Preface

This Professional Document covers the study on the implementation of eAuction System in Karnataka State Financial Corporation. The document includes the reading on the situation before implementation of eAuction, challenges faced by KSFC, how the new System is sustainable till date and the technologies adopted in the eAuction System.

The intention behind writing this document is to provide an easy understanding of all the steps taken by KSFC towards the citizen centric eAuction System. Any interested person should be able to a clear picture on stages involved in the implementation of eAuction System.

We have tried our best to narrate the facts behind the successful implementation of eAuction System in a simple manner. The simplicity of the document has been a major factor kept in mind during the compilation of the document. We are sure that the document will serve the purpose of replication of eAuction System in other State Financial Corporations and similar organisations.

The document is designed in such a way that the readers can go with step by stepunderstanding of actual experience KSFC underwent in the successful implementation of eAuction System in its Head Offices and Branch Offices across Karnataka State.

eAuction initiative by KSFC

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BRIEF HISTORY OF KSFC

Karnataka State Financial Corporation (KSFC)

KSFC was established in the year 1959 under the State Financial Corporation Act 1951 of the Government of India. KSFC gives financial assistance to set up tiny, small, medium and large scale industrial units in the Karnataka State. The Corporation extends term loans to new & existing units upto Rs. 500 lakhs for corporate bodies and registered co-operative societies. Term loans upto Rs. 200 lakhs are sanctioned to proprietary, partnership and joint Hindu undivided family concerns.

KSFC is one of the fast track term lending financial institutions in the country. With assistance to more than 1,65,128 units amounting to nearly 11,282 crores over the last 53 years in the State of Karnataka. It is one of the robust, professionally managed State Financial Corporations.

The focus of Karnataka State Financial Corporation (KSFC) has always been on the small scale sector, artisans, tiny units and disadvantaged groups. KSFC has been the main term lending institution in most of the districts for first generation entrepreneurs. Its major thrust in the regular activities are :

a. Assistance to backward areas
b. Assistance to the small scale sector
c. Assistance to artisans, tiny, village and cottage industries.
d. Assistance to medium scale industries
e. Assistance to local entrepreneurs
f. Assistance to special segments of society

KSFC continues to accord priority to projects set up by entrepreneurs belonging to special segments of society like scheduled castes and scheduled tribes

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OPERATIONAL AREAS AT KSFC

Loan Sanctions

A prospective borrower (proprietor, partnership firm or company) submits a Project Profile providing information on the project and promoter, details of land, building, plant and machinery, power, water, marketing, arrangements for working capital, project cost and means of finance, securities offered etc.
The project is appraised technically and financially by the Officers of KSFC after conducting detailed field inspection. The documents of land and building are scrutinised by the Legal Officers for authenticity. The detailed appraisal memorandum will be placed before the Competent Authority, based on the quantum of the loan.
Loan Disbursements
Once the loan is sanctioned, the borrower will complete the necessary Legal Documentation as advised by the Legal Officer and obtains Legal Clearance. He will be eligible for disbursement of loan after he complies with the first investment requirement assigned to him in the loan sanction letter. The Officers of KSFC will physically inspect the location record the progress made in the project and recommend for the disbursement eligible amount.
Loan Recovery
The Recovery activity is the most important operational area of the financial institution. The borrower implements the project after investing his margin money and the loan sanctioned by KSFC. His unit has to commence the commercial operations and start earning revenue soon after the project implementation. KSFC helps the borrower by providing a Moratorium Period upto a maximum of 2 years. During the Moratorium Period, the borrower will pay only the interest on loan availed of by him and the payment of principal starts only after the Moratorium Period.
The Recovery Officers closely monitor the interest and principal repayments to be received from the borrower from time. They make periodic visits to the unit and remind about the dues to paid. All actions consequent to defaults by a borrower will be initiated by the Recovery Department as per the requirement of the situation.

SALE OF ASSETS THROUGH AUCTIONED BY KSFC

Any SFC is vested with several powers under the law to deal with the borrowers who turned defaulters. The Sections 29 and 31 (AA) were widely used in the past. Now, the SARFAESI Act is resorted to commonly like most of

the financial institutions including commercial banks. Under the above acts, KSFC can take following actions.

a. Take over and sell the primary assets of the unit which are financed.

b. Take over the collateral security offered to the loan.

c. Personal properties of the proprietor/partner/director etc,. as the case may be.

The assets taken over by KSFC as explained above are brought for sale through auction. The asset will be sold to the highest bidder. The proceeds of the sale are adjusted against the dues of the borrower and remainder if any will be compensated to the borrower.

It may be noted that the borrower will be given several opportunities to regularize his account with KSFC. It includes loan rescheduling, sanction of additional loan for expansion etc. Taking over of assets is the last resort when all other options under the powers of KSFC have been exhausted. Decision to attach the borrower's property is taken by the competent authority after examining the gravity of the situation including humanitarian angle.

Accordingly, we are forced to reach one of the important stages of recovery process where we required to sell assets through Auction process.

SITUATION BEFORE THE IMPLEMENTATION OF EAUCTION SYSTEM

Subsequent to taking over the assets of the financed units KSFC issued paper notifications regarding sale of assets through Auction. The size of the paper notification used to be considerably large as it contained entire information of the asset. This resulted in increased advertisement expenditure.

The bids were submitted by the bidders in sealed envelopes. On the date of opening the bids, all the bidders used to assemble in a hall to participate in the bid. Further, the bidders were asked to increase their bids subsequent to opening the sealed envelopes. There were chances for cartelization among the bidders to manipulate the price. This would result in financial loss to KSFC, as final bid values were just marginally higher than reserve price. KSFC was not able to get best price for the property prevailing in the market. There was also scope for other similar malpractices which were detrimental to the interest of KSFC as well as the clients of KSFC who were the real owners of the assets. Also, the conditions of sale could not be advertised exhaustively in each auction, which could lead to litigation subsequently. The management of KSFC was of the view that the auction system should be open and transparent, tamper-proof and fetch best values for the assets.

BRIEF INTRODUCTION TO eAuction

Similar to manual auction, the purpose of eAuction is also to sell to the highest bidder. However, major difference lies in the way they are conducted. In manual auction the bids are received and negotiations are conducted across the table, face to face. Conversely, in eAuctions they are carried out via an online platform using internet. The auctioner and the bidders need not be physically present in a single place.

Bidders get the chance of improving their proposals online based on the bids made by other bidders. eAuctions are considered to be the most transparent way of conducting negotiations. The payment of EMD is made online using NEFT/RTGS or physically. The communications to successful and unsuccessful bidders are sent electronically. The proceeds of the sale also can be made online. Only the legal documentation needs to be done manually as per the prevailing practice.

Benefits of an e-Auction

- Transparent process
- It will be clear to participants why they won/lost the eAuction.
- Participants will receive real-time market information.
- Sale communications can be issued faster.
- Time saving compared to face-to-face negotiations.

IMPLEMENTATION OF eAuction SYSTEM

The decision to implement eAuction was taken by the Management in the year 2011. The goals set to achieve by doing so are listed below.

a. To overcome all the inadequacies of manual auction system as much possible.
b. To increase the efficiency of the system in terms time and manpower.
c. To reduce the overall cost auctioning process.
d. To increase transparency in the auctioning process.
e. To reduce the interference of vested interests in the auctioning process.

The implementation was carried out in 3stages as follows:

1. Testing of the eAuction Software (EAS) : The EAS was tested thoroughly over a period of 3 months. Hundreds of eAuctions were simulated in a test environment and the results were analysed to ensure that system is seamless without any glitches. Suggestions were made to the EAS Developer to modify, add new features, reduce unnecessary features. Care was taken to make EAS user-friendly to both Bidders and Local Administrators. The end result showed that any person with minimum familiarity with computers and internet can comfortably use the EAS.

2. Training to Local Administrators (LA) : Every Branch Manager/HOD at HO was assigned the role of LA. The LA is the person who posts assets for eAuction in his respective BO/Department at HO. One day training programme was held for LAs at HO soon after testing part was completed. The training was interactive where live demo was shown on the process of eAuction. The LAs were made to realise that conducting eAuction is a simple task which does not require any special technical skills. The LAs were further asked to acquaint the concerned employees in their respective BOs/Departments with the practice eAuction. They were also entrusted with the task of educating the prospective bidders of their respective BOs.
3. Actual Implementation : The eAuction became operational in April 2010, starting with HO and Bangalore based BO. By June 2010 all the other BO successfully switched over to eAuction.

Accordingly, it took about 5 months to implement eAuction in entire KSFC which can be considered quite short.

eAuction PROCESS AT KSFC

A. Procedure for eAuction:local administrator (LA) :

The Heads of concerned Departments at HO and BMs in all the BOs are authorised as Local Administrator (LA) for conducting e-Auction. His duties include the following:

a. Obtaining Login Id and Password from Central Administrator (CA), IT

Department, HO :

The LA should send email to the CA (webadmin@ksfc.in) requesting for Login Id and Password. This will be issued within 24 hours by the CA. Soon after receiving Login id and Password, the LA should log in to the account and change the Password.

b. Posting e-Auction:

The LA can go to the Login Page by clicking the link 'Administrator' on the eAuction homepage. When the LA logs into the account he will be the find link post e-Auctions. When he clicks on that the 'Post Auctions' Page appears. He will have to make necessary entries under the headings Basic Information, Owner Information, Asset Information, Auctioner Information, Statutory Information and Auction & Bid Information. After all the entries made correctly he has to accept the Terms and Conditions and click on the button 'Post'. This will make the Auction Page e visible to all the Bidders.

Note : In the 'Post Auction' Page, there are facilities to upload a Photograph, a Video and a Document of the Properties put up for Auction. All the LAs are advised to upload Photographs and Videos for each Auction without fail.

c. Issuing Bid Key/Auction Key to the Bidders after collecting EMD :

Any Bidder can login to the account and view the Auctions posted by the LA. If he wishes to bid for any Asset, he has to submit EMD DD to the LA. After verifying the DD, the LA to logs into his account where we find the list of Auctions posted by him. He should click on the Asset Id of the Asset for which bid is received and it will open 'View Auction' Page. There is a tab called 'Generate Key' on this Page. Click on the same and it will open 'Auction Key Generation' Page. There he has to make entries like Member Id, PAN No. and EMD details. After making all the entries, click on the Button, 'Generate Key', which will generate Auction Key. We get a message as 'Successfully Generated the Key' and also option to print and e-mail a letter to the Bidder. The LA has to use both the options.

d. Checking the bids received:

After receiving the Bid Key from the LA, the Bidder will bid for the Property. In the Bidding Process, successive Bidders will be forced to bid an amount higher than the previous Valid Bid amount.

The LA will login to his account and click on the required AssetId. In the next page click on the Tab, 'Bids' which will open 'Bid Count List' Page where information about all the bids received with the Bid Amount will be displayed. After the closure of the bidding time, the highest bidder will be declared Successful Bidder by the System.

Note : The System allows a Bidder to bid with an amount less than the Reserve Price. Such Bids will not be accepted as Valid Bids, but recorded separately. The LA will have buttons to take Report on such Bidders, who had bid with amounts lower than Reserve Price. This information will be used for next Auction of the Property if all Bids received are lower than Reserve Price. In such situation, the LA may lower the Reserve Price comparing the received Bids with SR Value, after approval from the Competent Authority.

b. Communication to the Bidder after the Bid Closing Time:

Within few minutes after the automatic closure of the e-Auction the System will generate emails and send them to the following.

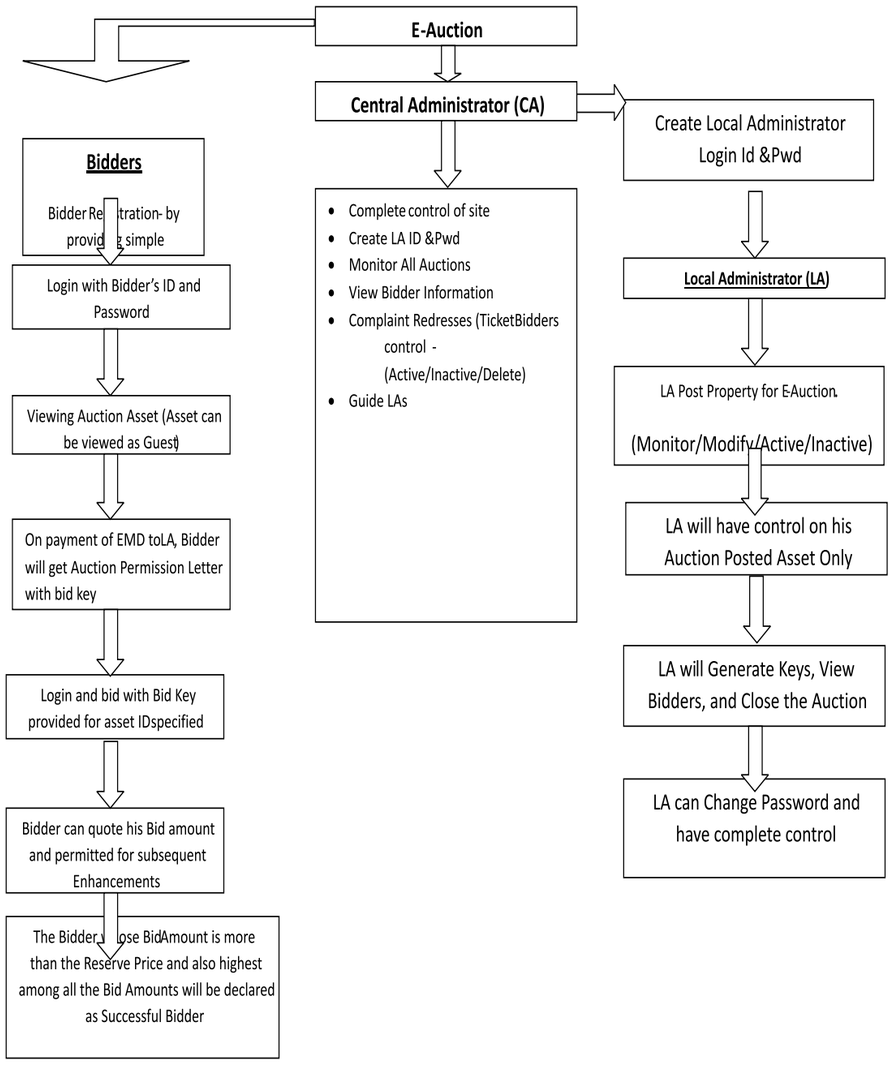
i. Successful Bidder asking to pay 25% amount on the same day.
ii. Second highest Bidder informing status of his Bid.
iii. Unsuccessful Bidder informing status of his Bid.

The Auto-Mails will be only a brief Notice informing the status of Bids to respective Bidders. The LA will print a Report on the closed e-Auction and place it before the Competent Authority for approval. Thereafter, a hard Copy of the Communication will be sent to the Successful Bidder with detailed Terms and Conditions. All the remaining procedures in respect of Second highest Bidder and Unsuccessful Bidders remain unchanged.

B. Procedure for e-auction: (Bidders):

Any Bidder can bid for the Properties posted by LA, only through Internet. To do so, he should be registered with KSFC as a Bidder. For registration as Bidder, one should click on the link 'New Bidders' on the eAuction homepage. If he is a new bidder he has to click on 'New Bidder' Link which will take him to Registration Page. On this page he has to enter various details like Profile Type, Personal Information, Communication Address, Contact Information, and Login Information. Next, he has to accept the Terms & Conditions and click on the Button, 'Register'. After the successful registration, his Login Id and Password will be mailed to his email Id. Whenever he wishes, he can login to this account and look for the Properties posted by various LAs. He can bid for any of the Property by submitting the EMD and obtaining Bid Key from the concerned LA.

Flowchart of e-Auction



The EAS of KSFC the following modules:

- Administrator (Admin)
- Local Administrator (LA)
- Secondary Local Administrator (SLA)
- Bidder

Administrator

The administrator will be the super user. He/she will have all the privileges. The role of the administrator will be:

- Create LA and SLA.
- Oversee the entire operations
- Impart training to LAs and SLAs as and when required.
- Address bidder grievances.

Local Administrator

These will be the department heads or branch heads who have assets to be auctioned. The role of the LA will be:

- Post bids.
- Monitor bids.
- Generate bid keys for bidders

Secondary Local Administrator

These will be one level below the LA. Their primary function will be to generate bid keys in the absence of LA.

Bidder

Bidder is the most important stake holder. He/she is the one for whom the application is developed. Basically he/she will log into the application and bid for the interested property/asset.

SITUATION AFTER THE IMPLEMENTATION OF eAuction SYSTEM

As practiced before, every BO issues a paper notification when an asset is posted for eAuction. However, the notifications will be very brief resulting in considerable savings of advertisement. Even those prospective bidders who do come across the issued by KSFC BOs from time have to just visit our eAuction once in a while to look for assets required by them. A bidder from anywhere India can bid for the assets posted by any of the BOs of KSFC without being present physically in any of the BOs. This was never possible in manual auction system practiced in the past. Due to this the number of bidders has increased substantially, especially for the urban properties.

The competition on the online platform takes place smoothly as any bidder can bid in anonymity without being influenced by vested interests. The eAuction has indicated the many assets which never fetched good price earlier or never had buyers, have been sold successfully for better prices. The cartelisation by unscrupulous bidders to rig the bid amounts or coercing a genuine bidder not to bid for particular property have almost stopped.

The employees of recovery section at BOs find the eAuction process much simpler with reduced paperwork, elimination of negotiations across the table and higher probability of selling the assets. They get more time to devote other tasks involved in the recovery section. This has also led to improvements in recovery performance.

CHALLENGES FACED IN THE IMPLEMENTATION OF eAuction SYSTEM

KSFC believed that the participation and interest of all the officers was very essential for the successful implementation of the concept. The manual procedures were thoroughly studied. A concept paper was prepared and this was discussed in the meeting of senior executives involving technical, financial and legal officers to ensure that all requirements are met and safeguards were built in to make the system tamper-proof.

Before going live with the eAuction facility all the concerned officers from both HO and BOs were adequately trained using live demo and necessary presentations.The suggestions of the field level officers were studied and the processes and procedures were streamlined.eAuction was made compulsory without any relaxation, from a specific date. Therefore, all the concerned had no other option than to accept the new system. As the eAuction website has simple and intuitive user interface, the officers had no problem in adopting the same. The IT Department also provided necessary support over phone and remote connection whenever required. Therefore, it may be stated that on the part of KSFC Officers involved in e-Auction there were no issues or challengers.

However, KSFC experienced a few problems with respect to prospective bidders. Many of the small bidders even did not have an e-mail id which is mandatory to participate in bidding. In addition to this, many did not have access to PC with Internet connection. This posed a major challenge to KSFC.

STRATEGY ADOPTED TO OVERCOME THE CHALLENGES

The problems mentioned in the earlier section were overcome by the public friendly initiative taken by the Management of KSFC. All the concerned with eAuction were advised to take following measures to assisted the prospective bidders.

a. To create en e-mail id at our office whenever a prospective bidder requested for the same.

b. To allow the bidder to use computer and internet connection of our office if required.

c. An undertaking was taken for Bidders that KSFC will not be responsible if a bidder was not able to carry out bidding by using KSFC facility, on account of any technical snags experienced by the computer he was using. Fortunately, such incidents have never taken place so far.

The above measures helped nearly 50% of small Bidders to participate in e-Auction even though they did not have access to Computer/ Internet and also who did not have an email id.

SUSTAINABILITY OF THE NEW SYSTEM

The EAS can be considered sustainable based on the following factors.

a. Quick adaptability by both employees of KSFC and prospective bidders.

b. Everyone involved has gained in terms of efficiency, transparency and convenience over last 2 years.

c. Elimination of all most all the ills of manual auction system.

d. Robust and seamless software system which has undergone several improvements continually based on the feedback received from users.

e. It is not possible think of any other better alternative, as this system has made optimum usage of Information Technology.

RESULTS ACHIEVED

As on 31.03.2013 KSFC has brought nearly 800 assets for sale through e-Auction (this also includes those assets which were auctioned more than once). So far, 107 assets have been sold. Recent survey conducted across the BOs indicates that for each auction, the savings in paper advertisement is a minimum of Rs 3000/auction, on an average. Further, there are considerable savings in administrative expenses. Many properties which remained unsold for a long time have been sold at prices much higher than reserve price.

The savings in advertisement expenditure alone works out to Rs 24,00,000. Considering the savings in other overheads, the total savings will be much higher. Our experience indicates that the eAuctions are at least 50% faster than manual auctions and completely transparent. The complaints regarding the conduct of the auctions have almost disappeared which was not the case earlier. It may be noted that EAS makes use of Server and Database already procured by KSFC at cost of around Rs 7.00 lakh for hosting the Web Portal. Therefore, there was no investment of Server and Database, exclusively for EAS. Even if Rs 7.00 lakh is treated as expenditure along with the software development cost of Rs 2.00 lakh, the net gain will be Rs 15.00 lakh within 2 years and it can be considered as commendable achievement.

LESSONS LEARNT

The experience with eAuction has showed that Information Technology can be used effectively to bring in transparency and efficiency, eliminating all the malpractices which were prevalent earlier. We have listed some of the benefits we experienced due to the use of IT in Auction of Assets.

Advantages:

a. Increases in operational efficiency and savings in time: EAS has used technology to automate large number tasks involved in the Auction process. This saves time and it also results into quality of service.

b. Improved communication through communication technology: With the help of communication technology tools like phones, electronic mail, databases just to name a few, movement of information within KSFC has become easy and fast. Employees can easily move/modify information across whole process without having any interruptions.

c. Improved data storage and file management: This saves on paper work and makes transfer and access of data remote. Information and data are very important tools for a business. Now, they are being utilised and stored in a seamless environment.

d. Reduction in costs of operation and increases on ROI (Return on Investment) In any business, factors like cost of operation play a big role in the development and growth of that business. So when businesses use information technology to cut down on costs of operation, then their ROI will increase which will result into business growth. In the case of KSFC, an investment of Rs 2.00 lakh invested in eAuction Infrastructure has already returned us over Rs 24,00,000 lakh.

e. Improvements in business to consumer relationship : Information Technology creates a strong business to consumer relationship and it results into business growth and expansion. Information technology can be used to improve customer service in so many ways. For example, a prospective bidder can bid for any property posted for auction by any of the 32 BOs of KSFC simultaneously from any part of the globe. A good customer service can be used as a great tool by any organisation to gain competitive advantage.

REPLICATION

We are of the opinion that eAuction can be easily replicated across different SFCs/Financial Institutions based on the factors explained below

a. Hardware : It requires the server of basic configurations which will not cost more than Rs.4.00 lakh. This cost also includes operating system. The server meant for eAuction can be located in the existing data center of the organisation.

b. Software : A Data base like Oracle basic costs around Rs.4.00 lakh which fulfills the data base requirements of eAuction. Organisations can also make use of open source data base like MySQL which further reduces the cost of data base. For middleware, Apache Tomcat Server can be used effectively which is also an open source product. For frontend,JSP can be used. There are options for many IDEs like Netbeans, Eclipse, JDeveloper etc. There is also an option to use PHP and other freeware.

c. Training to employees : If the EAS developed is user friendly and intuitive, the task of training will be very easy and the request hardly one day.

d. Familiarizing the bidders regarding eAuction : This also will be an easy task if KSFC model is followed where the employees of KSFC will provide all the facilities like email id, PC with Internet connection and guldens bidding wherever required.

Our experience indicates that with an investment of Rs.8.00 lakh any organisation can implement eAuction system easily within 6 to 7 months. Therefore, we strongly feel that replication of eAuctionsystem will not pose any difficulty.

TECHNOLOGIES ADOPTED

The technologies used by KSFC in terms of hardware, database, middleware, frontend development tool are as follows.

Hardware: KSFC has used a Server of basic configuration which is less expensive. The details of the Server as below.
Specification of the Server

Sl No	Particulars	Specifications
1	Processor	Intel Xeon E5502, 64 Bit, Dual Core, 1.86 Ghz 4 MB L3 Cache
2	No Cores	2
3	No of Processors	1
4	Motherboard	Intel make, suitable for above Processor
5	Memory	32 GB minimum expandable upto 96 GB max, DDR3 800
6	Minimum Memory Module Size	8 GB
7	No of Memory Slots	Minimum 12
8	Storage	SAS Hot Plug Drives
9	Storage Capacity	a.Internal : 2.4 TB (4X600GB)b.External : Provision upto 7.2 TB (12X600GB),] not to be supplied now.
10	RAID	Integrated RAID-5
11	Expansion Slots	Minimum 8 PCI Express Slots
12	Keyboard	101 Keys Keyboard
13	Mouse	Optical Mouse
14	Monitor	19"TFT
15	Ports	Min 6 USB 2.0 Ports and 1 Serial Port
16	Power Supply	Suitable Power Supply with Redundancy
17	Hot-Swap Components	Power Supplies, Fans, Memory, Hard Disk Drives and PCI-Express Adapters
18	Optical Drive	DVD Writer Dual Layer
19	Form factor	Rack
20	Networking	Integrated Dual Port Gigabit Ethernet
21	Systems Management	All necessary System Management Softwares
22	Service and Warranty	On Site Warranty for 3 years from the date of Commissioning and Extendable upto 2 years

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Database : We have used Oracle 11G Standard Edition which is low-cost, fully function edition and sufficient for the EAuction requirement of KSFC. The reasons for using Oracle Database are

- Is robust supportable and has a clear future to prevent technology lock in.
- Does not come with any penalties or drawbacks in terms of cost, ease of use, scalability or deployability.
- Is fully supported by the application, and the application layer takes full advantage of the databases feature set.
- Security features are superior compared all other databases
- Easy deployment and administration
- Supports all leading front-end tools like Oracle Forms, J Developer, Netbeans, PHP, .NET etc
- Is scalable and supports cost effective high availability needs consistent with the business requirements.

Middleware: Apache Tomcat is used as Middleware. Apache Tomcat is an open source web server and servlet container developed by the Apache Software Foundation (ASF). Tomcat implements the Java Servlet and the JavaServer Pages (JSP) specifications from Sun Microsystems, and provides a "pure Java" HTTP web server environment for Java code to run.Apache Tomcat includes tools for configuration and management, but can also be configured by editing XML configuration files. The other advantages in addition to being open source are

Dynamic Configuration : It support for web fragments, libraries will be able to use an embedded web.xml fragment to provide their configuration, eliminating the need for developers to add library-specific configuration entries to their application's web.xml files.

Annotation Support :It offers developers another method of configuring filters, listeners and servlets through declarative-style programming.Classes and servlets can be quickly defined by annotating the class, which makes development faster and eliminates the need for deployment descriptors.

Extended Servlet API : An extension of the Servlet API will enable the programmatic addition of Filters and Servlets as an application starts, and although access to this API while running an application is prohibited in the Servlet 3.0 specification, Tomcat 7 will allow developers to ignore this specification if they wish.

Other Servlet -related Features : It includes the use of generics, improved session tracking and SSL session ID tracking for increased security, and brand new file upload functionality, which will allow developers to upload additional libraries as needed.

Simpler, Faster, More Developer-Friendly : It has many features making it the most developer-friendly release yet! Here is a look at some of the features aimed at making development more agile and user-friendly.

Simplified Embedding : It has APIs making embeddable Tomcat applications a simple, hassle-free reality. Utilizing this new API, developers will only need 8 lines of code to get Tomcat up and running within their applications.

Improved Logging : In an effort to make log files easier to read, it includes an asynchronous file handler and a single line log formatter. The asynchronous handler allows Tomcat to write logs to disk in a dedicated thread, so that logging operations do not cause any latency in processing threads. The single line formatter writes logs in a single line, which is a better solution for administrators.

Security : The Manager and host-manager applications are more secure compared all open source Middlewares. There are separate roles for script-based, web-based, JMX proxy, and status page access, for more specific access control. To prevent CSRF attacks, a randomly generated nonce will be required for all non-idempotent requests. Preventive measures have also been incorporated in to protect against session fixation attacks.

Frontend : The frontend makes use of Java and JSP. The IDE (Integrated Development Environment) used is Net Beans which is freeware.JSP is one of the most popular languages being used in developing high-traffic web apps. It can scale very efficiently to multiple web servers. It uses a distributed cache for storing the frequently used data to remove performance bottlenecks. It also makes use of the java language for coding. JSP allows Java code and certain pre-defined actions to be interleaved with static web markup content, with the resulting page being compiled and executed on the server to deliver a document. The compiled pages, as well as any dependent Java libraries, use Java byte code rather than a native software format. Like any other Java program, they must be executed within a Java virtual machine (JVM) that integrates with the server's host operating system to provide an abstract platform-neutral environment. JSPs are usually used to deliver HTML and XML documents.

JSP is one of the most preferred technology for controlling the content or appearance of Web pages through the use of servlets, small programs that are specified in the Web page and run on the Web server to modify the Web page before it is sent to the user who requested it. JSP is comparable to Microsoft's Active Server Page (ASP) technology. Whereas a Java Server Page calls a Java program that is executed by the Web server, an Active Server Page contains a script that is interpreted by a script interpreter (such as VBScript or JScript) before

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the page is sent to the user. The former is given more preference by the any Web Developers due its simplicity, efficiency and security.

Many programmers also prefer JSP because it simplifies development by allowing the insertion of Java code directly into standard text files. It is also an independent, cross-platform, portable language that falls in line with the Java motto of 'write once, run anywhere.' Boasting the ability to separate content from the foundation of the page, the language allows programmers to create new code independent of the existing work. JSP is largely considered to be a robust and efficient technology for both the server and client side aspects of programming.

Server OS : We have used Red Hat Linux as the operating system for the Server. It is optimised for multi-core processors and has continued hardware support for maximum flexibility and fully suited for our eAuction need. It also has advanced I/O performance and virtualization technologies, compared other flavours of Linux. The other benefits include

- Large SMP support for both physical and virtual systems
- IPv4/IPv6 fragmentation offload and buffer management
- Dynamically switchable per-queue I/O schedulers
- Kernel buffer splice capability for improved I/O buffer operations
- It includes Multi-Level Security and targeted policies for all services with integrated directory and security capabilities
- It also such has a mechanism known as call frame Canary word tostrengthen hacker defenses
- Several Audit features provide powerful new search/reporting and real-time monitoring
- Network storage enhancements include Autofs, FS-Cache, and iSCSI support with interoperability features
- It also IPv6 support and conformance enhancements
- Improved ACPI support with features such as suspend to disk
- Smart card login - with PKI/Kerberos authentication
- Integrated multimedia support
- Enhanced plug and play hardware support (cameras, printers, scanners, etc.)
- Network Manager which provides automatic wired and wireless network configuration

Support for root device multipath IO (MPIO) improves availability

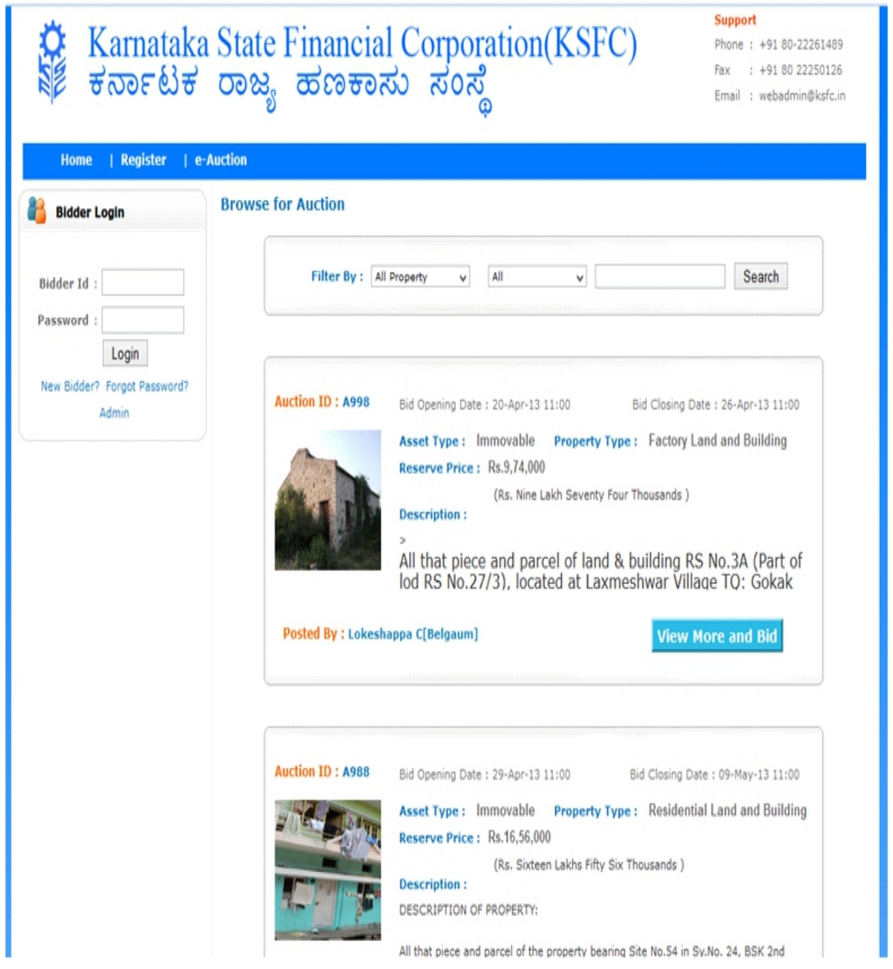
THE ROAD AHEAD

Both the employees and bidders have provided positive feedback regarding their experience with regard to eAuction. In the last 2 years, the EAS has undergone several improvement based on the inputs received from various sources including regular users. In the coming days there are plans to add additional feature to increase the convenience for the users.

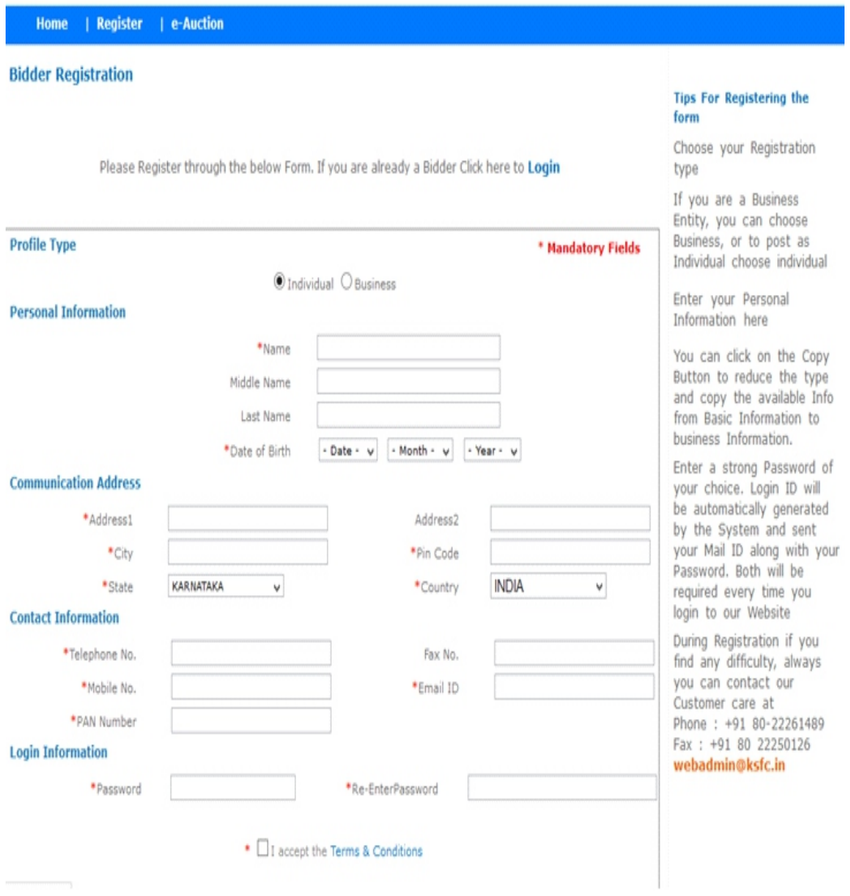
a. Additional communication through SMS for bidder registration, successful bidder, unsuccessful bidder, EMD payment, EMD refund etc.,
b. Facility to pay EMD through Credit card
c. Online refund of EMD directly to party's account / credit card.
d. Online eAuction demo app for new users.
e. Exclusive live support on eAuction homepage through Chat Window.

ANNEXURES

eAuction Home Page

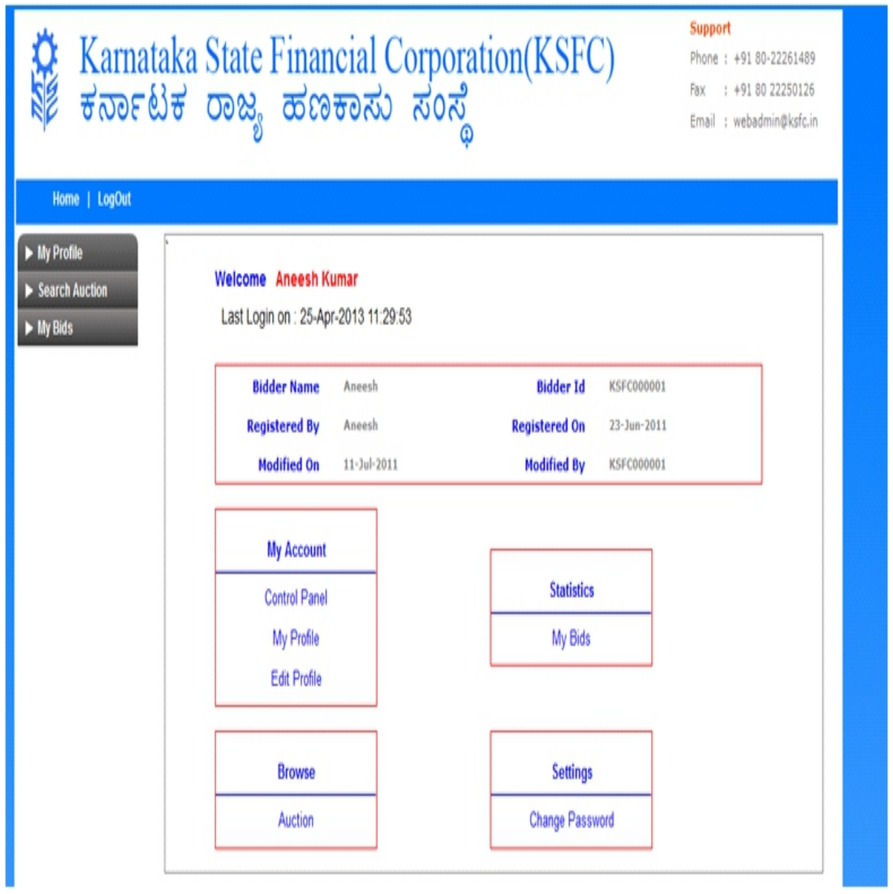


New Bidder Registration Page

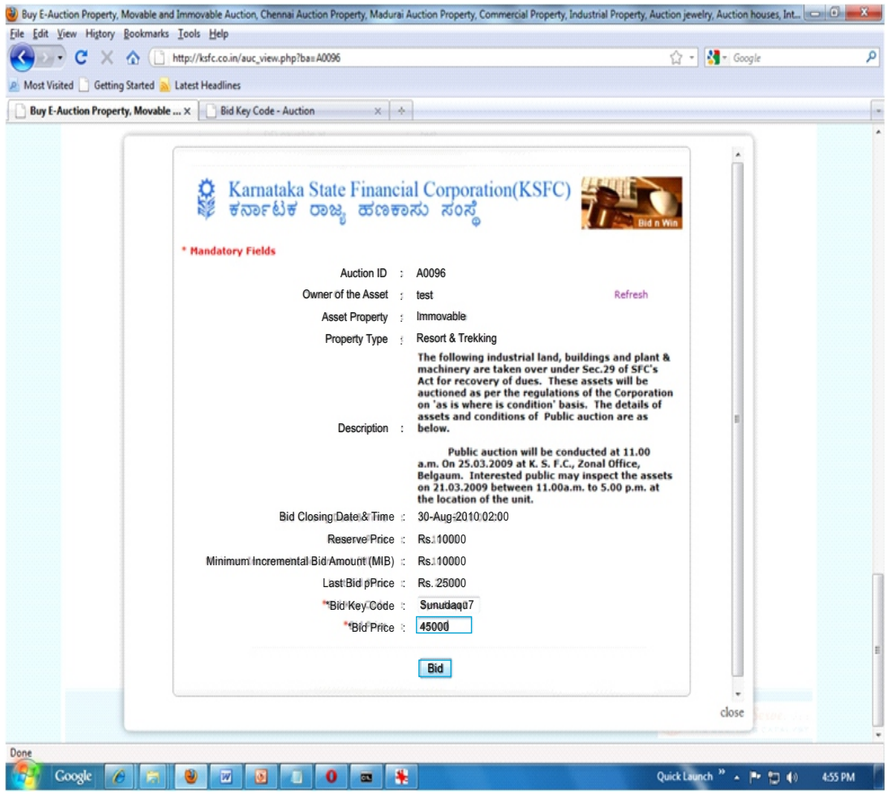


eAuction initiative by KSFC

Bidder's Home Page



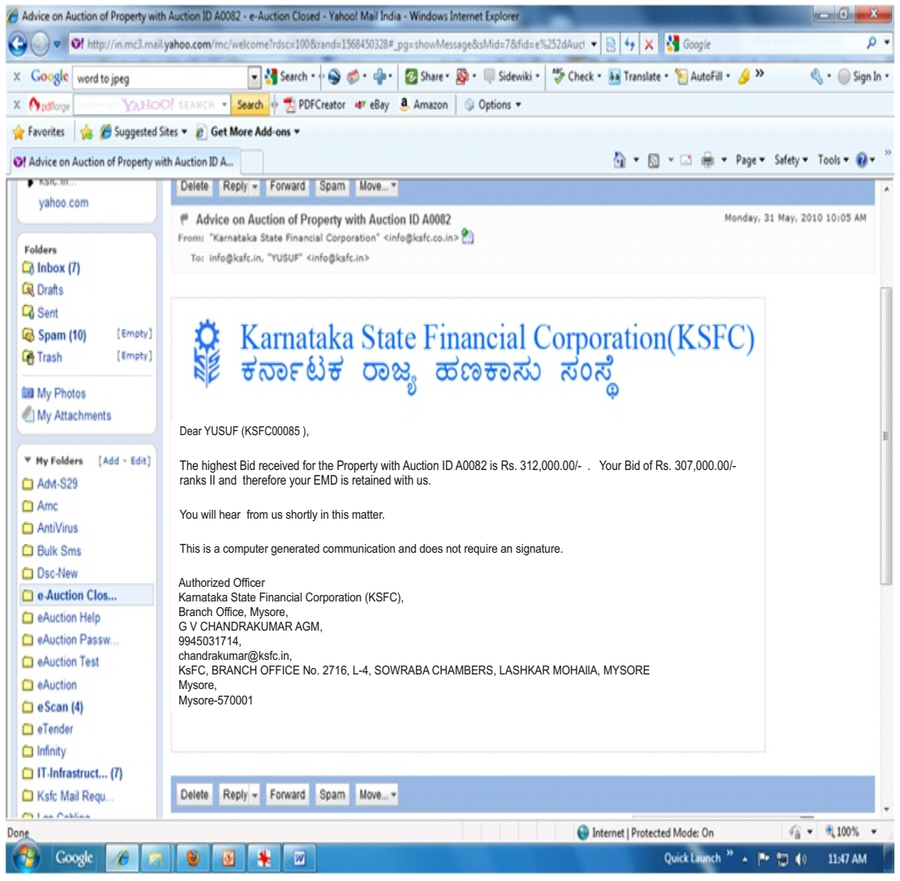
Bidding Window



eAuction initiative by KSFC

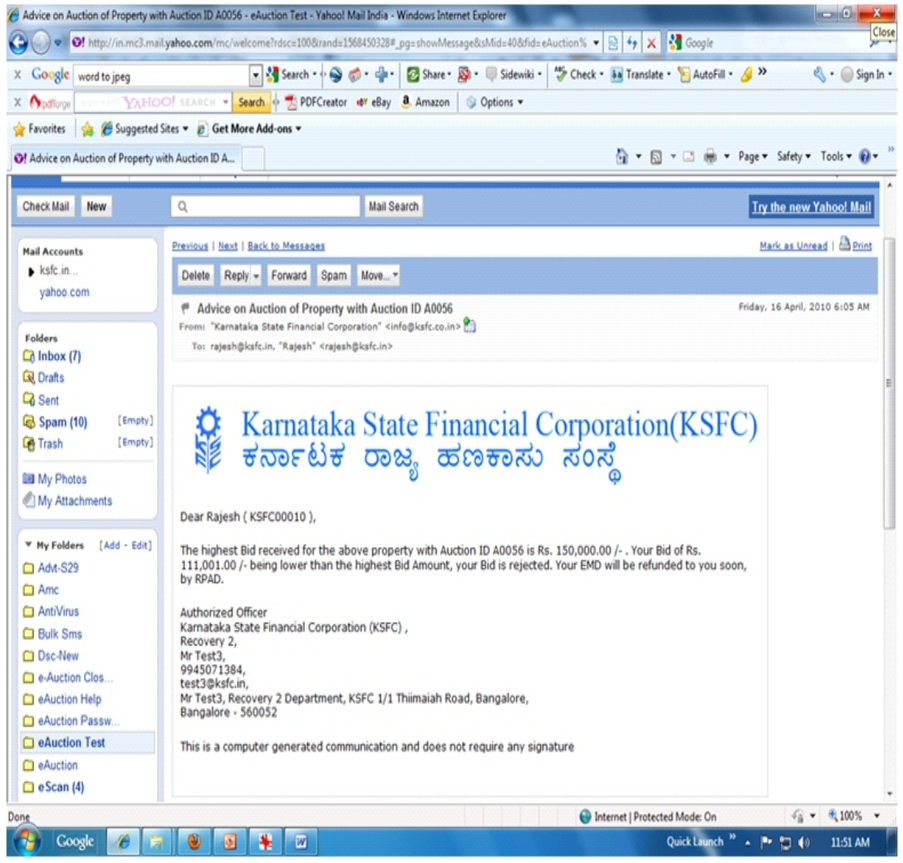
Mail to Successful Bidder

Mail to 2nd highest Bidder

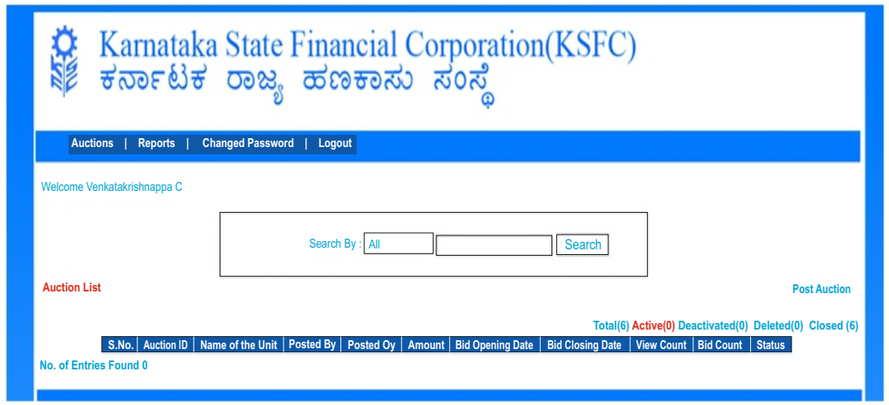


eAuction initiative by KSFC

Mail to Unsuccessful Bidder



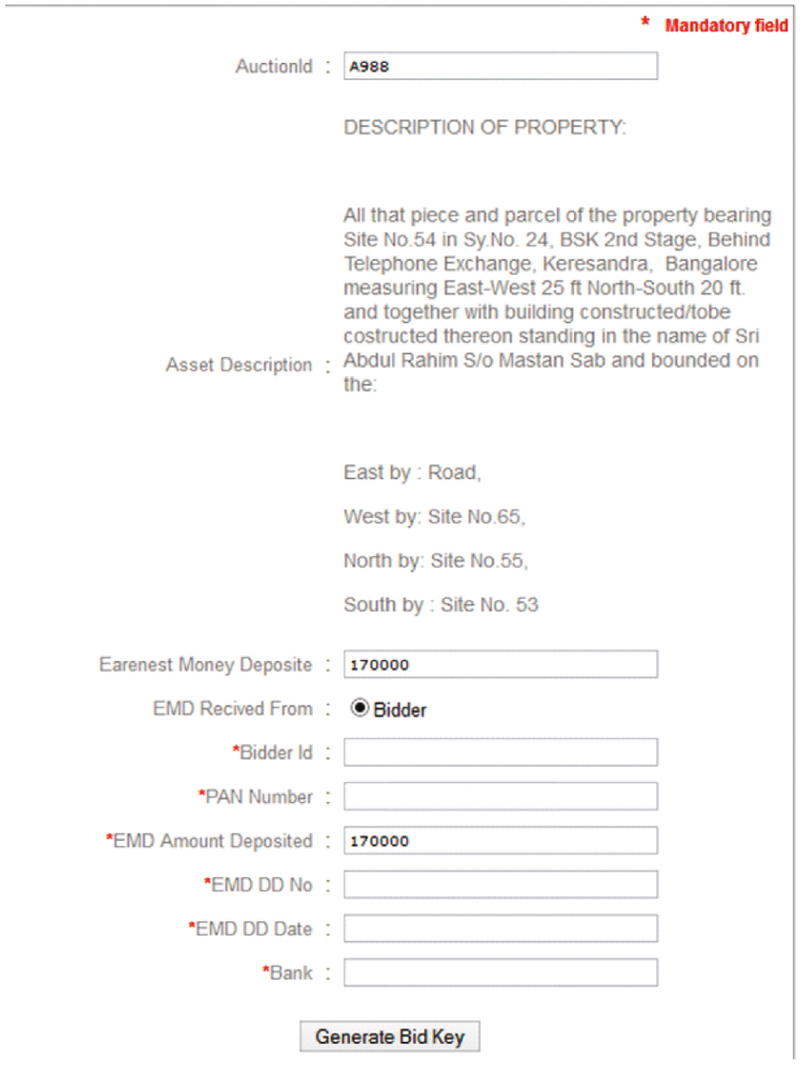
LA's Home Page



eAuction initiative by KSFC

Post Auction Page – LA

Generate Bid Key Page – LA



eAuction initiative by KSFC

Valid Bids List – LA

Karnataka State Financial Corporation(KSFC)
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Auctions | Reports | Change Password | Logout

Valid Bids List

List Auction

View | Views | Valid Bids List | Low Bids List | Report

Reserve Price: Rs. 8, 61,000

Auction Id: A987

S.No.	Bidder ID	Bid Value	Bid Date
1	KSFC000573	Rs. 9,31,000	08-Apr-2013 10:57:13
2	KSFC000572	Rs. 9,26,000	08-Apr-2013 10:56:16
3	KSFC000573	Rs. 9,21,000	08-Apr-2013 10:55:56
4	KSFC000574	Rs. 9,16,000	08-Apr-2013 10:54:18
5	KSFC000573	Rs. 9,11,000	08-Apr-2013 10:53:19
6	KSFC000574	Rs. 9,06,000	08-Apr-2013 10:51:57
7	KSFC000573	Rs. 9,01,000	08-Apr-2013 10:49:16
8	KSFC000574	Rs. 8,96,000	08-Apr-2013 10:47:11
9	KSFC000572	Rs. 8,91,000	08-Apr-2013 13:19:52
10	KSFC000573	Rs. 8,86,000	08-Apr-2013 21:52:06
11	KSFC000574	Rs. 8,81,000	08-Apr-2013 15:16:18
12	KSFC000573	Rs. 8,76,000	08-Apr-2013 13:31:42
13	KSFC000572	Rs. 8,71,000	08-Apr-2013 11:55:06
14	KSFC000571	Rs. 8,66,000	08-Apr-2013 16:50:42

Reports Menu – LA

Karnataka State Financial Corporation(KSFC)
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Auctions | Reports | Change Password | Logout

Welcome Venkatakrishnappa C

- Comprehensive List of Properties bought for sale through e-Auction (PROFORMA - I)
- List Of Successful e-Auctions (PROFORMA - II)
- Live e-Auctions As on Date (PROFORMA - III)
- Un Successful List (PROFORMA - IV)

Documentation supported by :

Department of Administrative Reforms & Public Grievances
Ministry of Personnel, Public Grievances & Pensions
Government of India

Karnataka State Financial Corporation

Established under the State Financial Corporations' Act, 1951

IS / ISO 9001:2008

KSFC - Growth never ending

e-Auction System in Karnataka State Financial Corporation

Head Office : KSFC Bhavan, No. 1/1, Thimmaiah Road
Near Cantonment Railway Station, Bangalore - 560 052.