The Kofax Mobile SDK™ turns smartphones and tablets into advanced information-capture devices.

**Image capture:** Improve quality of captured images and barcodes through stability controls, flash support and image frame guidelines

**Image processing:** Provide control over images obtained from mobile device cameras

**Integration:** Integrate directly into Kofax real-time data extraction and validation services, and the complete Kofax portfolio of products

## SDK Components

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### Object-Oriented SDK

The developer has complete control over discrete components.

- **Capture objects:** Settings containers for images, documents, pages and fields
- **Custom UI controls:** Viewing, editing, adding, deleting or manipulating images or data
- **Engines:** Image processing and classification
- **Logistics objects:** Bi-directional communication with a server for submitting and receiving data and documents
- **App statistics:** Track user behavior, errors, exceptions, timing, performance, device data and carrier

## Image Capture Control Object

Select the capture mode—programmatically.

### Photo mode
- Camera control
- Stability control
- Quality check
- User takes picture

### Video mode
- Continuous capture
- Automatic
- Gamification
- Ease of use

- Use the preferred method based upon your use case
- Customize as needed
- Events trigger instructions for the user
  - Move closer, move back, center image, too dark, too light
  - Overlays, graphics, instructions, guidance

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**Image Processing Features**

Individual settings are exposed to developers for optimizing the performance of their app or use case.

**Capture Modes**
- Developer controls capture behavior, experience and mode—photo or continuous (aka video)
- Developer controls multiple modes for a single transaction
  - Capture a document using continuous mode for real-time content extraction of a driver license
  - Switch to photo mode for photographs of damage
- Developer enables the user to switch modes based on environmental conditions or quality concerns

**Standard eVRS Image Processing Features**

eVRS represents Kofax patented and proven image processing, which runs natively on the device with individual controls to the developer. “Image processing controls” ensure the app captures the best images possible—and becomes optimized for the specific use case

**Standard features:**
- **Reference** the internal phone gyro to detect, control and reference movement
- **Take** a photo after a selectable stability setting is reached to eliminate photo focus issues and blur
- **Use** images obtained from the camera’s photo roll, or from the camera in real time
- **Find** the trapezoidal edges of the document in a photo
- **Verify** the quality of the image, checking if it’s under or oversaturated, or blurry
- **Rectify** the trapezoidal image into a rectangle, normalizing the image as needed
- **Crop** the image to a rectified rectangle
- **Correct** skew in the rectangle, to make image straight
- **Apply** selectable and optional image processing enhancements to the rectified image

**Optional Image Processing Features for Developers**
- **Remove speckles:** Eliminates specs of noise and cleans up a bitonal image using a sensitivity setting
- **Sharpen:** Removes blur and sharpens image using sensitivity setting, improving OCR, readability and image crispness
- **Rotation:** Rotates image by 90 degree increments to orient as desired
- **Auto-orientation:** Automatically rotates image so characters are right-side up and image is in correct orientation so it can be read
- **Deskew by content:** Deskews original image by using content on the document, rather than the document edge; developers can also select deskew by found document edges
- **Change output:** Changes output to grayscale or bitonal image
- **Scale DPI:** Scales effective DPI of image, to improve OCR to remove image artifacts
- **Smooth background:** Smooths out background color of a color document, so that a variegated color is replaced by an average fixed color; reduces file size and makes image more readable and consistent

**Scan Time Settings**
Low level settings of eVRS can be optimized by the app developer to improve recognition results—ensuring fewer suspect or reject images, which affect usability and user satisfaction.

- **Auto crop:** Defines whether automatic cropping is enabled
- **Auto deskew:** Defines whether automatic deskew is enabled
- **Auto orientation:** Defines whether automatic orientation/image rotation is enabled
- **DPI:** Sets desired vertical resolution (DPI) of output image
- **Color mode:** Sets storage format (JPG, PNG, or TIFF) of resulting image (color, grayscale, or black and white)
- **eVRS tokens:** Ability for developer to set low level eVRS operations for processing an image specific to a particular use case, document type, or app
- **Enhanced binarization:** Alternative image enhancement algorithm, providing better results on specific document types

**Barcode Detection**
Barcodes contain important data and make data extraction and processing easier; the Kofax Mobile SDK enables real-time and post-process capturing of barcode data.

- **Set search direction:** Developer can specify search directions to locate and process barcodes
- **Maximum to return:** Developer can specify max number of barcodes per image to be returned to the app
- **Returned data:** Data is returned so the developer can determine how to leverage and map results to metadata or fields within app

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• **Symbologies:** Code 128, EAN-8, EAN-13, UPC-A, UPC-E, Code 39, Interleaved 2of5, Code 93, Codabar, Linear 2of5, Data Matrix, PDF 417, QR Code, Aztec

• **Multiple:** Multiple barcodes can be captured and returned from a single image

**Kofax Mobile Capture SDK Library Screens**

Library screens are optional default screens for easier development. Packaged default screens and UI are available in the SDK. By utilizing Kofax objects and UI, developers experience faster app development.

Individual settings are available to control the behaviors of image processing, capture modes, barcode recognition, classification, server integration, real-time data extraction and document or data review.

• **Home:** Home screen with custom controls you specify; this includes “about” box, your logo, launch of the login or settings screens, and starting the process

• **Settings:** Shows options for the stability feature, automatic processing and review options; this screen can be blocked from use by your users

• **Case:** Dynamic list of cases/processes obtained from Kofax Front Office Server™ (if being used) from which you initiate a capture process; this is for when you want a single app to support multiple capture processes

• **Server:** Allows your user to log into Kofax Front Office Server or Kofax TotalAgility® Server by specifying user name, password, an email address and server name; this option is not required, but is available for customers who want to deploy a multipurpose capture app that supports multiple use cases and flows

• **Image acquire:** This is a camera control screen, including grid lines, the stability feature and flash controls; it includes a screen with feedback during automatic processing to ensure optimum image is captured

• **Image review:** Shows the image acquired, with the edge of the document highlighted, and the results of the image quality tests for saturation and focus; this feature is used to ensure the complete document was captured and presents the user with optional controls to manually correct images

• **Case Management:** A view of document thumbnails and images captured; optionally available to developers who want to allow users to review images from a multipage document; users can leverage this view to edit and manipulate the images

• **Edit Screens:** Screen where users can edit an image, select from a menu to manually crop it, rotate it, reprocess it and other options; then, the modified image goes back into the case edit thumbnail list view

• **Case Control:** Menu that allows users to add additional photos or documents to an existing case, entering case information and submitting a case

• **Case Information:** Screen showing fields that you want your user to fill in for the case, such as name and address or account information; in short, this is a data entry form for users to submit or review information

• **Submit In Progress:** Provides real-time submission feedback to the user; shows the submit information, the case data and document information being submitted

• **Submit Complete:** A final review screen with a “done” button; tapping it returns back into the starting point, which can be the home screen or back to your application

**Platforms**

Supported mobile device platforms for native apps include Apple iOS and Android. For hybrid apps, Kofax supports a plugin for PhoneGap. For mobile web and HTML5 apps, Kofax can support image processing, data extraction, and validation server side.

**About Kofax**

Kofax® is a leading provider of smart process applications for the business critical First Mile™ of customer interactions. These begin with an organization’s systems of engagement, which generate real time, information intensive communications from customers, and provide an essential connection to systems of record (large, enterprise applications and repositories not easily adapted to contemporary technology). Kofax improves the customer experience and reduces operating costs for increased competitiveness, growth and profitability.

For more information, visit kofax.com.