

**Documentation  
for  
DM365 IPNC Web UI Code**  
*Version 1.1*

## 1 Document History

| Version | Author     | Date      | Verified By | Comments  |
|---------|------------|-----------|-------------|---|
| 1.0     | Vimala S   | 11-May-10 | Rajan D     | Covers web modules except DMVA  |
| 1.1     | Sivaram. G | 08-Oct-10 | Rajan D     | 5.4.4, 5.4.5, 5.4.6, 5.4.7, 5.4.8, 5.4.9, 5.4.10 Sections are newly added |

## 2 The Legal

This Document is Proprietary and exclusive property of GoDBTech Private Limited except as otherwise indicated. No part of this document, in whole or in part, may be reproduced, stored, transmitted or used for design/any purposes without the prior written permission of GoDBTech Private Limited.

The information in this document is for information purpose only. GoDBTech disclaims all warranties expressed or implied, including but not limited to, implied warranties of merchantability and fitness for a particular purpose, except as provided for in a separate software license agreement.

### 2.1 Trademarks and Copyrights

GoDB and GoDB Tech are trademarks of GoDBTech Private Limited. All other trademarks are owned by respective owners and are used only as reference.

### 2.2 Disclaimer

This source code is provided as-is without any expressed or implied warranty of any kind including those of merchantability, non-infringement of third-party intellectual property, or fitness for a particular purpose. Neither GoDB nor its suppliers shall be liable for any damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other loss) arising out of the use of or inability to use the software, even if GoDB has been advised of the possibility of such damages.

The information provided in this document are based on the code that is available at the time of writing of this document. New functions, function parameters, new functionality are subject to be added to the application based on the future requirements. Existing functions/ function parameters and existing functionality are also subject to be removed or altered based on the requirements. These changes done may not be included to be a part of this documentation.

## Contents

|        |   |    |
|--------|---|----|
| 1      | Document History .....                                      | 2  |
| 2      | The Legal .....   | 2  |
| 2.1    | Trademarks and Copyrights.....                              | 2  |
| 2.2    | Disclaimer.....   | 2  |
| 3      | Application .....   | 5  |
| 4      | Using the Project.....                                      | 5  |
| 4.1    | Development Environment.....                                | 5  |
| 4.1.1  | Acquiring the gStudio IDE .....                             | 5  |
| 4.2    | Loading the project in the IDE.....                         | 5  |
| 4.3    | File classifications .....                                  | 5  |
| 4.4    | Compiling the project .....                                 | 5  |
| 4.4.1  | Development phase .....                                     | 5  |
| 4.4.2  | Deployment in IPNC.....                                     | 5  |
| 5      | Modules Covered.....  | 6  |
| 5.1    | Login.....  | 6  |
| 5.2    | Add Users.....  | 6  |
| 5.3    | Live video screen .....                                     | 7  |
| 5.3.1  | Live Video.....   | 7  |
| 5.3.2  | Display All Stream .....                                    | 7  |
| 5.3.3  | Display 1x mode.....  | 8  |
| 5.3.4  | SD Card Explorer .....                                      | 8  |
| 5.4    | Settings .....  | 9  |
| 5.4.1  | Video .....   | 9  |
| 5.4.2  | Video – Advanced .....                                      | 10 |
| 5.4.3  | Advanced Features .....                                     | 10 |
| 5.4.4  | Smart Analytics → Event Monitoring.....                     | 11 |
| 5.4.5  | Smart Analytics → Event Monitoring → Advanced Settings..... | 12 |
| 5.4.6  | Smart Analytics → Intelligent Motion Detection .....        | 12 |
| 5.4.7  | Smart Analytics → Streaming Meta .....                      | 13 |
| 5.4.8  | Smart Analytics → Object Counting.....                      | 14 |
| 5.4.9  | Smart Analytics → Trip Zone .....                           | 14 |
| 5.4.10 | Smart Analytics → Scheduler .....                           | 15 |
| 5.4.11 | Camera.....   | 16 |
| 5.4.12 | Audio .....   | 16 |
| 5.4.13 | Date/Time.....  | 16 |
| 5.4.14 | Network and Port.....                                       | 17 |

---

|        |  |    |
|--------|--|----|
| 5.4.15 | Alarm .....  | 18 |
| 5.4.16 | Storage .....  | 18 |
| 5.4.17 | Maintenance .....  | 18 |
| 5.4.18 | Support .....  | 19 |
| 5.5    | Common files .....   | 19 |
| 6      | Steps for making simple changes .....                                | 20 |
| 6.1    | Adding a new keyword .....   | 20 |
| 6.2    | Modifying a keyword .....  | 20 |
| 6.3    | Adding UI elements/ Aligning UI elements .....                       | 20 |
| 6.3.1  | Generating .inc for .frm files .....                                 | 20 |
| 6.4    | To Change the background image for login page .....                  | 21 |
| 6.5    | To change the logo of Texas Instruments found in the left menu ..... | 21 |

### 3 Application

DM365 IPNC Web based System

## 4 Using the Project

### 4.1 Development Environment

|                      |   |
|----------------------|---|
| IDE                  | GStudio. This is available as a 30 days evaluation package. |
| Programming Language | GBasic – A proprietary language of GoDB Tech Private Ltd.   |

#### 4.1.1 Acquiring the GStudio IDE License

The Any customer of TI who wishes to acquire a license of gStudio can contact TI. TI in turn can contact [support@goddbtech.com](mailto:support@goddbtech.com) on behalf of their client and get them the installer and the relevant license.

### 4.2 Loading the project in the IDE

- Unzip the contents of the file gIPNC.zip
- Double click on file gIPNC.gws to load the project in the GoDB editor gStudio.

### 4.3 File classifications

| File Extension | Description  |
|----------------|--|
| .frm           | Contains the UI controls used in each module                   |
| .bas           | Contains the logic implemented for the corresponding .frm file |
| .inc           | Included files which may be part of one or more modules.       |
| .fnt           | Font files used in the project                                 |

### 4.4 Compiling the project

#### 4.4.1 Development phase

- Ensure that “Debug” is selected from the Debug/ Release dropdown.
- Pressing F7 will compile the project. Pressing F5 will compile and launch the project in debug mode. This will launch the application as a Win32 application.
- Ensure that you have a file by name “ip.txt” in the folder “Win32\_Debug” having the IP address of the IPNC as the content. This must be available in the folder for the user to login to the application.

#### 4.4.2 Deployment in IPNC

- Ensure that “Release” is selected in the IDE from the Debug/ Release dropdown.
- From the menu bar of the IDE choose View-> Options. In the tab “Build” ensure that the check box “Make Read-Only BDB” is checked
- Find for a file named “gIPNC-ro.bdb” inside the Win32\_Release folder inside the project directory.
- Compress the file “gIPNC-ro.bdb” and create a file named “gIPNC-ro.gz” using the following command. C:\Program Files\GoDB\ged.exe -i gIPNC-ro.bdb gIPNC-ro.gz
  - "<GoDB Installed folder>\ged.exe" -i "<gIPNC Project folder>\Win32\_Release\gIPNC-ro.bdb" "<gIPNC Project folder>\Win32\_Release\gIPNC-ro.gz"

- For example: "C:\Program Files\GoDB\ged.exe" -i "D:\Project\gIPNC\Win32\_Release\gIPNC-ro.bdb" "D:\Project\gIPNC\Win32\_Release\gIPNC-ro.gz"
- Copy the file "gIPNC-ro.gz" and create the "cramfs" file

## 5 Modules Covered

### 5.1 Login

Following are the files used display login screen,

| File name       | Purpose                                       | Exclude from Build Flag |
|-----------------|---|-------------------------|
| <b>auth.frm</b> | Contains UI Controls                          | No                      |
| <b>auth.bas</b> | Contains User name, Password validation logic | No                      |

### 5.2 Add Users

Following are the files used display users details screen,

| File name           | Purpose   | Exclude from Build Flag |
|---------------------|---|-------------------------|
| <b>addusers.frm</b> | Contains UI elements used   | No                      |
| <b>addusers.bas</b> | Contains implementation logic   | No                      |
| <b>addusers.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the function used to display/add/edit/delete users in camera (addusers.bas)

| Type            | Function Name  | Purpose   | File Name     |
|-----------------|----------------|---|---------------|
| <b>GET</b>      | getUserSetting | Get user name, authority, user name and password minimum length from camera | functions.inc |
| <b>ADD/EDIT</b> | addUser        | Add /Edit user to camera  | functions.inc |
| <b>DELETE</b>   | deleteUser     | Delete selected user from camera  | functions.inc |

## 5.3 Live video screen

### 5.3.1 Live Video

Following are the files used in Live Video screen:

| File name            | Purpose   | Exclude from Build Flag |
|----------------------|---|-------------------------|
| <b>liveVideo.frm</b> | Contains UI elements used   | No                      |
| <b>liveVideo.bas</b> | Contains implementation logic   | No                      |
| <b>liveVideo.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the functions used to fetch stream names, RTSP URLs from the camera and set click snap values in the camera (liveVideo.bas)

| Type       | Function Name       | Purpose  | File Name     |
|------------|---------------------|--|---------------|
| <b>GET</b> | getLoadingTime      | Get camera reload time from camera                                     | functions.inc |
| <b>GET</b> | getSDCardValue      | Get SD insert status values from camera                                | functions.inc |
| <b>GET</b> | getLiveVideoOptions | Get click snap,example values from camera                              | functions.inc |
| <b>GET</b> | loadStreamDetails   | Get stream name and its corresponding RTSP url from camera             | common.inc    |
| <b>SET</b> | setAudioStatus      | Set audio status and audio mode value to camera                        | functions.inc |
| <b>SET</b> | setLiveVideoOptions | Set click snap, file name and storage location option values to camera | functions.inc |
| <b>SET</b> | setExampleValue     | Set selected example value to camera                                   | functions.inc |

### 5.3.2 Display All Stream

Following are the files used to display all the available stream video screens,

| File name                  | Purpose   | Exclude from Build Flag |
|----------------------------|---|-------------------------|
| <b>allStreamsVideo.frm</b> | Contains UI elements used   | No                      |
| <b>allStreamsVideo.bas</b> | Contains implementation logic   | No                      |
| <b>allStreamsVideo.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Function used to get and set values in display all streams screen are same as live video function.

### 5.3.3 Display 1x mode

Following are the files used to display 1x mode screens,

| File name                | Purpose                       | Exclude from Build Flag |
|--------------------------|-------------------------------|-------------------------|
| <b>display1xMode.frm</b> | Contains UI elements used     | No                      |
| <b>display1xMode.bas</b> | Contains implementation logic | No                      |

Below are the functions used to display selected stream video in 1x display (display1xMode.bas)

| Type       | Function Name     | Purpose  | File Name  |
|------------|-------------------|--|------------|
| <b>GET</b> | loadStreamDetails | Get stream name and its corresponding RTSP url from camera | common.inc |

### 5.3.4 SD Card Explorer

Following are the file to display SD Card screens,

| File name             | Purpose                       | Exclude from Build Flag |
|-----------------------|-------------------------------|-------------------------|
| <b>SDExplorer.frm</b> | Contains UI elements used     | No                      |
| <b>SDExplorer.bas</b> | Contains implementation logic | No                      |

Below are the function used to display selected stream video in 1x display (SDExplorer.bas)

| Type       | Function Name   | Purpose   | File Name      |
|------------|-----------------|---|----------------|
| <b>GET</b> | getSDCardValue  | Get SD insert status values from camera                             | functions.inc  |
| <b>SET</b> | cmdFormat_Click | Set SD Format value to camera to format the SD card                 | SDExplorer.bas |
| <b>SET</b> | cmdMount_Click  | Mount and Un-mount SD card by setting corresponding value to camera | SDExplorer.bas |

Note: The list of files in the SD Card is generated as an html file (sdget.htm) by the IPNC on request.



## 5.4 Settings

### 5.4.1 Video

Following are the files used to display video setting screen:

| File name                     | Purpose   | Exclude from Build Flag |
|-------------------------------|---|-------------------------|
| <b>videolmageSettings.frm</b> | Contains UI elements used   | No                      |
| <b>videolmageSettings.bas</b> | Contains implementation logic   | No                      |
| <b>videolmageSettings.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the functions used to get and set video setting screen values (videolmageSettings.bas)

| Type       | Function Name        | Purpose  | File Name     |
|------------|----------------------|--|---------------|
| <b>GET</b> | getVideolmageSetting | Get stream type,codec and resolution from camera   | functions.inc |
| <b>GET</b> | getVideoStream1      | Get frame rate,bit rate,rate control, quality factor and overlay setting values for stream 1 | functions.inc |
| <b>GET</b> | getVideoStream2      | Get frame rate,bit rate,rate control,quality factor and overlay setting values for stream 2  | functions.inc |
| <b>GET</b> | getVideoStream3      | Get frame rate,bit rate,rate control, quality factor and overlay setting values for stream 3 | functions.inc |
| <b>GET</b> | getVideoFile         | Get video files ,stream and video stream values from camera                                  | functions.inc |
| <b>SET</b> | setVideolmageSetting | Set selected stream type, codec, resolution and mirror value to camera                       | functions.inc |
| <b>SET</b> | setVideoStream1      | Set frame rate,bit rate,rate control, quality factor and overlay setting values for stream 1 | functions.inc |
| <b>SET</b> | setVideoStream2      | Set frame rate,bit rate,rate control, quality factor and overlay setting values for stream 2 | functions.inc |
| <b>SET</b> | setVideoStream3      | Set frame rate,bit rate,rate control, quality factor and overlay setting values for stream 3 | functions.inc |
| <b>SET</b> | setVideoFile         | Set selected stream and video stream values of video file to camera                          | functions.inc |

### 5.4.2 Video – Advanced

Following are the files used to display Video Advanced Settings screen:

| File name                     | Purpose   | Exclude from Build Flag |
|-------------------------------|---|-------------------------|
| <b>videolmageAdvanced.frm</b> | Contains UI elements used   | No                      |
| <b>videolmageAdvanced.bas</b> | Contains implementation logic   | No                      |
| <b>videolmageAdvanced.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the function used to get and set Video - Advanced setting screen values. (videolmageAdvanced.bas)

| Type       | Function Name          | Purpose  | File Name     |
|------------|------------------------|--|---------------|
| <b>GET</b> | getVideolmageAdvanced1 | Get video advanced screen setting values with region of interest values for stream 1 | functions.inc |
| <b>GET</b> | getVideolmageAdvanced2 | Get video advanced screen setting values with region of interest values for stream 2 | functions.inc |
| <b>GET</b> | getVideolmageAdvanced3 | Get video advanced screen setting values with region of interest values for stream 3 | functions.inc |
| <b>SET</b> | setVideolmageAdvanced1 | Set video advanced setting screen stream 1 values to camera                          | functions.inc |
| <b>SET</b> | setVideolmageAdvanced2 | Set video advanced setting screen stream 2 values to camera                          | functions.inc |
| <b>SET</b> | setVideolmageAdvanced3 | Set video advanced setting screen stream 3 values to camera                          | functions.inc |

### 5.4.3 Advanced Features

Following are the files used to display Video Advanced settings screen,

| File name                        | Purpose   | Exclude from Build Flag |
|----------------------------------|---|-------------------------|
| <b>videoAnalyticsSetting.frm</b> | Contains UI elements used   | No                      |
| <b>videoAnalyticsSetting.bas</b> | Contains implementation logic   | No                      |
| <b>videoAnalyticsSetting.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |
| <b>motiondetection_bas.inc</b>   | Contains implementation logic of motion detection screen                | Yes                     |

Below are the functions used to get and set Video - Advanced setting screen values. Video – Advanced setting screen (videoAnalyticsSetting.bas)

| Type | Function Name             | Purpose   | File Name     |
|------|---------------------------|---|---------------|
| GET  | getVideoAnalyticsSettings | Get face detect,region of interest,face recognition values from camera                | functions.inc |
| GET  | getVideoAnalyticsOptions  | Get drop down values from camera  | functions.inc |
| GET  | getMotionDetectSettings   | Get motion detection values from camera   | functions.inc |
| SET  | setVideoAnalyticsSettings | Set motion detection,face detect,region of interest,face recognition values to camera | functions.inc |
| SET  | setMotionDetectSettings   | Set motion detection values from camera   | functions.inc |

#### 5.4.4 Smart Analytics → Event Monitoring

Following are the files used to display Smart Analytics Event Monitoring screen,

| File name            | Purpose   | Exclude from Build Flag |
|----------------------|---|-------------------------|
| DMVAeventMonitor.frm | Contains UI elements used   | No                      |
| bodybg.frm           | Contains Header UI elements used. Included in DMVAeventMonitor.frm      | Yes                     |
| DMVAeventMonitor.bas | Contains Implementation Logic   | No                      |
| DMVAeventMonitor.inc | Contains Label, X, Y, Width and Height of all elements in the .frm file | Yes                     |
| DMVAfunctions.inc    | Contains common function used throughout application                    | Yes                     |

Below are the functions used to get and set Camera setting screen values (DMVAeventMonitor.bas)

| Type | Function Name           | Purpose   | File Name         |
|------|-------------------------|---|-------------------|
| GET  | GetEventList            | Get values from INI file for the specified events.                    | DMVAfunctions.inc |
| SET  | SetEventNum             | Set Event values  | DMVAfunctions.inc |
| GET  | loadIniValues           | Get values from INI File and display the corresponding status in form | DMVAfunctions.inc |
| GET  | getEventMonitorValues   | Get Event Monitor Values from the INI file                            | DMVAfunctions.inc |
| GET  | getOverlayValues        | Get Overlay values from the INI file                                  | DMVAfunctions.inc |
| SET  | SetDMVAdetectMode       | Set DMVA Mode   | DMVAfunctions.inc |
| SET  | SetRecordingProperties  | Set recording properties  | DMVAfunctions.inc |
| SET  | SetDisplayProperties    | Set display properties  | DMVAfunctions.inc |
| SET  | SetROIProperty          | Set Region of Interest property                                       | DMVAfunctions.inc |
| GET  | getDisplayStreamName    | Get and displays the Stream Name                                      | DMVAfunctions.inc |
| GET  | getDMVAConfigValues     | Get DMVA Configuration values and load in application                 | DMVAfunctions.inc |
| SET  | SetSearchDateTime       | Set Date Time information to Search criteria                          | DMVAfunctions.inc |
| SET  | SetSendsearchtrash      | Set search and trash flag   | DMVAfunctions.inc |
| SET  | SetValTodeleteEventList | Set values to be deleted  | DMVAfunctions.inc |
| GET  | GetSDCardValue          | Get SD Card information   | DMVAfunctions.inc |
| GET  | SchedulerOnOff          | Get Scheduler status  | DMVAfunctions.inc |

### 5.4.5 Smart Analytics → Event Monitoring → Advanced Settings

Following are the files used to display Video Advanced settings screen,

| File name                      | Purpose   | Exclude from Build Flag |
|--------------------------------|---|-------------------------|
| <b>DMVAadvancedSetting.frm</b> | Contains UI elements used   | No                      |
| <b>bodybg.frm</b>              | Contains Header UI elements used. Included in DMVAadvancedSetting.frm   | Yes                     |
| <b>DMVAadvancedSetting.bas</b> | Contains implementation logic.  | No                      |
| <b>DMVAadvancedSetting.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |
| <b>DMVAfunctions.inc</b>       | Contains common function used throughout application                    | Yes                     |

Below are the functions used to get and set Camera setting screen values (DMVAadvancedSetting.bas)

| Type       | Function Name          | Purpose  | File Name         |
|------------|------------------------|--|-------------------|
| <b>GET</b> | loadIniValues          | Get values from INI File and display the corresponding status in form  | DMVAfunctions.inc |
| <b>GET</b> | getDisplayStreamName   | Get and displays the Stream Name   | DMVAfunctions.inc |
| <b>GET</b> | getDMVAAadvancedValues | Get and display the DMVA Advance setting values like Font Type, Color, Box color, Centriod color, velocity color etc | DMVAfunctions.inc |
| <b>SET</b> | SetDMVAAadvancedValues | Set the DMVA Advance setting values like Metadata, Overlay properties etc.,  | DMVAfunctions.inc |
| <b>GET</b> | getctrlNo              | Gets the Position or No of the selected control  | DMVAfunctions.inc |

### 5.4.6 Smart Analytics → Intelligent Motion Detection

Following are the files used to display Intelligent Motion Detection Event Setting screen,

| File name                             | Purpose   | Exclude from Build Flag |
|---------------------------------------|---|-------------------------|
| <b>intelligentMotionDetection.frm</b> | Contains UI elements used   | No                      |
| <b>intelligentMotionDetection.bas</b> | Contains implementation logic.  | No                      |
| <b>intelligentMotionDetection.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |
| <b>intelligentMotionDetection.css</b> | Contains Style Sheet for Form Controls                                  | Yes                     |
| <b>DMVAfunctions.inc</b>              | Contains common function used throughout application                    | Yes                     |
| <b>messagebox.inc</b>                 | Contains functions to display custom message box                        | Yes                     |

Below are the functions used to get and set Camera setting screen values (intelligentMotionDetection.bas)

| Type | Function Name        | Purpose   | File Name         |
|------|----------------------|---|-------------------|
| SET  | setIMDObjSize        | SET Intelligent Motion Detection Object size  | DMVAfunctions.inc |
| SET  | SetZoneValues        | SET Zone Values based on the zone name  | DMVAfunctions.inc |
| GET  | getDisplayStreamName | Get and displays the Stream Name  | DMVAfunctions.inc |
| GET  | GetIMDValues         | Get Intelligent Motion Detection values like Vehicle, Person Max / Min Width / Height                             | DMVAfunctions.inc |
| GET  | GetZoneValues        | Get Zone values   | DMVAfunctions.inc |
| SET  | SetIMDValues         | SET Intelligent Motion Detection values like Vehicle, Person Max / Min Width / Height                             | DMVAfunctions.inc |
| SET  | SetPolysides         | Set Polygon sides for the Intelligent Motion Detection Zone   | DMVAfunctions.inc |
| SET  | SetLoadNameIndex     | SET the current Index of the Load name to download the IMD values related to the selected load name from the IPNC | DMVAfunctions.inc |
| SET  | SetFilename          | SET Save settings File Name   | DMVAfunctions.inc |
| GET  | GetTripZoneFileNames | GET Intelligent Motion Detection File Name and Load the settings  | DMVAfunctions.inc |

#### 5.4.7 Smart Analytics → Streaming Meta

Following are the files used to display Streaming Meta Event Setting screen,

| File name                | Purpose   | Exclude from Build Flag |
|--------------------------|---|-------------------------|
| <b>streamingMOS.frm</b>  | Contains UI elements used   | No                      |
| <b>bodybg.frm</b>        | Contains Header UI elements used. Included in StreamingMOS.frm          | Yes                     |
| <b>streamingMOS.bas</b>  | Contains implementation logic.  | No                      |
| <b>streamingMOS.css</b>  | Contains Style Sheet for Form Controls                                  | Yes                     |
| <b>streamingMOS.inc</b>  | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |
| <b>DMVAfunctions.inc</b> | Contains common function used throughout application                    | Yes                     |
| <b>messagebox.inc</b>    | Contains functions to display custom message box                        | Yes                     |

Below are the functions used to get and set Camera setting screen values (streamingMOS.bas)

| Type | Function Name         | Purpose  | File Name         |
|------|-----------------------|--|-------------------|
| GET  | loadIniValues         | Get values from INI File and display the corresponding status in form            | DMVAfunctions.inc |
| GET  | getDisplayStreamName  | Get and displays the Stream Name   | DMVAfunctions.inc |
| GET  | GetStreamingMOSValues | GET Streaming Metadata values  | DMVAfunctions.inc |
| SET  | SetStreamingMOSValues | SET Streaming Metadata values  | DMVAfunctions.inc |
| SET  | SetLoadNameIndex      | SET the current Index of the Load name to download the IMD values related to the | DMVAfunctions.inc |

|            |                      |  |                   |
|------------|----------------------|--|-------------------|
|            |                      | selected load name from the IPNC                       |                   |
| <b>SET</b> | SetFilename          | SET Save settings File Name                            | DMVAfunctions.inc |
| <b>GET</b> | GetTripZoneFileNames | GET Streaming Metadata File Name and Load the settings | DMVAfunctions.inc |
| <b>GET</b> | GetSMetaZoneValues   | GET Streaming Metadata Zone information                | DMVAfunctions.inc |

#### 5.4.8 Smart Analytics → Object Counting

Following are the files used to display Object Counting Event Setting screen,

| File name                 | Purpose   | Exclude from Build Flag |
|---------------------------|---|-------------------------|
| <b>objectCounting.frm</b> | Contains UI elements used   | No                      |
| <b>bodybg.frm</b>         | Contains Header UI elements used. Included in objectCounting.frm        | Yes                     |
| <b>objectCounting.bas</b> | Contains implementation logic.  | No                      |
| <b>objectCounting.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |
| <b>DMVAfunctions.inc</b>  | Contains common function used throughout application                    | Yes                     |
| <b>messagebox.inc</b>     | Contains functions to display custom message box                        | Yes                     |

Below are the functions used to get and set Camera setting screen values (objectCounting.bas)

| Type       | Function Name           | Purpose   | File Name         |
|------------|-------------------------|---|-------------------|
| <b>GET</b> | loadIniValues           | Get values from INI File and display the corresponding status in form   | DMVAfunctions.inc |
| <b>GET</b> | getDisplayStreamName    | Get and displays the Stream Name  | DMVAfunctions.inc |
| <b>GET</b> | getObjectCountingValues | GET Object counting values from INI File  | DMVAfunctions.inc |
| <b>SET</b> | SetObjectCountingValues | SET Object counting values to IPNC Camera   | DMVAfunctions.inc |
| <b>SET</b> | SetLoadNameIndex        | SET the current Index of the Load name to download the IMD values related to the selected load name from the IPNC | DMVAfunctions.inc |
| <b>SET</b> | SetFilename             | SET Save settings File Name   | DMVAfunctions.inc |
| <b>GET</b> | GetTripZoneFileNames    | GET Object counting File Name and Load the settings   | DMVAfunctions.inc |

#### 5.4.9 Smart Analytics → Trip Zone

Following are the files used to display Trip Zone Event Setting screen,

| File name                | Purpose   | Exclude from Build Flag |
|--------------------------|---|-------------------------|
| <b>tripZone.frm</b>      | Contains UI elements used   | No                      |
| <b>bodybg.frm</b>        | Contains Header UI elements used. Included in tripZone.frm              | Yes                     |
| <b>tripZone.bas</b>      | Contains implementation logic.  | No                      |
| <b>tripZone.inc</b>      | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |
| <b>DMVAfunctions.inc</b> | Contains common function used throughout application                    | Yes                     |
| <b>messagebox.inc</b>    | Contains functions to display custom message box                        | Yes                     |

Below are the functions used to get and set Camera setting screen values (tripZone.bas)

| Type | Function Name        | Purpose   | File Name         |
|------|----------------------|---|-------------------|
| GET  | loadIniValues        | Get values from INI File and display the corresponding status in form   | DMVAfunctions.inc |
| GET  | GetTripZoneValues    | Get Trip Zone values from INI File  | DMVAfunctions.inc |
| SET  | SetTripZoneValues    | Set Trip Zone values into IPNC Camer  | DMVAfunctions.inc |
| SET  | SetZoneValues        | SET Zone Values based on the zone name  | DMVAfunctions.inc |
| GET  | getDisplayStreamName | Get and displays the Stream Name  | DMVAfunctions.inc |
| SET  | SetLoadNameIndex     | SET the current Index of the Load name to download the IMD values related to the selected load name from the IPNC | DMVAfunctions.inc |
| SET  | SetFilename          | SET Save settings File Name   | DMVAfunctions.inc |
| GET  | GetTripZoneFileNames | GET Trip zone stored File Name and Load the settings  | DMVAfunctions.inc |

#### 5.4.10 Smart Analytics → Scheduler

Following are the files used to display Scheduler Setting screen,

| File name                | Purpose   | Exclude from Build Flag |
|--------------------------|---|-------------------------|
| <b>schedule.frm</b>      | Contains UI elements used   | No                      |
| <b>bodybg.frm</b>        | Contains Header UI elements used. Included in tripZone.frm              | Yes                     |
| <b>schedule.bas</b>      | Contains implementation logic.  | No                      |
| <b>schedule.inc</b>      | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |
| <b>DMVAfunctions.inc</b> | Contains common function used throughout application                    | Yes                     |

Below are the functions used to get and set Camera setting screen values (Scheduler.bas)

| Type | Function Name     | Purpose  | File Name         |
|------|-------------------|--|-------------------|
| GET  | loadIniValues     | Get values from INI File and display the corresponding status in form            | DMVAfunctions.inc |
| GET  | GetScheduleValues | Get Schedule value from IPNC like rule type, setting name and schedule day name. | DMVAfunctions.inc |
| GET  | GetSchedules      | Get Schedule Information from IPNC   | DMVAfunctions.inc |
| SET  | SetScheduleValues | Set Schedule information to IPNC   | DMVAfunctions.inc |
| SET  | DelScheduleValues | Delete Schedule information from IPNC  | DMVAfunctions.inc |

### 5.4.11 Camera

Following are the files used to display Camera settings screen,

| File name                 | Purpose   | Exclude from Build Flag |
|---------------------------|---|-------------------------|
| <b>cameraSettings.frm</b> | Contains UI elements used   | No                      |
| <b>cameraSettings.bas</b> | Contains implementation logic   | No                      |
| <b>cameraSettings.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the functions used to get and set Camera setting screen values (cameraSettings.bas)

| Type       | Function Name           | Purpose   | File Name     |
|------------|-------------------------|---|---------------|
| <b>GET</b> | getCameraSettings       | Get Lighting condition, 2A setting, Low light behavior, Noise filter values from camera | functions.inc |
| <b>GET</b> | getcameraSettingOptions | Get drop down values from camera  | functions.inc |
| <b>SET</b> | setCameraSettings       | Set Lighting condition, 2A setting, Low light behavior, Noise filter values to camera   | functions.inc |

### 5.4.12 Audio

Following are the files used to display Audio setting screen

| File name               | Purpose   | Exclude from Build Flag |
|-------------------------|---|-------------------------|
| <b>audiosetting.frm</b> | Contains UI elements used   | No                      |
| <b>audiosetting.bas</b> | Contains implementation logic   | No                      |
| <b>audiosetting.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the functions used to get and set Audio setting screen values (audiosetting.bas)

| Type       | Function Name   | Purpose  | File Name     |
|------------|-----------------|--|---------------|
| <b>GET</b> | getAudioSetting | Get audio enable, audio mode, audio input and audio output values from camera. | functions.inc |
| <b>GET</b> | getAudioOptions | Get drop down options from camera.   | functions.inc |
| <b>SET</b> | setAudioSetting | Set audio enable, audio mode, audio input and audio output values to camera.   | functions.inc |

### 5.4.13 Date/Time

Following are the files used to display Date and Time setting screen,

| File name              | Purpose   | Exclude from Build Flag |
|------------------------|---|-------------------------|
| <b>setDateTime.frm</b> | Contains UI elements used   | No                      |
| <b>setDateTime.bas</b> | Contains implementation logic   | No                      |
| <b>setDateTime.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |



Below are the functions used to get and set Date and Time setting screen values (setDateTime.bas)

| Type | Function Name        | Purpose   | File Name     |
|------|----------------------|---|---------------|
| GET  | getDateTime          | Get camera current date and time. Get date and time format selected values from camera. | functions.inc |
| GET  | getDateFormatOptions | Get date,time and position drop down options from camera                                | functions.inc |
| GET  | getTimezones         | Download time zone text file from came to get time zone options                         | functions.inc |
| SET  | SetDatetime          | Set new date, time, format and position to camera                                       | functions.inc |

#### 5.4.14 Network and Port

Following are the files used to display date and time setting screen,

| File name           | Purpose   | Exclude from Build Flag |
|---------------------|---|-------------------------|
| networkSettings.frm | Contains UI elements used   | No                      |
| networkSettings.bas | Contains implementation logic   | No                      |
| networkSettings.inc | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the functions used to get and set network setting screen values (networkSettings.bas)

| Type | Function Name      | Purpose  | File Name     |
|------|--------------------|--|---------------|
| GET  | getNetworkDetails  | Get network values from camera                             | functions.inc |
| GET  | getFTPDetails      | Get FTP server values from camera                          | functions.inc |
| GET  | getSMTPDetails     | Get SMTP server values from camera                         | functions.inc |
| GET  | getSNTPRTSPDetails | Get RTSP,SNTP values from camera                           | functions.inc |
| GET  | getPORTDetails     | Get Port setting values from camera                        | functions.inc |
| SET  | setNetworkDetails  | Set network setting values to camera if DHCP is not enable | functions.inc |
| SET  | setFTPDetails      | Set FTP server configuration values to camera              | functions.inc |
| SET  | setSMTPDetails     | Set SMTP server configuration values to camera             | functions.inc |
| SET  | setPORTDetails     | Set port setting values to camera                          | functions.inc |
| SET  | setSNTPRTSPDetails | Set RTSP, SNTP values to camera                            | functions.inc |

### 5.4.15 Alarm

Following are the files used to display alarm setting screen,

| File name                | Purpose   | Exclude from Build Flag |
|--------------------------|---|-------------------------|
| <b>alarmSettings.frm</b> | Contains UI elements used   | No                      |
| <b>alarmSettings.bas</b> | Contains implementation logic   | No                      |
| <b>alarmSettings.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the function used to get and set alarm setting screen values (alarmSettings.bas)

| Type       | Function Name          | Purpose  | File Name     |
|------------|------------------------|--|---------------|
| <b>GET</b> | getAlarmSetting        | Get enable alarm, alarm duration, Alarm Trigger, on alarm values from camera | functions.inc |
| <b>GET</b> | getAlarmSettingOptions | Get drop down option values from camera                                      | functions.inc |
| <b>SET</b> | setAlarmSetting        | Set enable alarm, alarm duration, Alarm Trigger, on alarm values to camera   | functions.inc |

### 5.4.16 Storage

Following are the files used to display storage setting screen,

| File name                 | Purpose   | Exclude from Build Flag |
|---------------------------|---|-------------------------|
| <b>storageSetting.frm</b> | Contains UI elements used   | No                      |
| <b>storageSetting.bas</b> | Contains implementation logic   | No                      |
| <b>storageSetting.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the functions used to get and set alarm setting screen values (alarmSettings.bas)

| Type       | Function Name     | Purpose   | File Name     |
|------------|-------------------|---|---------------|
| <b>GET</b> | getStorageSetting | Get storage setting and its schedule values from camera | functions.inc |
| <b>SET</b> | setStorageSetting | Set schedule details to camera                          | functions.inc |

### 5.4.17 Maintenance

Following are the files used to display maintenance screen,

| File name              | Purpose   | Exclude from Build Flag |
|------------------------|---|-------------------------|
| <b>maintenance.frm</b> | Contains UI elements used   | No                      |
| <b>maintenance.bas</b> | Contains implementation logic   | No                      |
| <b>maintenance.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |
| <b>Maintenance.htm</b> | Display the UI required for accessing Logs and Upgrading                | Will be a part          |

|  |   |                |
|--|---|----------------|
|  | firmware. Will be displayed inside a web browser control inside the GoDB application. | of the cramps. |
|--|---|----------------|

### 5.4.18 Support

Following are the files used to display support screen,

| File name                | Purpose   | Exclude from Build Flag |
|--------------------------|---|-------------------------|
| <b>supportScreen.frm</b> | Contains UI elements used   | No                      |
| <b>supportScreen.bas</b> | Contains implementation logic   | No                      |
| <b>supportScreen.inc</b> | Contains Label, X, Y, width and Height of all elements in the .frm file | Yes                     |

Below are the function used to get support screen values (supportScreen.bas)

| Type       | Function Name  | Purpose  | File Name     |
|------------|----------------|--|---------------|
| <b>GET</b> | getSupportData | Get kernel, Uboot and software version from camera                                   | functions.inc |
| <b>GET</b> | dwnldFile      | Download file from to display license, support info, credits, copyrights from camera | functions.inc |

## 5.5 Common files

Following are included files used throughout the application.

| File name               | Purpose  | Exclude from Build Flag |
|-------------------------|--|-------------------------|
| <b>common.inc</b>       | Function which are used in more than one page are defined in this page                                     | Yes                     |
| <b>Function.inc</b>     | All GET from camera and SET to camera definitions are defined in function.inc                              | Yes                     |
| <b>defines.inc</b>      | Common #defines are available in this page   | Yes                     |
| <b>keywords.inc</b>     | All GUI keyword with corresponding screen control display name to display failure keywords GUI field names | Yes                     |
| <b>menuCaptions.lan</b> | Left menu display captions   | Yes                     |
| <b>leftMenu.frm</b>     | Contains Left menu UI controls   | Yes                     |
| <b>leftMenu.bas</b>     | Contains left menu implementation logic  | Yes                     |

Below are the function used to display UI controls,

| Type           | Function Name        | Purpose  | File Name    |
|----------------|----------------------|--|--------------|
| <b>General</b> | displayControls      | Align UI controls based on screen resolution   | common.inc   |
| <b>General</b> | createGDOControl     | Creates GDO(ActiveX control) control to play RTSP stream                                   | common.inc   |
| <b>General</b> | calVideoDisplayRatio | Calculate aspect ratio for the selected stream to display video in calculated aspect ratio |              |
| <b>General</b> | showSubMenu          | To show/Hide setting sub menu  | leftMenu.bas |

|                |                     |  |              |
|----------------|---------------------|--|--------------|
| <b>General</b> | selectSubMenu       | Change FG color for selected setting                 | leftMenu.bas |
| <b>General</b> | assignSelectedImage | Assign selected image for selected main menu element | leftMenu.bas |

## 6 Steps for making simple changes

### 6.1 Adding a new keyword

Below are the functions to be modified to add new keyword.

**Function Name:** loadIniValues()

**File Name** : functions.inc

Add new keyword to keywords\$ string separated by commas.

**File Name** : keywords.inc

Add new keyword to cameraKeywords\$ string with corresponding UI control display name .

Use the keyword prefixed with 'g' in the GET functions.

### 6.2 Modifying a keyword

Find the old keyword in “functions.inc” and replace the old keyword with the new keyword.

### 6.3 Adding UI elements/ Aligning UI elements

1. New UI elements can be added to the application by adding the required controls in the respective .frm file. The position of the controls can also be changed by adjusting the position of the same in the respective .frm file.

2. To make the alignment changes visible in the UI modify the related .inc file following the steps in the section below (**Generating .inc for .frm files**)

3. If any new control is added to the left menu of the application, please add the number of the controls added to the number displayed in the #define LEFTMENUCTRLS available in the page “**defines.inc**”.

#### 6.3.1 Generating .inc for .frm files

.Inc file has all the form control attributes like control name, X, Y, Width, Height values. Application uses these values to realign controls to fit all the screen resolution.

If .frm file(s) are modified (add new control, modify X, Y, etc...) then .inc files must be generated by following below steps,

1. Download the Generate\_INC.zip file and unzip the same.



Generate\_INC.zip

2. Copy all the modified .frm from source code folder and paste to the “Generate\_INC” folder.
3. Double-click on “Run.bat”.
4. Click on “Create .inc file” button on launched application.
5. <frm filename>.inc file will be generated in Generate\_INC folder.
6. Copy all the .inc files from Generate\_INC folder and replace the files in source code folder.

**Note:** Frame and Image controls realign code will be available in corresponding .bas file.

#### 6.4 To Change the background image for login page

Modify the image “**login\_bg.jpg**” that will be available in the images folder. The reference to this image can be found in the page “auth.bas”

#### 6.5 To change the logo of Texas Instruments found in the left menu

Modify the image “**logo.jpg**” that will be available in the images folder. The reference to this image can be found in the page “leftmenu.frm”