

## Software Requirement Specification

CONTEC GLOBAL

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Rensol Systems Pvt. Ltd.

# Online Visa Application

RENSOL SYSTEMS PVT.LTD

# Contec Global

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# ONLINE VISA APPLICATION

## 1.0 Background

Rensol Systems, in the past had built various software applications for Contec Global. Due to a good working relationship between the two companies, the quantum of engagement is on the rise. Rensol Systems has been awarded by Contec Global to develop web enabled visa application system.

## 2.0 Scope of Work

### **Web enabled Visa application**

Contec Global requires a Web based Visa processing application for its customer countries allowing Visa applicants to apply from the internet from anywhere in the world. The applicant can use his/ her home PC to register him/ her first and then using the created user id and password he/ she can enter all the information required to obtain the Visa. The application shall provide for a Guest login as well for those who are in a hurry and do not have time to register first.

There would also be Agent Login for the agents who can fill in the Visa Application form on behalf of the applicant. The applicant, including the online applicant, can come over to nearest Agent to submit their biometric finger print.

The applicant can make payment using a payment gateway while applying for the Visa. The Payment gateway provider and the Merchant Account and the Banker name shall be provided by Contec Global. The applicant has an option to pay on arrival as well. The applicant may choose that option. In either case the applicant will have a Transaction Id. He would also be given a receipt on payment by online in the form of an email. Receipt shall be provided to those who pay on arrival after they have made the payment. The payment details shall be encrypted and can never be altered by the Visa Officer or anybody. After the Visa Sticker is made and Payment receipts generated, the data can never be altered or deleted. The Flag for Printing of Visa Sticker will be updated only after payment is received either online or on arrival. Visa cannot be printed unless the payment flag is updated.

The application will have a work flow engine which will automatically forward the application to concerned Visa Officer. If the Visa officer has the authority to approve the Visa then he will do that. On approval of the Visa, a Transaction ID will be generated.

He can also return the application with some doubts/ queries and the applicant shall enter the details again and resubmit the application. In this situation also there will be a Transaction ID to be used for resubmission. If the Visa Officer is not authorized to approve the type of Visa that the applicant has applied for, he may forward this to next superior person in the work flow hierarchy. The software will do auto allocation, however, a manual intervention may be allowed to send the application to a specific superior Officer. There should be two levels of authorities for approval of

visa. One type of authority shall be Junior Immigration Officer, while the other shall be Commissioner General of Immigration. Junior Immigration officer shall approve for Ordinary Passport Holders, while Commissioner General of Immigration shall approve for Service & Diplomatic Passport Holders, as they may require "FREE Visa". The junior shall receive all applications and shall forward it to Commissioner General of Immigration for the cases they would have authorities for. Software will have validation allowing enforcing this.

The Officers at any level shall be able to view application status for him and subordinates.

The application will have a gateway to integrate with the Interpol database based on the access rights given to that govt. by Interpol. To enable such integration, Contec Global shall forward the sample of such report so that they can be saved in the database using a pre-created table structure.

On approval of the Visa and also when the payment has been made by the applicant directly or through agent, the application shall generate a Visa Number. The Visa shall be emailed to the applicant/Agent depending on the situation. This will be called paper visa only. This number will be used by the immigration officer at Border to retrieve applicant data for printing of Visa.

If the applicant pays on arrival with an approved Visa with Transaction Id, Visa Number and sticker shall be generated after he/ she has made payment on arrival. Those who have approved paper Visa for which they have made payment, they have to show the paper Visa on arrival and then the system shall make a sticker and allow him/ her to come in.

In case of Visa Payment on arrival, the bank will be receiving the requisite visa fee on a separate counter and shall issue cash receipt for money received from the applicant. As soon as the money is received the flag for printing of visa sticker will be updated by the system and then only the operator will be able to print the visa sticker. The cash receipt along with Passport will be submitted at the 2nd counter where operator will print the visa and paste it on the passport.

Following are the desired modules for web enabled Visa application

## 1. Registration

The applicant will first have to register himself/herself. They will register online by invoking appropriate URL. A form will open which shall have following fields:-

- First Name
- Middle Name (Optional)
- Last Name
- Date of Birth
- Place of birth
- Sex
- Marital Status
- Father's name
- Mother's name
- Nationality
- Current Address
- Permanent Address
- Passport No
- Passport Type
- Date of Issue
- Date of Expiry
- Place of Issue
- Issuing Authority
- Mobile No.
- Landline Phone - home

- Landline Phone - Work
- Email ID1
- Email ID2
- Picture Upload
- Upload other documents like passport pages

Here system should check if the validity of the passport is less than 6 months the visa should not be granted to that person.

Once the user has registered him/ her online, the system shall generate a unique code and this number shall be sent to his mail id. The applicant has to complete the registration process by entering the code sent.

## 2. Visa Application

### Online Application

On successful registration, the applicant can invoke the visa application form for paper visa. She/he can log in anytime and apply for Visa. Once registered, he/she need not register again. In case any change of information, he can edit the registration info at any time.

The applicant will enter the following details

- His Registration ID which will fetch most of the required information.
- Type of Visa applied for
- Arrival date
- Departure Date
- Applicant Status ( Employment, Student, Home Maker, Self Employed, Retired, Unemployed)
- Has he traveled to this country earlier also, if yes, please provide details (viz Visa Number, date of Issue, Date of expiry, country from where he got this visa etc)
- Residency ( In case Resident of a different country than Nationality )
- Visa stamps from countries
- Cities he/she would be visiting
- Entry point which could be Lagos, Abuja airport, road, port entry.
- Exit point
- Upload Picture ( This is to compare with the photo uploaded during registration)
- Etc

### Application through Agent

The agent will scan documents, take a picture and enter the application on the behalf of the applicant and also collect the payment.

### Visa on Arrival

The applicant will fill in a manual form. The applicant first goes to the Visa Application Verification counter. The Visa officer shall check the application and the passport and the type of Visa applied for. Then the officer shall enter the details on a PC screen of the application. The officer at the bank counter shall check this and collect the fees and hand over a receipt. Then the applicant will go to a visa sticker counter. The counter person will check everything and see if payment has been made and print a Visa Sticker.

**Type of Visa (Master Required)**

- a. Transit Visa - ONLINE VISA
- b. Business Visa - ONLINE VISA
- c. Tourist Visa - ONLINE VISA
- d. Extension Visa - Selection of this Type of Visa will be available to the selected users only - FORMS WILL BE SOLD THROUGH BANK
- e. Residence Visa - Selection of this Type of Visa will be available to the selected users only - FORMS WILL BE SOLD THROUGH BANK
- f. Entry / Exit Visa - Selection of this Type of Visa will be available to the selected users only, while issuing this type of visa, serial number of the residence visa issued to that person will be provided in the system so that system can check the validity of the residence visa before issuing the entry / exit visa - FORMS WILL BE SOLD THROUGH BANK
- g. Entry for people from East African Community.

**Period of Visa (Master Required)**

- a. Transit Visa = 3 Days
- b. Business Visa = 30 Days
- c. Tourist Visa = 30 Days
- d. Extension Visa = for any number of days...minimum are 5 days if the extension is for less than one month. The extension can be given for 1,2 and 3 months
- e. Residence Visa = 2 Years
- f. Entry / Exit Visa = 5, 10, 15, 20, 25, 30 Days or 1 month to 7 months
- g. Specified number of free days stays for different countries in East Africa and after free stay days the regular rate will be charged.

**Rates of Visas**

Visa Rates may change from time to time. The application must remember w.e.f dates from the database. The appropriate dates should be used for all financial computation irrespective of current rates.

- a. Transit Visa = US\$ 20/-
- b. Business Visa = US\$ 80/-
- c. Tourist Visa = US\$ 80/-
- d. Extension Visa = US\$ 2/- for each day for the visa less than one month, US\$ 60/- for each month of extension.
- e. Residence Visa = US\$ 300/-
- f. Entry / Exit Visa = US\$ 2/- for each day and US\$ 60/- for each month.

**Visa for people from East African Community**

People from different countries (East African Community) will be entitled to stay FREE for different number of days and after the free stay is finished they need to obtain a visa. The rate for the visa to these people may or may not vary from the rate of the regular visa. Therefore the system shall take care of the following functionality as well:

1. System to generate a unique serial number for each Inward and outward entry.
2. Regular Visa (if any) issued after exhaust of FREE days should be linked with Inward entry number
3. Outward entry to be linked with inward entry / Regular Visa number.
4. Selection of the Country and system will generate a form with the below mentioned field:
  1. Unique serial number of the form (Generated by the system).
  2. Name of the Person
  3. Father's Name
  4. Passport Number / Laissez Passer Number / Tavel Document Number.
  5. Date of Birth of the Person.
  6. Period of stay

### 3. Visa Approval

Visa approval will be done at different levels:

1. Officer
2. Superior
3. Further Higher Person

A workflow engine shall be built. The levels in the workflow structure can have 3 levels of hierarchy. The application can be customized based on the norm of the country in which it shall be used. The Officer shall check the details and based on the details, the application can be approved, rejected. In both the cases, an email shall be sent to the applicant email ID giving the status of the application. If it is accepted, a paper visa paper visa with a unique Transaction ID will be mailed to the applicant on his/her personal mail ID or can even take the print out from the Web site based on the unique no. In case the visa request is either declined or certain clarification is sought by the competent authority a mail will be generated accordingly and send to the applicant. The system will be capable of handling all the resubmissions, when there is some type of errors or some information not furnished. If the applicant resubmits the application, he need not pay again.

### 4. Visa status

The applicant can check the status of his application online. In case the applicant does not receive email, he/she can log in to the application, provide application number and can check the status. The status can be

- a. Approved
- b. Rejected
- c. Pending
- d. Resubmit

### 5. Access Rights-

A robust security and access right shall be maintained. For example a Visa applicant can only register, enter their details and view the status of the form. While the administrator will be able to do the following

- a. Change entry point
- b. Change cities
- c. Upload logo
- d. Etc

Besides each Transaction shall be audit trailed.

6. Other Processes: At the airport the applicant will show the paper visa and make payment to the Bank counter, unless already paid through Internet and shall be will be allowed entry and a proper visa sticker will be generated thereof based on the application no. Proper information such as arrival date, arrival city name etc shall be entered into the system. The person may have to show his finger to match biometric finger print., based on the configuration of the application specific to a country. Biometric finger print may be optional initially.
7. Agent: We would keep in the database center number. The center would have a registration process as well. People who do not have access to internet can register themselves. The biometric finger print can also be collected for those who have registered from home. This biometric finger print shall be transferred to the main database for further matching.
8. Embassy: The individuals of a country can approach the High Commission/ Embassy of the issuing country in the country of origin of the applicant. Same application can cater to this requirement and



Embassy/ High Commission can have option to have access to the application and also call for interview, collect biometric signature, picture etc.

9. Visa Sticker Inventory (Receipts, used and discarded) shall be maintained for each location.
10. Location-wise warehouse and Visa sticker inventory will enable selection of visa sticker number from the available number only.
11. **Reports-** The application shall have many reports. Reports such as
  - a. Number of arrivals in a particular city (Border-wise, Day-wise, Period-wise)
  - b. Number of arrivals in a year
  - c. Frequent visitors
  - d. 1<sup>st</sup> time travelers
  - e. Inventory Report - Visa stickers.
  - f. Visa Applications made during the period.
  - g. Visa Paper converted into Visa stickers and Paid for (Period Wise)
  - h. Total Collections for the day and for the period.
  - i. Statement of Daily / Period transfer of Funds to Contec Global Account and Government of Republic of Burundi's Account.
  - j. List of Pending applications.
  - k. Any other customized reports required.

There will be a maximum of 20 reports, including the above ones.

### **Payment Integration**

This would involve buying a merchant account of a standard bank for which payment gateway is available. It should ideally be in the country of operation but from technical standpoint, we can do it from any country. In India, banks like ICICI, HDFC provides payment gateway. The customer has to pay them directly 1 time fee and after that annual fee which is renewable every year. Apart from that payment for every transaction has to be made. Contec Global should negotiate with the bank for these payments.

This integration will take 2 months depending on Bank and their level of support. We are assuming support in English language only.

### **Device Integration**

Following devices are to be integrated

1. Finger print reader
2. Camera
3. Signature Pad
4. MRZ Scanner

Contec Global shall provide a device of each type and corresponding APIs or Web Services or SDKs.

### **Database Integration:**

The application shall be capable of integrating with the following databases provided access rights and Web Service details are provided for by the appropriate agencies.

1. Interpol database
2. Passport authority database

The API or Web Service required for such integration shall be provided for by Contec Global after collecting them from the appropriate agencies.

**The checklist of features of this application.**

- ✓ The application shall so be designed that it becomes a 'Product'. The Application will be generic in nature and will not be country specific, so that it can be used for any country based on the configuring the application through masters. Most fields whenever possible shall be stored in a table; hard-coding of data shall be avoided as much as practicable.
- ✓ The Application will have a Document Master where different type of documents will be defined and appear in the main menu/drop down box and next level will define sub type of a document. Each Sub type will be associated with certain
- ✓ attributes and different approving levels. In the admin module the access rights will be defined for the master and also for sub type of a document.
- ✓ The data capture fields specific to a document will be dynamic and definable.
- ✓ All the menus/submenus will carry the name of the selected document.
- ✓ The Application will be capable of integrating with the existing Passport application.
- ✓ The Application will be in multilingual. Five languages are to be supported for heading and prompt only, the data will be in English font. The field prompt, heading etc needs to be entered from a data entry screen by Contec Global for all languages other than English.
- ✓ The Payment gateway / routing will be country specific.
- ✓ The Payment shall be encrypted and once sticker is generated or Receipt is generated nobody can alter payment related information.
- ✓ The site will have a guide where step by step help for applying for the visa will be provided along with the general information about the visa process will be given.
- ✓ (This will be document specific and will be dynamic in nature)
- ✓ Site efficiency and response time should be given high consideration.
- ✓ Security & Data encryption during transmission
- ✓ Hacker Proof.
- ✓ Each Country will have a local sever which in turn will be connected to a central server hosted in India or any other country. The Data will transmit in the encryption form once daily late evening to the main server.
- ✓ The images like flag, Court of arm etc will be country specific
- ✓ The Site will have moderate multimedia features if the performance does not get impacted
- ✓ The Site administration features should be robust so that the user's rights and the associated features are very well defined and designed.
- ✓ MRZ Lines will be printed on the Visa Sticker.
- ✓ Online Help. (document Specific)

### 3.0 System Development Environment:

Operating System	:	Microsoft Windows XP
Language	:	C#.
Database	:	Sql Server 2005
Reporting Tools	:	SSRS or HTML or some tool as suggested by Contec Global
IDE	:	Microsoft Visual Studio 2008.
Web Browser	:	Internet Explorer 6.0