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Face API

This API allows to scan/verify the face template.

- BS2_ScanFace: FaceStation2 Scans the face from a device and extracts template and image data.
- BS2_GetAuthGroup: Retrieves selected authentication groups.
- BS2_GetAllAuthGroup: Retrieves all authentication groups.
- BS2_SetAuthGroup: Configures an authentication group.
- BS2_RemoveAuthGroup: Removes selected authentication groups.
- BS2_RemoveAllAuthGroup: Remove all authentication groups.

FaceEx API

- BS2_ScanFaceEx: FaceStation F2 Scans the face from a device and extracts template and image data. [+ 2.7.1]
- BS2_ExtractTemplateFaceEx: FaceStation F2 Extracts template data by the face image. [+ 2.7.1]

Structure

BS2Face

```
typedef struct {
    uint8_t faceIndex;
    uint8_t numOfTemplate;
    uint8_t flag;
    uint8_t reserved;

    uint16_t imageLen;
    uint8_t reserved2[2];

    uint8_t imageData[BS2_FACE_IMAGE_SIZE];
    uint8_t templateData[BS2_TEMPLATE_PER_FACE][BS2_FACE_TEMPLATE_LENGTH];
} BS2Face;
```

1. *faceIndex*
Index of face

2. *numOfTemplate*
Number of face templates.

3. *flag*
Not used.

4. *reserved*
Reserved space.

5. *imageLen*
Size of the face image.

6. *reserved2*
Reserve space.

4. *imageData*
Face image data.

5. *data*
Face template data.

BS2AuthGroup

```
typedef struct {
    BS2_AUTH_GROUP_ID        id;
    char                  name[BS2_MAX_AUTH_GROUP_NAME_LEN];
    uint8_t                  reserved[32];
} BS2AuthGroup;
```

1. *id*
Group ID for group matching.

2. *name*
Name of the matching group that will be displayed on BioStar 2

3. *reserved*
Reserved space.

BS2TemplateEx

```
typedef struct {
    uint8_t       data[552];
    uint8_t       isIR;
    uint8_t       reserved[3];
} BS2TemplateEx;
```

`FaceStation F2`

1. *data*
IR or visual image template data

2. *isIR*
True when it comes to an IR image, false when it comes to a visual image

3. *reserved*
Reserved

BS2FaceEx

```
typedef struct {
    uint8_t       faceIndex;
    uint8_t       numOfTemplate;
    uint8_t       flag;
    uint8_t       reserved;

    uint32_t      imageLen;
    union {
        struct {
            uint16_t irImageLen;
            uint8_t  unused[6];            ///< 6 bytes (packing)
            uint8_t  imageData[BS2_MAX_WARPED_IMAGE_LENGTH];            ///<
40 * 1024 bytes
            uint8_t  irImageData[BS2_MAX_WARPED_IR_IMAGE_LENGTH];       ///<
30 * 1024 bytes
            BS2TemplateEx templateEx[BS2_MAX_TEMPLATES_PER_FACE_EX];    ///<
20 * 556 bytes
        };

        uint8_t   *rawImageData;
    };
} BS2FaceEx;
```

FaceStation F2

1. *faceIndex*
Index of face

2. *numOfTemplate*
The number of template including Visual, IR

3. *flag*
Flag whether the image is a WARPed image.
WARP is a kind of generalization that extracts the face among the physical image which contains different body parts.
When flag is set to 1, the device refers to 5 pieces of information defined by the struct in the union.
When flag is set to 0, the device refers to rawImageData in the union.
If the user wants to register a face with a random image that is not WARPed,
please set the flag as BS2_FACE_EX_FLAG_NONE(0), set as image data in the address space of rawImageData, and set the size of image data as imageLen.
When this happens, the device will automatically go through the WARP process with rawImageData and fill in the information in the struct.
Please note that rawImageData and struct are tied in an union.

Value	Description
BS2_FACE_EX_FLAG_NONE	0x00
BS2_FACE_EX_FLAG_WARPED	0x01
BS2_FACE_EX_FLAG_ALL	0xFF

4. *reserved*
Reserved

5. *imageLen*
The size of image data

6. *irImageLen*
The size of IR image data

7. *unused*
Unused space. (for packing)

8. *imageData*
WARPed facial image data. This is made by rawImageData automatically.

9. *irImageData*
IR image data. IR image might not exist in the WARP process.
It is generated automatically when trying authentication.
10. *templateEx*
Template data of Visual or IR image

11. *rawImageData*
Non-WARPed image data (`JPG image only, Minimun size is 250 * 250`)

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