Unit Testing Plan

Electronic Door Lock System

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Index

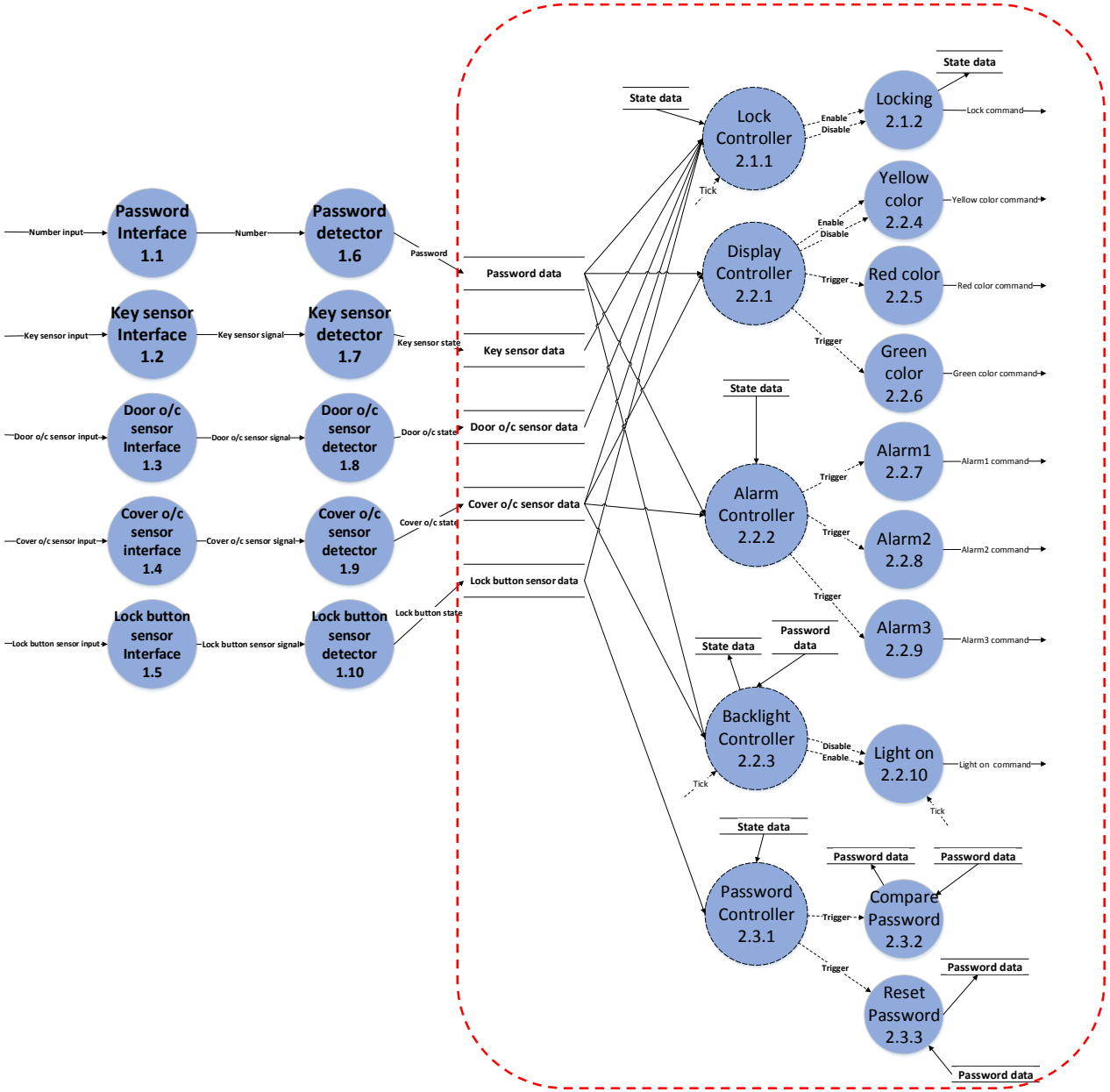
References

Team1-2013.EDLS.SRA-2.0: Process specification, DFD
State Transition Diagram

Team1-2013.EDLS.SDS-2.0: Process specification, Structure chart

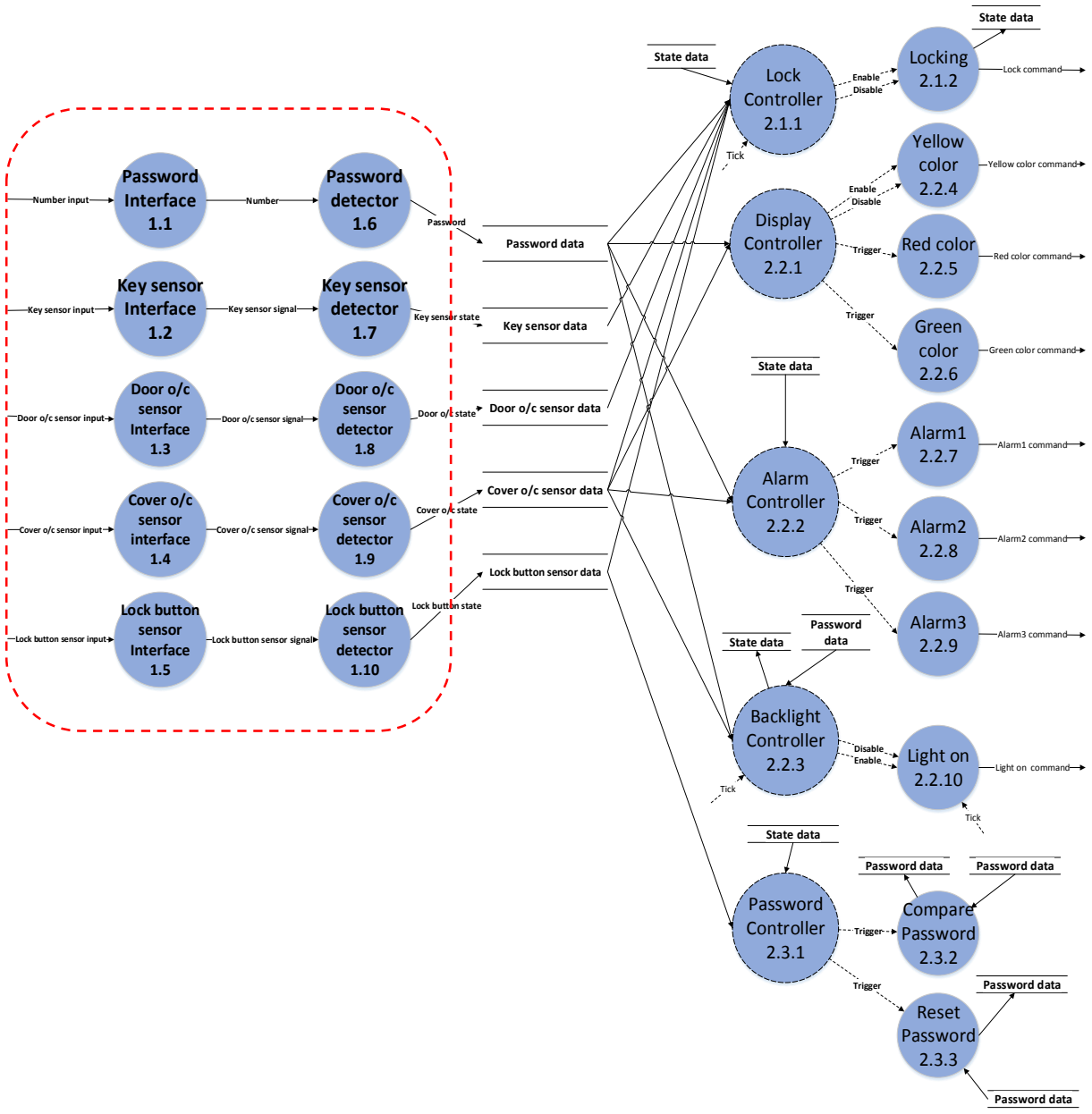
Features to be tested

ID	Name
2.1.1	Lock Controller
2.1.2	Locking
2.2.1	Display Controller
2.2.2	Alarm Controller
2.2.3	Backlight Controller
2.3.1	Password Controller
2.3.2	Compare Password
2.3.3	Reset Password
2.2.4	Yellow Color
2.2.5	Red Color
2.2.6	Green Color
2.2.7	Alarm1
2.2.8	Alarm2
2.2.9	Alarm3
2.2.10	Light On

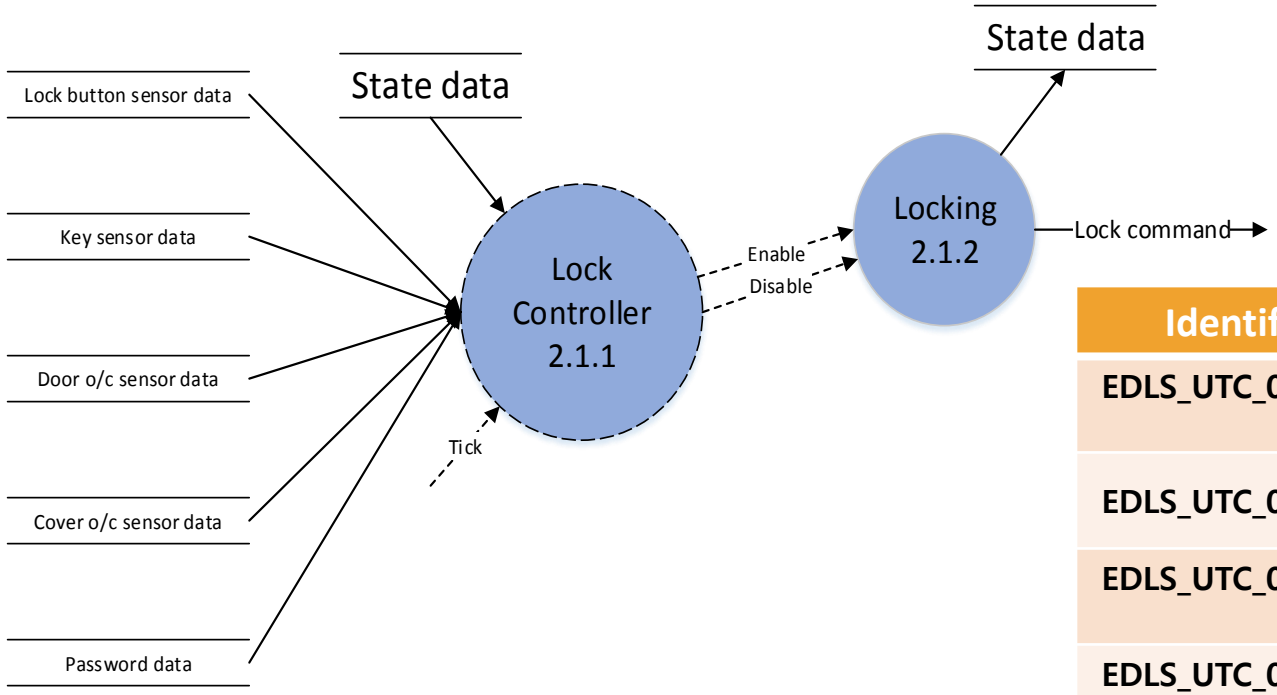


Features not to be tested

ID	Name
1.1	Password Interface
1.2	Key Sensor Interface
1.3	Door o/c Sensor Interface
1.4	Cover o/c sensor Interface
1.5	Lock button sensor Interface
1.6	Password Detector
1.7	Key Sensor Detector
1.8	Door o/c Sensor Detector
1.9	Cover o/c sensor Detector
1.10	Lock Button Sensor Detector



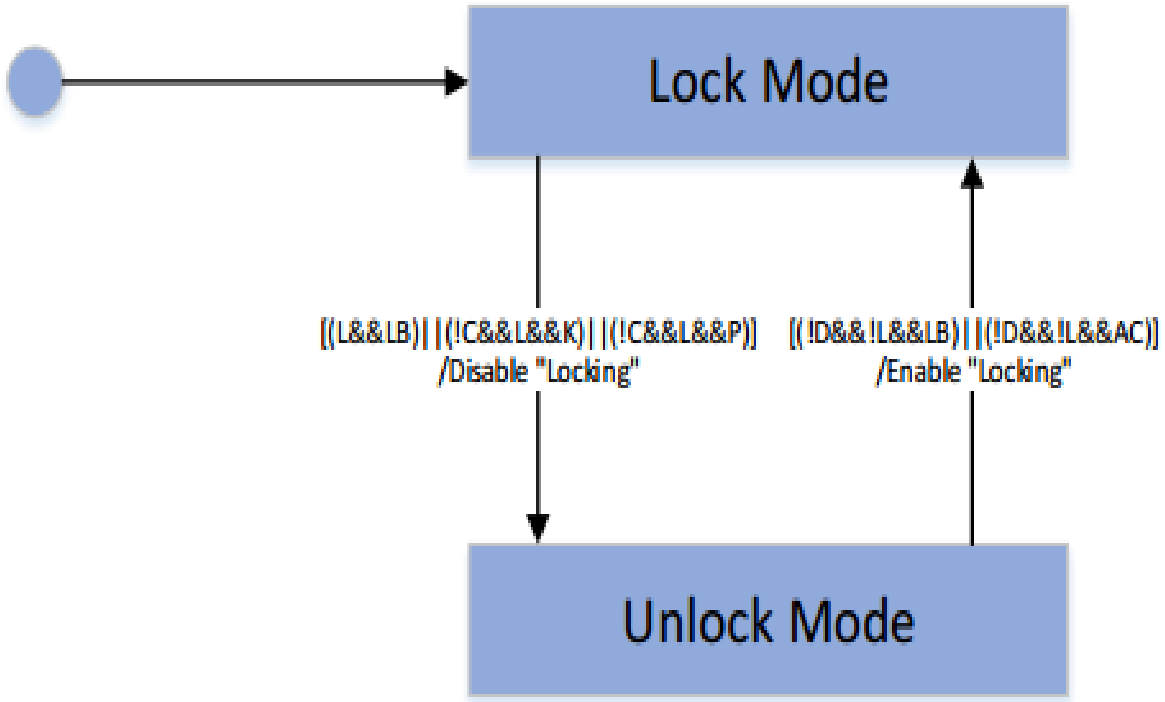
Test Identification (Lock Controller)



Identifier	Feature(Process ID in DFD)	Valid/Invalid value
EDLS_UTC_000_000	2.1.1 Lock Controller	Lock Mode에서 [BO]=FALSE Input
EDLS_UTC_000_001	2.1.1 Lock Controller	Lock Mode에서 [K]=TRUE Input
EDLS_UTC_000_002	2.1.1 Lock Controller	Unlock Mode에서 [LB]=TRUE Input
EDLS_UTC_000_003	2.1.1 Lock Controller	Unlock Mode에서 [BO]=TRUE Input
EDLS_UTC_000_004	2.1.1 Lock Controller	Unlock Mode에서 [N]=FALSE Input
EDLS_UTC_000_005	2.1.1 Lock Controller	Lock Mode에서 [C]=FALSE&&[P]=TRUE Input
EDLS_UTC_000_006	2.1.1 Lock Controller	Lock Mode에서 [C]=TRUE&&[K]=TRUE Input
EDLS_UTC_001_000	2.1.2 Locking	Enable Input

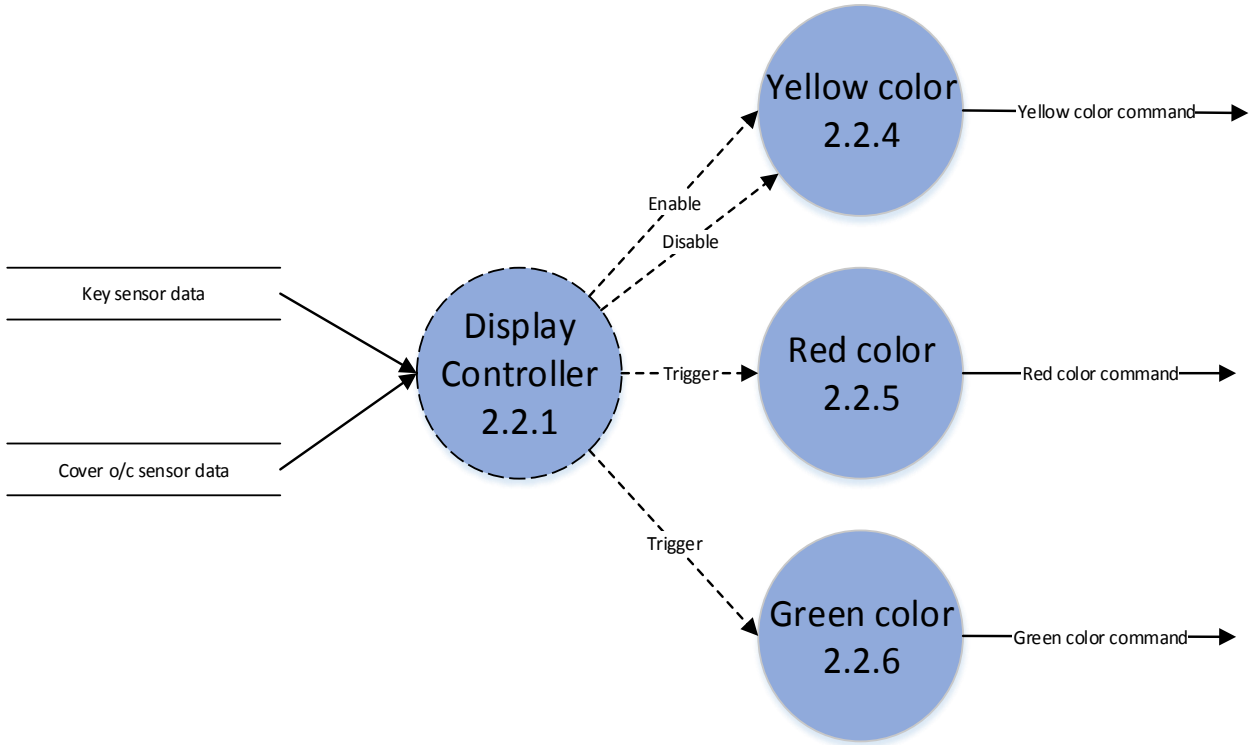
Test Case Specification (Lock Controller)

Test Case Identifier	Input Specification	Output Specification
EDLS_UTC_000_000	State=Lock, [BO]==FALSE	State=Lock
EDLS_UTC_000_001	State=Lock, [K]==TURE	Disable / Locking==0
EDLS_UTC_000_002	State=Unlock,[LB]==TRUE	Enable / Locking==1
EDLS_UTC_000_003	State=Unlock, [BO]==TRUE	State=Unlock
EDLS_UTC_000_004	State=Unlock, [N]==FALSE	State=Unlock
EDLS_UTC_000_005	State=Lock, [C]==FALSE&&[P]==TRUE	Enable / Locking==1
EDLS_UTC_000_006	State=Lock, [C]==TRUE&& [K]==TRUE	Enable / Locking==1
EDLS_UTC_001_000	Enable	[L], Lock command



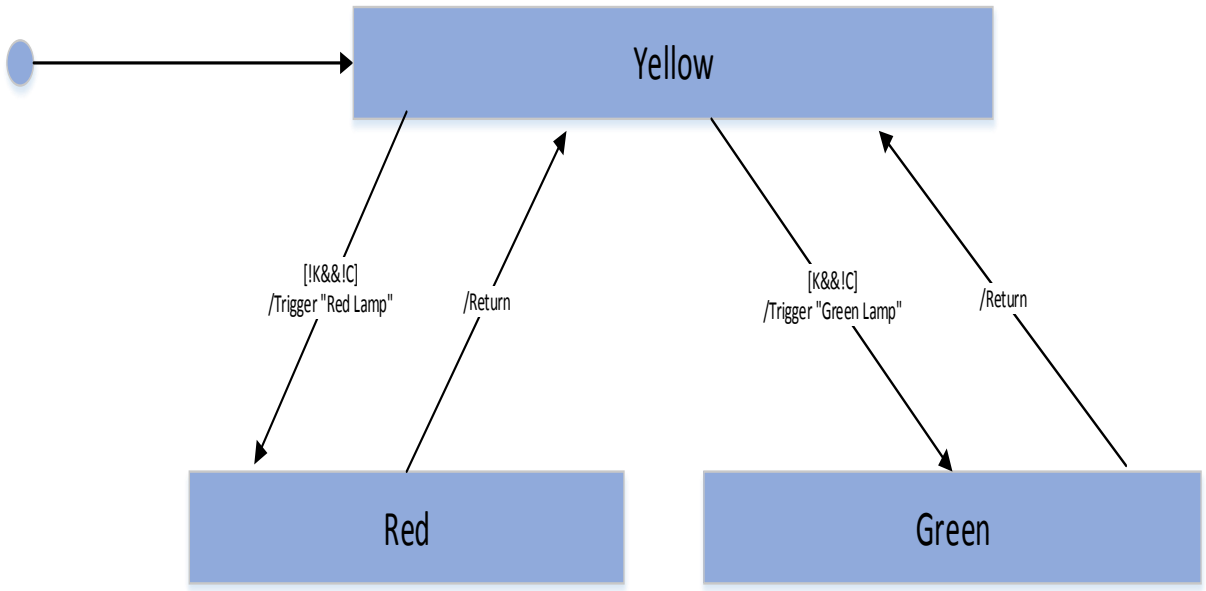
Test Identification (Display Controller)

Identifier	Feature(Process ID in DFD)	Valid/Invalid value
EDLS_UTC_002_000	2.2.1 Display Controller	Yellow상태에서 [C]==TRUE && [K]==TRUE Input
EDLS_UTC_002_001	2.2.1 Display Controller	Yellow상태에서 [C]==FALSE && [K]==TRUE Input
EDLS_UTC_002_002	2.2.1 Display Controller	Yellow상태에서 [C] ==FALSE && [K]==FALSE Input
EDLS_UTC_002_003	2.2.1 Display Controller	Yellow상태에서 [C]==TRUE && [K]==TRUE Input
EDLS_UTC_005_000	2.2.4 Yellow Color	Enable Input
EDLS_UTC_006_000	2.2.5 Red Color	Trigger Input
EDLS_UTC_007_000	2.2.6 Green Color	Trigger Input



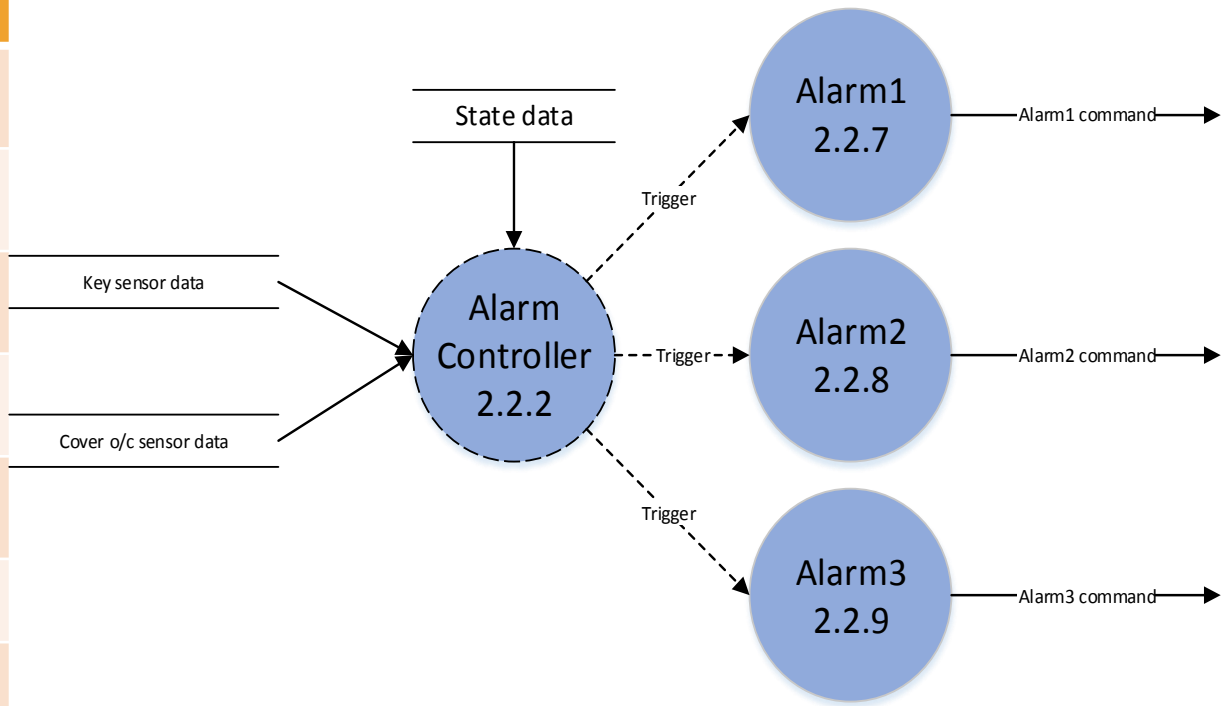
Test Case Specification (Display Controller)

Test Case Identifier	Input Specification	Output Specification
EDLS_UTC_002_000	State==Yellow/[C]==TRUE&&[K] == TRUE	State == Yellow
EDLS_UTC_002_001	State==Yellow/[C]==FALSE&&[K]==TRUE	Trigger / State == Green
EDLS_UTC_002_002	State==Yellow/[C]==FALSE&&[K]==FALSE	Trigger / State == Red
EDLS_UTC_002_003	State==Yellow/[C]==TRUE&& [K]==FALSE	State == Yellow
EDLS_UTC_005_000	Enable	Yellow color command
EDLS_UTC_006_000	Trigger	Red color command
EDLS_UTC_007_000	Trigger	Green color command



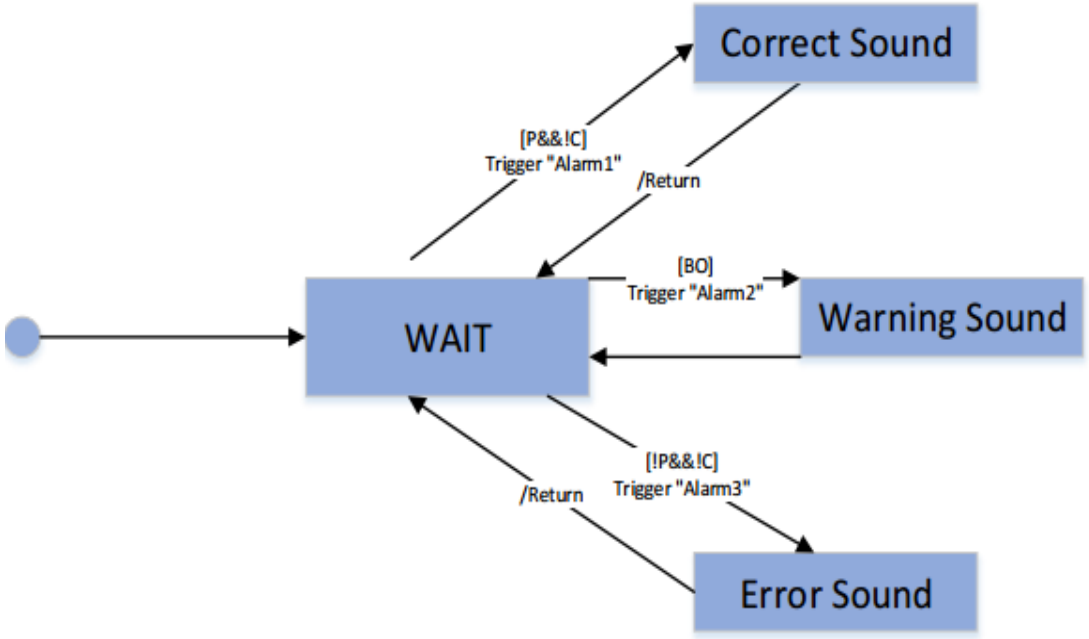
Test Identification (Alarm Controller)

Identifier	Feature(Process ID in DFD)	Valid/Invalid value
EDLS_UTC_003_000	2.2.2 Alarm Controller	Wait상태에서 [C]==FALSE && [P]==TRUE Input
EDLS_UTC_003_001	2.2.2 Alarm Controller	Wait상태에서 [L] Input
EDLS_UTC_003_002	2.2.2 Alarm Controller	Wait상태에서 [AC] Input
EDLS_UTC_003_003	2.2.2 Alarm Controller	Wait상태에서 [INPUT_END] Input
EDLS_UTC_003_004	2.2.2 Alarm Controller	Wait상태에서 [C_flag] Input
EDLS_UTC_008_000	2.2.7 Alarm1	Trigger Input
EDLS_UTC_009_000	2.2.8 Alarm2	Trigger Input
EDLS_UTC_010_000	2.2.9 Alarm3	Trigger Input



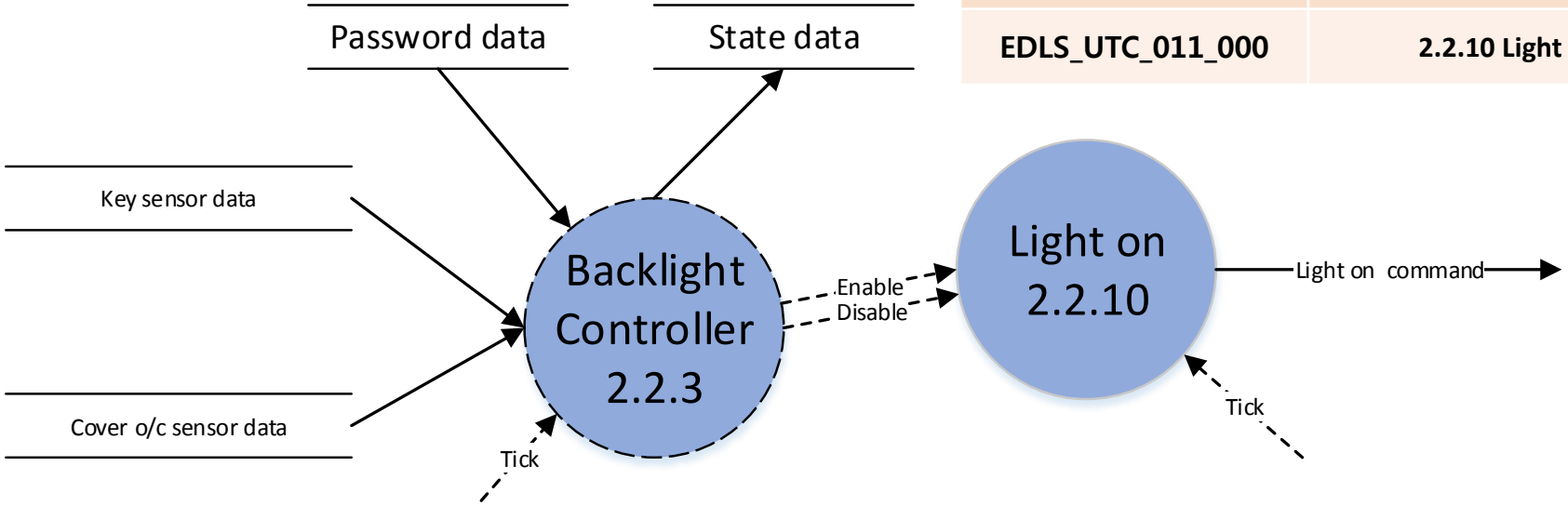
Test Case Specification (Alarm Controller)

Test Case Identifier	Input Specification	Output Specification
EDLS_UTC_003_000	State==Wait/ [C]==FALSE &&[P]==TRUE	Trigger/State==Correct Sound
EDLS_UTC_003_001	State==Wait / [L]	State == Wait
EDLS_UTC_003_002	State==Wait / [AC]	State == Wait
EDLS_UTC_003_003	State == Wait /[INPUT_END]	State == Wait
EDLS_UTC_003_004	State == Wait /[C_flag]	State == Wait
EDLS_UTC_008_000	Trigger	Alarm1 Command
EDLS_UTC_009_000	Trigger	Alarm2 Command
EDLS_UTC_010_000	Trigger	Alarm3 Command



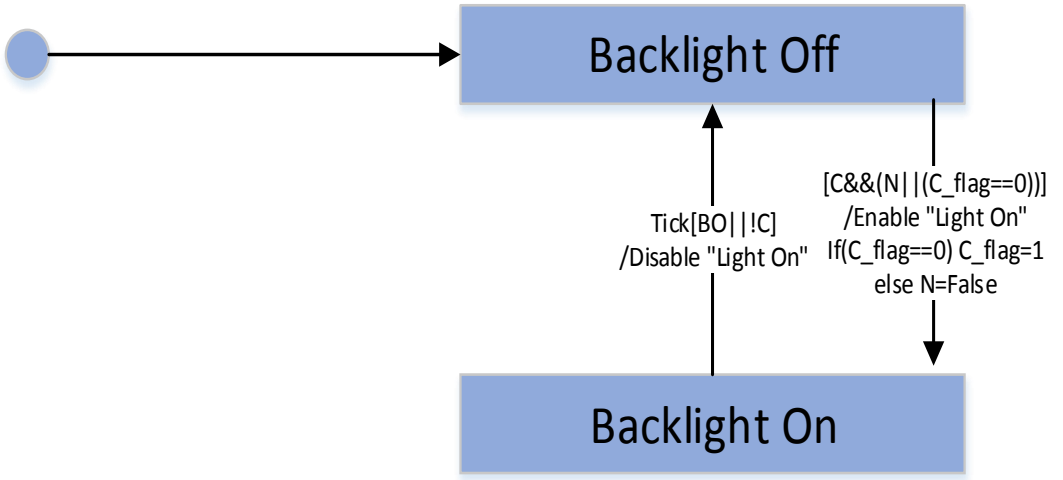
Test Identification (Backlight Controller)

Identifier	Feature(Process ID in DFD)	Valid/Invalid value
EDLS_UTC_004_000	2.2.3 Backlight Controller	Backlight Off 상태에서 [N] Input
EDLS_UTC_004_001	2.2.3 Backlight Controller	Backlight Off상태에서 [C_flag==0] Input
EDLS_UTC_004_002	2.2.3 Backlight Controller	Backlight off인 상태에서 [K] Input
EDLS_UTC_004_003	2.2.3 Backlight Controller	Backlight on상태에서 [N] Input
EDLS_UTC_004_004	2.2.3 Backlight Controller	Backlight on인 상태에서 [C_flag==1] Input
EDLS_UTC_004_005	2.2.3 Backlight Controller	Backlight on 상태에서 [C_flag==0] Input
EDLS_UTC_004_006	2.2.3 Backlight Controller	Backlight on상태에서 [BO] Input
EDLS_UTC_011_000	2.2.10 Light On	Disable 상태에서 Enable Input



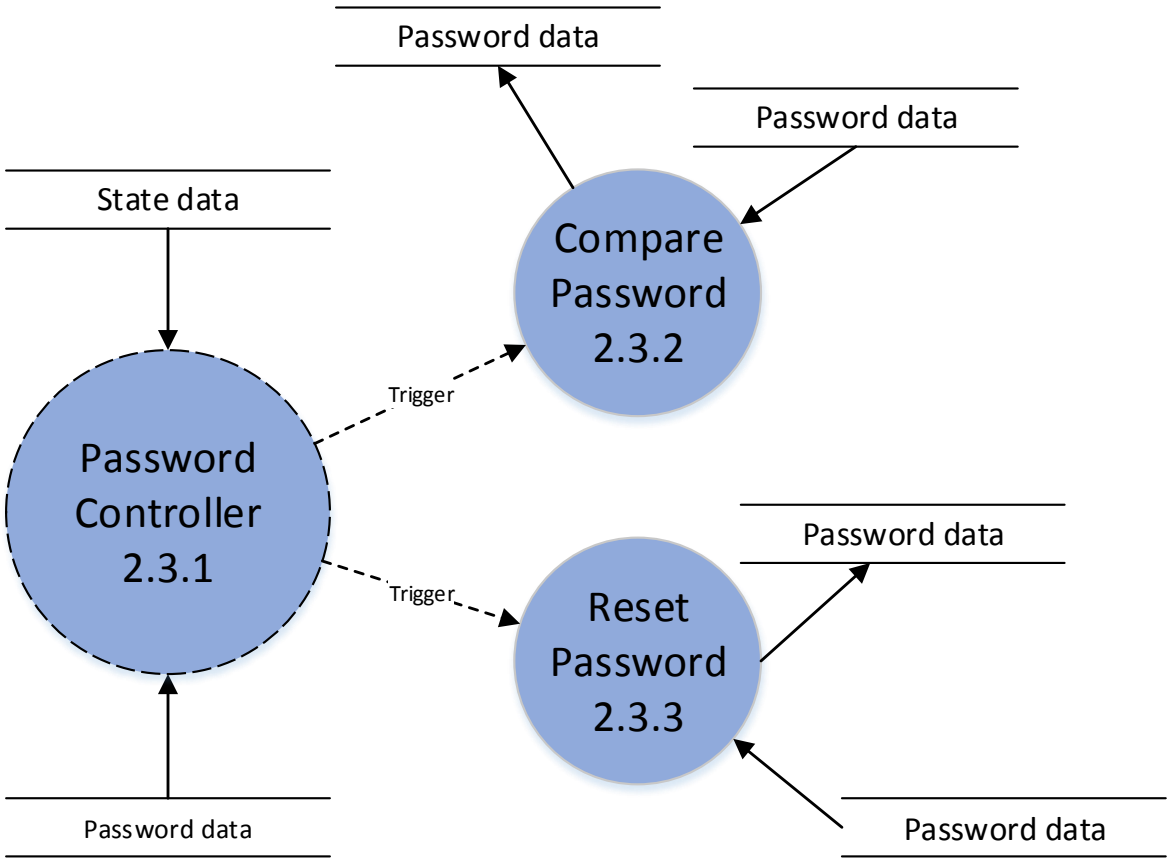
Test Case Specification (Backlight Controller)

Test Case Identifier	Input Specification	Output Specification
EDLS_UTC_004_000	State == Backlight Off/[N]	Enable/State==Backlight On
EDLS_UTC_004_001	State == Backlight Off/[C_flag==0]	Enable/State==Backlight On
EDLS_UTC_004_002	State == Backlight Off/[K]	Disable/State==Backlight Off
EDLS_UTC_004_003	State == Backlight On/[N]	Tick counting==0/State==Backlight On
EDLS_UTC_004_004	State == Backlight On/[C_flag==1]	Tick counting++
EDLS_UTC_004_005	State == Backlight On/[C_flag==0]	Tick counting==0/State==Backlight On
EDLS_UTC_004_006	State == Backlight On/[BO]	Disable/State==Backlight Off
EDLS_UTC_011_000	State==Disable/Enable	Light On Command/State==Enable



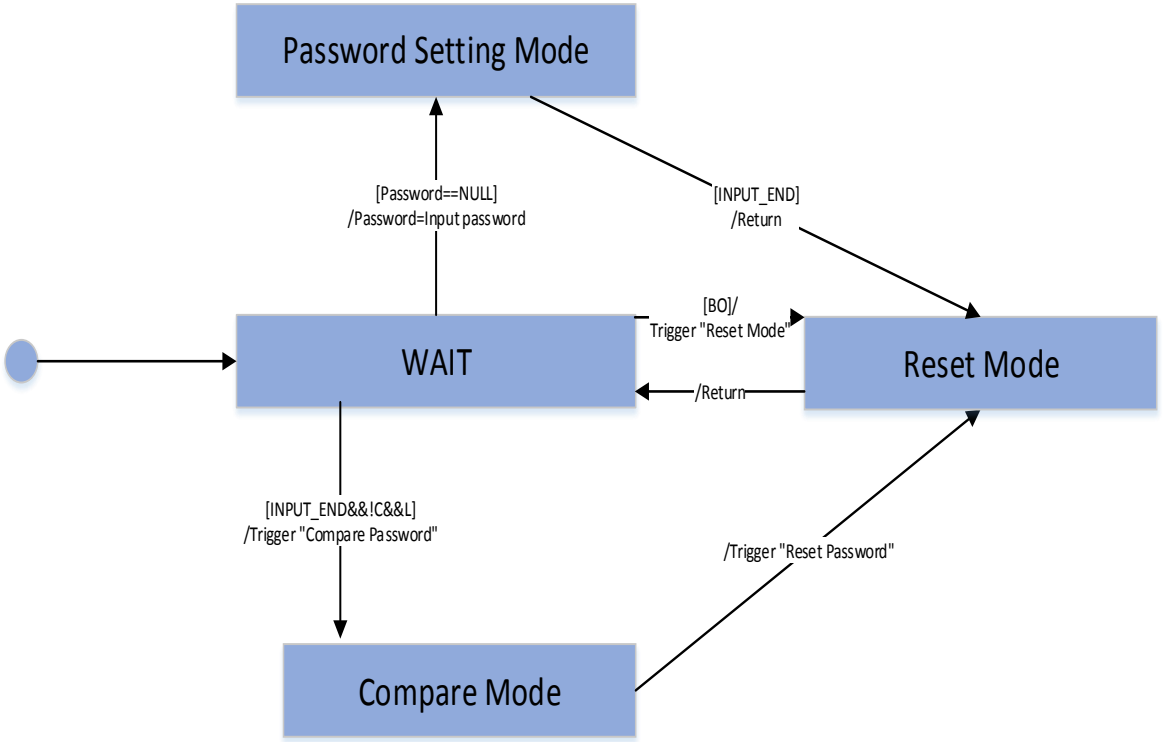
Test Identification (Password Controller)

Identifier	Feature(Process ID in DFD)	Valid/Invalid value
EDLS_UTC_012_000	2.3.1 Password Controller	Wait 상태에서 [L] == TRUE && [C] ==FALSE 와 [INPUT_END] == FALSE 입력
EDLS_UTC_012_001	2.3.1 Password Controller	Wait 상태에서 [L] == TRUE && [C] ==FALSE 와 [INPUT_END] == TRUE 입력
EDLS_UTC_012_002	2.3.1 Password Controller	[Password] == NULL 입력
EDLS_UTC_012_003	2.3.1 Password Controller	Wait 상태에서 [L] == FALSE && [C] == TRUE 데이터 입력
EDLS_UTC_012_004	2.3.1 Password Controller	Wait 상태에서 [L] == TRUE && [C] == FALSE 데이터 입력
EDLS_UTC_012_005	2.3.1 Password Controller	Wait 상태에서 [INPUT_END] && C == TRUE 데이터 입력
EDLS_UTC_012_006	2.3.1 Password Controller	Wait 상태에서 ![INPUT_END] && C == FALSE.데이터 입력
EDLS_UTC_013_000	2.3.2 Compare Password	TRIGGER 입력
EDLS_UTC_014_000	2.3.3 Reset Password	TRIGGER 입력



Test Case Specification (Password Controller)

Test Case Identifier	Input Specification	Output Specification
EDLS_UTC_012_000	State == wait/ [L]==TRUE&&[C]==FALSE/![INPUT_END]	Trigger “Reset Password”/ State == Reset Mode
EDLS_UTC_012_001	State== wait /[L]==TRUE&&[C]==FALSE/[INPUT_END]	Trigger / “Compare Password”/ State == Compare Mode
EDLS_UTC_012_002	State == wait /[PASSWORD]==NULL	State ==Password Setting Mode
EDLS_UTC_012_003	State == wait/[L]==FALSE&&[C]==TRUE	State==wait
EDLS_UTC_012_004	State == wait /[L]==TRUE&&[C]==FALSE	State==wait
EDLS_UTC_012_005	State == wait /![INPUT_END] && C == FALSE	State==wait
EDLS_UTC_012_006	State == wait /[INPUT_END] && C == TRUE	State==wait
EDLS_UTC_013_000	Trigger	[P]
EDLS_UTC_014_000	Trigger	INPUT_PASSWORD == NULL



Q&A