후 180Tick 이 지나면 <u>CardSensor</u> 를 disable시킨다.



Reference No.	1.2
Name	DB Initialization
Input	Trigger
Output	DB initialization command
Process Description	<u>MainController</u> 에서 DB initialization요청을 받아 DB를 초기화한다.



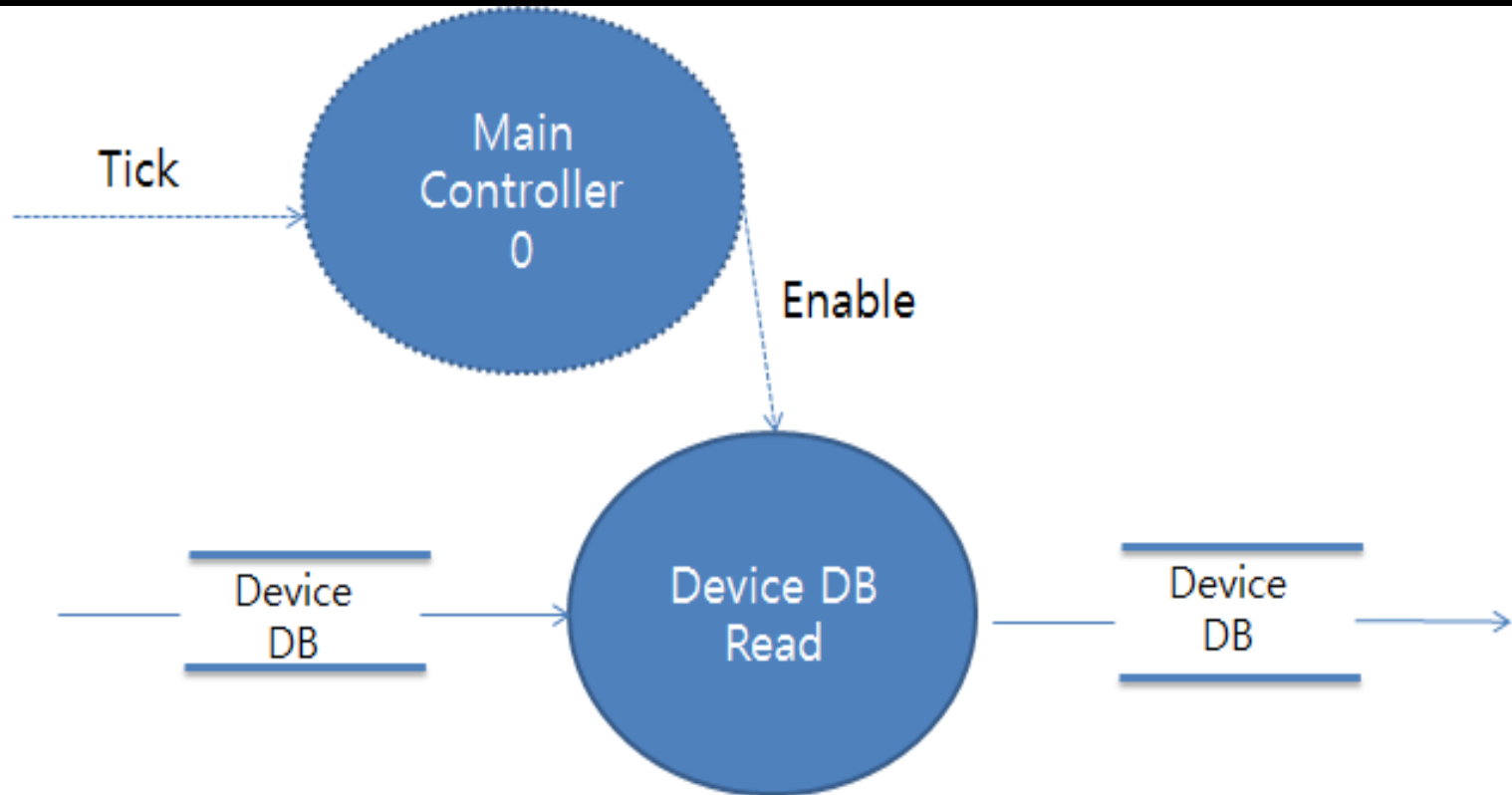
Reference No.	1.3
Name	Get off Sensor Interface
Input	Trigger, Enable/Disable, <u>CardData</u> , After Calculate Data
Output	Output Data, Get Off <u>SensorData</u>
Process Description	Enable신호를 받으면 카드에서 정보를 <u>입력 받거나</u> 카드로 정보를 전송할 수 있다. 180Tick 이후에는 disable된다.



Reference No.	1.2
Name	DB Initialization
Input	Trigger
Output	DB initialization command
Process Description	Enable신호를 받으면 카드에서 정보를 <u>입력 받거나</u> 카드로 정보를 전송할 수 있다. 180Tick 이후에는 disable된다.

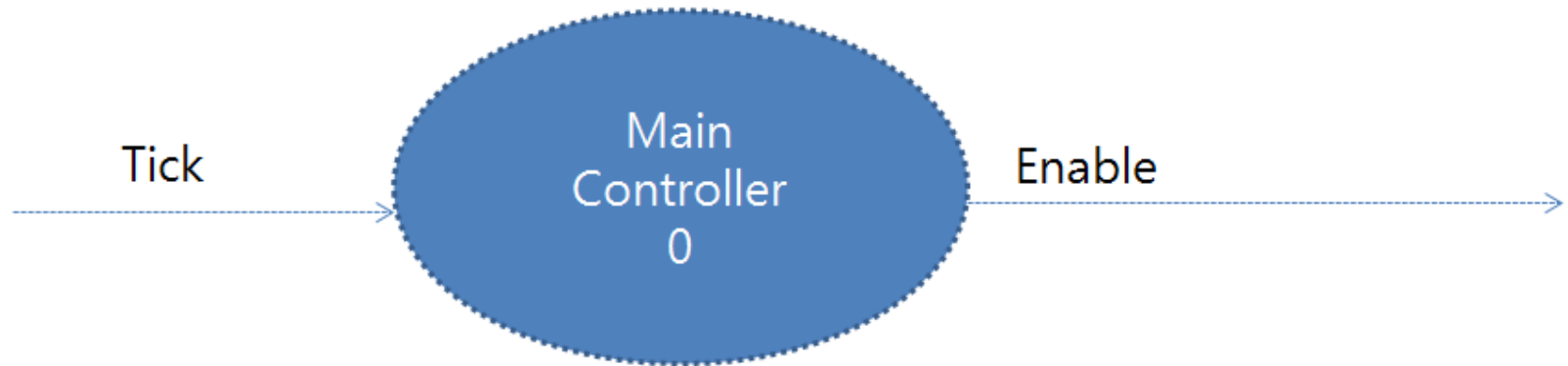
정산시스템 DFD Lv2

-DB Read



DFD Lv2

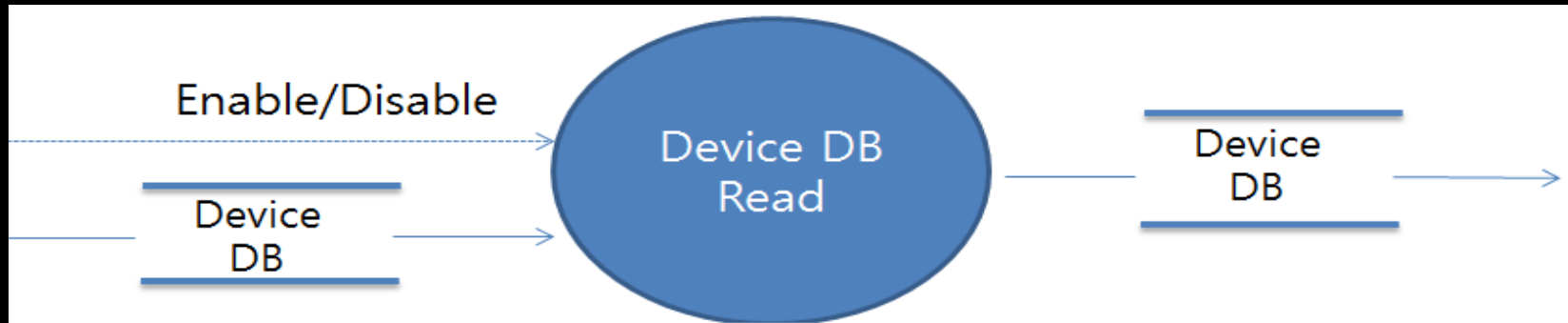
- Process Specification



Reference No.	0.1
Name	Main Controller
Input	Tick(From. Digital Clock)
Output	Enable(To. Device DB Read)
Process Description	Digital Clock으로부터 Tick 신호를 받아 동작하며, Device DB Read에 Enable신호를 보내준다.

DFD Lv2

- Process Specification

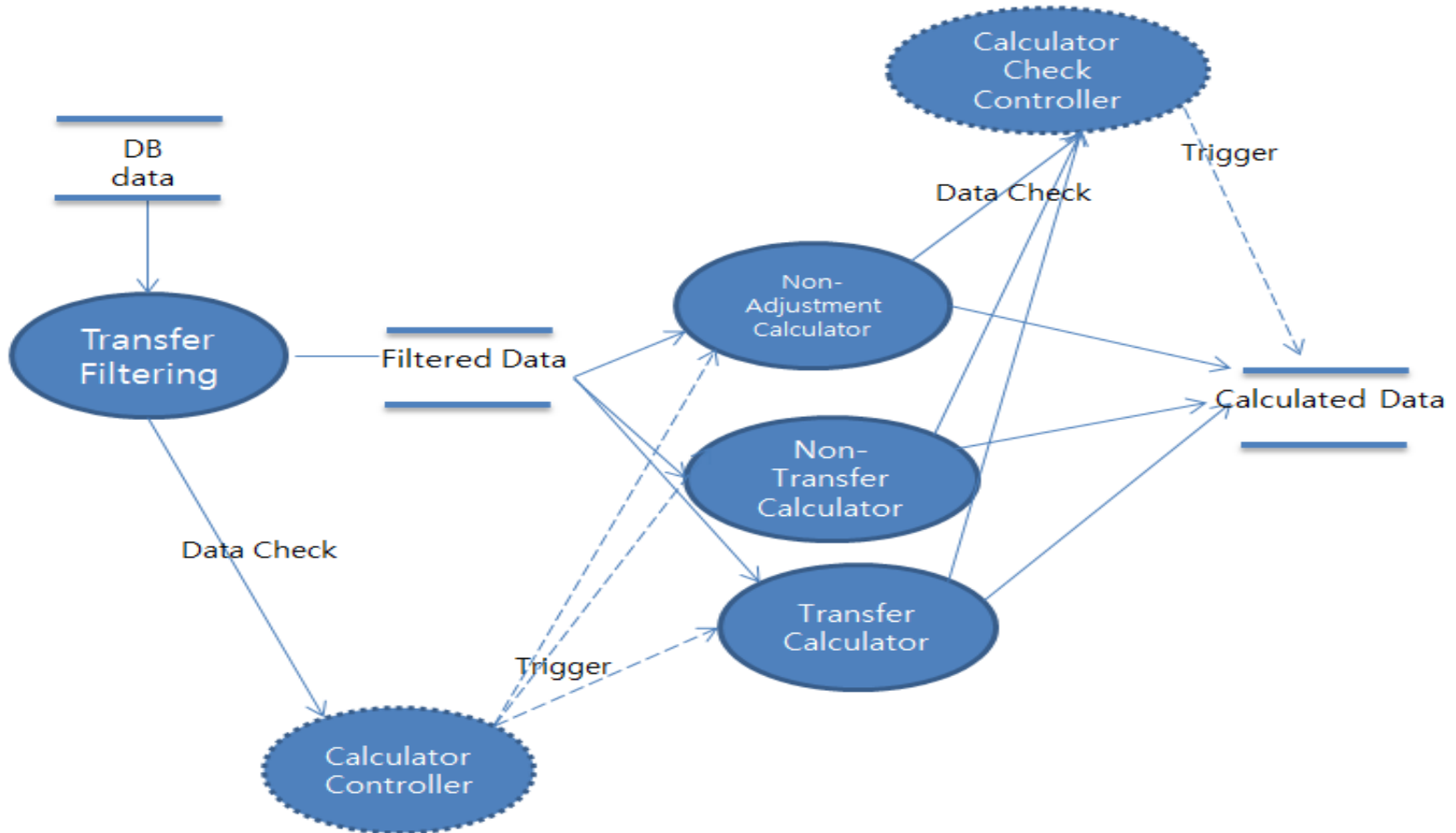


Reference No.	0.2
Name	Device DB Read
Input	Enable(From. Main Controller) Device DB(From. Device)
Output	Device DB(To. Filtering)
Process Description	Main Controller로 부터 Enable을 받아 동작하며 단말기 DB를 텍스트로 받아 Filtering로 전송해준다.

Chapter 3

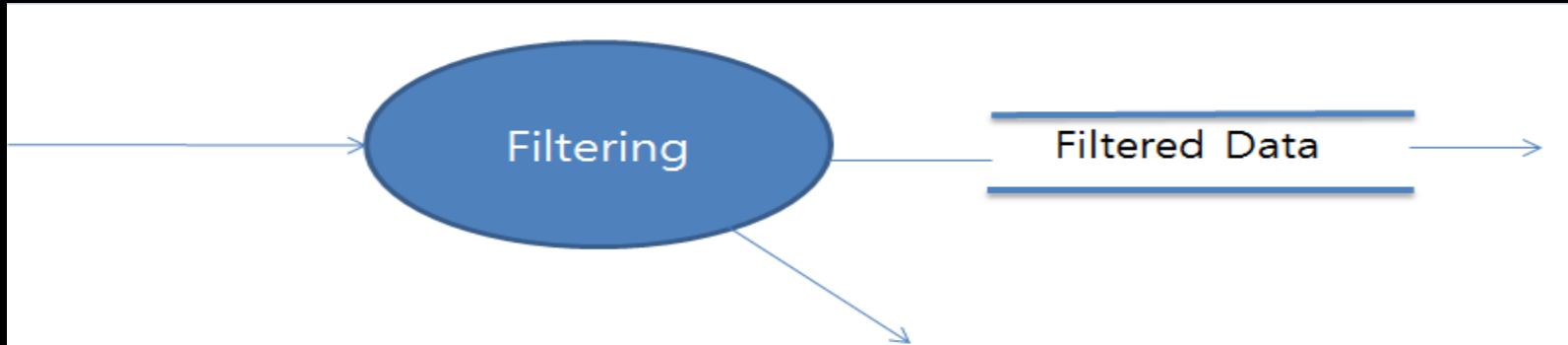
DFD Lv2

- Calculate



DFD Lv2

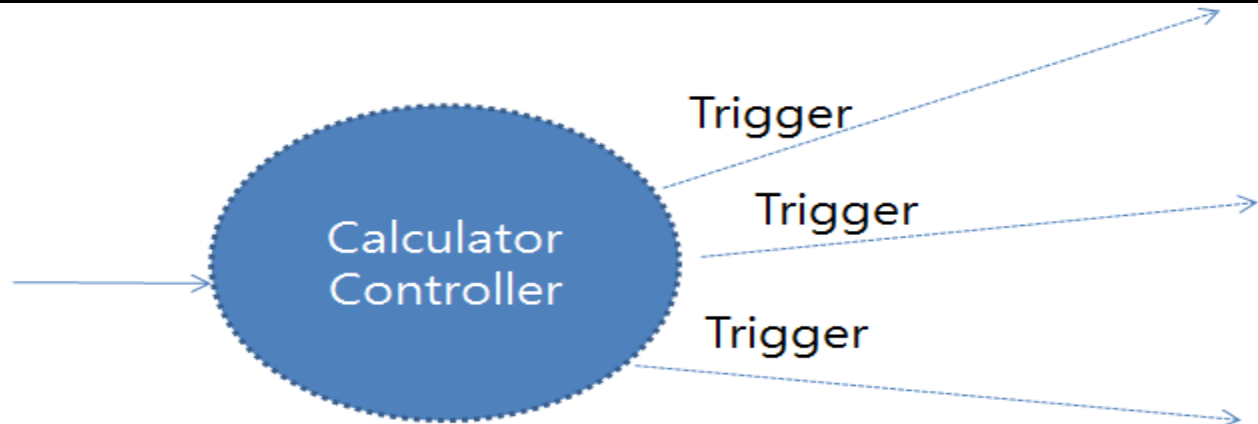
- Process Specification



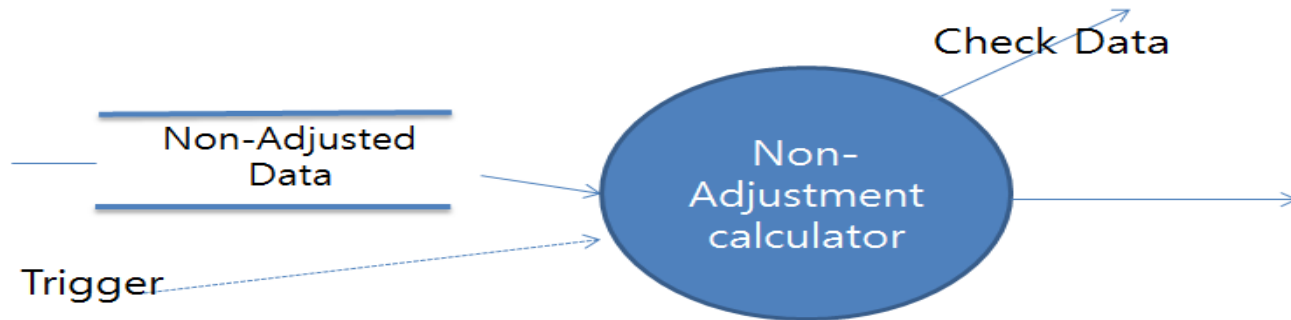
Reference No.	1.1
Name	Filtering
Input	DB Data(From. Device DB Read)
Output	Filtered Data, Extra Data
Process Description	Device DB Read로 부터 DB Data를 받아서 Data를 미 정산 요금, 미 환승 요금, 환승 요금으로 구분하여 Filtered Data로 보내고 나머지 Data를 Calculator Controller로 보낸다.

DFD Lv2

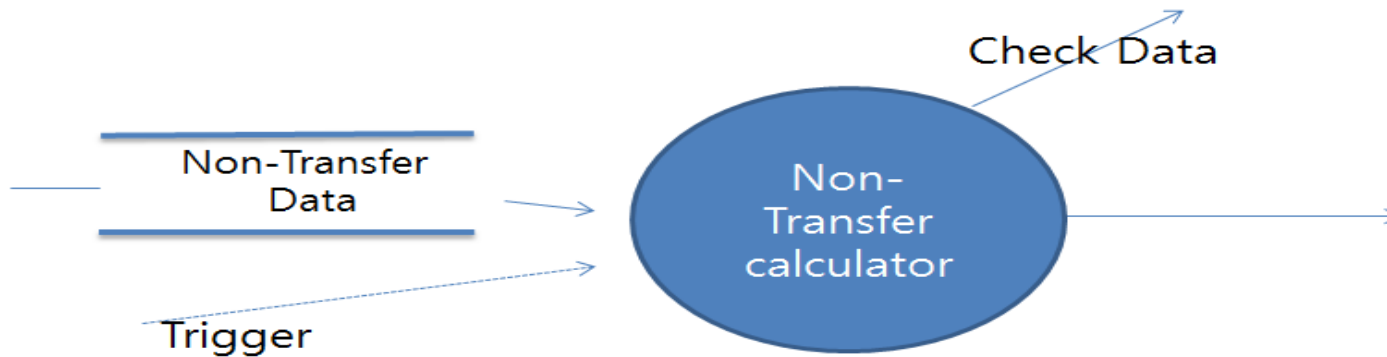
- Process Specification



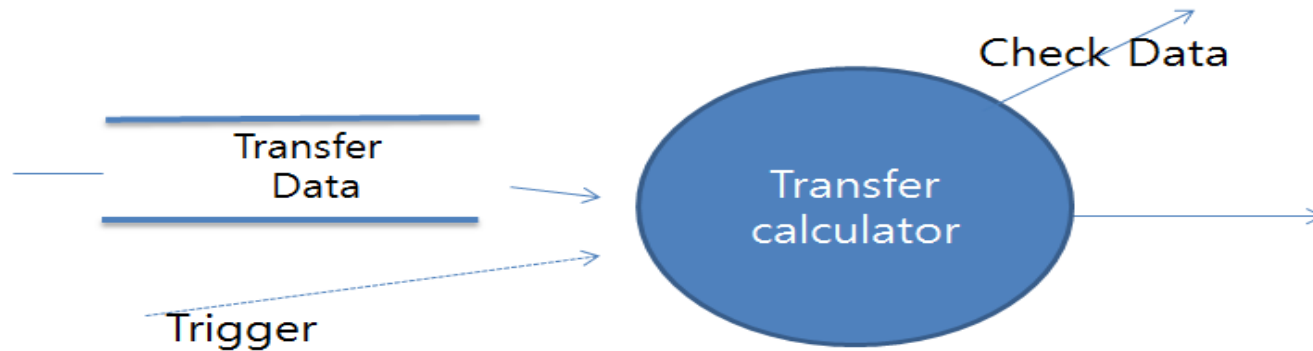
Reference No.	1.2
Name	Calculator Controller
Input	Not-adjusted data
Output	Trigger
Process Description	Filtering으로 부터 Not-adjusted data 을 받은 후 Non-adjustment Cal, Non-transfer Cal, Transfer Cal에 Trigger를 보낸다.



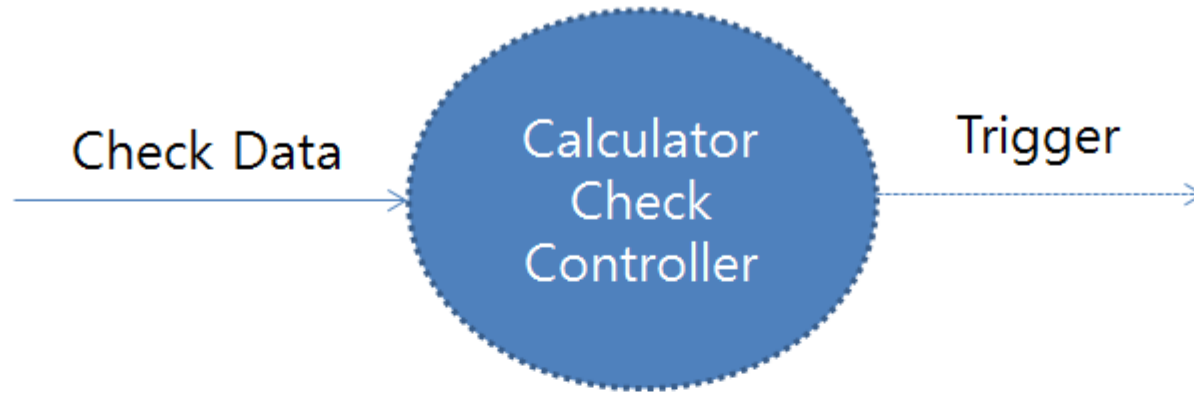
Reference No.	1.3
Name	Non-Adjustment Calculator
Input	Trigger(From. Calculator Controller) Non-Adjusted Data(From. Filtered Data)
Output	Non-Adjusted Fee(To. Aggregation, Cal Check) Check Data
Process Description	Filtered Data와 Calculator controller로 부터 Trigger와 Non-Adjusted Data를 받아서 정산 한 후 Aggregation으로 전송하고, Calculator Check Controller에 Check Data를 전송한다.



Reference No.	1.4
Name	Non-Transfer Calculator
Input	Trigger(From. Calculator Controller) Non-Transfer Data(From. Filtering)
Output	Non-Transfer Fee(To. Aggregation, Cal Check), Check Data
Process Description	Filtered Data와 Calculator controller로 부터 Trigger와 Non-Transfer Data를 받아서 정산 한 후 Aggregation으로 전송하고, Calculator Check Controller에 Check Data를 보낸다.



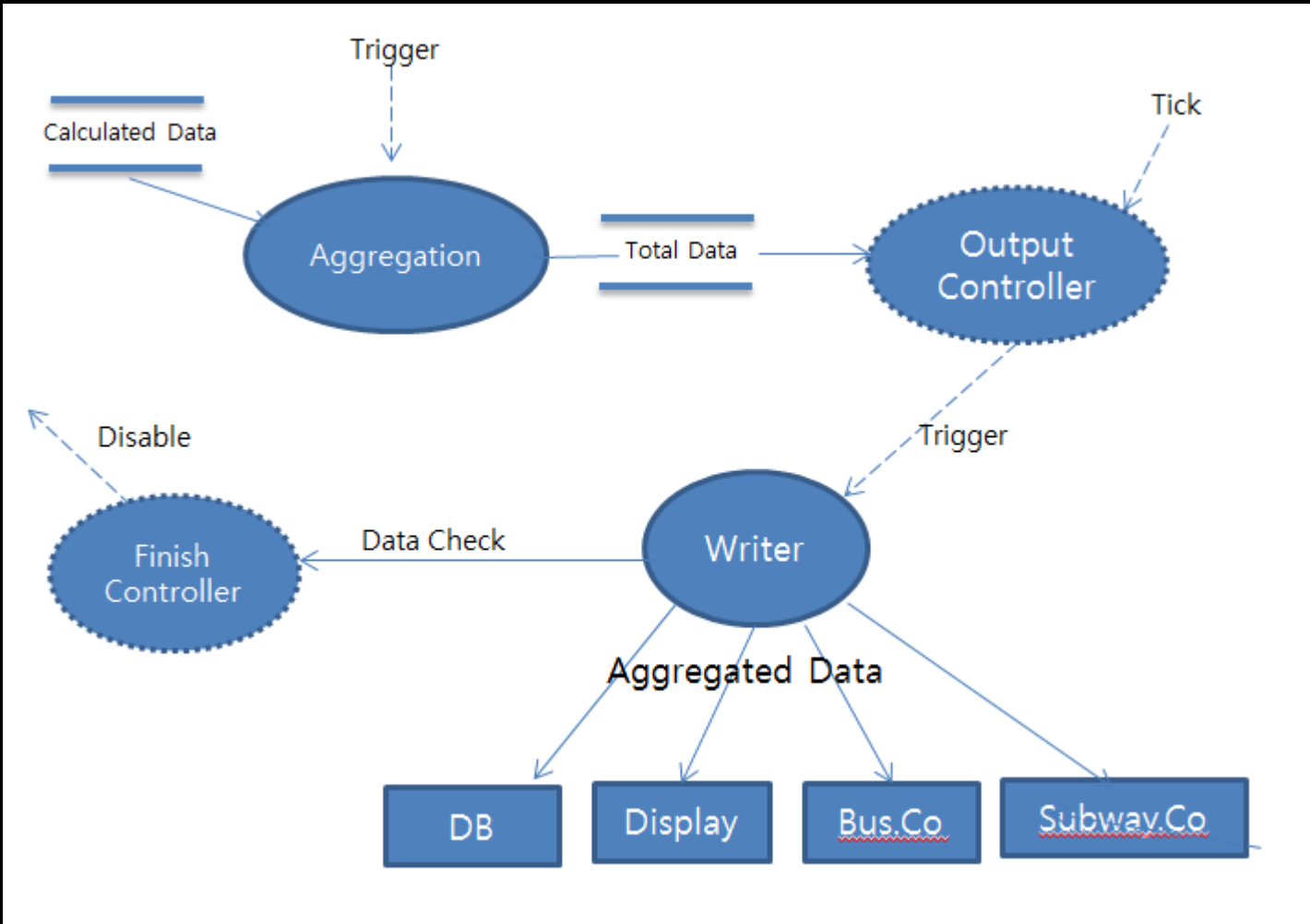
Reference No.	1.5
Name	Transfer Calculator
Input	Trigger(From. Calculator Controller) Transfer Data(From. Filtering)
Output	Transfer Fee(To. Aggregation, Cal Check) Check Data
Process Description	Transfer Data와 Calculator controller로 부터 Trigger와 Transfer Data를 받아서 정산한 후 Aggregation으로 전송하고, Calculator Check Controller로 Check Data를 전송한다.

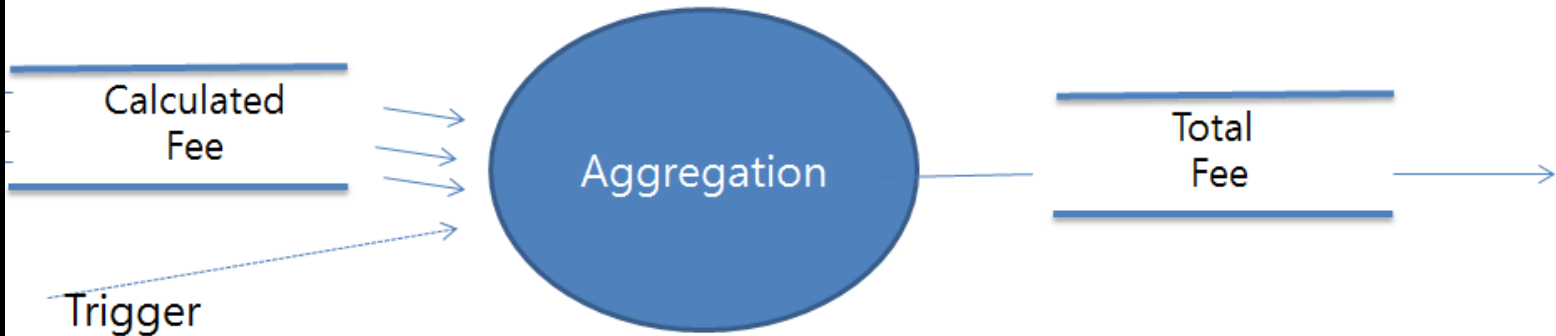


Reference No.	1.6
Name	Calculator Check Controller
Input	Check Data
Output	Trigger
Process Description	Check Data를 받아 Aggregation에 Trigger신호를 보내준다.

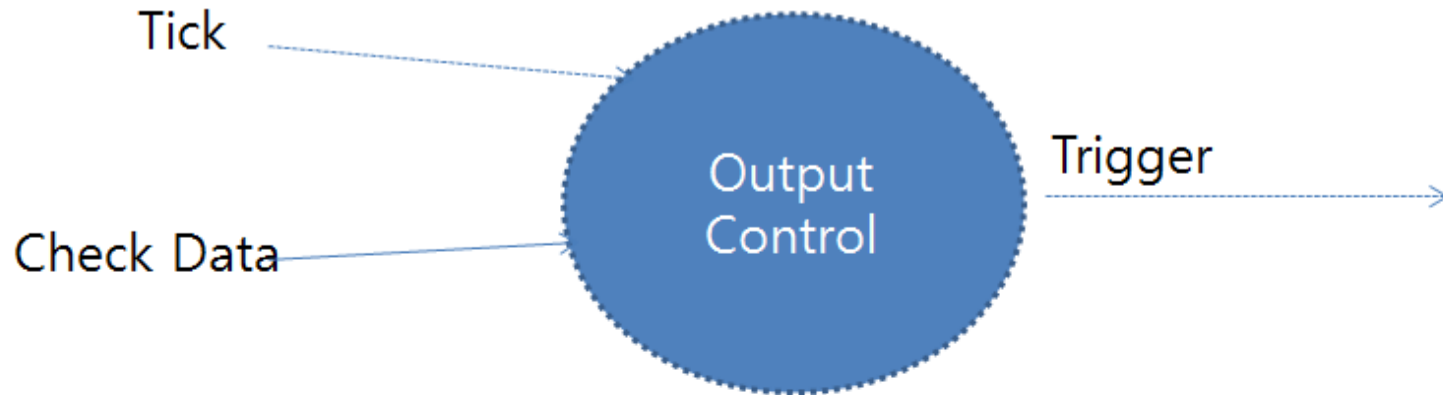
DFD Lv2

-Aggregation & Write

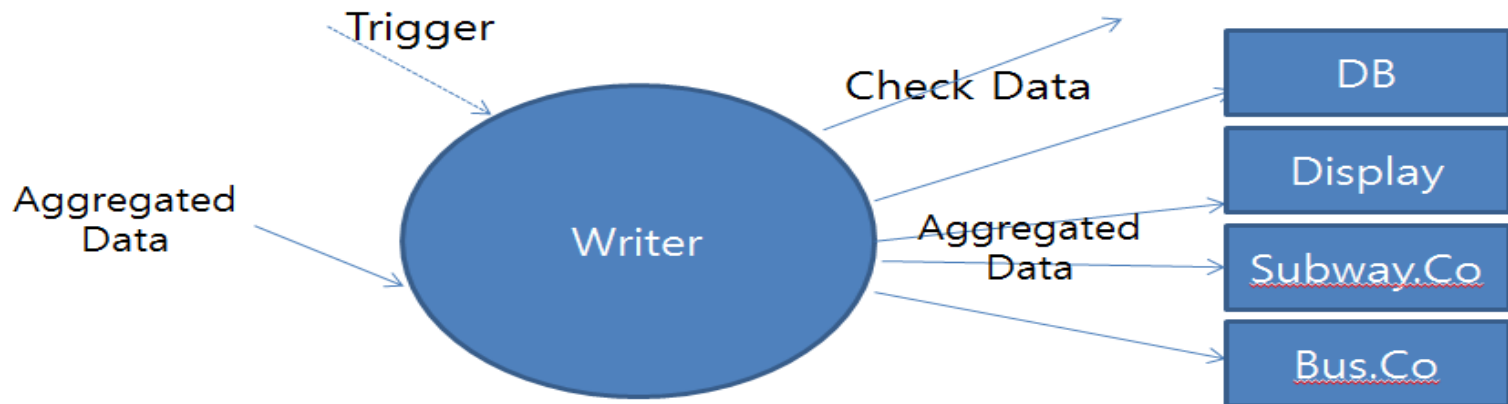




Reference No.	2.0
Name	Aggregation
Input	Trigger(Cal Check) Calculated Fee(From. Non-Adjustment Cal, Non-Transfer Cal, Transfer Cal)
Output	Total Fee
Process Description	각각의 Calculator에서 계산된 Fee를 받아서 합산하여, Output controller, Writer에 전송한다.



Reference No.	2.1
Name	Output Control
Input	Total Fee, Check Data, Tick
Output	Trigger
Process Description	Check Data를 받으면 Writer에게 Trigger 신호를 보낸다.



Reference No.	2.2
Name	Writer
Input	Aggregated Data, Trigger
Output	Check Data, Aggregated Data
Process Description	<p>각각의 정산된 data를 받고 Output Controller로 부터 Trigger를 받아서 DB에 쓰고, Display에 출력, 각 회사에 정산금을 보내준다.</p> <p>그리고 Finish Controller에 Check Data를 보낸다.</p>

DFD Lv2

- Process Specification

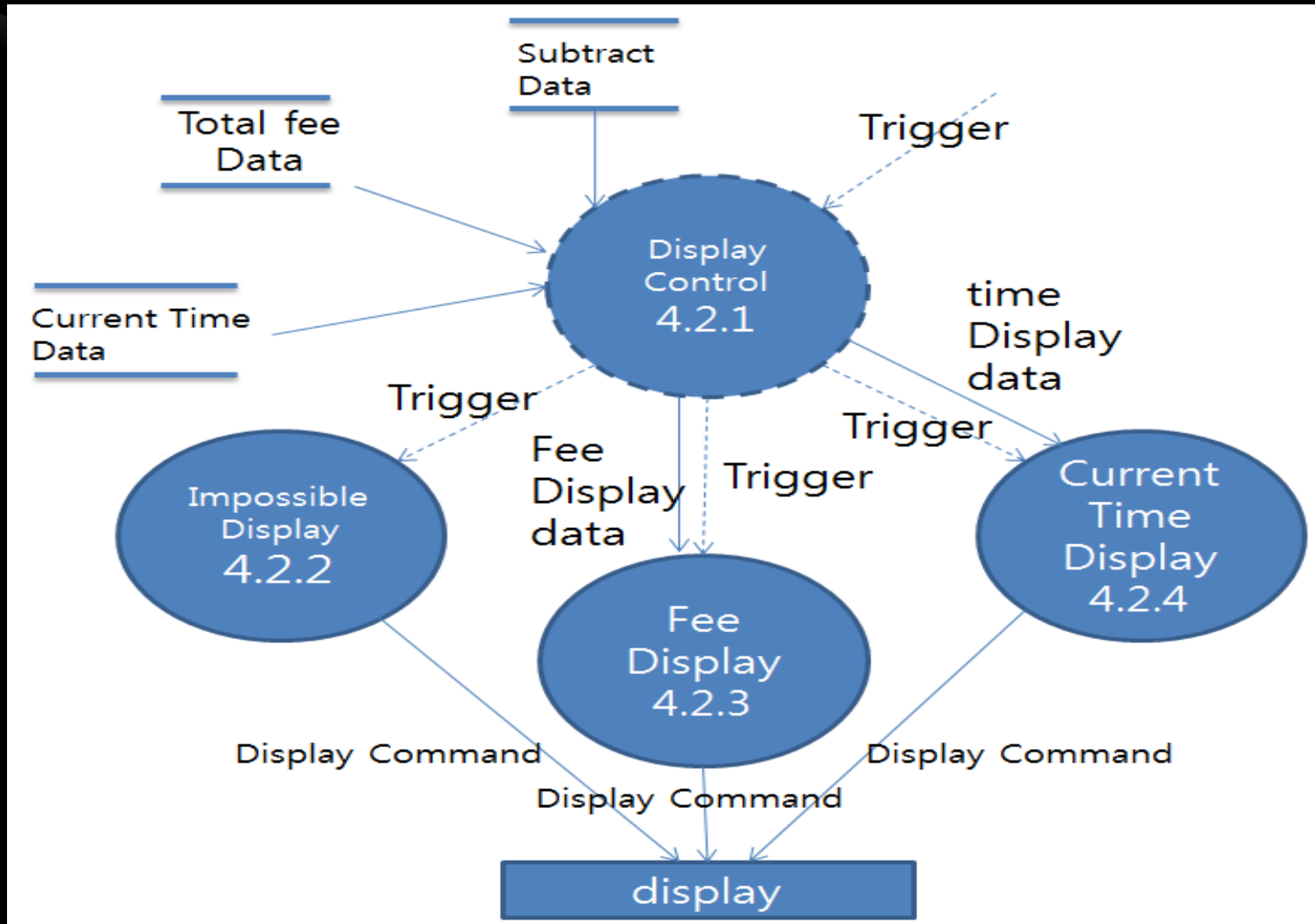


Reference No.	2.3
Name	Finish Control
Input	Check Data
Output	Disable
Process Description	Check Data를 받으면 Device DB Read에 게 Disable 신호를 보낸다.



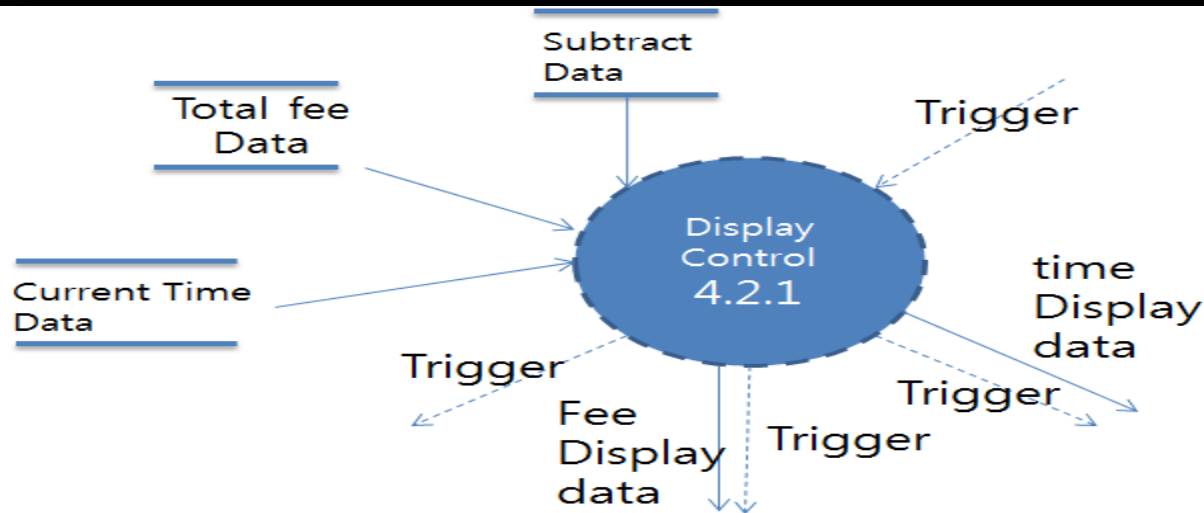
Chapter

4

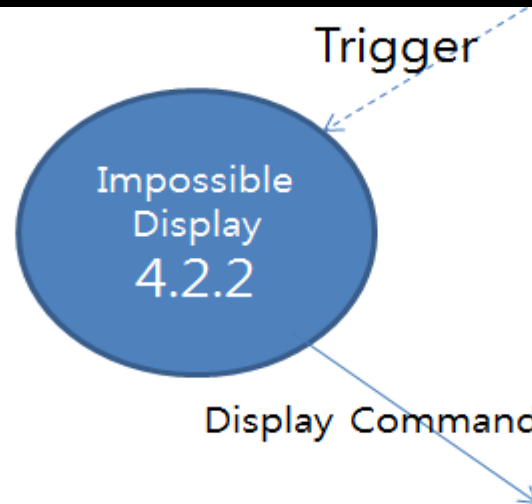


DFD Lv3

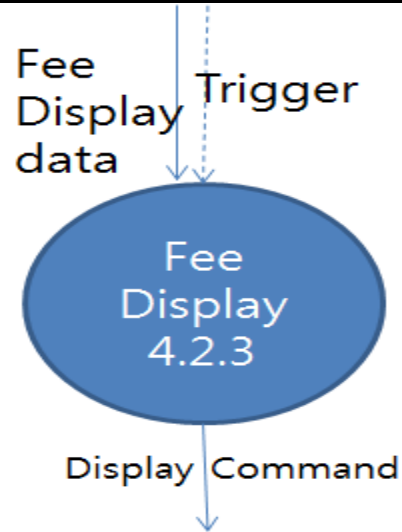
- Process Specification



Reference No.	4.2.1
Name	Display Control
Input	Subtract Data, Current Time Data, Total fee Data , Trigger
Output	Trigger, <u>timedisplay data</u> , Fee display data
Process Description	4가지 <u>입력값</u> 을 바탕으로 승차 거부, 요금(사용금액, 잔액), 시간을 display에 전송해준다.



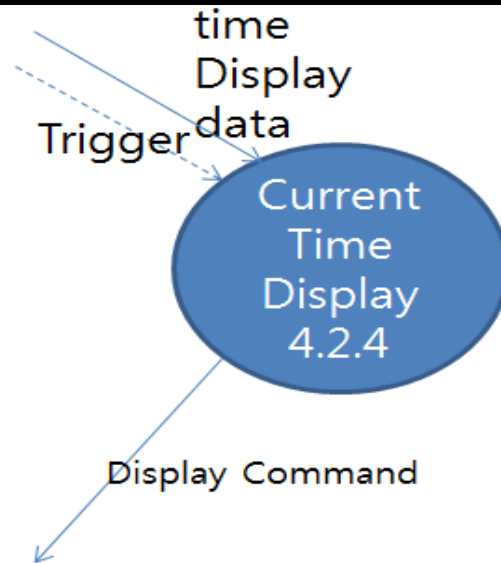
Reference No.	4.2.2
Name	Impossible Display
Input	Trigger
Output	Display Command
Process Description	Trigger를 받으면 승차 불가능을 display에 Display command 보내준다.



Reference No.	4.2.3
Name	Fee Display
Input	<u>FeeDisplayData</u> , Trigger
Output	Display Command
Process Description	화면표시요금데이터를 받아 display에 표현하도록 display command를 보낸다.

DFD Lv3

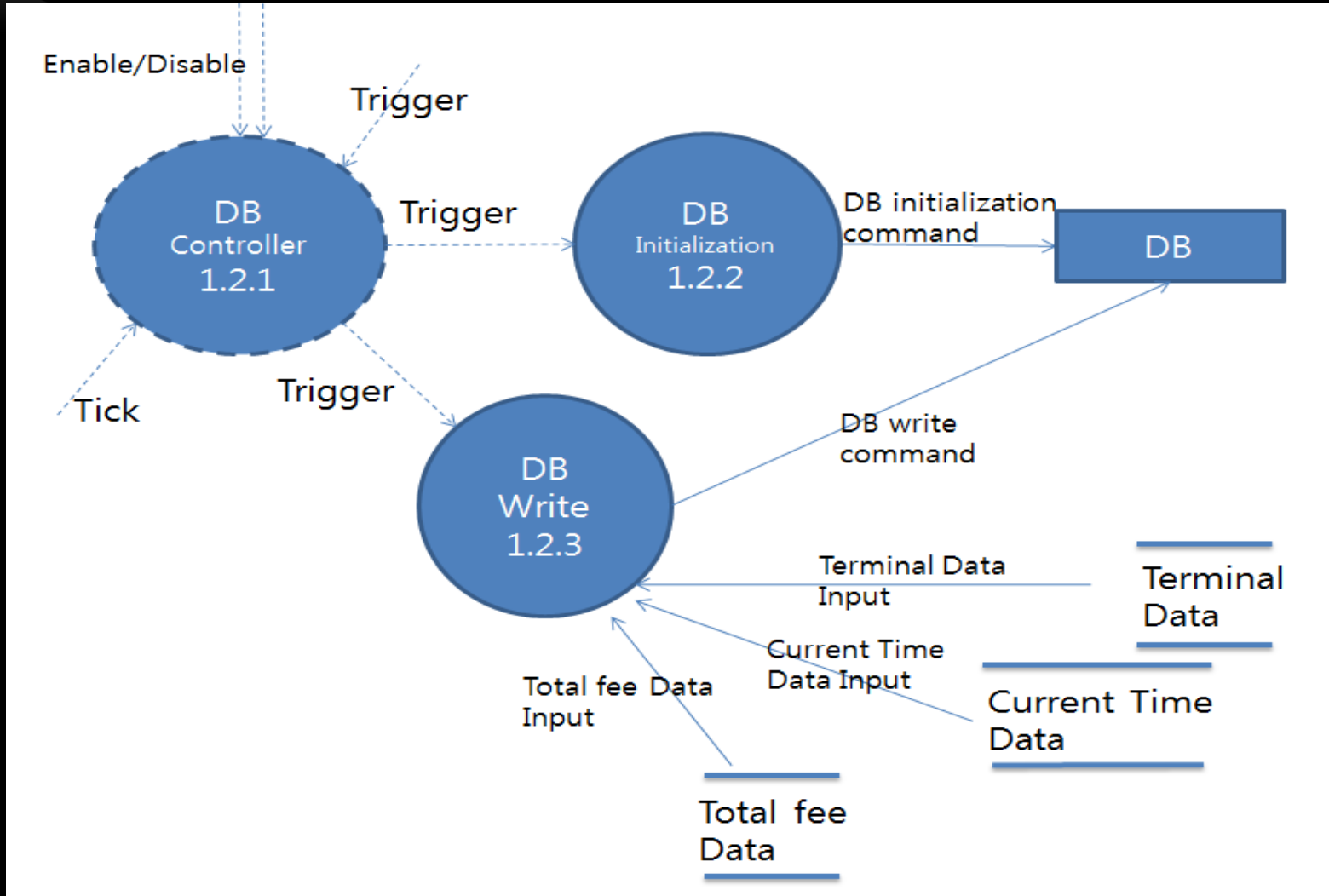
- Process Specification

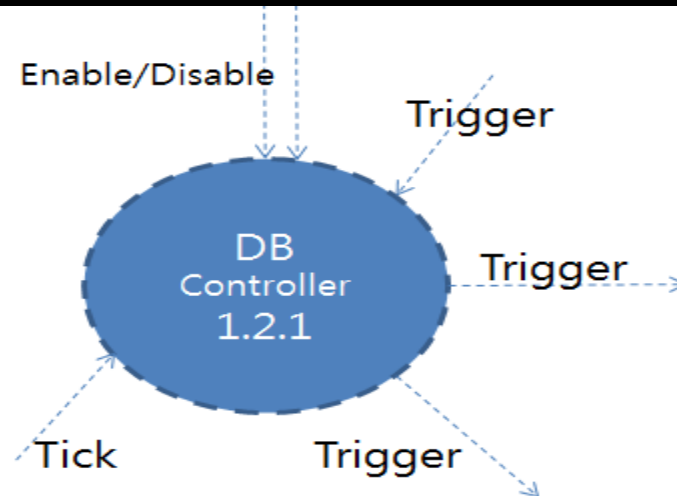


Reference No.	4.2.4
Name	<u>CurrentTimeDisplay</u>
Input	<u>TimeDisplayData</u> , Trigger
Output	Display Command
Process Description	<u>TimeDisplayData</u> 를 받아 Display 에 표시하도록 Display command 를 보낸다.

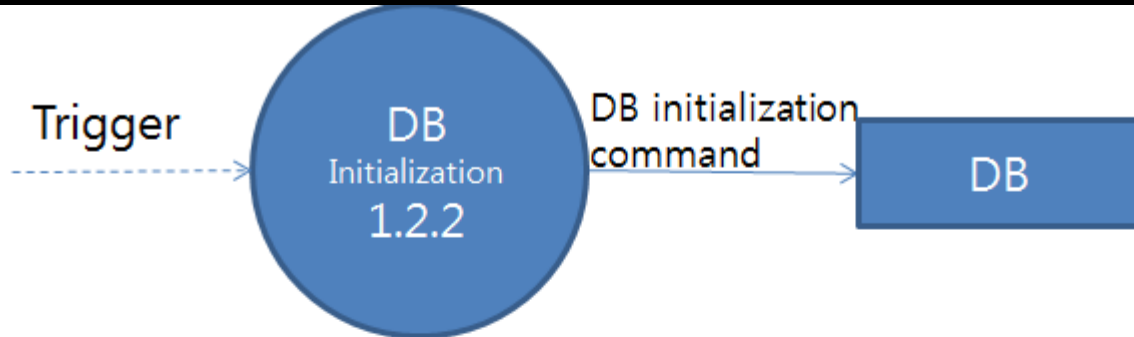
Chapter 4

Subway Terminal DFD Lv3 -DB Controller

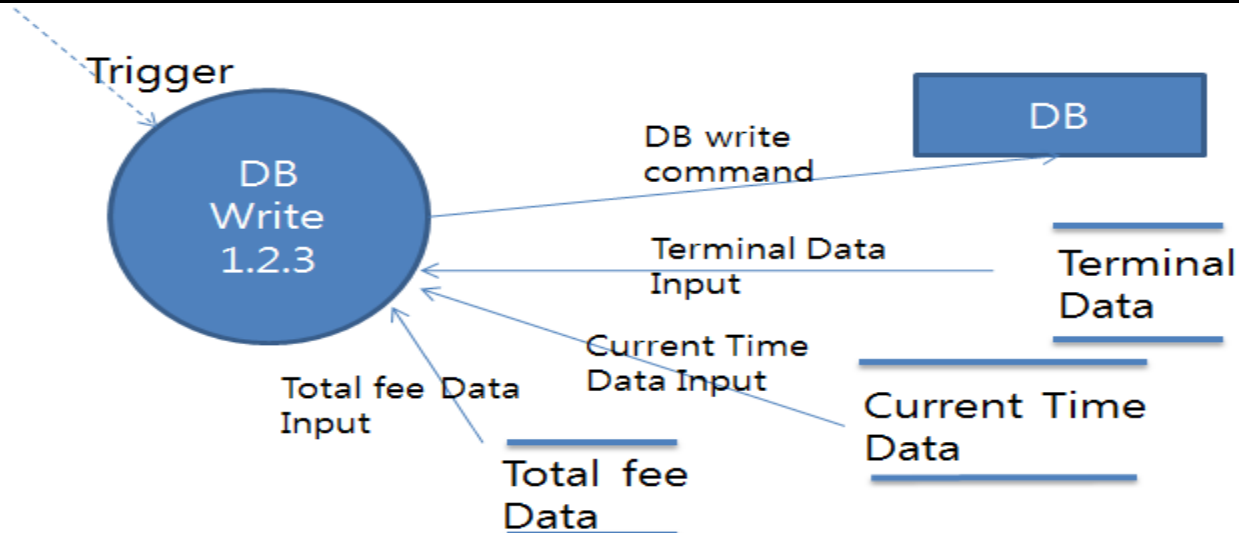




Reference No.	1.2.1
Name	DB Controller
Input	Trigger, Enable/Disable, Tick
Output	Trigger
Process Description	Enable신호를 받고 DB initialization 에 Trigger를 보내고 Output Contoll로 부터 Trigger를 받으면 Dbwrite에 Trigger를 보낸다.

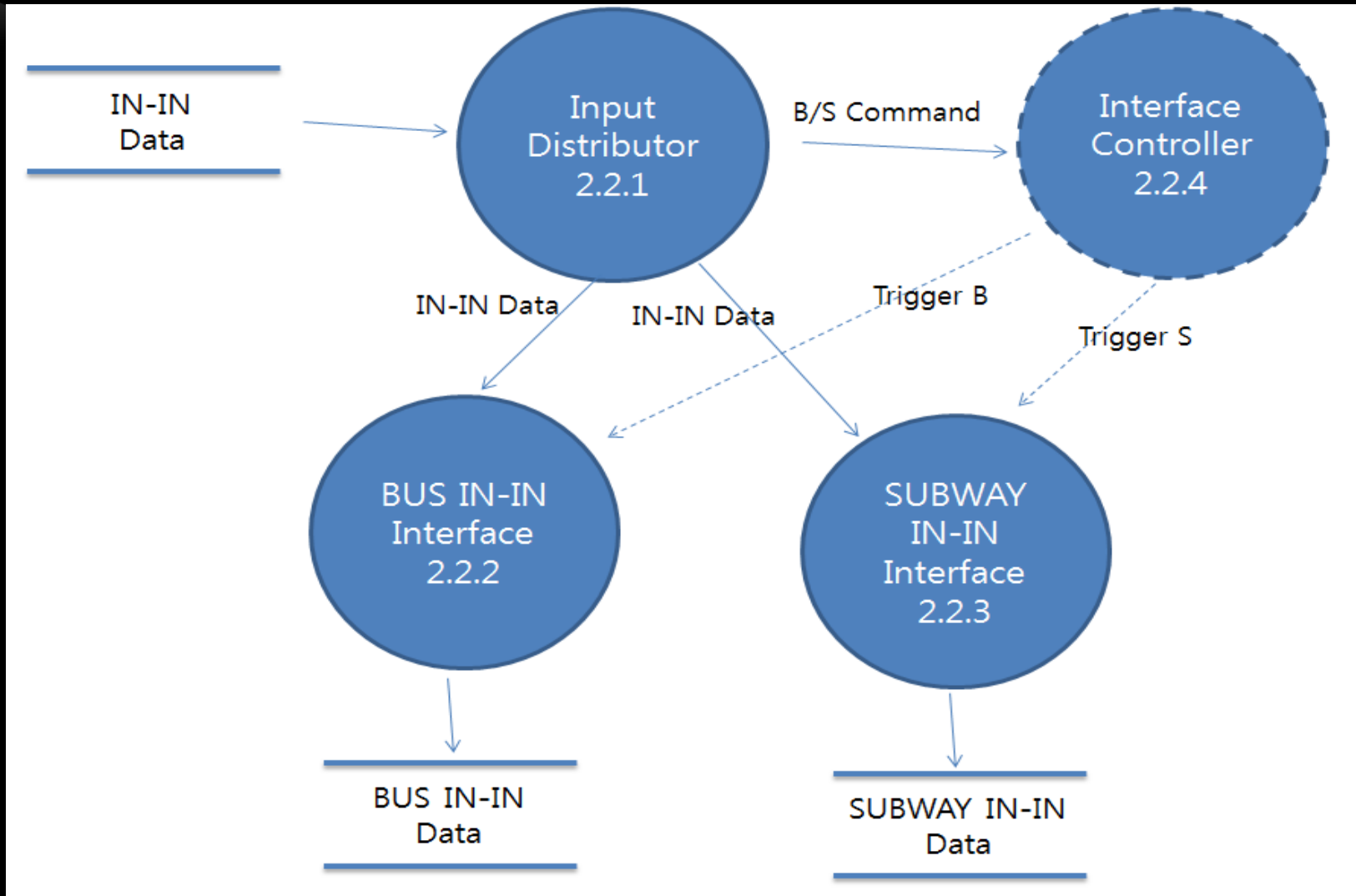


Reference No.	1.2.2
Name	DB Initialization
Input	Trigger
Output	DB initialization Command
Process Description	DB Controller 로 부터 trigger 신호를 받으면 DB에 DB initialization command를 보낸다.



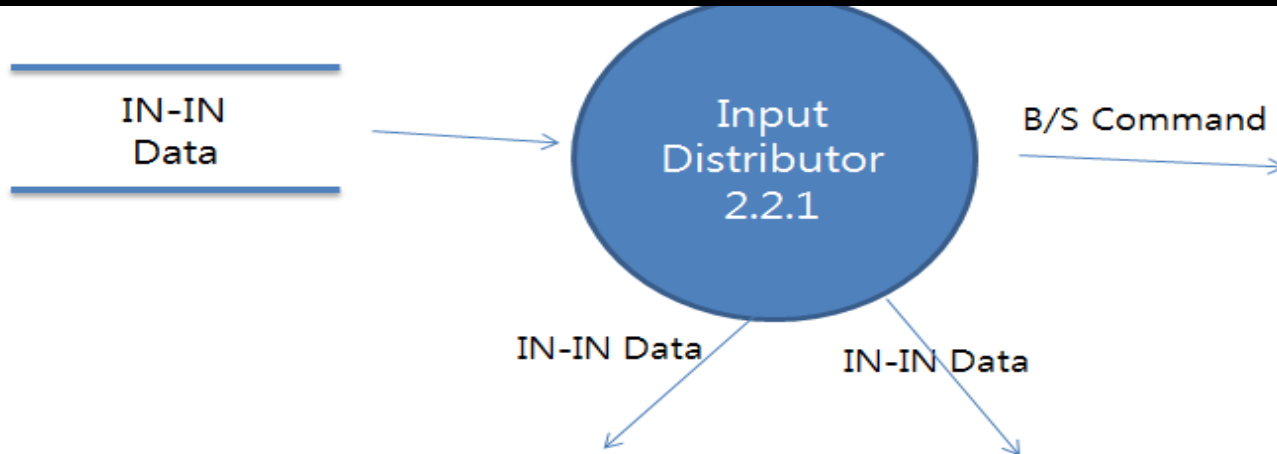
Reference No.	1.2.3
Name	DB Wirte
Input	Trigger , Terminal Data, <u>CurrentData</u> , <u>Total FeeData</u>
Output	DB write Command
Process Description	DB Controller 로 부터 Trigger 신호를 받으면 Handled Data로부터 Input을 받아 DB에 DB write Command를 보낸다.

Subway Terminal DFD Lv3 -Interface

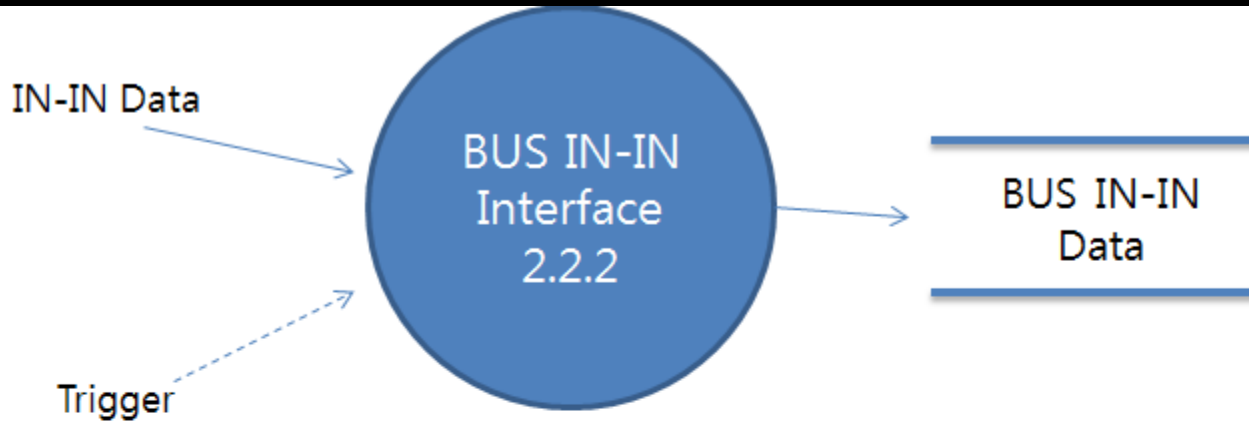


DFD Lv3

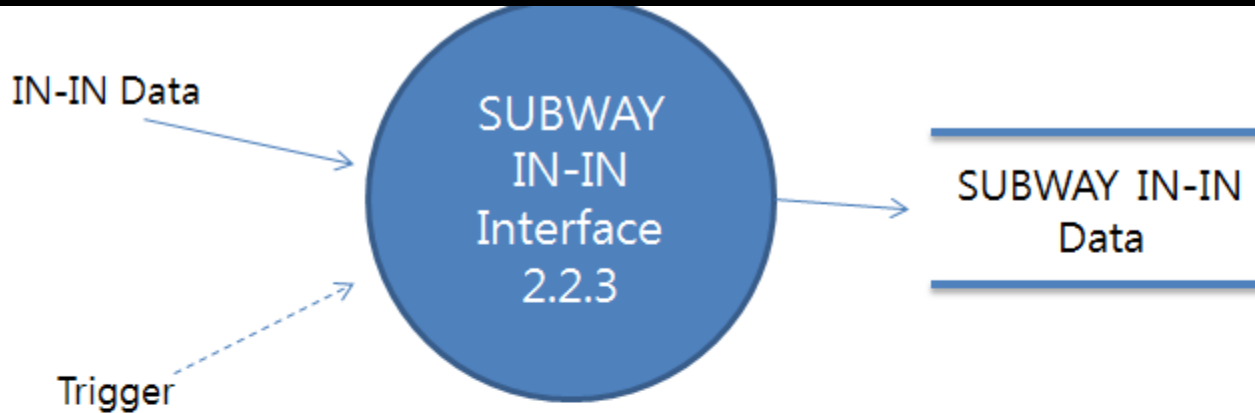
- Process Specification



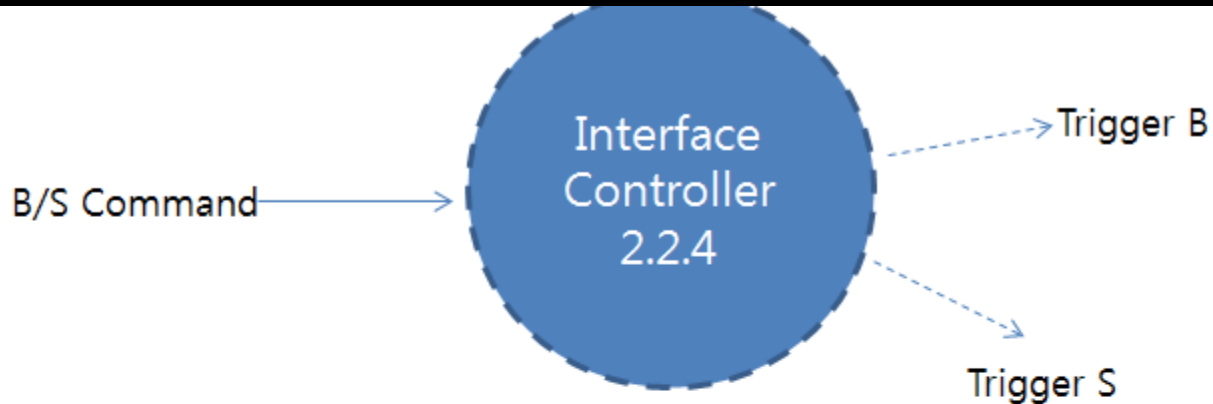
Reference No.	2.2.1
Name	Input Distributor
Input	IN-IN Data
Output	IN-IN Data, B/S Command
Process Description	IN-IN Data를 읽어서 Last IN Data의 교통수단을 구해서 Interface Controller에 전달한다(B/S Command). 그리고 데이터 처리 인터페이스들에게 IN-IN Data를 분배해준다.



Reference No.	2.2.2
Name	BUS IN-IN Interface
Input	IN-IN Data, Trigger
Output	BUS IN-IN Data
Process Description	Interface Controller로부터 Trigger를 받으면 <u>입력받은 IN-IN Data를 가공하여</u> BUS IN-IN Data로 출력한다



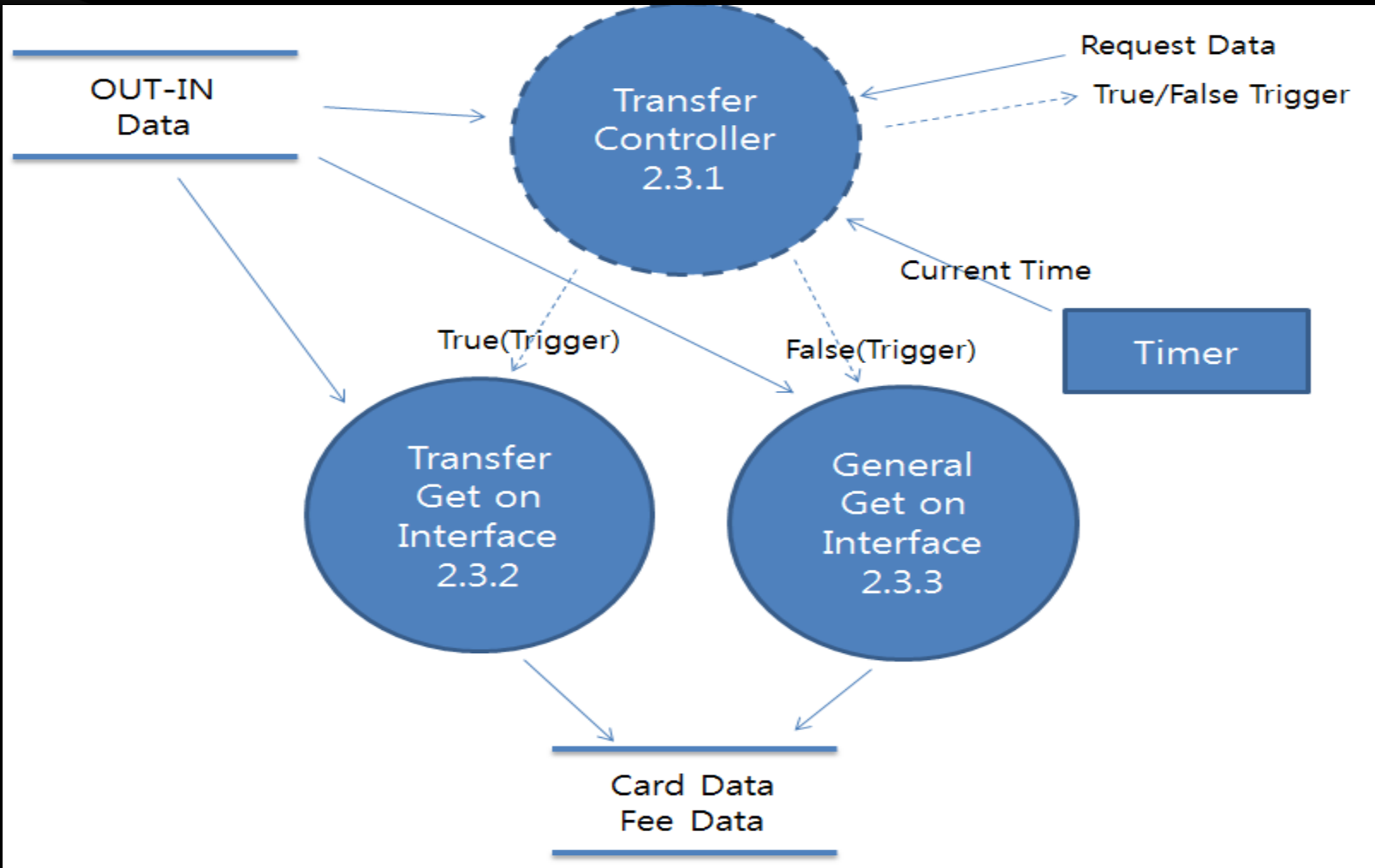
Reference No.	2.2.3
Name	BUS IN-IN Interface
Input	IN-IN Data, Trigger
Output	SUBWAY IN-IN Data
Process Description	Interface Controller로부터 Trigger를 받으면 <u>입력받은</u> IN-IN Data를 가공하여 SUBWAY IN-IN Data로 출력한다

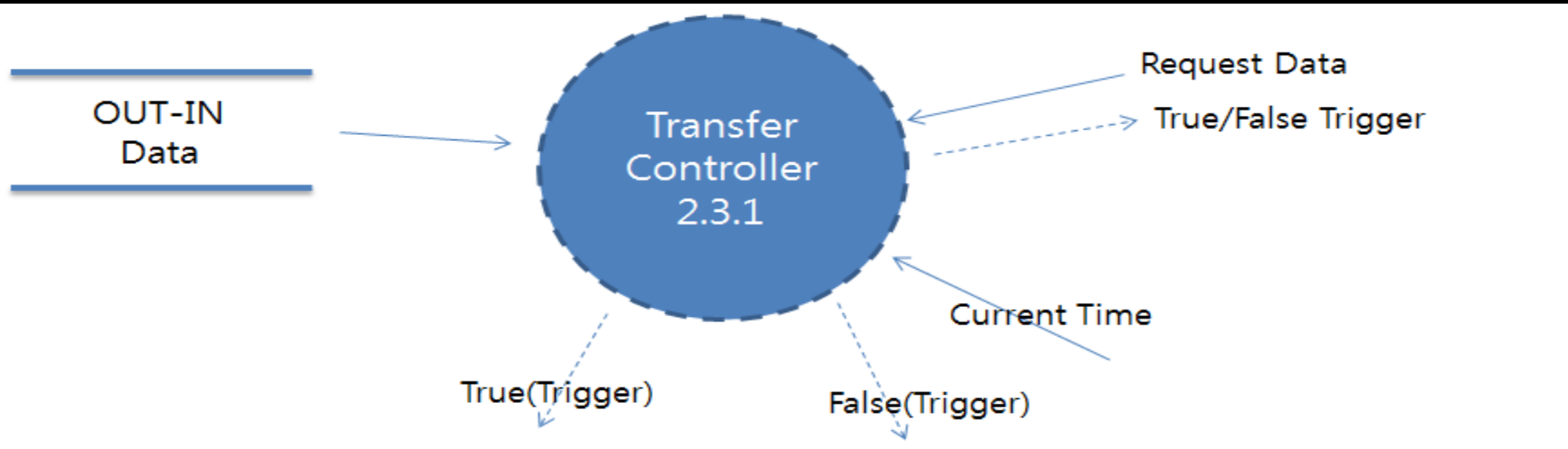


Reference No.	2.2.4
Name	Interface Controller
Input	B/S Command
Output	Trigger B, Trigger S
Process Description	B/S Command 값에 따라 Trigger B or S 를 출력하여 해당 프로세스가 동작하게 컨트롤한다.

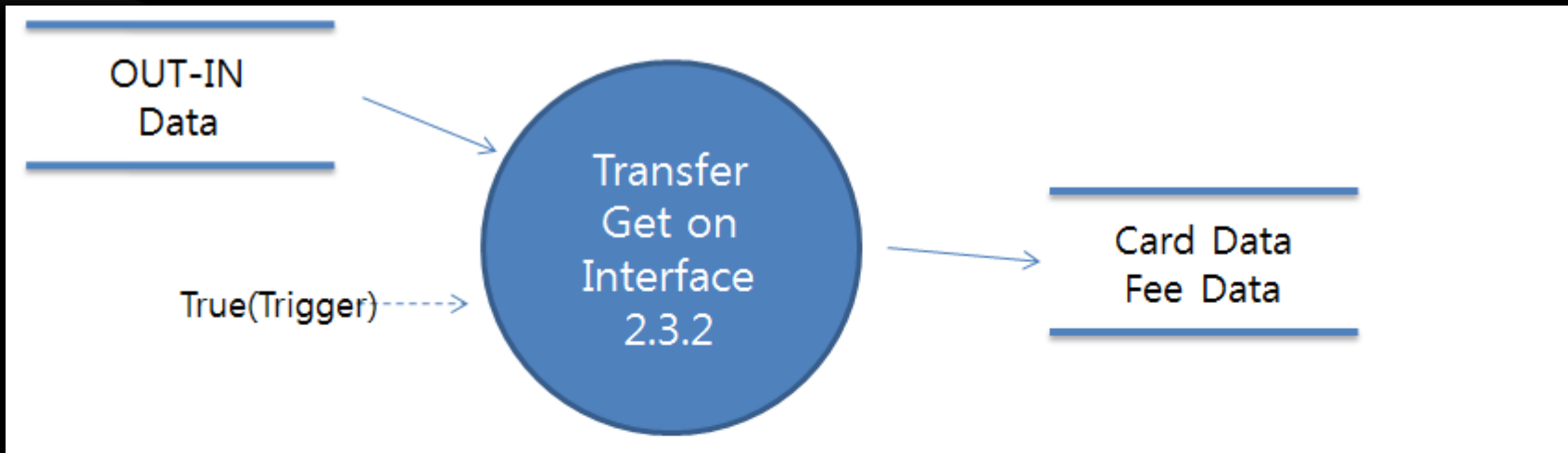
DFD Lv3

- Out-In-Interface

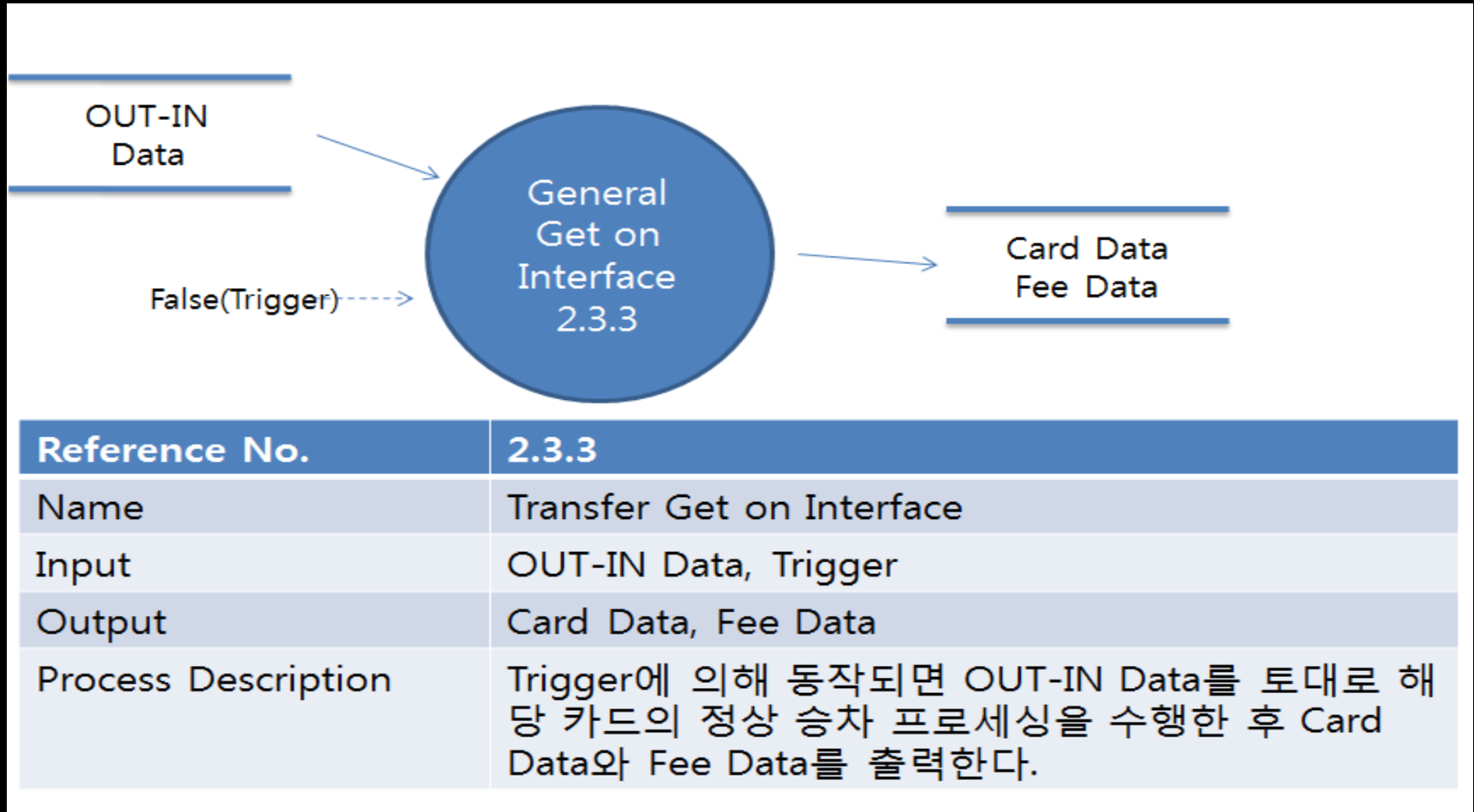




Reference No.	2.3.1
Name	Transfer Controller
Input	OUT-IN Data, Request Data, Current Time
Output	True/False Trigger
Process Description	입력받은 데이터를 통해 환승 여부를 판단한다. 환승이면 True 시그널을, 아니라면 False 시그널을 전달한다. OUT-IN Data 외에 Request Data로 요청이 들어오면 들어온 쪽으로 시그널을 전송한다.



Reference No.	2.3.2
Name	Transfer Get on Interface
Input	OUT-IN Data, Trigger
Output	Card Data, Fee Data
Process Description	Trigger에 의해 동작되면 OUT-IN Data를 토대로 해당 카드의 환승 처리 프로세싱을 수행한 후 Card Data와 Fee Data를 출력한다.



Chapter4

DFD Lv3

- Data Dictionary

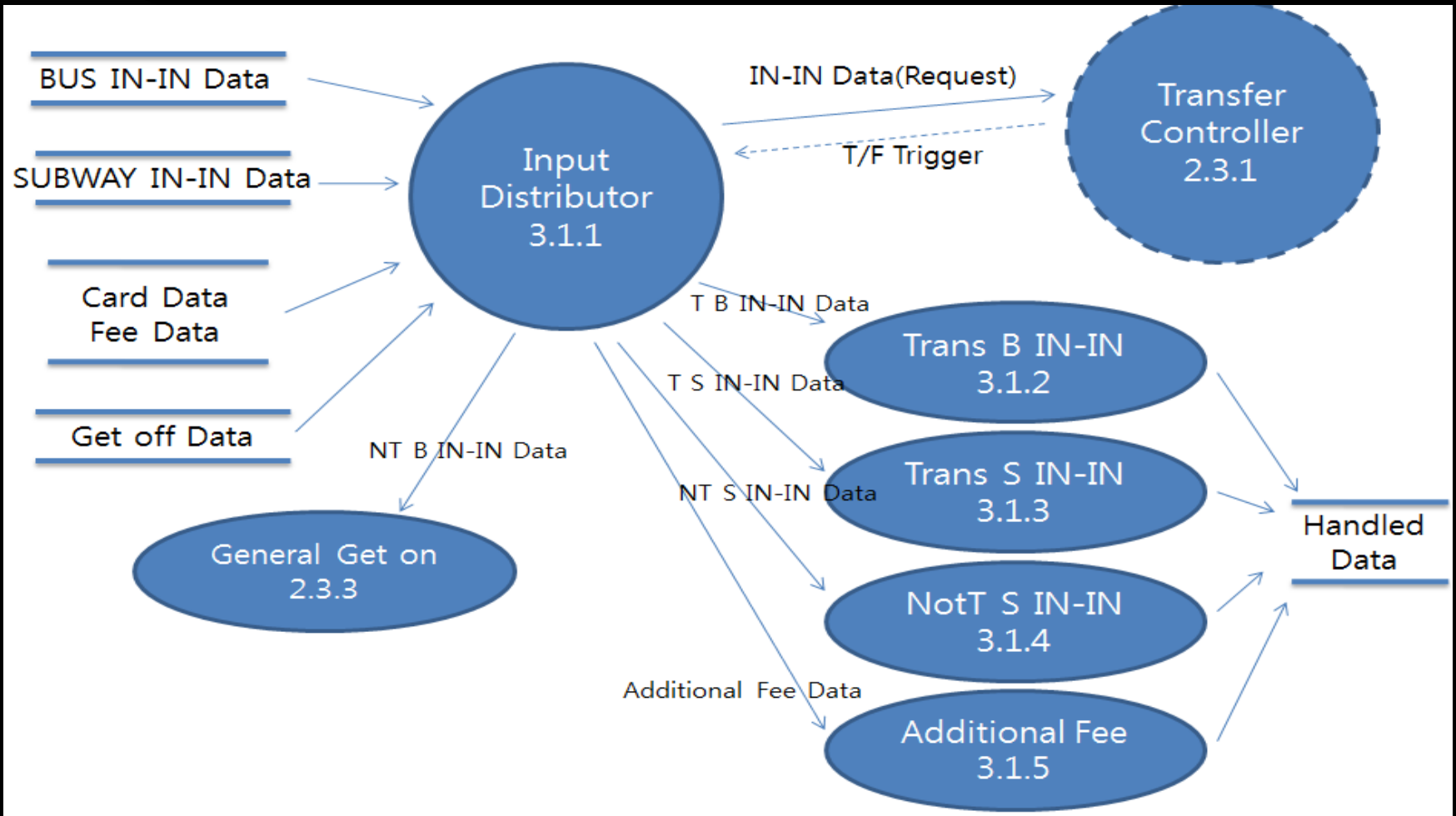
Input/Output Event	Descript	Type(Format)
OUT-IN Data	Get on Sensor에서 Tag된 Card Data의 최근 승하차 기록값이 Out인 Data	Card Data
Request Data	Transfer Controller에 환승 여부 판단을 요청하는 데이터	Card Data
Card Data	센서에 Tag되어 읽어들이는 교통카드 Data	Card Data
Fee Data	현재 Tag되어 처리중인 교통카드가 지불해야할 요금 정보	String / Integer

Input/Output Event	Descript	Type(Format)
IN-IN Data	Get on Sensor에서 Tag된 Card Data의 최근 승하차 기록값이 IN인 Data	Card Data
B/S Command	IN-IN Data를 통해 Input Distributor 가 식별한 값.	Character ('B' or 'S')
BUS IN-IN Data	마지막으로 버스를 탑승한 후 태그하지 않고 내린 뒤 다시 승차 시도 한 것으로 확인된 Card Data	Card Data + Flag
SUBWAY IN-IN Data	마지막으로 지하철을 탑승한 후 태그하지 않고 내린 뒤 다시 승차 시도 한 것으로 확인된 Card Data	Card Data + Flag

Chapter 4

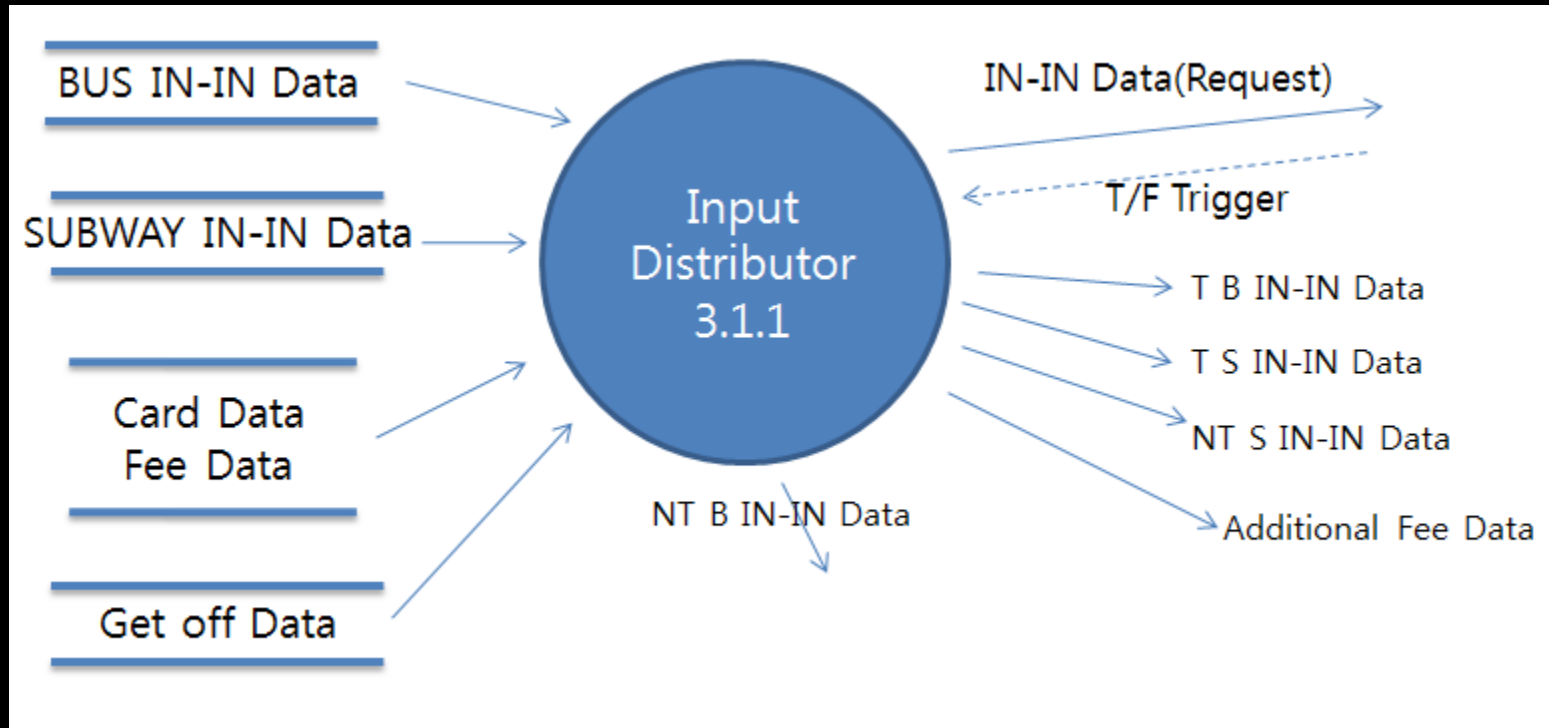
DFD Lv3

- Fee Calculator

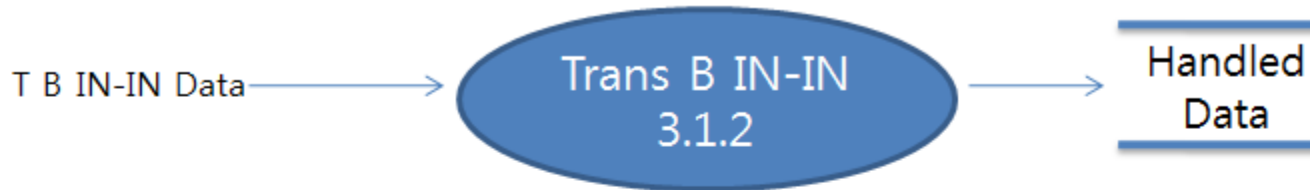


DFD Lv3

- Process Specification



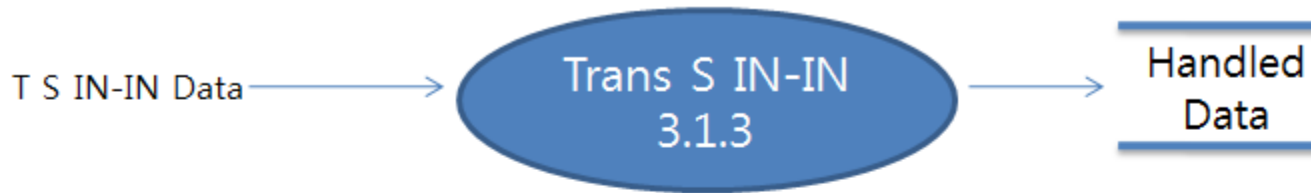
Reference No.	3.1.1
Name	Input Distributor
Input	BUS IN-IN Data, SUBWAY IN-IN Data, Card Data, Fee Data, Get off Data T/F Trigger
Output	NT B IN-IN Data, T B IN-IN Data, T S IN-IN Data, NT S IN-IN Data, Additional Fee Data, IN-IN Data(Request)
Process Description	IN-IN Data가 입력되면 Transfer Controller에 Request 하여 환승여부를 확인받는다. BUS IN-IN Data가 환승 True 시그널을 받으면 T B IN-IN Data가 된다. 환승 False 시그널을 받으면 NT B IN-IN Data가 된다. 이때, NT B IN-IN Data는 정상 승차 처리되어야 하므로 해당 프로세서로 재전송된다. 마찬가지로 SUBWAY IN-IN Data는 T S IN-IN Data와 NT S IN-IN Data로 구분된다. Get off Data는 하차시 추가요금 계산을 위해 Additional Fee Data로 가공되어 해당 프로세스에 보내진다.



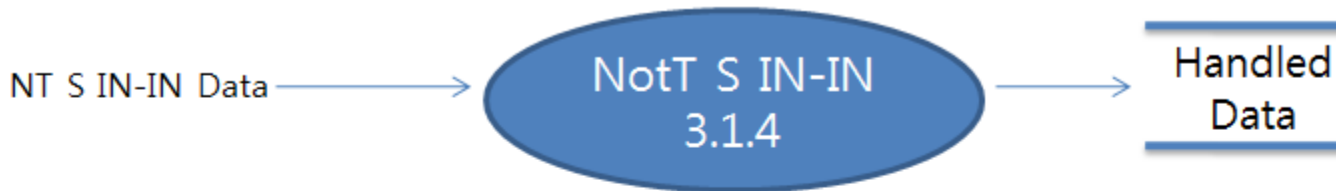
Reference No.	3.1.2
Name	Trans B IN-IN
Input	T B IN-IN Data
Output	Handled Data
Process Description	이번 승차 전에 환승한 버스를 탑승하고 하차시 카드를 태그하지 않은 Data이다. 미정산 요금 700원을 부과하고 Handled Data로 가공하여 출력한다.

DFD Lv3

- Process Specification



Reference No.	3.1.3
Name	Trans S IN-IN
Input	T S IN-IN Data
Output	Handled Data
Process Description	이번 승차 전에 환승한 지하철을 탑승하고 하차시 카드를 태그하지 않은 Data이다. 미정산 요금 600원을 부과하고 Handled Data로 가공하여 출력한다.



Reference No.	3.1.4
Name	NotT S IN-IN
Input	NT S IN-IN Data
Output	Handled Data
Process Description	이번 승차 전에 지하철을 탑승하고 하차시 카드를 태그하지 않은 Data이다. 미정산 요금 200원을 부과하고 Handled Data로 가공하여 출력한다.



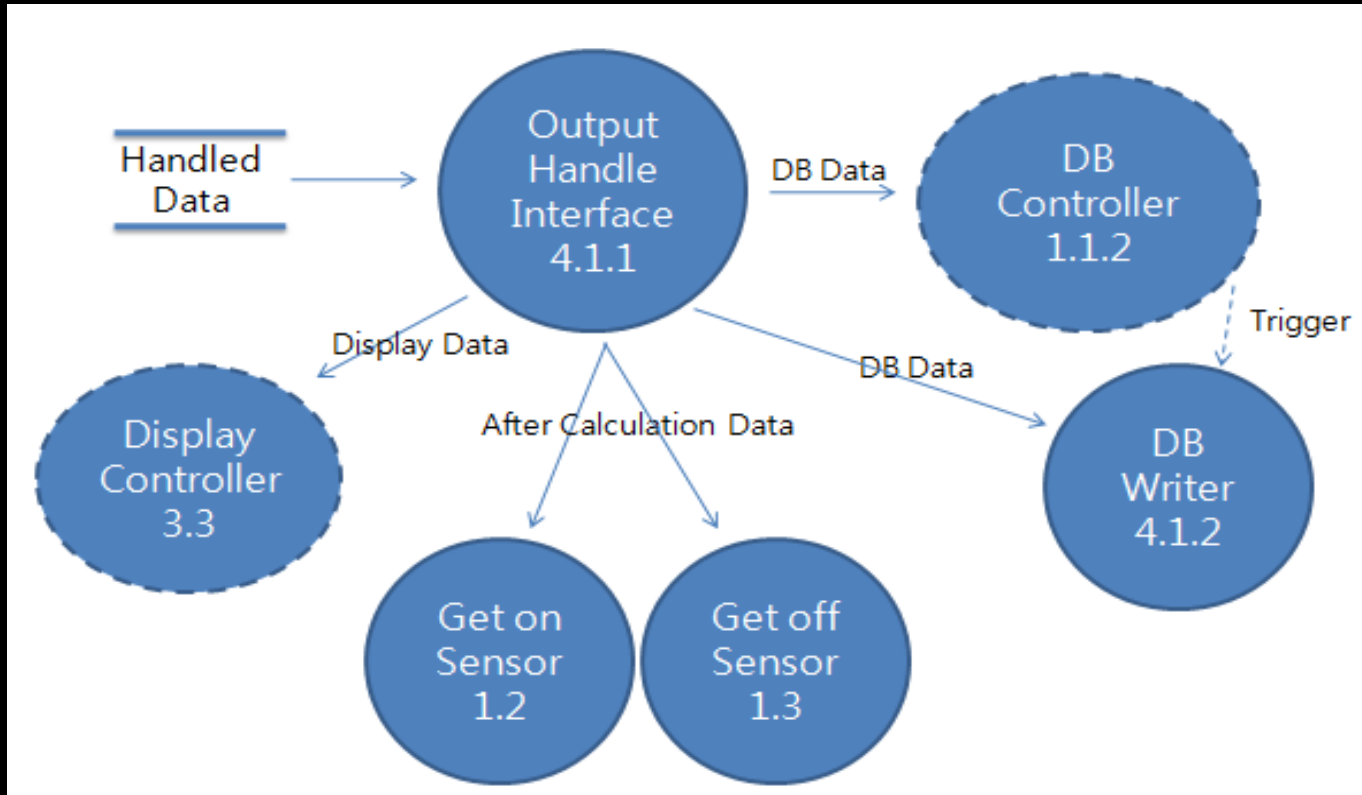
Reference No.	3.1.5
Name	Additional Fee
Input	Additional Fee Data
Output	Handled Data
Process Description	Get off Data를 바탕으로 하차시 추가요금 계산 과정을 수행하는 프로세스. 추가요금을 계산한 후 Handled Data로 가공하여 출력

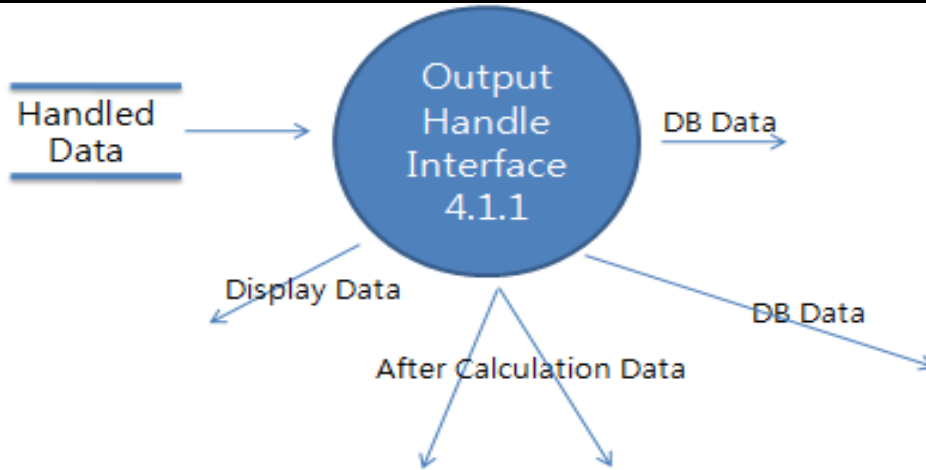
Chapter4

DFD Lv3

- Data Dictionary

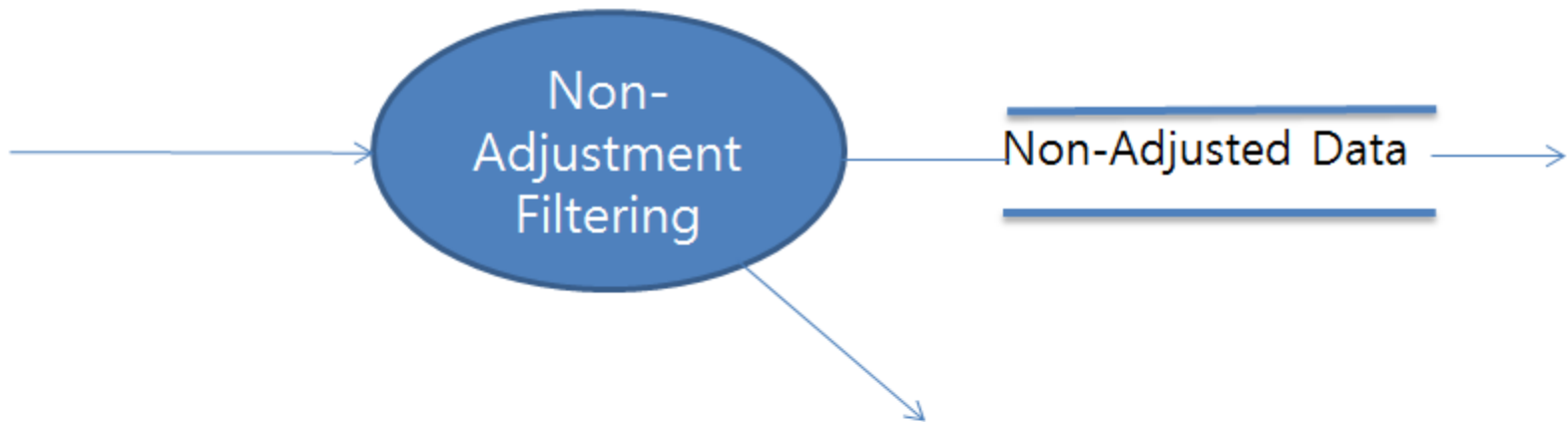
Input/Output Event	Descript	Type(Format)
T B IN-IN Data	이번 승차 전 환승으로 탑승한 버스에서 하차시 태그하지않고 내린 카드 데이터	Card Data + Flag
NT B IN-IN Data	이번 승차 전 기본 탑승한 버스에서 하차시 태그하지않고 내린 카드 데이터	Card Data + Flag
T S IN-IN Data	이번 승차 전 환승으로 탑승한 지하철에서 하차시 태그하지않고 내린 카드 데이터	Card Data + Flag
NT S IN-IN Data	이번 승차 전 기본 탑승한 지하철에서 하차시 태그하지않고 내린 카드 데이터	Card Data + Flag
Additional Fee Data	하차시 태그하여 추가요금 계산이 필요한 카드 데이터	Card Data



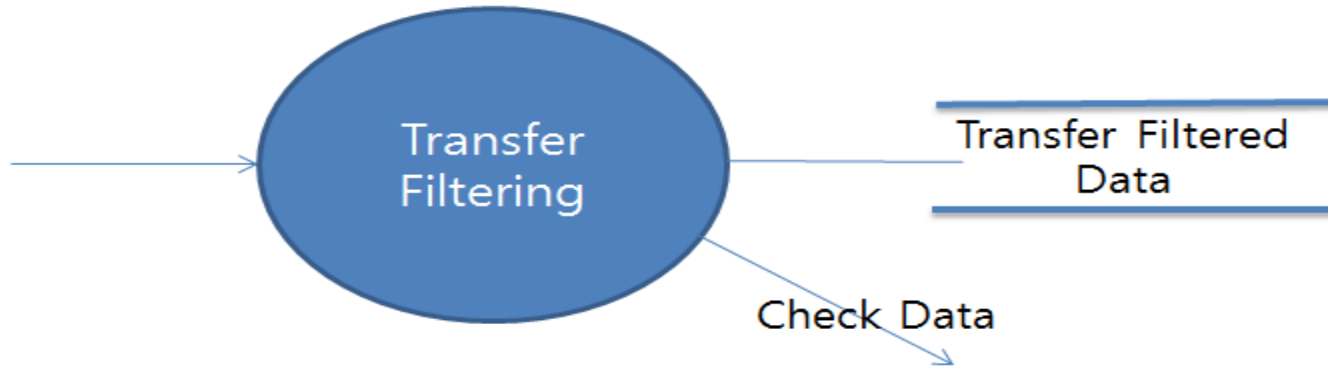


Reference No.	4.1.1
Name	Output Handle Interface
Input	Handled Data
Output	DB Data, Display Data, After Calculation Data
Process Description	Handled Data의 정보로 Display 출력, DB 입력 및 센서를 통해 교통카드에 요금 정산 정보를 기록

Input/Output Event	Descript	Type(Format)
DB Data	정산 완료 후 DB에 기록할 데이터	Date / Integer / String
Display Data	단말기 디스플레이에 출력할 데이터	String / Integer
After Calculation Data	Tag상태인 단말기의 요금계산 완료 후 수정될 데이터	Card Data



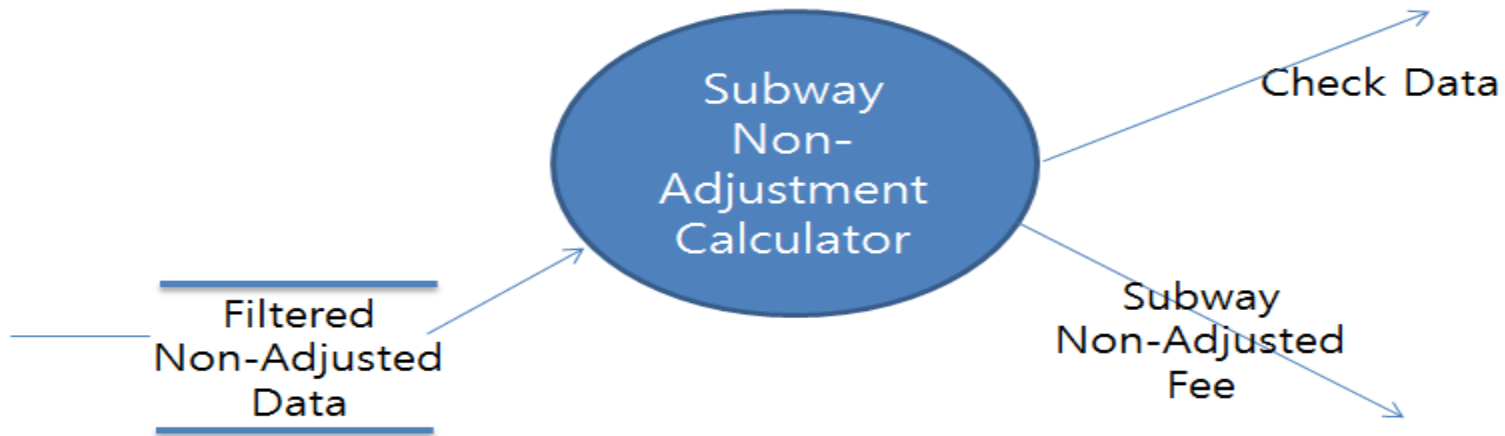
Reference No.	1.0.1
Name	Filtering
Input	DB Data(From. Device DB Read)
Output	Non-Adjusted Data, Extra Data
Process Description	Device DB Read로 부터 DB Data를 받아서 미 정산 Data를 구분하여 Non-Adjusted Data로 보내고 나머지 Data를 Transfer Filtering으로 보낸다.



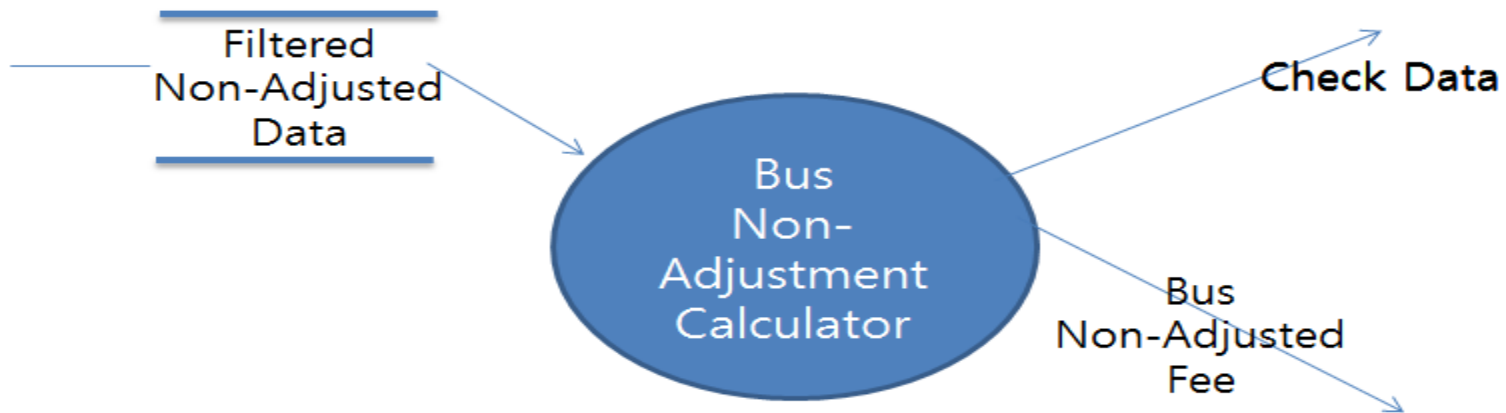
Reference No.	1.0.2
Name	Transfer Filtering
Input	Extra Data
Output	Transfer Filtered Data Extra Data
Process Description	Non-Adjustment Filtering 으로부터 미 정산 이외의 데이터를 받아 <u>환승과 미환승을</u> 구분하여 Transfer Filtered Data에 보내고 나머지 계산하지 말아야 할 요금을 Calculate Controller로 보낸다.

DFD Lv3

- Process Specification



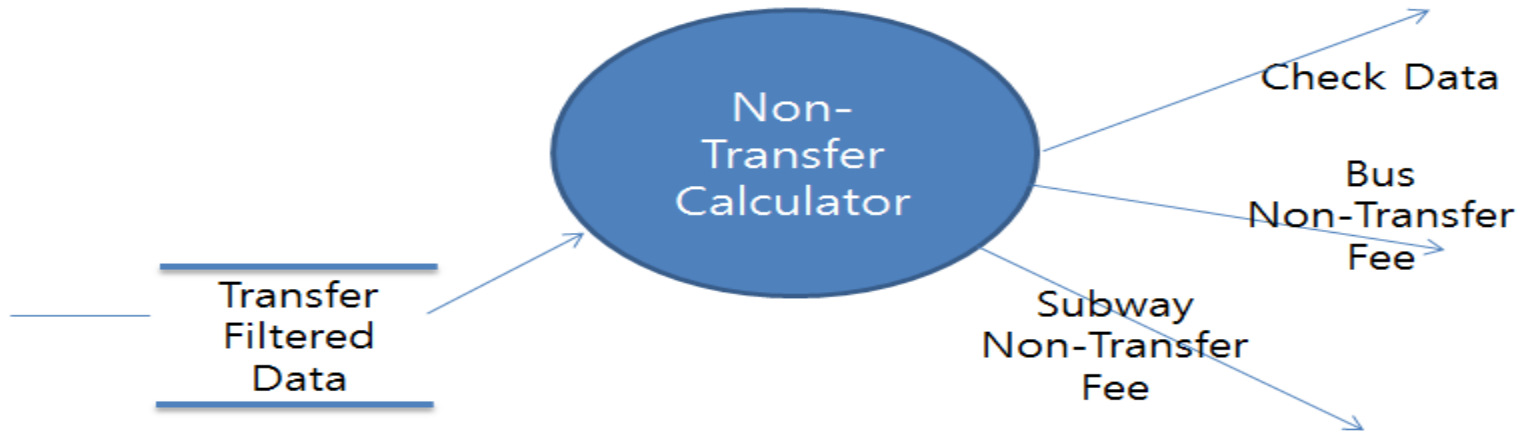
Reference No.	1.3.1
Name	Subway Non-Adjustment Calculator
Input	Subway Non-Adjusted Data
Output	Check Data, Subway Non-Adjusted Fee
Process Description	Non-Adjusted Data로 부터 지하철의 미정산데이터를 받아서 계산식에 따라 계산 후 Calculator Controller로 Data를 보내고, 계산된 <u>미정산</u> 요금을 Subway Aggregation으로 보낸다.



Reference No.	1.3.2
Name	Bus Non-Adjustment Calculator
Input	Bus Non-Adjusted Data
Output	Check Data, Bus Non-Adjusted Fee
Process Description	Non-Adjusted Data로 부터 버스의 미 정산 데이터를 받아서 계산식에 따라 계산 후 Calculator Controller로 Data를 보내고, 계산 된 <u>미정산</u> 요금을 Bus Aggregation으로 보낸다.

DFD Lv3

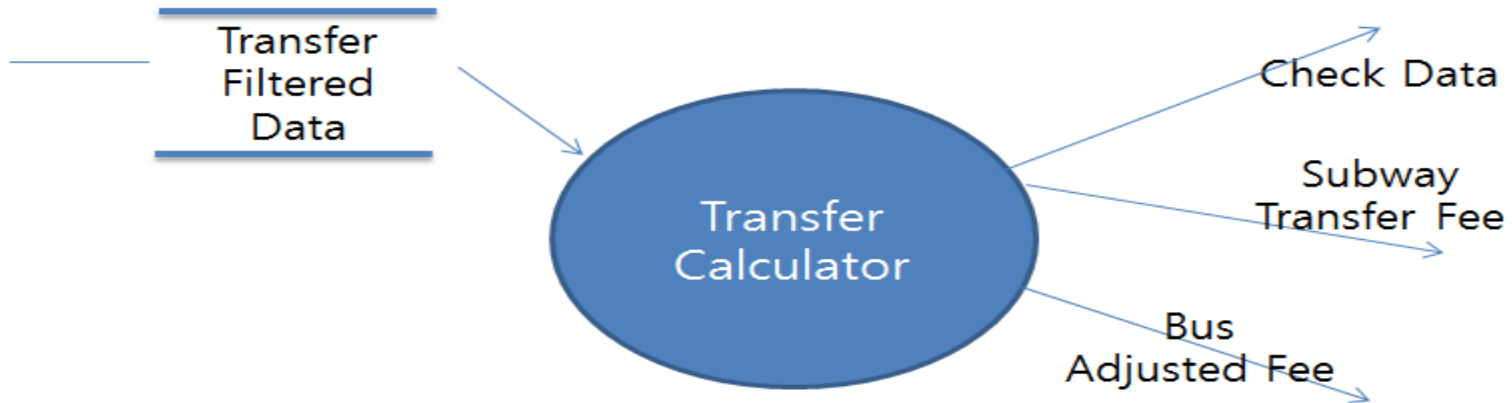
- Process Specification



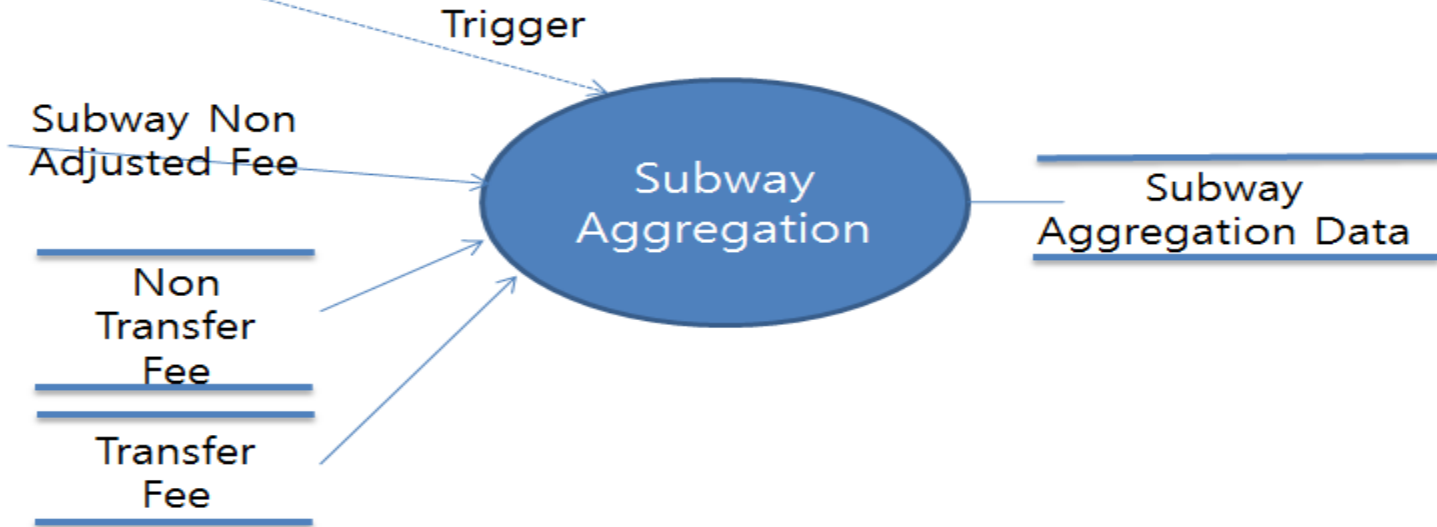
Reference No.	1.4.1
Name	Non-Transfer Calculator
Input	Transfer Filtered Data
Output	Check Data, Subway Non-Transfer Fee, Bus Non-Transfer Fee
Process Description	Transfer Filtered Data로 부터 하나의 대중교통을 이용한 요금data를 받아서 계산 후 Calculate Check Controller로 Data를 보내고, 계산 된 요금을 Subway, Bus Aggregation으로 보낸다.

DFD Lv3

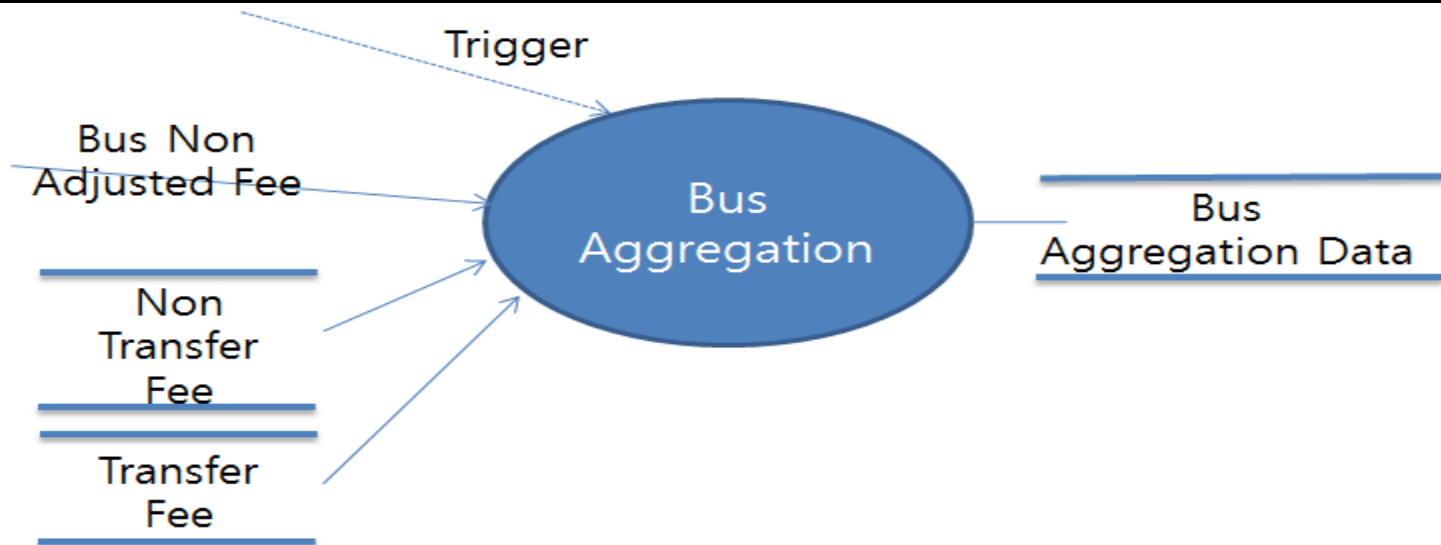
- Process Specification



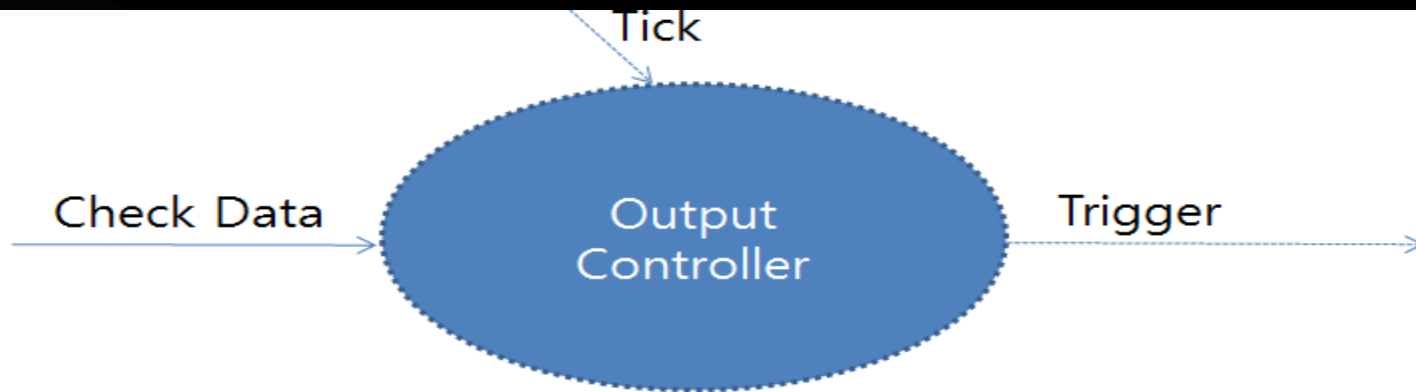
Reference No.	1.5.1
Name	Transfer Calculator
Input	Transfer Filtered Data
Output	Check Data, Subway Non-Transfer Fee, Bus Non-Transfer Fee
Process Description	Transfer Filtered Data로 부터 하나의 대중교통을 이용한 요금data를 받아서 계산 후 Calculate Check Controller로 Data를 보내고, 계산 된 요금을 Subway, Bus Aggregation으로 보낸다.



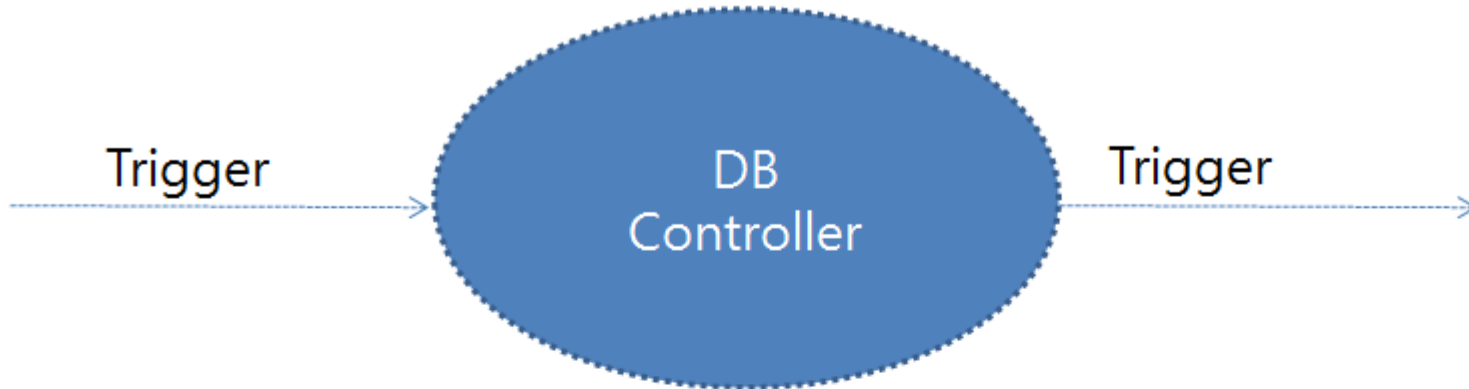
Reference No.	2.0.1
Name	Subway Aggregation
Input	Trigger, Calculated Fee
Output	Aggregated Data
Process Description	각각의 계산된 요금과 Trigger를 받아서 지하철 요금을 합산한다. 합산한 Data는 Subway Aggregation Data로 보낸다.



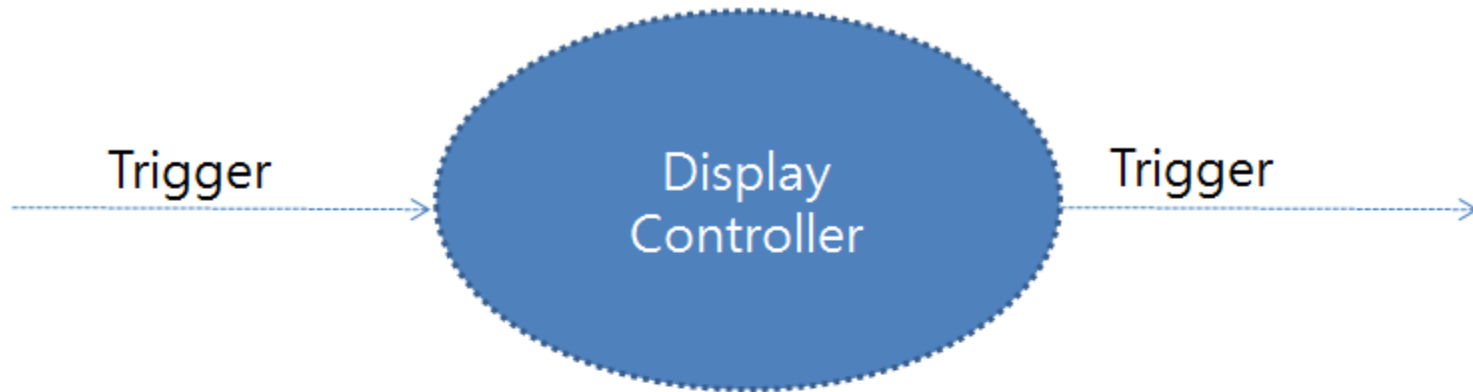
Reference No.	2.0.2
Name	Bus Aggregation
Input	Trigger, Calculated Fee
Output	Aggregated Data
Process Description	각각의 계산된 요금과 Trigger를 받아서 버스 요금을 합산한다. 합산한 Data는 Bus Aggregation Data로 보낸다.



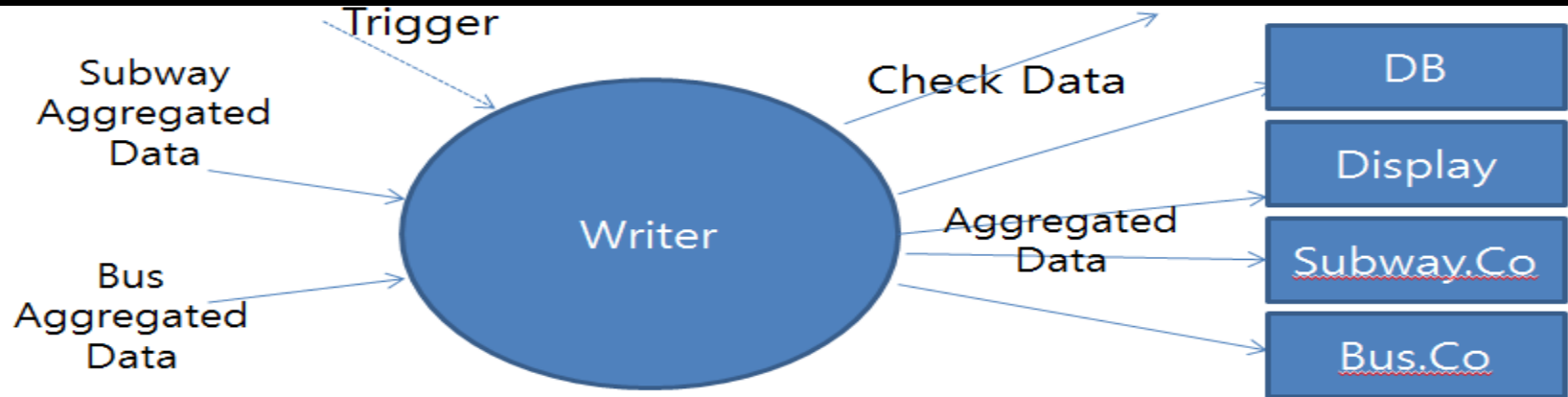
Reference No.	2.1.1
Name	Output Controller
Input	Check Data, Trigger, Tick
Output	Trigger, Disable
Process Description	Data Input을 받아 Display Controller, DB Controller, Writer에 Trigger 신호를 전송한다.



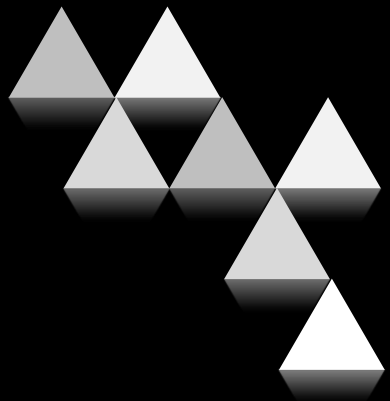
Reference No.	2.1.2
Name	DB Controller
Input	Trigger
Output	Trigger
Process Description	Output Controller로 부터 Trigger를 받고, Writer에 DB작동 Trigger를 보낸다.



Reference No.	2.1.3
Name	Display Controller
Input	Trigger
Output	Trigger
Process Description	Output Controller로 부터 Trigger를 받고, Writer에 Display작동 Trigger를 보낸다.



Reference No.	2.2.1
Name	Writer
Input	Aggregated Data, Trigger
Output	Trigger, Aggregated Data
Process Description	<p>각각의 정산된 data를 받고 컨트롤들로 부터 Trigger를 받아서 DB에 쓰고, Display에 출력, 각 회사에 정산금을 보내준다.</p> <p>그리고 Output Controller에 Trigger를 보낸다.</p>



Question & Answer

