

K-SMART - Kerala Solutions for Managing Administrative Reformation and Transformation

The vision of K-SMART is to create a Comprehensive, Integrated & Intelligent Data Centric e-Governance platform having combined features of an Enterprise Resource Planning (ERP), Government Process Reengineering (GPR) and Citizen Relationship Management (CRM) to establish a well governed & sustainable, people centered & service oriented, efficient & responsive, accountable & transparent, financially sound & competitive, Smart & Digital Local Governments for Kerala towards ensuring Ease of Living for the People (Joyful Citizens) , Ease of Doing Businesses (Joyful Entrepreneurs) and Ease of Working for Employees (Joyful Employees) resulting in an Efficient Administration.

K-SMART is envisaged to have over 23 functional modules covering the entire gamut of services and functionalities of a local governments and having features of a single mobile based app, with a single sign on, and a dashboard for every citizen & employee. It is being built on the UPYOG (Urban Platform for Delivery of Online Governance) e-Governance Platform of the National Urban Digital Mission (NUDM). It is based on Java Technology and employs the microservices architecture and DevOps engineering. IKM also intends to use Emerging Technologies like AI/ML, Internet of things, Block Chain, AR/VR, Analytics etc.

Today's government processes are rife with tedious manual labour, slow-moving workflows, bureaucratic logjams, and other inefficiencies. K-SMART e-Governance solution can address all of these pain points through automated, streamlined and coordinated processes, improving both Citizen and Employee Services.

Our Approach and Plans

- Re engineering the process and transform the government delivery of services through a variety of channels (including online, telephone and face-to-face)
- Identify A – Z Third Party Integrations
- Employee Process Transformations
- Design and deliver joined-up, end-to-end services
- Deliver the Digital Transformation
- Establish a Whole of Government approach to transformation, laying the ground for broader transformation across the public sector

In the first phase, there are 14 modules in K-SMART:

1. Human Resources Management System module
2. Digital File Management System module
3. Finance Module

4. Civil Registration (birth-death-marriage registration) module
5. Business Facilitation (licenses for trade and industries) module
6. Property Tax module
7. Legacy Data Management System
8. Building Permission module
9. e-DCR Rule Engine and GIS Rule Engine
10. Public Grievance Redressal module
11. Know Your Land App (Android)
12. K-SMART App (iOS & Android)
13. K-SMART Web Portal
14. Feedback module

In the second phase, there will be the following modules also in K-SMART:

No	Functional Module	Service/Functionalities Covered
1	Citizen Welfare Module	<ol style="list-style-type: none"> 1. Social Security Pension Services 2. Welfare Related Certificates
2	Revenue Management module	<ol style="list-style-type: none"> 1. Profession Tax Services 2. Entertainment Tax
3	Meeting Management Module	<ol style="list-style-type: none"> 1. Integrated Agenda Preparation 2. Agenda Listing & Merging 3. Meeting Scheduling 4. Digital Attendance Capturing 5. Meeting Minuting 6. Integration of meeting decision to concerned files
4	Public Infrastructure and Civic Amenities & Services	<ol style="list-style-type: none"> 1. Mapping and Tracking Public Infrastructure 2. Managing Schemes/Projects on Public Infrastructure 3. Citizen Service Delivery - Leasing, Renting, Booking, User fees. 4. Public Grievance Resolution on Public Infrastructure
5	Surveys & Forms	Flexible Survey Questionnaire and Data Collections and Analysis
6	Business Facilitation Module	All Licenses including Pet license, other than IFTE&OS license and Registrations

Salient features

- Citizen Profile
- Automated workflow for Civil Registrations
- GIS Integrated Platform for Building Permits
- Licensee Management
- EDCR engine for Building Permit
- Adhar Integration

- Video KYC for Marriage Registration
- My Buildings Management
- Tax Management (Tax Assessment - Payments, Appeal etc.)
- Group Pay - Property Tax
- Budget Preparation
- Integrated Workflow
- Duty Delegation
- Service & Post Mapping
- Quick Payment
- Quick Certificates
- WhatsApp Integration
- Know your land feature
- Self-Certification
- SMS Integration

Modules and status of transactions as on 31.03.2024 is provided below:

1. Human Resources Management System module

Human Resources Management System (HRMS) is a module within KSMART designed to streamline and manage various HR functions. This document provides a comprehensive guide to the features and functionalities of HRMS. The main feature of HRMS is Configuration Settings, where administrators can manage employees. Office Head (Admin) login requires Pen number and OTP received in both CUG and Spark linked numbers for the first time. Sanctioned strength (Wing wise & Designation wise) of Local body is displayed in HRMS Configuration Settings window after login. Post IDs are pre-generated against sanctioned strength. Pen number can be linked with post IDs in the Pen Mapping screen. Functional Groups head (Designated Officer) and officials (Subordinates) can be assigned from the listed accordions.

Service Mapping:

- Employees' service mapping can be done within HRMS.
- Service mapped details of all employees with functional group/module/submodule/service/status/PEN/name can be checked via Service Mapping Preview.

Other Offices Mapping:

- HRMS allows mapping of other offices from the Local body.

Employee Directory:

- An accordion named Employee Directory lists all employees with PEN, Post ID, Name, Designation, Mobile Number, and Location.

Employee Management:

- Details against any Pen number (Spark/G-spark – Temporary PEN) can be updated in the Employee Management screen.

Relieve Accordian:

- The Relieve Accordian is used to relieve an admin by giving charge to a subordinate or new admin.

Reports:

- Sanctioned Post History report is included in reports to check Sanctioned posts in given periods.
- Thus, HRMS module provides a comprehensive solution for managing various HR functions.

Status as on 31.03.2024

Service	Nos.
Total Number of Citizen Registration:	481561
Total Number of Organisation Registration:	13142
Total Employee Registration:	8148

2. Digital File Management System module

K-SMART file management system is similar to the e-Office system. Citizen can apply for a service even without coming to the office through e-File system. An acknowledgement is generated by which user can track the status of particular application. SMS and WhatsApp facility are also integrated for communication. Communication from other offices (tapals) are generated as file through counter module. Employees can also create files for internal communications.

Status as on 31.03.2024

Service	Nos.
Total Files received	819678
Closed files	509088
Running files	310590

3. Finance Module

The Accrual Based Double Entry Accounting System, which follows the Internationally Accepted Accounting Principles equips even a fresh recruit, who is not proficient in the local bodies sphere of duties, especially its accounting, to prepare the entire Financial Reports without depending on accounting professionals. The system records each financial transaction in real time. Budget document creation, Facility for cash flow management for long term, short term and midterm, Regular cash position reports, daily

cash collection reports, budget summaries & digitalization of Asset registers in local bodies could be accomplished by this application suite and a balance sheet of the exact financial position of the local body can be derived from the application. However, due to the fact that urban local bodies started getting more funds from various sources through various missions and grant in aids for their further development, the accounting of all such funds were becoming a tedious process. As the funds were being allocated through multiple modes, and the progress and further allotment of each fund was directly linked to the expenditure and outcome of the progress of the project, the proper accounting of the funds had to be more accurate than at present, otherwise the urban local body would have lost such funds thereby stalling innovative projects at various stages of completion incurring huge loss of resources also in that process. Hence recording of the exact receipts and payments, income and expenditure from various accounts has become top priority for the urban local bodies. The application which could be customised with ease as per the requirement of times, has become a necessity for the proper budgeting and accounting of various funds of Urban local bodies. The K smart financial solution meets all the accounting and budgeting requirements of LB. This reduces embezzlement, incorrect journalization, unreconciled entries, etc.

Salient Features of Financial Management

- Real time Budget linked Receipt and Payment system
- Budget Variance Report with Annual Financial Statement
- Fully automated and digitally controlled Finance Management System
- Price and Spark enabled digital bill system.
- Digital mode of Field Collection and Remittance system
- Card, UPI Payment system
- Automated Financial Reports and AFS
- User control Role mapping system
- Digital Sign controlled Payment system.
- All payments are through DBT system.

The payments received till 31.03.2024 for the services of property tax, building permit fee, license fee and civil registration are given below.

Sl.No	Service	Amount (In core)
1	Payments received through Front Office	452.33
2	Outdoor Collection	5.34
3	e-Pay	66.33
4	PoS	43.00
Total		567.00

4. Civil Registration (birth-death-marriage registration) module

Birth Registration

Citizens can apply for birth registration and other birth related services like Name inclusion, correction of name and other corrections fully online through K-SMART from anywhere in the world and can download certificates without physical presence in local bodies.

Death Registration

Through K-Smart Citizens can apply for Death registration, name and other corrections, services like non-availability certificate, abandoned death registrations fully online without visiting the local bodies and can download certificates

Marriage Registration

Under K-SMART, registration of marriage can be applied for and completed from anywhere in the world. This feature is in tune with the High Court verdict that a marriage under the Special Marriage Act can be registered online. Another highlight of the feature is that the wife and husband can complete the registration from different locations. This will be highly helpful to expatriates. This has been made possible by the introduction of video KYC. This is the first time in the country.

Status as on 31.03.2024

Service	Application Submitted	Approved
Total Birth Application Submitted to LB	61445	55528
Total Death Application Submitted to LB:	30072	25792
Total Marriage Application Submitted to LB:	15607	11384
Video-KYC:		2957

5. Business Facilitation (licenses for trade and industries) module

- Citizens can apply for a new license and renewal of license through K-SMART.
- At the time of application, the applicant can know the documents required for the selected business.
- Once the official process is completed, the applicant can pay the fee and download the license at the time of paying the fee.
- Applicant can know the status of application.
- Building tax arrears can be known at the time of selecting the building.

Status as on 31.03.2024

Service	Nos.
New licenses issued	4028
Renewal	47414

6. Property Tax module

The details of functional service available in Property tax module is provided below

- New Tax Assessment
- Tax Re-assessment
- Pay Building Tax
- Link My Buildings
- Tax Exemption- Ex-service, Area, Functionality
- Tax Exemption Revoke- Ex-service, Area, Functionality
- Vacancy Remission
- Vacancy Remission Revoke
- Intimation of Demolition
- Ownership Change
- Add/Update Building details
- Building Certificates
- Residence Certificate
- PDE Receipt Entry - Employee
- Tax Recovery – Employee - (Revenue recovery, Prosecution)
- Legacy Data Management Module (LDMS) for data correction
- Reports- bulk demand notice, building list, building count, field collection report

Status as on 31.03.2024

Sl.No	Service	Amount (In core)
1	Payments received through Front Office	208.02
2	Outdoor Collection	4.90
3	e-Pay	53.02
4	PoS	40.77
Total		306.71

7. Legacy Data Management System

The Legacy Data Management System module offers several key facilities:

Local body employees can manage property tax data, including:

- Buildings not digitally signed.

- Buildings omitted from data entry.
- Buildings requiring correction if errors are found in signed data.

Additionally, local body employees can create new masters and modify existing ones using this module. Joint Director office employees can also approve digitized license details submitted by building permit licensees to obtain Institutional login access for K-SMART.

8. Building Permission module

Although there have been previous efforts in the country to implement digital building plan mapping, Kerala is the first state in the Country to successfully implement this. K-SMART facilitates the expedited issuance of building permits to the public by digitally preparing information on plots and buildings using GIS technology, ensuring a swift and efficient process. We have been able to do this because we have introduced a GIS Rule Engine and an e-DCR Rule Engine in K-SMART. 70% of the buildings come under the low-risk category (Below 10 meters in height and 330 sq.mts in area). BPs are issued in under 10 seconds on K-SMART for low-risk buildings, because there is no human intervention. The Architect or Chartered Engineer should make the drawing on K-SMART, and the software will guide them. Once they submit, the building permit is issued in under 10 seconds. For the balance 30% buildings, they have to use K-SMART, but there are physical inspections that are necessary.

The details of functional services available in Building Permission module is provided below:

- Design with Rule Compliance
- Scrutinize Your Building Plans
- Know Your Land
- K-Map
- New Building Permits- General
- New Building Permit self-certified
- Regularisation + Permit
- Regularisation + Completion
- Regularisation + Partial Completion
- New Building Permit Under Govt. approved schemes (Through File Management)
- Land Development (Through File Management)
- Intimation of Telecommunication Tower (Through File Management)
- Intimation of Temporary huts and sheds (Through File Management)
- Intimation of Demolition of a construction (Through File Management)
- Intimation of completion of earthworks. (Through File Management)

Status as on 31.03.2024

Service	Nos.
Approved Self Certified Permits	3067
Normal Permits	447
Total Approved Permits	3514

9. e-DCR Rule Engine and GIS Rule Engine

GIS Rule Engine

- Through GIS (Geographic Information System) enabled local governance, K Smart is a revolutionary step to make spatial planning and control details available at the fingertips of the general public.
- Through the “Know your land” module, the general public will be able to know within seconds about the various spatial regulations that are applicable to a particular plot.
- “K-Map” to easily check maps of various spatial regulations applicable to the state.
- The map details of CRZ, Master Plans, Airport Zone, Railway Land, Landslide zone, High Tide Line Area, High tension electric lines, can be verified using a single platform.
- Details of issued building permits are published through “Issued Permit Map” for public inspection and the details are updated as per approvals at various stages of construction there by creating a dynamically synchronized map.

EDCR Rule Engine

- All the building regulations applicable to the proposed building can be known through the “Design with Rule Compliance” module, which is provided during the preliminary phase of the building (Concept Design stage), and the design of the proposed construction can be made fully compliant with the details required by the building bye-laws.
- “Scrutinize Your Building Plans – Scrutinize Your Building Plans module to check whether the proposed plans comply with building regulations even after the design is completed.
- The customer is given complete freedom in the choice of drafting software to be used for preparing and submitting plans.
- Completely paperless operational steps. Transparent and simple procedures.
- Validity results of plans are made available within seconds. The automated rule verification process is completely computerized, without any human intervention.

10. Public Grievance Redressal module

In a first-of-its-kind initiative anywhere in the country, K-SMART facilitates online mass petitioning by the public. Although a provision is now available for submitting a joint petition, this is the first time that a provision for mass petition has been introduced. Under this provision, a person will be able to share a petition prepared by him/her with more people in the form of a deep link. People can become part of that petition by simply clicking on the link. When the petition is received at the local body concerned, the exact number of petitioners will be shown. The status of the petition and details about further action taken on it will be delivered to each petitioner individually through a dedicated messaging system.

- Citizen can file complaint and grievance (Apply self)

- Citizen can file complaint and grievance with the help of another person (apply for another person)
- Two or more people can file a joint petition or mass petition.
- Reply from respondent (A respondent involved in a complaint can file reply to LB through his /her login)

Status as on 31.03.2024

Service	Nos.
Total Application Submitted:	7310
Resolved Grievances	964
Grievances returned to citizens	510
Rejected Applications	25
On Process	5811

11. Know Your Land App (Android)

The 'Know Your Land' feature in K-SMART enables the public to gain a clear idea about the kinds of constructions permissible in a particular area. The software automatically verifies that the submitted plans comply with regulations, thus simplifying field inspections and expediting the process of obtaining construction permits. K-SMART also facilitates online verification of permits by both the public and licensees at any time. A visit to the plot and scanning the area using the K-SMART application will help to evaluate whether the plot falls within the 1. Coastal Regulation Zone, 2. Railway Zone, 3. Airport Zone, or 4. Environmentally fragile area 5. Master Plan Zone 6. High Tension Line (KSEB). The app also provides details such as the permissible height of the structure and the mandatory setback in meters. This is the first time in the country that such details are being made available to the public using spatial data under a government system. We have been able to do this because we have introduced a GIS Rule Engine and an e-DCR Rule Engine in K-SMART.

K-SMART Know Your Land app is available in Google Play Store.

12. K-SMART App (iOS & Android)

KSMART offers both iOS and Android platforms, providing seamless access to its e-Governance services on mobile devices. Through the KSMART mobile app, users can conveniently access a wide range of government services, including online payments, certificate requests, permits, and administrative tasks. The app is designed to offer a user-friendly interface, ensuring accessibility for citizens across different devices and operating systems. With the KSMART mobile app, citizens can experience the convenience of accessing government services anytime, anywhere, enhancing efficiency and transparency in governance processes.

13. K-SMART Web Portal

KSMART Web Platform is a comprehensive digital solution aimed at modernising Local Body Governance processes in the State. It integrates various Local Self Government

services and initiatives onto a single platform, making them easily accessible to citizens. Through KSMART, citizens can avail services such as online payments, certificates, permits, and other file & administrative functions, fostering efficiency, transparency, and convenience in public service delivery.

14. Feedback module

KSMART feedback system is a tool designed to gather user input and insights to improve the performance, functionality, and overall user experience of Different Modules in KSMART.

Software Development for other departments on K-SMART Platform:

1. Kerala Water Authority
2. Construction Workers Welfare Board Cess Module
3. Audit Module
4. Midday Meal Software
5. Software for Kudumbasree
