Cognex Mobile Barcode SDK - Cordova Plugin (v2.4.x)

Introduction

The purpose of these wiki pages is to provide detailed description of the API methods of the **Cordova** plugin that implements the cmbSDK.

Platform Targets

The plugin on the JavaScript side of things, is implemented as one ***js*** file that can be found in the ***www*** folder of your **Cordova** app.

> Supports the two major platforms: **Android** and **iOS.** All features on both platforms are tailored to work the same from a user/developer point of view.
> Supports two modes of scanning: With a smartphone camera, which utilizes the Manatee Works Barcode Scanner SDK (property of Cognex) and with a dedicated hardware scanner from the MX* series (hardware designed and produced by Cognex).

Impementation

In the plugin folder, we also provide a sample folder, which is basically three files that can be copied to your **js/index.js css/index.css** and **index.html** of your project and a **cmbconfig.js** file that is copied automatically to the **/js** folder, when the plugin is installed.

It covers other implementations too, specifically **Ionic** and a Hybrid app approach based on **SAP/FIORI** platform.

Installation

To build an awesome app with **Cordova**, we first need to create one with the cordova starter:

```
cordova create awesome-cordova-app-with-cmbsdk
cd awesome-cordova-app-with-cmbsdk
cordova plugin add absolute_path_to_plugin_directory          //for example: /Users/superUser/cmb-co
rdova-master
cordova platform add android
//cordova platform add ios //if you want to build on ios
```

For an **Ionic** solution:

```
#install ionic
sudo npm install -g cordova ionic
#start an ionic app with tabs layout
ionic start awesome-ionic-app tabs
cd awesome-ionic-app
#add our plugin
ionic cordova plugin add /WORKPLACE/PLUGINS/cmb-cordova //path to where you unzipped our plugin
#add the platform
ionic cordova platform add android@7.0.0
brew update && brew install gradle
# see https://gradle.org/install/
//to build directly from the console need to change the permissions of the gradlew file
sudo chmod 755 /Users/**/platforms/android/gradlew
//going to need ionic-native too
npm install ionic-native --save

//will run on android with live refresh and console logs
ionic cordova run android -l -c
```

This will create an app. The developer needs to be familiar with the process of developing on ***Cordova***. There are quirks, like **iOS** will want a signing profile, or **Android** will complain about the manifest file.

Once there is a **Cordova** app that builds on the desired platform, we can add our Cognex solution.

In the **Cordova** plugin folder from the sample folder we need to copy the *index.html* into the platform **www** folder. The **index.js** into **www/js/index.js**, and the **index.css** into **www/css/index.css**. **cmbconfig.js** is copied automatically to the **www/js** folder.

Licensing the SDK

If you plan to use the cmbSDK to do mobile scanning with a smartphone or tablet (with no MX mobile terminal), then the SDK requires the installation of a license key. Without a license key, the SDK will still operate, although scanned results will be obfuscated (the SDK will randomly replace characters in the scan result with an asterisk character).

Contact your Cognex Sales Representative for information on how to obtain a license key including trial licenses which can be used for 30 days to evaluate the SDK.

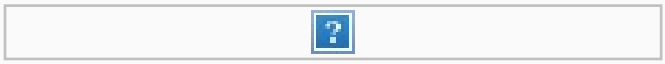
Android - After obtaining your license key, add the following line in your application's AndroidManifest.xml file, under the application tag:

```
<meta-data android:name="MX_MOBILE_LICENSE" android:value="YOUR_MX_MOBILE_LICENSE"/>
```

Next, put your key in place of YOUR_MX_MOBILE_LICENSE.

```
<application android:hardwareAccelerated="true" android:icon="@mipmap/icon" android:label="@string/a
pp_name" android:supportsRtl="true">
        <activity android:configChanges="orientation|keyboardHidden|keyboard|screenSize|locale" andr
oid:label="@string/activity_name" android:launchMode="singleTop" android:name="MainActivity" android
:theme="@android:style/Theme.DeviceDefault.NoActionBar" android:windowSoftInputMode="adjustResize">
            <intent-filter android:label="@string/launcher_name">
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <meta-data android:name="MX_MOBILE_LICENSE" android:value="g/9ytJzcja+sxt4DTEDxR4hp6sZh9bmL9
7vUx+EE9uY="/>
    </application>
```

iOS - After obtaining your license key, add it as a String in your application's Info.plist file, under the key *MX_MOBILE_LICENSE*.



Changelog

version 1.2.10

- Added getSdkVersion(callback) method
- Added restoreOnBackButton method

version 1.2.9

- Multicode support
- Fix for Android icon issues
- Update to cmbSDK v. 2.1.0
- Supporting android 4.4.x
- Added setPreviewOverlayMode method
- Added showToast(string) and hideToast methods

version 1.2.8

- Update README.md

version 1.2.7

- Add function for cmbSDK license key

version 1.2.6

- Supportng cordova android 7.x

version 1.2.5

- Update to cmbSDK v. 2.0.2 for iOS only

version 1.2.4

- Supported SAP platform. Fixed issue with icons for iOS, and camera feature for Android. We can use now the same plugin without any changes on SAP platform also.

version 1.2.3

- Update to cmbSDK v. 2.0.1

version 1.2.2

- Bug fixes

version 1.2.1

- iOS MX-100 improvements.
- Android scan image result fixes.

version 1.2.0

- Added missing architecture libs.
- Fixed different symbology index numbers on Android and iOS platforms.
- Added AAR for Android support instead of JAR and SO.
- MX - 100 support added for iOS only.

version 1.1.2

- Added **setPreviewOptions()**. See CONSTANTS.PREVIEW_OPTIONS.
- Added **setTriggerType()**. Sets how we handle the closing of the scanner after a result has been received. See: TRIGGER_TYPES.
- Removed **setDeviceType()** Moved the device selection to **loadScanner()**.
- Changed how **loadScanner()** works on native Side, it doesn't connect to the device by default, we now have to call **mwbScanner.connect()** after **loadScanner()** finishes loading.
- Changed the callback nature of **loadScanner()**, it now returns a proper callback.
- Changed the callback nature of **startScanning()** and **stopScanning()**, they now do not return a callback at all instead we need to listen to **startStop** event by setting the **setActiveStartScanningCallback(callback)**

- removed the redundant "var callback" redeclaring of the parameters.

version 1.1.1

- Added promise support for **isSymbologyEnabled()**, **setSymbologyEnabled()**, **getConnectionState()**, **setCommand()**.
- **getConnectionState()** saves the callback function so next time we call **getConnectionState()** it reuses it.
- Changed the name of the function **setConnectionState** to **setConnectionStateDidChangeOfReaderCallback()** to be more consistent with the native side.
- Changed the CONSTANT names for SYMBOLS, from plain variables to an object for easy access.
- Fixed the symbology CONSTANTS starting from index 0 for DataMatrix instead of 1.

version 1.1.0

- Removed overhead callbacks.
- Fixed startScanning not setting the callback properly.

Constants

The list of Constants that can be used by a developer is as follows:

Devices

There are two types of devices that you can use with this ***Cordova*** plugin. An MX device which is a hardware scanner, and a smartphone Camera.

```
DEVICES : ["DEVICE_TYPE_MX_1000","DEVICE_TYPE_MOBILE_DEVICE"],
DEVICES_FRIENDLY : ["MX Device","Camera"],
```

Triggers

There are two types of triggers, but six values are reserved. For the **MANUAL_TRIGGER** setting, once a barcode is found during the scanning process, the scanner will automatically stop further scanning. For **CONTINUOUS_TRIGGER** it will keep looking for a barcode and will fire the event each time it finds a barcode.

```
TRIGGER_TYPES : ["","","MANUAL_TRIGGER","","","CONTINUOUS_TRIGGER"],
```

Availability

```
AVAILABILITY_UNKNOWN :  0,
AVAILABILITY_AVAILABLE :  1,
AVAILABILITY_UNAVAILABLE :  2,
```

Connection State

When we monitor the connection state of the READER device (either Camera or MX) with setConnectionStateDidChangeOfReaderCallback we can get one of the following integer values that can be accessed via the **CONSTANTS** object

```
CONNECTION_STATE_DISCONNECTED :  0,
CONNECTION_STATE_CONNECTING :  1,
CONNECTION_STATE_CONNECTED :  2,
CONNECTION_STATE_DISCONNECTING :  3,
```

Camera Modes

The developer has access to the following camera modes:

```
CAMERA_MODES : ["NO_AIMER", "PASSIVE_AIMER", "ACTIVE_AIMER", "FRONT_CAMERA"]
```

NO_AIMER : Use camera with no aimer. Preview is on, illumination is available.
PASSIVE_AIMER : Use camera with a basic aimer (e.g., StingRay). Preview is off, illumination is not available.
ACTIVE_AIMER : Use camera with an active aimer (e.g., MX-100). Preview is off, illumination is available.
FRONT_CAMERA : Use mobile device front camera. Preview is on, illumination is not available.

Preview Overlay Modes

The developer has access to the following preview overlay modes:

```
PREVIEW_OVERLAY_MODE : ["OM_CMB", "OM_LEGACY"],
```

OM_CMB: Use CMB overlay'd preview. Provides a scanner timeout indicator but

doesn't provide a visual indicator of the decoder ROI (viewfinder area).
OM_LEGACY: Use MW (legacy) overlay'd preview. Provides a visual indicator of the decoder ROI (viewfinder area). Doesn't provide scanner timeout indicator.

If you are going to change the previewOverlayMode, you need to do it before loadScanner is called, otherwise it will not work properly.

Symbols

A list of available **SYMBOLS** to use with the our scanner.

Not all symbols are implemented on both Camera Scanner and MX* Scanner

Refer to the wiki pages Appendix A DMCC for the Camera Reader for more info on support for **SYMBOLS**.

```
SYMBOLS : {
       "SYMBOL.UNKNOWN"            : 0
      ,"SYMBOL.DATAMATRIX"         : 1
      ,"SYMBOL.QR"                 : 2
      ,"SYMBOL.C128"               : 3
      ,"SYMBOL.UPC-EAN"            : 4
      ,"SYMBOL.C11"                : 5
      ,"SYMBOL.C39"                : 6
      ,"SYMBOL.C93"                : 7
      ,"SYMBOL.I2O5"               : 8
      ,"SYMBOL.CODABAR"            : 9
      ,"SYMBOL.EAN-UCC"            : 10
      ,"SYMBOL.PHARMACODE"         : 11
      ,"SYMBOL.MAXICODE"           : 12
      ,"SYMBOL.PDF417"             : 13
      ,"SYMBOL.MICROPDF417"        : 14
      ,"SYMBOL.DATABAR"            : 15
      ,"SYMBOL.POSTNET"            : 16
      ,"SYMBOL.PLANET"             : 17
      ,"SYMBOL.4STATE-JAP"         : 18
      ,"SYMBOL.4STATE-AUS"         : 19
      ,"SYMBOL.4STATE-UPU"         : 20
      ,"SYMBOL.4STATE-IMB"         : 21
      ,"SYMBOL.VERICODE"           : 22
      ,"SYMBOL.RPC"                : 23
      ,"SYMBOL.MSI"                : 24
      ,"SYMBOL.AZTECCODE"          : 25
      ,"SYMBOL.DOTCODE"            : 26
      ,"SYMBOL.C25"                : 27
      ,"SYMBOL.C39-CONVERT-TO-C32" : 28
      ,"SYMBOL.OCR"                : 29
      ,"SYMBOL.4STATE-RMC"         : 30
}
```

Bar code Result Object

```
interface BarcodeResult {
 readString : string,
 symbologyString: string,
 symbology : integer,
 goodRead : bool,
 xml: string,
 imageGraphics? : string,
 image? : string
};
```

The result from a successful scan is returned in an JavaScript Object with the layout shown above. The image is optional and it depends on the enableImage() API method.

Api Methods

loadScanner()

cmbScanner.loadScanner(deviceType,[callback])

To get a scanner up and running, the first thing to do, is to call the **loadScanner()** method.

It expects a **device type** and a **callback** function as a second param. The **callback** function is wrapped within a Promise and it's returned as one.

This method does not connect to the Reader Device. We need to call **connect()** in the **callback** (promise) to actually connect to the Reader Device.

```
/*   @return
{
    const (string)action : the taken action (will always return LOAD READER)
    (string)  result : the message from the server
    (bool)    status : if the reader was loaded it will return true
    (string)  err    : the string error if an error was thrown
    (int)     type   : the type of the device that we connected to [0,1]
    (string)  name   : the name of the type of device DEVICES[type]
}
*/
```

The device type parameter can either be a string constant, with possible values:

```
DEVICES : ["DEVICE_TYPE_MX_1000","DEVICE_TYPE_MOBILE_DEVICE"]
```

Or we can just pass 0 for DEVICE_TYPE_MX and 1 for DEVICE_TYPE_MOBILE_DEVICE

Examples

```
//example as a callback:
    cmbScanner.loadScanner("DEVICE_TYPE_MOBILE_DEVICE",function(result){
        cmbScanner.connect();
    });
//example as a Promise
    cmbScanner.loadScanner("DEVICE_TYPE_MOBILE_DEVICE").then(function(result){
        cmbScanner.connect();
    });
//example passing the device type as an integer
    cmbScanner.loadScanner(0).then(function(result){
        cmbScanner.connect();
    });
```

connect()

To connect to a READER after we've loaded it, we need to use **Connect**.

```
cmbScanner.connect([callback]);
```

```
/*   @return
    (promise)  {
        status : boolean, if connection succeded true if not false
        err : string , if status false err will not be null
    }
*/
```

The result from the **connect()** method is returned as a Promise and it will return the result of the connection attempt.

Examples

```
/** Using connect and returning the value as a promise */
cmbScanner.connect().then(function(connectionState){
    console.log(connectionState);
// { "status" : false, "err" : "Did not return OK in success" }
});
/** Using connect and returning the value as a callback function */
cmbScanner.connect(function(connectionState){
  console.log(connectionState);
});
```

Even though we return the result of the **connect** action, acting on the result from the connect callback for the purpose of updating DOM elements or calling API methods that only work after we have a connection set, is not advised.

There is a listener callback **(**setConnectionStateDidChangeOfReaderCallback**)** function that can be set, that will always trigger whenever there is a change in the connection state and we should really keep that code there.

disconnect()

```
/*   @return
    (promise)  {
        status : boolean, if connection succeded true if not false
        err : string , if status false err will not be null
    }
*/
```

Just as there is **connect()**, there is a **disconnect()** method that does the opossite of **connect()** :

```
cmbScanner.disconnect([callback])
```

Similarly to **connect()**, **disconnect()** too returns the connectionState in the callback function (which is wrapped into a Promise), and we could act on the connectionState, for example change the label from "connected" to "disconnected":

```
cmbScanner.disconnect(function(connectionState){
  if(connectionState == cmbScanner.CONSTANTS.CONNECTION_STATE_DISCONNECTED){

    document.getElementById('some-label').innerHtml('DISCONNECTED');
  }
  else if (connectionState == cmbScanner.CONSTANTS.CONNECTION_STATE_CONNECTED){
    document.getElementById('some-label').innerHtml('DISCONNECTED');
```

```
  }
  })
```

But, just like **connect()**, we don't have to do this because of ***setConnectionStateDidChangeOfReaderCallback()*** that sets a listener to all connect / disconnect / connecting / disconnecting events.

setResultCallback()

To handle successful scan results, we need to setup the **ResultCallback** function. This is done via the ***setResultCallback***.

This method DOESN'T return a PROMISE.

It sets the callback function for all ***didReceiveReadResultFromReader*** events.

cmbScanner.setResultCallback(callback)

```
cmbScanner.setResultCallback(function(result){
     if(result && result.readResults && result.readResults.length > 0){

                result.readResults.forEach(function (item, index){

                    if (item.goodRead == true) {
//Perform some action on barcode read
//example:
                        document.getElementById('content').insertAdjacentHTML('beforeend','<div cla
ss="result"><span class="symbol">'+item.symbologyString+'</span> : '+item.readString+'</div>');
//we could put all this DOM handling in the dom helper object, but since it's just one line of code
let's leave it be
                    }
                    else{
//Perform some action when no barcode is read or just leave it empty
          // navigator.notification.alert("Stopped");
                    }
                });
            }
});
```

ResultCallback will fire every time there is a barcode scan (or the scanner was stopped either manually or it timedout with No Result).

Result Object

The structure of the barcode result is as follows:

- **result.readResults** - json array. If you use multicode mode here you will find main result(set of all partial results together merged in one readString) and all other partial results
- **result.subReadResults** - json array of all partial results (if single code mode is uset this array will be empty)
- **result.xml** - string representation of complete result from reader device in xml format

result.readResults and **result.subReadResults** are json arrays that contains items with this structure:
- **item.readString** - string representation of barcode
- **item.symbologyString** - string representation of the barcode symbology detected
- **item.goodRead** - bool that indicate if barcode is successful scanned
- **item.xml** - string representation of partial result in xml format
- **item.imageGraphics** - string that represent svg image from last detected frame
- **item.image** - base64 string that contain image from last detected frame

setAvailabilityCallback()

To monitor for availability of the MX device use:

setAvailabilityCallback([callback])

Set a listener on availability changes. Will fire when the device becomes available or loses availability.

Does not return a Promise.

Usage

```
cmbScanner.setAvialabilityCallback(funciton(availability){
        /**
        * availability - int representation of the Device availability
        */
        if (availability == CONSTANTS.AVAILABILITY_UNKNOWN) {
            //Perform some action when device availability is not known
        }
        else if (availability == CONSTANTS.AVAILABILITY_AVAILABLE) {
            //Perform some action when device is available
        }
        else if (availability == CONSTANTS.AVAILABILITY_UNAVAILABLE) {
            //Perform some action when device is not available
```

```
        }
});
```

setConnectionStateDidChangeOfReaderCallback()

cmbScanner.setConnectionStateDidChangeOfReaderCallback([callback])

All **connect/disconnect** events should be handled within the callback function set with this API method.

This method DOESN'T return a PROMISE. It sets the callback function for all ***connectionStateDidChangeOfReader*** events.

The callback is optional, because the plugin provides a default callback that handles **connect/disconnect** events, but the default callback is only a placeholder function and doesn't offer much functionality to the end app developer.

The App developer should **always set** this method, as most of the configuration settings for the Reader will be done within this listener.

When the **connetionStateDidChange** is fired, it will return one of 4 possible integer values

CONNECTION_STATE_DISCONNECTED : 0,
CONNECTION_STATE_CONNECTING : 1,
CONNECTION_STATE_CONNECTED : 2,
CONNECTION_STATE_DISCONNECTING : 3

These can be accessed directly as integers, or the developer can use them from the CONSTANTS enum available to them by accessing the CONSTANTS object within the cmbScanner**.**

cmbScanner.CONSTANTS.CONNECTION_STATE_CONNECTED

Example of this in action would be:

```
cmbScanner.setConnectionStateDidChangeOfReaderCallback(function(connectionState){
      if(connectionState == cmbScanner.CONSTANTS.CONNECTION_STATE_CONNECTED){
//do stuff while connected, like set a symbology to enabled
          return cmbScanner.setSymbologyEnabled("SYMBOL.QR",true).then(function(rr){
```

```
//see setSymbologyEnabled for more info on the rr (returned result) object
//after the symbol has been set we can send a command. Let's set the flash ON
             cmbScanner.sendCommand("SET LIGHT.INTERNAL-ENABLE ON")
              .then(function(result){
//if the command is succesful we should have the LIGHT turn ON whenever we start the scanning proces
s
//and to check if the flash is ON we can use the isLightsOn API method
                  cmbScanner.isLightsOn().then(function(lights_on){
//light should be on
                  });
              });
          });
      }
  });
```

Here we not only listen to the **connect/disconnect** event, but we also enable a few symbologies and set the flash light on, via a command and the API method **isLightsOn**.

startScanning()/stopScanning()

To start/stop the scanning process, we use these two methods. They can either be called from a button via the app's UI, or we can call the programmatically.

startScanning Declaration

void ***cmbScanner.startScanning([callback])***

stopScanning Declaration

void ***cmbScanner.stopScanning(callback)***

Usage

They take an optional callback as a parameter, but it will overwrite the "main" callback function only if it's not set by ***setActiveStartScanningCallback()*** already.

Because of the nature of the READERS we should always set the **setActiveStartScanningCallback()** function, if we want to control certain DOM elements based on the status of the scanner (Reader).

```
cmbScanner.startScanning(function(scannerState){
 if(scannerState)
  document.getElementById('scanner-active-label')[removed] = 'RUNNING';
```

```
 else
  document.getElementById('scanner-active-label')[removed] = 'STOPPED';
});
```

Examples

```
<a href="cmbScanner.startScanning();">Start Scanner</a> <!-- button to start the scanner -->
<a href="cmbScanner.stopScanning();">Stop Scanner</a> <!-- button to stop the scanner -->

<a href="cmbScanner.startScanning(function(scanner_state){
//this callback function will be used, only if we don't already have one set via
// setActiveStartScanningCallback. In all other cases it will be ignored.
console.log(scanner_state);
});">Start Scanner</a> <!-- button to start the scanner with a callback, avoid this and always use s
etActiveStartScanningCallback -->
```

setActiveStartScanningCallback()

If we want to monitor the state of the scanner (READER), we need to setup this callback function.

The callback function will be fired every time the scanner starts looking for a bar code (either via a Camera Reader, or via the trigger button on an MX device) or stops looking (via a manual stopScanning() call or if it finds a bar code).

Declaration

cmbScanner.setActiveStartScanningCallback(callback)

Usage

```
cmbScanner.setActiveStartScanningCallback(function(scannerState){
  if(scannerState == true){
    console.log('scanner is working');
  }
  else{
    console.log('scanner is not working');
  }
  });
```

As previously mentioned, setting this function, completely removes the need to setup a callback on the **startScanning()** or **stopScanning()** methods.

Even though it may seem more appropriate to just have that action return in a promise or a callback immediately after **startScanning()**/**stopScanning()** is called, due to the nature of the **stopScanning** process, which occurs every time there's is a result, it's best to listen for both actions (starting and stopping) in the same place.

setSymbologyEnabled()

Once there is a connection to the Reader, we can enable Symbols by calling

setSymbologyEnabled(symbol,on_off,[callback]).

If Mobile Camera is used as a Reader, there are **NO SYMBOLS enabled by default.** We need to enable each SYMBOL that we want to use**.**

It expects a string value of the symbol to be enabled, see Constants for more information on how to use SYMBOLS.

Returns a Promise.

```
setSymbologyEnabled(symbol,on_off,[callback])

/* @return A promise that contains the JSON object
        {
            action  : the DMCC command that was invoked
            status  : did it succeed or not, if an error happened it will be set to false
            result   : if the symbol is enabled then true, if not then false
            err     : the error message if the action didn't complete
        }
```

```
*/
```

Example of how you would use it:

```
cmbScanner.setSymbologyEnabled("SYMBOL.C93",true,function(result){
  console.log(JSON.stringify(result));
//will print {"action" : "SET SYMBOL.C93 ON","status" : true, "result" : true, "err" : null}
});

//or with a Promise

cmbScanner.setSymbologyEnabled("SYMBOL.C93",true).then(function(result){
  console.log(JSON.stringify(result));
   //will print {"action" : "SET SYMBOL.C93 ON","status" : true, "result" : true, "err" : null}
});
```

isSymbologyEnabled()

To check if we have a symbol enabled, we use **isSymbologyEnabled()**.

isSymbologyEnabled(symbol,[callback])

The result is returned in the callback which is then wrapped into a Promise.

```
/**
@return A promise that contains the object
{
    action  : the DMCC command that was invoked
    status  : did it succeed or not, if an error happened it will be set to false
    result  : if the symbol is enabled then true, if not then false
    err     : the error message if the action didn't complete
}
*/
```

Example

```
cmbScanner.isSymbologyEnabled("SYMBOL.C93",function(rr){
  console.log(JSON.stringify(rr));
```

```
//will print {"action" : "GET SYMBOL.C93","status" : true, "err" : null,"result" : true}
});
```

setCameraMode()

To set how the camera will behave when we use camera device as a barcode reader we use:

(void) ***cmbScanner.setCameraMode(cameraMode)***

Note: It should be called before we call **loadScanner()** *for it to take effect. Calling it after the scanner was loaded won't do anything if the scanner is loaded.*

```
/**
Use camera with no aimer. Preview is on, illumination is available.
NO_AIMER = 0,

Use camera with a basic aimer (e.g., StingRay). Preview is off, illumination is not available.
PASSIVE_AIMER = 1,

Use camera with an active aimer (e.g., MX-100). Preview is off, illumination is available.
ACTIVE_AIMER = 2,

Use mobile device front camera. Preview is on, illumination is not available.
FRONT_CAMERA = 3
*/
```

setPreviewContainerPositionAndSize()

To set the size and position of the preview container (only available to the user when they use the camera reader):

(void) ***setPreviewContainerPositionAndSize(x,y,w,h)***

```
/*
  @params x,y,w,h
        x,y  : top left position
        w,h  : width and height of the rectangular in precentages of the full container
*/
```

```
cmbScanner.setPreviewContainerPositionAndSize(0,0,100,50);
//will set the preview to 0,0 and 100% width 50% height
```

setLightsOn()

To enable the flash light programmatically, we can use:

setLightsOn(lights_on, callback)

```
/**
@return A promise that contains the JSON object
{
  (string)  action  : the DMCC command that was invoked
  (bool)    status  : did it succeed or not, if an error happened it will be set to false
  (string)  err     : the error message if the action didn't complete
  (bool)  result    : the result of the taken action, in this case TRUE if the light was enabled, fa
lse if not
}
*/
```

Example

```
cmbScanner.setLightsOn(true,function(response){
  //console.log(response);
});

cmbScanner.setLightsOn(true).then(function(response){
//or with a promise, the callback function is wrapped within a promise
//so if we don't set a callback function as a param, the default one will be used
//and it will return a promise to continue the chain
});
```

isLightsOn()

To check if the flash light is ON, we can use:

isLightsOn(callback)

```
/**
@return A promise that contains the JSON object
{
  (string)  action  : the DMCC command that was invoked
  (bool)    status  : did it succeed or not, if an error happened it will be set to false
  (string)  err     : the error message if the action didn't complete
  (bool)  result    : the result of the taken action, in this case TRUE if the light was enabled, fa
lse if not
}
*/
```

Example

```
cmbScanner.isLightsOn(true,function(response){
  //console.log(response);
});

cmbScanner.isLightsOn(true).then(function(response){
//or with a promise, the callback function is wrapped within a promise
//so if we don't set a callback function as a param, the default one will be used
//and it will return a promise to continue the chain
});
```

enableImage()/enableImageGraphics()

If we want to return the last image seen by the decoder we use **enableImage()**. If we want image graphics stats on the returned image we use **enableImageGraphics().**

Declaration

cmbScanner.enableImage(on_off_switch);
cmbScanner.enableImageGraphics(on_off_switch);

Usage

```
cmbScanner.enableImage(true);
//it will enable the image in the result
```

```
cmbScanner.enableImageGraphics(true);
//will show where exactly the barcode was detected on the image
```

The structure of the bar code result object is:

```
interface BarcodeResult {
 readString : string,
 symbologyString: string,
 symbology : integer,
 goodRead : bool,
 xml: string,
 imageGraphics? : string,
 image? : string
};
```

If set, the returning image is returned as base64 png image.

sendCommand()

Most of the API methods can be replaced with just sending the appropriate commands to the MX (or Camera) reader.

(Promise) ***sendCommand([callback])***

Send command receives a callback and wraps it into a promise, so the chain can be continued.

Usage

```
cmbScanner.sendCommand("SET SYMBOL.POSTNET OFF")
          .then(function(result){
//and in the promise let's see what our command did
              console.log(JSON.stringify(result));
          });
//or like this
cmbScanner.sendCommand("SET LIGHT.INTERNAL-ENABLE ON")
          .then(function(result){
//if the command is succesful we should have the LIGHT turn ON whenever we start the scanning proces
s
              console.log(JSON.stringify(result));
          });
```

The first command will disable the **SYMBOL POSTNET**. The second will set the Flash ON.

Both actions can be performed with their appropriate API functions **setSymbologyEnabled()** and **setLightsOn()** and generally speaking a developer should always prefer the API functions to the **sendCommand().**

However, there are cases where the Cordova plugin doesn't cover certain use case scenarios, and we can always use the **sendCommand** for that.

Example

If we want to change the way our MX device "beeps" and "lights" we can use:

ACTION	COMMAND	PARAMETER	PARAM VALUES	DESCRIPTION OF PARAMETERS	RESULT ACTIO
SET|GET	OUTPUT.USER-CONFIGURE	event number, beep tone, beep number, LED color, vibration	[1,2] [0-2] [0-3] [0-7] [ON|OFF]	1: USER_EVENT_1, 2: USER_EVENT_2 [0]: Low, [1]: Medium, [2]: High Number of beeps [0]: Off, [1]: Blue, [2]: Green, [3]: Cyan, [4]: Red, [5]: Magenta, [6]: Yellow, [7]: White enable/disable ON: The reader vibrates. OFF: The reader does not vibrate.	Sets th beeper t and th number beeps USER_EVE or USER_EVE

SET OUTPUT.USER-CONFIGURE

So for our example we would have:

```
cmbScanner.sendCommand("SET OUTPUT.USER-CONFIGURE 1 1 2 4 ON").then(function(response){
```

```
  //console.log(response); //print out the result of the action
});
```

This will configure user event #1 to two medium beeps with red LED and vibration. In order to activate this event, we use:

```
cmbScanner.sendCommand("OUTPUT.USER1").then(function(response){
     //this will call the stored settings item for USER1, so the MX device will basically beep twice
 with red LED and vibration
})
```

resetConfig()

If we need to reset the configuration settings stored for the MX/Camera reader we can use:

Declaration

resetConfig([callback])

Usage

```
cmbScanner.resetConfig(function(result){
      console.log(result);
})
```

Result Interface

```
/*
@return A promise that contains the JSON object
{
  (string) action  : the DMCC command that was invoked
  (bool)   status  : did it succeed or not, if an error happened it will be set to false
  (string) err     : the error message if the action didn't complete and there is an error. default
is null
  (bool)  result   : the result of the sendCommand action
}
*/
```

registerSDK()

Another way to add your license key if you are using camera device. This one will overwrite your license key from manifest for Android or info.plist for iOS.

registerSDK("SDK_KEY")

Example

```
cmbScanner.registerSDK("SDK_KEY");
```