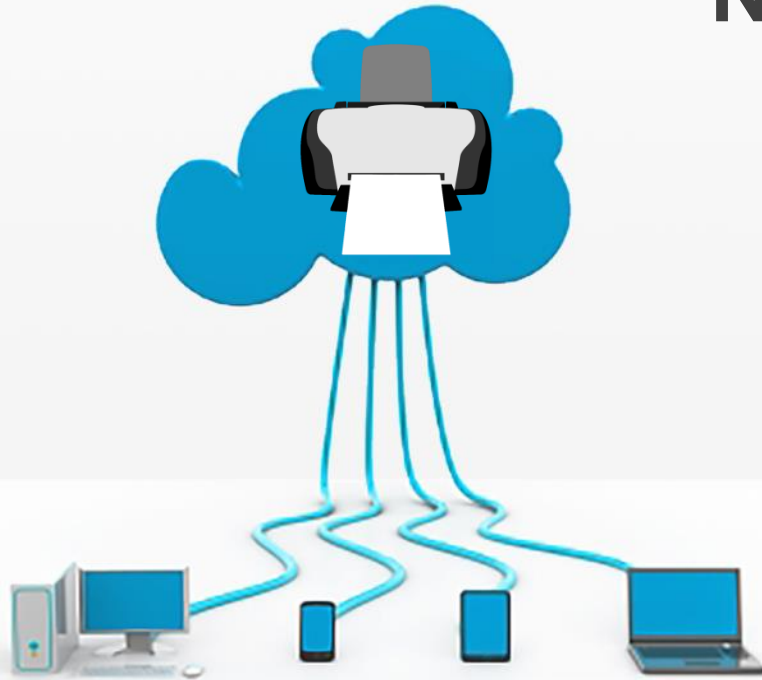


# N.P.S

# Network Printer System

UT Presentation



201011355 이재상  
201012047 신보선  
201111396 한재만  
201111345 김종우

## Explanation

- Overall - SC

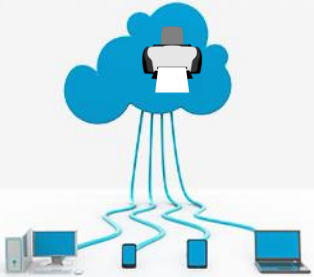
## Unit Test

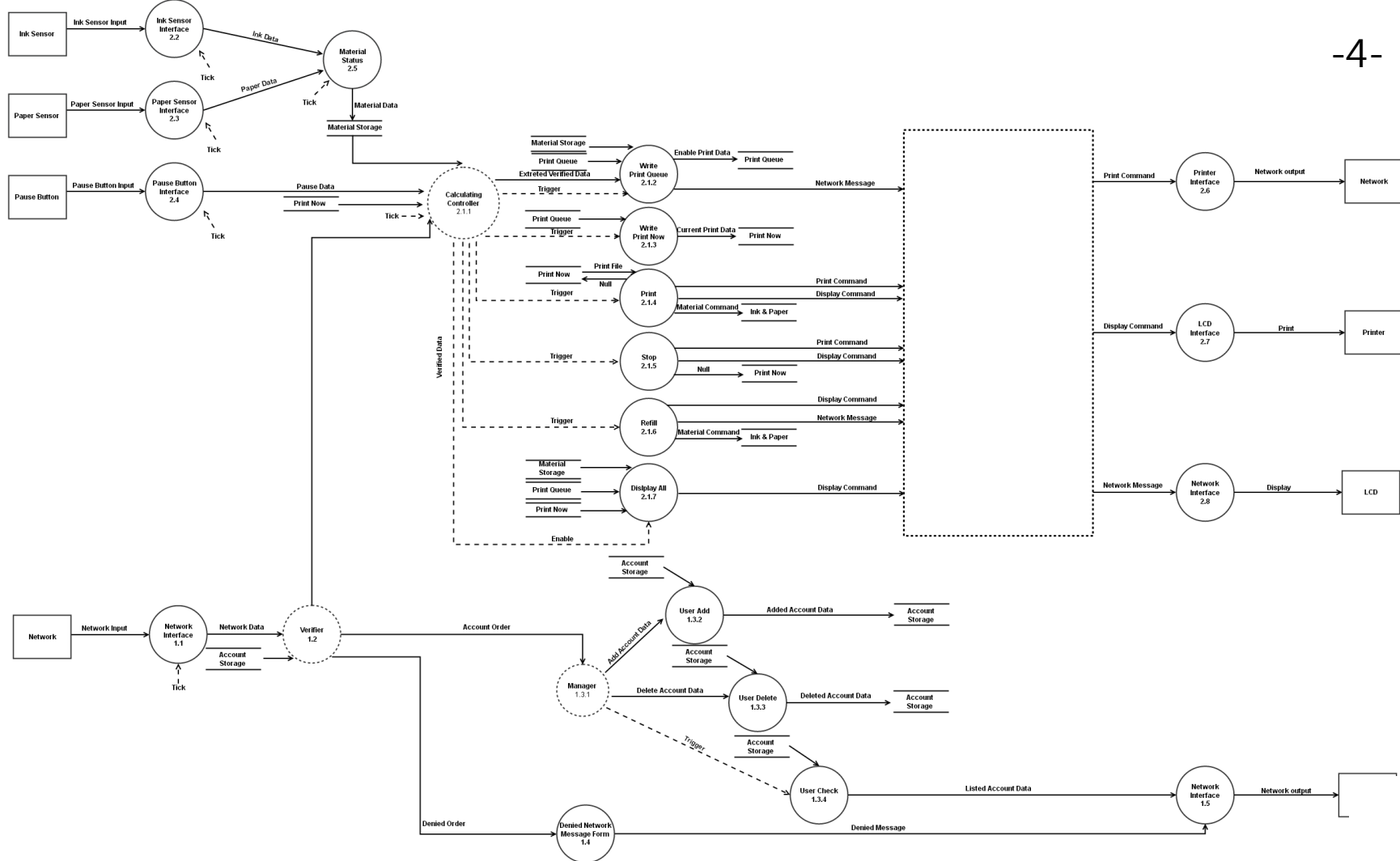
- Items
- Features to be tested
- Features not to be tested
- Test Identification
- Test Specification

## Q&A

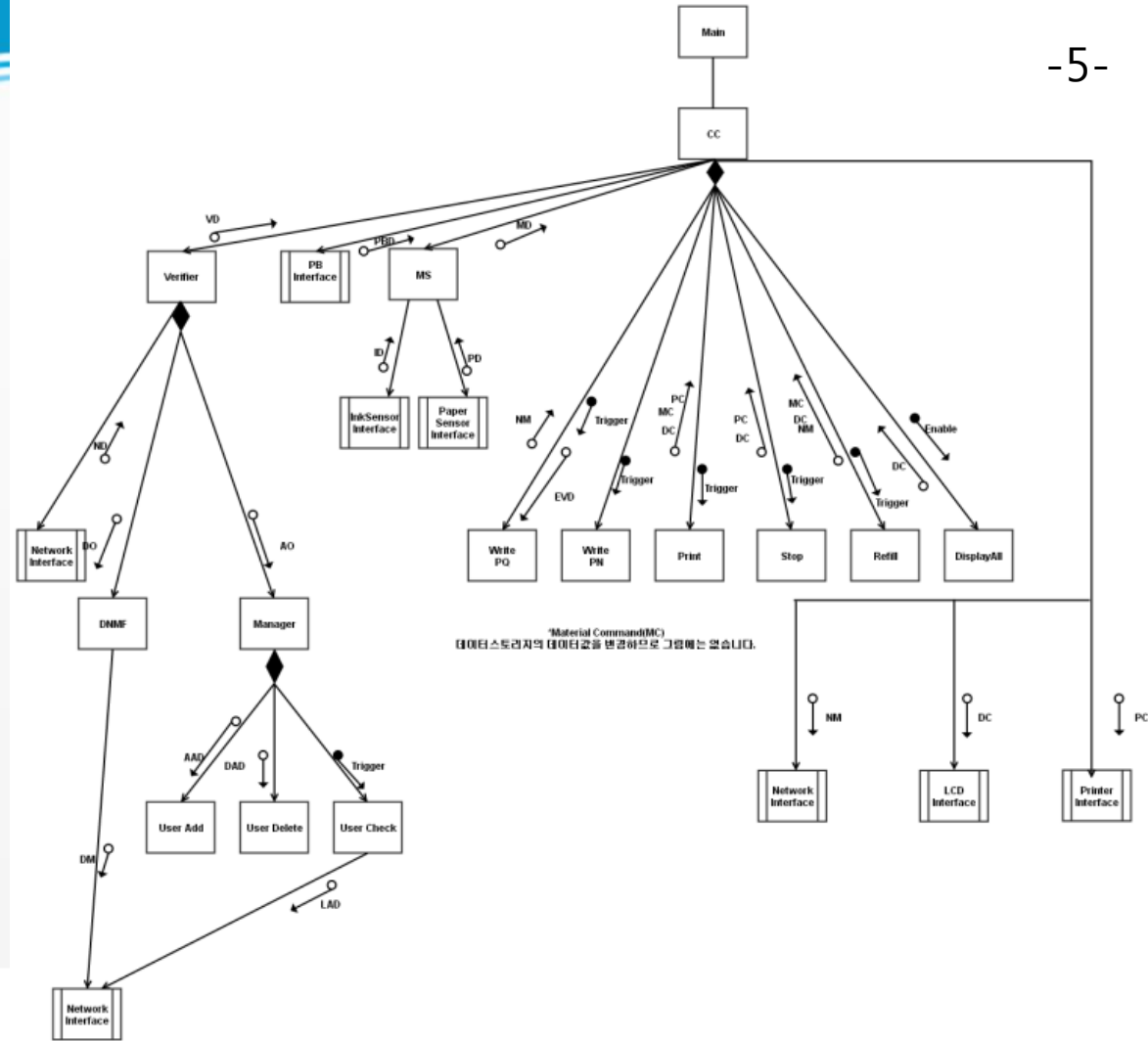


# Explanation

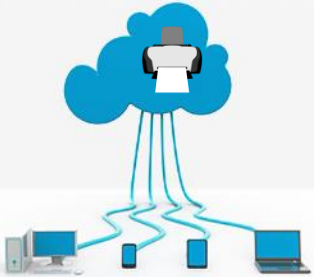




# Structured Chart (Advanced)

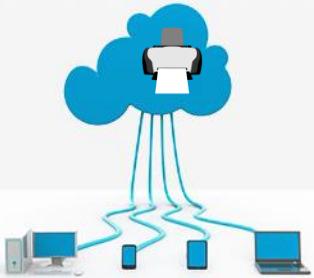


# Unit Test



# Items

	<b>Name</b>
1.2	Verifier
1.3.1	Manager



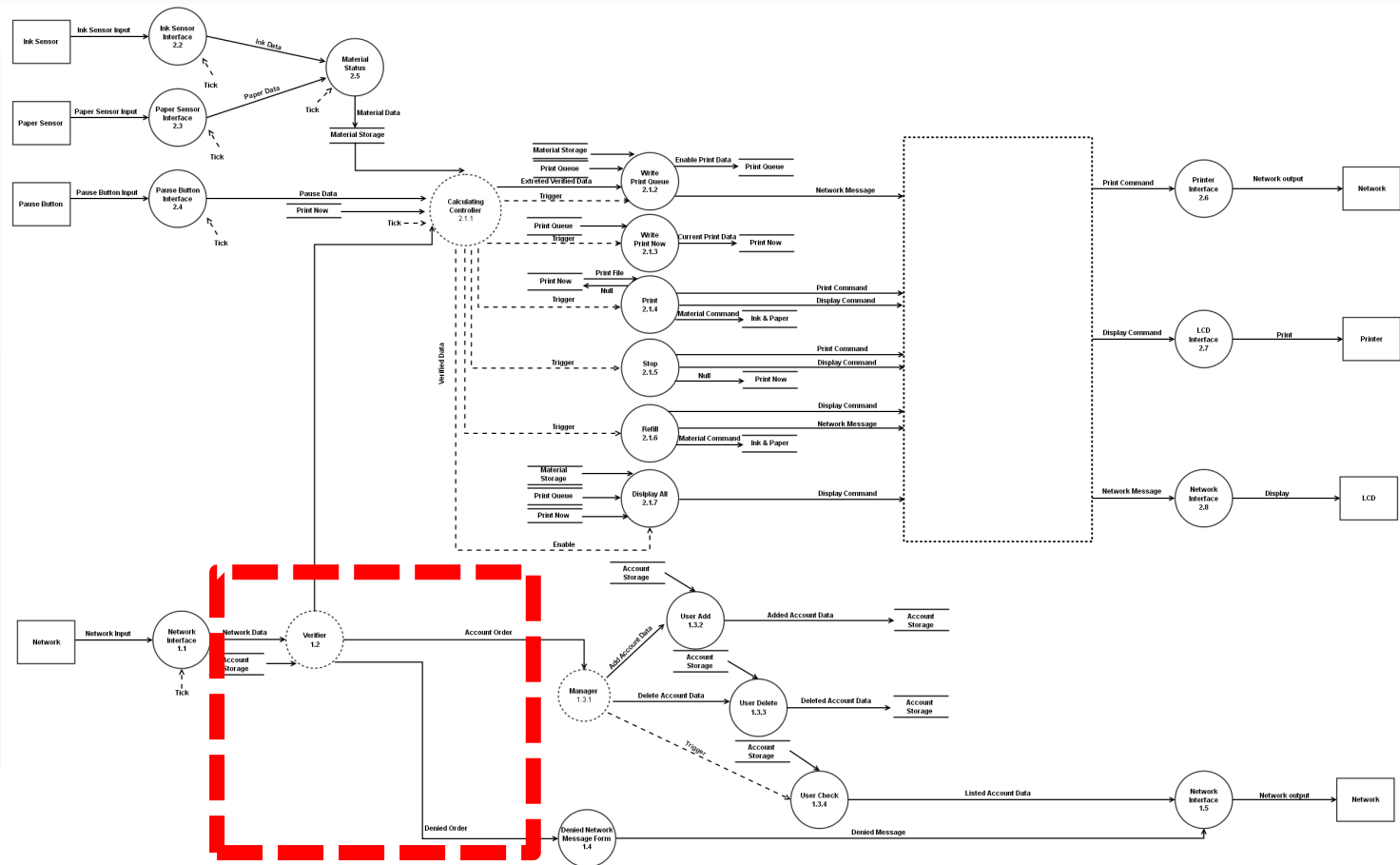
# Items

	Name
2.1.1	Calculating Controller
2.1.2	Write Print Queue
2.1.3	Write Print Now
2.1.4	Print
2.1.5	Stop
2.1.6	Refill
2.1.7	Display All

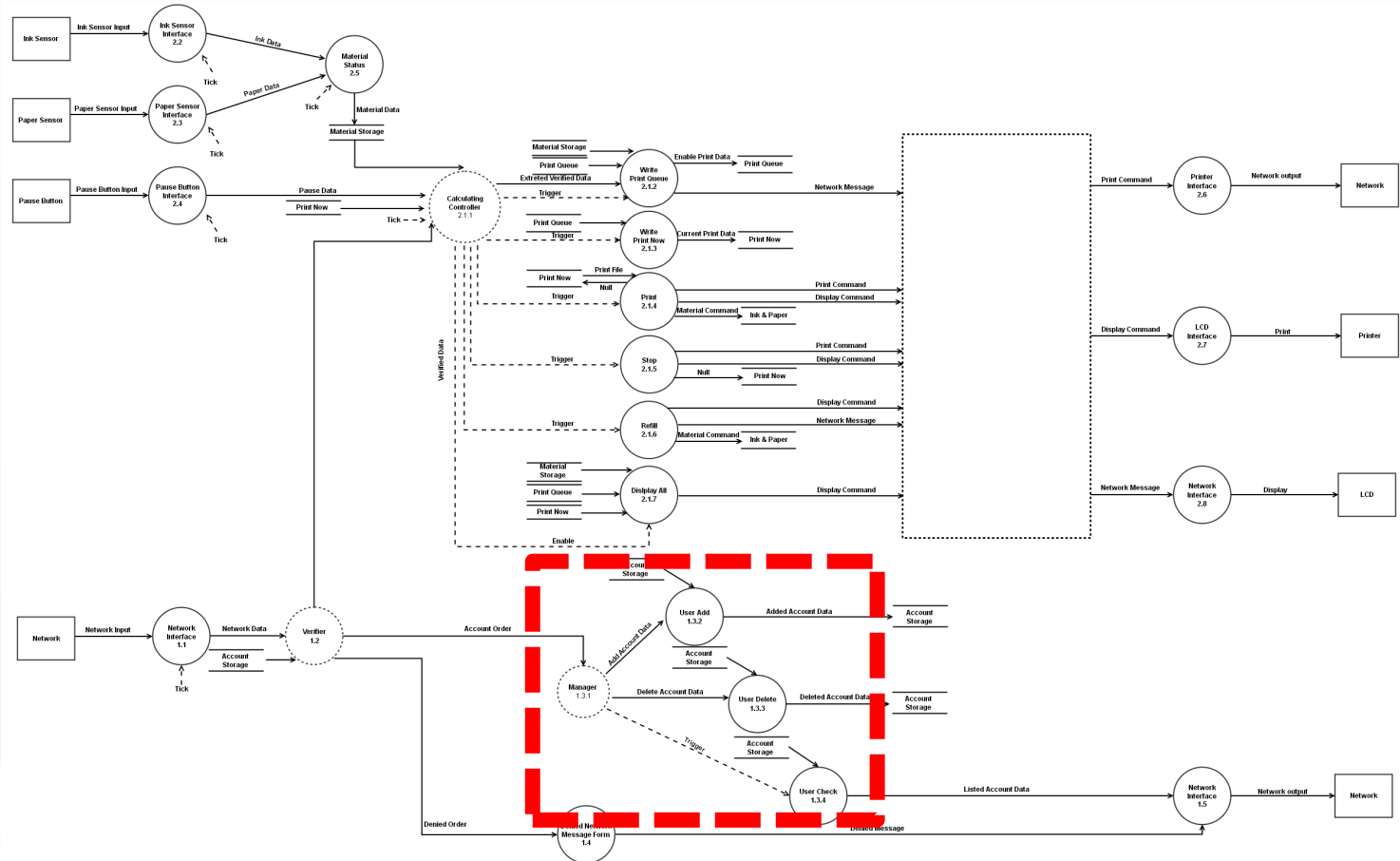




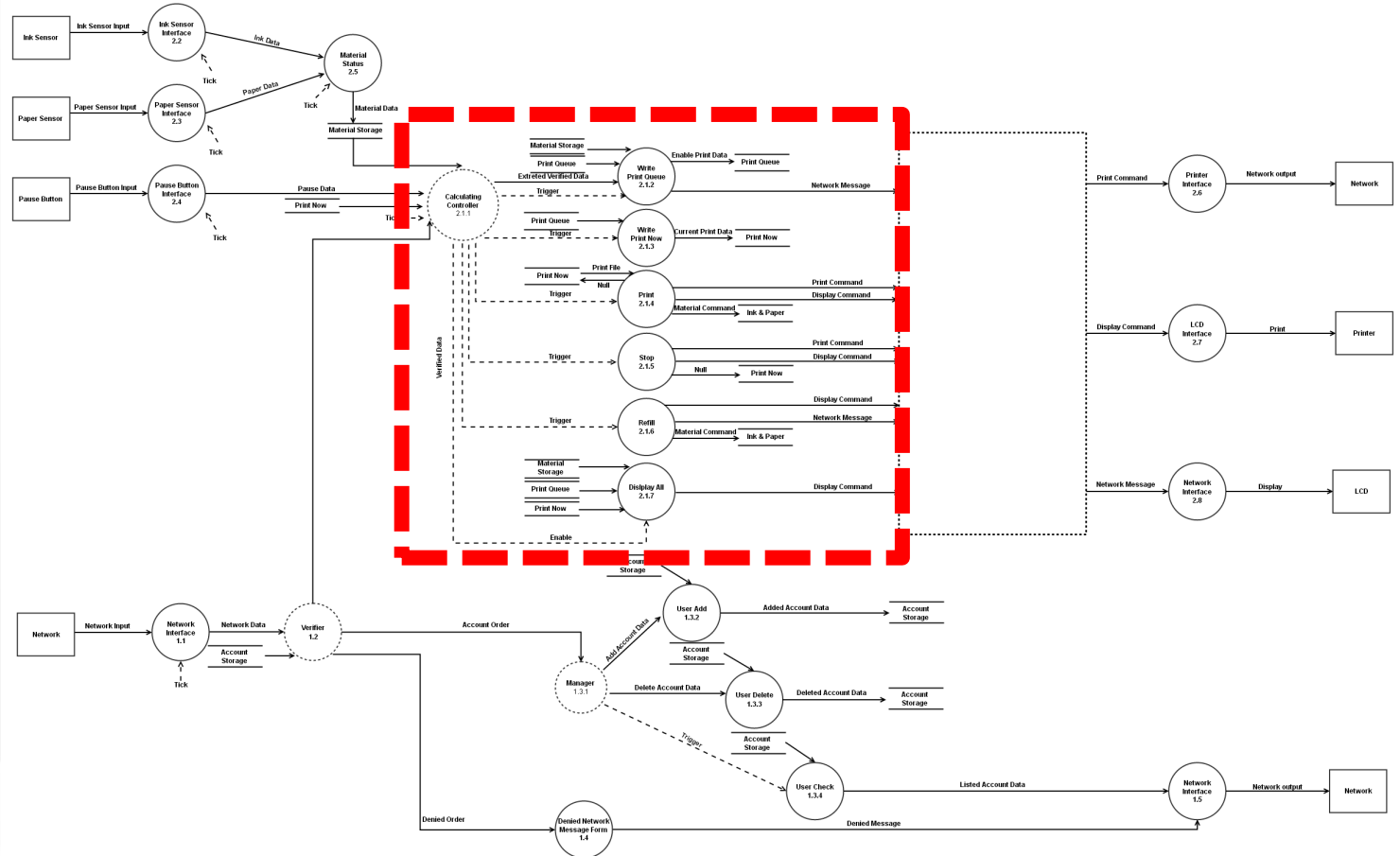
# Features to be tested



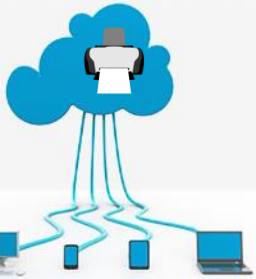
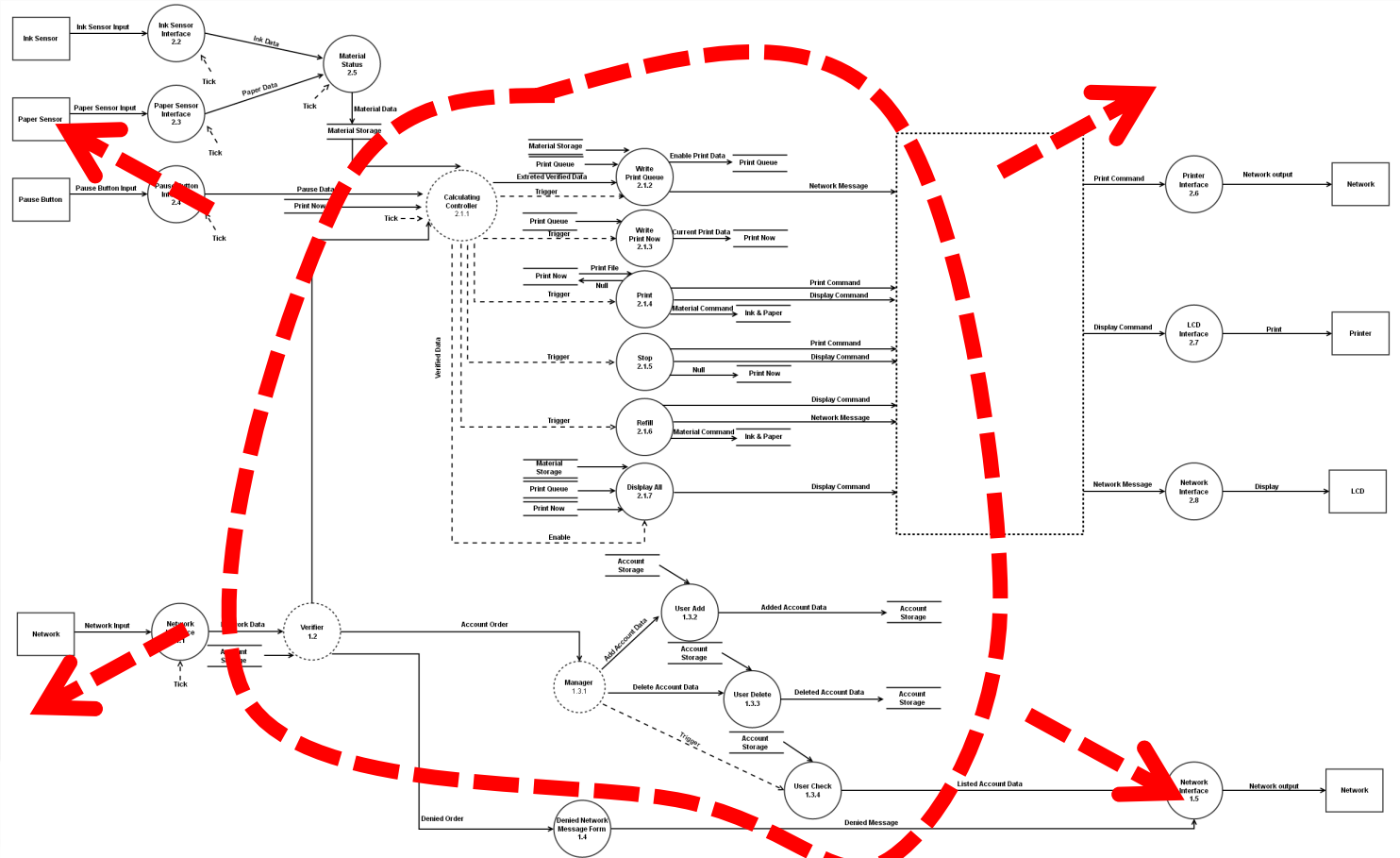
# Features to be tested



# Features to be tested



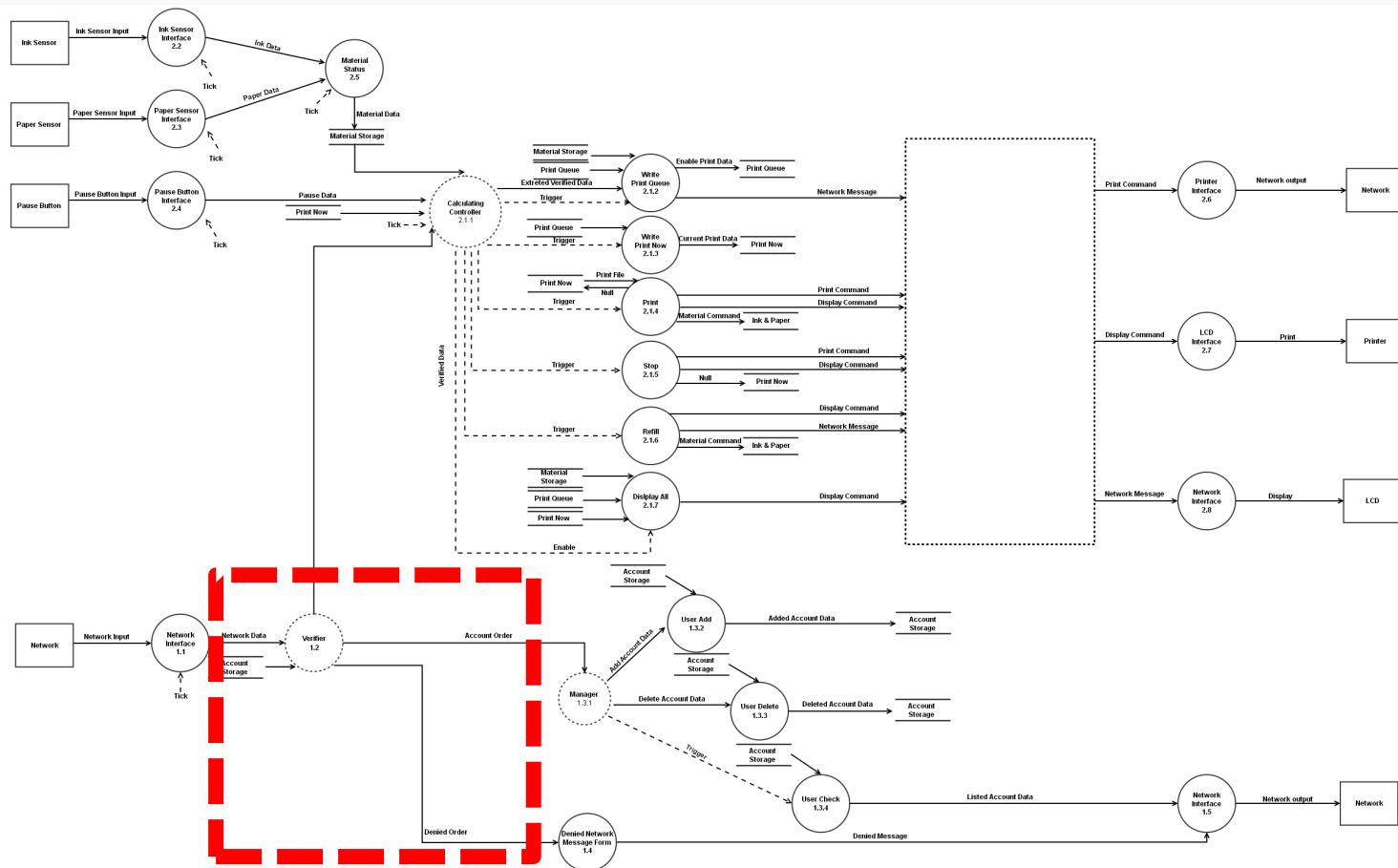
# Features not to be tested



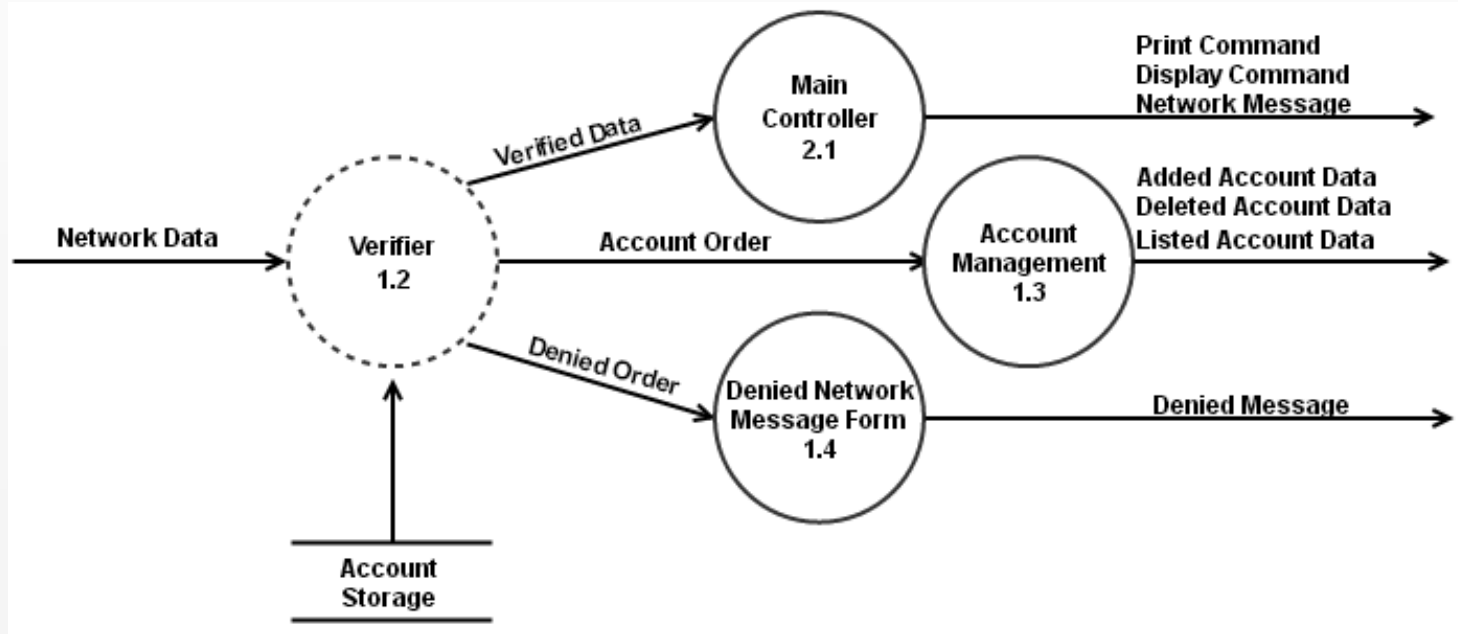
# Test Identification



# Test Identification -1.2 Verifier

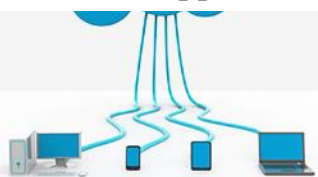
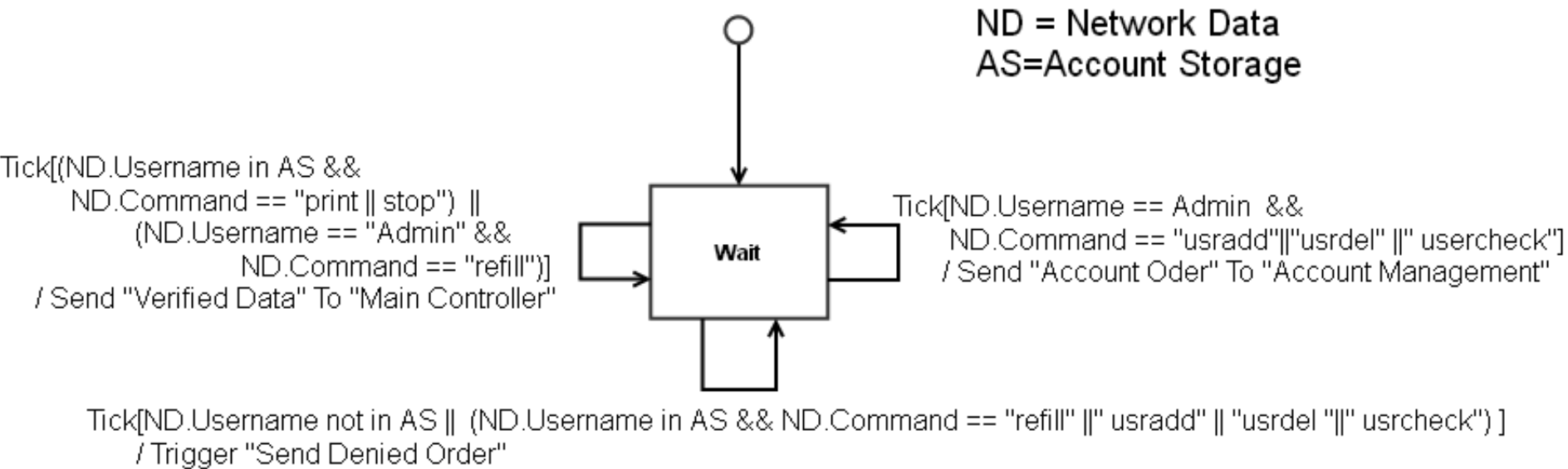


# Test Identification -1.2 Verifier



# Test Identification -1.2 Verifier

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# Test Identification -1.2 Verifier

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Identifier	Feature(Process ID in DFD)
Team3_NTS_000_000	1.2 Verifier

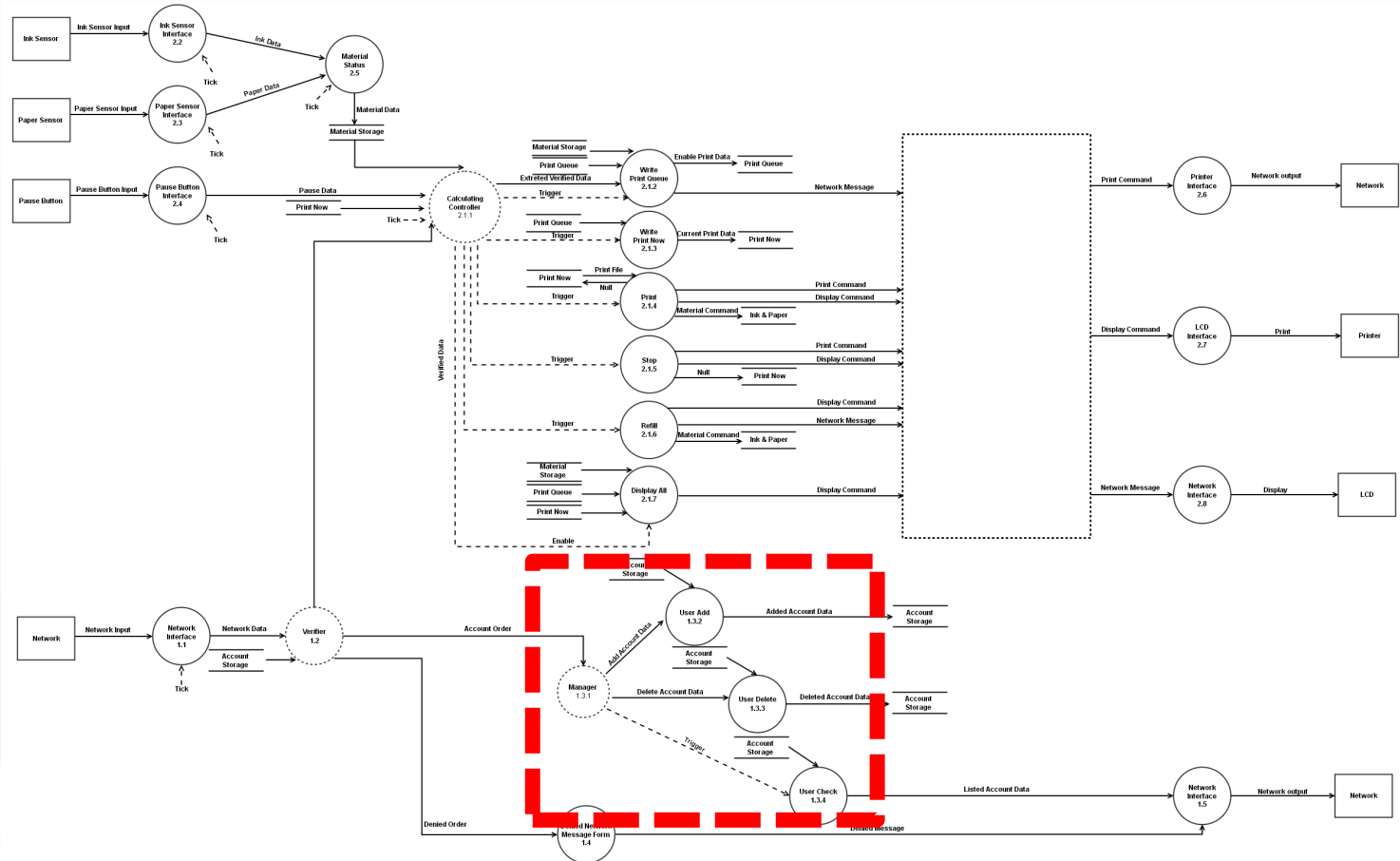
## Valid value

Network Data를 받아 Verified Data, Account Order 그리고 Denied Order로 구분 지어 전달한다.

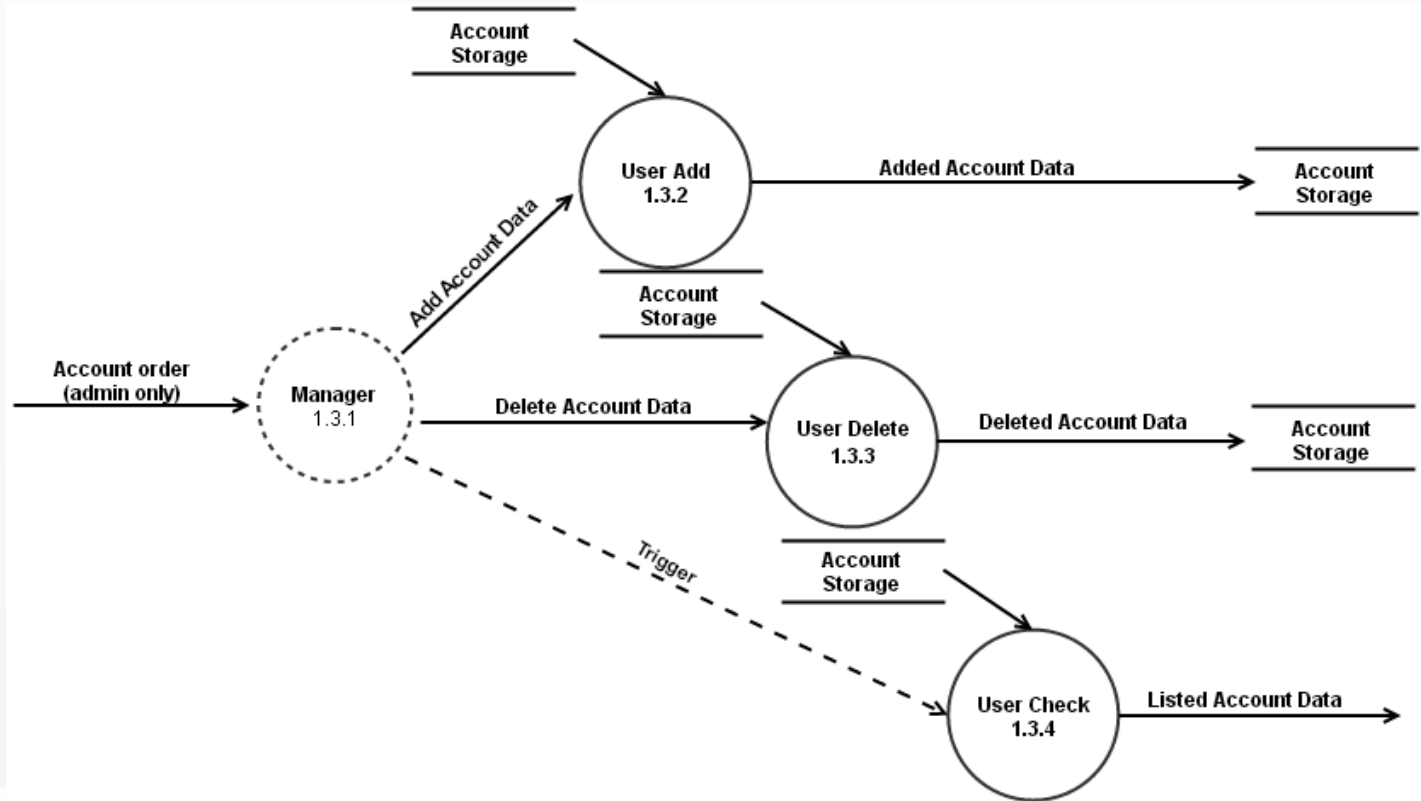
## Invalid value



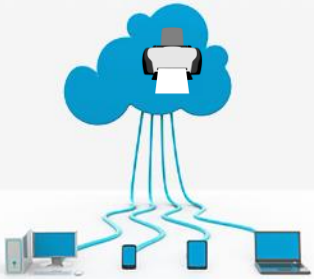
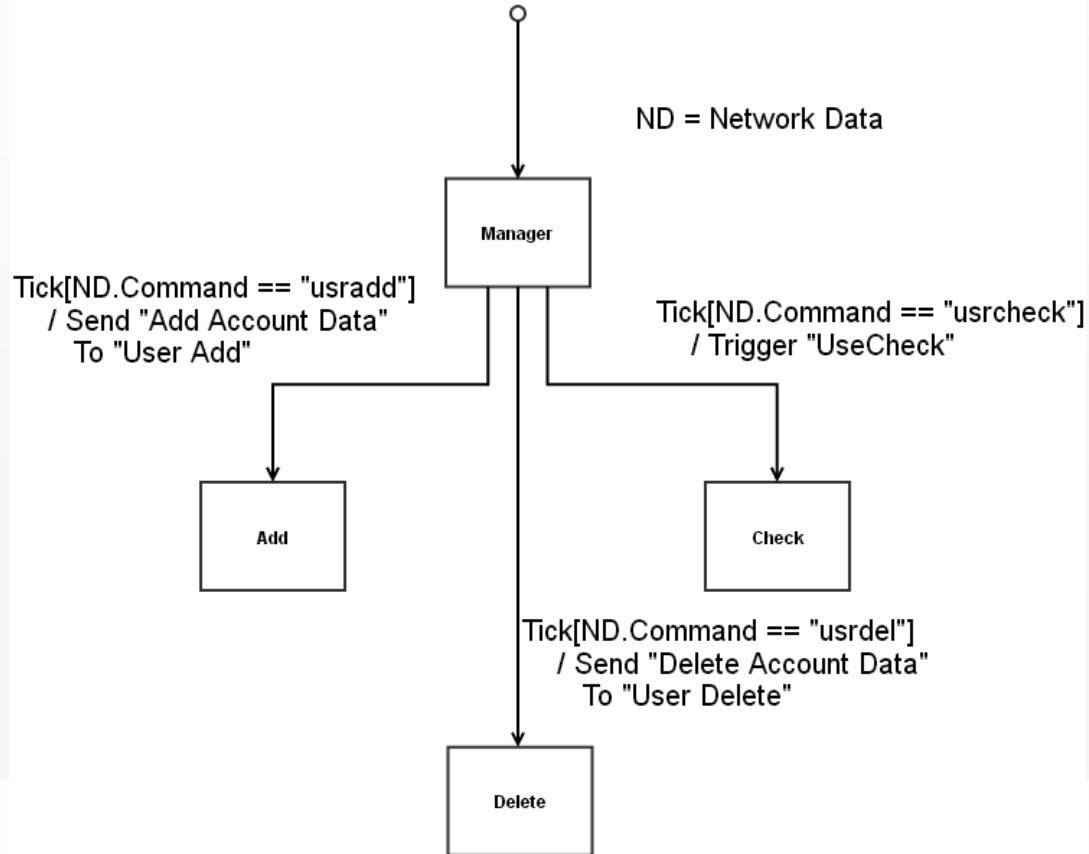
# Test Identification -1.3.1 Manager



# Test Identification -1.3.1 Manager



# Test Identification -1.3.1 Manager



# Test Identification -1.3.1 Manager

Identifier	Feature(Process ID in DFD)
Team3_NTS_000_000	1.3.1 Manager

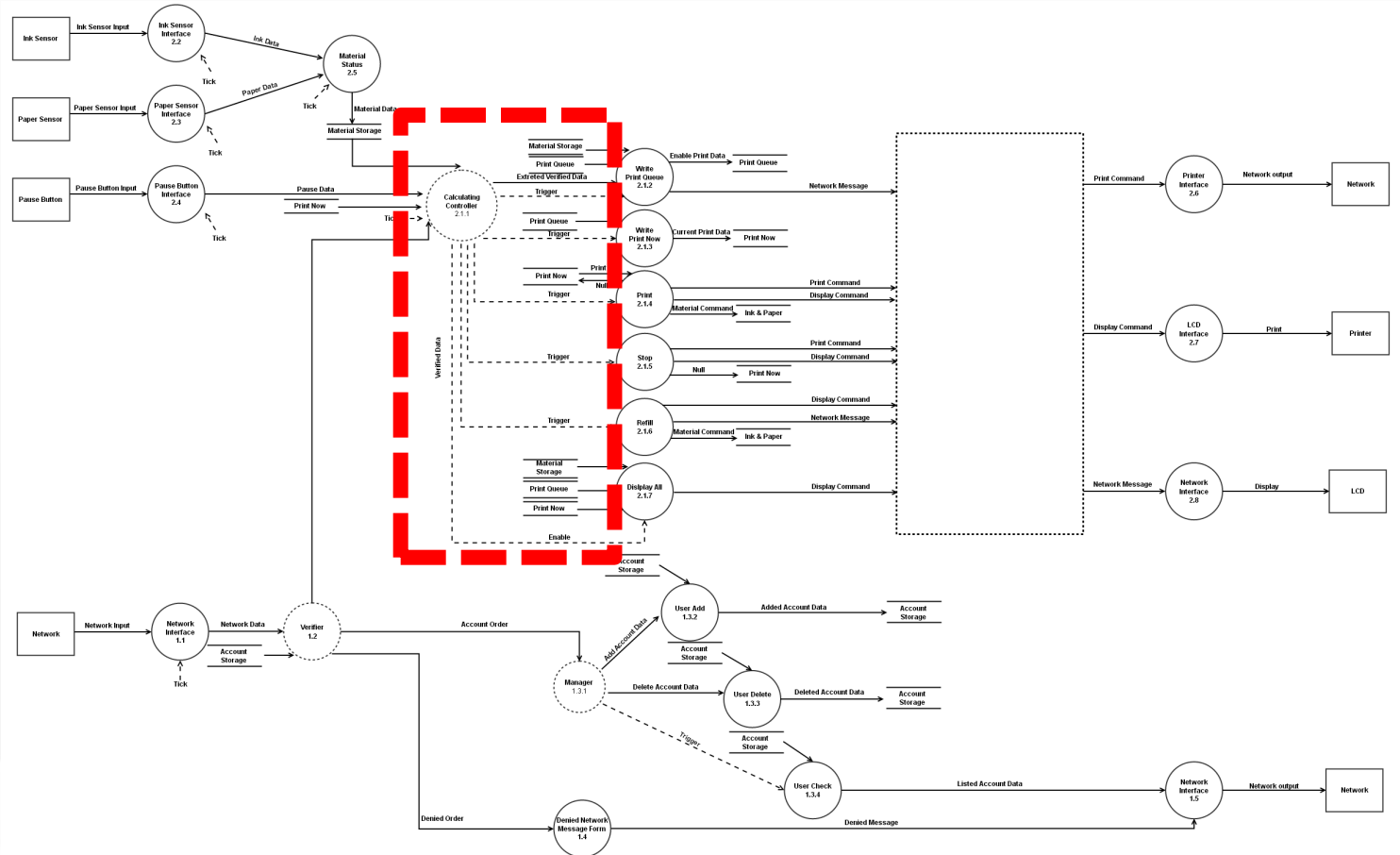
### Valid value

Account Order를 받아 Add Account Order 또는 Delete Account Order를 전달하거나 User Check를 trigger한다.

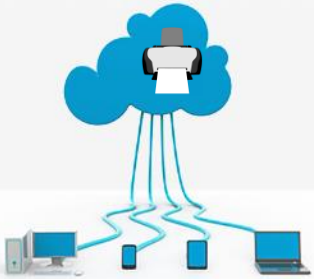
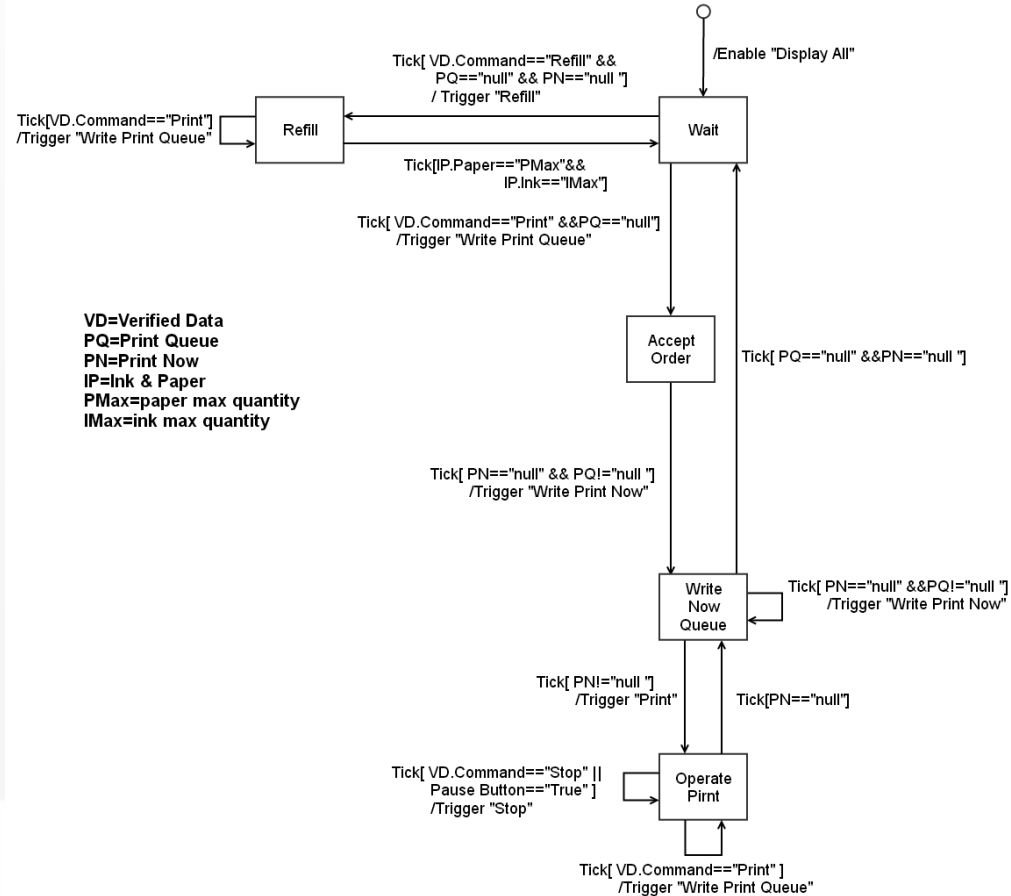
### Invalid value



# Test Identification -2.1.1 Calculating Controller



# Test Identification -2.1.1 Calculating Controller



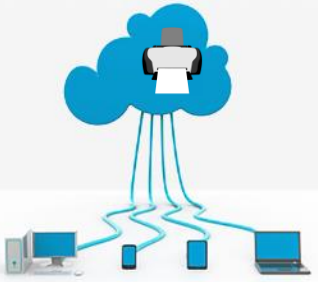
# Test Identification -2.1.1 Calculating Controller

Identifier	Feature(Process ID in DFD)
Team3_NTS_001_000	2.1.1 Calculating Controller

### Valid value

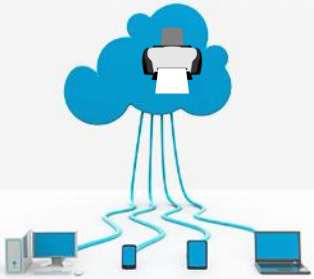
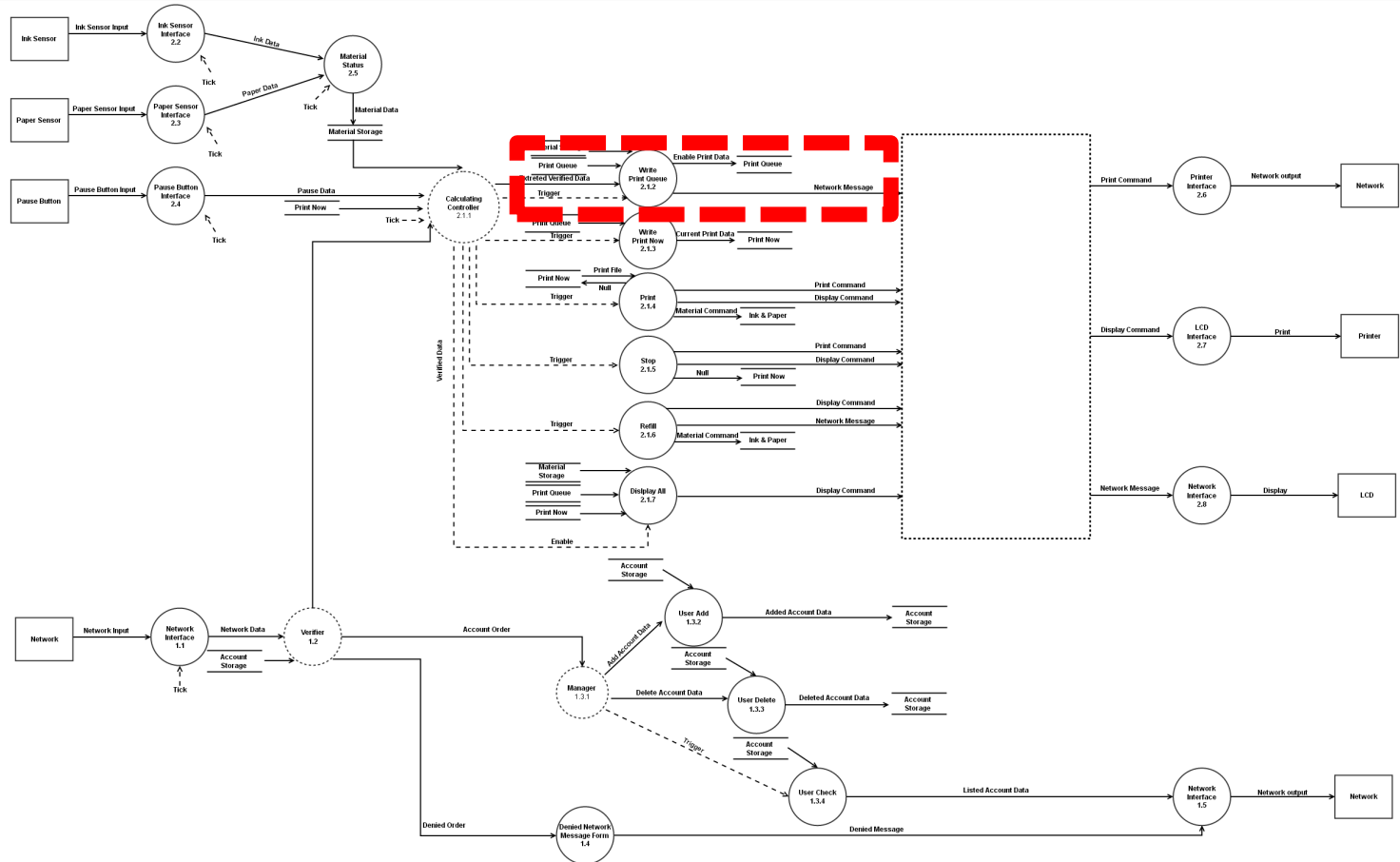
Pause Data, Print Now, Verified Data를 받아 Extracted Verified Data를 전달하거나 Write Print Queue, Write Print Now, Print , Stop, Refill, Display All을 trigger한다.

### Invalid value





# Test Identification -2.1.2 Write Print Queue



# Test Identification -2.1.2 Write Print Queue

Identifier	Feature(Process ID in DFD)
Team3_NTS_002_000	2.1.2 Write Print Queue

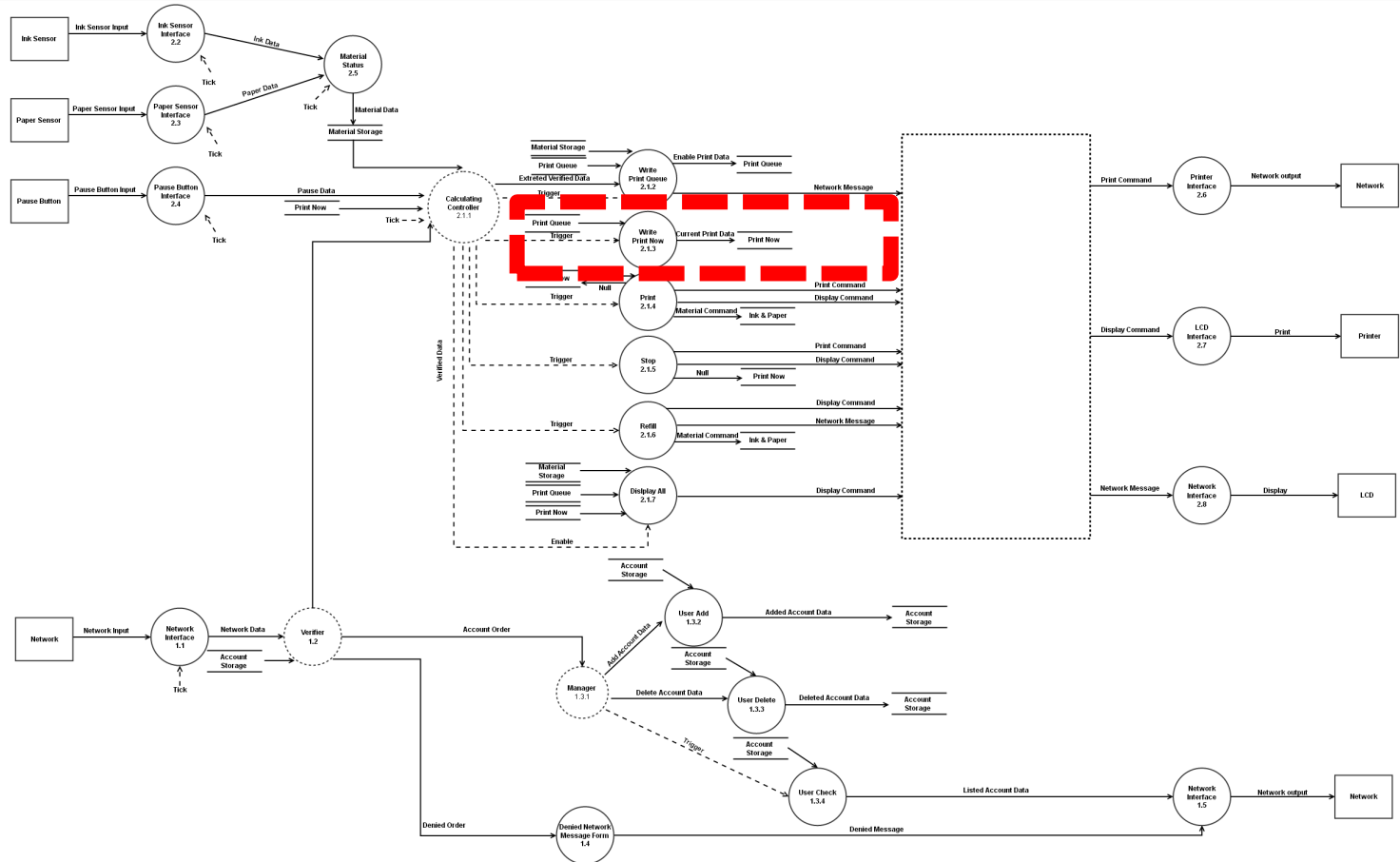
### Valid value

Material Storage, Print Queue, Extracted Verified Data를 받고 trigger로 인해 실행되어 Enable Print Data, Network Message를 전달한다.

### Invalid value



# Test Identification -2.1.3 Write Print Now



# Test Identification -2.1.3 Write Print Now

Identifier	Feature(Process ID in DFD)
T3_NTS_003_000	2.1.3 Write Print Now

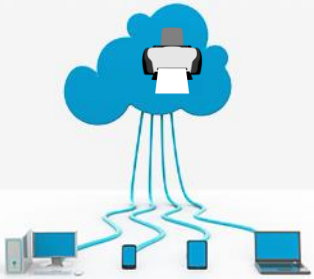
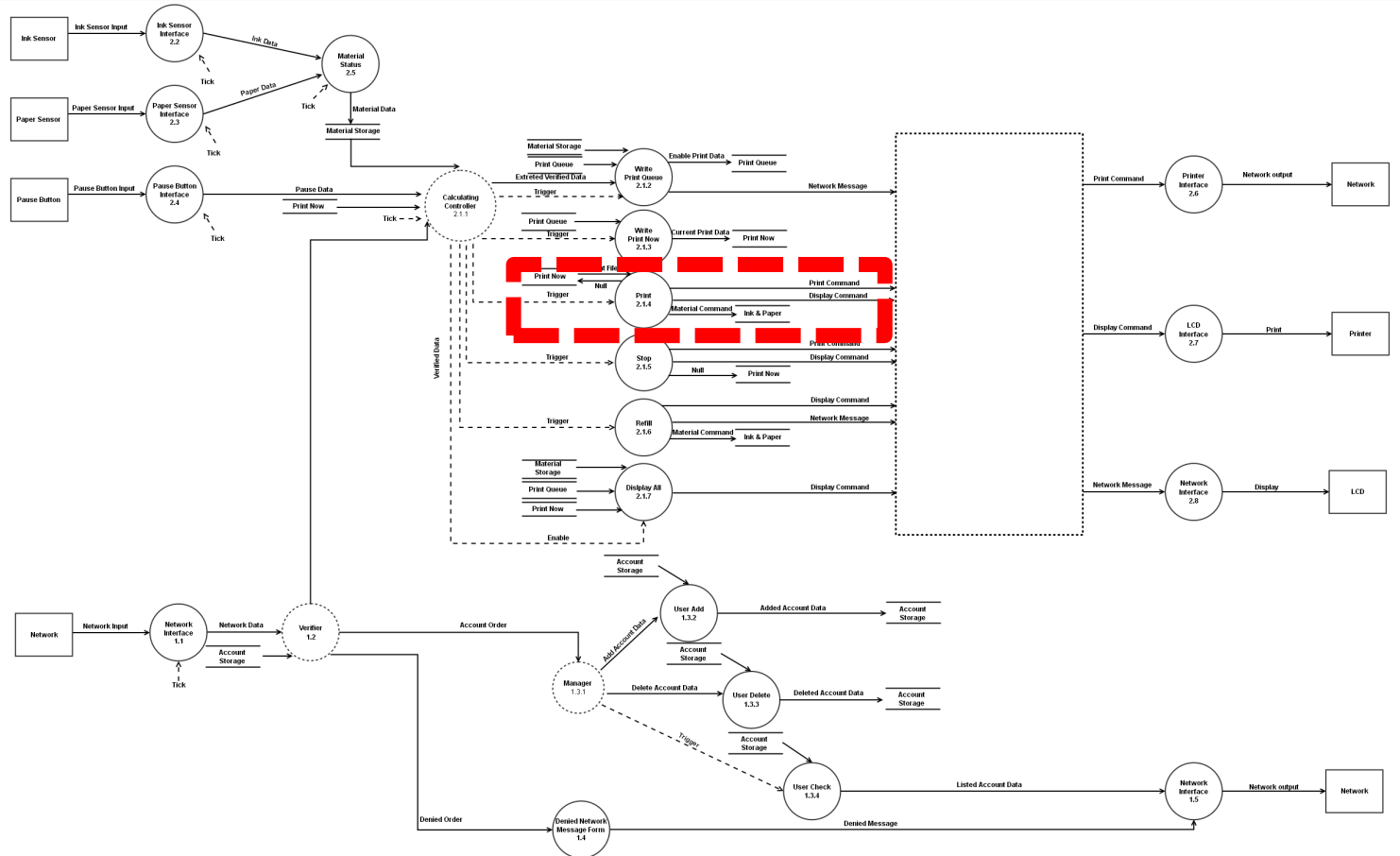
### Valid value

Print Queue를 받고 trigger로 인해 실행되어 Current Print Data를 전달한다.

### Invalid value



# Test Identification -2.1.4 Print



# Test Identification -2.1.4 Print

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Identifier	Feature(Process ID in DFD)
Team3_NTS_004_000	2.1.4 Print

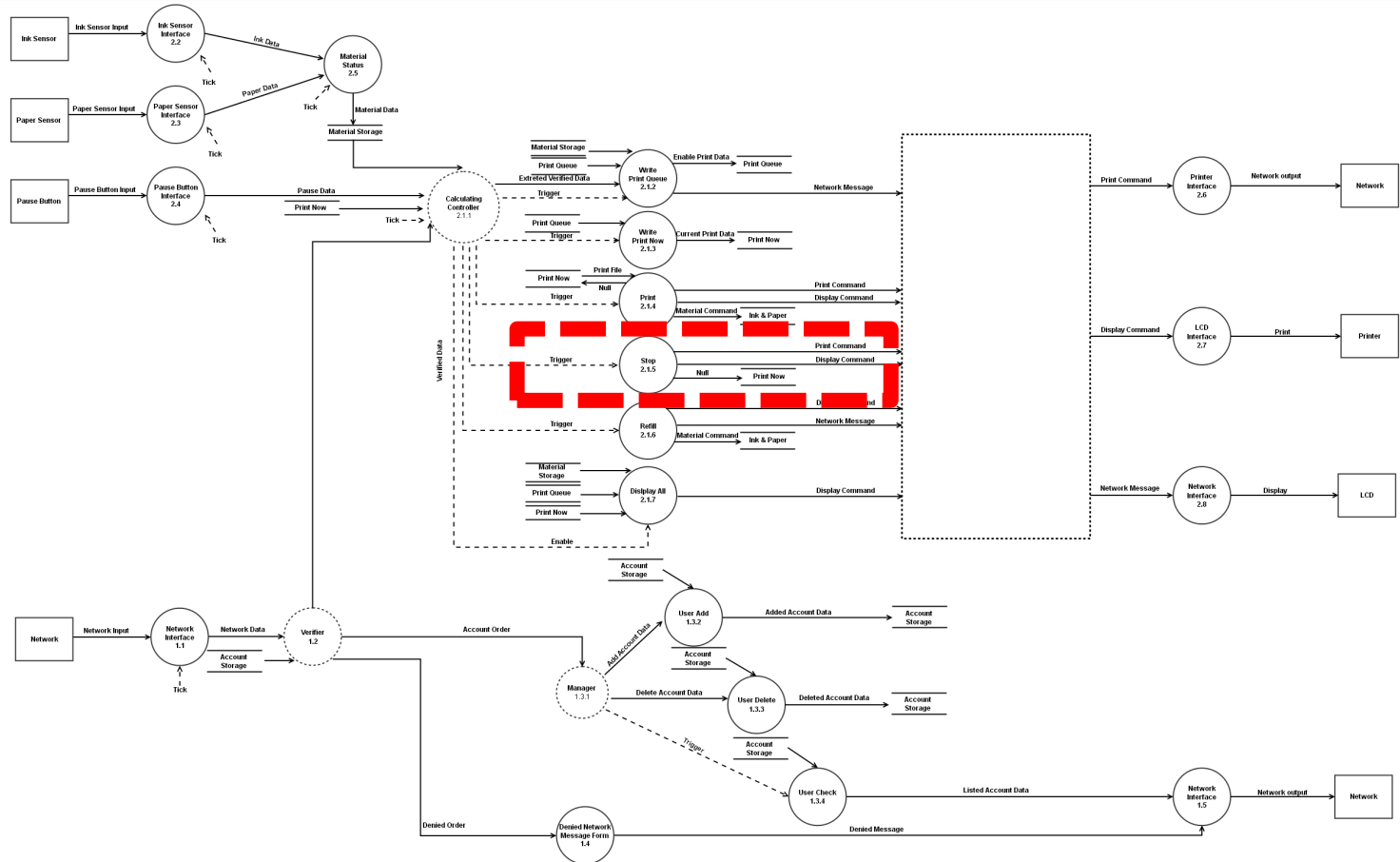
## Valid value

Print Now를 받고 trigger로 인해 실행되어 Null, Print Command, Display Command, Material Command를 전달한다.

## Invalid value



# Test Identification -2.1.5 Stop



# Test Identification -2.1.5 Stop

Identifier	Feature(Process ID in DFD)
Team3_NTS_005_000	2.1.5 Stop

### Valid value

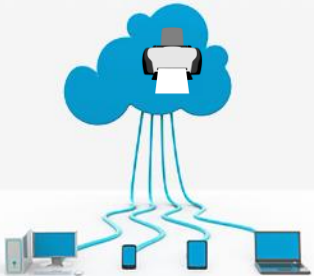
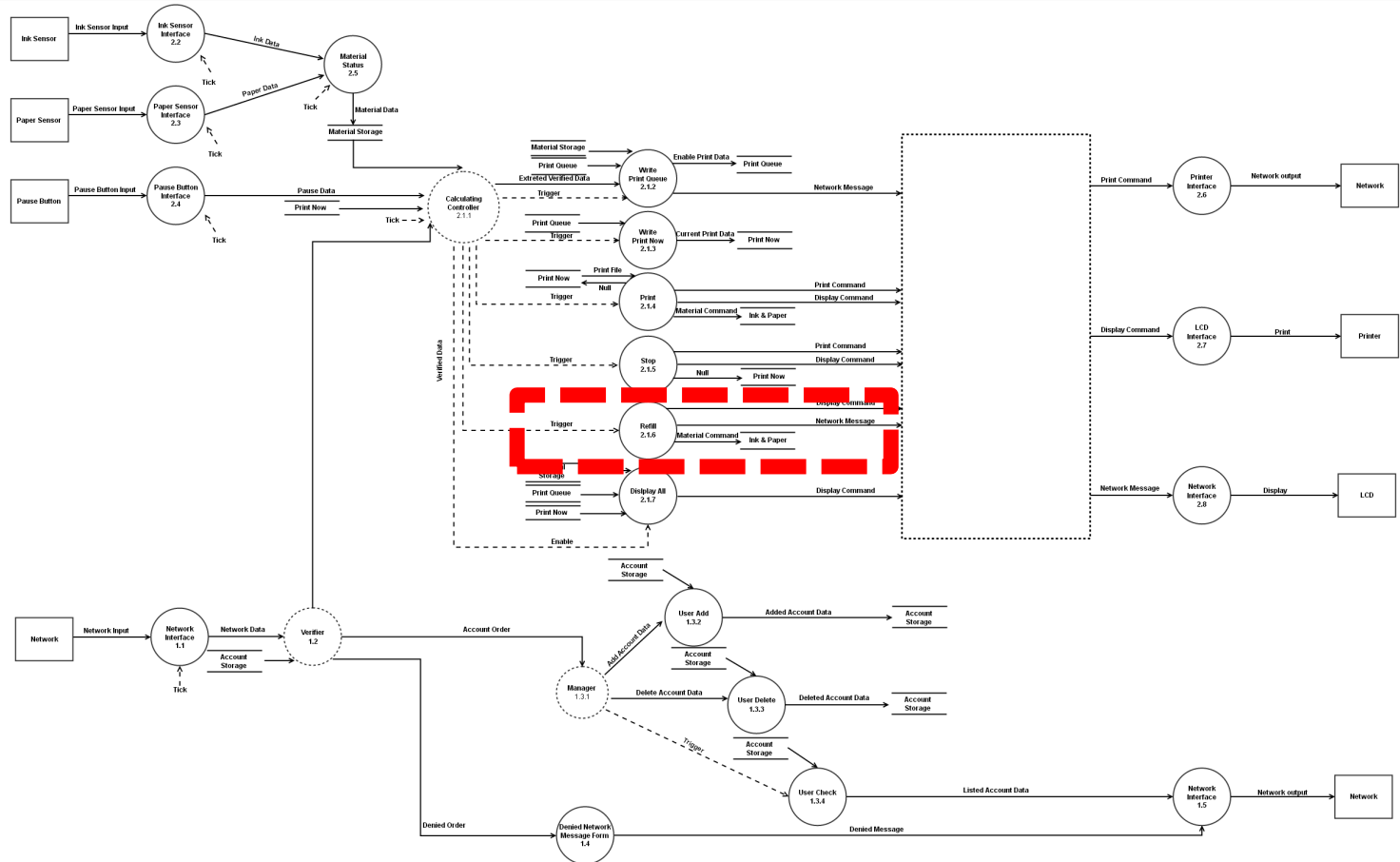
Trigger로 인해 실행되어 Null, Print Command, Display Command, Material Command를 전달한다.

### Invalid value





# Test Identification -2.1.6 Refill



# Test Identification -2.1.6 Refill

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Identifier	Feature(Process ID in DFD)
Team3_NTS_006_000	2.1.6 Refill

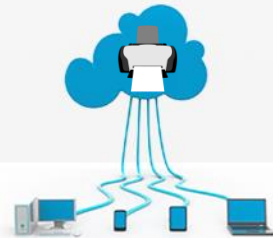
## Valid value

Trigger로 인해 실행되어 Network Message, Display Command, Material Command를 전달한다.

## Invalid value



# Test Specification



# Test Specification

Team3\_NPS\_000\_000 ~ Team3\_NPS\_000\_001

---

## Input

Network Data =  
{"Admi", "usrcheck",\0}

Account Storage =  
{"Admin"}

Network Data = {"Admin","u Command 재입력 요구  
srd",\0}

Account Storage =  
{"Admin"}

---

## Output

Username 재입력 요구

Command 재입력 요구



# Test Specification

Team3\_NPS\_000\_002 ~ Team3\_NPS\_000\_003

---

## Input

## Output

Network Data = TargetUsername  
{"Admin", "usradd", "123456 재입력 요구  
78900"}  
Account Storage =

{"Admin"}

Network Data = TargetUsername  
{"Admin", "usradd", ""} 재입력 요구  
Account Storage =

{"Admin"}

---



# Test Specification

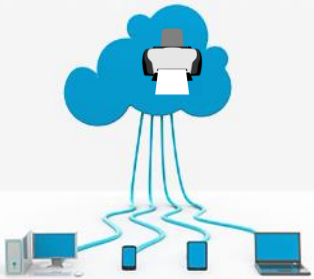
Team3\_NPS\_000\_004 ~ Team3\_NPS\_000\_005

## Input

Network Data =  
{"Admin", "usradd", "A"}  
Account Storage =  
{"Admin"}  
Network Data =  
{"Admin", "usrdel", "B"}  
Account Storage =  
{"Admin", "A"}

## Output

Account Order = {"usradd"}  
TargetUsername = {"A"}  
Account Storage =  
{"Admin", "A"}  
TargetUsername  
재입력 요구



# Test Specification

Team3\_NPS\_000\_006 ~ Team3\_NPS\_000\_007

---

## Input

Network Data =  
{"Admin", "usrdel", "A"}

Account Storage =  
{"Admin", "A"}

Network Data =  
{"Admin", "usrcheck", \0 }

Account Storage =  
{"Admin", "A"}

---

## Output

Account Order = {"usrdel"}  
TargetUsername = {"A"}

Account Storage =  
{"Admin"}

Listed Account Data =  
{"Admin", "A"}



# Test Specification

Team3\_NPS\_000\_008 ~ Team3\_NPS\_000\_009

---

## Input

Network Data =  
{"Admin", "refill", \0 }  
Account Storage =  
{"Admin"}

Network Data =  
{"Admin", "prin", "test.txt" }  
Account Storage =  
{"Admin"}

---

## Output

Verified Data =  
{"Admin", "refill", \0 }

Command 재입력 요구





# Test Specification

Team3\_NPS\_000\_010 ~ Team3\_NPS\_000\_011

---

## Input

Network Data =  
{"Admin", "print", "testtxt" }  
Account Storage =  
{"Admin"}

## Output

Filename 재입력 요구

Network Data =  
{"Admin", "print", "test1.txt" }  
Account Storage =  
{"Admin"}

---



# Test Specification

Team3\_NPS\_000\_014 ~ Team3\_NPS\_000\_015

---

## Input

Network Data =  
{"a", "print", "test.txt"}

Account Storage =  
{"Admin", "A"}

Network Data =  
{"A", "usradd", "B"}

Account Storage =  
{"Admin", "A"}

---

## Output

Username 재입력 요구

Command 재입력 요구



# Test Specification

Team3\_NPS\_000\_016 ~ Team3\_NPS\_000\_017

---

## Input

Network Data =  
{ "A", "usrdel", "B" }

Account Storage =  
{ "Admin", "A" }

Network Data =  
{ "A", "usrcheck", \0 }

Account Storage =  
{ "Admin", "A" }

---

## Output

Command 재입력 요구

Command 재입력 요구



# Test Specification

Team3\_NPS\_000\_018 ~ Team3\_NPS\_000\_019

---

## Input

## Output

Network Data =  
{"A", "refill", \0}

Command 재입력 요구

Account Storage =  
{"Admin", "A"}

Network Data =  
{"A", "prin", "test.txt" }

Command 재입력 요구

Account Storage =  
{"Admin", "A"}

---



# Test Specification

Team3\_NPS\_000\_020 ~ Team3\_NPS\_000\_021

---

## Input

Network Data =  
{"A", "print", "testtxt" }

Account Storage =  
{"Admin", "A"}

Network Data =  
{"A", "print", "test1.txt" }

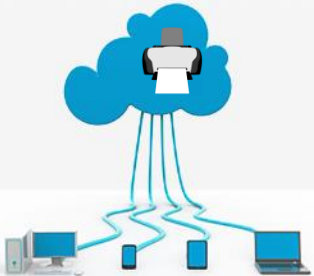
Account Storage =  
{"Admin", "A"}

---

## Output

Filename 재입력 요구

Filename 재입력 요구



# Test Specification

Team3\_NPS\_000\_022 ~ Team3\_NPS\_000\_023

---

## Input

Network Data =  
{"A", "print", "test.txt" }

Account Storage =  
{"Admin", "A"}

Network Data =  
{"A", "stop", \0}

Account Storage =  
{"Admin", "A"}

---

## Output

Verified Data =  
{"A", "print", "test.txt" }

Verified Data =  
{"A", "stop", \0}



# Test Specification

Team3\_NPS\_001\_000 ~ Team3\_NPS\_001\_001

---

## Input

Verified Data =  
{"Admin", "print", "test.txt"}  
Pause Data = {False}  
Print Now = {\0}

Verified Data =  
{"Admin", "stop", \0}  
Pause Data = {False}  
Print Now = {\0}

## Output

call Write Print Queue  
Extracted Verified Data =  
{"A", "print", "test.txt"}

call Stop

---



# Test Specification

Team3\_NPS\_001\_002 ~ Team3\_NPS\_001\_003

## Input

Verified Data =  
{"Admin", "refill", \0}  
Pause Data = {False}  
Print Now = {\0}

Verified Data =  
{"A", "print", "test.txt"}  
Pause Data = {False}  
Print Now = {\0}

## Output

call Refill

call Write Print Queue  
Extracted Verified Data =  
{"A", "print", "test.txt"}





# Test Specification

Team3\_NPS\_001\_004 ~ Team3\_NPS\_001\_005

---

## Input

Verified Data =

{"A", "stop", \0}

Pause Data = {False}

Print Now = {"Q1"}

Verified Data =

{\0, \0, \0}

Pause Data = {True}

Print Now = {"Q1"}

---

## Output

call Stop

call Stop



# Test Specification

Team3\_NPS\_001\_006 ~ Team3\_NPS\_001\_007

---

## Input

Verified Data =

{\0, \0, \0}

Pause Data = {False}

Print Now = {\0}

Verified Data =

{\0, \0, \0}

Pause Data = {False}

Print Now = {"Q1"}

---

## Output

call Write Print Now

call Print



# Test Specification

Team3\_NPS\_002\_000

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}

Material Storage Data =  
{Ink=0, Paper=0}

Print Queue =  
{"Q1", "Q2", "Q3", "Q4", "Q5"}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

Team3\_NPS\_002\_001

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}

Material Storage Data =  
{Ink=3000, Paper=0}

Print Queue =  
{"Q1", "Q2", "Q3", "Q4", "Q5"}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

Team3\_NPS\_002\_002

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}

Material Storage Data =  
{Ink=0, Paper=100}

Print Queue =  
{"Q1", "Q2", "Q3", "Q4", "Q5"}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

Team3\_NPS\_002\_003

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}

Material Storage Data =  
{Ink=3000, Paper=100}

Print Queue =  
{"Q1", "Q2", "Q3", "Q4", "Q5"}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

Team3\_NPS\_002\_004

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}  
Material Storage Data =  
{Ink=0, Paper=0}  
Print Queue =  
{"Q1", "Q2", "Q3", "Q4", \0}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

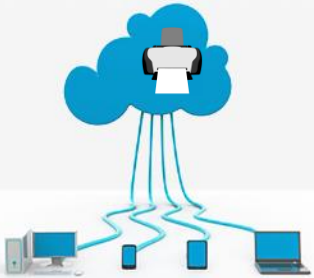
Team3\_NPS\_002\_005

## Input

Extracted Print Data =  
{ "A", "print", "test.txt" }  
Material Storage Data =  
{ Ink=0, Paper=0 }  
Print Queue =  
{ "Q1", "Q2", \0, \0, \0 }

## Output

Network Message =  
{ "Can't Print" }





# Test Specification

Team3\_NPS\_002\_006

## Input

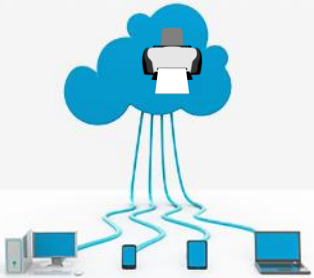
Extracted Print Data =  
{"A", "print", "test.txt"}

Material Storage Data =  
{Ink=0, Paper=0}

Print Queue =  
{"Q1", "Q2", "Q3", "Q4", "Q5"}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

Team3\_NPS\_002\_007

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}  
Material Storage Data =  
{Ink=3000, Paper=0}  
Print Queue =  
{"Q1", "Q2", "Q3", "Q4", \0}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

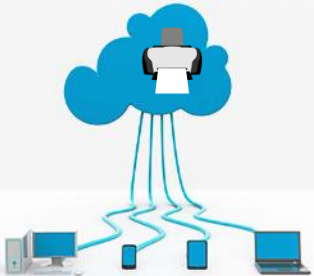
Team3\_NPS\_002\_008

## Input

Extracted Print Data =  
{ "A", "print", "test.txt" }  
Material Storage Data =  
{ Ink=3000, Paper=0 }  
Print Queue =  
{ "Q1", "Q2", \0, \0, \0 }

## Output

Network Message =  
{ "Can't Print" }



# Test Specification

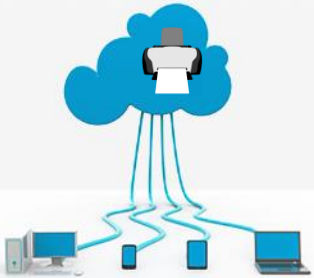
Team3\_NPS\_002\_009

## Input

Extracted Print Data =  
{ "A", "print", "test.txt" }  
Material Storage Data =  
{ Ink=3000, Paper=0 }  
Print Queue =  
{ \0, \0, \0, \0, \0 }

## Output

Network Message =  
{ "Can't Print" }



# Test Specification

Team3\_NPS\_002\_010

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}  
Material Storage Data =  
{Ink=0, Paper=100}  
Print Queue =  
{"Q1", "Q2", "Q3", "Q4", \0}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

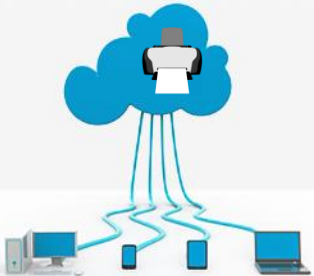
Team3\_NPS\_002\_011

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}  
Material Storage Data =  
{Ink=0, Paper=100}  
Print Queue =  
{"Q1", "Q2", \0, \0, \0}

## Output

Network Message =  
{"Can't Print"}



# Test Specification

Team3\_NPS\_002\_012

## Input

Extracted Print Data =  
{ "A", "print", "test.txt" }  
Material Storage Data =  
{ Ink=0, Paper=100 }  
Print Queue =  
{ \0, \0, \0, \0, \0 }

## Output

Network Message =  
{ "Can't Print" }



# Test Specification

Team3\_NPS\_002\_013

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}  
Material Storage Data =  
{Ink=3000, Paper=100}  
Print Queue =  
{"Q1", "Q2", "Q3", "Q4", \0}

## Output

Print Queue =  
{"Q1", "Q2", "Q3", "Q4", "Q5"}





# Test Specification

Team3\_NPS\_002\_014

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}  
Material Storage Data =  
{Ink=3000, Paper=100}  
Print Queue =  
{"Q1", "Q2", \0, \0, \0}

## Output

Print Queue =  
{"Q1", "Q2", "Q3", \0, \0}



# Test Specification

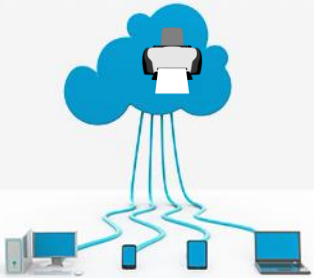
Team3\_NPS\_002\_015

## Input

Extracted Print Data =  
{"A", "print", "test.txt"}  
Material Storage Data =  
{Ink=3000, Paper=100}  
Print Queue =  
{\0, \0, \0, \0, \0}

## Output

Print Queue =  
{"Q1", \0, \0, \0, \0}



# Test Specification

Team3\_NPS\_003\_000 ~ Team3\_NPS\_003\_002

## Input

## Output

Print Queue =  
{"Q1", "Q2", "Q3", "Q4", "Q5"}

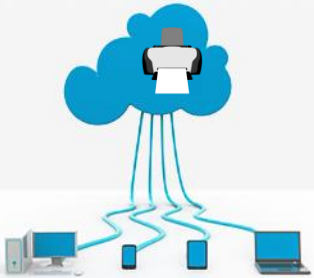
Print Now = {"Q1"}  
Print Queue =  
{"Q2", "Q3", "Q4", "Q5", \0}

Print Queue =  
{"Q1", "Q2", "Q3", "Q4", \0}

Print Now = {"Q1"}  
Print Queue =  
{"Q2", "Q3", "Q4", \0, \0}

Print Queue =  
{"Q1", "Q2", "Q3", \0, \0}

Print Now = {"Q1"}  
Print Queue =  
{"Q2", "Q3", \0, \0, \0}



# Test Specification

Team3\_NPS\_003\_003 ~ Team3\_NPS\_003\_004

---

<b>Input</b>	<b>Output</b>
Print Queue = {"Q1", "Q2", \0, \0, \0}	Print Now = {"Q1"} Print Queue = {"Q2", \0, \0, \0, \0}
Print Queue = {"Q1", \0, \0, \0, \0}	Print Now = {"Q1"} Print Queue = {\0, \0, \0, \0, \0}

---



# Test Specification

Team3\_NPS\_004\_000

## Input

Print Now = {"Q1"}

## Output

Print Now = {\0}

Print Command =  
{"currenttime.txt"}

Display Command =  
{status=1}

Material Command =  
{Ink-=100, paper-=1}



# Test Specification

Team3\_NPS\_004\_001

## Input

Print Now = {"Q2"}

## Output

Print Now = {\0}

Print Command =  
{"currenttime.txt"}

Display Command =  
{status=1}

Material Command =  
{Ink-=1000, paper-=3}



# Test Specification

Team3\_NPS\_005\_000

Input	Output
Trigger	Print Now = {\0} Display Command = {status=3}



# Test Specification

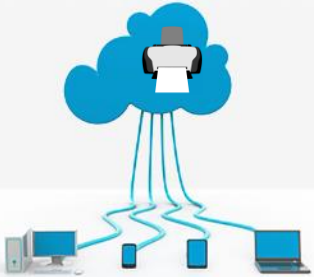
Team3\_NPS\_006\_000

Input	Output
Trigger	Display Command = {status=2} Material Command = {Ink=3000, paper=100}



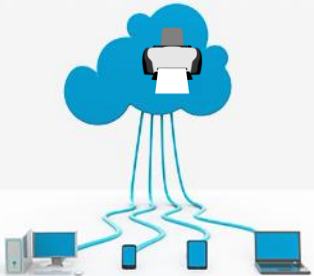


# Test Summary



# Test Summary

Identification	Result
Team3_NPS_000_000	Pass
Team3_NPS_000_001	Pass
Team3_NPS_000_002	Fail
Team3_NPS_000_003	Pass
Team3_NPS_000_004	Pass
Team3_NPS_000_005	Pass
Team3_NPS_000_006	Pass
Team3_NPS_000_007	Pass
Team3_NPS_000_008	Pass
Team3_NPS_000_009	Pass



# Test Fail Specification

Team3\_NPS\_000\_002

Input	Output
Network Data = {"Admin", "usradd", "123456 78900"} Account Storage = {"Admin"}	TargetUsername 재입력 요구 ----- TargetUsername = {"1234567890"}



# Test Summary

Identification	Result
Team3_NPS_000_010	Pass
Team3_NPS_000_011	Pass
Team3_NPS_000_012	Pass
Team3_NPS_000_013	Pass
Team3_NPS_000_014	Pass
Team3_NPS_000_015	Pass
Team3_NPS_000_016	Pass
Team3_NPS_000_017	Pass
Team3_NPS_000_018	Pass
Team3_NPS_000_020	Pass



# Test Summary

Identification	Result
Team3_NPS_000_021	Pass
Team3_NPS_000_022	Pass
Team3_NPS_000_023	Pass
Team3_NPS_001_000	Pass
Team3_NPS_001_001	Pass
Team3_NPS_001_002	Pass
Team3_NPS_001_003	Pass
Team3_NPS_001_004	Pass
Team3_NPS_001_005	Fail
Team3_NPS_001_006	Pass



# Test Fail Specification

Team3\_NPS\_001\_005

Input	Output
Verified Data = {\0, \0, \0}	call Stop -----
Pause Data = {True}	don't call Stop
Print Now = {"Q1"}	Random Result



# Test Summary

Identification	Result
Team3_NPS_001_007	Pass
Team3_NPS_002_000	Pass
Team3_NPS_002_001	Pass
Team3_NPS_002_002	Pass
Team3_NPS_002_003	Pass
Team3_NPS_002_004	Pass
Team3_NPS_002_005	Pass
Team3_NPS_002_006	Pass
Team3_NPS_002_007	Pass
Team3_NPS_002_008	Pass



# Test Summary

Identification	Result
Team3_NPS_002_009	Pass
Team3_NPS_002_010	Pass
Team3_NPS_002_011	Pass
Team3_NPS_002_012	Pass
Team3_NPS_002_013	Pass
Team3_NPS_002_014	Pass
Team3_NPS_002_015	Pass
Team3_NPS_003_000	Pass
Team3_NPS_003_001	Pass
Team3_NPS_003_002	Pass





# Test Summary

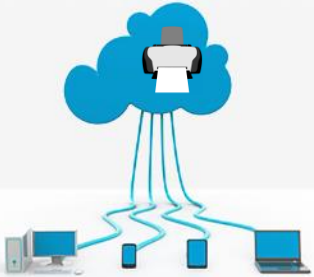
---

<b>Identification</b>	<b>Result</b>
Team3_NPS_003_003	Pass
Team3_NPS_003_004	Pass
Team3_NPS_004_000	Pass
Team3_NPS_004_001	Pass
Team3_NPS_005_000	Pass
Team3_NPS_006_000	Pass

---



# Demo



# Demo

```
C:\cygwin64\home\NPS\ver1\NPS\bin@Debug\NPS.exe
Please Order : King Print aa.txt
Account Data Load Success
Please Order : King Print aa.txt
Account Data Load Success
Please Order : King Print aa.txt
Account Data Load Success
Please Order : a Print aa.txt
Account Data Load Success
Please Order : a Print aa.txt
Account Data Load Success
Please Order : a Print aa.txt
Account Data Load Success
Please Order : a Print aa.txt
Account Data Load Success
Please Order : a Print aa.txt
Account Data Load Success
Please Order : a Print aa.txt
Account Data Load Success
Please Order : a Print aa.txt
Account Data Load Success
Please Order : King Print aa.txt
Account Data Load Success
Please Order :
```

```
C:\cygwin64\home\NPS\ver1\WLCD\bin@Debug\WLCD.exe
Ink : 1050 Paper : 35 Status : Print
2015-11-10 20:38:34
-Print New-
A B/1
-Print Wait-
A 1
A 1
King 1
NO 0
NO 0
```



