ABBYY

ABBYY Mobile Capture SDK

React Native Module

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Introduction

ABBYY Mobile Capture SDK React Native Module allows to use ABBYY Mobile Capture SDK features in apps based on the React Native framework. Image Capture feature is available as a complete scenario, including user interface implementation. Core API methods for low-level single image processing, such as data extraction, text recognition, images export, etc., can be simply integrated into your projects.

This module requires the ABBYY Mobile Capture assets, which differ for Android and iOS, and a license file. You can request ABBYY Mobile Capture trial version on the ABBYY website.

This manual describes JavaScript API. More information, including the library usage details, is available in the *ABBYY Mobile Capture SDK Developer's Guide* found in the library packages.

Getting Started

To start developing with the ABBYY Mobile Capture SDK React Native Module, you need to add the module and ABBYY Mobile Capture to your project. Find the steps below.

Note: *If you are new to React Native, set up development environment first. You will need* ***yarn***, ***npx*** *and* ***cocoapods*** *(for iOS) utilities. See React Native documentation for details.*

1. Choose one of the following ways to add the module to your project:

- From npm:

```
yarn add react-native-abbyy-mobile-capture
```

- From sources:

```
yarn add file:"Path to react-native-abbyy-mobile-capture sources"
```

2. Request ABBYY Mobile Capture trial version on the ABBYY website and add it to your project:

- Copy iOS **assets** directory to the project into **./assets** folder
- Copy your license into **./assets** with **MobileCapture.License** name
- Copy Android **libs** directory to the project into **./android/libs** folder
- Copy iOS **libs** directory to the project into **./ios/libs** folder

3. Proceed setup depending on the platform:

- **Android setup**
  - Add **gradle** file to the project. Usually it is located at **./android/build.gradle**:

```
allprojects {
   repositories {
      flatDir {
      dirs "$rootDir/libs"
      }
   }
}
subprojects {
   afterEvaluate {
      dependencies {
         // Change abbyy-mi-sdk-2.0 to abbyy-rtr-sdk-1.0 if you need to
use recognition API (MI+Extended or MI+ExtendedDC)
         implementation(name: 'abbyy-mi-sdk-2.0', ext: 'aar')
         implementation(name: 'abbyy-ui-1.0', ext: 'aar')
      }
   }
}
```

  - Add to application **gradle** file. Usually it is located at **./android/app/build.gradle**:

```
android {
         defaultConfig {
            ndk {
                  // Filter out mips
                  abiFilters 'armeabi-v7a', 'arm64-v8a', 'x86', 'x86_64'
              }
         }

         sourceSets {
            main {
               assets.srcDirs += [ "$rootDir/../assets" ]
            }
         }

         packagingOptions {
            pickFirst 'lib/x86/libc++_shared.so'
            pickFirst 'lib/armeabi-v7a/libc++_shared.so'
            pickFirst 'lib/arm64-v8a/libc++_shared.so'
            pickFirst 'lib/x86_64/libc++_shared.so'
         }
      }
```

- Set minimum SDK version to '21'.
- Add **adb** utility to PATH environment variable. **adb** is located in **Android sdk directory/platform-tools** directory.

- **iOS setup**
  - Run **pod install** from iOS directory.
  - Select your project in the **Target** group and open the **Build Settings** tab. In the **Search Paths** section add to the **Framework Search Paths** the following path:

```
${PROJECT_DIR}/libs
```

  - On the **Build Options** tab set **Enable Bitcode** option to **No**.
  - Open the **Build Phases** tab. In the **Link Binary With Libraries** section, click "+" and add the **AbbyyRtrSDK.framework** and **AbbyyUI.framework**.
  - In **Build Phases**, add a new **Run Script** phase. Run the **copy_frameworks.sh** script that removes the frameworks for the non-active CPU architectures (the complete list depends on the project settings), and sign the resulting framework. This is a required step before uploading your application to App Store.

```
/bin/sh "${SRCROOT}/libs/copy_frameworks.sh"
```

  - To add the resource files and set up the copying rules, in **Build Phases** add one more **Run Script** phase. Run the **copy_assets.py** script to automatically copy all resource files to corresponding destinations and add necessary dictionaries.

```
python "${SRCROOT}/../assets/copy_assets.py"
```

- In **Build Phases**, go to the **Copy Bundle Resources** section and add the **MobileCapture.License** file.
- Add the **NSCameraUsageDescription** and **NSPhotoLibraryUsageDescription** keys into the **info.plist** file for requesting access to the device's camera and to the user's photo library.

How to run samples

1. Request ABBYY Mobile Capture trial version on the ABBYY website and add it to the sample:

- Copy iOS **assets** directory to the project into **./assets** folder
- Copy your license file into **./assets** with **MobileCapture.License** name
- Copy Android **libs** directory to the project into **./android/libs** folder
- Copy iOS **libs** directory to the project into **./ios/libs** folder

2. Run **yarn install** from the sample root

3. Run **pod install** from the **sample/ios** directory

4. To run application do the following:

Android	**iOS**

• From console:
  ○ Execute **npx react-native run-android** from the sample root
• From Android Studio:
  ○ Open **sample/android** project
  ○ Click **Run app** button
	• From console:
	  ○ Execute **npx react-native run-ios** from the sample root
	  It runs sample in the simulator
	• From XCode
	  ○ Open **sample/ios** project
	  ○ Click **Run** button

AbbyyMobileCapture module

ABBYY Mobile Capture SDK module.

Methods

Name	Description
User interface	
startImageCapture	Opens a screen for the Image Capture scenario.
Core API	
recognizeText	Starts a text capture scenario for a single image.
extractData	Starts a data capture scenario for a single image.
detectDocumentBoundary	Detects a quadrangle representing document boundary on an image.
cropImage	Crops image according to the document boundary and size.
rotateImage	Rotates image by specified angle.
assessQualityForOcr	Estimates if an image quality is suitable for OCR.
exportImage	Exports an image to JPG or PNG format.
exportImagesToPdf	Exports images to PDF format.

startImageCapture method

Opens a screen for the Image Capture scenario.

Note: *You can manage and localize UI string sources. See User interface string sources section for details.*

```
async function startImageCapture(settings)
```

Parameters

settings

Object specifying image capture parameters (see Options).

Return values

The method returns result depending on how the scenario finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change image capture settings. All parameters are optional. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".
cameraResolution	string	The resolution of the images captured from the camera preview. This parameter can be set to the following values: • "HD" • "FullHD" • "UHD_4K" Default: "FullHD".
isFlashlightButtonVisible	boolean	Show (true) or hide (false) the flashlight button in the image capture dialog. Default: true (flashlight visible).
isCaptureButtonVisible	boolean	Show (true) or hide (false) the button for taking photo manually. Default: true (button is visible).
isGalleryButtonVisible	boolean	Show (true) or hide (false) the button for choosing an image from photo gallery. Default: true (button is visible).

Parameter	Value type	Description
orientation	string	The type of image orientation. This parameter can be set to the following values: • "Portrait" • "Landscape" • "Default" (the orientation will be detected automatically) Default: "Default".
isShowPreviewEnabled	boolean	Show a preview of an image after capture (true) or show a camera view (false) Default: false (camera view is shown).
requiredPageCount	int	Total number of pages to be captured. Set the page-limitation mode of the image capture as following: • 0 to allow unlimited image capture. The set of the result images can be saved or edited at any time; • a positive value to set the exact number of images that should be captured. Images saving is enabled only when this number of images are been captured. Default: 0.
destination	string	Captured image will be saved to corresponding file ("File") or returned as encode base64 image string ("Base64"). ***Note:*** *Image can be saved to Base64 only for requiredPageCount=1. Otherwise an exception will be thrown.* Default: "File".
exportType	string	Captured image will be saved to this format. This parameter can be set to the following values: • "Jpg" • "Png" • "Pdf" (all images will be saved to one PDF file) Default: "Jpg".
compressionLevel	string	The uniform image compression scale for lossy formats. This parameter can be set to the following values: • "Low" • "Normal" • "High"

Parameter	Value type	Description
		• "ExtraHigh" Default: "Low".
defaultImageSettings	object	Custom image capture settings. This object has the following parameters: • **aspectRatioMin** (float): Lower limit of the document's aspect ratio. This property is used in pair with the **aspectRatioMax**, defining an interval of acceptable aspect ratio values of the document to be captured. Setting aspect ratio will help to improve boundary detection accuracy. If only **aspectRatioMax** is set, **aspectRatioMin** will be set to 1. Default: 0 (aspect ratio is not set). • **aspectRatioMax** (float): Upper limit of document's aspect ratio. This property is used in pair with the **aspectRatioMin**, defining an interval of acceptable aspect ratio values of the document to be captured. Setting aspect ratio will help to improve boundary detection accuracy. If only **aspectRatioMin** is set, **aspectRatioMax** will be set to infinity. Default: 0 (aspect ratio is not set). • **imageFromGalleryMaxSize** (int): Maximum available size of an image, loaded from the gallery. The size is defined as the length of the largest side of an image (in pixels). Default: 4096. • **minimumDocumentToViewRatio** (float): the minimum document area relative to the whole frame area, required for capture. If the document area is less than this ratio, the image will not be captured. The value can be from 0 to 1. Default: 0.15. • **documentSize** (string): expected size of the original document in millimeters. This parameter can be set to the following constant values: ○ "A4" ○ "BusinessCard" ○ "Letter" ○ "Any" ○ or defined as a string with 2 integers separated with an 'x' symbol: "100x100". All parameters are optional.

Result

This section describes the object that represents image capture results. Returned parameters depend on the scenario.

Parameter	Value type	Description

images	object array	Captured images. This parameter is returned only if the **exportType** is set to "Jpg" or "Png".
		Each object in the array represents a single image with corresponding information. The image objects have the following parameters:
		• **resultInfo** (object): this object has the following parameters:
		  ○ **exportType** (string): the format of the captured image.
		  ○ **imageSize** (object): full size of the preview frame, an object with int parameters **width** and **height**.
		  ○ **uriPrefix** (string): add this string to the beginning of the **filePath** or **base64** parameter to get a URI. This parameter can be 'file://' if the destination is 'File' and '' or '' if the destination is 'Base64'.
		• **filePath** (string): full path to the exported file. This parameter is present if the destination is 'File'.
		• **base64** (string): the original image returned as base64 image string. This parameter is present if the **destination** parameter was set to "Base64".

pdfInfo	object	This parameter is returned if the **exportType** is set to "Pdf". The value is an object which has the following parameters: • **filePath** (string): full path to the exported PDF file. • **pagesCount** (integer): number of pages in the exported PDF file. Normally fits the number of captured images.
resultInfo	object	Additional information. This object has the following parameters: • **userAction** (string): the user's action which stopped the module, if any. Can be "Canceled" if the user canceled processing. If the module has stopped automatically, the **userAction** parameter is not present in **resultInfo**. • **uriPrefix** (string): add this string to the beginning of the **filePath** or **base64** parameter to get a URI. This parameter can be 'file://' if the destination is 'File' and '' or '' if the destination is 'Base64'.

Below is an example of a result JSON when image capture succeeds.

```
{
    "images": [
        {
            "resultInfo": {
                imageSize: {
```

```
                    width: 658,
                    height: 1187
                }
                "exportType": "Jpg"
            },
            "filePath":
"/data/user/0/com.abbyy.rtr.reactnative.sample/files/pages/page_334fd281-
f472-4756-a4a0-d1f8d1857a0c.jpg"
        }
    ]
}
```

User interface string sources

The user interface messages can be adjusted depending on the application language and specific. The ways differ for different platforms. Choose the one appropriate for your application:

Android

Add the following attributes to the **strings.xml** file and edit as needed.

```
<string name="uic_camera_need_permission_tip_title">Permissions
required</string>
<string name="uic_camera_need_permission_tip_message">Please allow the
app to access the camera on this device</string>

<string
name="uic_camera_dialog_permission_rationale_positive_button">OK</string
>
<string
name="uic_camera_dialog_permission_rationale_negative_button">Cancel</st
ring>
<string name="uic_camera_dialog_permission_rationale_title">Permissions
denied</string>
<string name="uic_camera_dialog_permission_rationale_message">This app
needs access to the camera on this device</string>

<string
name="uic_camera_dialog_permission_settings_positive_button">Open
settings</string>
<string
name="uic_camera_dialog_permission_settings_negative_button">Cancel</str
ing>
<string name="uic_camera_dialog_permission_settings_title">Permissions
denied</string>
<string name="uic_camera_dialog_permission_settings_message">Please
allow the app to access the camera.\nYou can turn on camera permissions
in the system settings.</string>

<string name="uic_ics_looking_for_document_tip">Looking for
document</string>
<string name="uic_ics_move_closer_tip">Closer</string>
<string name="uic_ics_dont_move_tip">Keep still</string>
```

```
<string name="uic_mpics_camera_number_of_captured_pages_fixed_count">%
1$d of %2$d</string>
<plurals name="uic_mpics_camera_number_of_captured_pages">
<item quantity="one">%d Page</item>
<item quantity="other">%d Pages</item>
</plurals>

<string name="uic_mpics_editor_add_page_button">Add Page</string>
<string name="uic_mpics_editor_next_document_button">Next
Document</string>
<string name="uic_mpics_editor_done_button">Done</string>
<string name="uic_mpics_editor_current_document_index">%1$d of %
2$d</string>

<string name="uic_mpics_crop_edit">Edit Crop</string>
<string name="uic_mpics_crop_auto">Auto crop</string>
<string name="uic_mpics_crop_full">Expand crop area to the full
screen</string>
<string name="uic_mpics_crop_cancel">Cancel</string>
<string name="uic_mpics_crop_accept">Accept</string>

<string name="uic_mpics_editor_delete_all_warning_title">Delete
all</string>
<string name="uic_mpics_editor_delete_all_warning_message">Are you sure?
</string>
<string
name="uic_mpics_editor_delete_all_warning_positive_button">Delete</strin
g>
<string
name="uic_mpics_editor_delete_all_warning_negative_button">Cancel</strin
g>

<string name="uic_mpics_editor_delete_page_warning_title">Delete
page</string>
<string name="uic_mpics_editor_delete_page_warning_message">Are you
sure?</string>
<string
name="uic_mpics_editor_delete_page_warning_positive_button">Delete</stri
ng>
<string
name="uic_mpics_editor_delete_page_warning_negative_button">Cancel</stri
ng>

<string name="uic_mpics_editor_error_title">Error</string>
<string name="uic_mpics_editor_error_button">OK</string>
<string name="uic_mpics_editor_page_deleted">Page deleted</string>
<string name="uic_mpics_editor_add_more_pages">Add more pages</string>

<string name="uic_mpics_editor_retake">Retake</string>
<string name="uic_mpics_editor_delete_page">Delete page</string>
<string name="uic_mpics_editor_delete_all">Delete all</string>

<string name="uic_mpics_preview_title">Preview</string>

<string name="uic_rn_ic_saving_pages_warning_message">Saving
pages...</string>
```

```
<string name="uic_rn_ic_delete_on_cancel_warning_title">Discard
pages</string>
<string name="uic_rn_ic_delete_on_cancel_warning_message">You will lose
captured pages</string>
<string
name="uic_rn_ic_delete_on_cancel_warning_negative_button">Cancel</string
>
<string
name="uic_rn_ic_delete_on_cancel_warning_positive_button">Discard</strin
g>
```

iOS

Run the **sample-ui-imagecapture/ios/sample-ui-imagecapture.xcworkspace** file and find user interface string sources in the **AbbyyUI.strings** and **MobileCapture.strings** files located in the **sample-ui-imagecapture** folder.

Core API methods

This section contains description of the low-level methods for single image processing.

recognizeText method

Starts text capture and recognition for a single image. Captured image will be processed according to the passed settings and recognized text will be returned with some technical information such as warnings, if any, and text orientation on the image.

```
export async function recognizeText(settings)
```

Parameters

settings

Object specifying parameters of the text capture scenario for a single image (see Options).

Return values

The method returns result depending on how the scenario finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change text capture settings. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".
imageUri	string	**imageUri** (string): Image source for the operation passed as URI. This parameter can be set to the following values: • "Base64": you can pass an encode base64 image string, i.e. "*<base64 encoded image data>*" • "File": image file address, i.e. "*file:///data/user/0/com.abbyy.rtr.reactnative.sample.coreapi/files/pages/page_848b121d-5a7a-4ead-94e6-dd91bc6bfead.jpg*". '*content://*' schema is also supported for Android. Required parameter.
areaOfInterest	object	A rectangle specifying the area of interest in the coordinates, set by the following parameters: • **top** (int): upper left point ordinate • **bottom** (int): bottom left point ordinate • **left** (int): upper left point abscissa • **right** (int): upper right point abscissa I.e., {top: 100, bottom: 1000, left: 100, right: 1000} ***Note:*** *All parameters should be defined to set the* ***areaOfInterest*** *parameter. If some of them are defined and some are not, an error occurs.* Default: a rectangle, containing the whole image.
isTextOrientationDetectionEnabled	boolean	Enables or disables detection of the image orientation while preprocessing. If the property is set to **true**, the image top is detected and correct orientation can be used for image rotation. You can set this property to **false** for speeding the process up. ***Note:*** *Disable the image detection only if you can be sure that the captured image has correct orientation. Otherwise the text on image will not be detected and recognized.*

Parameter	Value type	Description
		The default value of this property is **true** (enabled).
recognitionLanguages	string[]	List of languages, supported for the text recognition, i.e. ['English', 'Russian']. See the full list of supported languages here. Default: ['English'].

Result

This section describes the object that represents text capture results. Returned parameters depend on the captured and passed image.

Parameter	Value type	Description
orientation	int	An angle on which the image was rotated to get normal orientation. Possible values are: 0, 90, 180, 270.
warnings	string[]	Warnings that occurred during processing, if any.
text	string	The whole recognized text as a single string. Text lines are divided with "\n". Text blocks are divided with "\n\n".
textBlocks	object[]	An array of text blocks. Each text block is represented as an array of **textLines** parameter.

textBlocks.textLines	object[]	An array of text lines. Each text line has the following parameters:
		• **text** (string): recognized text.
		• **quadrangle** (object): quadrangle containing text, represented by an array of its four vertices' coordinates: { **x**: int, **y**: int }. The vertices are indexed clockwise starting from the bottom left.
		• **rect** (object): bounding rectangle for quadrangle. The rectangle is set by the following parameters:
		  • **top** (int): upper left point ordinate
		  • **bottom** (int): bottom left point ordinate
		  • **left** (int): upper left point abscissa
		  • **right** (int): upper right point abscissa
		• **charInfo** (object[]): an array, which elements contain information concerning concrete recognized symbol.

Parameter	Value type	Description

textBlocks.textLines.charInfo	object[]	An array, which elements contain information concerning concrete recognized symbol. This object contains parameters, describing the symbol's place at an image, and its recognition confidence.
		• **quadrangle** (object): quadrangle containing text, represented by an array of its four vertices' coordinates: { **x**: int, **y**: int }
		• **rect** (object): bounding rectangle for quadrangle. The rectangle is set by the following parameters:
		  • **top** (int): upper left point ordinate
		  • **bottom** (int): bottom left point ordinate
		  • **left** (int): upper left point abscissa
		  • **right** (int): upper right point abscissa
		• **isUncertain** (boolean): returned only in case the symbol is uncertain.

Example of a result JSON.

```
{"textBlocks": [{
  "textLines": [
   {
     "text": "",
     "quadrangle": [
       {
        "x": 82,
        "y": 567
      },
       {
        "x": 82,
        "y": 567
      },
       {
        "x": 82,
        "y": 567
      },
       {
        "x": 82,
        "y": 567
      }
     ],
     "rect": {
       "top": 515,
       "bottom": 568,
       "left": 82,
       "right": 528
     },
     "charInfo": [
       {
        "quadrangle": [
         {
```

```
            "x": 82,
            "y": 567
          },
          {
            "x": 82,
            "y": 567
          },
          {
            "x": 82,
            "y": 567
          },
          {
            "x": 82,
            "y": 567
          }
        ],
        "rect": {
         "top": 515,
         "bottom": 568,
         "left": 82,
         "right": 528
        },

        "isUncertain": true,
        "isItalic": true
       }
      ],
      "text": "",
      "orientation": 0
     }]
   }]
}
```


extractData method

Starts data capture for a single image. Data fields will be detected and recognized on the captured image according to the passed settings. One of the settings is a date capture profile, representing a type of a document to be recognized, i.e. a business card. The profile defines a data schema, describing document fields. The profile schema is applied during the capture process.

Result will be returned with some technical information such as warnings, if any, and text orientation on the image.

Note: *The functionality is currently supported for business cards recognition only.*

```
export async function extractData(settings)
```

Parameters

settings

Object specifying parameters of the data capture scenario for a single image (see Options).

Return values

The method returns result depending on how the scenario finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change data capture settings. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".
imageUri	string	**imageUri** (string): Image source for the operation passed as URI. This parameter can be set to the following values: • "Base64": you can pass an encode base64 image string, i.e. "*<base64 encoded image data>*" • "File": image file address, i.e. "*file:///data/user/0/com.abbyy.rtr.reactnative.sample.coreapi/files/pages/page_848b121d-5a7a-4ead-94e6-dd91bc6bfead.jpg*". '*content://*' schema is also supported for Android. Required parameter.
profile	string	The profile name. I.e. 'BusinessCards'. ***Note:*** *The functionality is currently supported for business cards recognition only.*
isTextOrientationDetectionEnabled	boolean	Enables or disables detection of the image orientation while preprocessing. If the property is set to **true**, the image top is detected and correct orientation can be used for image rotation. You can set this property to **false** for speeding the process up. ***Note:*** *Disable the image detection only if you*

Parameter	Value type	Description
		can be sure that the captured image has correct orientation. Otherwise the text on image will not be detected and recognized. The default value of this property is **true** (enabled).
recognitionLanguages	string[]	List of languages, supported for the text recognition, i.e. ['English', 'Russian']. See the full list of supported languages here. Default: ['English'].

Result

This section describes the object that represents data capture results. Returned parameters depend on the captured and passed image.

Parameter	Value type	Description
orientation	int	An angle on which the image was rotated to get normal orientation. Possible values are: 0, 90, 180, 270.
warnings	string[]	Warnings that occurred during processing, if any.

dataFields	object[]	List of objects representing captured and recognized data fields. Each data field has the following parameters:
		• **id** (int): internal identifier of the data field.
		• **name** (string): human readable name of the data field.
		• **text** (string): recognized text of the data field.
		• **quadrangle** (object): quadrangle containing text, represented by an array of its four vertices' coordinates: { **x**: int, **y**: int }. The vertices are indexed clockwise starting from the bottom left.
		• **rect** (object): bounding rectangle for quadrangle. The rectangle is set by the following parameters:
		  • **top** (int): upper left point ordinate
		  • **bottom** (int): bottom left point ordinate
		  • **left** (int): upper left point abscissa
		  • **right** (int): upper right point abscissa
		• **components** (object[]): field components. If the field has only one component, this array contains one element. This property may be 0, if the field is not compound. In

Parameter	Value type	Description
		this case result does not contain **components**. Each component can have the same parameters as **dataField** including **components** array. • **charInfo** (object[]): an array, which elements contain information concerning concrete recognized symbol.

dataFields.charInfo	object[]	An array, which elements contain information concerning concrete recognized symbol. This object contains parameters, describing the symbol's place at an image, and its recognition confidence.
		• **quadrangle** (object): quadrangle containing text, represented by an array of its four vertices' coordinates: { **x**: int, **y**: int }
		• **rect** (object): bounding rectangle for quadrangle. The rectangle is set by the following parameters:
		  • **top** (int): upper left point ordinate
		  • **bottom** (int): bottom left point ordinate
		  • **left** (int): upper left point abscissa
		  • **right** (int): upper right point abscissa
		• **isUncertain** (boolean): returned only in case the symbol is uncertain.

Example of a result JSON.

```
{"dataFields": [
  {
    "id": "Mobile",
   "name": "Mobile",
   "text": "",
    "quadrangle": [
     {
         "x": 82,
       "y": 567
     },
     {
       "x": 82,
      "y": 567
     },
     {
       "x": 82,
       "y": 567
     },
     {
       "x": 82,
       "y": 567
     }
    ],
    "rect": {
     "top": 515,
     "bottom": 568,
```

```
      "left": 82,
      "right": 528
     },
     "charInfo": [
      {
        "quadrangle": [
         {
           "x": 82,
           "y": 567
         },
         {
           "x": 82,
           "y": 567
         },
         {
           "x": 82,
           "y": 567
         },
         {
           "x": 82,
           "y": 567
         }
        ],
        "rect": {
         "top": 515,
         "bottom": 568,
         "left": 82,
         "right": 528
        },
        "isUncertain": true
      }
     ],
    "components": [
      {
       "id": "PhoneCode",
       "name": "PhoneCode",
       "text": "",
       "quadrangle": [
         {
          "x": 82,
          "y": 567
         },
         {
          "x": 82,
          "y": 567
         },
         {
          "x": 82,
          "y": 567
         },
         {
          "x": 82,
          "y": 567
         }
       ],
       "rect": {
```

```
        "top": 515,
        "bottom": 568,
        "left": 82,
        "right": 528
      },
      "charInfo": [
        {
         "quadrangle": [
           {
            "x": 82,
            "y": 567
           },
           {
            "x": 82,
            "y": 567
           },
           {
            "x": 82,
            "y": 567
           },
           {
            "x": 82,
            "y": 567
           }
         ],
         "rect": {
           "top": 515,
           "bottom": 568,
           "left": 82,
           "right": 528
         },
         "isUncertain": true
        }
       ]
      }
    ]
  }]
}
```


detectDocumentBoundary method

Detects a quadrangle representing document boundary on an image.

```
export async function detectDocumentBoundary(settings)
```

Parameters

settings

Object specifying parameters of the document boundary detection (see Options).

Return values

The method returns result depending on how the document boundary detection finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change document boundary detection settings. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".
imageUri	string	**imageUri** (string): Image source for the operation passed as URI. This parameter can be set to the following values: • "Base64": you can pass an encode base64 image string, i.e. "*<base64 encoded image data>*" • "File": image file address, i.e. "*file:///data/user/0/com.abbyy.rtr.reactnative.sample.coreapi/files/pages/page_848b121d-5a7a-4ead-94e6-dd91bc6bfead.jpg*". '*content://*' schema is also supported for Android. Required parameter.
areaOfInterest	object	A rectangle specifying the area of interest in the coordinates, set by the following parameters: • **top** (int): upper left point ordinate • **bottom** (int): bottom left point ordinate • **left** (int): upper left point abscissa • **right** (int): upper right point abscissa I.e., {top: 100, bottom: 1000, left: 100, right: 1000} ***Note:*** *All parameters should be defined to set the* ***areaOfInterest*** *parameter. If some of them are defined and some are not, an error occurs.* Default: a rectangle, containing the whole image.
detectionMode	string	Document boundary detection mode. The mode influences the crop speed and accuracy. This parameter can be set to the following values:

Parameter	Value type	Description
		○ 'Fast' - this mode signifies processing speed ○ 'Default' - balanced mode, that combines optimal processing speed and high quality. Default: 'Default'.
documentSize	object	Document size represented by its width and height in millimeters. The values of the width and height are set to the **documentSize** parameters: • **width** (float) • **height** (float) I.e., {x: 210; y: 297} for A4 document size. To leave the document size undefined, set both width and height to 0. In this case document of any size will be detected.

Result

This section describes the object that represents image capture results. Returned parameters depend on the scenario.

Parameter	Value type	Description
documentSize	object	Detected document size represented by its width and height in millimeters. The values of the width and height are stored in the **documentSize** parameters: • **width** (int) • **height** (int)
documentBoundary	object	Quadrangle containing the whole document. It is represented by an array of its four vertices' coordinates: { **x**: int, **y**: int }. The vertices are indexed clockwise starting from the bottom left. Default: coordinates of a quadrangle, containing the whole image. When document boundary is not detected, this parameter is not returned.

Example of a result JSON.

```
{
  "documentSize": {
    "width": 0,
   "height": 0
  },
  "documentBoundary": [
  {
   "x": 82,
   "y": 567
  },
  {
   "x": 82,
   "y": 567
  },
  {
   "x": 82,
   "y": 567
  },
  {
   "x": 82,
   "y": 567
  }
  ]
}
```

cropImage method

Crops image according to the document boundary and size. Applying this operation removes empty fields around a detected document the and corrects perspective distortion if needed.

```
export async function cropImage(settings)
```

Parameters

settings

Object specifying parameters of the image crop operation (see Options).

Return values

The method returns result depending on how the image crop finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change image crop settings. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".
imageUri	string	**imageUri** (string): Image source for the operation passed as URI. This parameter can be set to the following values: • "Base64": you can pass an encode base64 image string, i.e. "*<base64 encoded image data>*" • "File": image file address, i.e. "*file:///data/user/0/com.abbyy.rtr.reactnative.sample.coreapi/files/pages/page_848b121d-5a7a-4ead-94e6-dd91bc6bfead.jpg*". '*content://*' schema is also supported for Android. Required parameter.
result	object	Result image description, represented by the following parameters: • **compressionLevel** (string): the uniform image compression scale for lossy formats. Valid for export to JPG only. This parameter can be set to the following values: • 'Low' • 'Normal' • 'High' • 'ExtraHigh' Default: 'Low'. • **exportType** (string): result image will be saved to this format. This parameter can be set to the following values: ○ 'Jpg' ○ 'Png' Default: "Jpg". • **destination** (string): result image will be saved to corresponding file ("File") or returned as encode base64 image string ("Base64"). Default: "Base64". • **filePath** (string): full path to the exported file. This parameter is used only if the **destination** is 'File'. Otherwise the value will be ignored. In case the **destination** is 'File' and this parameter is not set, the path will be generated automatically.
documentSize	string	Document size represented by its width and height in

Parameter	Value type	Description
		millimeters. The values of the width and height are set to the **documentSize** parameters: • **width** (float) • **height** (float) I.e., {x: 210; y: 297} for A4 document size. To leave the document size undefined, set both width and height to 0. In this case document of any size will be detected.
documentBoundary	object	Quadrangle containing the whole document. It is represented by an array of its four vertices' coordinates: { **x**: int, **y**: int }. The vertices are indexed clockwise starting from the bottom left. Default: coordinates of a quadrangle, containing the whole image.

Result

This section describes the object that represents image capture results. Returned parameters depend on the scenario.

Parameter	Value type	Description
imageUri	string	Cropped image returned as URI. This image corresponds to the description in the passed **result** parameter.
resolution	object	The image resolution as calculated from image size and physical page size.
imageSize	object	Cropped image size represented by its width and height in pixels. The values of the width and height are stored in the following parameters: • **width** (int) • **height** (int)

Example of a result JSON.

```
{
  "imageUri": "file://data/user/0/com.abbyy.rtr.cordova.sample/files/
{guid}.jpg",
```

```
  "resolution": {
   "x": 0,
   "y": 0
  },
  "imageSize": {
    "width": 1966,
   "height": 3474
  }
}
```

rotateImage method

Rotates image by specified angle.

```
export async function rotateImage(settings)
```

Parameters

settings

Object specifying parameters of the image rotation (see Options).

Return values

The method returns result depending on how the scenario finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change image rotation settings. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".
imageUri	string	**imageUri** (string): Image source for the operation passed as URI. This parameter can be set to the following values: • "Base64": you can pass an encode base64 image string, i.e. "*<base64 encoded image data>*" • "File": image file address, i.e. "*file:///data/user/0/com.abbyy.rtr.reactnative.sample.coreapi/files/pages/page_848b121d-5a7a-4ead-94e6-*

Parameter	Value type	Description
		dd91bc6bfead.jpg". '*content://*' schema is also supported for Android. Required parameter.
angle	int	The angle in degrees. Available values of the angle: 0, 90, 180, 270.
result	object	Result image description, represented by the following parameters: • **compressionLevel** (string): the uniform image compression scale for lossy formats. Valid for export to JPG only. This parameter can be set to the following values: • 'Low' • 'Normal' • 'High' • 'ExtraHigh' Default: 'Low'. • **exportType** (string): result image will be saved to this format. This parameter can be set to the following values: ○ 'Jpg' ○ 'Png' Default: "Jpg". • **destination** (string): result image will be saved to corresponding file ("File") or returned as encode base64 image string ("Base64"). Default: "File". • **filePath** (string): full path to the exported file. This parameter is present if the destination is 'File'.

Result

This section describes the object that represents image capture results. Returned parameters depend on the scenario.

Parameter	Value type	Description
imageUri	string	Rotatedimage returned as URI. This image corresponds to the description in the passed **result** parameter.
size	object	Rotated image size represented by its width and height in pixels. The values of the width and height are stored in the

Parameter	Value type	Description
		following parameters: • **width** (int) • **height** (int)

Example of a result JSON.

```
{
  "imageUri": "file://data/user/0/com.abbyy.rtr.cordova.sample/files/
{guid}.jpg",
  "imageSize": {
    "width": 1966,
   "height": 3474
  }
}
```

assessQualityForOcr method

Estimates if an image quality is suitable for OCR. The whole image is represented as a set of rectangles. A type of rectangle can be either text or unknown. The quality assessment of the image for OCR is calculated based on the rectangles collection.

Note: *This is a technology preview feature. The functionality will be improved and completed in future versions.*

```
export async function assessQualityForOcr(settings)
```

Parameters

settings

Object specifying parameters of the image quality assessment (see Options).

Return values

The method returns result depending on how the scenario finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change image quality assessment settings. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".
imageUri	string	Image source for the operation passed as URI. This parameter can be set to the following values: • "Base64": you can pass an encode base64 image string, i.e. "*<base64 encoded image data>*" • "File": image file address, i.e. "*file:///data/user/0/com.abbyy.rtr.reactnative.sample.coreapi/files/pages/page_848b121d-5a7a-4ead-94e6-dd91bc6bfead.jpg*". '*content://*' schema is also supported for Android. Required parameter.
documentBoundary	object	Quadrangle containing the whole document. It is represented by an array of its four vertices' coordinates: { **x**: int, **y**: int }. The vertices are indexed clockwise starting from the bottom left. Default: coordinates of a quadrangle, containing the whole image.

Result

This section describes the object that represents image capture results. Returned parameters depend on the scenario.

Parameter	Value type	Description
qualityAssessmentForOcrBlocks	object[]	Collection of rectangles with corresponding quality assessment for each of them. Each rectangle can have the following parameters: • **type** (string): rectangle type for quality for OCR estimating. Can be 'Text' or 'Unknown'. • **quality** (int): for blocks with 'Text' **type** this parameter stores a value from 0 to 100 that indicates suitability of the text for OCR. • **rect** (object): bounding rectangle for quadrangle. The rectangle is set by the following parameters: • **top** (int): upper left point ordinate

Parameter	Value type	Description
		• **bottom** (int): bottom left point ordinate • **left** (int): upper left point abscissa • **right** (int): upper right point abscissa

Example of a result JSON.

```
{
  "qualityAssessmentForOcrBlocks": [
    {
     "type": "Text",
     "quality": 2,
     "rect": {
       "top": 1,
      "bottom": 65,
      "left": 65,
      "right": 129
     }
   }
  ]
}
```

exportImage method

Exports an image to JPG or PNG format. Please note, that this method exports a single image only.

```
export async function exportImage(settings)
```

Parameters

settings

Object specifying parameters of the image export (see Options).

Return values

The method returns result depending on how the scenario finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change image export settings. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".
imageUri	string	**imageUri** (string): Image source for the operation passed as URI. This parameter can be set to the following values: • "Base64": you can pass an encode base64 image string, i.e. "*<base64 encoded image data>*" • "File": image file address, i.e. "*file:///data/user/0/com.abbyy.rtr.reactnative.sample.coreapi/files/pages/page_848b121d-5a7a-4ead-94e6-dd91bc6bfead.jpg*". '*content://*' schema is also supported for Android. Required parameter.
result	object	Result image description, represented by the following parameters: • **compressionLevel** (string): the uniform image compression scale for lossy formats. Valid for export to JPG only. This parameter can be set to the following values: • 'Low' • 'Normal' • 'High' • 'ExtraHigh' Default: 'Low'. • **exportType** (string): result image will be saved to this format. This parameter can be set to the following values: ○ 'Jpg' ○ 'Png' Default: "Jpg". • **destination** (string): result image will be saved to corresponding file ("File") or returned as encode base64 image string ("Base64"). Default: "Base64". • **filePath** (string): full path to the exported file. This parameter is present if the destination is 'File'.

Result

This section describes the object that represents image capture results. Returned parameters depend on the scenario.

Parameter	Value type	Description
imageUri	string	Exported image returned as URI. This image corresponds to the description in the passed **result** parameter.
imageSize	object	Exported image size represented by its width and height in pixels. The values of the width and height are stored in the following parameters: • **width** (int) • **height** (int)

Example of a result JSON.

```
{
  "imageUri": "file://data/user/0/com.abbyy.rtr.cordova.sample/files/
{guid}.jpg",
  "imageSize": {
    "width": 1966,
   "height": 3474
  }
}
```

exportImagesToPdf method

Exports images to PDF format. An array of images can be exported, see options description for details.

```
export async function exportImagesToPdf(settings)
```

Parameters

settings

Object specifying parameters of the image export to PDF (see Options).

Return values

The method returns result depending on how the scenario finished (see Result).

Options

The table below describes parameters that you can pass as the *settings* argument to change image export to PDF settings. Omitting a parameter means that a default setting will be used.

Parameter	Value type	Description
licenseFileName	string	The name of the license file. This file must be located in the **/assets/** directory in your project. Default: "MobileCapture.License".

images	object[]	Array of images for export with corresponding information. Each image can have the following parameters:
		• **pageSize** (object): image size represented by its width and height in points (1/72 of an inch). I.e., a page size of A4 is 595x842.
		If both width and height are set to 0, image size will be detected in pixels.
		The values of the width and height are stored in corresponding width and height parameters:
		  • **width** (int)
		  • **height** (int)
		• **compressionLevel** (string): the uniform image compression scale for lossy formats. Valid for export to JPG only. This parameter can be set to the following values:
		• 'Low'
		• 'Normal'
		• 'High'
		• 'ExtraHigh'
		
		Default: 'Low'.
		• **imageUri** (string): Image source for the operation passed as URI. This parameter can be set to the following values:
		• "Base64": you can pass an encode base64 image string, i.e. "*<base64 encoded image data>*"
		• "File": image file address, i.e. "*file:///data/user/0/com.abbyy.rtr.reactnative.sample.coreapi/files/pages/page_848b121d-5a7a-4ead-94e6-dd91bc6bfead.jpg*".
		'*content://*' schema is also supported for Android.
		
		Required parameter.

result	object	Result PDF file description, represented by the following parameters: • **destination** (string): result image will be saved to corresponding file ("File") or returned as encode base64 image string ("Base64"). Default: "Base64". • **filePath** (string): full path to the exported file. This parameter is used only if the **destination** is 'File'. Otherwise the value will be ignored. In case the

Parameter	Value type	Description
		destination is 'File' and this parameter is not set, the path will be generated automatically.
pdfInfo	object	Extra information corresponding to the PDF file. This object can have the following parameters: • **title** (string) • **subject** (string) • **keywords** (string) • **author** (string) • **company** (string) • **creator** (string) • **producer** (string)

Result

This section describes the object that represents image capture results. Returned parameters depend on the scenario.

Parameter	Value type	Description
pdfUri	string	Result URI, corresponding to the description in the passed **result** parameter. If the PDF file destination was 'File', this parameter value corresponds to the **filePath** parameter value with '*file://*' prefix.

Example of a result JSON.

```
{
  "pdfUri": "file://data/user/0/com.abbyy.rtr.cordova.sample/files/
{guid}.pdf"
}
```

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react

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react-native-keyboard-aware-scroll-view

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React Native PDFView

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React Native ActionSheet

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jacoco-android-plugin

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