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Sweet heart

- The ultimate coffee machine you've dreamed of (SASD(SD))

Remote Controller
[Transform Analysis, Structed Chart(basic), Structed Chart(advance), Code Generation]

Sweet Heart
[Transform Analysis, Structed Chart(basic), Structed Chart(advance), Code Generation]

Web Server
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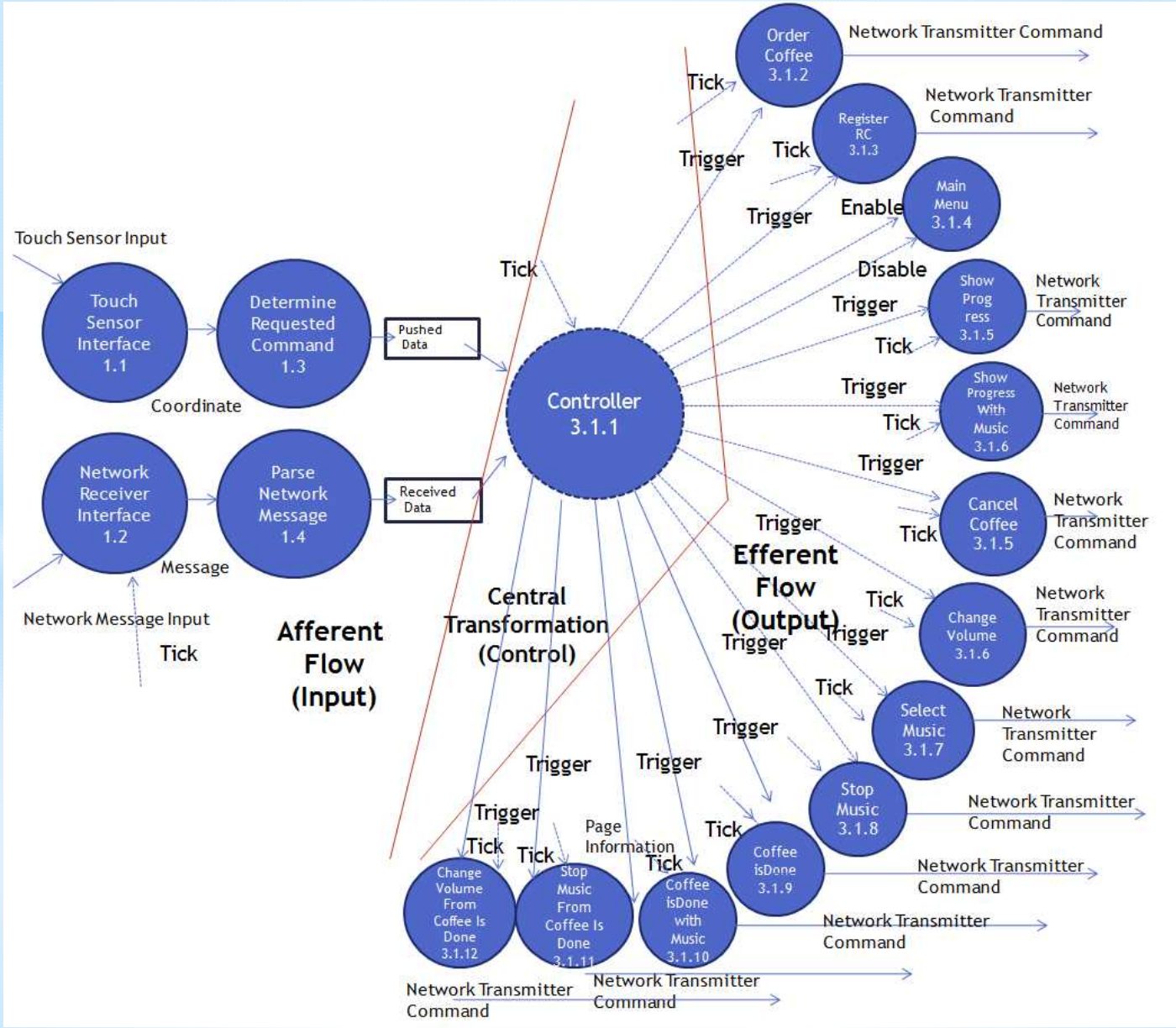
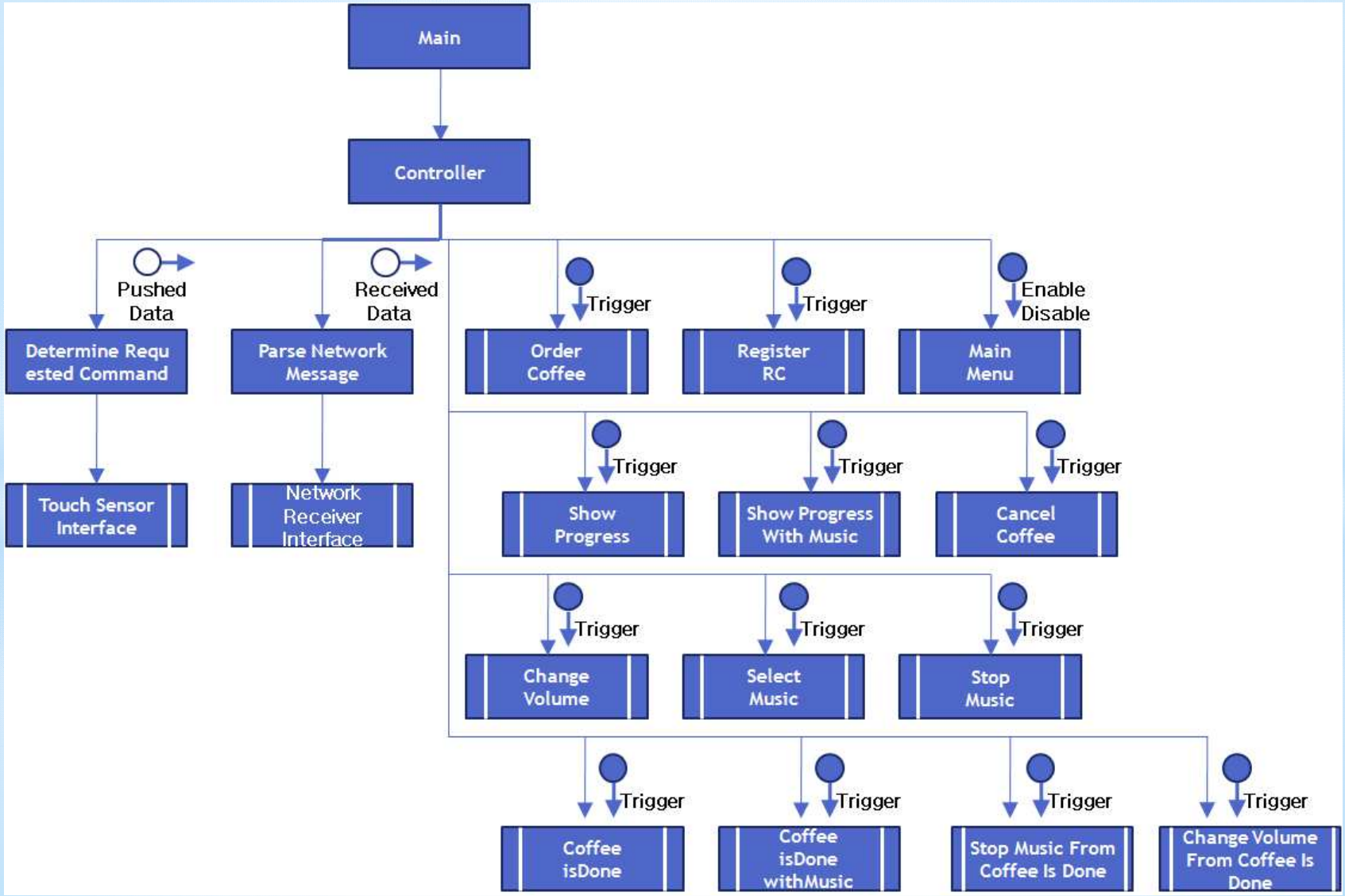
Transform Analysis

- Remote Controller



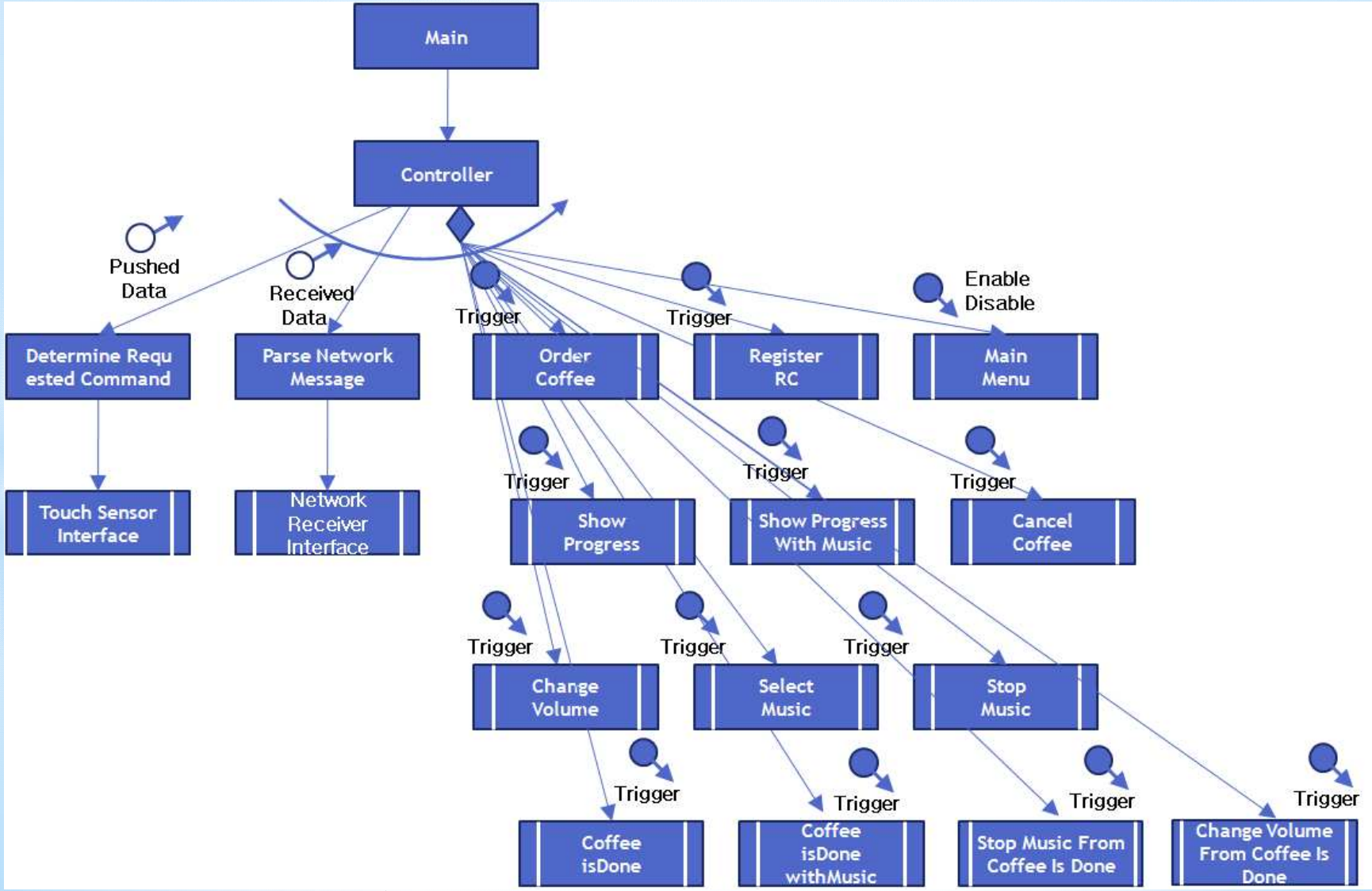
Structured Chart(Basic)

- Remote Controller



Structured Chart(Advanced)

- Remote Controller



Code Generation

- Remote Controller

```
int mainLoop( )
{
    printf("₩n");
    printf("₩n");
    printf("----------------------------------------₩n");
    PrintCurrentState( );

    DetermineRequestedCommand( );
    ParseNetworkMessage( );

    switch( g_nCurrentState ) {
    case -1:
        MainMenu( );
        break;
    case ST_OrderCoffee: // Order Coffee
        OrderCoffee( );
        break;
    case ST_SelectMusic: // SelectMusic
        SelectMusic( );
        break;
    case ST_ShowProgress: // ShowProgress
        ShowProgress( );
        break;
    case ST_ShowProgressWithMusic: // ShowProgressWithMusic
        ShowProgressWithMusic( );
        break;
    case ST_ChangeVolume: // Change Volume
        ChangeVolume( );
        break;
    case ST_StopMusic: // Stop Music
        StopMusic( );
        break;
```

Code Generation

- Remote Controller

```
void ParseNetworkMessage( )
{
	char input[100];
	int i;
	printf("ParseNetworkMessage : ₩n");

	for(i = 0; ; i++ ) {
		if( NAME_ParseNetworkMessage[i] == NULL ) {
			break;
		}
		printf("  [%d] %s₩n", i+1, NAME_ParseNetworkMessage[i]);
	}
	printf("Select : ");
	scanf("%s", input);

	g_nRecvData = atoi( input );
}


void InputSensorManager( )
{
	char input[100];
	int i;
	printf("InputSensorManager : ₩n");

	for(i = 0; ; i++ ) {
		if( NAME_InputSensorManager[i] == NULL ) {
			break;
		}
		printf("  [%d] %s₩n", i+1, NAME_InputSensorManager[i]);
	}
	printf("Select : ");
	scanf("%s", input);

	g_nSensorData = atoi( input );
}
```

Code Generation

- Remote Controller

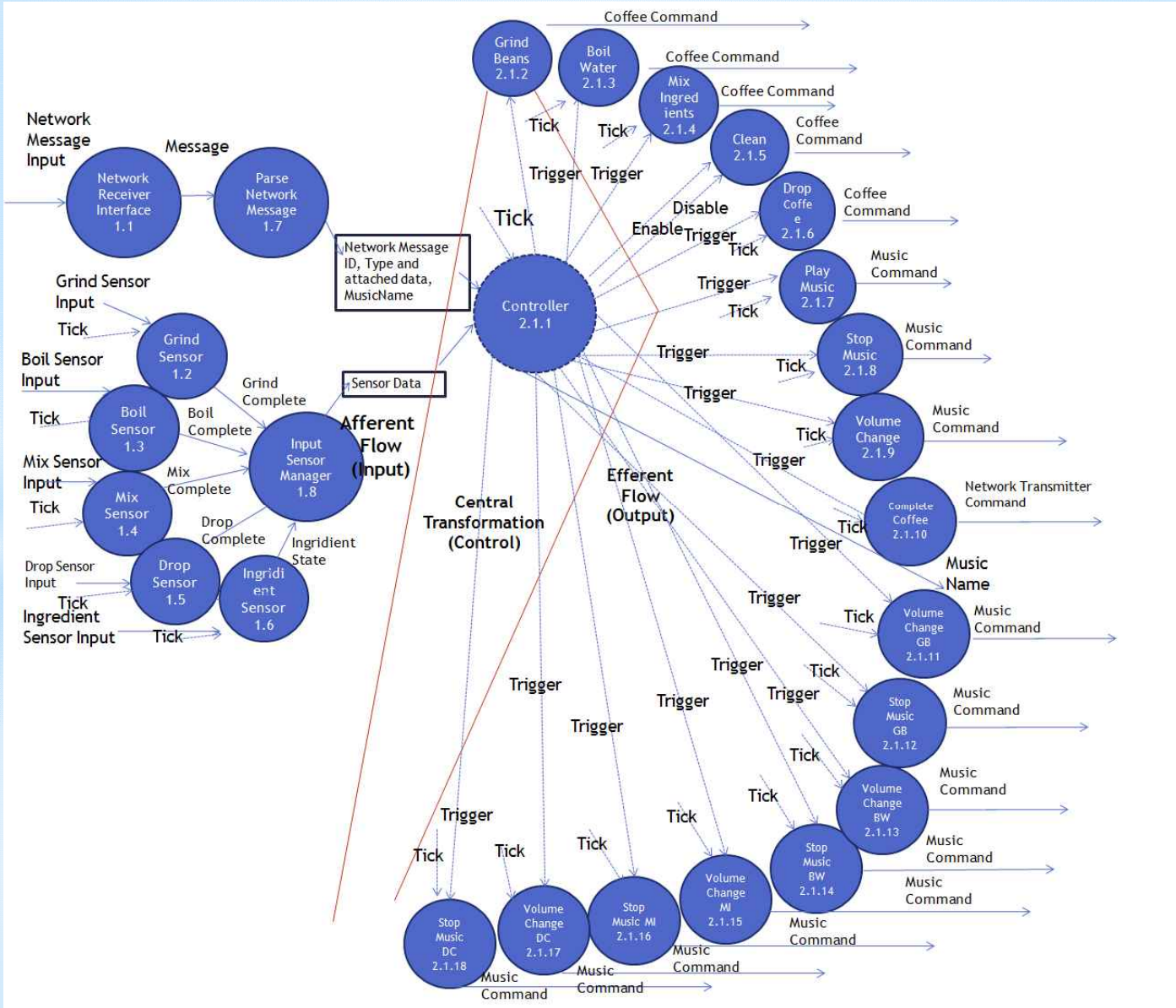
```
void OrderCoffee( )
{
      printf("[!!!] OrderCoffee₩n");
      if( g_nPushedData == -1 ) {

      } else {
        switch( g_nPushedData ) {
        case ConfirmCoffeePushed: // ConfirmCoffeePushed
             g_nCurrentState = ST_SelectMusic;
             NetworkTransmitterCommand(2);
             PageInformation(ST_SelectMusic);
             printf("[!!!] From OrderCoffee to SelectMusic₩n");
             break;
        }
      }
}

void MainMenu( )
{
      printf("[!!!] MainMenu₩n");
      switch( g_nPushedData ) {
       case 1: //OrderCoffeePushed
             g_nCurrentState = ST_OrderCoffee; // order coffee
             NetworkTransmitterCommand(1);
             PageInformation(ST_OrderCoffee);
             printf("[!!!] From MainMenu to OrderCoffee₩n");
             break;
       case RegisterRCPushed:
             g_nCurrentState = ST_RegisterRC;
             NetworkTransmitterCommand(8);
             PageInformation(ST_RegisterRC);
             printf("[!!!] From MainMenu to ST_RegisterRC₩n");
             break;
      }
```

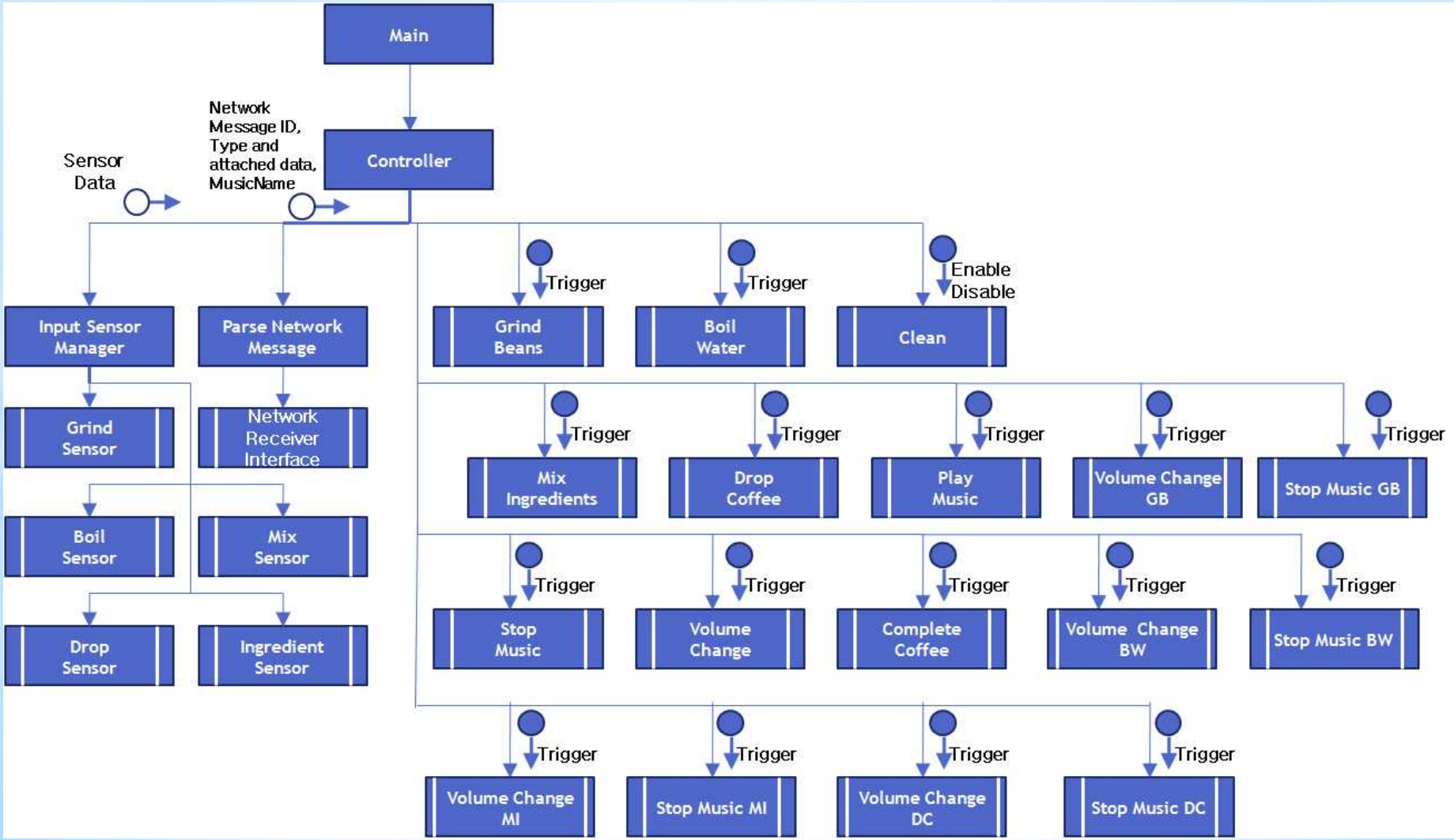
Transform Analysis

- Sweet Heart



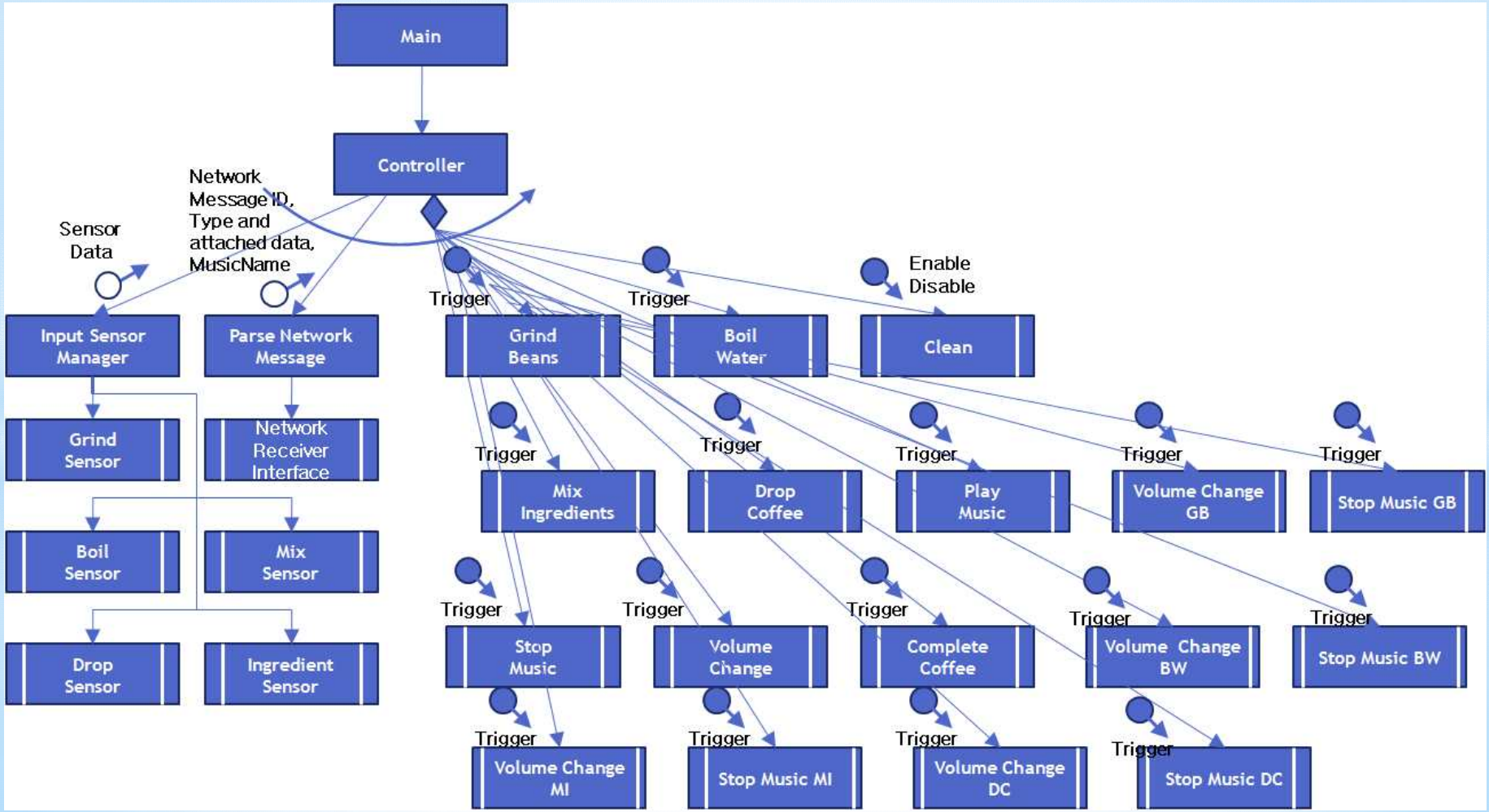
Structured Chart(Basic)

- Sweet Heart



Structured Chart(Advanced)

- Sweet Heart



Code Generation

- Sweet heart

```
int mainLoop( )
{
    printf("₩n");
    printf("₩n");
    printf("----------------------------------------₩n");
    PrintCurrentState( );

    ParseNetworkMessage( );
    InputSensorManager( );

    switch( g_nCurrentState ) {
    case -1:
        Clean( );
        break;
    case ST_GrindBeans:
        GrindBeans( );
        break;
    case ST_BoilWater:
        BoilWater( );
        break;
    case ST_MixIngredients:
        MixIngridients( );
        break;
    case ST_DropCoffee:
        DropCoffee( );
        break;
    case ST_CompleteCoffee:
        CompleteCoffee( );
        break;
    case ST_VolumeChange:
        VolumeChange( );
        break;
```

Code Generation

- Sweet heart

```
void ParseNetworkMessage( )
{
	char input[100];
	int i;
	printf("ParseNetworkMessage : ₩n");

	for(i = 0; ; i++ ) {
		if( NAME_ParseNetworkMessage[i] == NULL ) {
			break;
		}
		printf("  [%d] %s₩n", i+1, NAME_ParseNetworkMessage[i]);
	}
	printf("Select : ");
	scanf("%s", input);

	g_nRecvData = atoi( input );
}


void InputSensorManager( )
{
	char input[100];
	int i;
	printf("InputSensorManager : ₩n");

	for(i = 0; ; i++ ) {
		if( NAME_InputSensorManager[i] == NULL ) {
			break;
		}
		printf("  [%d] %s₩n", i+1, NAME_InputSensorManager[i]);
	}
	printf("Select : ");
	scanf("%s", input);

	g_nSensorData = atoi( input );
}
```

Code Generation

- Sweet heart

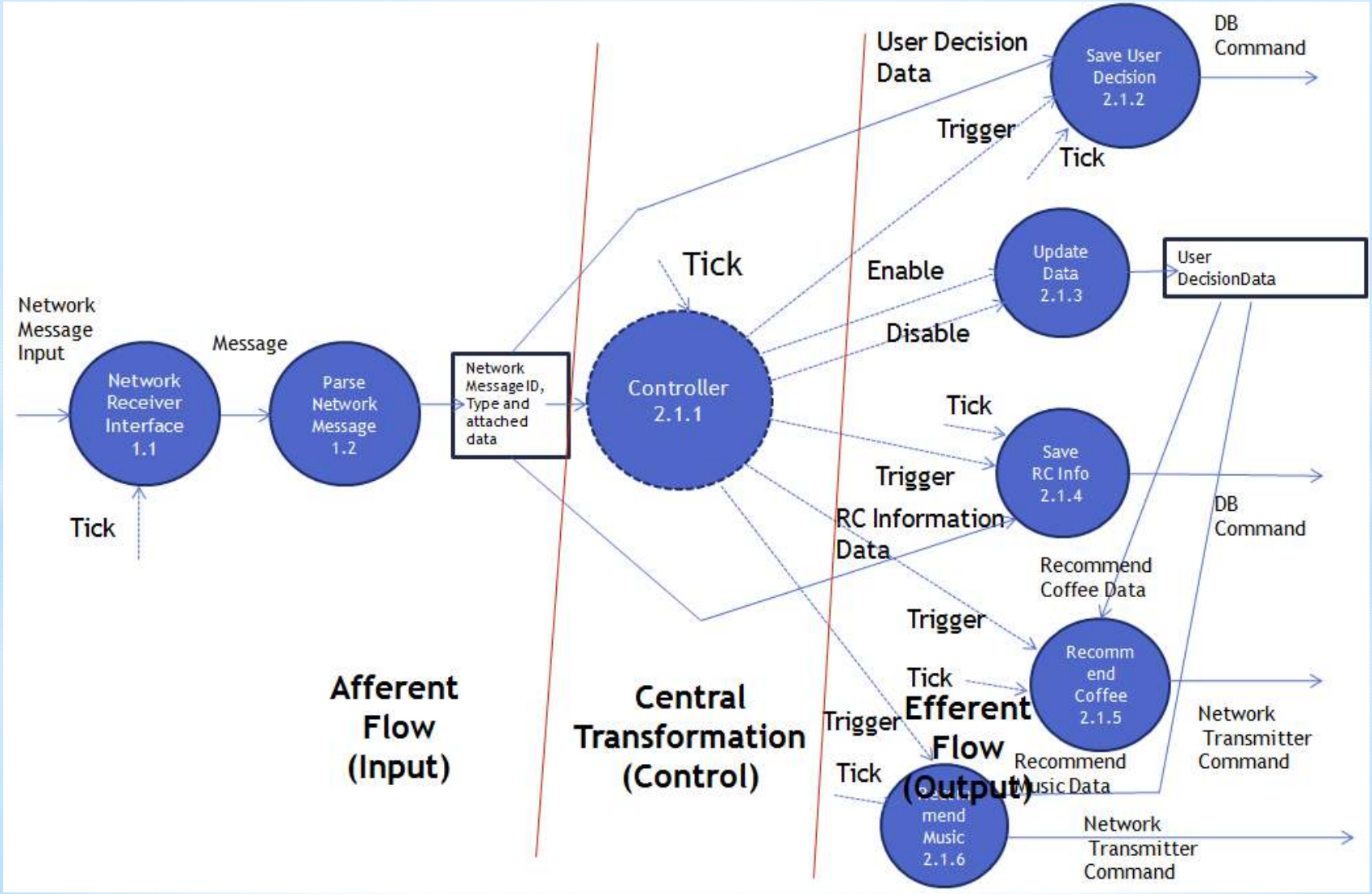
```
void GrindBeans( )
{
      printf("[!!!] GrindBeans₩n");

      MusicName(g_szMusicName);
      switch( g_nSensorData ) {
        case -1:
             break;
        case GrindComplete:
             g_nCurrentState = ST_BoilWater;
             CoffeeCommand(CC_BoilWater);
             printf("[!!!] From GrindBeans to ST_BoilWater₩n");
             break;
      }

      switch( g_nRecvData ) {
        case -1:
             break;
        case VolumeChangeRecved:
             g_nCurrentState = ST_VolumeChangeGB;
             printf("[!!!] From GrindBeans to ST_VolumeChangeGB₩n");
             break;
        case StopMusicRecved:
             g_nCurrentState = ST_StopMusicGB;
             printf("[!!!] From GrindBeans to ST_StopMusicGB₩n");
             break;
        case CancelCoffeeRecved:
             g_nCurrentState = -1;
             strcpy(g_szMusicName, "");
             printf("[!!!] From GridBeans to Clean₩n");
             break;
      }
}
```

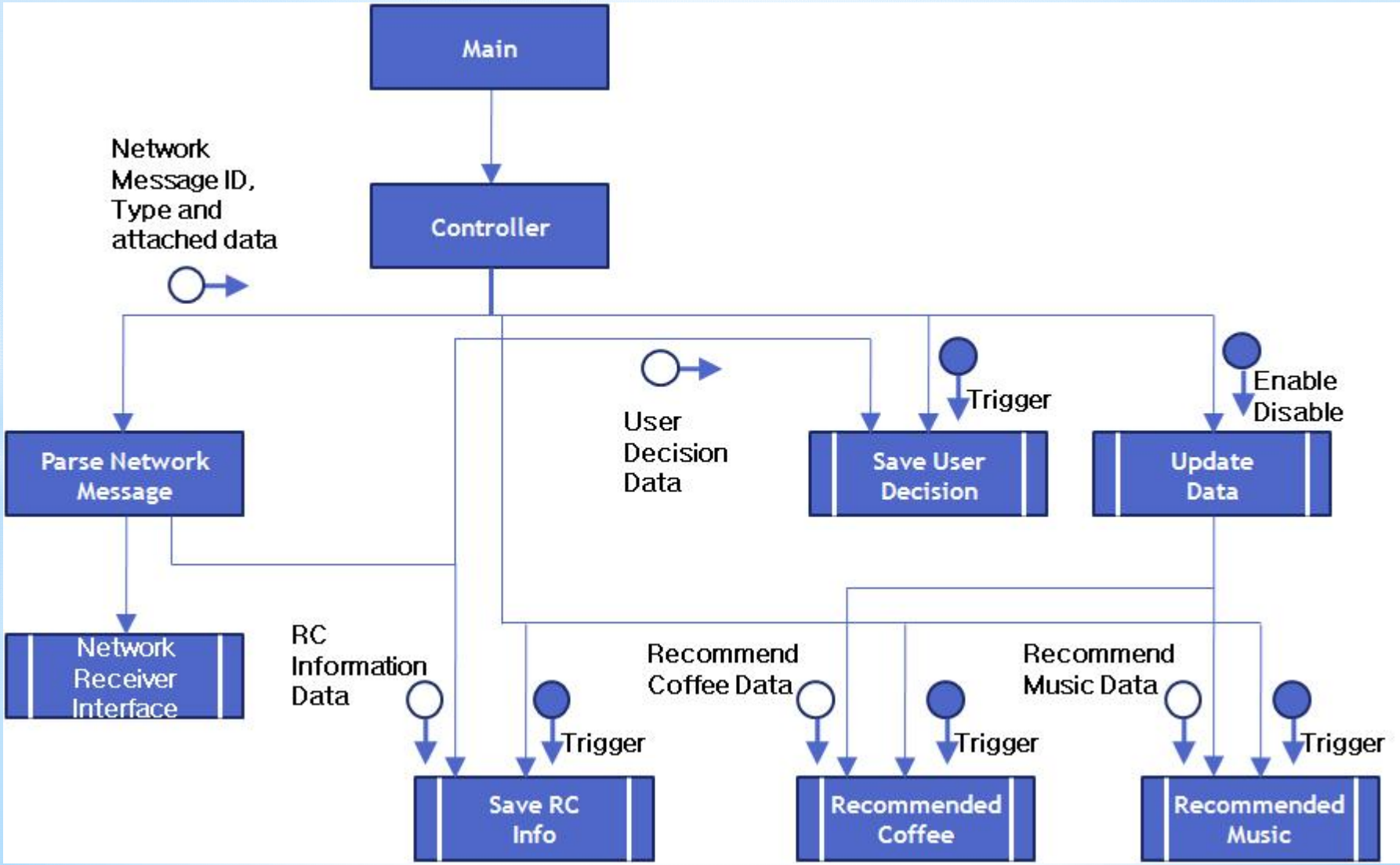
Transform Analysis

- Web Server



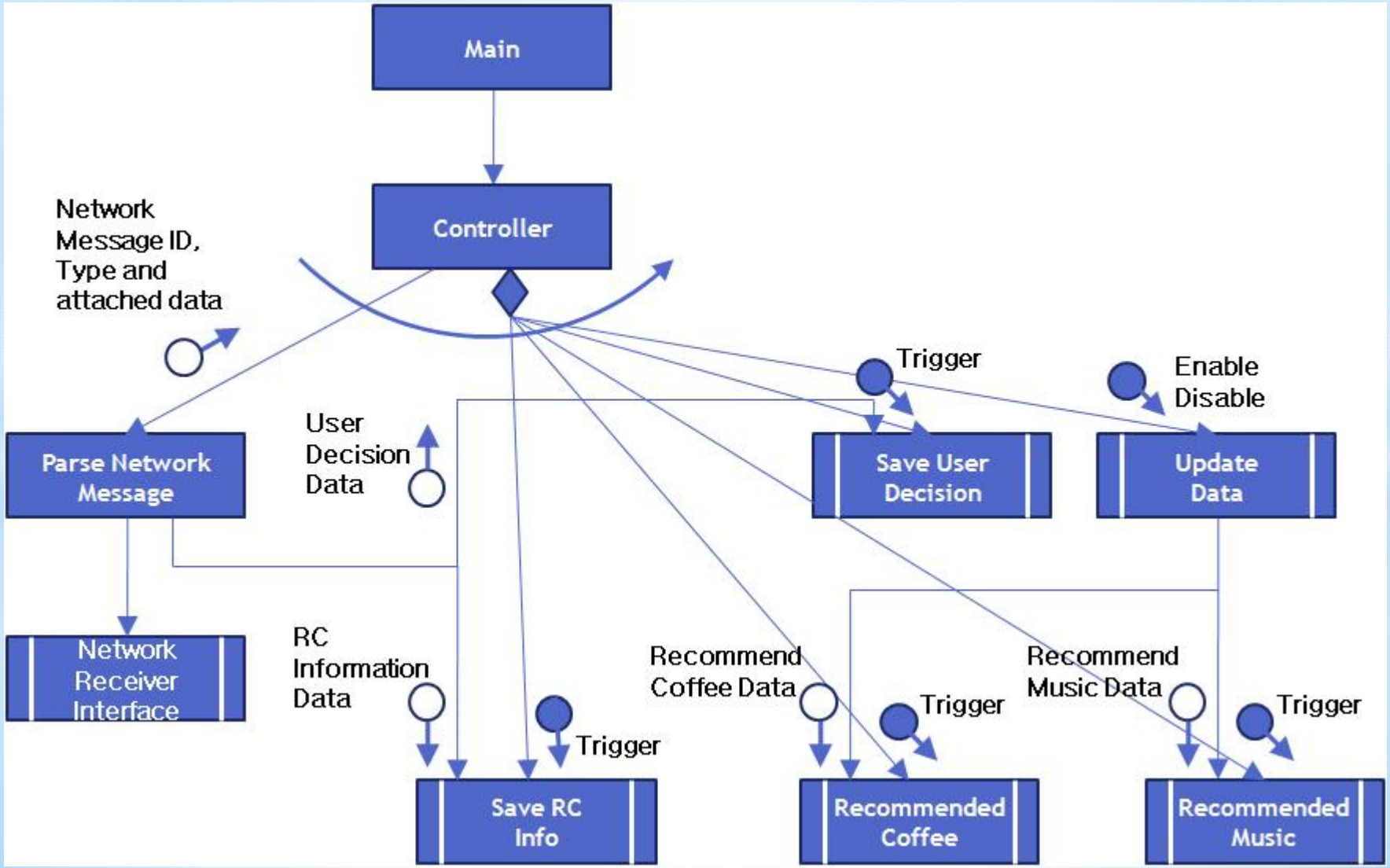
Structured Chart(Basic)

- Web Server



Structured Chart(Advanced)

- Web Server



Code Generation

- Web server

```
int mainLoop( )
{
    printf("₩n");
    printf("₩n");
    printf("-------------------------------------₩n");
    PrintCurrentState( );

    ParseNetworkMessage( );

    switch( g_nCurrentState ) {
    case -1:
         UpdateData( );
         break;
    case ST_SaveUserDecision:
         SaveUserDecision( );
         break;
    case ST_SaveRCInfo:
         SaveRCInfo( );
         break;
    case ST_RecommendCoffee:
         RecommendCoffee( );
         break;
    case ST_RecommendMusic:
         RecommendMusic( );
         break;


    }
```

Code Generation

- Web server

```
int PrintCurrentState( )
{
    printf("[!!!] Current State : ");
    switch( g_nCurrentState ) {
    case -1:
        printf("Update Data");
        break;
    case ST_SaveUserDecision:
        printf("SaveUserDecision");
        break;
    case ST_SaveRCInfo:
        printf("SaveRCInfo");
        break;
    case ST_RecommendCoffee:
        printf("RecommendCoffee");
        break;
    case ST_RecommendMusic:
        printf("RecommendMusic");
        break;

    }
    printf("₩n");
}
```

```
void ParseNetworkMessage( )
{
    char input[100];
    int i;
    printf("ParseNetworkMessage : ₩n");

    for(i = 0; ; i++ ) {
        if( NAME_ParseNetworkMessage[i] == NULL ) {
            break;
        }
        printf("  [%d] %s₩n", i+1, NAME_ParseNetworkMessage[i]);
    }
    printf("Select : ");
    scanf("%s", input);

    g_nRecvData = atoi( input );
}
```

Code Generation

- Web server

```
void UpdateData( )
{
     printf("[!!!] UpdateData₩n");

     switch( g_nRecvData ) {
       case -1:
            break;
       case ConfirmCoffeeRecved:
            g_nCurrentState = ST_SaveUserDecision;
            DBCommand(1);
            printf("[!!!] From UpdateData to ST_SaveUserDecision₩n");
            break;
       case SelectMusicRecved:
            g_nCurrentState = ST_RecommendMusic;
            NetworkTransmitterCommand(2);
            printf("[!!!] From UpdateData to ST_RecommendMusic₩n");
            break;
       case RegisterRCRecved:
            g_nCurrentState = ST_SaveRCInfo;
            DBCommand(2);
            printf("[!!!] From UpdateData to ST_SaveRCInfo₩n");
            break;
       case OrderCoffeeRecved:
            g_nCurrentState = ST_RecommendCoffee;
            NetworkTransmitterCommand(1);
            printf("[!!!] From UpdateData to ST_RecommendCoffee₩n");
            break;
     }
}
```

Code Generation (Demo)

- Web server

* Please refer to the attachment file.
* The followings are layout of directories

* [Root folder]
  * [rm] : Remote controller (main.c)
  * [sh] : Sweet heart (main.c)
  * [ws] : Web server (main.c)