

Software Specification for Image Setup Process Library Ver.1.42 (For I2FDIA Ver.2.50)

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1. Purpose

The Image Setup Process Library has the features for the image setup processing (Automatic and manual) and the red-eye removal (Automatic and manual).

This specification is described the functions for these features.

2. History

| Version | Date | Description |
|----------|---------------|---|
| Ver.0.50 | Oct. 7, 2005 | First release |
| Ver.0.60 | Oct. 12, 2005 | <ul style="list-style-type: none">● Delete ISPL_ManualWithRedEye0.● Add ISPL_ManualSetup0 and ISPL_RedEye0.● Add the structure ISPL_REDEYE_AREA, ISPL_REDEYE_FACEDATA and ISPL_REDEYE_RESULT.● Modify the workflow for case 1-4.● Add the error code ISPL_ERR_LOAD_DLL, ISPL_ERR_PARAM_INIT. |
| Ver.0.80 | Oct. 20, 2005 | <ul style="list-style-type: none">● Modify the arguments for ISPL_ManualSetup0.● Change the member name of ISPL_MANUALPARAM.● Modify the workflow for case 1-4. |
| Ver.0.90 | Oct. 21, 2005 | <ul style="list-style-type: none">● Add the explanation to use ISPL_IMAGE_INFO structure at Note on Chapter 6.● Modify the value in ISPL_IMAGE_INFO structure on Chapter 6.4. |
| Ver.1.00 | Oct. 28, 2005 | <ul style="list-style-type: none">● Change the process workflow for case 1, 2 and 3.● Add and change the error code on Chapter 8. |
| Ver.1.10 | Nov. 25, 2005 | <ul style="list-style-type: none">● Change the structure ISPL_IMAGE_INFO (Chapter 6.1), ISPL_PROFILE_INFO (Chapter 6.2) for UNICODE. |
| Ver.1.20 | Dec. 2, 2005 | <ul style="list-style-type: none">● Not performed the automatic image setup processing even if flag is ON in ISPL_ImgSetupWithRedEye0.<ul style="list-style-type: none">➔ Images with a CR flag in EXIF tags.➔ Images from FUJICOLOR CD.● Add the error code ISPL_ERR_FORMAT_PARAM (2009) on Chapter 8. |
| Ver.1.30 | Dec. 9, 2005 | <ul style="list-style-type: none">● Change the process when images with a CR flag in Exif tags and form FUJICOLOR CD and flags is OFF in ISPL_ImgSetupWithRedEye0.● The problem of terminating abnormally when the image setup processing is continuously is corrected. |
| Ver.1.31 | Jan. 6, 2006 | <ul style="list-style-type: none">● Supports both ASCII and UNICODE for file name. |
| Ver.1.40 | Mar. 31, 2006 | <ul style="list-style-type: none">● Supports the red-eye manual removal.● Add notes about the red-eye removal on Chapter 3.● Add ISPL_RedEyeManual0 (Chapter 5.7) and ISPL_RedEyeUndo0 (Chapter 5.8).● Add the structure ISPL_REDEYE_MANUALINFO (Chapter 6.7)● Change the workflow for case 4 (Chapter 7.4).● Add the error code on Chapter 8. |
| Ver.1.41 | Apr. 12, 2006 | <ul style="list-style-type: none">● The following problems of the red-eye removal are corrected.<ul style="list-style-type: none">➔ When the result of ISPL_RedEyeManual0 is no correction, the result of ISPL_RedEyeUndo0 after ISPL_RedEyeManual0 is wrong.➔ When application executes the red-eye automatic removal function with ISPL_RedEye0, the number of corrected Red-eye and image are different. |
| Ver.1.42 | Apr. 24, 2006 | <ul style="list-style-type: none">● The following problems of the red-eye removal are corrected.<ul style="list-style-type: none">➔ When executing the red-eye manual removal function with ISPL_RedEyeManual0 twice, after first processing, the first correction is not reflected in the second correction.➔ When application executes the red-eye manual removal function with ISPL_RedEyeManual0 using a larger image size (1000x1000 pixels or more), the memory access violation occurs sometimes. |

3. Notes

Ver.1.4.2 (Apr. 24)

The function's I/F are not changed. So replace FFISPL.dll and FAR2.dll.

Ver.1.4.1 (Apr. 12)

The function's I/F are not changed. So replace FFISPL.dll and FAR2.dll.

Ver.1.4.0 (Mar. 31)

This version supports the red-eye manual removal.

This version also changes the header file (FFISPL.h) to add two functions, a structure and the error code.

Ver.1.3.1 (Jan. 6)

This version supports ASCII and UNICODE for file name.

The function I/F for ASCII is same as Ver.1.3.0.

The function I/F for UNICODE is different from ASCII.

Therefore, the header file is changed as Ver.1.3.0.

You can use the header file on both environment with ASCII and UNICODE.

Ver.1.3.0 (Dec. 9)

The function's I/F are not changed. So replace FFISPL.dll.

Ver.1.2.0 (Dec. 2)

Change the header file (FFISPL.h) to add an error code (ISPL_ERR_FORMAT_PARAM).

Ver.1.1.0 (Nov. 25)

ISPL_ImgSetupWithRedEye() and ISPL_PrinterProfile() support UNICODE.

Therefore, application should change the parameters to indicate file name.

ISPL_ManualSetup() and ISPL_Redeye() don't need to support UNICODE.

When application doesn't support UNICODE, it should use FFISPL Ver.1.0.1.

Red-eye removal

The red-eye removal function consists of two functions. These are the red-eye automatic removal and the red-eye manual removal.

Red-eye automatic removal : This function recognizes a face in an image. When a face has red-eyes, this function removes red-eye. A user operation is not needed, and red-eyes are removed automatically.

Red-eye manual removal : User selects a face included red-eyes. This function recognizes a face in selected area by user, and removes red-eyes automatically.

Notes when executing the red-eye removal are as follows.

- Application should use the image data which minimum size is more than 900 pixels. Therefore, application should use the original image data such like 1832x1228pixel.
- Red-eye removal function needs an image has never been that executed this function. Because this function re-calculates the contents of correction every time. So application should set an image before executing the red-eye manual removal function in ISPL_RedEye(), ISPL_RedEyeManual() and ISPL_RedEyeUndo().

4. Function list

| No | Function | Explanation |
|----|-------------------------|---|
| 1 | ISPL_Init | Initialize the parameters. |
| 2 | ISPL_Finish | Terminate the parameters. |
| 3 | ISPL_SetDefaultParam | Set the default values to the parameters. |
| 4 | ISPL_ImgSetupWithRedEye | Execute the automatic image setup processing and the red-eye automatic removal. |
| 5 | ISPL_ManualSetup0 | Execute the manual image setup processing. |
| 6 | ISPL_RedEye0 | Execute the red-eye automatic removal. |
| 7 | ISPL_RedEyeManual0 | Execute the red-eye manual removal. |
| 8 | ISPL_RedEyeUndo0 | Return the image before executing previous ISPL_RedEye0 or ISPL_RedEyeManual0. |
| 9 | ISPL_PrinterProfile | Convert the color space from sRGB to printer color space. |

5. Function specification

5.1 ISPL_Init

| | | | |
|--------------|---|---------------|---------|
| Function | int ISPL_Init0 | | |
| Description | Initialize the parameters that this library uses. <ul style="list-style-type: none"> ● Call this function first. ● Call this function for each image. | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | None | | |
| Return value | ISPL_NOERR: Success Other: Error | | |

5.2 ISPL_Finish

| | | | |
|--------------|---|---------------|---------|
| Function | int ISPL_Finish0 | | |
| Description | Terminate the parameters that this library uses. <ul style="list-style-type: none"> ● Should call this after image setup processing. ● Should call this after occurring the errors. | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | None | | |
| Return value | ISPL_NOERR: Success Other: Error | | |

5.3 ISPL_SetDefaultParam

| | | | |
|--------------|--|------------------------------------|---|
| Function | int ISPL_SetDefaultParam(PISPL_MANUAL_PARAM) | | |
| Description | The default value is stored in ISPL_MANUAL_PARAM structure. | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | OUT | PISPL_MANUAL_PARAM pManualParam | Manual setup parameter structure Allocate Memory : by application |
| Return value | ISPL_NOERR: Success Other: Error | | |
| How to use | 1. Allocate memory for ISPL_MANUAL_PARAM . 2. Execute this function. 3. The default value is stored in ISPL_MANUAL_PARAM . | | |

5.4 ISPL_ImgSetupWithRedEye

| | | | |
|--------------|--|---------------------------------|---|
| Function | int ISPL_ImgSetupWithRedEye (BOOL, BOOL, ISPL_IMAGE_INFO, ISPL_MANUAL_PARAM, PISPL_REDEYE_RESULT, ISPL_PROFILE_INFO) | | |
| Description | In this function, the following features can be performed. <ul style="list-style-type: none"> ● Automatic image setup processing ● Manual image setup processing ● Red-eye automatic removal (All area) ● Conversion color space from sRGB to printer color | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | IN | BOOL bAutoSetupSwitch | Auto setup processing switch OFF : ISPL_AUTOSSETUP_OFF(FALSE) ON : ISPL_AUTOSSETUP_ON(TRUE) |
| | IN | BOOL bRedEyeSwitch | Red-eye automatic removal switch OFF : ISPL_REDEYE_OFF(FALSE) ON : ISPL_REDEYE_ON(TRUE) |
| | IN/OUT | ISPL_IMAGE_INFO ImageInfo | Image information structure Allocate Memory : by application |
| | IN | ISPL_MANUAL_PARAM ManualParam | Manual setup parameter structure Allocate Memory : by application |
| | OUT | PISPL_REDEYE_RESULT pRedEyeInfo | Red-eye result structure Allocate Memory : by application |
| | IN | ISPL_PROFILE_INFO ProfileInfo | Set NULL if it is not necessary. Profile information structure |
| Return value | ISPL_NOERR: Success Other: Error | | |
| How to use | 1. Allocate memory and prepare parameters for ISPL_IMAGE_INFO , ISPL_MANUAL_PARAM and ISPL_REDEYE_RESULT . 2. Execute this function. 3. The number of faces that this function finds and removes red-eyes is stored in pRedEyeInfo->nFaceNum . 4. The pointer of the red-eye removal result is stored in pRedEyeInfo->pRedEyeFaceData . <u>And pRedEyeInfo->pRedEyeFaceData->RedEyeArea that is a dimension of ISPL_REDEYE_AREA is allocated by this dll.</u> | | |
| Note | Set the following parameters in ISPL_IMAGE_INFO structure. lpOriginalImg : Original image data pointer. This function creates thumbnail using this image data to calculate correction values. pImgFilePath : Original image file path to load EXIF tags. Set the following parameters in ISPL_PROFILE_INFO structure. pScannerProfile : Scanner profile path to convert the color space from scanner color to sRGB. pPrinterProfile : Printer profile path to convert the color space from sRGB to printer color. | | |

5.5 ISPL_ManualSetup

| | | | |
|--------------|--|-------------------------------|---|
| Function | int ISPL_ManualSetup (ISPL_IMAGE_INFO , ISPL_MANUAL_PARAM) | | |
| Description | In this function, the following features can be performed. <ul style="list-style-type: none"> ● Manual image setup processing Execute ISPL_ImgSetupWithRedEye() before calling this function. | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | IN/OUT | ISPL_IMAGE_INFO ImageInfo | Image information structure Allocate Memory : by application |
| | IN | ISPL_MANUAL_PARAM ManualParam | Manual setup parameter structure Allocate Memory : by application |
| Return value | ISPL_NOERR: Success Other: Error | | |
| How to use | 1. Allocate memory and prepare parameters for ISPL_IMAGE_INFO and ISPL_MANUAL_PARAM . 2. Execute this function. | | |

5.6 ISPL_RedEye

| | | | |
|--------------|--|--------------------------------------|--|
| Function | int ISPL_RedEye (ISPL_IMAGE_INFO , PISPL_REDEYE_RESULT) | | |
| Description | In this function, the following features can be performed. <ul style="list-style-type: none"> Red-eye automatic removal (All area) Execute ISPL_ImgSetupWithRedEye() before calling this function. | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | IN/OUT | ISPL_IMAGE_INFO ImageInfo | Image information structure Allocate Memory : by application |
| | OUT | PISPL_REDEYE_RESULT pRedEyeResult | Red-eye result structure Allocate Memory : by application |
| | | | Set NULL if it is not necessary. |
| Return value | ISPL_NOERR: Success Other: Error | | |
| How to use | 1. Allocate memory and prepare parameters for ISPL_IMAGE_INFO and ISPL_REDEYE_RESULT . 2. Execute this function. 3. The number of faces that this function finds and removes red-eyes is stored in pRedEyeInfo->nFaceNum . 4. The pointer of the red-eye removal result is stored in pRedEyeInfo->pRedEyeFaceData . <u>And pRedEyeInfo->pRedEyeFaceData->RedEyeArea that is a dimension of ISPL_REDEYE_AREA is allocated by this dll.</u> | | |

5.7 ISPL_RedEyeManual

| | | | |
|--------------|---|--|---|
| Function | int ISPL_RedEyeManual (ISPL_IMAGE_INFO, int, PISPL_REDEYE_MANUALINFO, PISPL_REDEYE_RESULT) | | |
| Description | In this function, the following features can be performed. <ul style="list-style-type: none"> Red-eye manual removal (Selected area) Execute ISPL_ImgSetupWithRedEye() before calling this function. | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | IN/OUT | ISPL_IMAGE_INFO ImageInfo | Image information structure Allocate Memory : by application |
| | IN | int nProcNum | Number of Red-eye removal |
| | IN | PISPL_REDEYE_MANUALINFO pRedEyeManualInfo | Red-eye manual removal information structure Allocate Memory : by application |
| | OUT | PISPL_REDEYE_RESULT pRedEyeResult | Red-eye result structure Allocate Memory : by application |
| | | | Set NULL if it is not necessary. |
| Return value | ISPL_NOERR: Success Other: Error | | |
| How to use | 1. Allocate memory and prepare parameters for ISPL_IMAGE_INFO , ISPL_REDEYE_MANUALINFO and ISPL_REDEYE_RESULT . 2. Execute this function. 3. The number of faces that this function finds and removes red-eyes is stored in pRedEyeInfo->nFaceNum . 4. The pointer of the red-eye removal result is stored in pRedEyeInfo->pRedEyeFaceData . <u>And pRedEyeInfo->pRedEyeFaceData->RedEyeArea that is a dimension of ISPL_REDEYE_AREA is allocated by this dll.</u> | | |

5.8 ISPL_RedEyeUndo

| | | | |
|--------------|---|--------------------------------------|---|
| Function | int ISPL_RedEyeUndo (ISPL_IMAGE_INFO, PISPL_REDEYE_RESULT) | | |
| Description | In this function, the following features can be performed. <ul style="list-style-type: none"> Return the image before executing previous ISPL_RedEye() or ISPL_RedEyeManual(). | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | IN/OUT | ISPL_IMAGE_INFO ImageInfo | Image information structure Allocate Memory : by application |
| | OUT | PISPL_REDEYE_RESULT pRedEyeResult | Red-eye result structure Allocate Memory : by application Set NULL if it is not necessary. |
| Return value | ISPL_NOERR: Success Other: Error | | |
| How to use | <ol style="list-style-type: none"> Allocate memory and prepare parameters for ISPL_IMAGE_INFO and ISPL_REDEYE_RESULT. Execute this function. The number of faces that this function finds and removes red-eyes is stored in pRedEyeInfo->nFaceNum. The pointer of the red-eye removal result is stored in pRedEyeInfo->pRedEyeFaceData. And pRedEyeInfo->pRedEyeFaceData->RedEyeArea that is a dimension of ISPL_REDEYE_AREA is allocated by this dll. | | |

5.9 ISPL_PrinterProfile

| | | | |
|--------------|--|----------------------------------|--|
| Function | int ISPL_PrinterProfile (ISPL_IMAGE_INFO, ISPL_PROFILE_INFO) | | |
| Description | Convert the color space from sRGB to printer color. When printing the image with template, this function is used after layouting image and template. | | |
| Arguments | IN/OUT | Type/Variable | Details |
| | IN/OUT | ISPL_IMAGE_INFO ImageInfo | Image information structure Allocate Memory : by application |
| | IN | ISPL_PROFILE_INFO ProfileInfo | Profile information structure Allocate Memory : by application |
| Return value | ISPL_NOERR: Success Other: Error | | |
| How to use | <ol style="list-style-type: none"> Allocate memory and prepare parameters for ISPL_IMAGE_INFO and ISPL_PROFILE_INFO. Execute this function. | | |
| Note | Set the following parameters in ISPL_PROFILE_INFO structure. pScannerProfile : In this function, application should be set NULL. pPrinterProfile : Printer profile path to convert the color space from sRGB to printer color. | | |

6. Structure specification

6.1 ISPL_IMAGE_INFO structure

Information for image data

| Type | Variable | Details | Value/Note |
|--------|---------------|---|---|
| LPVOID | lpConvertImg | Image data for conversion (DIB) [IN] Image data before conversion [OUT] Image data after conversion | Image data pointer to convert. Should not be NULL. |
| LPVOID | lpOriginalImg | Original image data (DIB) | Specify an original image in ISPL_ImgSetupWithRedEye(). Application should be set NULL in other. |
| int | nSetupType | Setup type | For DSC : ISPL_SETUP_TYPE_DSC(0) For Scanner : ISPL_SETUP_TYPE_SCN(1) Set ISPL_SETUP_TYPE_DSC(0) in ISPL_PrinterProfile(). |
| PWCHAR | pImgFilePath | Image file name (full path) UNICODE | Original image file path to load EXIF tags in ISPL_ImgSetupWithRedEye(). Application should be set NULL in other. |

6.2 ISPL_PROFILE_INFO structure

Information for profile

| Type | Variable | Details | Value/Note |
|--------|-----------------|---|--|
| PWCHAR | pScannerProfile | Scanner profile file name (full path) UNICODE | Scanner profile path to convert the color space from scanner color to sRGB. |
| PWCHAR | pPrinterProfile | Printer profile file name (full path) UNICODE | Printer profile path to convert the color space from sRGB to printer color. |

6.3 ISPL_MANUAL_PARAM structure

Parameters for image setup processing

| Type | Variable | Details | Value |
|-------|----------------------|--------------------------|---|
| short | sColorC | Color balance Cyan | -9 ~ +9 |
| short | sColorM | Color balance Magenta | -9 ~ +9 |
| short | sColorY | Color balance Yellow | -9 ~ +9 |
| short | sBrightness | Brightness | -9 ~ +9 |
| short | sContrast | Contrast | -9 ~ +9 |
| int | nMonotoneMode | Monotone mode | ISPL_MONOTONE_OFF(0): OFF ISPL_MONOTONE_BW(1): Black & White ISPL_MONOTONE_SEPIA(2): Sepia |
| short | sColChroma | Not used in this version | -50 ~ +50 |
| short | sChromaVal | Not used in this version | -9 ~ +9 |
| short | sSharpnessParam | Not used in this version | -500 ~ +500 |
| BOOL | bBeautifulSkinSwitch | Not used in this version | TRUE: ON, FALSE: OFF |
| short | sBeautifulSkinPower | Not used in this version | 0 ~ +100 |
| BOOL | bNoiseRedSwitch | Not used in this version | TRUE: ON, FALSE: OFF |
| short | sNoiseRedPower | Not used in this version | 0 ~ +100 |

6.4 ISPL_REDEYE_AREA structure

Location information of the result for the red-eye removal

| Type | Variable | Details | Value |
|-------|----------|--|------------------|
| LONG | lnPointX | Coordinate for peek point (Vertical) | 0 – Image width |
| LONG | lnPointY | Coordinate for peek point (Horizontal) | 0 – Image height |
| LONG | lnRectX | X coordinate for upper-left point (Vertical) | 0 – Image width |
| LONG | lnRectY | Y coordinate for upper-left point (Horizontal) | 0 – Image height |
| ULONG | ulRectW | Width of square for Red-eye removal | |
| ULONG | ulRectH | Height of square for Red-eye removal | |

6.5 ISPL_REDEYE_FACEDATA structure

Result of each face for the red-eye removal

| Type | Variable | Details | Value |
|------------------|---------------|-------------------------------------|-------|
| ISPL_REDEYE_AREA | RedEyeArea[2] | Location information for each face. | |

6.6 ISPL_REDEYE_RESULT structure

Total result for the red-eye removal

| Type | Variable | Details | Value |
|-----------------------|-----------------|---|-------|
| Int | nFaceNum | Number of the found face that have red-eye. | |
| PISPL_REDEYE_FACEDATA | pRedEyeFaceData | Result of each face (Dimension) | |

6.7 ISPL_REDEYE_MANUALINFO structure

Processing mode and rectangular area information for the red-eye removal

| Type | Variable | Details | Value |
|-------|------------|--|----------------------------|
| BYTE | byProcMode | Processing mode for the red-eye removal | 0 : Red-eye manual removal |
| LONG | lnRectX | X coordinate for upper-left point (Vertical) | 0 – Image width |
| LONG | lnRectY | Y coordinate for upper-left point (Horizontal) | 0 – Image height |
| ULONG | ulRectW | Width of square for the red-eye removal | |
| ULONG | ulRectH | Height of square for the red-eye removal | |

7. Process workflow

7.1 Case1

This chapter explains the print of the DSC image with the local printer.

Input image data: DSC (EXIF)

Processing: Automatic image setup processing and Printer profile processing

Display the results: None

| No | Process | ISPL Library Function | |
|----|---|----------------------------------|--|
| 1 | Init | ISPL_Init() | |
| 2 | Set default parameters | ISPL_SetDefaultParam() | |
| | | ISPL_MANUAL_PARAM structure | |
| | | pManualParam | Manual parameters |
| 3 | Automatic image setup processing and Printer profile processing | ISPL_ImgSetupWithRedEye() | |
| | | bAutoSetupSwitch | ISPL_AUTOSETUP_ON (TRUE) |
| | | bRedEyeSwitch | ISPL_REDEYE_OFF (FALSE) |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) |
| | | ImageInfo.lpOriginalImg | Original image data (DIB) |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_DSC (0) |
| | | ImageInfo.pImgFilePath | File name of the original image data (Full path) |
| | | ISPL_MANUAL_PARAM structure | |
| | | ManualParam | Manual parameters |
| | | ISPL_REDEYE_RESULT | |
| | | pRedEyeResult | NULL |
| | | ISPL_PROFILE_INFO structure | |
| | | ProfileInfo.pScannerProfile | NULL |
| | | ProfileInfo.pPrinterProfile | File name of the printer profile (Full path) |
| 4 | Finish | ISPL_Finish() | |

7.2 Case2

This chapter explains the print of the scanner image with the local printer.

Input image data: Scanner image

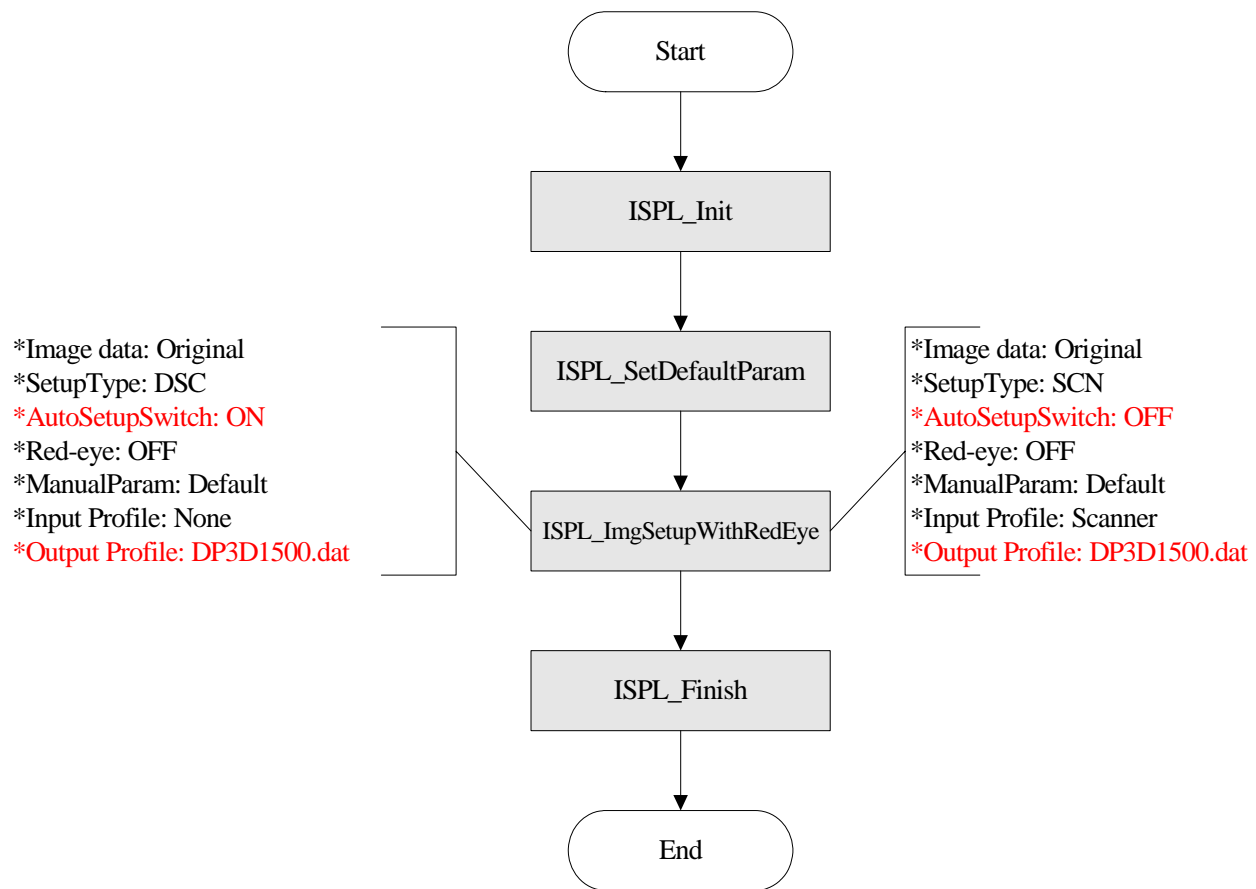
Processing: Automatic image setup processing and Printer profile processing

Display the result: None

| No | Process | ISPL Library Function | |
|----|---|----------------------------------|--|
| 1 | Init | ISPL_Init() | |
| 2 | Set default parameters | ISPL_SetDefaultParam() | |
| | | ISPL_MANUAL_PARAM structure | |
| | | pManualParam | Manual parameters |
| 3 | Automatic image setup processing and Printer profile processing | ISPL_ImgSetupWithRedEye() | |
| | | bAutoSetupSwitch | ISPL_AUTOSETUP_OFF (FALSE) |
| | | bRedEyeSwitch | ISPL_REDEYE_OFF (FALSE) |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) |
| | | ImageInfo.lpOriginalImg | Original image data (DIB) |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_SCN (1) |
| | | ImageInfo.pImgFilePath | NULL |
| | | ISPL_MANUAL_PARAM structure | |
| | | ManualParam | Manual parameters |
| | | ISPL_REDEYE_RESULT structure | |
| | | pRedEyeResult | NULL |
| | | ISPL_PROFILE_INFO structure | |
| | | ProfileInfo.pScannerProfile | File name of the scanner profile (Full path) |
| | | ProfileInfo.pPrinterProfile | File name of the printer profile (Full path) |
| 4 | Finish | ISPL_Finish() | |

Print DSC image with local printer (No edit)

Print scanner image with local printer (No edit)



7.3 Case3

This chapter explains the print of a layouted data with the local printer.

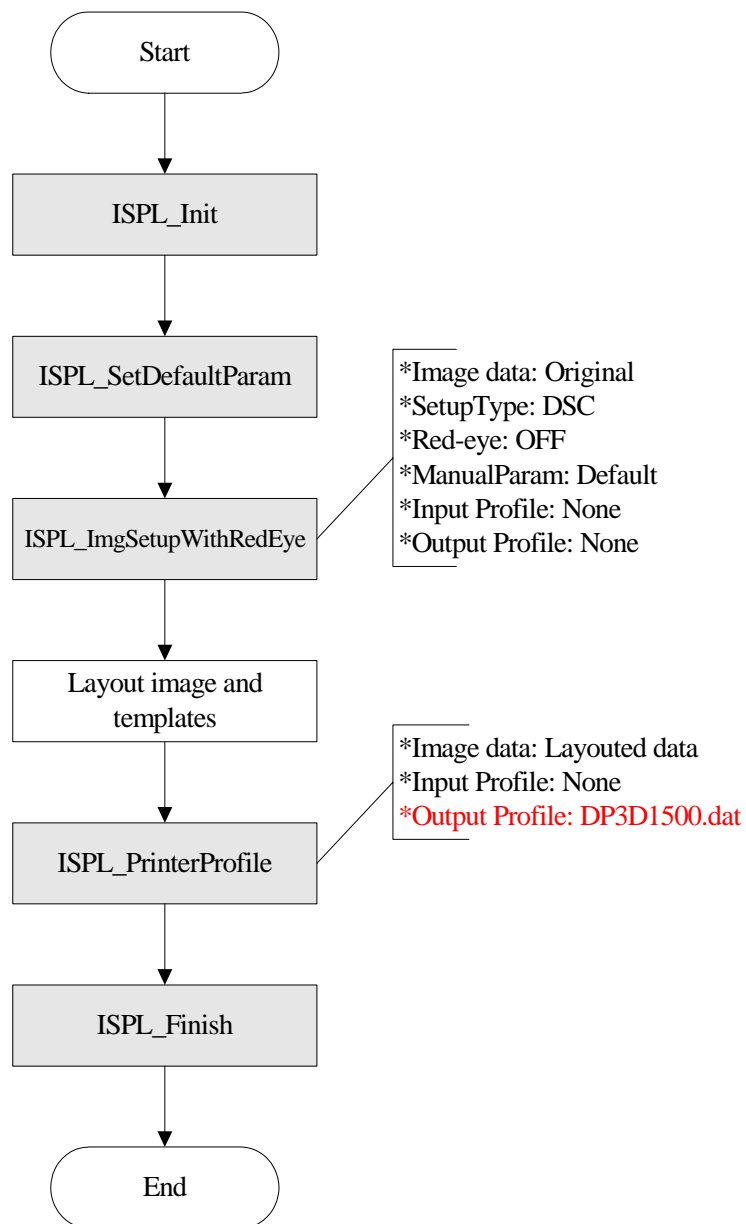
Input image data: DSC (EXIF)

Processing: Automatic image setup processing -> Layout images with templates -> Printer profile processing

Display the results: None

| No | Process | ISPL Library Function | |
|----|----------------------------------|----------------------------------|--|
| 1 | Init | ISPL_Init() | |
| 2 | Set default parameters | ISPL_SetDefaultParam() | |
| | | ISPL_MANUAL_PARAM strcture | |
| | | pManualParam | Manual parameters |
| 3 | Automatic image setup processing | ISPL_ImgSetupWithRedEye() | |
| | | bAutoSetupSwitch | ISPL_AUTOSETUP_ON (TRUE) |
| | | bRedEyeSwitch | ISPL_REDEYE_OFF (FALSE) |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) |
| | | ImageInfo.lpOriginalImg | Original image data (DIB) |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_DSC (0) |
| | | ImageInfo.pImgFilePath | File name of the original image data (Full path) |
| | | ISPL_MANUAL_PARAM structure | |
| | | ManualParam | Manual parameters |
| | | ISPL_REDEYE_RESULT structure | |
| | | pRedEyeResult | NULL |
| | | ISPL_PROFILE_INFO structure | |
| | | ProfileInfo.pScannerProfile | NULL |
| | | ProfileInfo.pPrinterProfile | NULL |
| 4 | Layout image with template | - | |
| 5 | Printer profile processing | ISPL_PrinterProfile() | |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) |
| | | ImageInfo.lpOriginalImg | NULL |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_DSC (0) |
| | | ImageInfo.pImgFilePath | NULL |
| | | ISPL_PROFILE_INFO structure | |
| | | ProfileInfo.pScannerProfile | NULL |
| | | ProfileInfo.pPrinterProfile | File name of the printer profile (Full path) |
| 6 | Finish | ISPL_Finish() | |

Print layouted data with local printer (No edit)



7.4 Case4

This chapter describes the workflow with user operation for the red-eye automatic removal and the red-eye manual removal.

Input image data: DSC (EXIF)

Processing (U/I application):

Automatic image setup processing -> Manual image setup processing (repeatedly)

-> Red-eye automatic removal -> Red-eye manual removal (repeatedly)

Processing (Print application):

Printer profile processing

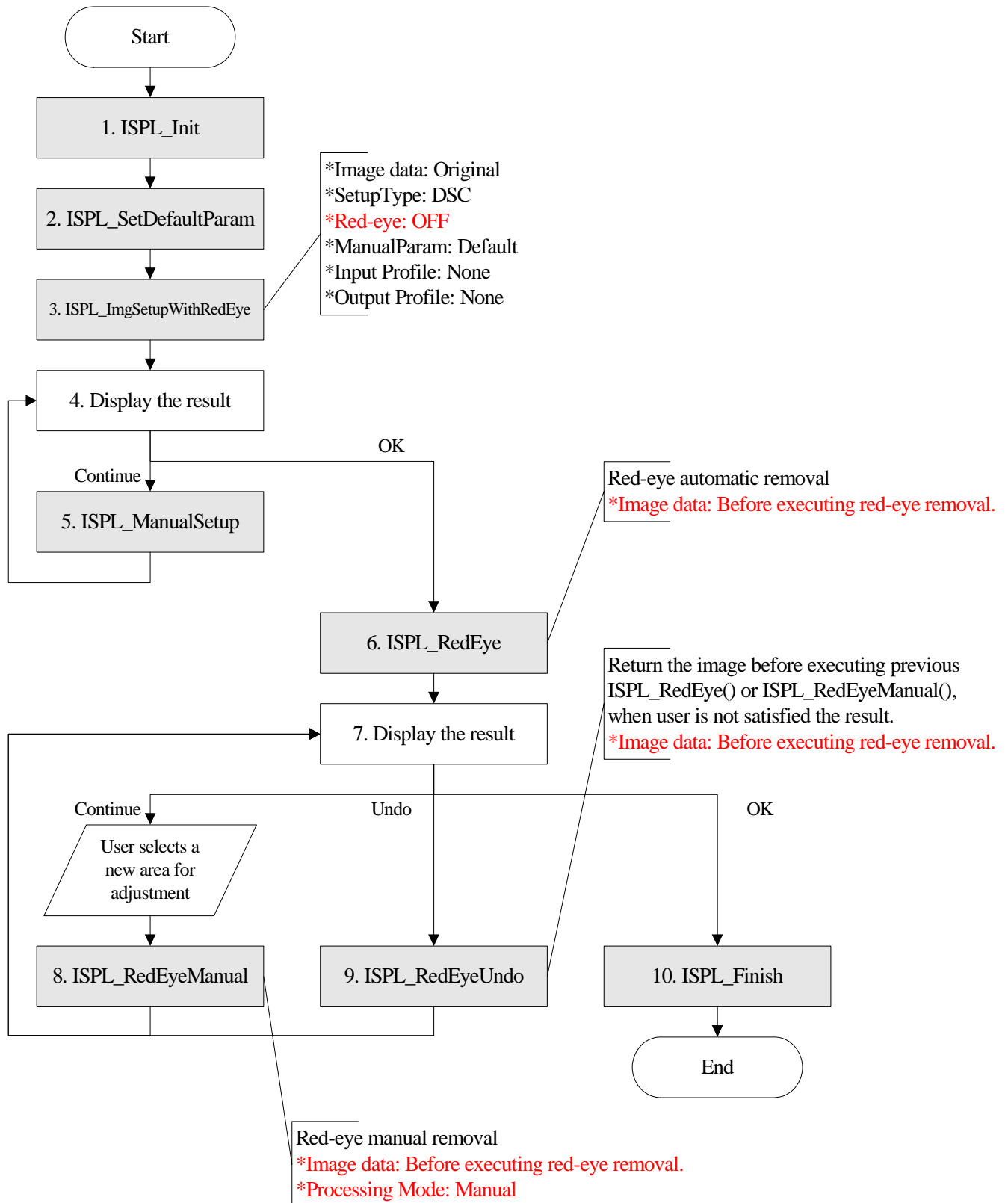
Display the results: Yes

< U/I application >

| No | Process | ISPL Library Function | |
|----|----------------------------------|----------------------------------|--|
| 1 | Init | ISPL_Init() | |
| 2 | Set default parameters | ISPL_SetDefaultParam() | |
| | | ISPL_MANUAL_PARAM structure | |
| | | pManualParam | Manual parameters |
| 3 | Automatic image setup processing | ISPL_ImgSetupWithRedEye() | |
| | | bAutoSetupSwitch | ISPL_AUTOSETUP_ON (TRUE) |
| | | bRedEyeSwitch | ISPL_REDEYE_OFF (FALSE) |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) |
| | | ImageInfo.lpOriginalImg | Original image data (DIB) |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_DSC (0) |
| | | ImageInfo.pImgFilePath | File name of the original image data (Full path) |
| | | ISPL_MANUAL_PARAM structure | |
| | | ManualParam | Manual parameters |
| | | ISPL_REDEYE_RESULT structure | |
| | | pRedEyeResult | NULL |
| | | ISPL_PROFILE_INFO structure | |
| | | ProfileInfo.pScannerProfile | NULL |
| | | ProfileInfo.pPrinterProfile | NULL |
| 4 | Display the result | - | Next step (Continue) : Go to 5. Next step (OK) : Go to 6. |
| 5 | Manual image setup processing | ISPL_ManualSetup() | |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) |
| | | ImageInfo.lpOriginalImg | NULL |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_DSC (0) |
| | | ImageInfo.pImgFilePath | NULL |
| | | ISPL_MANUAL_PARAM structure | |
| | | ManualParam | Manual parameters |

| No | Process | ISPL Library Function | |
|----|---|---|--|
| 6 | Red-eye automatic removal | ISPL_RedEye0 | |
| | | nProcNum | 1 |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) Image data before executing red-eye removal. |
| | | ImageInfo.lpOriginalImg | NULL |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_DSC (0) |
| | | ImageInfo.pImgFilePath | NULL |
| 7 | Display the result | - | Next step (Continue) : Go to 8. Next step (Undo) : Go to 9. Next step (OK) : Go to 10. |
| 8 | Red-eye manual removal | ISPL_RedEyeManual0 | |
| | | nProcNum | 1 |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) Image data before executing red-eye removal. |
| | | ImageInfo.lpOriginalImg | NULL |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_DSC (0) |
| | | ImageInfo.pImgFilePath | NULL |
| | | PISPL_REDEYE_MANUALINFO structure pointer | |
| | | pRedEyeManualInfo ->byProcMode | ISPL_REDEYE_MANUAL (0) |
| | | pRedEyeManualInfo->lnRectX | Rectangular X coordinates |
| | | pRedEyeManualInfo->lnRectY | Rectangular Y coordinates |
| | | pRedEyeManualInfo->ulRectW | Rectangular width |
| | | pRedEyeManualInfo->ulRectH | Rectangular height |
| | | pRedEyeManualInfo ->nFaceNum | 0 |
| 9 | Return the image before executing previous ISPL_RedEye0 or ISPL_RedEyeManual0. | ISPL_RedEyeUndo0 | |
| | | ISPL_IMAGE_INFO structure | |
| | | ImageInfo.lpConvertImg | Image data for conversion (DIB) Image data before executing red-eye removal. |
| | | ImageInfo.lpOriginalImg | NULL |
| | | ImageInfo.nSetupType | ISPL_SETUP_TYPE_DSC (0) |
| | | ImageInfo.pImgFilePath | NULL |
| 10 | Finish | ISPL_Finish0 | |

Image setup processing and Red-eye removal in Edit mode



8. Error code

The list of the error code is shown below.

| Definition name | Value | Content |
|----------------------------|-------|--|
| ISPL_NOERR | 0 | Normal termination. |
| ISPL_ERR_LOAD_DLL | 1001 | Failure to load I2 DLL. |
| ISPL_ERR_PARAM_INIT | 1002 | ISPL_Init() is not called. |
| ISPL_ERR_PARAM_FINISH | 1003 | ISPL_Finish() is not called. |
| ISPL_ERR_MANUAL_SETUP | 1004 | ISP_ImgSetupWithRedEye() is not called. |
| ISPL_ERR_SETUP_TYPE | 1005 | Invalid value for setup type. |
| ISPL_ERR_NOT_FOUND_FILE | 1006 | Not exist the specified file. |
| ISPL_ERR_CREATE_FILE | 1007 | Failure to create the file. |
| ISPL_ERR_DELETE_FILE | 1008 | Failure to delete the file. |
| ISPL_ERR_READ_FILE | 1009 | Failure to read the file. |
| ISPL_ERR_WRITE_FILE | 1010 | Failure to write the file. |
| ISPL_ERR_PARAM_FOLDER | 1011 | The file opening in the Param folder failed. |
| ISPL_ERR_SCN_PROFILE | 1012 | The scanner profile is NULL. |
| ISPL_ERR_PRN_PROFILE | 1013 | The type of the printer profile is not correct. |
| ISPL_ERR_REDEYE_CLASS_NEW | 1101 | The class creation of red-eye failed. |
| ISPL_ERR_REDEYE_MEM_NEW | 1102 | Failure to allocate memory of red-eye. |
| ISPL_ERR_REDEYE_SETDETIMG | 1103 | The input image creation processing of red-eye failed. |
| ISPL_ERR_REDEYE_DETECT | 1104 | The detection processing of red-eye failed. |
| ISPL_ERR_REDEYE_CONVDETDAT | 1105 | The information conversion processing of red-eye failed. |
| ISPL_ERR_REDEYE_CORRECT | 1106 | The correction processing of red-eye failed. |
| ISPL_ERR_REDEYE_PROCMODE | 1107 | The rectangular area outside the range was specified. |
| ISPL_ERR_REDEYE_RECTAREA | 1108 | The processing mode outside the range was specified. |
| ISPL_ERR_REDEYE_UNDO | 1109 | The specified red-eye removal has already been returned. |
| ISPL_ERR_COLOR_PARAM | 1201 | Invalid value for color(C, M, Y) correction. |
| ISPL_ERR_BRIGHTNESS_PARAM | 1202 | Invalid value for brightness correction. |
| ISPL_ERR_CONTRAST_PARAM | 1203 | Invalid value for contrast correction. |
| ISPL_ERR_MONOTONE_PARAM | 1204 | The monotone parameter is illegal. |
| ISPL_ERR_COLCHROMA_PARAM | 1205 | Invalid value for color chroma correction. |
| ISPL_ERR_CHROMAVAL_PARAM | 1206 | Invalid value for chroma correction. |
| ISPL_ERR_SHARPNESS_PARAM | 1207 | Invalid value for sharpness strength. |
| ISPL_ERR_BEAUTSKIN_PARAM | 1208 | Invalid value for beautiful skin strength. |
| ISPL_ERR_NOISERED_PARAM | 1209 | Invalid value for noise reduction strength. |
| ISPL_ERR_MEM_NEW | 2001 | Failure to allocate memory. |
| ISPL_ERR_NULL_PTR | 2002 | Parameter is NULL. |
| ISPL_ERR_NOT_SUPPORT_EXT | 2004 | An unsupported file extension. |
| ISPL_ERR_FILE_FORMAT | 2005 | This file format has not been permitted. |
| ISPL_ERR_FORMAT_PARAM | 2009 | Invalid parameter for image format. |
| ISPL_ERR_BOOL_PARAM | 2010 | The truth value parameter outside the range was specified. |
| ISPL_ERR_NOT_BMP | 2018 | BMP (DIB) data not correct. |
| ISPL_ERR_NOT_SUPPORT_IMAGE | 2019 | The image data not supported in this API. (depth, channel, and compression type, etc.) |
| ISPL_ERR_INSIZE_WH | 2020 | An input image size outside the range. (It is too small.) |
| ISPL_ERR_SETUP_PARAM | 2037 | The setup parameter is illegal. |
| ISPL_ERR_LEVEL_PARAM | 2039 | The level parameter is illegal |