

# NPS – Unit Test

Team Presentation #3

## TEAM [T7]

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201411297 이수빈

201411304 이지수

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**Features to be tested**

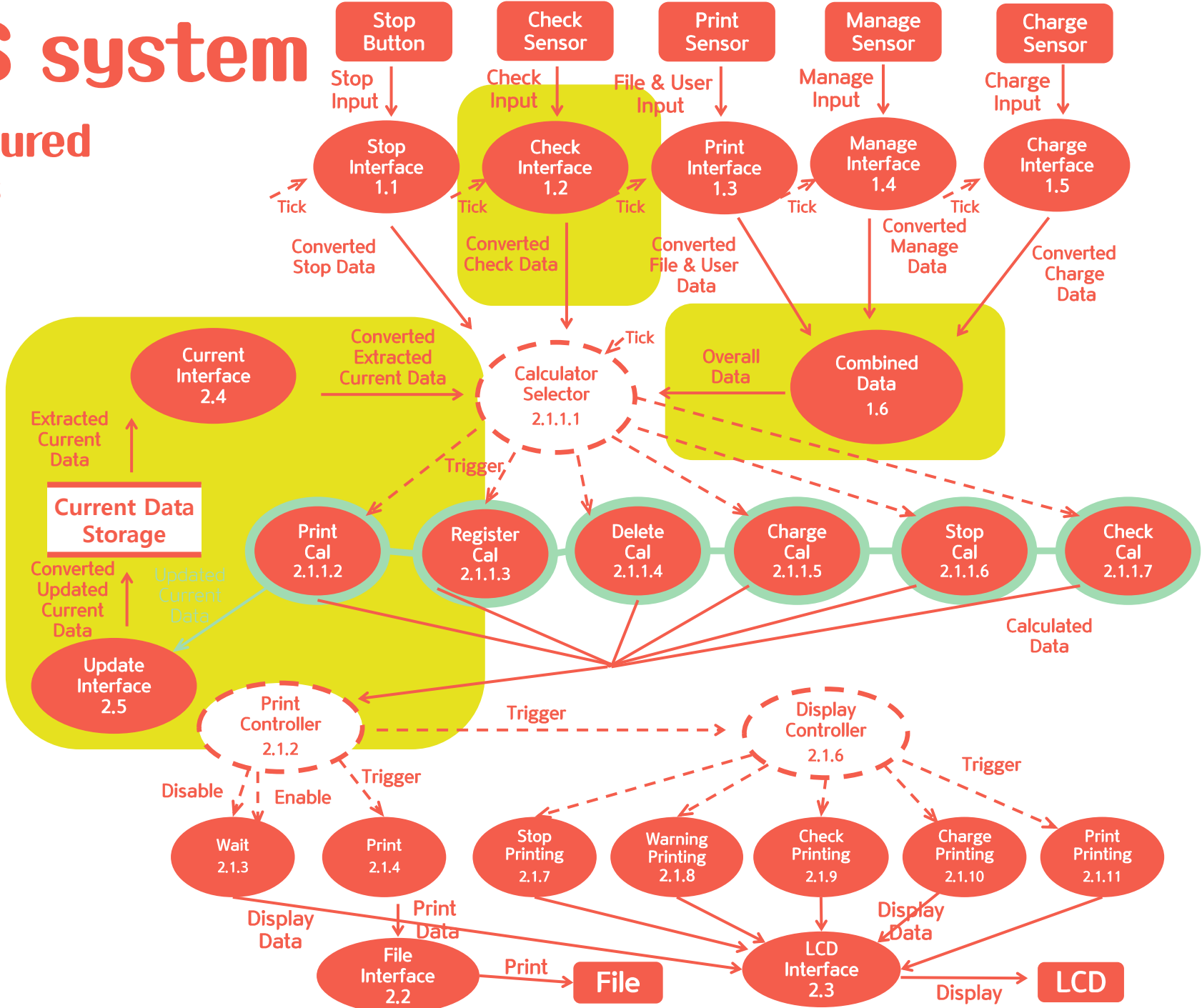
**Features not to be tested**

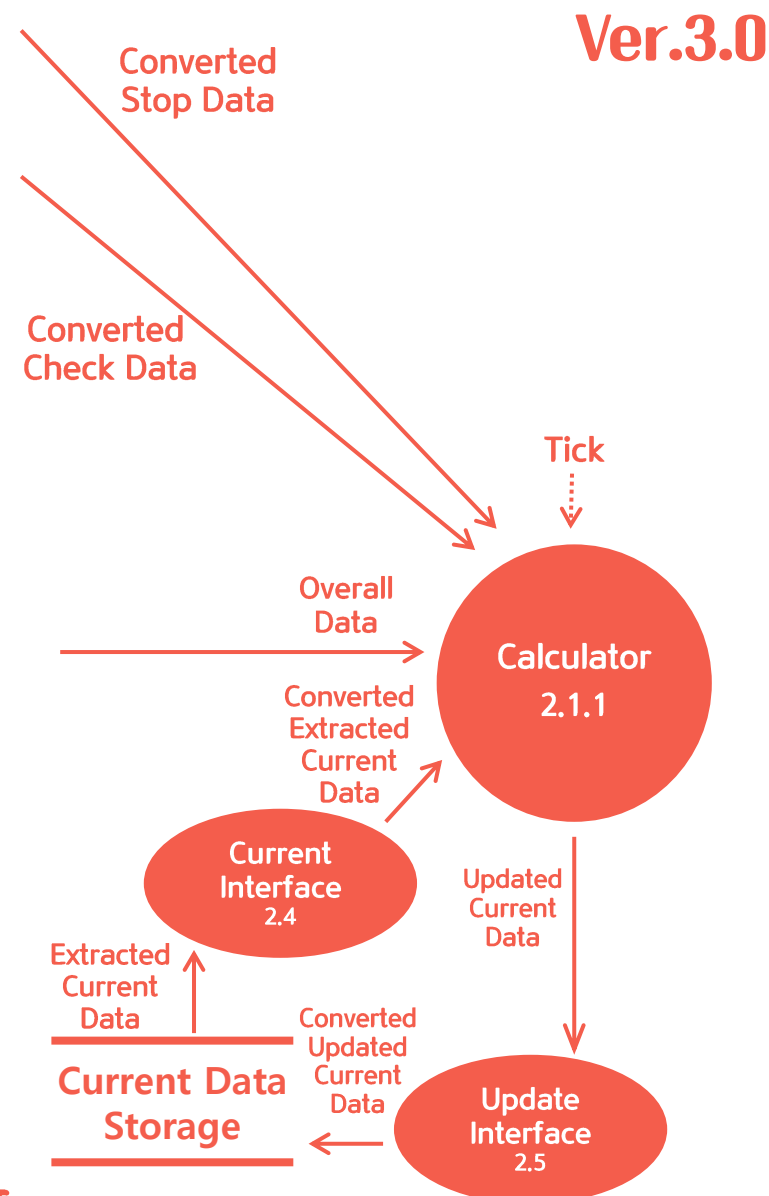
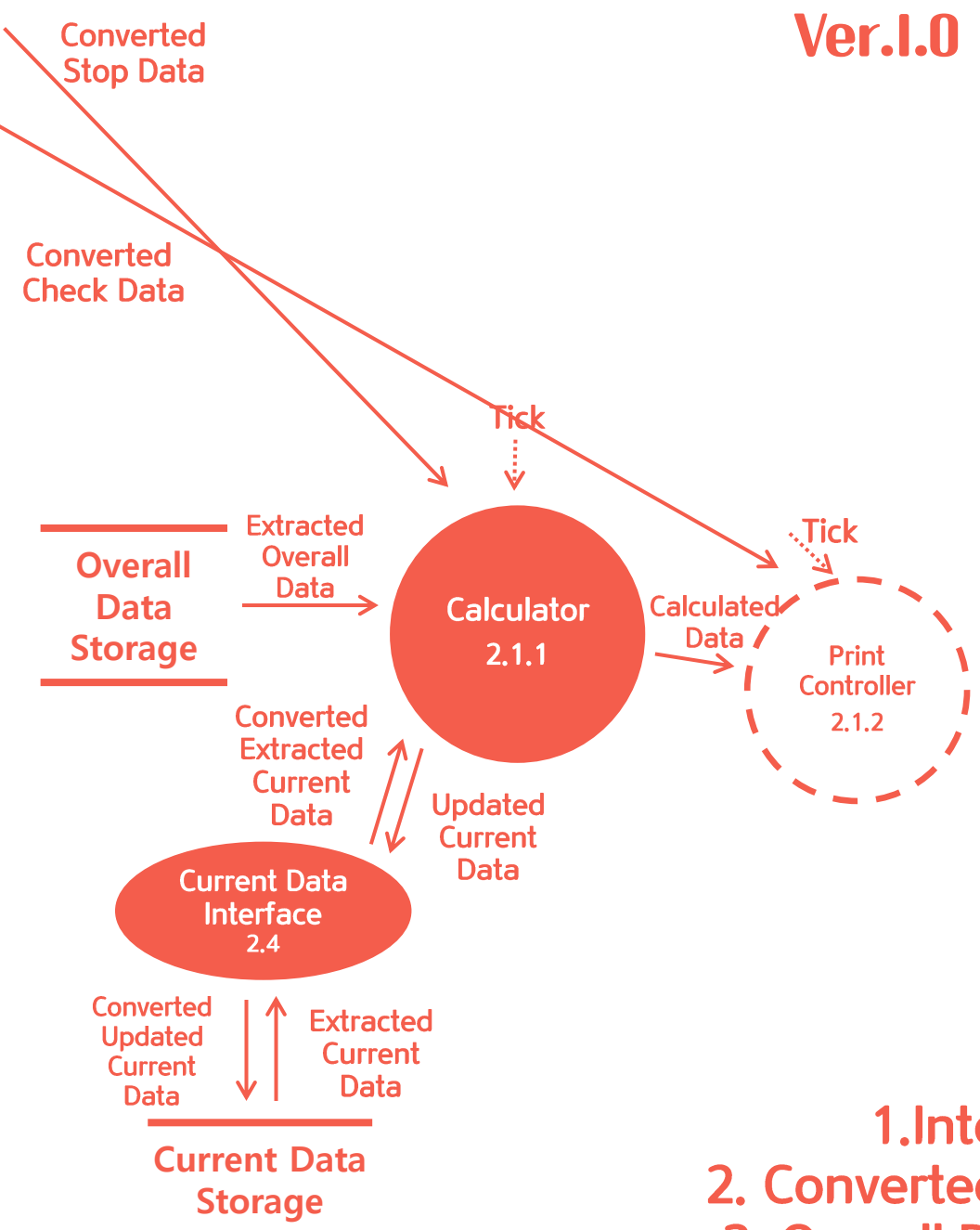
**Test Identification**

**Test Case Specification**

# NPS system

## Structured charts



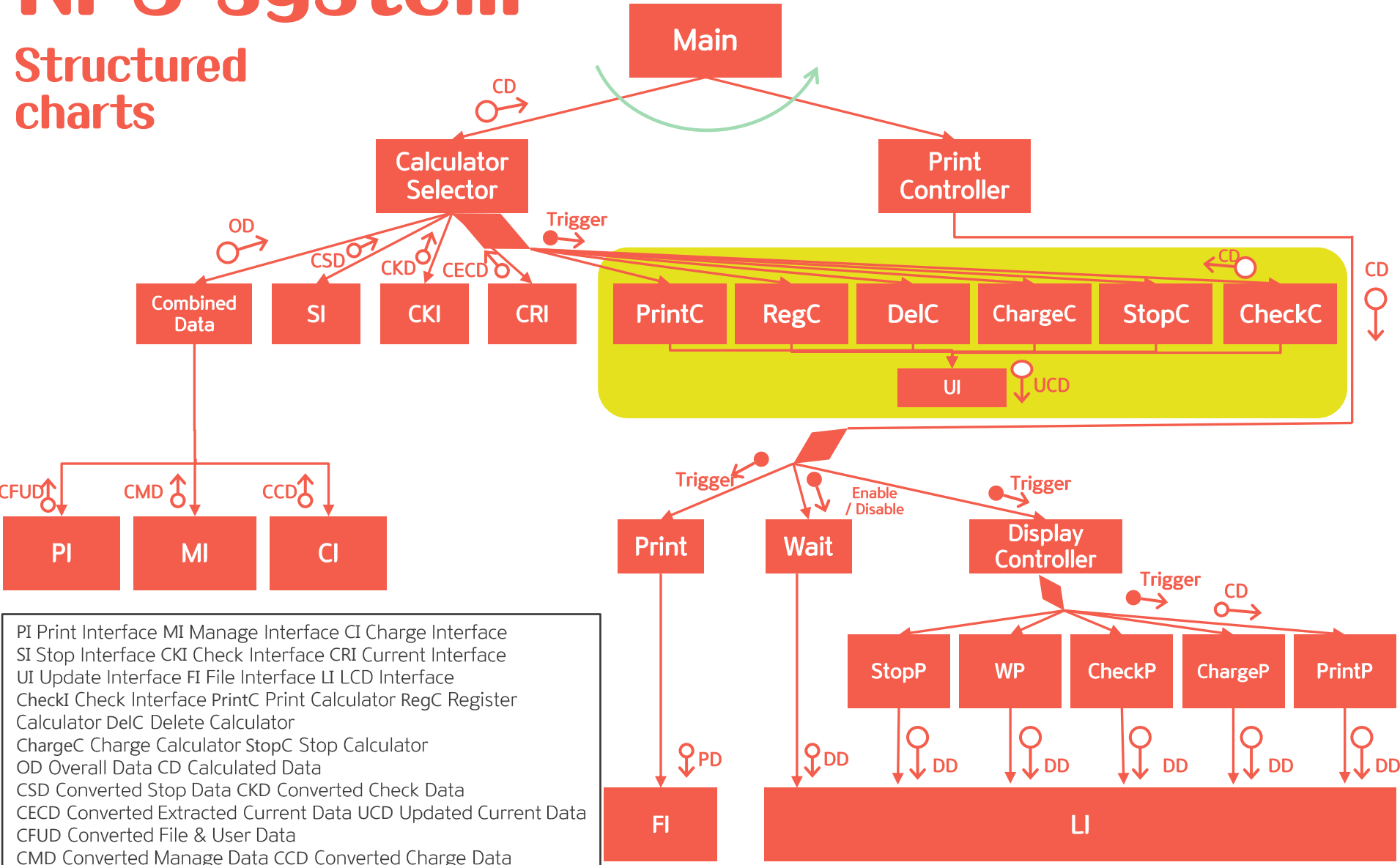


1. Interface
2. Converted Check Data
3. Overall Data Storage

# NPS system

Ver.2.0

## Structured charts



PI Print Interface MI Manage Interface CI Charge Interface  
 SI Stop Interface CKI Check Interface CRI Current Interface  
 UI Update Interface FI File Interface LI LCD Interface  
 CheckI Check Interface PrintC Print Calculator RegC Register  
 Calculator DelC Delete Calculator  
 ChargeC Charge Calculator StopC Stop Calculator  
 OD Overall Data CD Calculated Data  
 CSD Converted Stop Data CKD Converted Check Data  
 CECD Converted Extracted Current Data UCD Updated Current Data  
 CFUD Converted File & User Data  
 CMD Converted Manage Data CCD Converted Charge Data  
 StopP Stop Printing WP Warning Printing CheckP Check Printing  
 ChargeP Charge Printing PrintP Print Printing  
 PD Print Data DD Display Data

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**Features to be tested**

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# References

**[Team7 - 2015.SRA.VER3.0]**

**process specification**

**DFD**

**State Transition Diagram**

**[Team7 - 2015.SDS.VER2.0]**

**process specification**

**Structure Chart**



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**References**

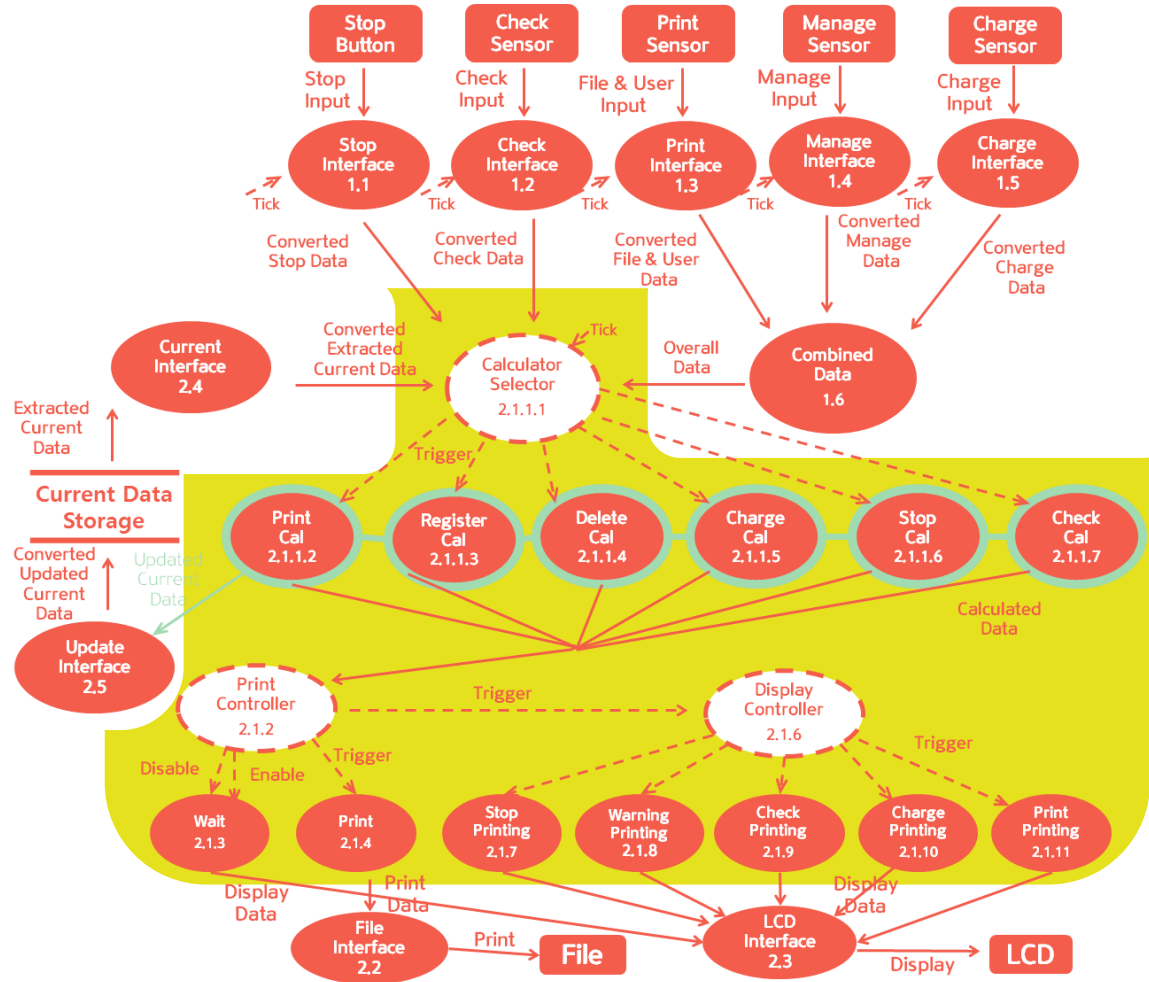
**Features to be tested**

**Features not to be tested**

**Test Identification**

**Test Case Specification**

ID	Name
2.1.1.1	Calculator Selector
2.1.1.2	Print Cal
2.1.1.3	Register Cal
2.1.1.4	Delete Cal
2.1.1.5	Charge Cal
2.1.1.6	Stop Cal
2.1.1.7	Check Cal
2.1.2	Print Controller
2.1.3	Wait
2.1.4	Print
2.1.5	Display Controller
2.1.6	Stop Printing
2.1.7	Warning Printing
2.1.8	Check Printing
2.1.9	Charge Printing
2.1.10	Print Printing



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**References**

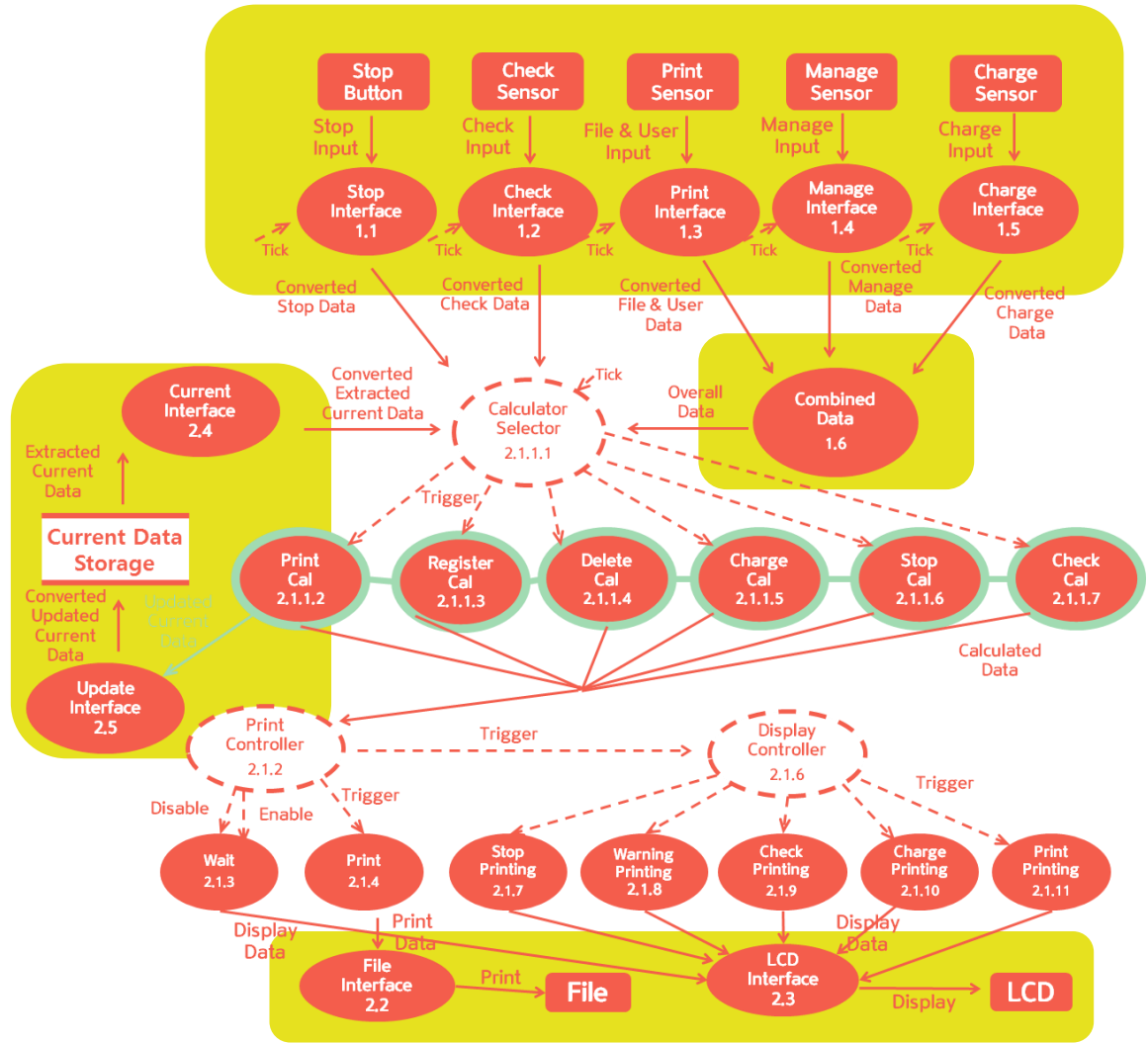
**Features to be tested**

**Features not to be tested**

**Test Identification**

**Test Case Specification**

ID	Name
1.1	Stop Interface
1.2	Check Interface
1.3	Print Interface
1.4	Manage Interface
1.5	Charge Interface
1.6	Combined Data
2.2	File Interface
2.3	LCD Interface
2.4	Current Data Interface



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**References**

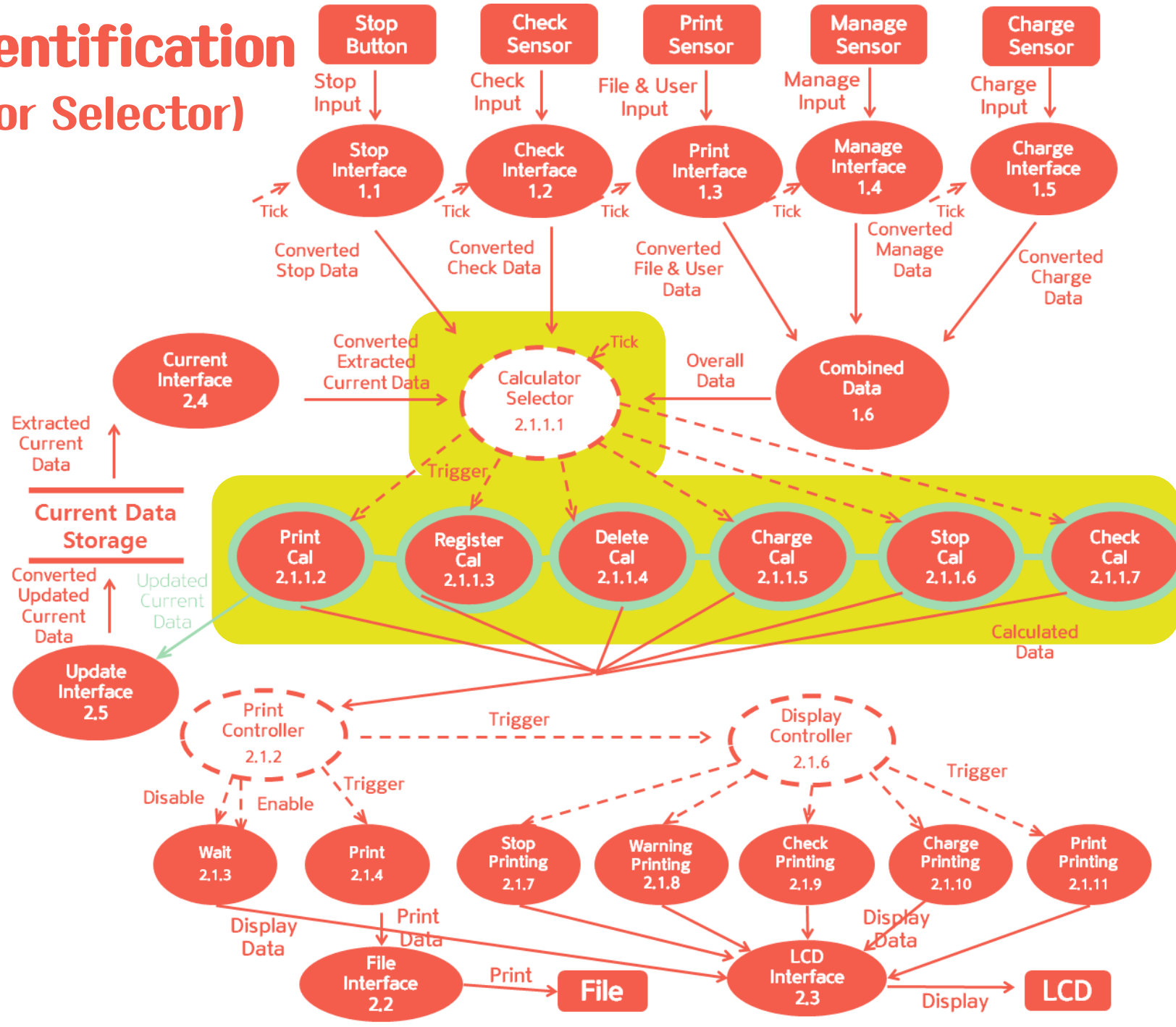
**Features to be tested**

**Features not to be tested**

**Test Identification**

**Test Case Specification**

# Test Identification (Calculator Selector)



# Test Identification

## (Calculator Selector)

Identifier	Feature(Process DFD)	Valid / Invalid value
NPS_0_000_000	2.1.1.1 Calculator Selector	OD(currentInput) : 1 CSD : 0 CKD : 0
NPS_0_000_001	2.1.1.1 Calculator Selector	OD(currentInput) : 3 CSD : 0 CKD : 0
NPS_0_000_002	2.1.1.1 Calculator Selector	OD(currentInput) : 4 CSD : 0 CKD : 0
NPS_0_000_003	2.1.1.1 Calculator Selector	OD(currentInput) : 2 CSD : 0 CKD : 0
NPS_0_000_004	2.1.1.1 Calculator Selector	CSD : 1 CKD : 0
NPS_0_000_005	2.1.1.1 Calculator Selector	CSD : 0 CKD : 1

# Test Identification

## (Calculator Selector)

Identifier	Feature(Process DFD)	Valid / Invalid value
NPS_0_001_000	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : [3000,100,[201411278,201411304],2 OD(userID, fileName) : 201411278,test.txt
NPS_0_001_001	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : 3000,100,[201411278,201411304],2 OD(userID, fileName) : 201411278,test2.txt
NPS_0_001_002	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : 0,100,[201411278,201411304],2 OD(userID, fileName) : 201411278,test.txt
NPS_0_001_003	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : 3000, 0,[201411278,201411304],2 OD(userID, fileName) : 201411278,test.txt
NPS_0_001_004	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : 3000,100,[201411278,201411304],2 OD(userID, fileName) : 201411269,test.txt
NPS_0_001_005	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum) : 3000,100,[201411278,201411304],2 OD(userID, fileName) : 201411278,test.txt
NPS_0_001_006	2.1.1.2 Print Cal	CECD(ink, paper, user, userNum, currentStatus) : 3000,100,[201411278,201411304],2,2 OD(userID, fileName) : 201411278,test.txt



# Test Identification

## (Calculator Selector)

Identifier	Feature(Process DFD)	Valid / Invalid value
NPS_0_002_000	2.1.1.3 Register Cal	CECD(user, userNum, currentStatus) : [201411280,201411297,201411304],5,3 OD(regUserID): 201411269
NPS_0_002_001	2.1.1.3 Register Cal	CECD(user, userNum, currentStatus) : [201411280, 201411297,201411304],3,1 OD(regUserID): 201411269
NPS_0_002_002	2.1.1.3 Register Cal	CECD(user, userNum, currentStatus) : [201411269, 201411278, 201411280, 201411297, 201411304],5,3 OD(regUserID): 201411223
NPS_0_002_003	2.1.1.3 Register Cal	CECD(user, userNum, currentStatus) : [201411269, 201411297,201411304],3,3 OD(regUserID): 201411269

# Test Identification

## (Calculator Selector)

Identifier	Feature(Process DFD)	Valid / Invalid value
NPS_0_003_000	2.1.1.4 Delete Cal	CECD(user, userNum, currentStatus) : [201411269,201411297,201411304],5,3 OD(delUserID): 201411269
NPS_0_003_001	2.1.1.4 Delete Cal	CECD(user, userNum, currentStatus) : [201411269, 201411297,201411304],3,1 OD(delUserID): 201411269
NPS_0_003_002	2.1.1.4 Delete Cal	CECD(user, userNum, currentStatus) : [201411280, 201411297,201411304],3,1 OD(delUserID): 201411269

# Test Identification

## (Calculator Selector)

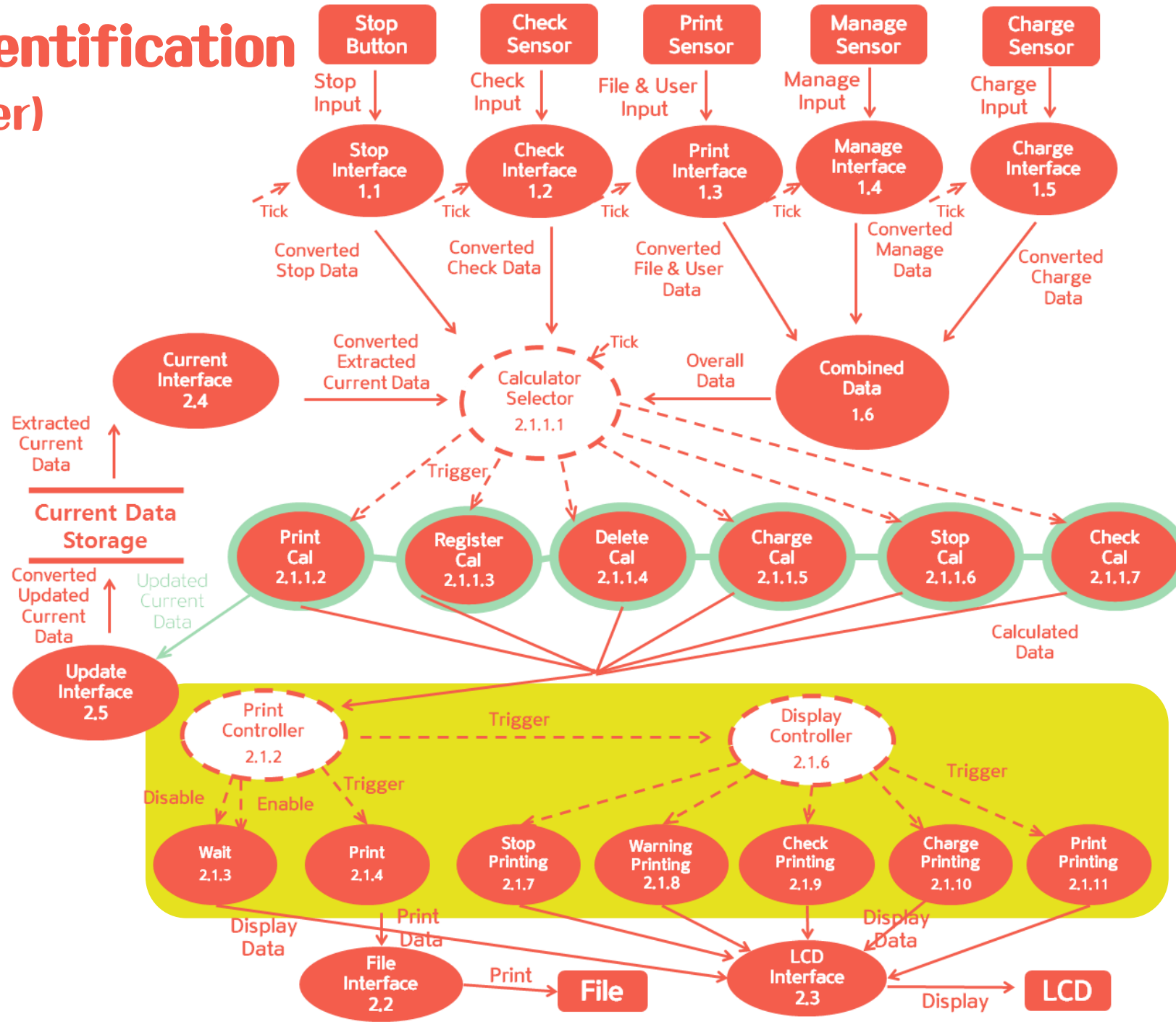
Identifierc	Feature(Process DFD)	Valid / Invalid value
NPS_0_004_000	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : 2000, 50, 3 OD(chargeInk,chargePaper) : 500,00
NPS_0_004_001	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : 2000,50,1 OD(chargeInk,chargePaper) : 500,00
NPS_0_004_002	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : 2000, 50, 3 OD(chargeInk,chargePaper) : 1000,00
NPS_0_004_003	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : 2000,50,3 OD(chargeInk,chargePaper) : 00,30
NPS_0_004_004	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : 2000,50,1 OD(chargeInk,chargePaper) : 00,30
NPS_0_004_005	2.1.1.5 Charge Cal	CECD(ink,paper, currentStatus) : 2000,50,3 OD(chargeInk,chargePaper) : 00,80

# Test Identification

## (Calculator Selector)

Identifier	Feature(Process DFD)	Valid / Invalid value
NPS_0_005_000	2.1.1.6 Stop Cal	CSD : 1
NPS_0_006_000	2.1.1.7 Check Cal	CKD : 1

# Test Identification (Controller)



# Test Identification

## (Print Controller)

Identifier	Feature(Process DFD)	Valid / Invalid value
NPS_0_007_000	2.1.2 Print Controller	CDStatus(mode) : 3
NPS_0_007_001	2.1.2 Print Controller	CDStatus(mode) : 0
NPS_0_007_002	2.1.2 Print Controller	CDStatus(mode) : 1

# Test Identification

## (Print Controller)

Identifier	Feature(Process DFD)	Valid / Invalid value
NPS_0_008_000	2.1.3 Wait	CD (paper, ink) : (3000, 10)
NPS_0_009_000	2.1.4 Print	CD(cdstatus, cdlist, cdpage, cdcontent)

# Test Identification

## (Display Controller)

Identifierc	Feature(Process DFD)	Valid / Invalid value
NPS_0_010_000	2.1.1.5 Display Controller	CD(mode) : {0}
NPS_0_010_001	2.1.1.5 Display Controller	CD(mode) : {1}
NPS_0_010_002	2.1.1.5 Display Controller	CD(mode) : {2}
NPS_0_010_003	2.1.1.5 Display Controller	CD(mode) : {4}
NPS_0_010_004	2.1.1.5 Display Controller	CD(mode) : {5}



# Test Identification

## (Display Controller)

Identifierc	Feature(Process DFD)	Valid / Invalid value
NPS_0_011_000	2.1.6 Stop Printing	CD(paper,ink) : {50, 2500}
NPS_0_012_000	2.1.7 Warning Printing	CD(paper,ink,mode,calNum) : {50, 2500,2,3}
NPS_0_013_000	2.1.8 Check Printing	CD(checkStatus, checkTime) : {1,현재시간}
NPS_0_014_000	2.1.9 Charge Printing 충전할 잉크가 0보다 클 때	CD(chargeInk, chargePaper) : {300, -1}
NPS_0_014_002	2.1.9 Charge Printing 충전할 종이가 0보다 클 때	CD(chargeInk, chargePaper) : {-1, 50}
NPS_0_015_000	2.1.10 Print Printing	CD(mode, ink, paper, stopTime) : {0, 2500, 50, 0}
NPS_0_015_001	2.1.10 Print Printing	CD(mode, ink, paper, stopTime) : {0, 2500, 50, 현재시간}

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**References**

**Features to be tested**

**Features not to be tested**

**Test Identification**

**Test Case Specification**

# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_000_000	OD(currentInput) : {1} CSD : {0} CKD : {0}	Call printCal
NPS_0_000_001	OD(currentInput) : {3} CSD : {0} CKD : {0}	Call deleteCal
NPS_0_000_002	OD(currentInput) : {4} CSD : {0} CKD : {0}	Call registerCal
NPS_0_000_003	OD(currentInput) : {2} CSD : {0} CKD : {0}	Call chargeCal
NPS_0_000_004	OD(currentInput) : {} CSD : {1} CKD : {0}	Call stopCal
NPS_0_000_005	OD(currentInput) : {} CSD : {0} CKD : {1}	Call checkCal

# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_001_000	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}	CDlist.txt CDcontent.txt CDpage.txt
NPS_0_001_001	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test2.txt}	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_001_002	CECD(ink, paper, user, userNum) : {0,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_001_003	CECD(ink, paper, user, userNum) : {3000, 0,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt}	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_001_004	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411269,test.txt}	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음
NPS_0_001_005	CECD(ink, paper, user, userNum) : {3000,100,{201411278,201411304},2} OD(userID, fileName) : {201411278,test.txt} waitUser : 5	CDlist.txt CDcontent.txt CDpage.txt 업데이트 되지 않음

# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_002_000	CECD(user, userNum, currentStatus) : {{201411280,201411297,201411304},3,3} OD(regUserID): {201411269}	CDUser.txt
NPS_0_002_001	CECD(user, userNum, currentStatus) : {{201411280, 201411297,201411304},3,1} OD(regUserID): {201411269}	CDUser.txt 업데이트 되지 않음
NPS_0_002_002	CECD(user, userNum ,currentStatus) : { {201411269, 201411278, 201411280, 201411297, 201411304},5,3} OD(regUserID): {201411223}	CDUser.txt 업데이트 되지 않음
NPS_0_002_003	CECD(user, userNum,currentStatus) : {{201411269, 201411297,201411304},3,3} OD(regUserID): {201411269}	CDUser.txt 업데이트 되지 않음

# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_003_000	CECD(user, userNum, currentStatus) : {{201411269,201411297,201411304},3,3} OD(delUserID): {201411269}	CDuser.txt
NPS_0_003_001	CECD(user, userNum, currentStatus) : {{201411269, 201411297,201411304},3,1} OD(delUserID): {201411269}	CDuser.txt 업데이트 되지 않음
NPS_0_003_002	CECD(user, userNum, currentStatus) : {{201411280, 201411297,201411304},3,1} OD(delUserID): {201411269}	CDuser.txt 업데이트 되지 않음

# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_004_000	CECD(ink,paper, currentStatus) : {2000, 50, 3} OD(chargeInk,chargePaper) : {500,00}	CDcharge.txt Cdstatus.txt
NPS_0_004_001	CECD(ink,paper, currentStatus) : {2000, 50,1} OD(chargeInk,chargePaper) : {50 0,00}	CDcharge.txt Cdstatus.txt
NPS_0_004_002	CECD(ink,paper, currentStatus) : {2000, 50, 3} OD(chargeInk,chargePaper) : {1000,00}	CDcharge.txt Cdstatus.txt
NPS_0_004_003	CECD(ink,paper, currentStatus) : {2000,50,3} OD(chargeInk,chargePaper ) : {00,30}	CDcharge.txt Cdstatus.txt
NPS_0_004_004	CECD(ink,paper, currentStatus) : {2000,50,1} OD(chargeInk,chargePaper ) : {00,30}	CDcharge.txt Cdstatus.txt
NPS_0_004_005	CECD(ink,paper, currentStatus) : {2000,50,3} OD(chargeInk,chargePaper ) : {00,80}	CDcharge.txt Cdstatus.txt

# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_005_000	CSD : {1}	CDstatus.txt
NPS_0_006_000	CKD : {1}	CDstatus.txt
NPS_0_007_000	CD(mode, checkStatus, checkTime) : {3, 1, 현재시간}	Call displayController
NPS_0_007_001	CD(mode, checkStatus, checkTime) : {3,0, 현재시간}	Call wait
NPS_0_007_002	CD(mode, checkStatus, checkTime) : {0,0,현재시간}	Call print
NPS_0_007_003	CD(mode, checkStatus, checkTime) : {4,0,현재시간}	Call displayController



# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_008_000	CD(paper, ink) : (3000, 10)	Current paper : 3000 Current ink : 10
NPS_0_009_000	CD(cdstatus, cdlist, cdpage, cdcontent)	CDstatus.txt CDlist.txt CDpage.txt CDcontent.txt
NPS_0_010_000	CD(mode) : {0}	Call printPrinting
NPS_0_010_001	CD(mode) : {1}	Call chargePrinting
NPS_0_010_002	CD(mode) : {2}	Call warningPrinting
NPS_0_010_003	CD(mode) : {4}	Call checkPrinting
NPS_0_010_004	CD(mode) : {5}	Call stopPrinting

# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_008_000	CD(paper, ink) : (3000, 10)	Current paper : 3000 Current ink : 10
NPS_0_009_000	CD(cdstatus, cdlist, cdpage, cdcontent)	CDstatus.txt CDlist.txt CDpage.txt CDcontent.txt
NPS_0_010_000	CD(mode) : {0}	Call printPrinting
NPS_0_010_001	CD(mode) : {1}	Call chargePrinting
NPS_0_010_002	CD(mode) : {2}	Call warningPrinting
NPS_0_010_003	CD(mode) : {4}	Call checkPrinting
NPS_0_010_004	CD(mode) : {5}	Call stopPrinting

# Test Case Specification

Identifier	Input Specification	Output Specification
NPS_0_011_000	CD(paper,ink) : {50, 2500}	Current paper : 50 Current ink : 2500
NPS_0_012_000	CD(paper,ink,mode,calNum) : {50, 2500,2,3}	Current paper : 50 Current ink : 2500 EXCESS ERROR - PRINT LIST
NPS_0_013_000	CD(checkStatus, checkTime) : {1,20151111025300}	user : 등록된 사용자
NPS_0_014_000	CD(chargeInk, chargePaper) : {300, -1}	Current paper : 300 Current ink : -1
NPS_0_014_001	CD(chargeInk, chargePaper) : {-1, 50}	Current paper : -1 Current ink : 50
NPS_0_015_000	CD(mode, ink, paper, stopTime) : {0, 2500, 50, 0}	Paper : 2500 Ink : 50 currentPage , page
NPS_0_015_001	CD(mode, ink, paper, stopTime) : {0, 2500, 50, 현재시간}	Paper : 2500 Ink : 50 FILE PRINTING STOPPED

**Q&A**