

소프트웨어 모델링 분석

<SASD - SD단계>

Concept : Smart Coffee Maker

1조

200611460 김정태

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SA 단계에서 수정 사항

2

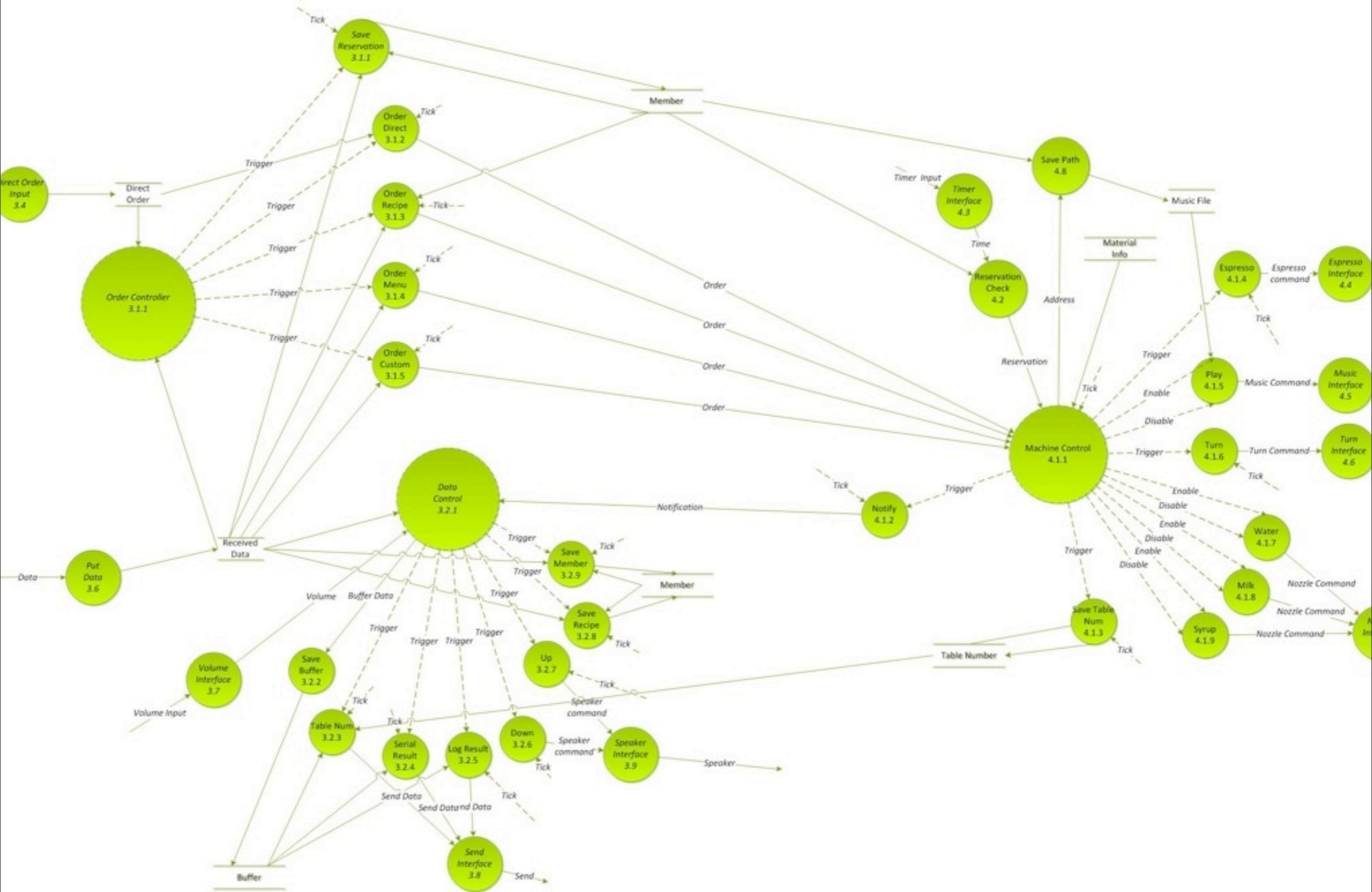
Structure chart - Remote Controller

3

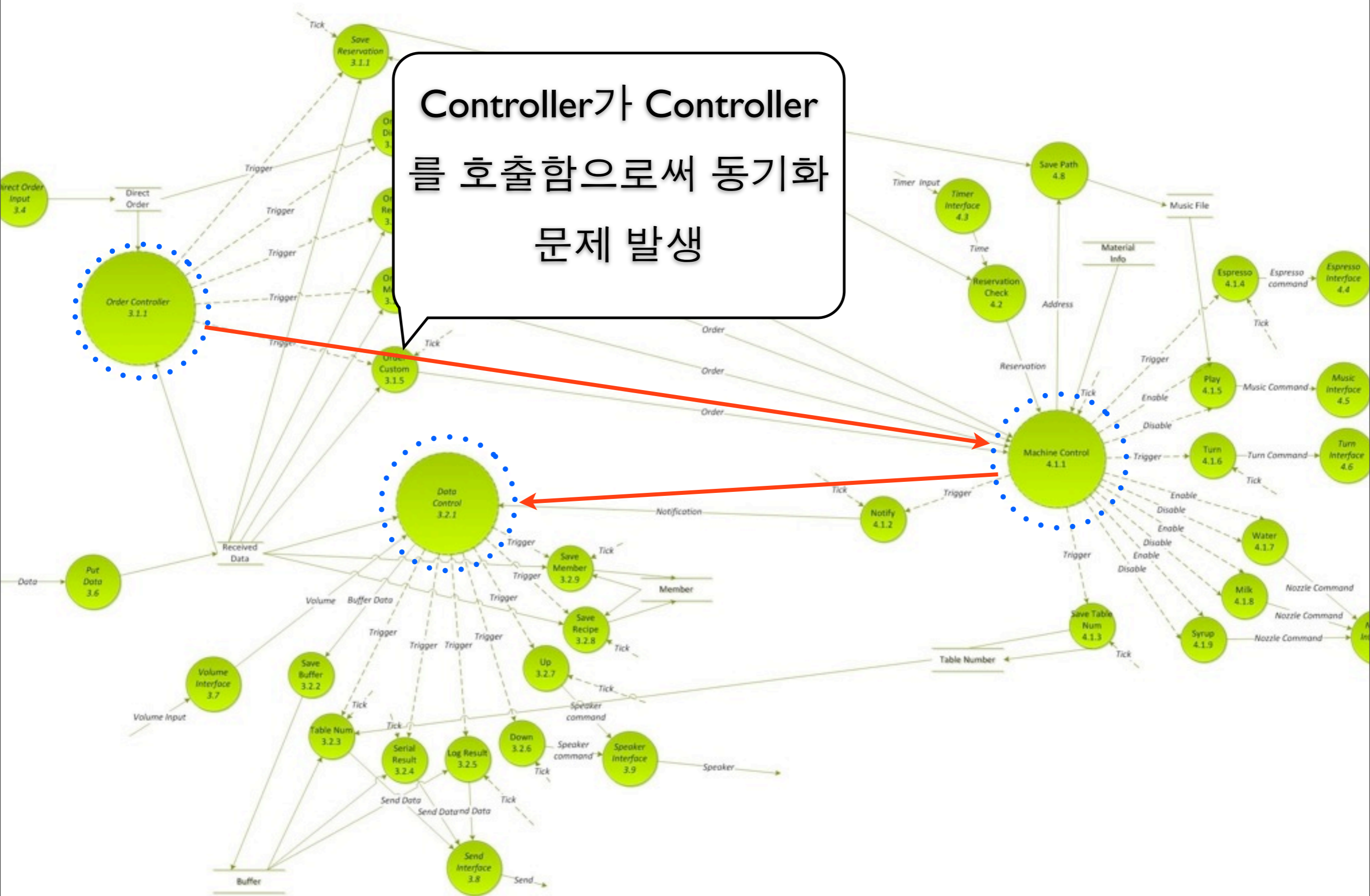
Structure chart - Coffee Maker

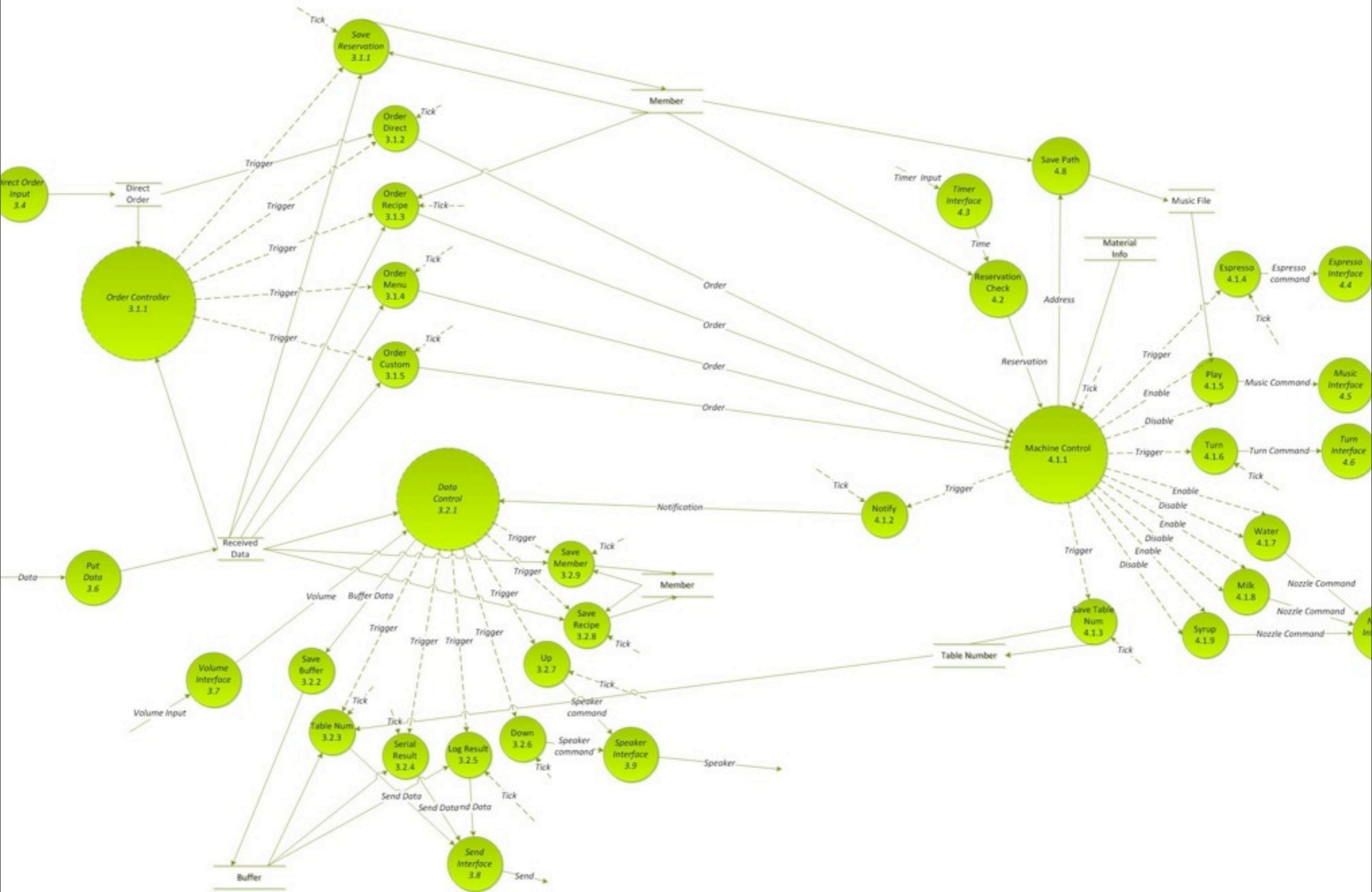
4

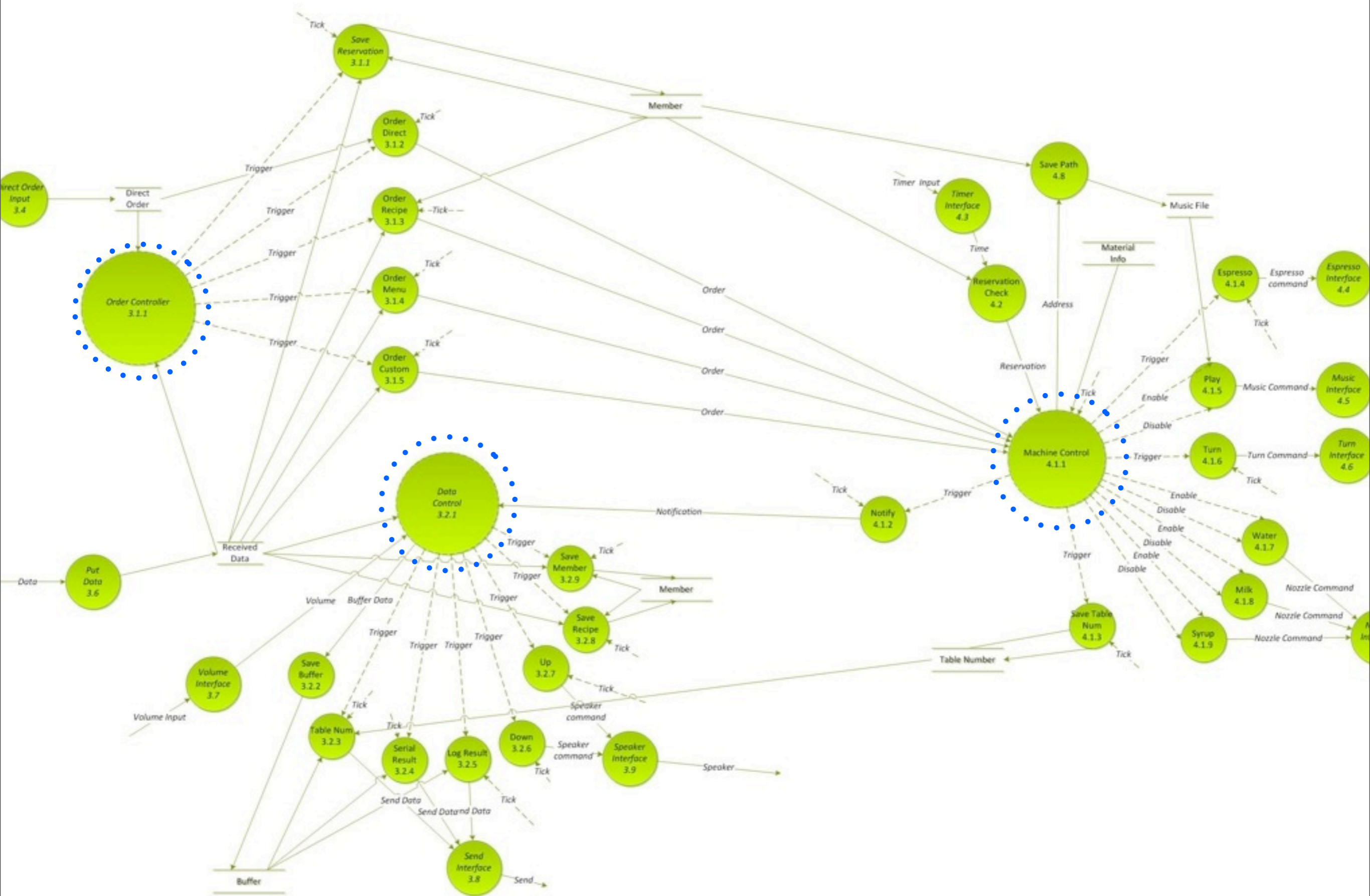
Pseudo code



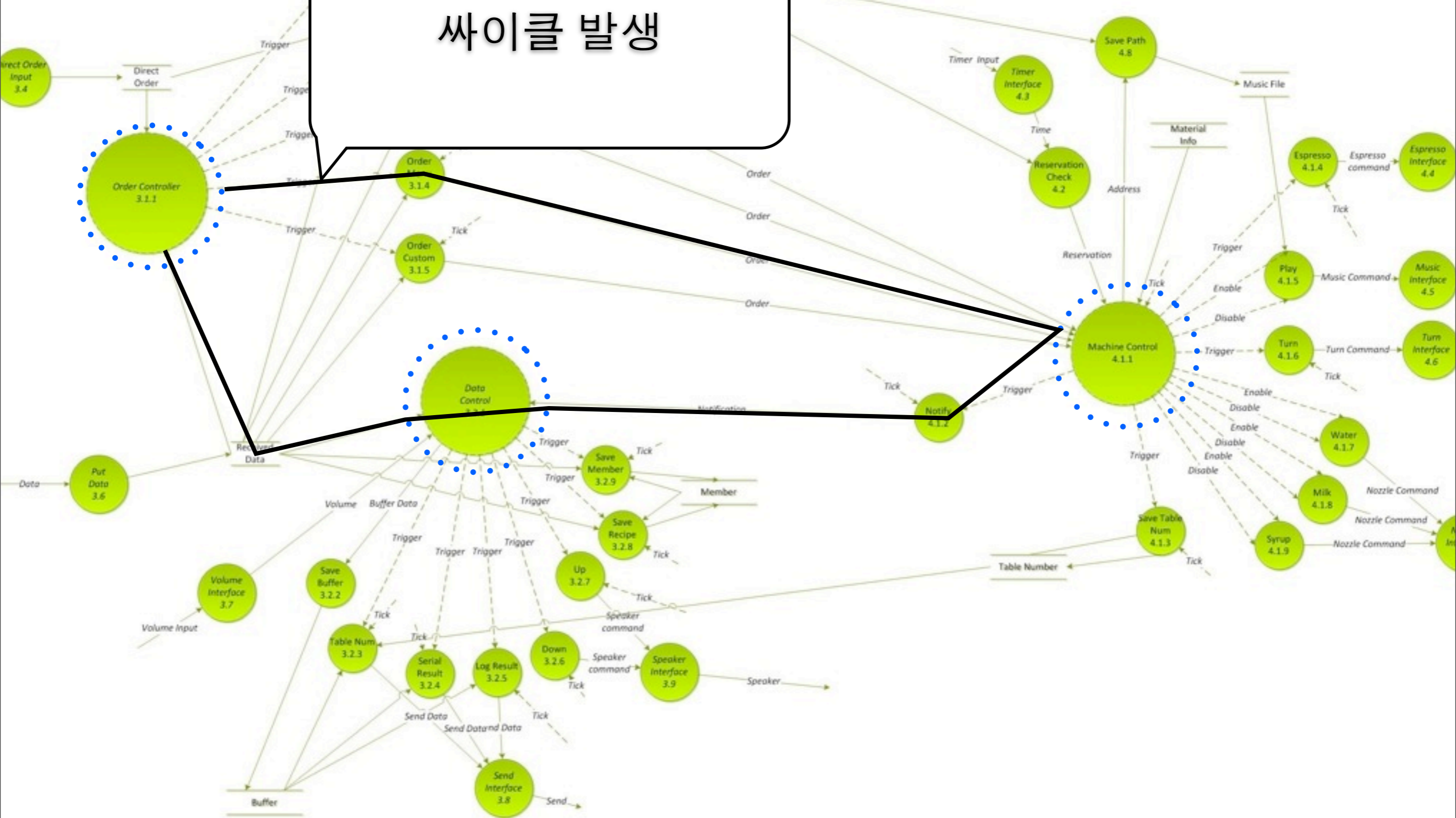
Controller가 Controller
를 호출함으로써 동기화
문제 발생



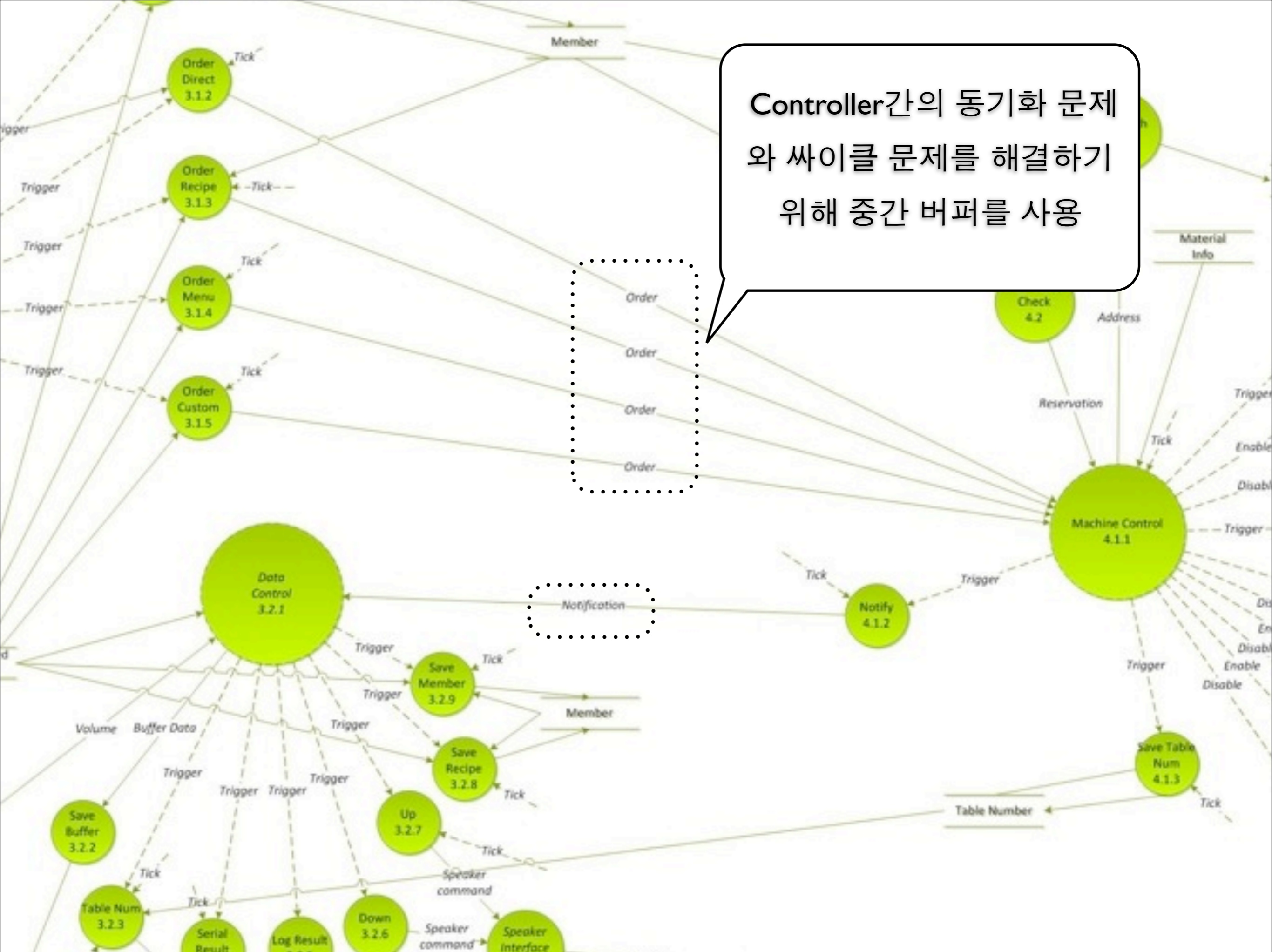


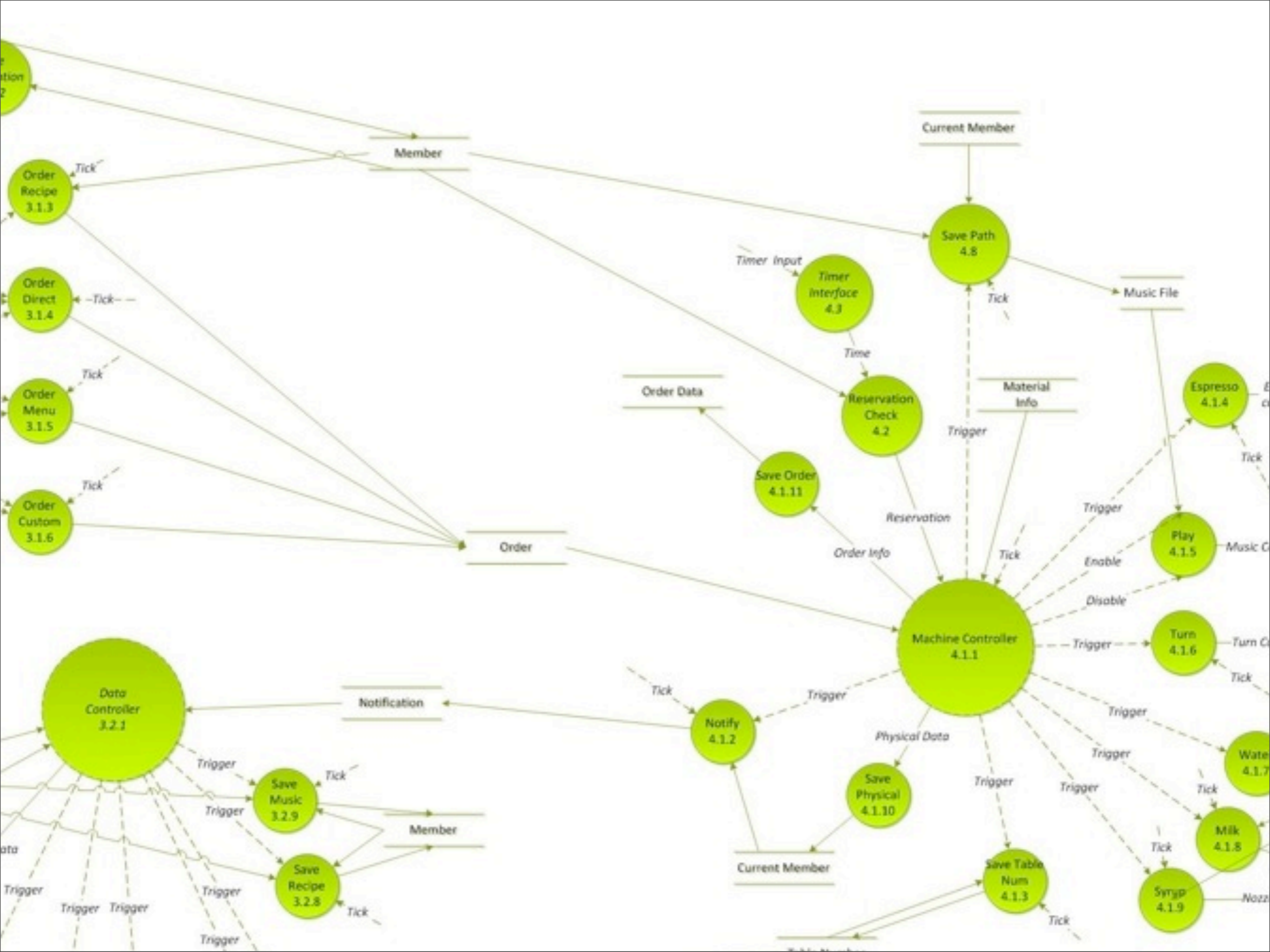


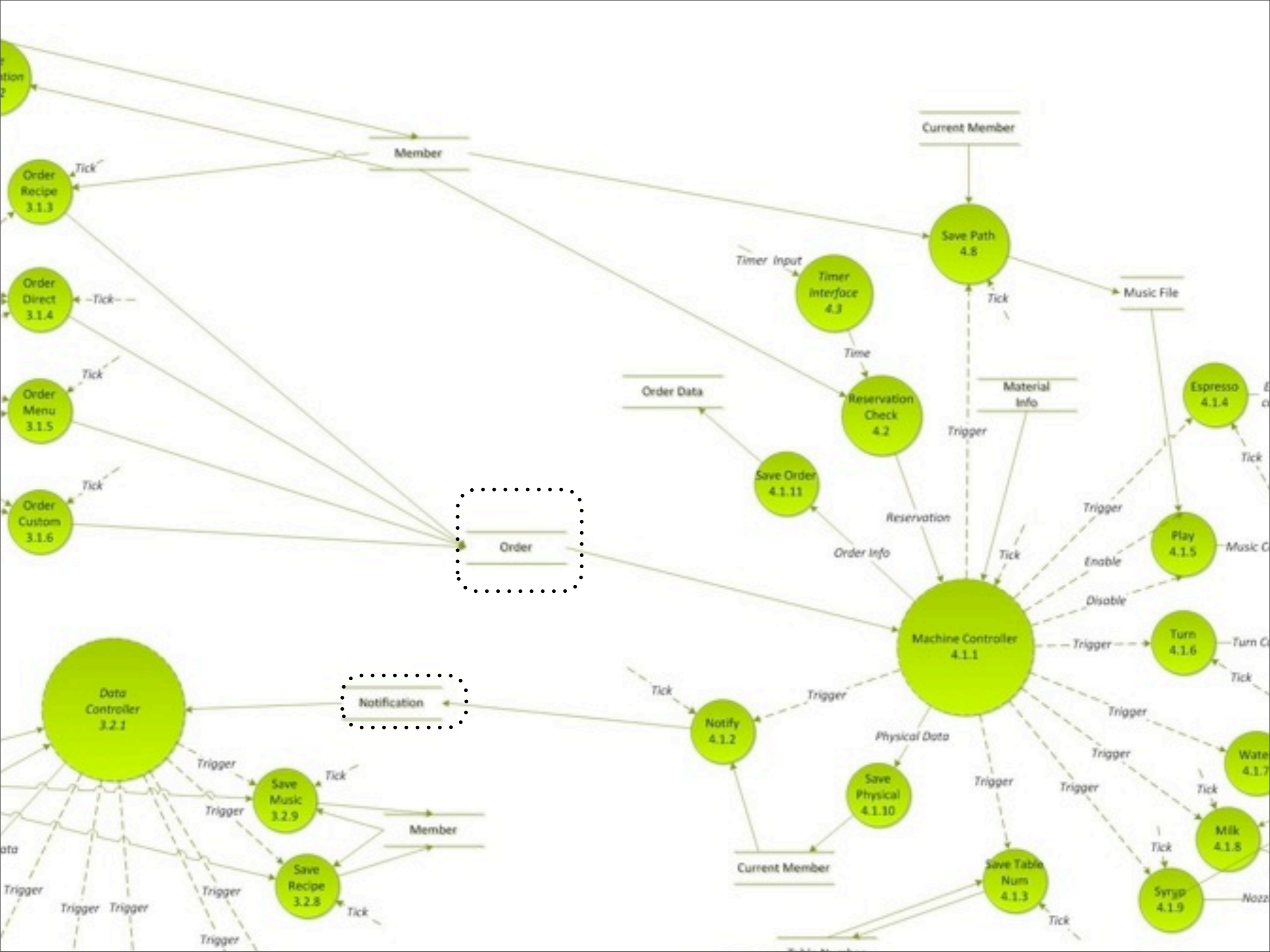
데이터 흐름간 사이클 발생

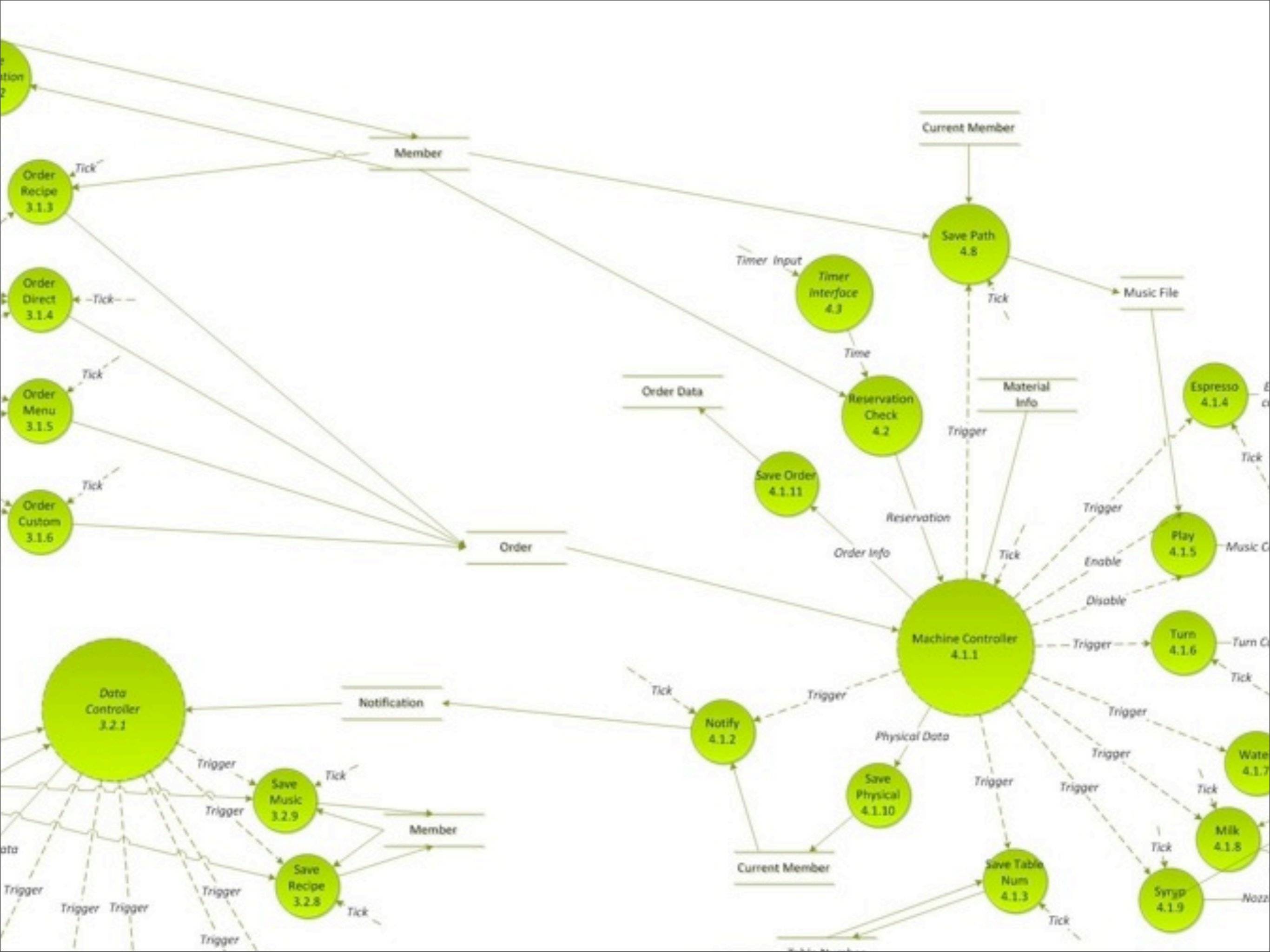


Controller간의 동기화 문제
와 사이클 문제를 해결하기
위해 중간 버퍼를 사용





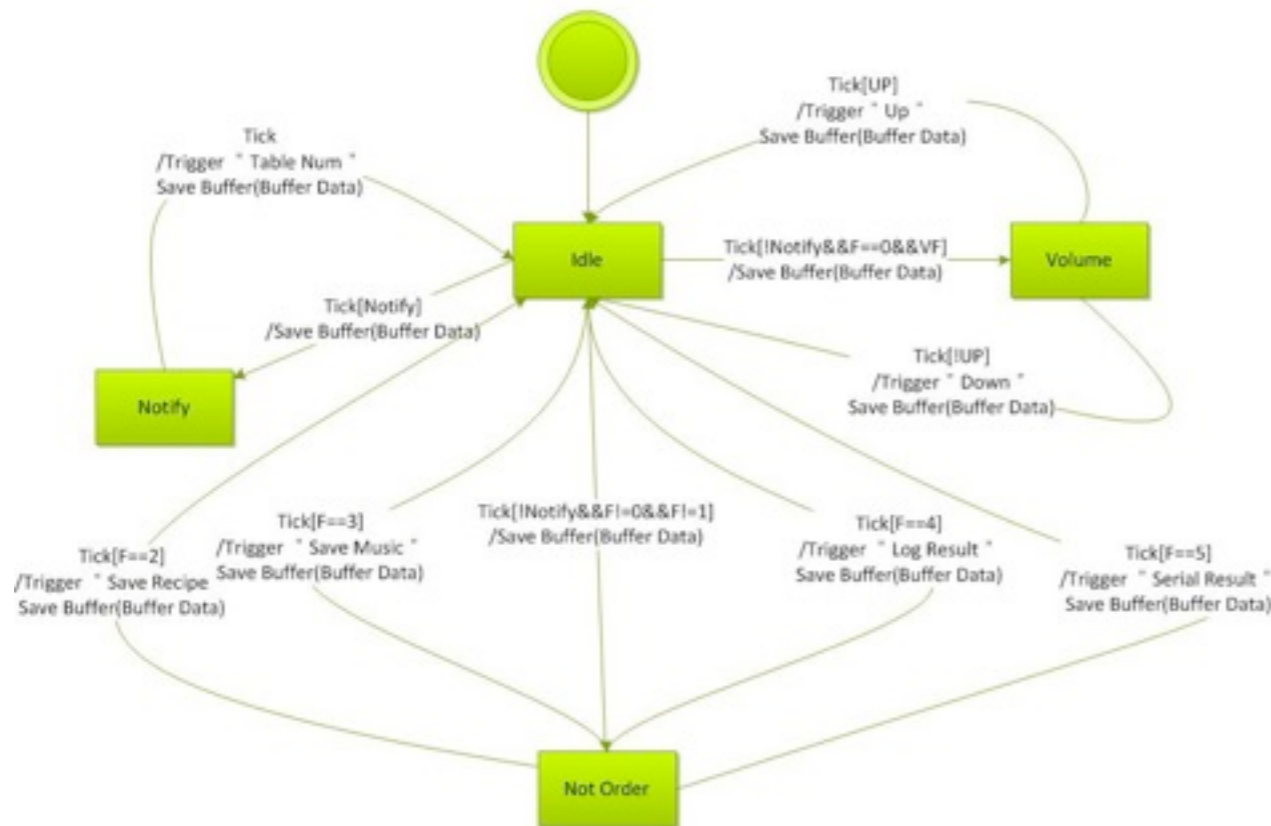




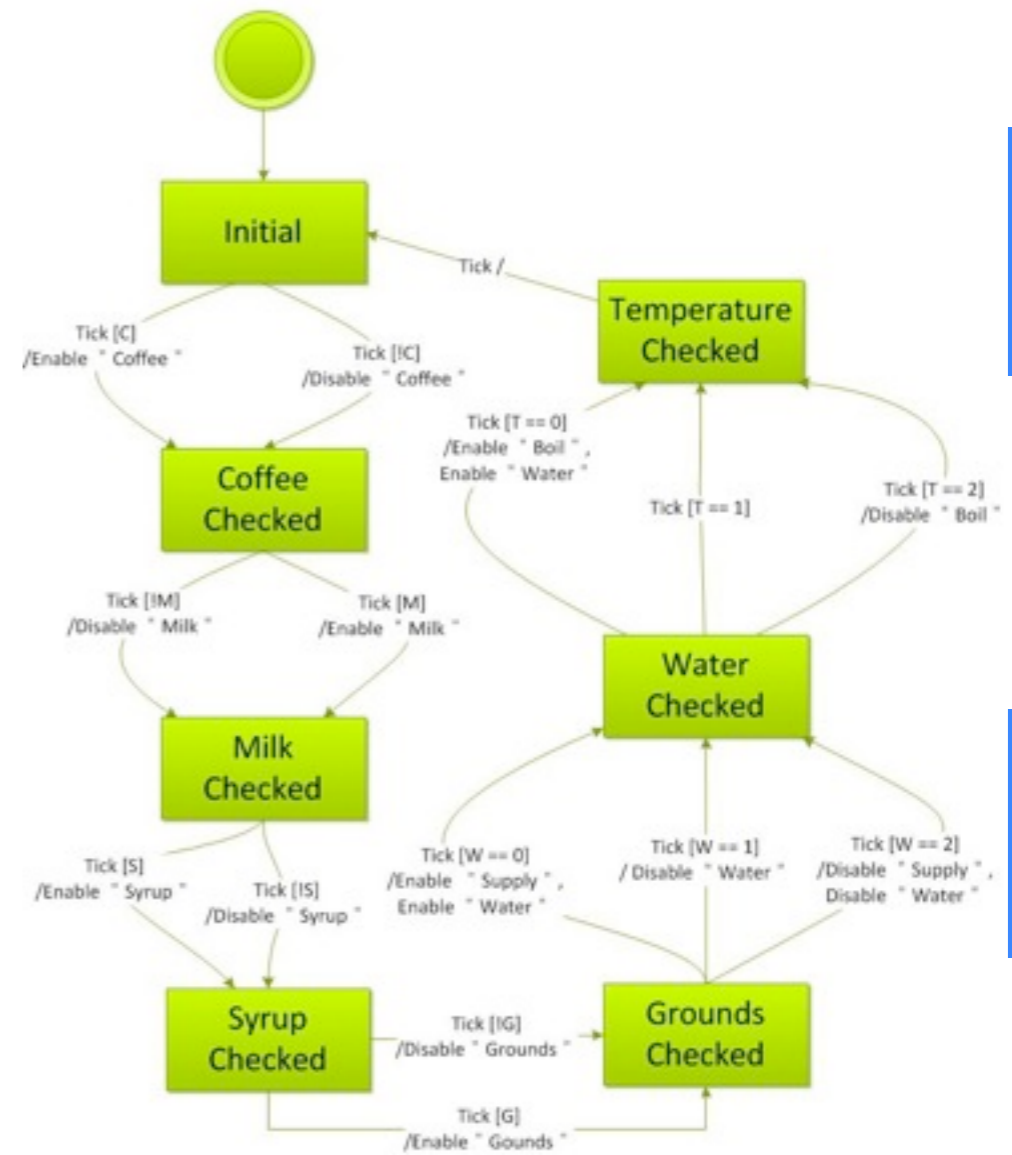
1

SA 단계에서 수정 사항

Data Controller 3.2.1



FSM
CoffeeMaker(Material)



2

3

4

1

SA 단계에서 수정 사항

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Structure chart - Remote Controller

3

Structure chart - Coffee Maker

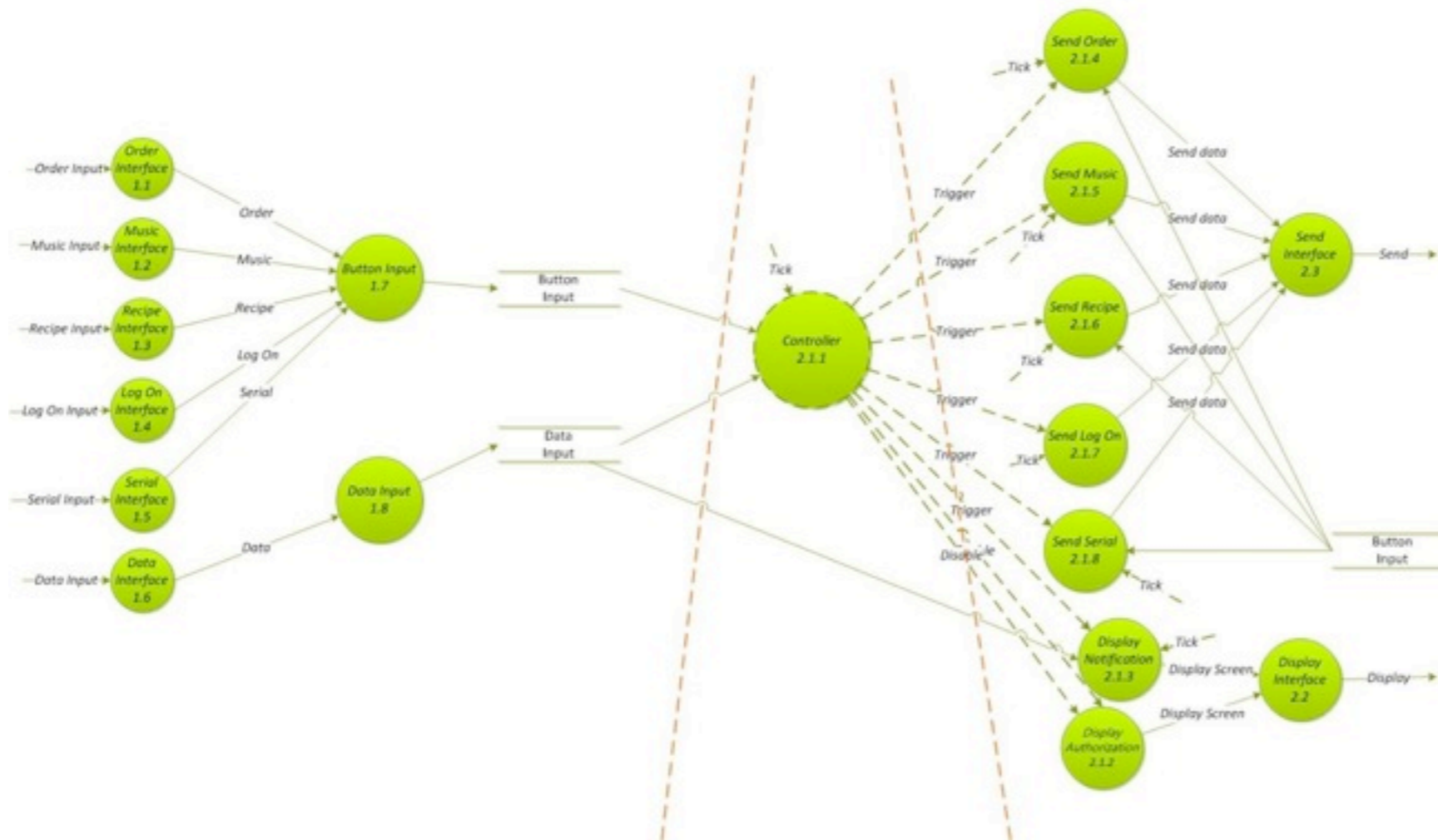
4

Pseudo code

2

Structure chart - Remote Controller

DFD Level 3
(Remote)

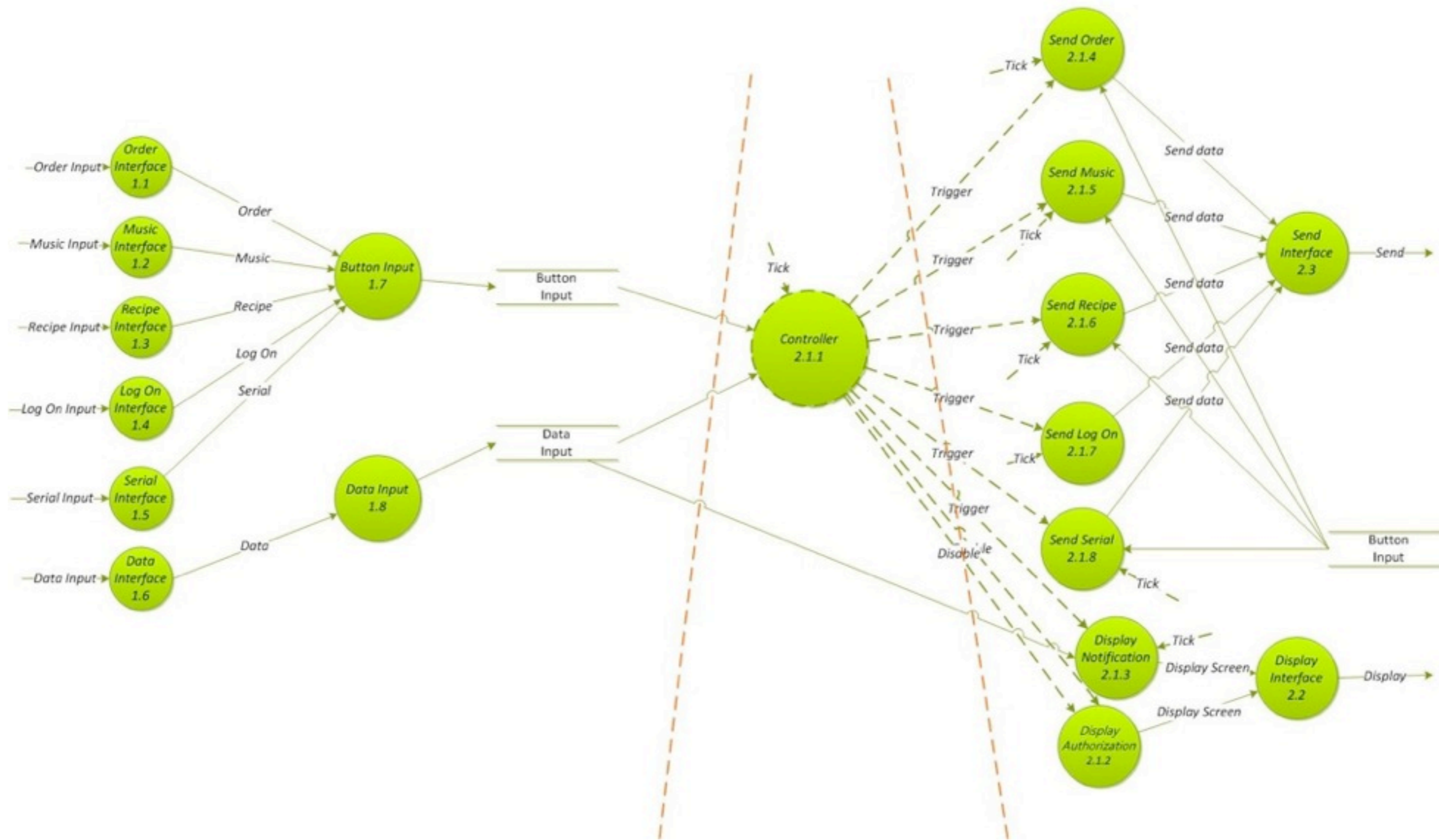


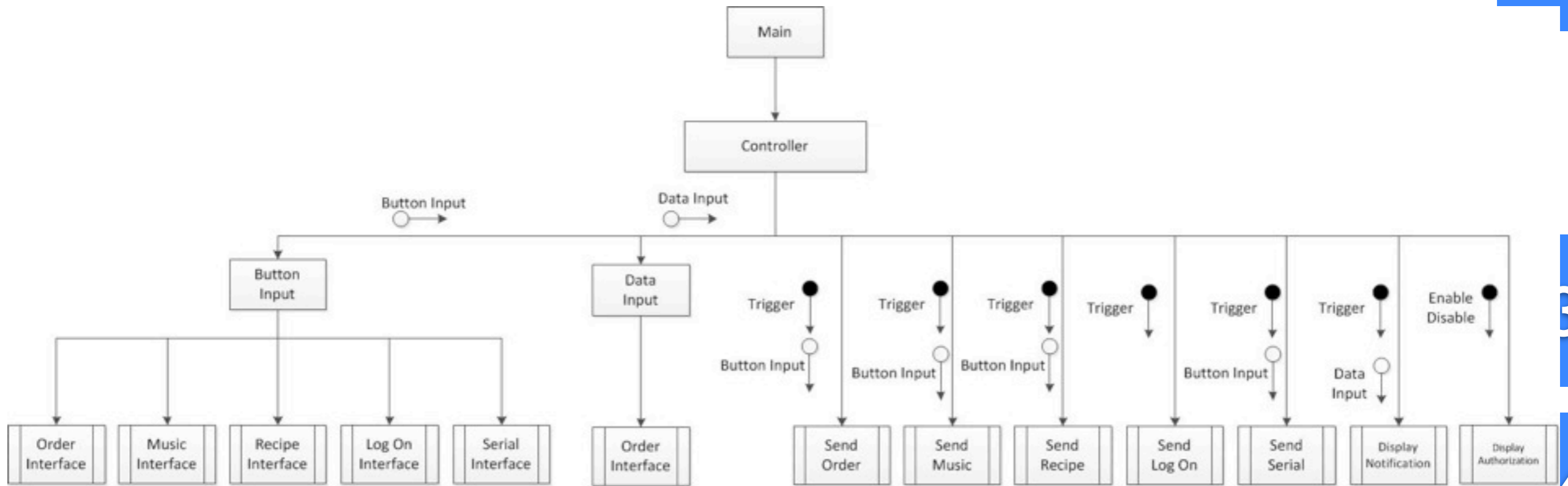
1

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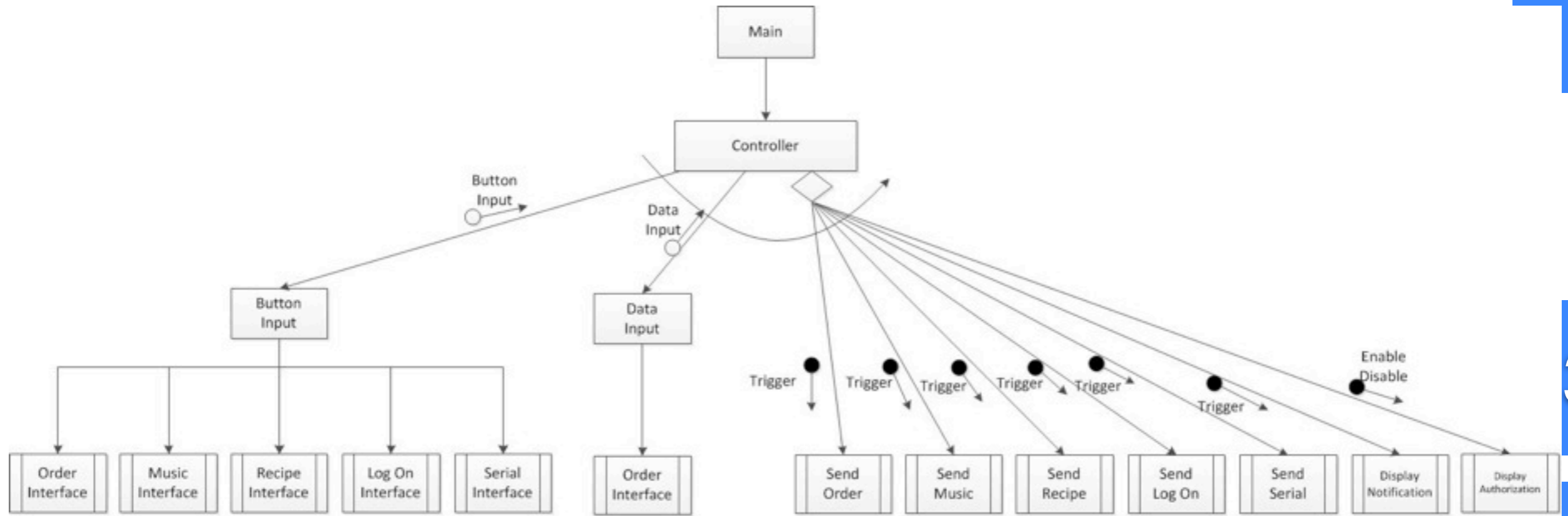
DFD Level 3 (Remote)





2

Structure chart - Remote Controller(Advance)



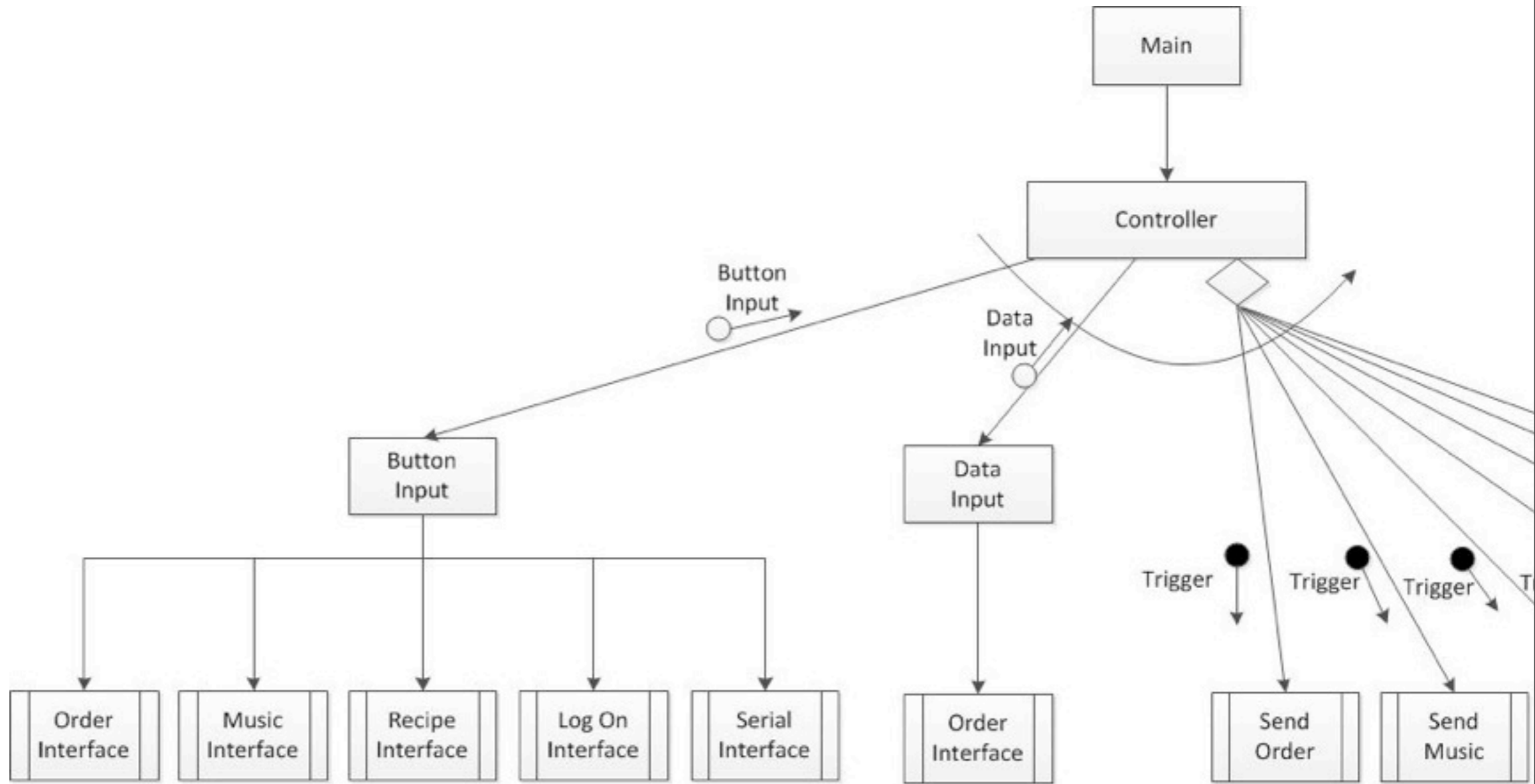
1

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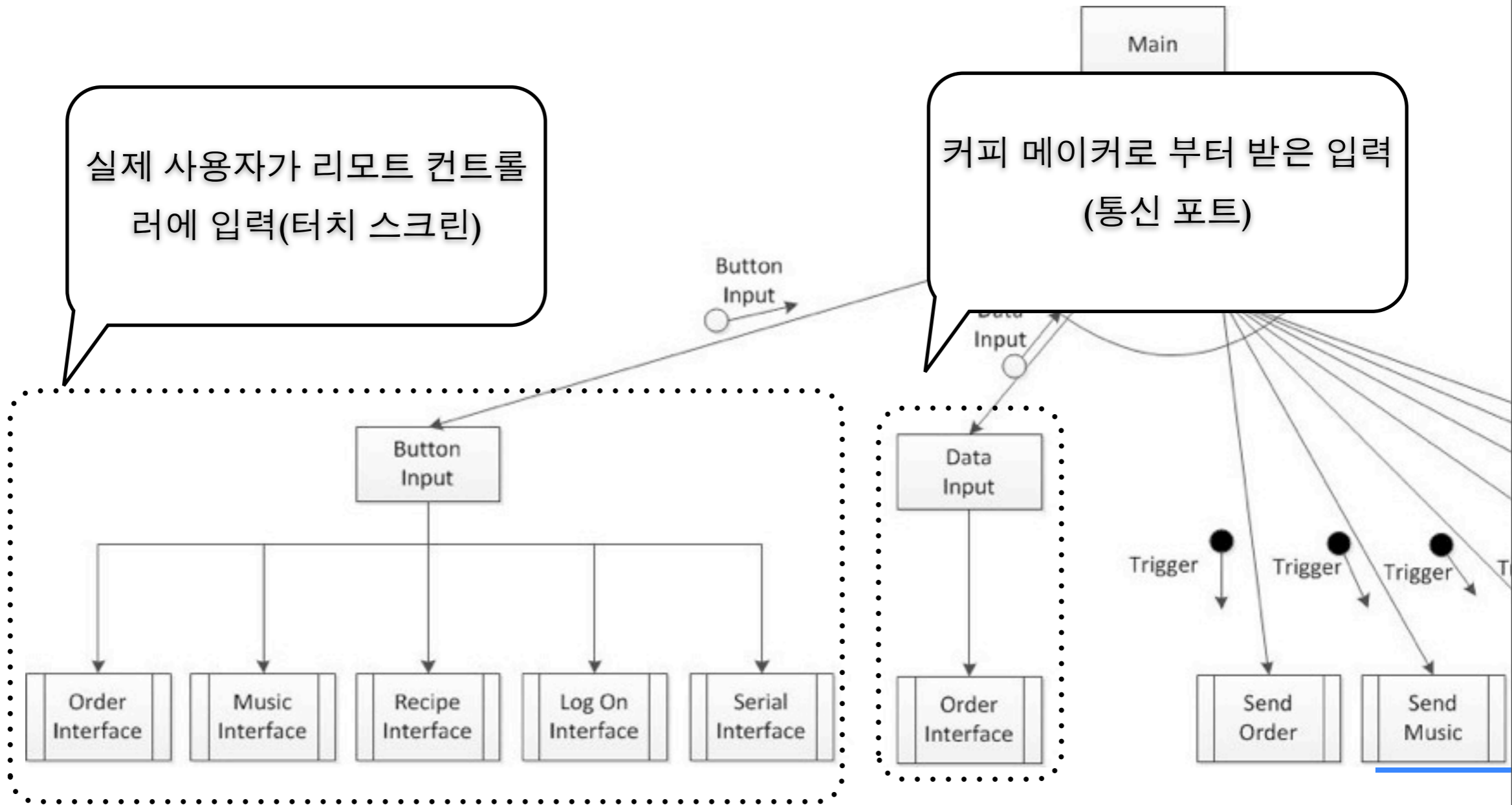
2

Structure chart - Remote Controller(Advance)



2

Structure chart - Remote Controller(Advance)



실제 사용자가 리모트 컨트롤러에 입력(터치 스크린)

커피 메이커로 부터 받은 입력 (통신 포트)

Button Input

Data Input

Button Input

Data Input

Order Interface

Music Interface

Recipe Interface

Log On Interface

Serial Interface

Order Interface

Trigger

Trigger

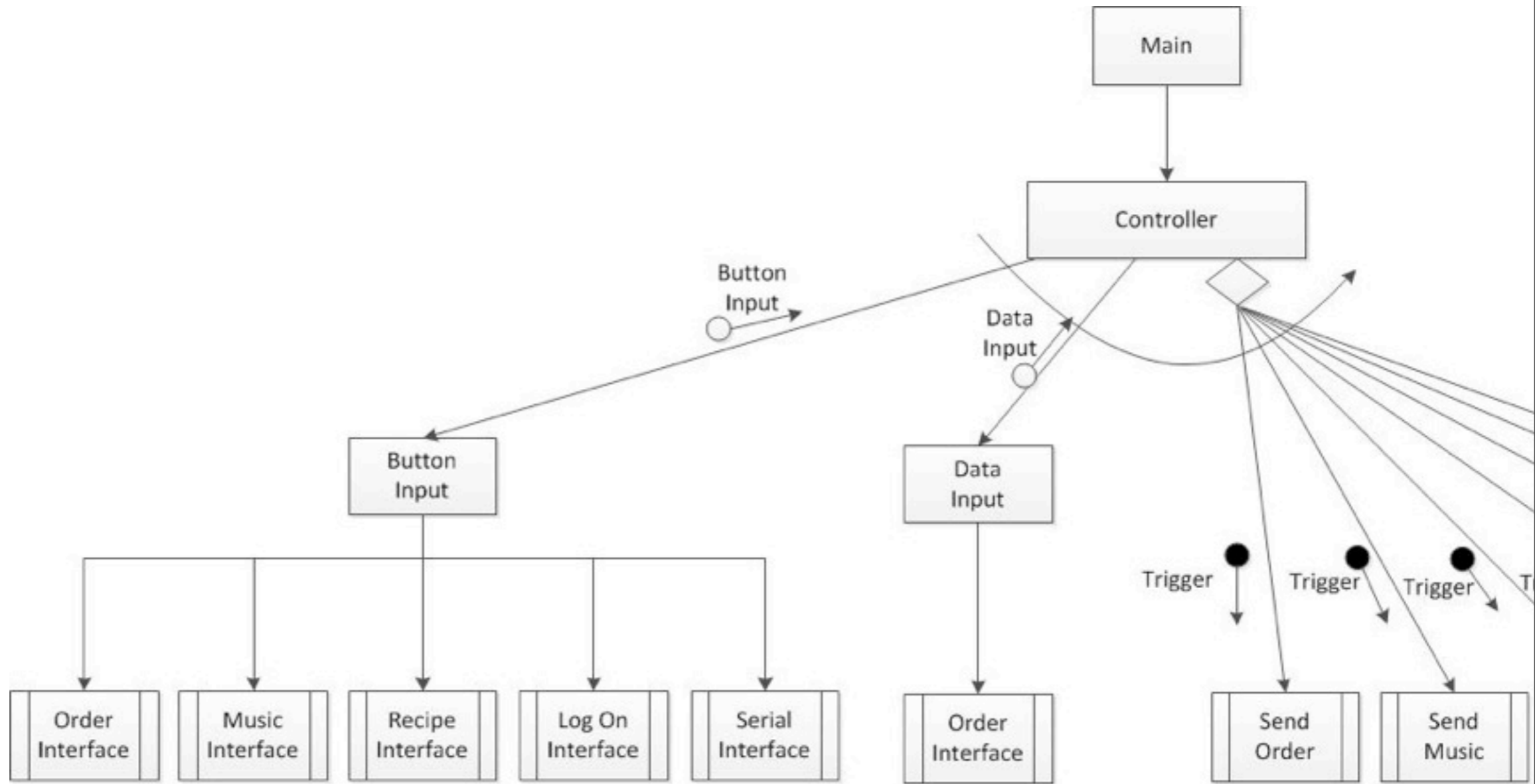
Trigger

Send Order

Send Music

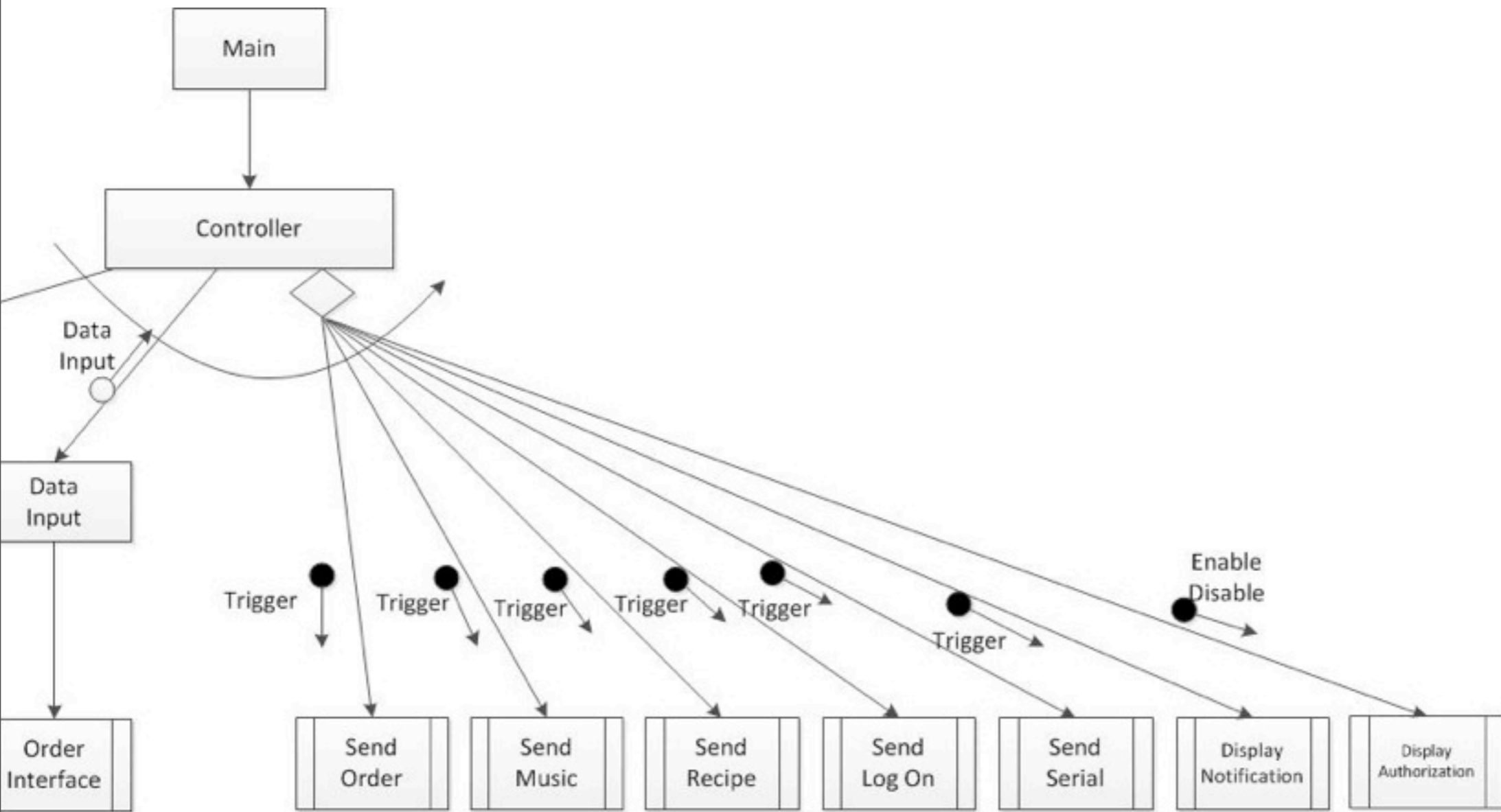
2

Structure chart - Remote Controller(Advance)



2

Structure chart - Remote Controller(Advance)



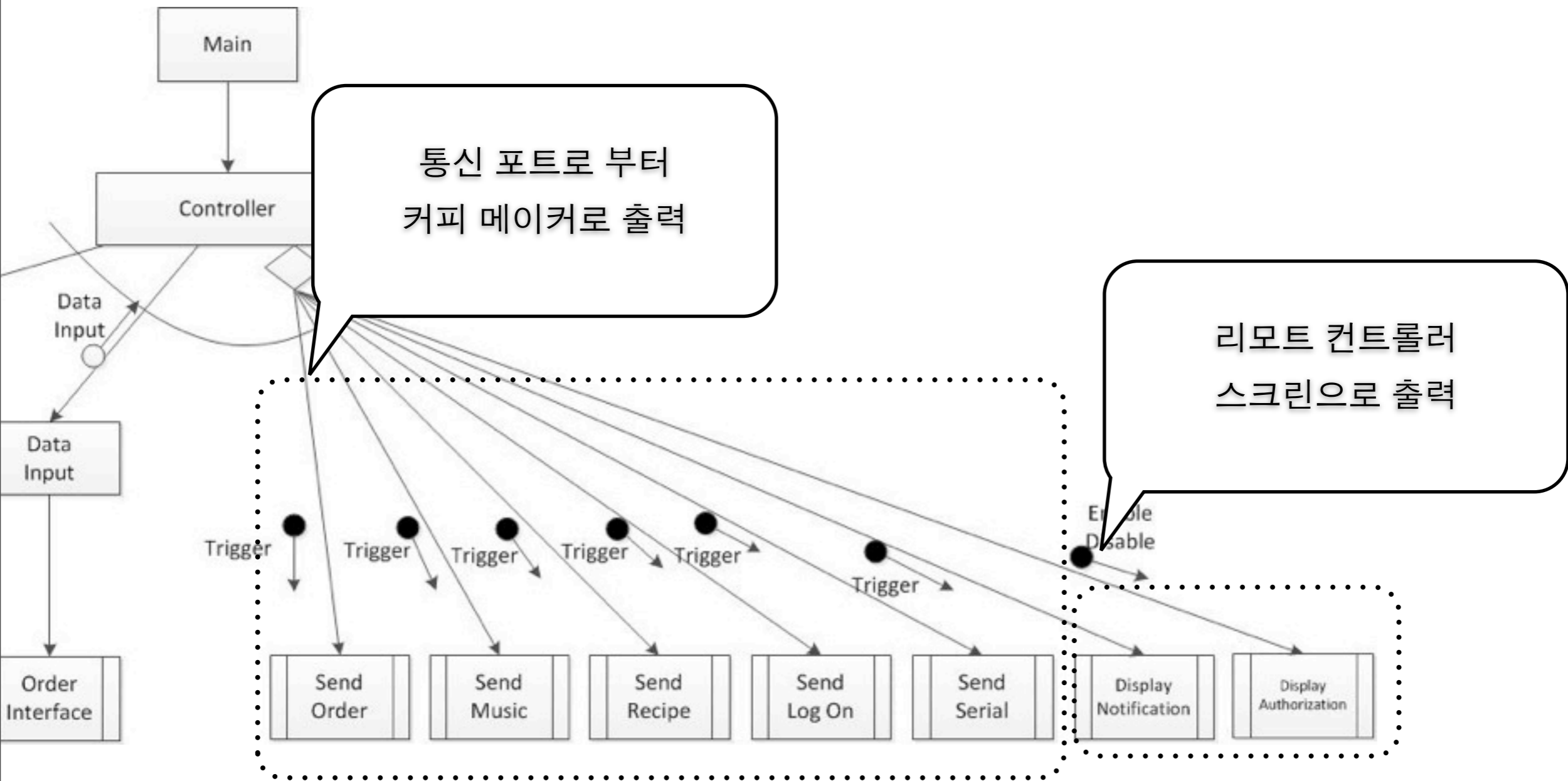
1

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4

2

Structure chart - Remote Controller(Advance)



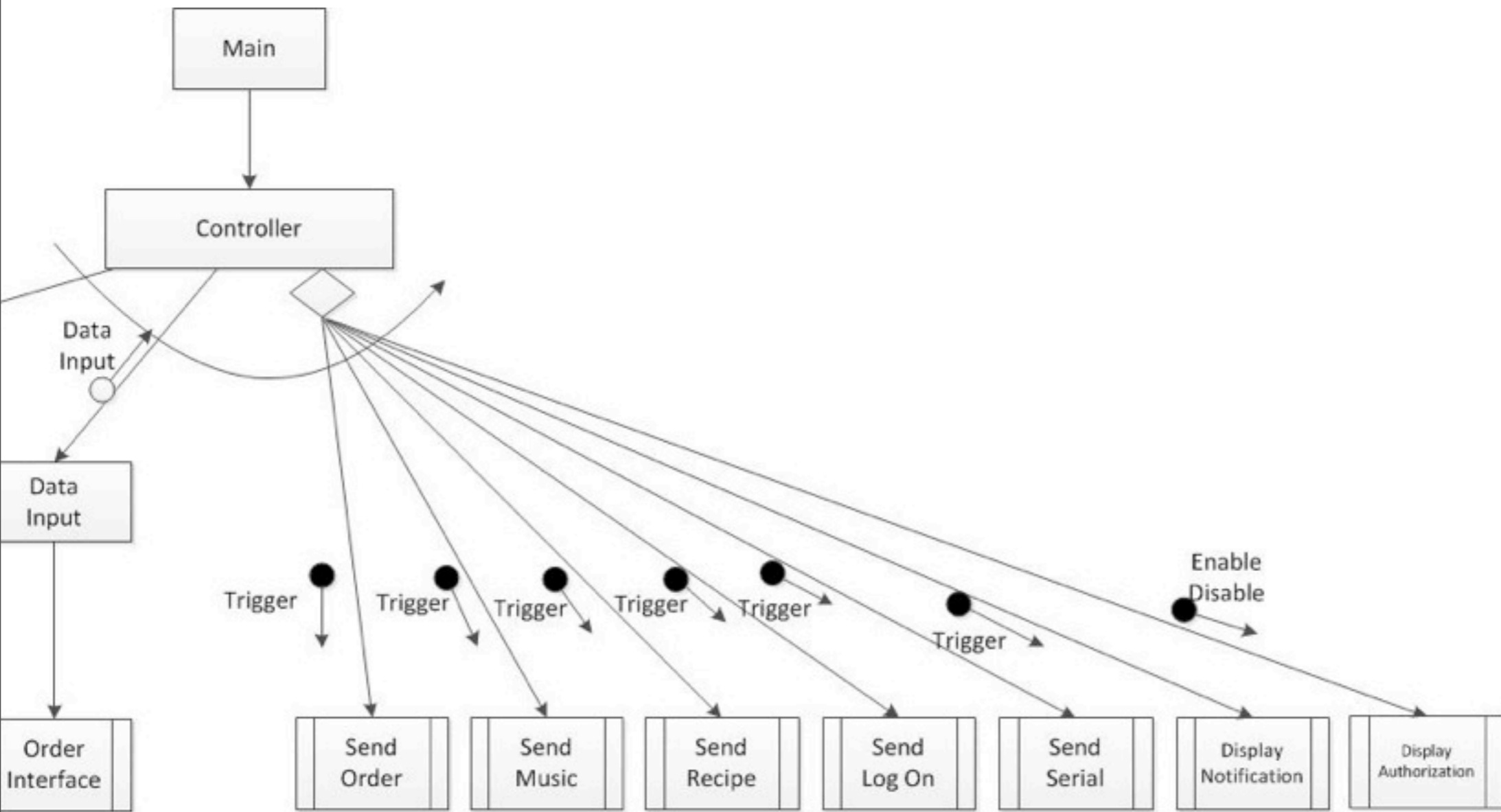
1

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4

2

Structure chart - Remote Controller(Advance)



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1

SA 단계에서 수정 사항

2

Structure chart - Remote Controller

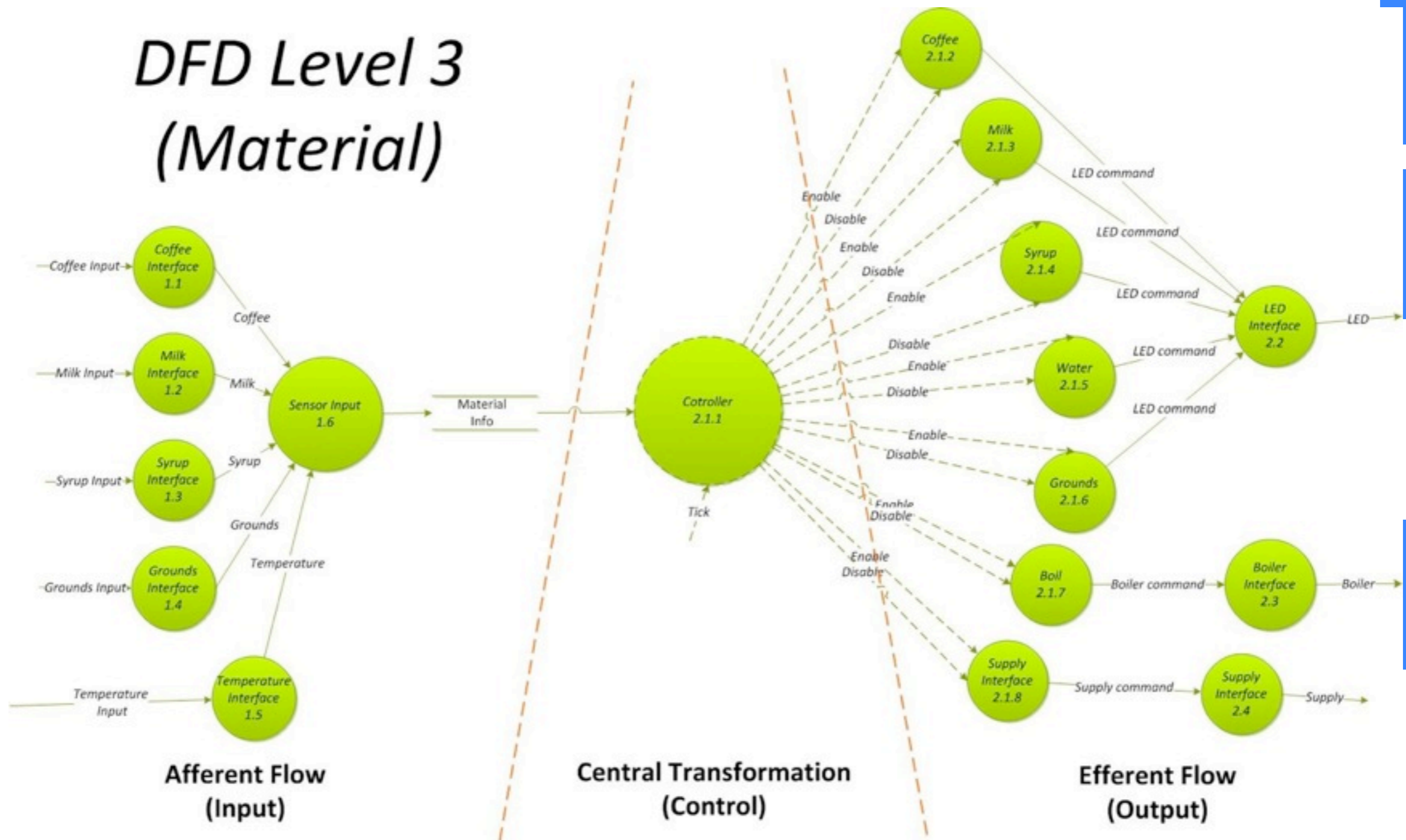
3

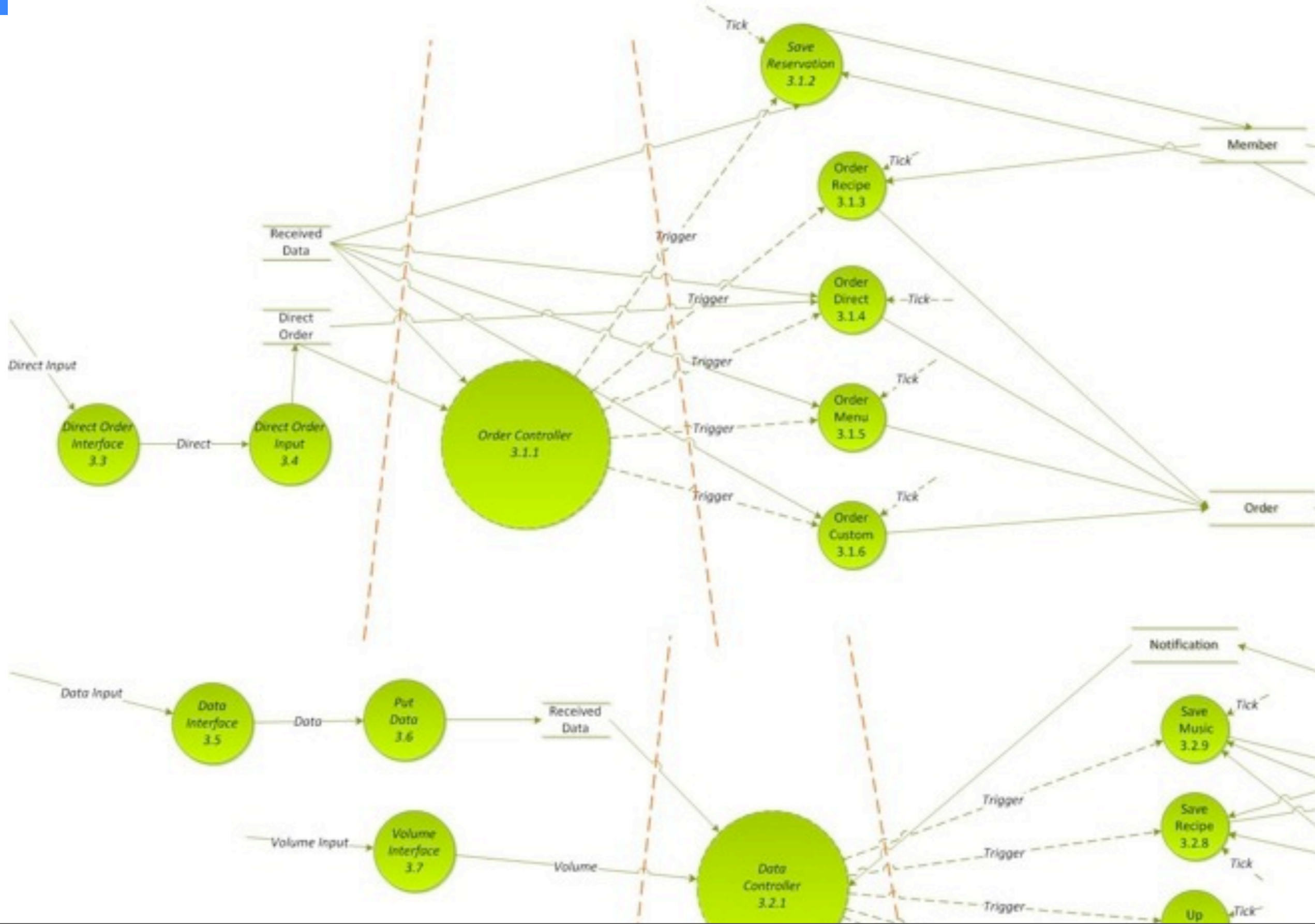
Structure chart - Coffee Maker

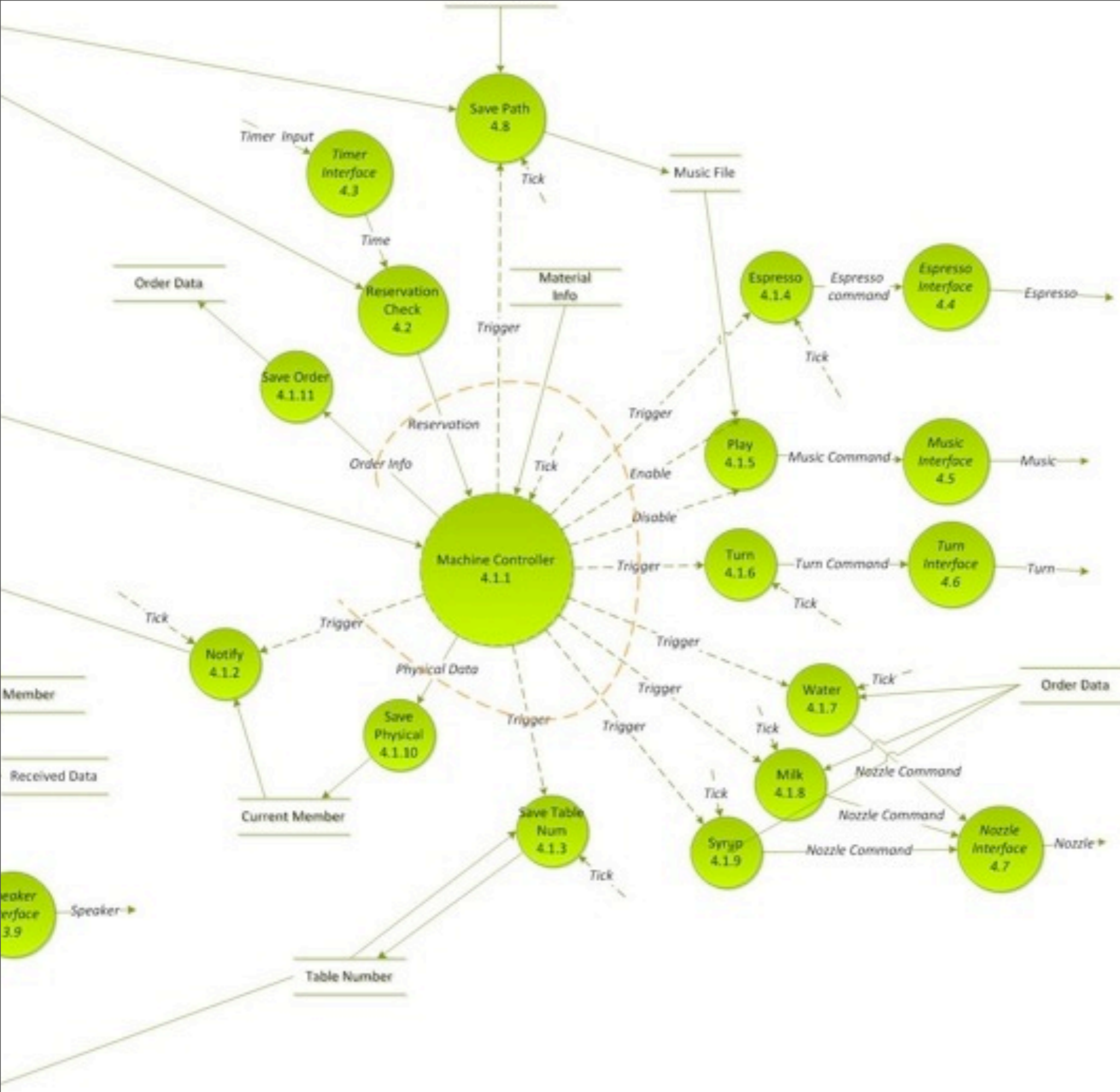
4

Pseudo code

DFD Level 3 (Material)



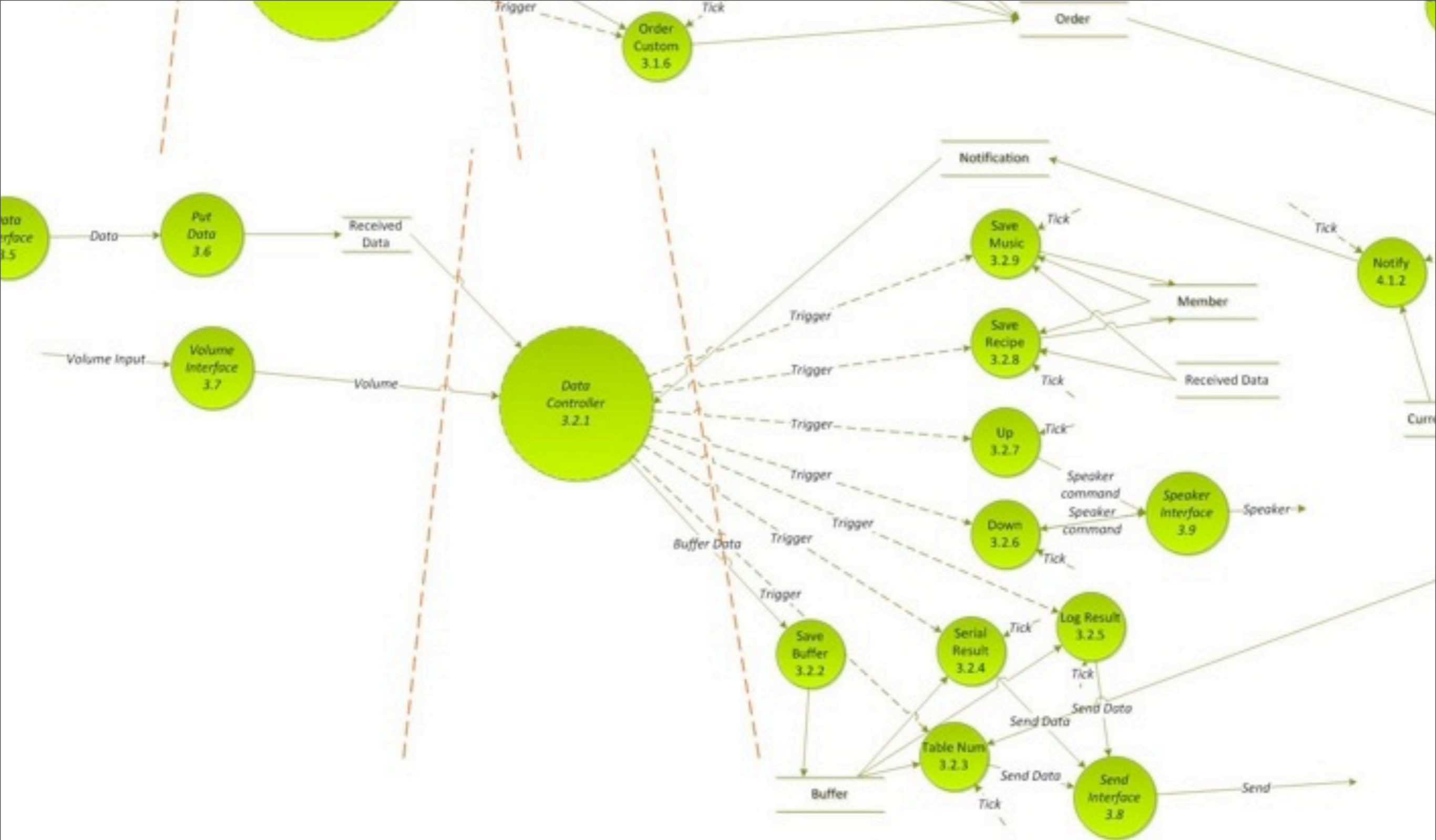




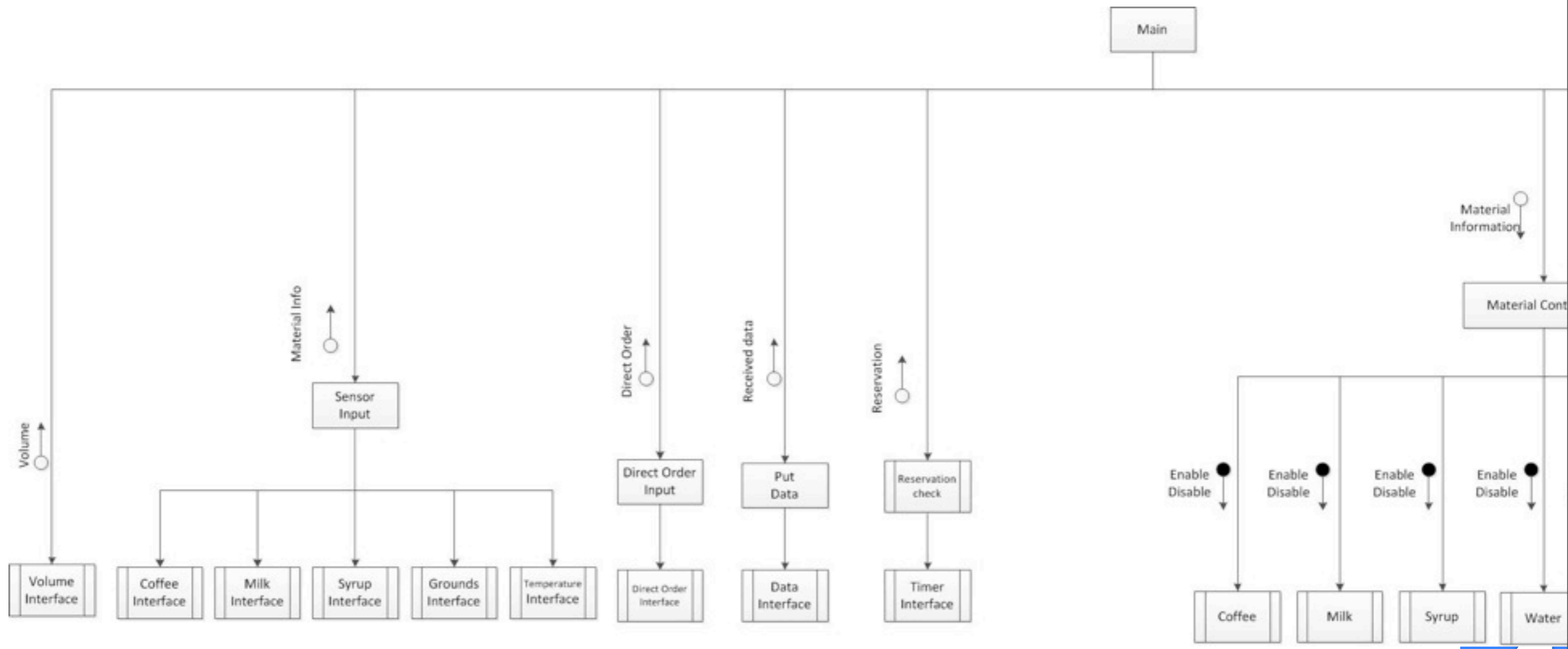
1

2

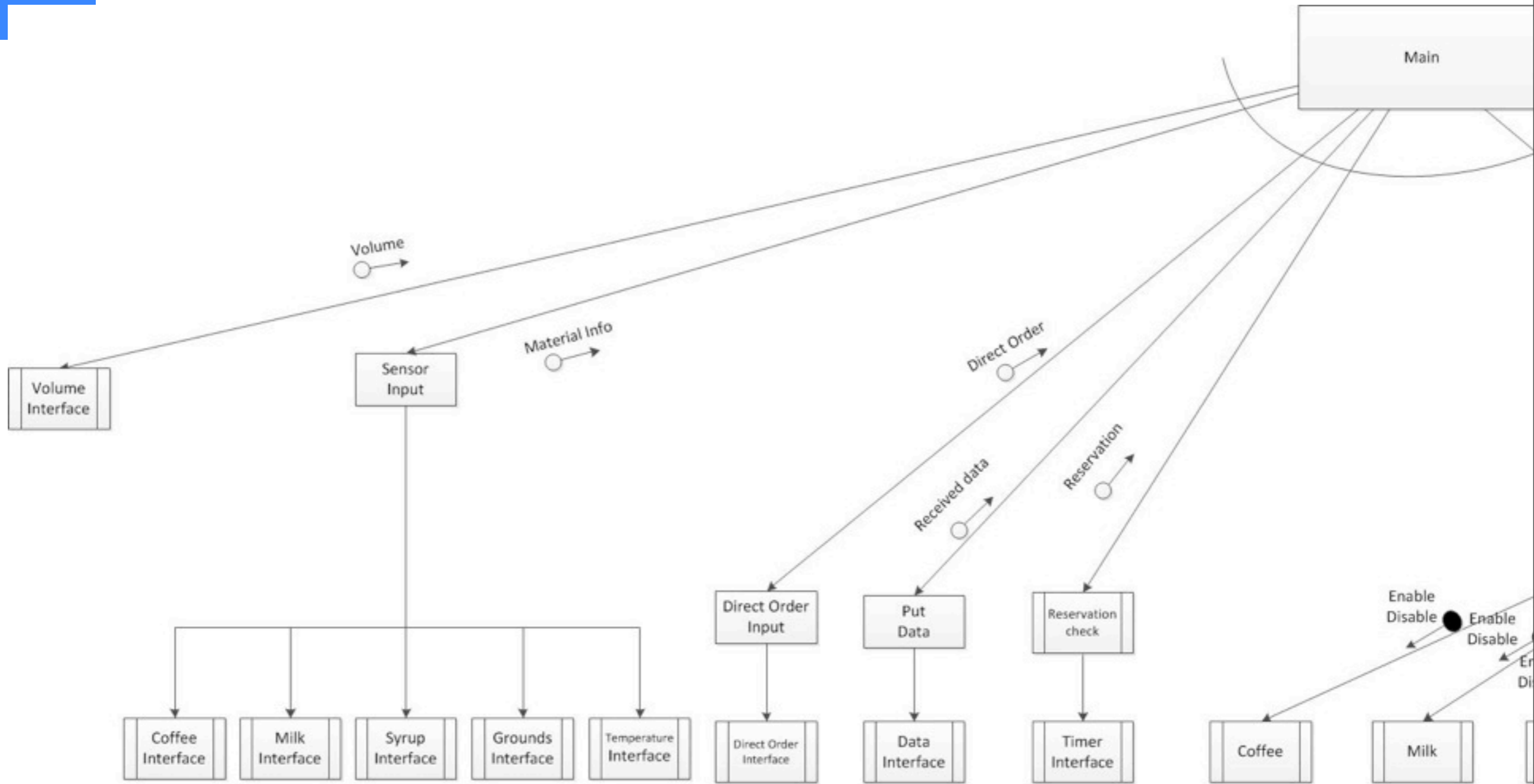
4



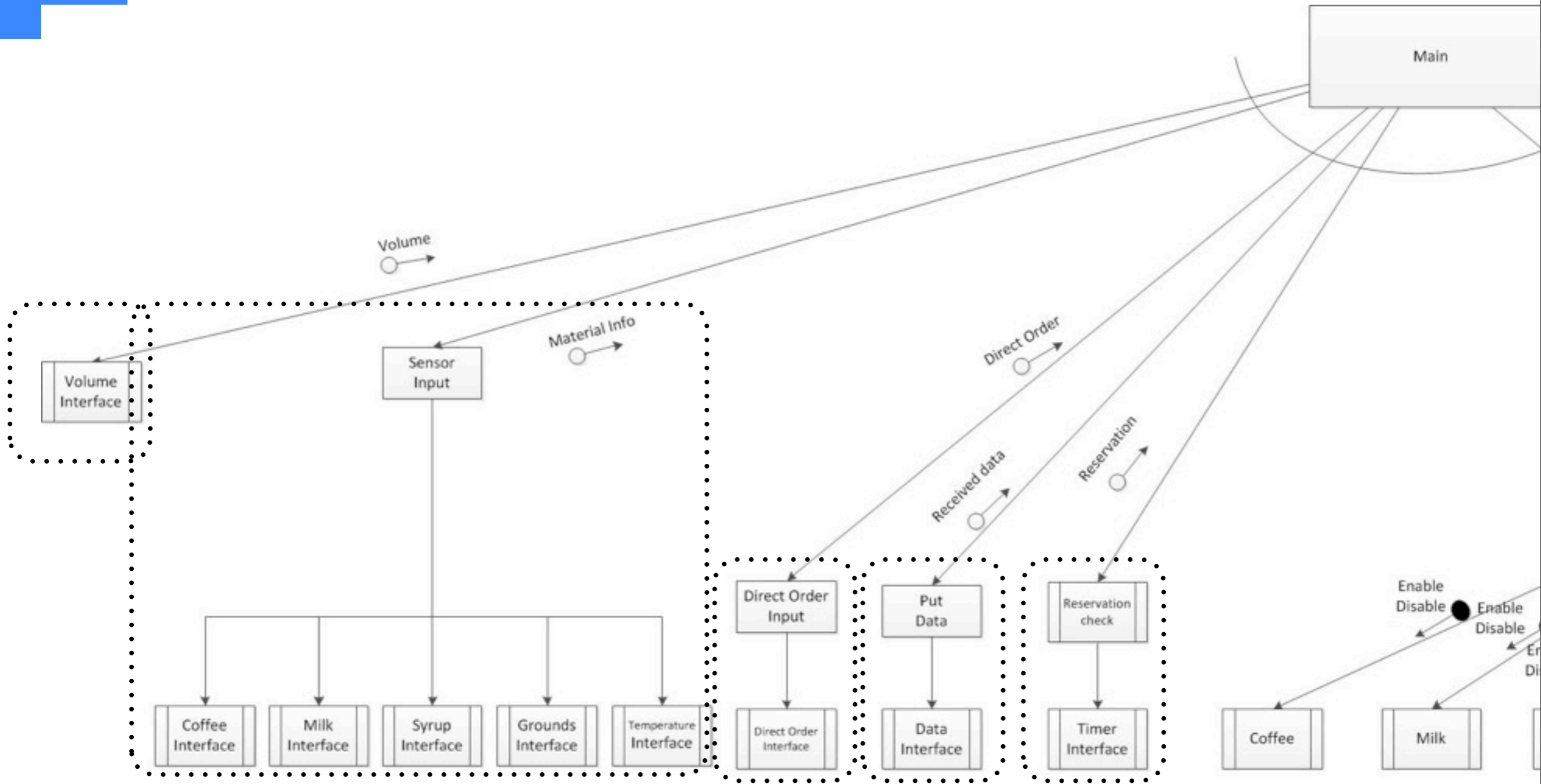
3 Structure chart - Coffee Maker(Basic)



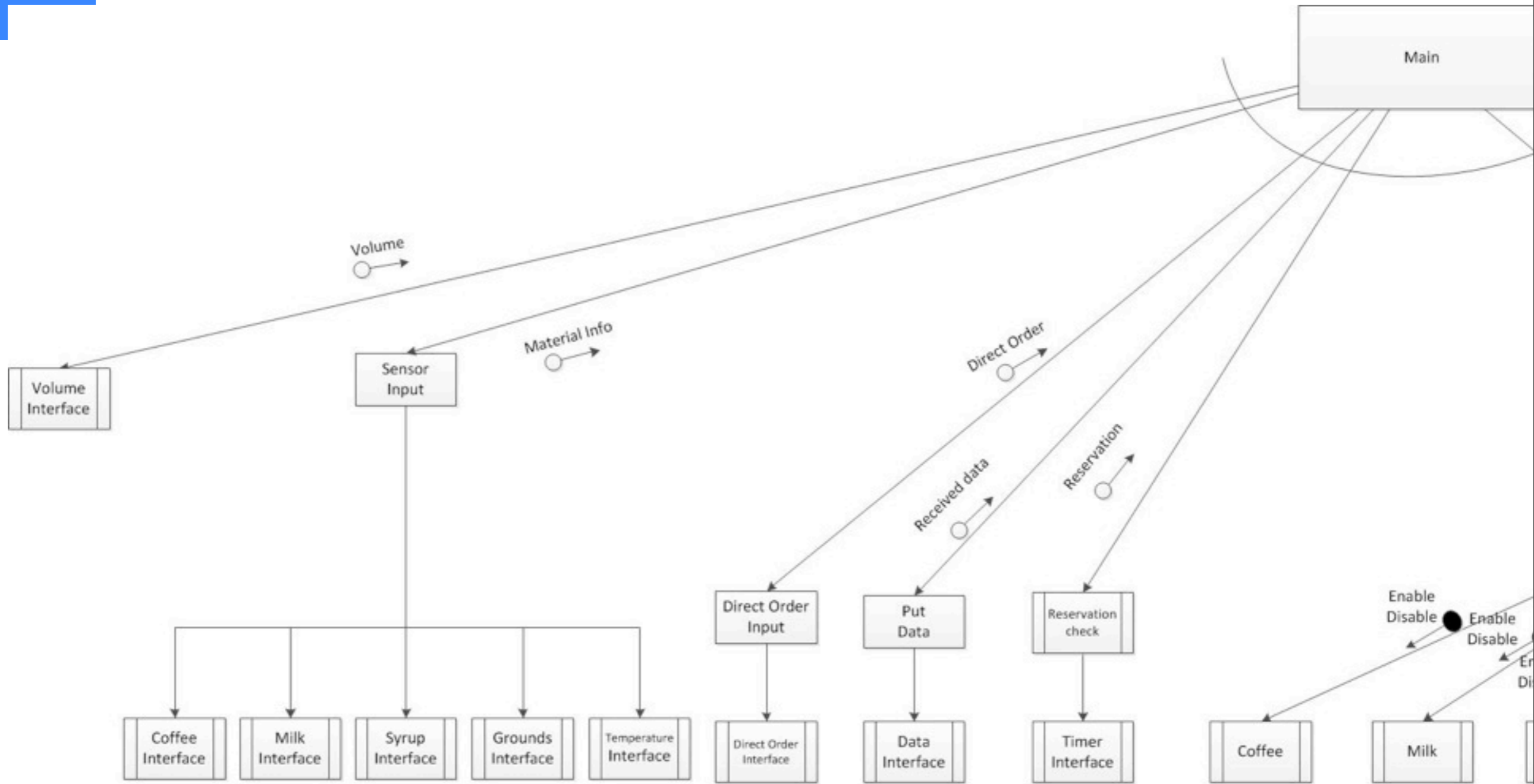
3 Structure chart - Coffee Maker(Advance)



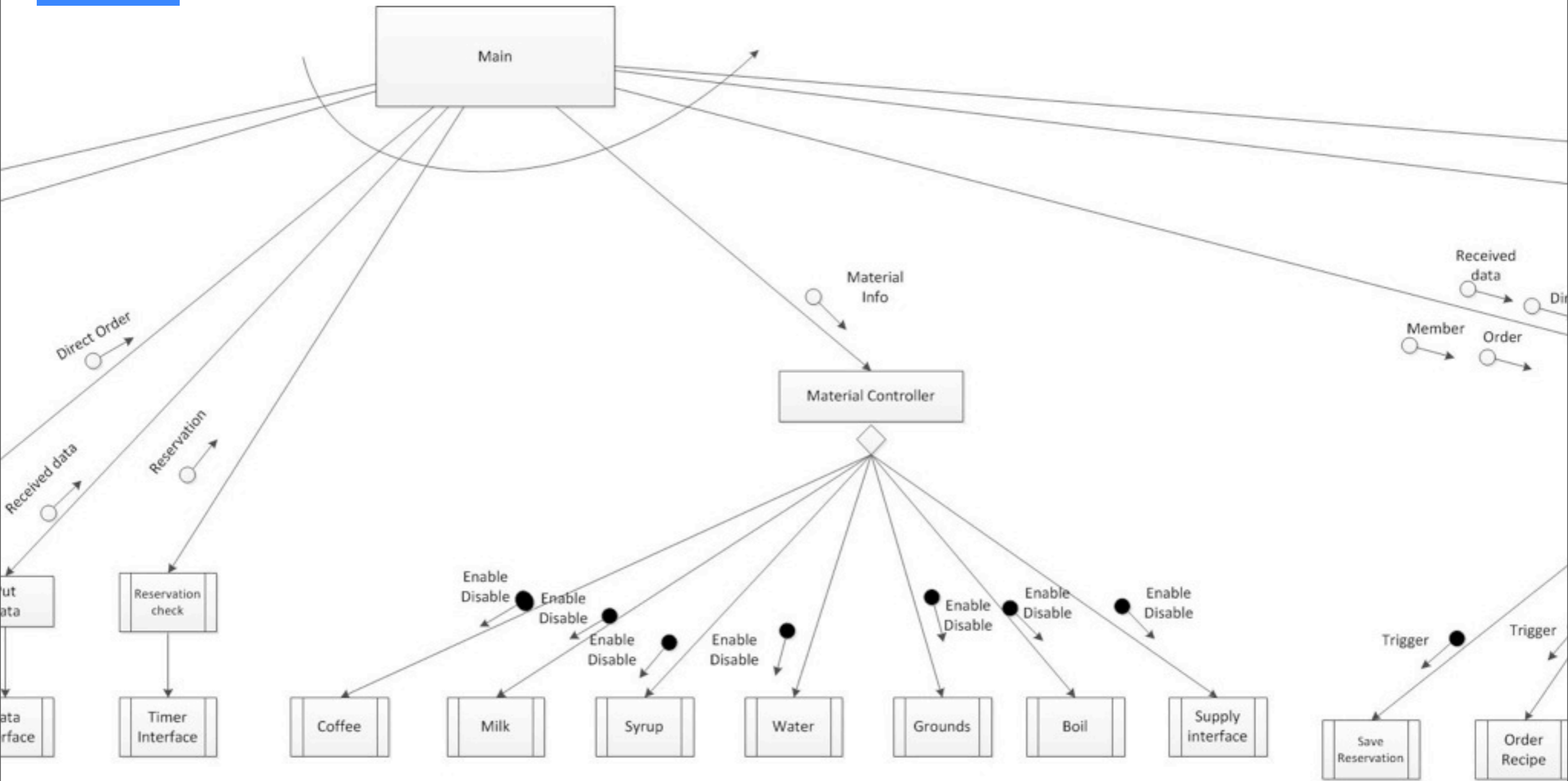
3 Structure chart - Coffee Maker(Advance)



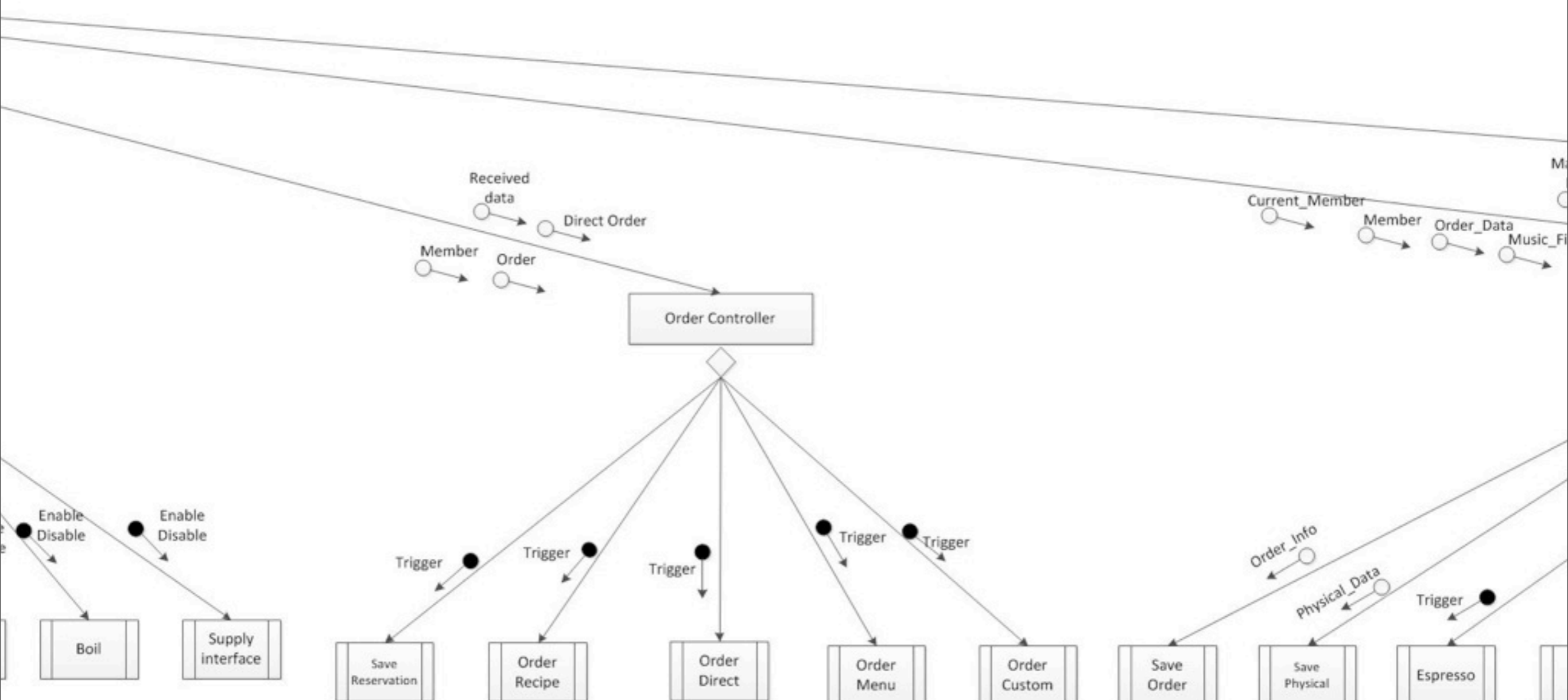
3 Structure chart - Coffee Maker(Advance)



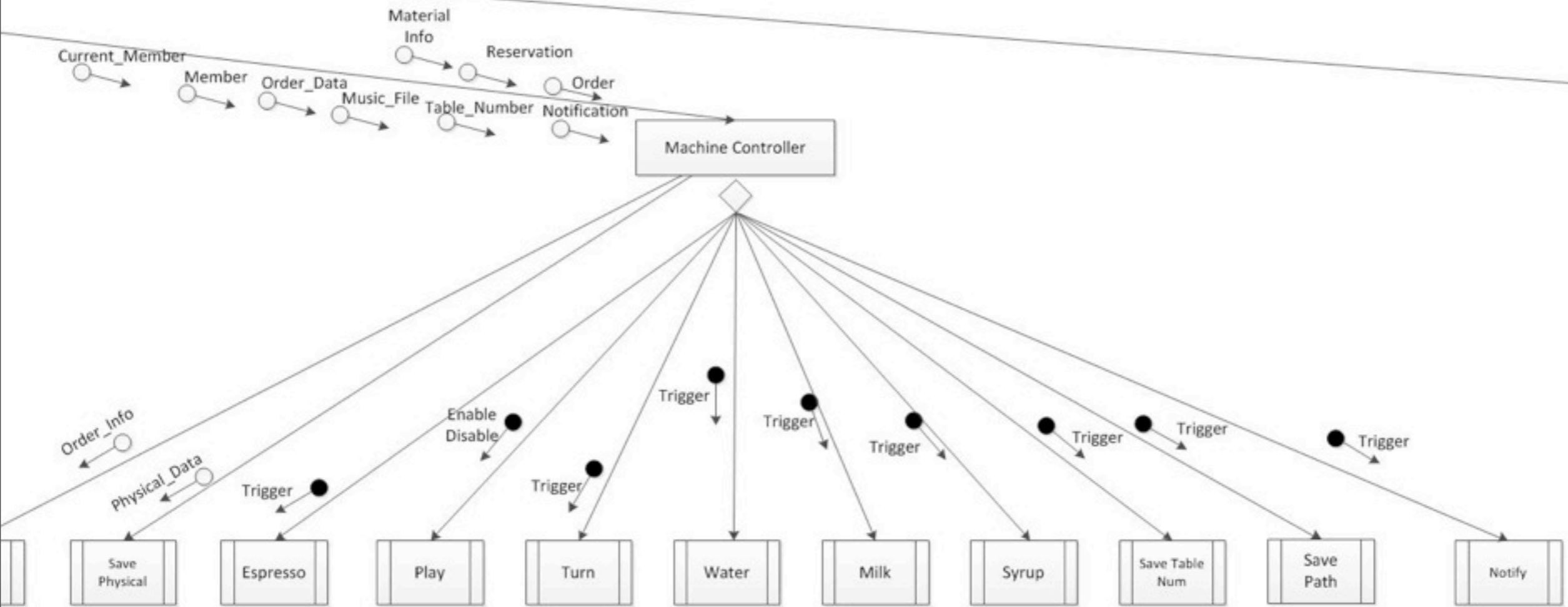
3 Structure chart - Coffee Maker(Advance)



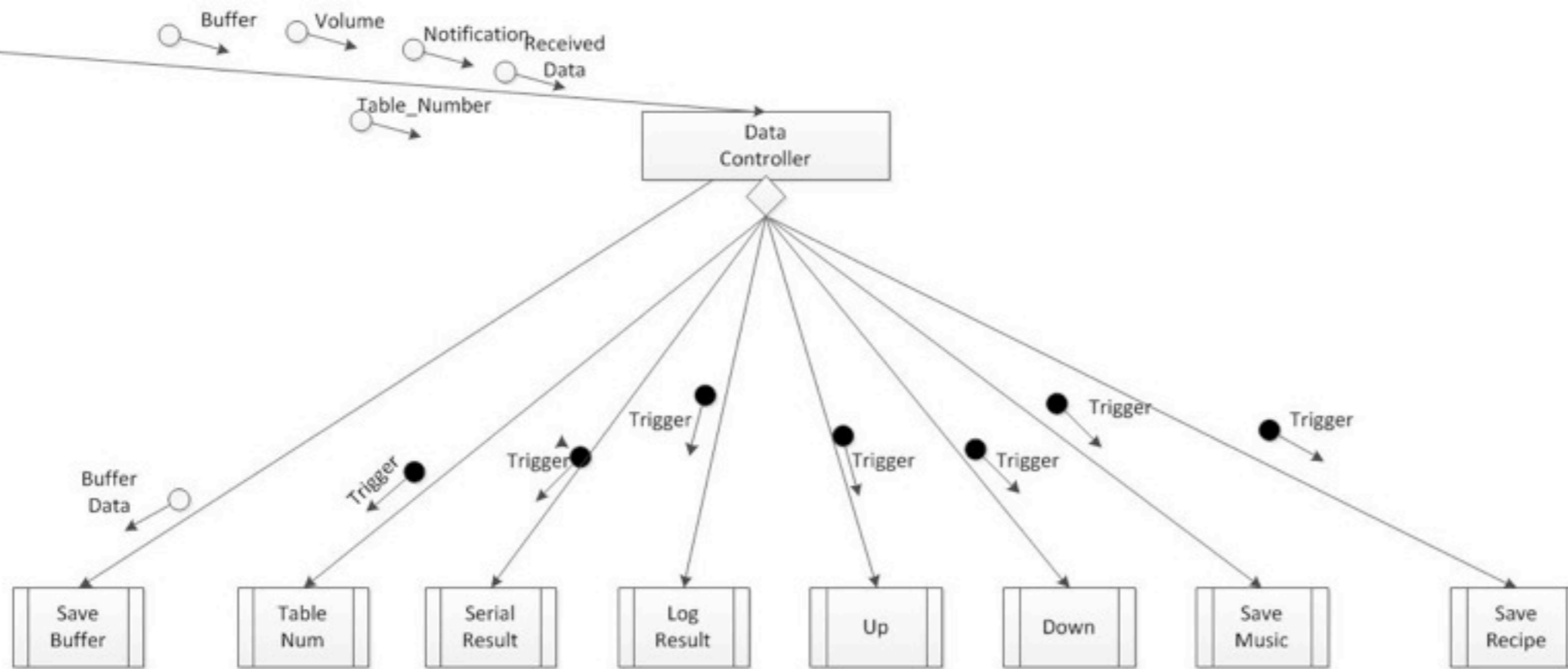
3 Structure chart - Coffee Maker(Advance)



3 Structure chart - Coffee Maker(Advance)



3 Structure chart - Coffee Maker(Advance)



1

2

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1

SA 단계에서 수정 사항

2

Structure chart - Remote Controller

3

Structure chart - Coffee Maker

4

Pseudo code

4

Pseudo code

```

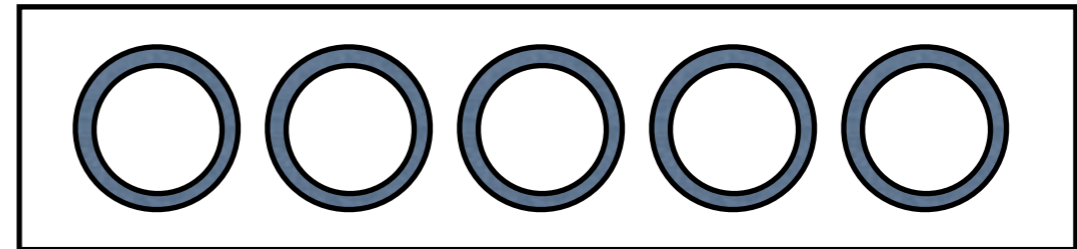
//Material_Controller
void Material_Controller() with "Material_Info"
{
    switch(Material_Controller State)
    {
        case Initial:
            if(C)
            {
                call Coffee(1);
            }
            else
            {
                call Coffee(0);
            }
            go to "Coffee_Checked" state;
            break;

        case Coffee_Checked:
            if(M)
            {
                call Milk(1);
            }
            else
            {
                call Milk(0);
            }
            go to "Milk_Checked";
            break;

        case Milk_Checked:
            if(S)
            {

```

Coffee Milk Syrup Grounds Water



```

Material_Info{
    C = 0
    M = 1
    S = 0
    G = 1
    W = 1
    T = 2
}

```

1

2

3

```

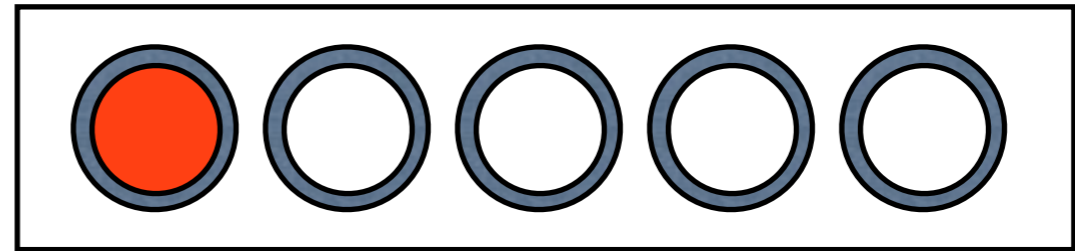
//Material_Controller
void Material_Controller() with "Material_Info"
{
    switch(Material_Controller State)
    {
        case Initial:
            if(C)
            {
                call Coffee(1);
            }
            else
            {
                call Coffee(0);
            }
            go to "Coffee_Checked" state;
            break;

        case Coffee_Checked:
            if(M)
            {
                call Milk(1);
            }
            else
            {
                call Milk(0);
            }
            go to "Milk_Checked";
            break;

        case Milk_Checked:
            if(S)
            {

```

Coffee Milk Syrup Grounds Water



```

Material_Info{
    C = 0
    M = 1
    S = 0
    G = 1
    W = 1
    T = 2
}

```

4

Pseudo code

```

call Coffee(1);
}
else
}
}
call Coffee(0);
}
go to "Coffee_Checked" state;
break;

```

```

case Coffeed_Checked:
if(M)
{
call Milk(1);
}
else
{
call Milk(0);
}
go to "Milk_Checked";
break;

```

```

case Milk_Checked:
if(S)
{
call Syrup(1);
}
else
{
call syrup(0);
}
go to "Syrup_Checked" state;
break;

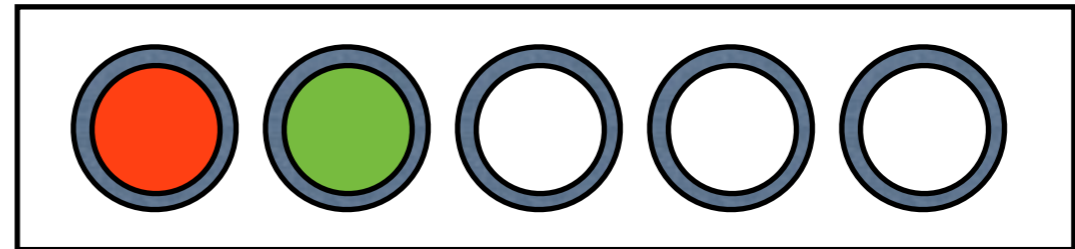
```

```

case Syrup_Checked:
if(G)
{
call Grounds(1);
}
else
{
call Gorunds(0);
}
}

```

Coffee Milk Syrup Grounds Water



```

Material_Info{
    C = 0
    M = 1
    S = 0
    G = 1
    W = 1
    T = 2
}

```

1

2

3

4

```

    call Milk(1);
}
else
{
    call Milk(0);
}
go to "Milk_Checked";
break;

```

```

case Milk_Checked:
    if(S)
    {
        call Syrup(1);
    }
    else
    {
        call syrup(0);
    }
    go to "Syrup_Checked" state;
    break;

```

```

case Syrup_Checked:
    if(G)
    {
        call Grounds(1);
    }
    else
    {
        call Gorunds(0);
    }
    go to "Grounds_Checked" state;
    break;

```

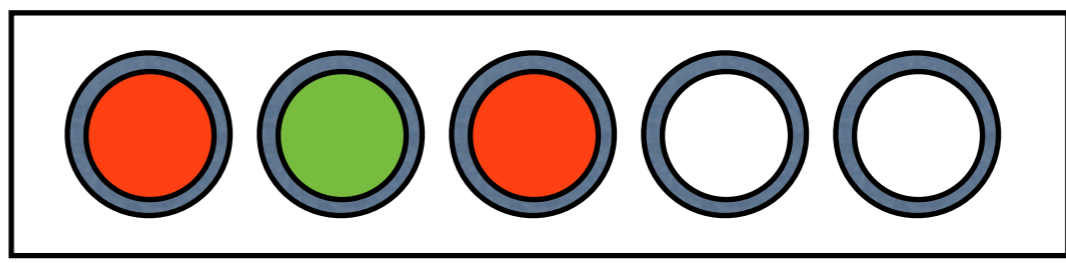
```

case Grounds_Checked:
    if(W==0)
    {
        call Supply(1);
        call Water(1);
    }
    else if(W==1)
    {
        call Water(0);
    }
}

```

Pseudo code

Coffee Milk Syrup Grounds Water



```

Material_Info{
    C = 0
    M = 1
    S = 0
    G = 1
    W = 1
    T = 2
}

```

1

2

3

Pseudo code

```

if(S)
{
    call syrup(1);
}
else
{
    call syrup(0);
}
go to "Syrup_Checked" state;
break;

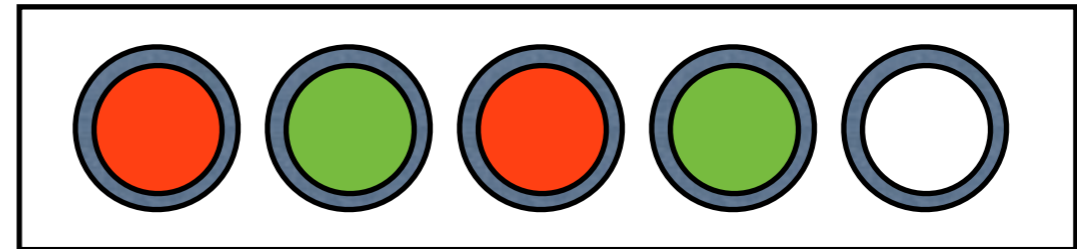
case Syrup_Checked:
if(G)
{
    call Grounds(1);
}
else
{
    call Grounds(0);
}
go to "Grounds_Checked" state;
break;

case Grounds_Checked:
if(W==0)
{
    call Supply(1);
    call Water(1);
}
else if(W==1)
{
    call Water(0);
}
else if(W==2)
{
    call Supply(0);
    call Water(0);
}
go to "Water_Checked" state;
break;

case Water_Checked:
if(T==0)

```

Coffee Milk Syrup Grounds Water



```

Material_Info{
    C = 0
    M = 1
    S = 0
    G = 1
    W = 1
    T = 2
}

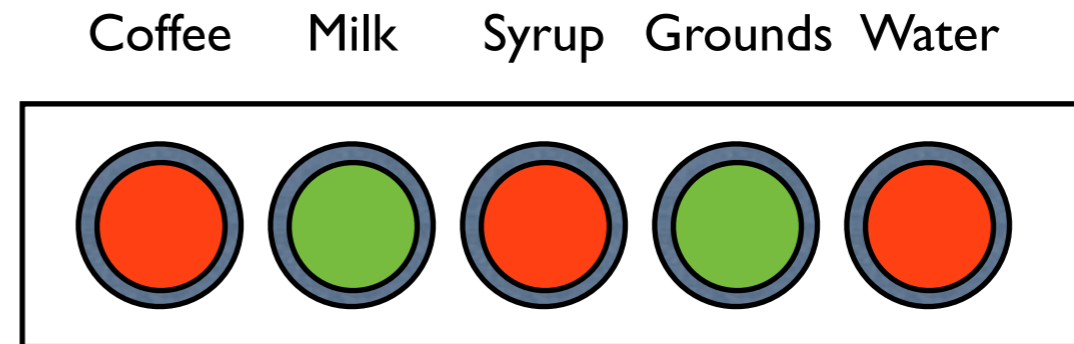
```

4 Pseudo code

```
    call Grounds(1);
}
else
{
    call Gorunds(0);
}
go to "Grounds_Checked" state;
break;

case Grounds_Checked:
if(W==0)
{
    call Supply(1);
    call Water(1);
}
else if(W==1)
{
    call Water(0);
}
else if(W==2)
{
    call Supply(0);
    call Water(0);
}
go to "Water_Checked" state;
break;

case Water_Checked:
if(T==0)
{
    call Boil(1);
    call Water(1);
}
else if(T==1)
{
}
else if(T==2)
{
    call Boil(0);
}
go to "Temperature_Checked" state;
break;
```



```
Material_Info{
    C = 0
    M = 1
    S = 0
    G = 1
    W = 0
    T = 2
}
```

1

2

3