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Chapter III

Project Implementation



Chapter

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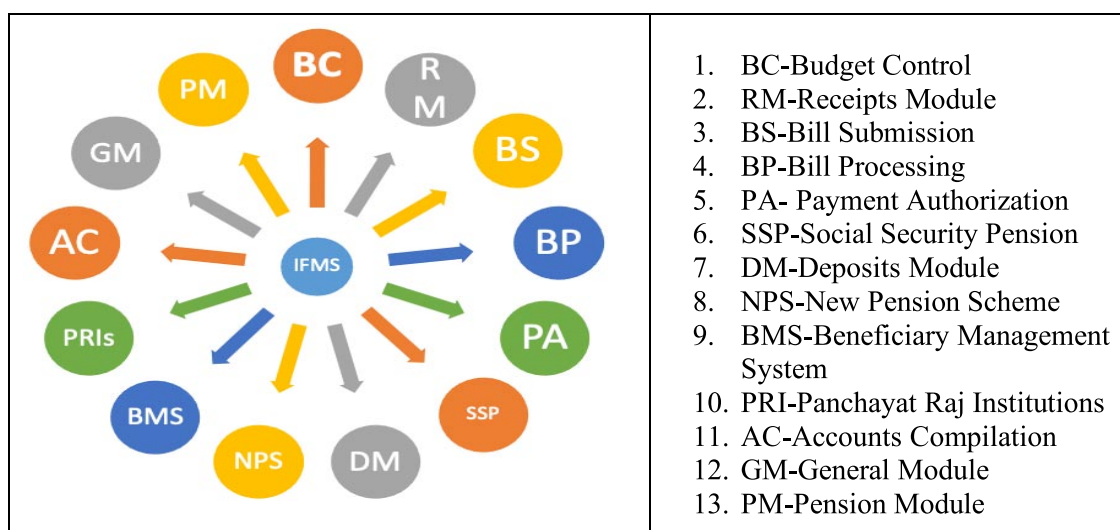


3.1 Status of the Modules

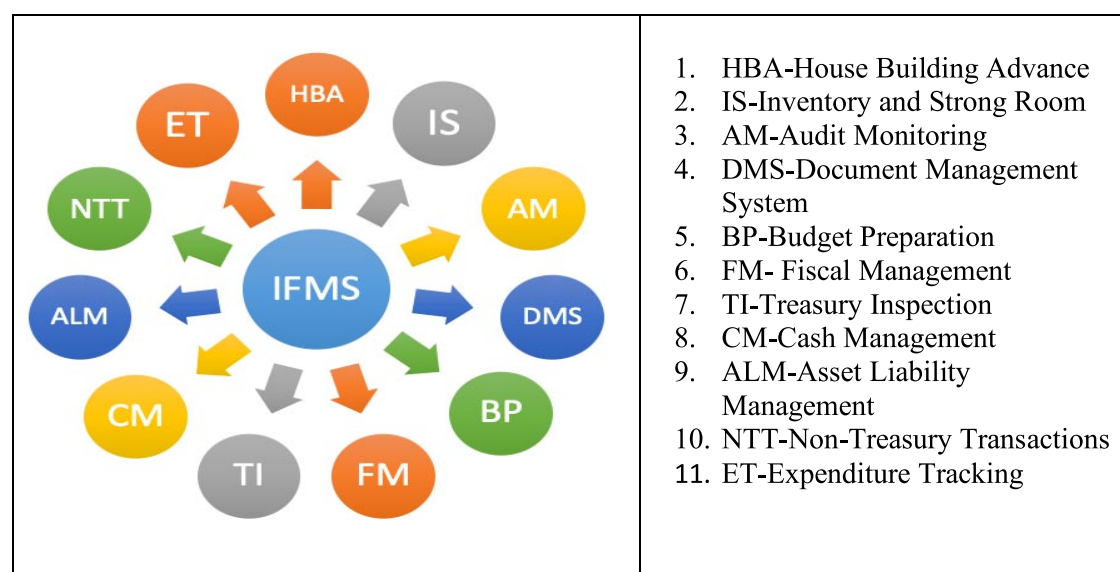
The K2 application comprises of 24 modules and was proposed to be implemented in two Stages. Stage I comprised of 13 modules and Stage II consisted of 11 modules as shown below.

Chart 3.1: Stage I and Stage II modules

Stage I:



Stage II:



Audit observed that 22 modules were being implemented at present (13 modules of Stage I and 9 modules of Stage II). Further, six out of the nine implemented modules of Stage II were not in use and two modules were yet to be developed. As a result, K2 project is yet to achieve all of its intended objectives and expected outcomes even after more than a decade since its conception.

3.1.1 Delay in implementation

According to the implementation plan in the MSA, the K2 Application was to Go-live¹⁰ on 18 February 2013. The Stage I modules were to be completed by 4 July 2012 followed by Stage 2 modules by 10 October 2012. Stage I modules was to bring all K1 functionalities into K2 Application and Stage II modules would bring in additional higher-level capabilities into K2 system. K1 was proposed to be de-commissioned after the roll out of Stage I module during July 2012.

However, none of the Stage I modules were completed as per schedule. The SI deployed the six modules of Stage I by September 2015. The development of the other six modules of Stage I *viz.* Receipts Module, Social Security Pension, Deposits Module, New Pension Scheme, Beneficiary Management System, Panchayat Raj Institutions were rolled out during the period 2015 to March 2020.

Further, it was observed that modules were launched before developing the complete functionalities. Out of the 939 identified functionalities of Stage I modules, 665 functionalities were in working state and 274 functionalities were yet to be made operational. The status of the functionalities module-wise for Stage I and Stage II is shown in **Appendix 3.1**.

The independent modules of the K2 would be able to collect and exchange data with each other only if they were deployed concurrently. Accordingly, MSA envisaged completion of both the stages within 51 weeks and commencement of O&M only after both the stages were completed.

Development and Deployment of the Stage II¹¹ modules *viz.* Expenditure Tracking Module, Cash Management Module, Fiscal Management Module, Asset Liability Management Module, Treasury Inspection, Audit Monitoring, Non-Treasury Transactions Module were to add higher level decision support

¹⁰ Go-live is referred to the completion of the entire development and deployment processes, along with user acceptance testing and third-party audit, across all treasuries, a one-month acceptance period for verifying adherence of all conditions and subsequently a two month stabilization period for meeting all the SLA conditions. The operational support and maintenance services would commence from the “Go-live” date for overall system stabilization, software maintenance, IT infrastructure (hardware and network) solution maintenance, system administration, security administration, database administration, LAN administration, LAN-WAN link administration and end-user problem resolution. The Operational Support shall be provided for a 6 year period from Go-live.

¹¹ These were also part of the minimum deliverables specified under treasury computerisation project of GOI. According to the Guidelines on Treasury Computerisation, the States would be free to decide their plans but would need to factor in minimum deliverables with regard to functionality, connectivity, service delivery and standards. The budget preparation, expenditure tracking and CAG interface module, financial data warehouse module, fund management module *etc.* were part of the indicative minimum deliverables under the GOI project.

capabilities to K2 Application as shown in **Appendix 3.2**. It was observed that none of the Stage II modules were completed within the scheduled period.

As a result, the K2 Application remained as a transaction processing system devoid of the envisaged decision support and business intelligence capabilities even after nine years of the project commencement.

3.1.2 Budget Preparation Module discarded

K2 Budget Preparation Module envisaged building automated capabilities to help in preparation of both the State and District sectors budget through creation and maintenance of a database of all Budget Estimating Officers (BEO), District Level Officers (Controlling Officers) and Drawing and Disbursing Officers (DDOs) and their responsibilities in preparing the budget.

Abandoning this module created a gap in the automation of the budget management. The budget preparation module was to provide input data to the budget control module. In the absence of this module, budget data continued to be fed through back-end operations and manual interventions which poses a risk on the integrity of the budget control data. Further the absence of data on the budgetary demands raised by the DDOs, the amount received against their demand, actual allocation, actual releases and expenditure were not amenable to analysis.

The Government stated (November 2021) that the FD decided not to adopt the Budget Preparation Module. Audit is of the view that by not correlating the budget projections with allocations and expenditure, the transparency¹² in budget preparation process is impacted. The Government should, therefore, deploy the module on priority.

3.1.3 Expenditure Tracking Module not utilised

The Expenditure Tracking Module was to assist the decision makers within the Government with financial details under various project, scheme or institution wise. These details were to be used to identify the status of a project and the expenditure incurred and objectives achieved. The module was to capture the details of works/projects/schemes/institutions within the Khajane system and map it with all receipts and payments, such that stakeholders can identify the progress of the project with respect to the expenditure done against each. The module would also capture the Government Orders (GOs) related to works/projects/schemes/institutions. A unique project/scheme/institution ID would be allocated to track all transactions done against that project, scheme or institution.

Non-deployment of the module thus impaired the capability of the K2 to support the stakeholders with relevant information on the progress of the works/projects/institutions *etc.* For example, K2 was not in a position to provide expenditure on K2 project over a period as no specific ID was assigned to the K2 project and the bills drawn towards K2 expenditure was not mapped. Similarly, all the work bills were to be passed through the K2 System. However,

¹² Code of Good Practices on Fiscal Transparency adopted by the International Monetary Fund in 1998. India was a member of the Interim Committee which discussed this code and was represented in the Committee when the Code was adopted.

the bills were passed as DC Bills. The Expenditure Tracking Module proposed to link the work bills across multiple years by assigning a work code. Since the module development was delayed, it was not possible to track the expenditure on a particular work. Thus, even though granular data is available, it could not be aggregated, monitored and tracked in the absence of deployment functionalities envisaged in the Expenditure Tracking Module.

The Expenditure Tracking Module should be implemented on priority to enable the tracking of projects, works, recurring payments etc.

3.2 Integration

The system integrates with other financial transactions of the external stakeholders such as Reserve Bank of India, Accountant General (Accounts & Entitlement), Agency Banks, Post Offices, Central Plan Scheme Monitoring System and internal stakeholders like HRMS, Directorate of Social Security Pension and other departments, to enhance the capability of preparation and reconciliation of accounts by FD.

3.2.1 Strategy for integration was not in place

The DPR for K2 considered integration as an essential element of the Application. Accordingly, the State Government was required to prepare a strategy to integrate State Service Delivery Gateway, State Portals, State Data Centres and Common Services Centres being set up under the National e-Governance Plan and other external agencies. It was observed that there was no strategy in place for integration. The DPR of K2 also envisaged preparation of a roadmap for integration with external entities. Data exchange with external agencies required a preliminary study of the existing applications with which integrations were planned to understand the type and structure of data. Audit observed that preliminary study was not undertaken to identify the functionalities available in the external applications. As a result, the FRS could not specify the integration requirements with other applications to permit effort estimation by the bidders.

According to the MSA, the integrations were to be completed by 19 February 2014. Audit observed that the e-procurement portal was not linked with K2 for capturing the project details, work details *etc.* The Police Information Technology (Police IT) system was not integrated for capturing the data pertaining to the Police Department. The K2 was yet to be integrated with Accountant General (Accounts & Entitlement) for the online exchange of voucher level data and reconciliation of accounting transactions. Further the integration with planning department, expected to aid in the real-time tracking of utilization of fund was not undertaken. Absence of integration with planning department impact the monitoring of timely transfer and utilisation of funds. Integration of K2 with HRMS to allow real time exchange of employee information was incomplete.

The delay in integration impacted the exchange of information with the stakeholders. To cite one instance of the impact of non-integration especially with AG, there were delays in submission of monthly accounts as it continued to be transmitted through manual methods by the individual treasuries. The

extent of delayed submission of monthly accounts to AG increased from 27 *per cent* in 2014-15 to 51 *per cent* in 2019-20, the delays are being up to 15 days.

The Government stated (November 2021) that deployment and development of integrations is an ongoing process. The Government response is not acceptable as external integrations were part of the MSA and it should have been completed in a time bound manner by SI. The absence of integration, thus, defeated the objective of system-to-system exchange of information to the major stakeholders.

The department needs to determine a timeline for completing the integration processes with important applications like e-procurement, HRMS etc.

3.2.2 Integration with Public Finance Management System

GoI launched the Public Financial Management System (PFMS) in April 2008 aimed at establishing a suitable online Management Information System (MIS) and Decision Support System (DSS) for fund management of the schemes of the GoI. The PFMS system *inter alia* envisaged tracking of disbursement and utilisation of GoI funds under various schemes on a real time basis. The PFMS facilitates monitoring the funds devolved to Consolidated Fund of States and obtaining real time expenditure information for schemes for which funds are transferred from the Central Ministries.

GoI guidelines on Treasury Computerisation and FRS of K2 envisaged automatic integration of K2 with PFMS to exchange data such as sanction order information, receipt of funds and expenditure. These aspects were part of the NTT Module of K2. It was, however, observed that due to delay in deployment of NTT Module, K2 was not integrated with the PFMS till the year 2020-21. As a result, the State Government was manually uploading the data related to the implementation of the central sector schemes to the PFMS.

The Project Director stated (February 2021) that the integration document for automation of the process had been finalised in consultation with the PFMS authorities and is under development. The State Government stated (November 2021) that the NTT Module was developed and operationalized and integration with PFMS was in place. The fact remained that the delay in implementation of the NTT module and consequent delay in implementation of the integration with the PFMS deprived the State Government of a tool for capturing the master and transaction level data and real time monitoring of the progress of central sector schemes.

3.3 Envisaged data analytic capabilities not built

One of the key objectives¹³ of K2 is to produce financial data that is relevant to decision making. K2 gathers large volume of financial data from various sources as part of its business transactions. According to the RFP, the SI should create an Online Analytical Processing (OLAP) system within K2 which should

¹³ The Guidelines on Treasury Computerisation envisaged a Financial Data Warehouse functionality where data from all modules is processed on a central server for generating various MIS reports covering up-to-date financial information across departments, budget, ways and means position, payment data, receipt data, and bills in process *etc.* It would provide a multi-dimensional query support based on various financial parameters.

provide a facility to perform historical analysis over backed up as well as live data to help in generating trend analysis and have capability to perform forecasting. The SI was to explore the possible use of Business Intelligence (BI) and provide Decision Support System (DSS) for various functions of the department and should be able to project a comparative analysis of expenditures and accomplishments, using statistics gathered from non-Khajane sources.

The data analytics capability as envisaged was not developed in K2 which limited the capacity of the application to support senior management by providing roll up, drill-down reports. Analysis of the data across the years, trend analysis reports, data analysis across K1 and K2 *etc.* was not facilitated.

The Government stated (November 2021) that the reports incorporating historical data and leveraging trend analysis, business intelligence and forecasting were yet to be developed. Since MSA stipulated development of these reports by the SI, department was required to enforce its execution, which was not done. In absence of data analytics and trend analysis, DSS and BI could not be achieved, which impacted decision making.

3.3.1 Geospatial Analytical capability not built

According to the FRS, the bills for major works/projects, schemes and grant-in-aid institutions should be with reference to the unique code assigned at the registration stage. MIS reports for tracking expenditure at periodic intervals and with reference to geographical locations were to be made available.

Accordingly, the technical solution proposed by TCS provided for integration of GIS with the modules of K2 to build a cohesive Information and Communication Technology (ICT) system along with an effective decision support system. Integrating both the systems will bring a powerful synergism allowing users to become more productive, improve business insight and provide the adaptability necessary to accelerate business strategies.

It was also observed that though K2 has created a repository of location information from hamlet level to State, the geospatial reporting capability was not built. As a result, analysis of expenditure across villages, taluks, districts and regions was not available in K2.

The Government may ensure that the K2 build functionalities capable of providing trend analysis and dynamic reporting leveraging the power of historical data captured.

3.3.2 Data digitisation and migration of K1 not achieved

According to the agreement, the SI was required to prepare a strategy for data migration and digitization with the consent of the department. The SI was responsible for migration from K1 to K2 and also the historical data on the State Finances from the year 1991 onwards, which was available with the Finance Department.

K1 was proposed to be de-commissioned after the completion of Stage I modules and completion of data migration. K1 application continued to be in use for financial transactions even as of March 2021 in the State as shown in **Table 3.1.**

Table 3.1: Statement showing the payments processed through K1 and K2

(₹ in crore)

Sl No	Financial Year	K-1		K-2	
		Number of Vouchers	Amount	Number of Vouchers	Amount
1	2015-16	41,01,142	1,65,766.70	25,992	148.86
2	2016-17	36,64,571	1,69,419.35	5,96,260	13,783.58
3	2017-18	33,71,893	1,66,860.48	6,05,664	39,208.54
4	2018-19	28,08,578	1,17,459.36	10,20,932	1,17,651.79
5	2019-20	14,20,520	51,296.28	25,19,973	1,92,447.87
6	2020-21	92,203	4,164.87	40,34,101	2,53,646.68

Source: Information furnished by the department

As a result, financial information was captured in two independent databases. Delay in Stage-I Modules and consequent non-retirement of the K1 Application resulted in continued parallel use of K1 application in the treasuries resulting in silos of databases capturing data in different formats. The absence of K1 data migration impaired the capability of K2 to provide comprehensive financial information. It was observed that the SI did not undertake the migration of data from K1 though it was part of the contract.

The Government stated (November 2021) that the entire transactional data of K1 would be archived on separate servers for quick and easy retrieval of data for generation of reports and also stated that common aggregate views combining K1 and K2 data would be developed for creating financial reports across the years. In the absence of concrete timelines for migration of data from K1, and prolonged capturing of financial information in two different silos of databases coupled with non-migration hinders the use of data for trend analysis, data protection and hardware maintenance *etc.* Data Digitisation and Migration, which was an important aspect of the MSA remains to be executed.

3.3.3 Generation of cash book and other subsidiary registers not achieved

The Guidelines on Treasury Computerization envisaged provision of computerised cash book as part of the accounts module. K2 Application capture the entire data related to receipts and disbursements for a particular DDO and information needed for the maintenance of cash book and required registers. However, the system does not provide a facility for preparation of the cash book for the DDO. Thus, the capability of K2 was not adequately utilised to reduce the manual recording of financial transactions by the departments.

As a result, the DDOs continued to maintain the manual cash book and were facing difficulties in recording the receipts and payments as they did not have authentic information on the transactions taking place through K2 with reference to the various receipts and payments. For *ex.*, the DDO is aware of submission of salary bills to Treasury but not the details of the actual disbursement to the employees' accounts. The recording of salary disbursement in the manual cash book was therefore a challenge requiring collection of information through manual efforts.

The Government stated (November 2021) that cash book was not in the scope of the K2. Since cash book was part of guidelines, audit is of the opinion that

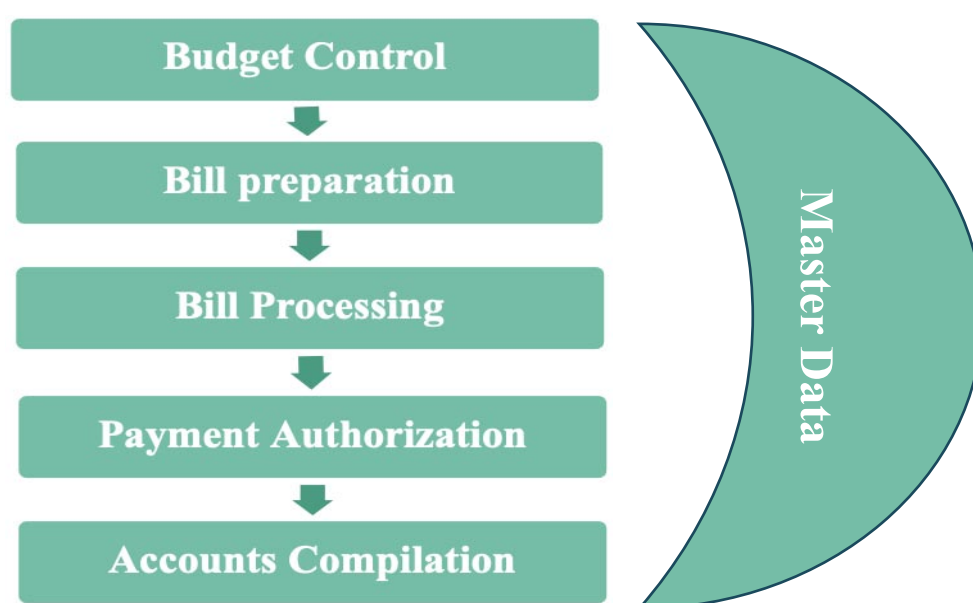
provision of a cash book could have avoided the manual maintenance of the cashbook.

The Government may ensure that K2 provide a cash book and other digitised financial documents to fully utilise the data captured by the system to avoid duplication of efforts.

3.4 Modules selected for test-check

The Performance Audit covered six out of twelve modules in operation as of March 2020. This covered the core modules which were rolled out in K2 production during September 2015. The relationship between the modules is indicated in **Chart 3.2**.

Chart 3.2: Relationship between the modules selected for test check



These modules cover the lifecycle of a payment transaction. The payment from the Government account is initiated when a claim is received against the Government towards work done, service rendered, article supplied *etc.* The amounts are drawn from the Consolidated Fund of the State against an allotted budget. The claims are processed by the designated DDOs against this allotted budget. The DDOs prepare bills in prescribed formats in the Bill Preparation & Submission Module (BSM). The approved bills are forwarded to the Treasury along with supporting documents and the Treasury processes these bills in the Bill Processing Module (BPM). The bills after verification and acceptance is forwarded to the Payment Authorisation Module (PAM) for final approval. The PAM generates voucher number to the bill and the payment advice. Payment scrolls are received from the Bank and these are processed and accounted in the Accounts and Reconciliation Module (ARM). Compilation Section of the Treasury prepares and sends the various reports to the Accountant General (A & E) based on the information generated by the ARM.

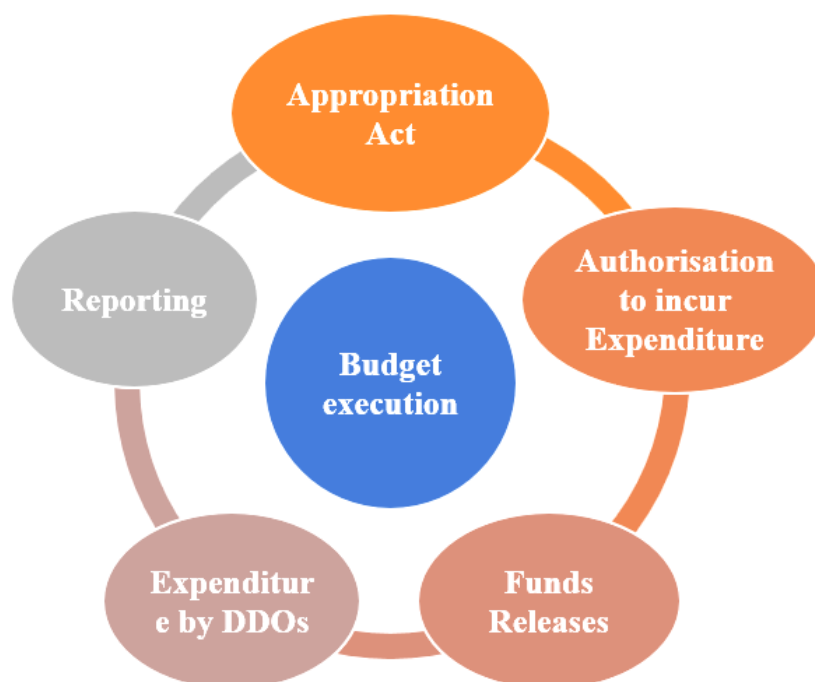
The module wise findings are discussed in the succeeding paragraphs.

Chart 3.3: Detailed flowchart of Budget Control Module



The Budget Control Module deals with the active phase of the budget cycle mainly relating to expenditure control as depicted in **Chart 3.4**.

Chart 3.4: Budget Cycle



3.5.1 Incomplete implementation of budget control module

The completion of all the activities indicated in the flow chart was important to make the budgetary control module effective. Out of the 54 sub-processes, only seven sub-processes were in production as of March 2020. The activities such as General Delegation of Financial Powers, Additionalities, Supplementary Estimates, Surrender, Savings, Re-appropriation *etc.*, were yet to be undertaken. The implementation of this module was, therefore, incomplete. The Department undertakes such processes through back-end interventions in the K2 database and such backend operations impacts the integrity of the database and dependent budgetary processes.

The Government stated (November 2021) that the budget control processes have been developed as conceptualised in SRS. This response is not tenable as nine sub processes are still not implemented.

3.5.2 Group of Drawing and Disbursing Officers

K2 introduced a concept of Group of DDOs for managing the release of funds by Administrative Department (AD)/Chief Controlling Officers to DDOs. The system proposed to group all DDOs operating a particular budget line as Group of DDOs by assigning a name and code for release of lump sum amount to the group.

Audit observed that large extent of funds released to Group of DDOs remained unutilized during the period 2016-17 to 2019-20 as indicated in **Table 3.2**.

Table 3.2: Statement showing the non-utilisation of funds

(₹ in crore)

Financial year	No. of Group of DDOs	Funds received	Expenditure	Savings	Percentage of savings
2016-17	759	4,342.68	2,116.46	2,226.22	51.26
2017-18	684	2,836.00	1,005.43	1,830.28	64.54
2018-19	90	3,682.09	1,596.78	2,085.31	56.63
2019-20	1,837	17,299.29	13,248.75	4,050.54	23.41

It can be seen from the Table that these heads of accounts assigned to group of DDOs had savings ranging from 23.41 *per cent* to 64.54 *per cent*. Grouping of DDOs affects the monitoring of expenditure by DDOs as no allotments are specified against individual DDOs and dilutes the budgetary control.

3.5.3 Fund release based on DDO request

Controlling Officers release funds based on the request received from DDO/group of DDOs. Release of fund based on request is dealt through a separate process ‘On Receipt of Additional Fund Request at CO’ in the System Application.

Analysis of budget control functionalities showed a defect in the implementation of the ‘Fund Request from DDO to CO’ process. The query that populates the screen is incorrect. The system takes into consideration the results for all the DDOs operating this particular HOA instead of the results pertaining to the logged in DDO. The CO who receives this data cannot respond to the request because of the incorrect figures.

To cite an example, for a request placed from the login of Range Forest Officer, Athani (DDO system code 4180 and user identification No. 1422288) under the Scheme – Afforestation on Forest and Non-Forest Areas (4406-01-101-0-03-139) for the year 2020-21, the system exhibited a set of figures (**Column 3 of Table 3.3**), which related to all the DDOs operating the HOA. However, when the corresponding data in the underlying tables was queried, the system exhibited a different set of figures for the logged in user (**Column 3 of Table 3.3**). Related screenshots are shown in **Appendix 3.3**.

Table 3.3: Different set of figures exhibited for a particular HOA

Details	Actual figures which should have been shown	Figures shown
Fund received by DDO	68,176	68,176
Actual expenditure	68,176	27,30,68,037
Expenditure in pipeline	0	39,30,251
Expenditure on pending bill	0	41,94,972
Total	68,176	28,11,93,260
Budget available with DDO	0	-27,29,99,861

Audit observed from the related UAT documentation that this feature was tested and passed.

The Government accepted the observation and stated (November 2021) that the system was not considering the DDO code of logged in user while generating the report during fund request by DDO to CO which led to incorrect calculation of pending, pipeline and actual expenditure for a budget line and the defect was rectified.

3.5.4 *Certain budgets not made part of K2*

The following budgets of the State Government did not form part of the K2 application.

➤ **Revenue Budget**

Audit observed that budget estimates for receipt head of accounts were not uploaded in K2 and there was no facility to monitor the progress of receipts.

The Government stated (November 2021) that the monitoring of progress of receipts against the budget estimates was carried out by the Controlling Officer and it was not in the scope of K2. This reply is not tenable as Revenue Budget was a part of FRS.

➤ **Gender Budget**

The SRS for budget preparation module considered account classification and Management Information System (MIS) formats for Gender Budget (GB). These MIS reports were to enable the FD to generate and verify the GB volume at the time of finalisation of the budget. However, analysis of the tables related to Budget and Expenditure and discussions held with the Technical team of K2 showed that there was no provision to link a budget line with GB. The FD, in order to prepare the GB, runs its own software in Oracle, enters the budget data and identifies the budget lines as GB for monitoring.

Since GB was introduced in 2007 itself and K2 intended to capture the related data, the database could have been designed suitably to include provision for GB since the beginning of development of K2.

The Government stated (November 2021) that the Heads of Accounts across different departments operating GB would be distinctly identified in the scheme master to facilitate expenditure reports.

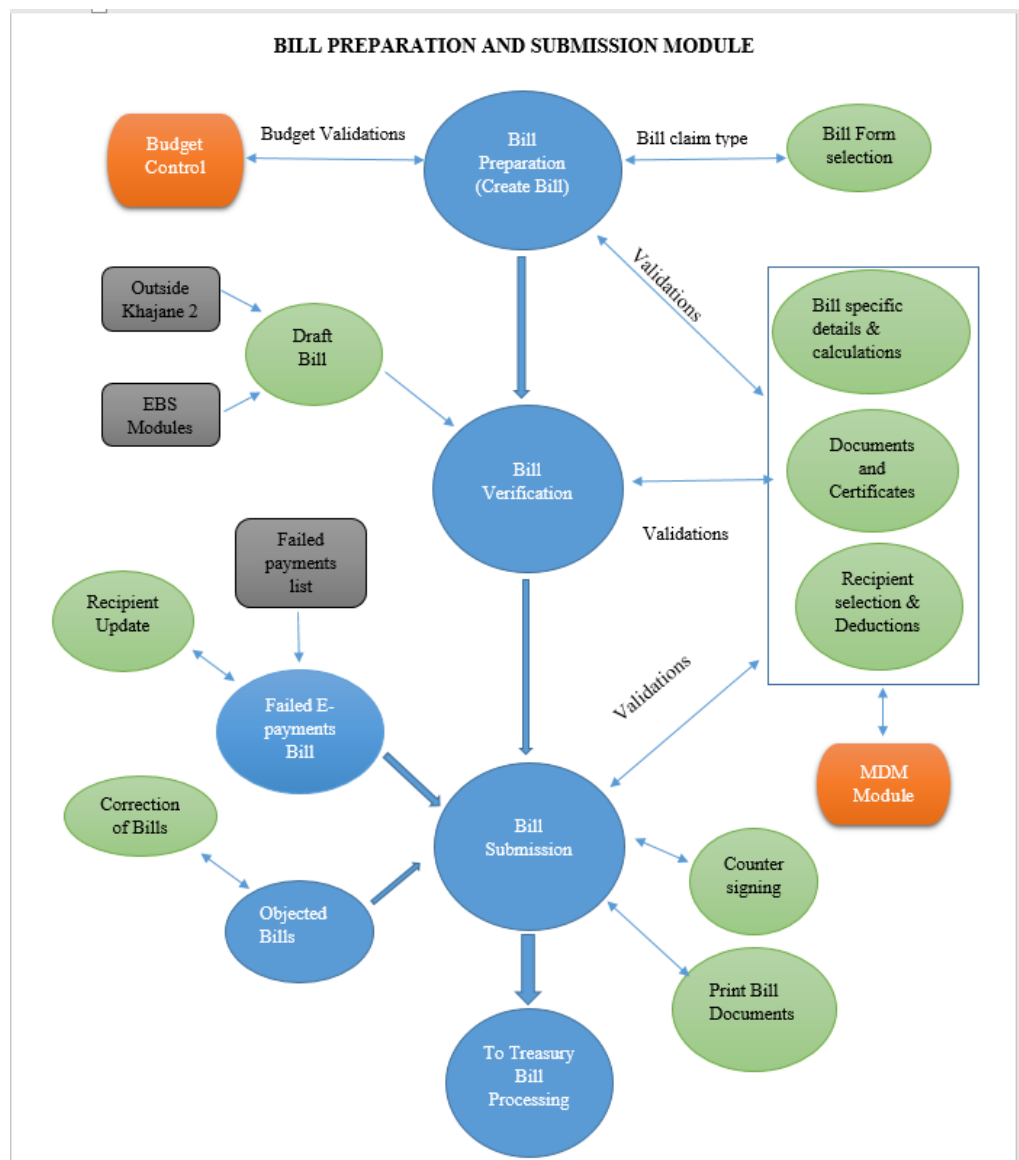
3.5.5 *Action taken on audit findings in budget release discrepancies*

Audit observed various issues that were informed to DoT for its response. The DoT replied that it had initiated action to fix the problems pointed out which were verified. The details of issues noticed and corrective measures taken thereon are indicated in **Appendix 3.4**.

3.6 **Bill Preparation and Submission Module**

The Bill Preparation and Submission Module enables the DDOs to prepare their bills online for drawing funds. Bills can either be directly created in the module or could be imported from other modules such as NPS, Deposit, BMS *etc.*, or external systems for further processing. There are ten types of bills (**Appendix 3.5**) which are used to draw funds from the Government. The flow chart depicting the module is shown in **Chart 3.5**.

Chart 3.5: Bill Preparation and Submission Module flow chart



3.6.1 Deficiencies in the user interface for Bill Preparation

Bills could be created by directly keying in the bill data in K2 system through the user interface provided to case worker role in the Drawing and Disbursement Office. Audit observed the following deficiencies in the user interface provided to the case worker.

3.6.1.1 No back button/edit facility

The claim type of the bill is to be chosen by the case worker in the first screen while creating a new bill. He proceeds to the next step by clicking on Forward Button. In case the caseworker has erred in choosing the right claim type and proceeds further, there is no back button or edit facility to correct the value. In such an event, one has option only to close the bill and restart creation of the bill. This results in delays in preparation of bills. A back button or edit option could have been provided in the bill creation module.

Similarly, there is no edit facility in case of deduction heads also.

The Government stated (November 2021) that back button and edit option features were under development.

3.6.1.2 Deduction heads not updated

The rates of deduction for the respective Heads of Account were to be mapped in the deduction module. Analysis of the master tables showed that the tax/deduction rates were not being updated as and when they were revised. For instance,

- (I) the rates of income tax for Tax Deduction at Source (TDS) were revised with effect from 14 May 2020 but the revision was not carried out in the Application. This resulted in the DDOs either deducting TDS at pre-revised rates or choosing the option 'Others' to type the correct deduction amount manually.
- (II) the DDOs were allotted a unique deposit account number for parking Goods and Service Tax (GST) deducted at source till it is deposited into Government account. For deducting TDS for GST, the bill creator has to choose the option Treasury Transfer Receipt (TTR) deduction in the deduction type and then select the deposit account number by typing in a few characters of the deposit number and choosing it from the list of deposit account numbers displayed. Since the deposit numbers linked to other DDOs are also listed, there is a possibility of choosing the wrong account number from the list. This could be avoided through display of the only those deposit number which are linked to the DDO instead of displaying all the deposit numbers, which could also act as a source of verification.

Analysis of the related data (GST deductions from bills and their transfer to the deposit accounts) showed 1,594 instances involving ₹15.84 crore wherein deductions were credited to deposit accounts not belonging to the DDO who prepared the bills due to incorrect input entries arising out of poor application input entry design.

Illustration

An amount of ₹4.25 lakh deducted from bill Id 1413851369 (token number 1901203608) drawn by National Highways Divisional Office (NHDO), Chitradurga was credited to deposit account No.10556A074 belonging to District Co-Operative Societies Office, Bagalkote instead of crediting to designated GST deduction account of NHDO, Chitradurga.

Further, when the default option of TTR is chosen, the rate of GST is taken as 10 per cent though the current rate of TDS is one per cent State GST and one per cent Central GST. Hence, the DDOs are required to choose 'Others' option and calculate TDS manually.

The Government stated (November 2021) that separate GST Deposit account is created for each DDO and mapped to the respective DDO. As a result, deposit account is operated for GST deductions by DDO. The fact remains that even in a test check, many instances of incorrect selection of Deposit Accounts leading to transfer of amount to incorrect DDOs have occurred.

The Government may ensure that an appropriate ‘filter’ may be provided regarding GST TTR deduction in Bill Creation screen to avoid input errors in account selection.

3.6.1.3 Difficulties in searching the recipient code

The case worker while preparing the bill was to provide the exact recipient code assigned to a recipient to whom the payment is being made. SRS provides two options to search the recipient; one is using Auto Complete functionality and another by using recipient bank account number. Auto Complete functionality will help the user to select the recipient by populating the list of recipients relevant to characters of the name entered by the user. However, search facility with name and recipient bank account number was not provided in the Application making the recipient searching process difficult.

Audit noticed that a Recipient Master Report was provided to Superintendent and DDO users and not to the caseworker who needs the recipient code to prepare a bill. Hence to get the recipient code, the case worker needs to

- (i) refer to the previous bills made to the recipient; or
- (ii) refer his own list containing recipient code and name maintained externally in Word/Excel file; or
- (iii) use the Superintendent login (Search and Modify Recipient Menu) and search for the recipient code by providing the recipient name.

The Government stated (November 2021) that caseworker has to perform some preparatory work before preparing a claim. Audit is of the view that as this feature was part of SRS, a drop-down list of recipients mapped to the DDO could have been provided with the recipient code displayed for reference. Additionally, search by recipient code /name could have also been provided to facilitate recipient search process.

3.6.1.4 Unfriendly drop-down lists in the user interface

According to the MSA, the user interface of K2 should be easy to use and locatability¹⁴ would be one important condition for judging the quality of an interface. Under the bill preparation form, the drop-down¹⁵ list provides an expenditure head of account for the users to choose the budget line to which the expenditure relates. According to K2 standards and guidelines, it is required that a dropdown should display the nearest item in the list when the user enters a matching value in the detailed part. This function was not implemented. In many instances, the drop-down list had more than 20 options. Such drop-down lists create difficulty for users as it necessitates scrolling within the list to locate the desired item. When including a drop-down list, it is important to display the options in a logical order. This could include grouping related items together placing the most commonly selected item first or organizing the options in alphabetical order.

¹⁴ Locatability is the property of a system which qualifies its capability in helping users identify and locate relevant information on a timely manner within the system

¹⁵ Drop-downs are compact user input controls that allow users to select options. Drop-down lists organize content into a list allowing the user to select and provide input data.

An illustrative example of a drop-down list is shown below.

The Government stated (November 2021) that this was an isolated case related to Director of Municipal Administration who operates a long list of major heads. Audit observed that these were not an isolated case and there are 1,874 DDOs who operates more than 100 budget lines. The K2 should have enforced compliance with the standards for user interface.

3.6.2 Input Design for the preparation of salary bills of employees on deputation

The salary bills of regular employees of the State Government are processed in the Human Resource Management System (HRMS) Application and a draft pay bill is sent to K2 for payment processing. In cases of employees on deputation whose salary bills are not processed through HRMS, K2 provides an interface for the preparation of the Detailed Contingent (DC) bills. Similarly, K2 provides for use of 'miscellaneous bill' type for processing salary bills apart from other payments from the Personal Deposit¹⁶ accounts. Audit observed that the design of the input screen was deficient as stated below:

- I. The same data needs to be entered afresh each time a salary bill is prepared. The historical data from the previous month's salary bills are not fetched to avoid re-entry of the already available data.
- II. The interface allows preparation of the salary bills multiple times even for the same month, as there are no validations against the historical data.
- III. The interface does not provide for TDS deduction of Income Tax under Salary head. It provides TDS only for Section 194 G of the Income Tax Act.
- IV. The interface does not provide options for deductions such as Employee General Provident Fund, Employers Contribution of the New Pension Scheme, Life Insurance Corporation premium, Family Benefit Fund *etc.*

¹⁶ The transactions of all local funds including municipal funds are recorded in the form of distinct personal deposits. These accounts are used for a variety of payment transactions including salary, non-salary, grant-in-aid, *etc.*

The gross deductions as a single amount was forwarded to parent department. The absence of break-up of deductions necessitates avoidable manual interactions with the department concerned. As a result, the actual remittance to the final agencies will not be available in K2.

The Government stated (November 2021) that DC bills were not designed for salary payments, and it was an interim arrangement until this can be facilitated in HRMS. Audit observed that at present, it provides for use of 'miscellaneous bill'/'DC Bill' option which does not take into consideration inbuilt checks used in salary bills of HRMS. Department may expedite processing of all types of salary bills in same application *i.e.*, HRMS.

3.6.3 Use of Payees' Receipts claim type for drawing grants.

Payees' Receipt is a bill type that permits payment of amounts in the form of a simple receipt. The claims under this include direct payments related to lumpsum compensation (accident/unnatural death), monthly payment under Sandhya Suraksha Yojana, monthly payment of old age pension, widow pension payments, monthly payment of physically handicapped pension, lumpsum payment to the family of deceased Government servant *etc.*

The Financial Rules does not provide any follow-up instruments or returns like UC, Non-payable Detailed Contingent (NDC) bills, Advance Tagging, *etc.*, for monitoring the amount utilised and balance pending out of the amounts drawn under these payees' receipt bills. Amounts which require monitoring till its end utilisation and balance reporting should not be processed through payees' receipt bills. This requires that the claim types provided under this payees' receipt bill are identifiable to the type of the claim. Audit observed that claim type under the payees' receipts bill contained a general claim type (payees' receipt) for drawing amounts.

Analysis of 3,46,582 Payees' Receipts type bills for an amount of ₹2,47,735.53 crore from 2015-16 to 2020-21 (up to August 2020) showed that 68,885 bills (19 *per cent*) totalling ₹1,45,442.01 crore (59 *per cent*) were drawn on this general claim type. Further it was observed that the number of bills under this general claim type increased from 38 in 2015-16 to 23,242 in 2019-20 indicating absence of monitoring mechanism that allowed the departments to draw bills on this general claim type thus ultimately affecting the quality of final information provided by K2.

It was observed that even payment of grants to implementing agencies and autonomous bodies were drawn and paid through the payee receipt bills. Since these grants were not in the nature of final payments and the implementing agencies were required to furnish utilization certificates, making payments through payee receipts were not in order. It was noticed that during the period 2016-20, grants amounting to ₹11,914 crore was drawn on 862 payee receipt claim type.

3.6.4 General Provident Fund bills

K2 provides for preparation and submission of bills under claim types - General Provident Fund (GPF) final withdrawal and GPF temporary advance. The application has the provision for fetching employee details from HRMS upon

entering the Karnataka Government Insurance Department (KGID) number of the employee.

3.6.4.1 GPF final bills submitted more than once

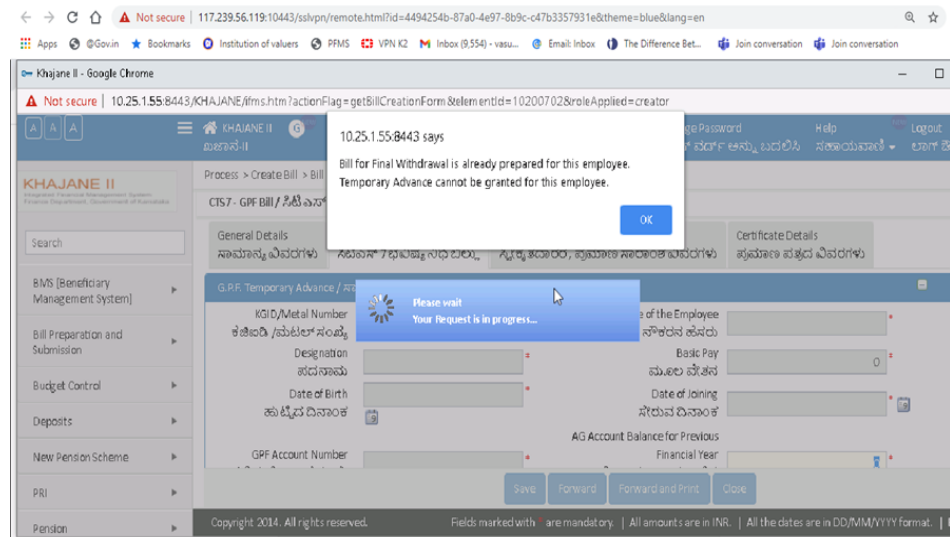
The final settlement of the GPF is paid as per the AG (A&E) authorisation. Audit analysis of the data showed that bills belonging to 434 individual KGID numbers were processed more than once. The total number of such bills were 873 for an amount of ₹45.80 crore. Out of these 873 bills, eight bills belonging to four individual KGID numbers were submitted twice with the same amount indicating the absence of checks and controls.

A scrutiny of a sample of eight bills with records of AG (A&E), showed drawing of GPF final amount in excess of the available balance by presenting the final bill amount twice. An employee with GPF Number EDN 82611 was paid GPF final withdrawal amount of ₹10,07,314 twice (once in April 2019 and once in May 2019) resulting in an excess payment of ₹10,07,314.

The Government stated (November 2021) that the GPF final bills settled in two instalments for withdrawal of subscription amount and residual balance. Audit is of the view that not distinguishing the subscription and residual bills in the K2 application is prone to risk of double payment as was seen in case study provided above. K2 needs to make provisions to capture and validate the nature of the GPF final withdrawal during bill creation.

3.6.4.2 GPF advance bills processed after final withdrawal bills

The application restricts the creation of a GPF temporary advance bill for an employee whose GPF final settlement bill has already been created. The screenshot with the error message is shown below:



Analysis of the data showed that 11 GPF advance bills for ₹14.69 lakh was paid after the GPF final bills were prepared and paid for these KGID numbers.

3.6.5 Inadequate validation controls in terminal leave encashment

Terminal benefits such as death cum retirement gratuity, commutation of pension, leave encashment on retirement are generally non-recurring one-time

payments. K2 provides for processing of bills under claim type 'Terminal Leave Encashment on Retirement or Death'. The amount payable is calculated automatically upon entering the earned leave that is being encashed. A maximum of 300 days of earned leave is allowed for a single employee for leave encashment. Analysis of the application controls over this claim type showed that a total of 1,329 bills for ₹37.59 crore belonging to 648 individual KGIDs were processed more than once. There was no provision to upload the sanction order/authorisation order because of which it was not possible to verify second claim. The authenticity of the bills submitted second time could also not be verified on the basis of the information available in K2.

The Government stated (November 2021) that terminal leave benefits were processed more than once for the same employee in cases of supplementary claims. The fact remains that K2 does not have the provision to distinguish the supplementary claims and controls specifying that the second claim as a supplementary claim during bill creation. This is prone to risk of double payments.

The Government should ensure that validation controls for preparation of bills for terminal benefits be strengthened to avoid the risk of processing the bills multiple times.

3.6.6 Continued salary payments to employees even after their retirement

Payment of retirement benefits to an employee is an indication that the employee has retired from the service of the Government. Once the employee is retired, the relevant tables in K2 needs to be updated to register the event of retirement. It was however, noticed that bill processing module and the master data on employees does not have sufficient validation features. A test check of the GPF final bill payments which were passed during the year 2019-20 with that of the salary payments after the GPF final payment dates and retirement data showed that 257 salary payments totalling ₹1,53,35,067 have been made to employees after their GPF final withdrawal bill in 2019-20. Thus, salary in respect of these employees has been drawn and paid even after retirement/death. Though the relevant data was available in the same tables to validate and reject the claims, the validation has not been implemented and these claims were passed. The list is for the test checked period only and requires comprehensive analysis of the entire data available in K2 in this regard to identify all the excess payments.

Illustration

An employee was retired on 30 November 2019 on voluntary basis. A GPF final withdrawal bill was passed on 2 March 2020 and payment made. It was observed that salaries for this employee was continued even during 2020-21.

3.6.7 Controls over preparation and submission of Abstract Contingent Bills

Under Rule 36 of the Manual of Contingent Expenditure, 1958 (MCE), the DDOs are authorised to draw sums of money by preparing Abstract Contingent (AC) bills and are required to present NDC bills (vouchers in support of final expenditure) to the Accountant General (A&E) through the treasuries before the

15th of the month following the month to which the bill relates. COs should ensure that no amounts are drawn from the treasury unless required for immediate disbursement and it should also be ensured that the previous AC bills are settled before a new AC bill is drawn.

Audit observed that 58 AC Bills worth ₹9.16 crore pertaining to the period prior to 2019-20 were outstanding settlement for want of submission of NDC bills. K2 did not provide any reports to monitor the submission of NDC bills against the AC bills drawn

The Government stated (November 2021) that this was being strengthened through tight control of not allowing bill submission of any kind by the DDO until settlement of pending AC bill.

3.6.8 Deficient application controls over submission of NDC bills

K2 Application provides interfaces for preparation of AC bills and submission of NDC Bills designed on the basis of the SRS finalised as part of the Bill Preparation and Submission Module. NDC bill is prepared for each AC bill and provides the details of expenditure incurred out of the funds drawn on AC bill in the form of actual sub-vouchers. The unspent balance, if any, is remitted back to the Government Account. Analysis of the application controls in this regard revealed the following deficiencies:

- According to SRS, during preparation of NDC Bill, if there is any unspent amount in the AC Bill, the system would auto populate the challan reference number based on the token/voucher number of AC bills mentioned during the creation of challan. However, this functionality for linking the challan with AC bills was not provided.
- Similarly, as per SRS a challan generation functionality would be invoked for remitting the unspent balance. Audit observed that this provision for invoking the challan generation functionality during the bill preparation was not provided
- As per SRS, application should also provide an option for the user to enter the challan reference number for unspent balance. Audit observed that the application permits entry of any challan reference number and even challan reference numbers dating prior to the withdrawal of AC bills Thus, input controls over the entry of challan reference number were inadequate.
- The due dates for submission of NDC bills from the date of drawal of AC bills was different in respect of some departments such as Animal Husbandry (2 months), Director of Collegiate Education (12 months for scholarships) etc. This required configuration of the time limits within which the NDC bills were to be submitted by the DDOs. Though the SRS provided for department and DDO-wise configuration of time limit, this functionality was not included in the application.

The Government stated (November 2021) that a check had been built to ensure that a challan paid earlier to the date of approval of AC bill or refunded challan cannot be tagged to the NDC bill. Time limit of 30 days was configured for settlement of AC bills and the MIS reports were under development.

3.6.9 Inadequate classification of claim types under DC Bill

The claim type master table contains an omnibus claim type DC Bill under DC bill type (CTS-5). While creating the bills using this omnibus claim type, the screen lists all the 15-digit budget lines for selection, providing scope for incorrect selections by the users and misclassification of the bills. During the period 2015-16 to 2019-20, the DDOs processed 3,71,273 DC bills for ₹30,678.01 crore by choosing the DC bill claim type (**Appendix 3.6**). The claim type has to provide additional information on the nature of the expenditure. Providing an omnibus claim type without specifying the nature of the expenditure thus resulted in huge amounts being drawn under this claim type.

3.6.10 Sanction orders not available in K2

The sanction order is a pre-requisite for creation of bill. The module provides for auto population of sanction orders in the bill creation screen wherever sanction orders are generated and issued through K2. In case online orders are not available, the order number needs to be entered and physical copy of the bill attached as a supporting document. K2 system does not have an option for scanning and uploading the sanction order.

Audit observed that the processes for sanction order creation and mapping of general Delegation of Financial Powers were yet to be completed and put in production. During the period 2015-16 to 2020-21, a total of 45,35,988 bills valuing ₹4,25,552.94 crore, were created and processed. These bills in the K2 database were not supported by electronically generated sanction orders. It only provided a reference data to the manual sanction order. Analysis of the bill data showed that the sanction order reference data entered contained junk data such as 1, 2, 3 in place of the sanction order details as indicated in **Appendix 3.7**. Absence of electronic sanction orders coupled with unreliable reference data impacted the completeness of the voucher information captured by the K2.

The department stated (August 2020) that online sanction order has now been moved into production and operationalized. DDOs will be trained about creating sanction orders online and tagging them to bills. Trainings are being planned and both the modules will be employed to tag sanction orders online. Audit is of the view that sanction was an important information based on which a financial transaction is initiated. In the absence of sanction order authority of past years, voucher information captured by the K2 was incomplete and required continued reliance on the physical data.

3.6.11 Drawing and Disbursing Officers functioning as Countersigning Officers

As per the codal provisions, the Countersigning officer (CSO)/CO shall be an officer superior to the person drawing the bills. Audit observed that 2,277 DDOs have discharged the functions of the CSO and passed bills in 2,50,983 cases till the end of August 2020.

In such cases, the existing process requires the DDO himself, after approving the bill and forwarding it to CSO, to switch over to the CSO role for visiting the bills awaiting countersignature, approve the bill and switch roles once again and receive the countersigned bill and forward it. This arrangement not only

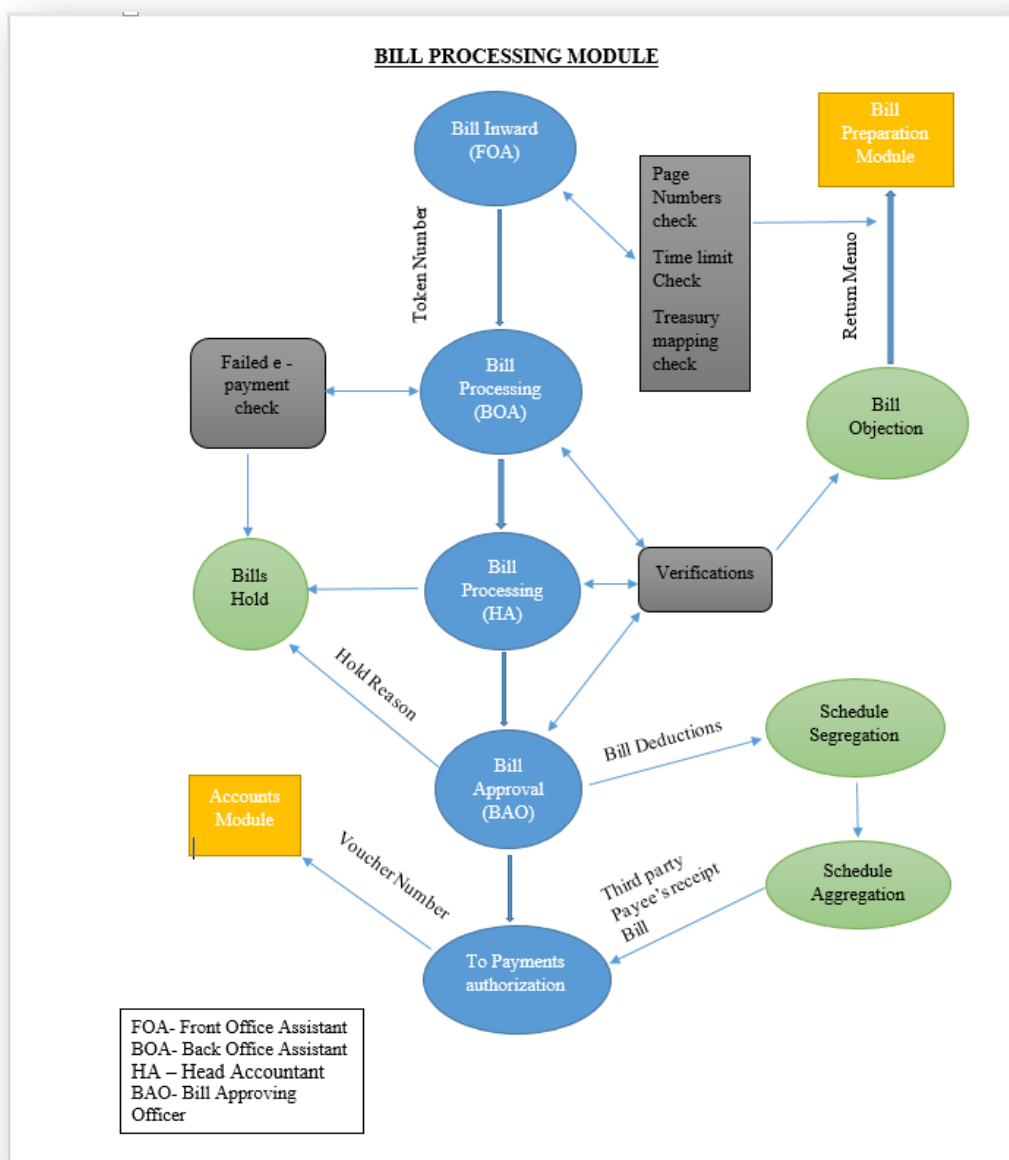
violated the necessary checks that should have been in place but also resulted in a false assurance that the bill has undergone an additional scrutiny by a superior officer countersigning it. This also highlights the fact BPR exercise was insufficient wherein it failed to strengthen the segregation of duties in a computerised environment.

The Government stated (November 2021) that a DDO who is also a CSO will perform distinct responsibilities as a DDO and as a countersigning officer. The verifications are different. Audit is of the view that assigning two conflicting tasks to the same person was not in line with the principle of segregation of duties.

3.7 Bill Processing Module

This module provides functionalities for verifying and processing the bills submitted by the DDOs to the Treasury. Bills can be submitted to the Treasury either on-line or manually. Bills prepared by the DDO in Bill Preparation and Submission module of K2 system are considered as online bills. These bills will be first accepted in the system by the Front Office Assistant (FOA), verified by the Back Office Assistant (BOA) and forwarded to the Head Accountant (HA) for further scrutiny. The final approval authority for all bills is the Bill Approving Officer (BAO). DDOs who do not have access to K2 submit the handwritten or printed bills that have not been prepared in Bill Preparation and Submission module. This feature would be available till K2 becomes completely operational and accessible to all DDOs. The data entry of these bills will be done in Treasury by the FOA and BOA and the HA will scrutinise the bills. The flow chart depicting the module is shown in **Chart 3.6**.

Chart 3.6: Bill Processing Module flow chart



3.7.1 Bills on hold

As per the FRS, most of the bill validations would be system based and carried out during bill generation. This would reduce the subjective and arbitrary objections raised at the Treasury level besides leading to transparency and standardisation across the State. The SRS also envisaged automated withholding of bills.

Audit observed that the system of manual intervention continued. The Treasuries kept the bills on hold for missing supporting documents, lack of fund, missing authorisation, recipient details/bank details mismatch and other reasons. The reasons are entered in bill movement transaction table in the K2 Application and the common lookup master table in the Application contains

the reasons for bills on hold. The year-wise number of bills kept on hold for various reasons are mentioned in **Table 3.4**.

Table 3.4: Year-wise details of bills kept on hold

Reason code	Reason	2014	2015	2016	2017	2018	2019	Grand Total
10302703	Missing supporting documents	1	1	194	2,449	7,316	12,163	24,321
10302705	Lack of funds	0	0	84	53	109	233	506
10302707	Missing authorisation	0	0	87	1,004	4,045	7,814	14,160
10302709	Other	0	0	173	1,793	7,232	14,140	25,388
10302711	Recipient details/ bank details mismatch	0	5	1,209	349	693	632	2,944
<Null>		0	1	188	48	0	0	238
Grand Total		1	17	1,935	5,696	19,395	34,982	67,557

The above table shows that 37 *per cent* of the bills were kept on hold citing ‘other reasons’ and in respect of 238 bills, no reasons were recorded. Not recording any reason would result in an exception and shows an error by the application. The absence of clarity on the reasons for keeping the bills on hold also makes it difficult for the DDOs to set right the omissions. Further, there was no time limit prescribed for rectifying the omissions for bills on hold. The amount in the bills is shown as ‘expenditure in the pipeline’ and is not available for other purposes. During 2019-20, 34 bills worth ₹83 lakh were kept on hold for one to 125 days after which they were cancelled at the end of the financial year resulting in lapse of funds.

The Government stated (November 2021) that the other reasons for which bills were being held would be standardised and added to the list of reasons.

3.7.2 Missing Auto Generated Items

The system generates the bill identification (primary key of bill head transaction table of the application) and token numbers in a sequential order. When bills are rejected/cancelled during bill processing, the status is captured without deleting the record. Audit observed gaps in the sequentially generated

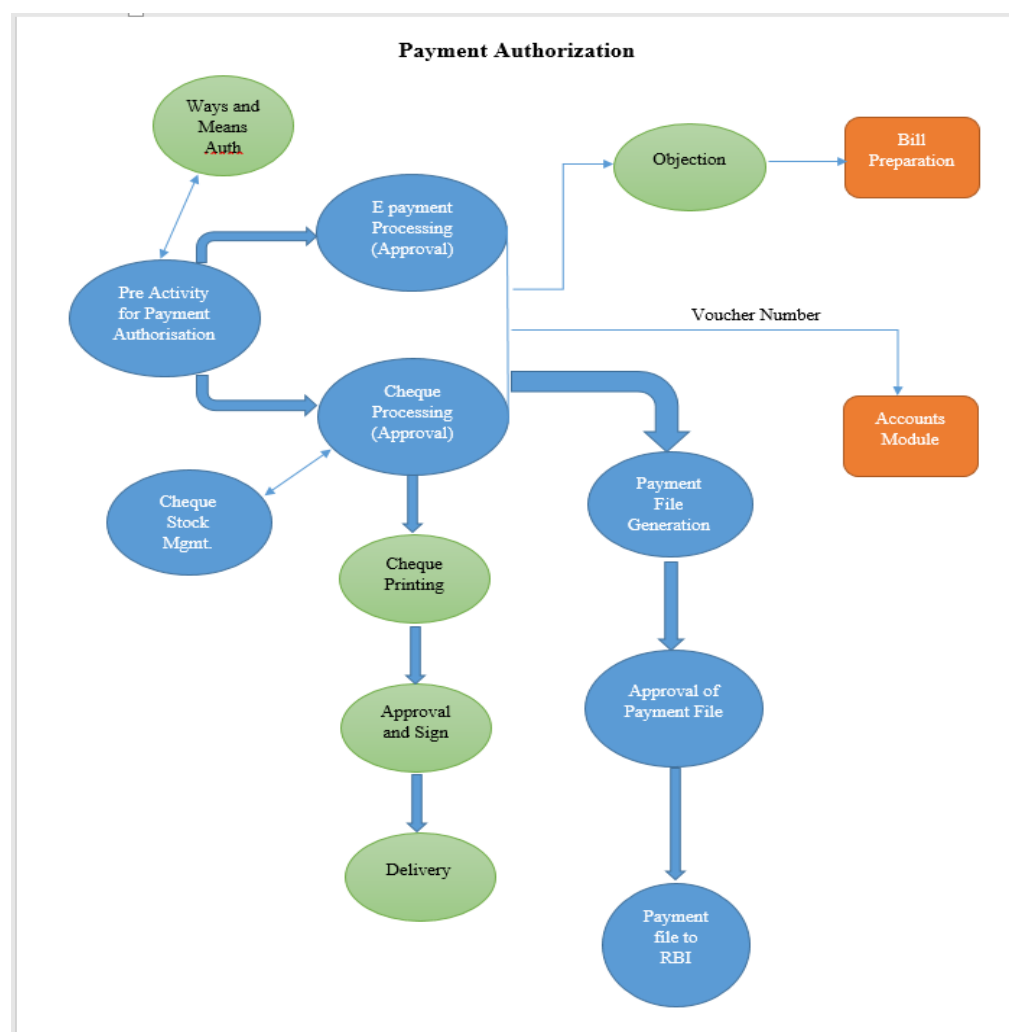
- Bill ids – the continuous gap between bill ids ranged between 34 and 393.
- Token numbers – 16 tokens between the numbers 2003411591 and 2003413171 were not found in the system.
- Similarly, there were missing items in the bill requisition id in the Receipt Refund Bill Transaction.

The Government stated (November 2021) that sometimes user opens the bill creation form but does not submit the same, sequence gets incremented since form is not submitted, id does not get captured in the corresponding table. The fact remains that the gaps in the token numbers which is generated after the approval of a bill by DDO were not explained. Also, the gaps in important serial numbers such as Token numbers and Bill ids affects the quality and reliability of the data.

3.8 Payment Authorisation Module

The bills approved in the Bills Processing Module are forwarded to Payment Authorisation Module for payment instrument generation. This provides the functionalities for printing of cheque or generation of electronic clearing system payment mandate. Head Accountant generates the draft payment advice, Treasury Officer verifies, approves and sends payment advice to bank. The payment instruments include cheques, National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), and TTR. The flow chart depicting the module is shown in **Chart 3.7**.

Chart 3.7: Payment Authorisation Module flow chart



3.8.1 Same token number associated with multiple bills – Double payments

A token number is a unique number generated by the system when a bill is passed by a DDO. There cannot be two tokens generated with the same number. Analysis of bill transactions in the database showed that three bills (1413028655, 1413028650, 1413028634) were associated with the same token No. 1800395519. All these bills were generated towards SGST refund for exports made by the refund recipient M/s. Cotton World for the same amount of ₹1,19,431. The status of the bills is indicated in **Table 3.5**.

Table 3.5: Status of bills associated with the same token number

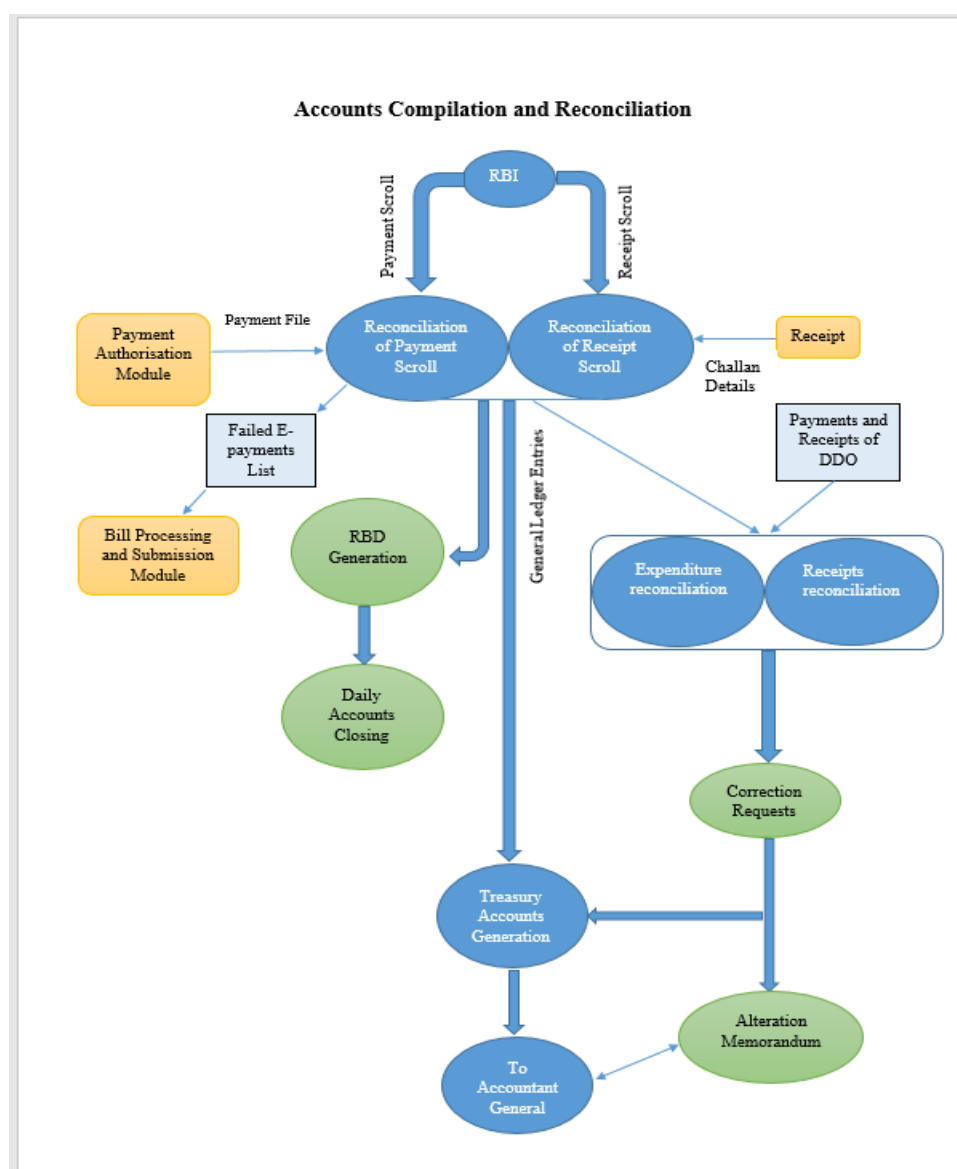
Bill number	Status	Payment id	Voucher number
1413028655	Rejected by DDO		
1413028650	Paid	E572E180119000376	0006572E0219000215
1413028634	Paid	E572E011218001224	0006572E1218000038

Further analysis of refunds made to M/s. Cotton World showed only one refund order generated (refund order Id number 1410691869) in Receipt Refund Transaction Table. No bill requisition Id was captured for this record. However, the token number updated against this id in Receipt Refund Transaction table was the same token number linked to the three bills discussed above. Thus, two payments were made for the same refund order.

The Government stated (September 2021) that there was inconsistency observed in updating records in case of revenue refund bill in both bill and receipt tables. Same has been corrected now through patches.

3.9 Accounts Compilation

Accounting refers to the function that records and integrates the results of financial transactions that occur in K2. Accounting in K2 aims at comprehensively capturing all accounting information including departmental personal ledger accounts. K2 aimed at generation of daily accounts of the State prepared with a high degree of accuracy and generation of accurate monthly accounts within two to three days of month end; generation of daily cash position of the State including payments and receipts that are in the pipeline. The flow chart depicting the module is shown in **Chart 3.8**.

Chart 3.8: Accounts Compilation Module Flow Chart

3.9.1 Expenditure not booked

K2 provides for accounting of each bill after it is approved in Treasury. When a bill sent by DDO to Treasury is approved for payment, a voucher is generated and expenditure booked against that bill. The application then passes general ledger entries by debiting the corresponding Head of Account of that bill. The Accounts General Ledger Master table records the general ledger entry corresponding to voucher generation and the voucher amount is reported as expenditure in the KFC 62B report of the corresponding DDO. Once the expenditure is booked, the DDO cannot use the funds towards any other bill.

Audit observed that general ledger entries were not available in the above table for 16 approved and paid bills worth ₹48.92 lakh pertaining to 16 DDOs (**Appendix 3.8**) during the period 2016-17 to 2018-19. Consequently, no Head of Account was debited, and no expenditure was booked against these bills

resulting in non-reflection of these expenditure in the KFC 62B report of the respective DDOs.

The department stated that missing entries of these bills has been reported to technical team as a defect which has been fixed through patch deployment. The reply did not mention about the action taken for correction of accounts with respect to these transactions.

3.9.2 Memorandum of Error not generated for duplicate payment scrolls

Each payment in K2 is identified using a unique payment identification number. The system sends the payment file to banks which contains payment information against each payment Id. For each and every payment file going from K2 there is a scroll coming back daily from RBI addressed to the respective payment instruction issuing treasury. The system will reconcile the scroll by matching the payment Ids in scroll with the payment Ids in the payment file sent to RBI and carries out Debit entries in the suspense accounts which completes the accounting process. If a payment id is found more than once in one or more scrolls, the system will generate Memorandum of Error (MOE) for the duplicate payment id.

Audit observed that the application processed 1,166 payment ids worth ₹2.32 crore more than once instead of generating MOE for the second instance. This resulted in duplicate debit entries from suspense heads for these payment ids.

The Government stated (November 2021) that the issue related to RBI 1.0 version. The shortcomings of RBI 1.0 have been overcome and RBI 2.0 version reporting is in place. In RBI 2.0, issues of such duplicate scrolls being sent by RBI has been resolved. The reply did not consider the shortcomings of K2 in accepting the duplicate scrolls related to same payment id. The reply also did not mention about the rectifications carried out in the suspense accounts.

3.9.3 General ledger entries not updated

The Payment Authorisation Detail transaction table of the Application stores the status of each payment and gets updated throughout this process. The final intended status of any payment for which the scroll received is 'Payment Successful'.

Audit observed that the status of payment in the above table of the Application for 35,836 payment ids valuing ₹137 crore which were generated before 31 March 2020 was shown as 'Scroll Processed' and no general ledger entries were found in Accounts Ledger Master Table of the System though the payments were successful and scrolls received. This resulted in the Suspense Heads of account exhibiting the amounts as not cleared but pending final clearance. Continued exhibition of amounts in the suspense account carries the risk of processing the amount again for clearance which would result in multiple payment processing.

The department stated unaccounted scrolls were identified and revised reports would be prepared and submitted to Accountant General. It also agreed to incorporate changes in the preparation of reports related to accounts.

The Government should ensure that K2 should provide a functionality for enforcing periodical review of the status of scrolls and clearance of suspense accounts.

3.9.4 Inconsistency in accounts and non-reconciliation

Analysis of data of bills, vouchers and payments showed inconsistencies in respect of voucher No. 2014566A0119001635 of Chitradurga Treasury for ₹9,794. The voucher was shown as passed on 18 January 2019 in the Payment Detail Transaction table and on 18 March 2019 in the Bill Header Transaction table. The Bill Header Transaction table further showed the bill status as 'payment delivered' on 18 January 2019. According to the voucher numbering pattern wherein the month of the voucher is coded into the 9th and 10th characters, this voucher was created during January 2019.

Audit observed that this voucher appeared in the monthly accounts of March 2019 as submitted by the Treasury to Accountant General (A&E) indicating the non-reconciliation of figures by the Treasury before submission.

The Government stated (November 2021) that this bill was approved by Treasury Officer (TO) and voucher was generated in January 2019. But in March 2019, recipient had complained saying that payment was not done against this token. On verification, it was found that due to technical issues in the application, this bill when approved by TO only voucher number was generated but there were no entries in accounting tables and token was not communicated to RBI for payment. Hence to allow communication of payment of this token, accounting entry was made from backend and then to reflect the bill in accounts, voucher date was updated from January to March.

Audit is of the view that such alterations from the back end and intervening in the payment process impacts the integrity of the payment process.

3.9.5 Reconciliation with RBI

The payment and receipt activities primarily result in a net increase or net decrease of cash balance of the Government with RBI. Hence, it is necessary for IFMS management to design and document the processes and their rationale/thought process behind the design for assurance regarding the correlation of RBI figures with that of figures and accounts prepared from the data maintained in the system.

Audit sought for the details such as;

- the process implemented in K2 to tally the daily balances in RBI against the total receipt and payment transactions of K2;
- the process which enables K2 management to assure itself that the total payments, total receipts and balances in RBI are in accordance with the information available within K2;
- the periodicity of these processes, number of occasions where the balances did not tally during the period 2015-16 to 2019-20 and aging report of transactions/amounts which have not tallied; and

- the availability of MIS report showing the total receipts, total payments as per K2 and as per the balances reported by RBI and breakup of variations treasury wise.

The department had not furnished the above information indicating the absence of such a mechanism within the application.

At present the RBI sends the monthly cash balance statement to the AG(A&E) who then does the accounts reconciliation on the basis of the accounts rendered by the individual treasuries, thereafter the monthly civil accounts are prepared by the Accountant General. The cash balance reconciliation done by the Accountant General is delayed as it is linked with monthly accounts manually received from the treasuries and the monthly accounts are finalised only in the subsequent month. In case of delay in receipt of the accounts from the treasuries, the monthly account preparation and dependent reconciliation could be further delayed.

AG (A&E) had brought out these aspects of delay in reconciliation and urged the State Government to put in place a mechanism to obtain periodical cash balance position from RBI and its reconciliation and to prepare a certificate of reconciliation and mark a copy to the Accountant General. However, a mechanism for reconciliation of the cash balance comprising of the receipts and payments was yet to be put in place.

The Government should ensure that the reconciliation mechanism be put in place to achieve periodic and real-time reconciliation between various stakeholders.

3.9.6 Delay in remittances to K2

KFC provisions stipulates that all transactions to which any Government servant in his official capacity is a party must, without any reservation, be brought to account, and all moneys received should be paid in full without undue delay in any case within two days, into a Government treasury, to be credited to the appropriate account and made part of the general treasury balance.

Further, according to Article 329 (v) of the Karnataka Financial Code, no challan should be acted upon by any Government officer unless credit for the money is first traced to the treasury accounts. The Department could deliver service to the citizens only after the confirmation of the receipt through the treasury reports. Thus, it is important that the time window of remittance to the bank and the actual accounting in K2 is reduced to enable timely delivery of services to the citizens.

Audit analysed a total of 63,46,208 entries for the period January 2016 to August 2020 under payment status 'Payment received at agency bank' (cash remittances made through challans) to observe the time taken for processing the challans. The agency bank which accepts the challan shall generate scrolls and send to RBI within one day of the transaction date after necessary reconciliation. It was observed that there exists a time lag between bank reconciliation and generation of scrolls to be sent to RBI. Similarly, after the scrolls are reconciled at RBI and sent to K2, the system is supposed to consume the scrolls and update its own tables, thus taking the transaction amount into account. Audit observed delays in accounting the transactions.

The time lag in transactions and accounting is shown in **Table 3.6**.

Table 3.6: Statement showing the delays in remittance and accounting

(₹ in crore)

Time lag between bank reconciliation date and RBI scroll received date	Remittances to Government Account		Accounting under K2	
	No. of entries	Amount	No. of entries	Amount
≤ 1	20,05,648	3,401.83	10,25,683	1,682.67
> 1 ≤ 5	39,07,496	6,048.94	13,57,725	2,247.40
> 5 ≤ 10	2,52,311	421.98	13,07,077	2,174.21
> 10 ≤ 20	1,14,769	288.84	17,85,049	2,791.45
> 20 ≤ 30	44,645	80.32	7,29,928	1,117.34
> 30 ≤ 60	20,645	37.49	1,40,746	266.82
> 60 ≤ 120	257	0.18	0	0
> 120 ≤ 180	427	0.28	0	0
> 180 ≤ 365	5	0.01	0	0
> 365	5	0.02	0	0
Total	63,46,208	10,279.90	63,46,208	10,279.90

The delay in accounting the challans results in delay in providing services to the citizens as according to the codal provisions services to the citizens could be provided only after the accounting of the amount remitted in the Government account.

The department explained the delay on the part of the bank in remitting the challan amounts to RBI. The reply was, however, silent on the delays by K2 in accounting the receipts.

3.9.7 Actual date of remittance of challan not captured

As per Government instructions, the time limit for credit of Government receipts by Agency Banks, Public Sector Banks and Private Sector Banks to Government account in RBI was revised (September 2019) from T+3¹⁷ days to T+1 day where T stands for the day the amount is received by the dealing branch. Any delay in remittance attracted penal interest.

Under the manual procedure, when cash is deposited in the agency bank, the challan was manually stamped with date, and it was possible for identifying the actual date of remittance of cash by the remitter to the bank. Audit observed that a method to inform the State Government of the actual date of physical collection of remittance by the bank was not devised.

K2 computes the penalty based on the actual date of physical collection as reported by the bank. Though ₹3.63 crore was computed as penal interest as of 31 March 2020, the agency banks had paid only ₹0.77 crore. The penalty and interest payable as of 31 December 2020 stood at ₹3.17 crore including arrears.

¹⁷ T+3 days where the collecting bank branch and focal point branch of the bank are in the same city/agglomeration, T+5 days where collecting bank branch and focal point branch are in different city/agglomeration and T+12 days where branches were situated in remote, difficult and hilly areas. T+3 days applied to Private Sector banks irrespective of the area of operation.

3.9.8 Incomplete processes in Accounts Module

As of March 2020, sub-processes like preparation of correction requests, Alteration Memorandum (AM), Modification of Accounts Based on AM, receipt reconciliation with DDO, reconciliation of expenditure with DDO, CO, CCO, modification of accounts based on DDO/CO request, processing of lapsed cheques, DMS and VDMS processing *etc.*, were yet to be developed and deployed in production. Thus, the module was incomplete and yet to reach the envisaged maturity level.

3.10 Master Data Management

K2 adopted the Master Data Management (MDM) methodology to ensure the uniformity, accuracy, consistency and accountability of the master data assets.

3.10.1 Absence of mapping between claim types and object heads

The SRS provided mapping of claim types to object heads to ensure correct classification of expenditure. The DDO creates a bill out of the 167 claim types provided in the Application system. Audit observed that the claim types are not mapped to object heads but was done for the entire 15 digit HOA. This resulted in DDOs approaching the helpdesk for mapping budget lines to claim types. As per the help desk data there were 108 requests during the 2019-20 alone. The consequent effect was the delay in preparation and submission of bills till the helpdesk resolves the issue.

3.10.2 Inadequate claim type classification

The data elements in the claim type table provides for 167 claim types for classifying the expenditure. It was observed that these claim types were not dealt in at a granular level. For instance, claim types related to expenditure on procurement under medical equipment, expenditure on computers, software were not available whereas categories for capturing the information on "procurement of carpets", "stitching charges" were available. These claim type classifications need to be made contemporary in line with the evolving information requirements of Government.

3.10.3 Purpose level information not captured

The Accountant General captures information only at the macro level from Major Head to object head. It does not capture information below object head of expenditure. Manual of Contingent Expenditure specifies the need for classification of expenditure beyond object head levels for the purpose of better financial control at the department level. Depending on their information needs, individual line departments would require information in greater detail for internal control and day-to-day decision making. As some of these information/reports could be specific to the line department concerned and not part of the generalised Chart of Accounts of the whole Government, a purpose level chart of accounts is a critical element of the PFM framework for classifying, recording and reporting information on financial transactions and events in a systematic and consistent way. Though SRS envisaged and built a purpose level master table for populating purpose level information while

creating bills it was observed that this is not being utilized in K2 application. Thus, non-preparation of purpose level chart of accounts in consultation with the departments resulted in lack of visibility into the granular level classification of expenditure. The opportunities presented by the computerised system were not fully utilized.

3.10.4 Incorrect mapping of Treasury Transfer Receipts

Analysis of the master data corresponding to mapping of TTRs with HoAs showed the incorrect mapping as below.

- Three TTR codes (1236, 3149, 3272) relating to Right to Information Act penalty was mapped to Motor Car Advance principle under the HoA 7610-00-202-0-01-000;
- Three TTR codes (3372, 2273, 3374) relating to HoA 8009-01-101-0-01-000-Other Receipts of Horticulture department was mapped to General Provident Fund of Karnataka;
- Recovery of losses caused by employee was mapped to Karnataka Government Family Benefit fund under three TTR codes (1240, 3102, 3224);
- Advance for medical treatment mapped to Advance for purchase of personal computers; and
- Penalty for delayed works mapped to receipts from water tanks.

The incorrect mapping resulted in misclassification of receipts. The department did not explain to audit the rationale behind the incorrect mapping of TTRs.

The Government stated (November 2021) that the deduction/recoveries heads of account has been cleansed and mapped to correct heads of account in K2. The incorrect mapping points to the deficient application process controls in the initial mappings and Audit is of the view that a third party audit along the lines envisaged in MSA would be needed to identify such functional discrepancies.

3.10.5 Mapping of activities to roles, users, offices and departments

Audit analysis of menus and features such as screens, forms and reports provided to users showed that the user screen is populated with certain links and menus that are either not relevant to the user or reject the users request as unauthorised access. Thus, the functionality that is not intended for the user is being presented to the user in his login. There is a disconnect between the presentation layer (user interface consisting of links and buttons and menus and various input controls provided to the user generated by the role set up and configuration) and the business layer (which among other things implements role-based access and business rules at the server side) indicating issues relating to mapping of activities to roles, users, offices and departments as illustrated.

Illustration

Analysis of login of Karnataka State Information Commission showed the following deficiencies:

- ***Funds distributed at CO report (BDC 015) lists several redistribution order numbers for viewing which belong to Crop Husbandry, Forestry and Wildlife, Water Supply and Sanitation etc., and not to the State Information Commission.***
- ***CO Fund Release report (BDC 004) shows choice of five Administrative Departments for this user (Finance, Personnel and Administrative Reforms, Labour, Public Works, Ports and Inland Water Transport and Department of Personnel and Administrative Reforms (Janaspandana).***
- ***DDO fund release and expenditure report (BDC 005) shows the same choice of five Administrative Departments as above in a chronological order.***
- ***Order details for fund release (BDC 002) by CO to DDO shows more than 20 departments as choices of Administrative Department.***
- ***The module level choices include Panchayat Raj Institutions (PRI) menu with sub menu and the fund request is related to PRI. PRI budget activities are not related to the State Information Commission.***

This requires a periodical review of the mapping of activities to roles, users, offices, and departments to remove inconsistent application behaviour.

The Government stated (November 2021) that the issue of other department orders populating in fund releases of a department was fixed. The incorrect mapping points to the deficient User Acceptance Testing of the mappings and Audit is of the view that a third party audit along the lines envisaged in MSA would be needed to identify such UAT issues.

3.10.6 Element Role Mapping

Elements are the links/forms/screens in K2 used for performing the various activities. Each role in K2 has a set of pre-defined activities that can be performed by the user mapped to that role. According to SRS functionality, the role-element mapping facility (adding/modifying elements mapped to different roles) would be provided in the application for use by K2 Master Maker role.

Audit observed that no functionality was created for K2 Master Maker for mapping the roles to elements in the Application. It cannot independently map an element to roles in accordance with the requirements rendering it less versatile. Consequently, it cannot assign a particular report viewing facility to FD/AD/or any other user if a need arises. This need can only be met by the SI.

The Government stated (November 2021) that simply mapping a role to an element would only provide the access of that link to the user rest other configurations will not be available to that user and hence user may not be able to achieve the complete functioning of element. Audit is of the view that since the SRS envisaged providing role element mapping facility for use by the K2 Master Maker role the necessary functionalities should have been configured to enable the complete functioning of the element mapping. This also would

reduce dependency of the K2 application on the SI. For example, the SI raised a change request (CCN Number: K2/BPS/00023 for an estimated amount of ₹31,000) to map an existing element 'Bill status report' to caseworker role.

3.10.7 Issues in Recipient data

New recipients are created by DDOs and mapped to the DDO. If the recipient provided services to another DDO's office, his records were to be mapped to that DDO as well. The recipient name should be the same as his bank account name. A recipient can have only one bank account number registered with the DDO. Change in bank account, Indian Financial System Code (IFSC) and Magnetic Ink Character Recognition (MICR) Code combination of a recipient will trigger the de-activation of the earlier account with all DDOs with whom the recipient is mapped. The recipient will, therefore, have to furnish the bank details through a fresh e-mandate to all DDOs with his existing recipient Id. Audit observed that same recipient was found with different active recipient codes, bank accounts and names.

Further, any DDO who proposes to make payments to the recipient can fetch the recipient details from the central database when a payment is processed. The DDOs can also modify and update the existing recipient details after accessing it from the central database through a search option. Thus, multiple DDOs can fetch the recipient details for payment processing and have access to modify and update the recipient details freely in such a multi-transaction environment. When payment processing and recipient data updating can be done on the same set of data, it is important to provide sufficient controls to avoid conflicts especially because both the transactions are separate, both accesses the same data item and one of them is 'write' operation.

Audit observed that while payment processing by one DDO is in the pipeline, another DDO can make changes to the bank details of the recipient which can materially influence the outcome process by the first DDO and the system does not prompt him to obtain a fresh mandate as envisaged initially. Since the recipient data contains details of destination and bank accounts, modification in such sensitive information being unnoticed by the payment processing DDO could have the effect of payments being channelised to unintended bank accounts or result in failed e-payments of bills submitted with old bank IDs of the recipient.

Audit analysis of a recipient, Karnataka State Electronics Development Corporation Limited (KEONICS) showed that;

- The agency had 392 recipient ids of which 52 were active.
- There were 35 active recipient codes and 40 different bank accounts associated with these 52 recipient Ids.
- Some of the bank accounts had incorrect bank account numbers like 0, 111111., dummy account 0001 or the bank account numbers with 000s added.
- The name for payment (bank account name) was registered as Keonics, Keonics Bangalore, Keonics Bengaluru, Karnataka State Electronics Development Corporation Limited, *etc.*

- Another recipient was created with recipient code No. 2903418332 and two recipient identification Nos. 1415477511 (bank account No. 2000083867 created on 28.02.2020) and 1415632657 (bank account No. 52010100005955 created on 18.3.2020). Both the records were created and updated by the same official in a DDO office.
- There are at least 272 payments that have failed and re-submitted during the financial years 2019 and 2020. Out of these 13 payments passed on 01 March 2020 and 8 March 2020 have failed as the 'Account was not found'. These bills were subsequently re-submitted for payment after the account number was corrected on 18 March 2020.

Audit also noticed that there are atleast 200 active recipient accounts with 'dummy' in the bank account name and at least 100 active recipients with just 0s in the bank account number. This indicates that the changes in recipient bank details were not necessarily initiated by the recipient but by the DDOs themselves. The bank mandates were also not signed by the DDOs and the recipient in all cases. Further, 22,25,857 out of 43,69,237 recipient records were created and updated by the same person through IFMS Recipient Master table. There were no MIS reports to provide details of the creator and approver of recipient records. MIS report to search a recipient by, the list of payments made and their status was also not available.

The Government stated (November 2021) that the DDOs were found to create multiple IDs under different recipient types. It was further stated that a change was effected to ensure modifications in recipient details would not affect the bills under processing. The reply of the Government did not consider the risk in K2 permitting the DDO to modify the recipient information without informing the recipients.

3.10.8 Incomplete Data Dictionary

The first step in analysing a system of objects with which users interact is to identify each object and its relationship to other objects. After each data object is given a descriptive name, its relationship is described by the type of data such as text or image or binary value, possible predefined values are listed, and a brief textual description is provided. This collection can be organized for reference into a book called a data dictionary. Data dictionary is a collection of descriptions of data objects or items in a data model for the benefit of people to understand where a data item fits in the database structure, what values it may contain, and basically what the data item means in real world terms.

Audit observed that there were 2,400 tables in the KIFMS Schema, of which only 786 tables were having comments to describe the table. The database development team did not adopt the practice of commenting the tables regularly to briefly describe the content/reason for existence of the tables. Hence the database comments were inadequate to serve the purpose of a data dictionary. Most of the fields in the data dictionary were not explained and the dictionary was not maintained on version control and updated with changes arising from change requests.

The Department should obtain the text of the standard queries to retrieve specific data from the database complemented by a detailed data dictionary so as to enable the use of K2 data without dependency on the K2 Application.

3.10.9 Data discrepancies

Various tables in the application such as the bill header transaction table, bill movement transaction table *etc.*, contain date fields such as forwarding date, receiving date, created date, bill created date and bill updated date. The department stated that bill created date and created date were the same and would remain static while the updated date undergoes changes as the status of bill gets updated. The tables capture the financial year (FY) of the bill creation date as the year during which the bill is created but when a bill is updated, the FY does not always correspond to the year during which it was updated. It was also observed that the FY of certain vouchers was not exhibited as the year during which they were created.

Audit analysis of the above tables showed that;

- there were 9,667 bills which were created during FY 2019-20 but the application considered the FY as 2020-21
- in 21,19,088 records, the updated date falls in FY 2019-20 and was treated as 2019-20 but in 2,47,183 bill records, though the updated date falls in the FY 2019-20 it was not considered as 2019-20
- though 27 vouchers were created during 2019-20, the FY considered was 2020-21. Similarly, nine vouchers of 2019-20 were created in 2018-19
- instances of Bill id absent in Bill Header table but voucher number generated and payment made
- instances of voucher number not present in Bill Header table but entries present in Account General Ledger Master Detail table
- a single bill in the Accounts General Ledger Master table was found to be associated with two different general ledger ids and two voucher numbers
- in 2,025 bills of 2019-20 and 5,025 bills of 2020-21, the voucher was created before the bill by a few minutes (10 to 15 minutes). In all these cases, the bill create date, voucher date and updated date are the same with 00:00:00 recorded as time indicating the possibility of these bills having been created as a batch process during midnight.

Audit observed that the time stamps in the K2 was not handled to ensure data consistency across multiple tables. The different fields in the database capture different time information about the same voucher date. For example, Bill Header table and Payment Details table differ in voucher date timestamp.

The above discrepancies impact the budget and accounting of the transactions and the dependent MIS reports.

3.10.10 Design and relationship of tables – inconsistencies

The tables and their columns in the database of K2 constitute multiple fields intending to contain the same information. These tables hold relationship with other entities in the application and should have an attribute to establish a link. The Bill Header Transaction table of the Application is designed to document the main features of the bill entity such as an identification number for each bill, the gross and net amounts of the bill, date of creation of the bill, head of account *etc.* This table has relationships with other entities such as DDO, Treasury and Payment entity.

Audit observed that there were three fields *viz.*, DDO system code, DDO code and DDO id but which of these was sufficient to identify the concerned DDO was not clear. The same scenario was found in the Payment Authorisation Transaction table which provides three columns pointing to the DDO.

Similarly, the Bill Header Transaction table contains two fields – head of account identification and head of account system code. It was not clear whether any one field was sufficient or were both the fields required to establish a relationship. A few examples of inconsistencies in the reference to fields are indicated in **Appendix 3.9**.

The above inconsistencies could result in erroneous choice of fields for validating and reporting purposes.

3.10.11 Same field names identified by different data types

Audit observed instances wherein the same identifier names to identify an entity are defined with differing data types in different tables as indicated below:

- DDO code to identify a DDO is defined as a numerical value in 6 tables and as an alphanumeric value in 65 tables;
- Post id is defined as alphanumeric value in 9 tables and as a numerical value in 34 tables;
- Treasury System code is defined as alphanumeric in 1 table and as numeric in 17 tables;
- The postcode in the DDO master table which indicates the post and holds the key to retrieving the roles available to the post does not match with the post code field in the Post details table but matches with the post Id field.

Audit also observed that the field definition and naming practices were not consistent in K2. This impacts data retrieval and could result in wrong outputs. Only an analyst who is aware of the arbitrary variations and counter-intuitive field naming and usage in K2 will be able to arrive at correct results.

3.10.12 Counter-intuitive field references and impact on reports

Audit analysis of report design and configurations showed that while CCO fund release and consolidated expenditure report used 'chart of accounts line item identification' field to collect rows from the Chart of Accounts Line Item Master table, the CCO fund release and expenditure report for Group Budget Line used the Chart of Accounts Line Item system code. The report developer used the

first field in one report and the second field in the other report. Only one out of these fields is a correct reference since both the two fields are not identical and cannot be interchangeable. However, the department did not furnish to Audit the correct field to refer to the Chart of Accounts Line Item Master table.

3.10.13 Data on projects and schemes

The State Government operates various schemes and projects which are implemented through the departments and other implementing agencies like the Boards and Corporations. Audit observed that the Application collected details of departments but the information on other institutions functioning under these departments were not captured and mapped to the departments.

Consequently, the details of the various Central Sector, Centrally Sponsored and State Sector Schemes, the nodal departments, implementing agencies, date of their commencement, date of their closure, *etc.*, were not distinctly captured as part of the MDM.

The department stated that classification of schemes has been collected from FD and is being updated. It further stated that details of implementing agencies were not maintained in K2.

The absence of data on implementing agencies rendered the K2 application deficient as it fails to provide a complete picture on the receipts and expenditure under the various schemes implemented in the State.

3.10.14 Repository of fees and charges not available

K2 seeks to simplify the process of remittance of receipts to Government by introducing Electronic Remittance Mechanism to facilitate ‘Any Where - Any Time’ payment facility. It is, therefore, necessary that citizens are informed about the fees and charges in respect of various services offered by different departments from time to time so as to enable them to compute and pay the fees. This would require a repository of fees and charges as notified by the various departments to be maintained as a Master Data in the System. This would also require Create, Read, Update and Delete (CRUD) facilities for departments to maintain the fee and services repository. Audit observed that such a repository of fee and charges were not available in K2.

3.10.15 Request for proposal requirements for coding standards

RFP for developing solution design requires the SI to prepare and publish standards to be followed for performing Coding, Customization, Testing, Project Management, Risk Management, Database structuring, SQL Query designing *etc.* It was also envisaged these standard documents should be made available for approval to the department or to its designated nominee, during the onset of the requirements gathering exercise.

The relevant coding standards submitted by SI and its approval by the department was not furnished to Audit. As a result, audit could not ensure whether the design and coding was standardized for K2 based on the best practices.

3.10.16 Non-functioning of Kannada version

As per the FRS, the application should provide bilingual support for both English and Kannada wherein English would be the primary medium of communication with the system while Kannada would be made optional for users to opt in case, they intend to use it as their mode of interaction with the system. The data, thus, managed within the system should be in Unicode.

Audit observed that the Kannada version of the application was not functional. The menu panel was empty when the user chooses Kannada as the medium of interaction. Moreover, some of the application labels appeared in Hindi instead of Kannada. Audit also observed that the UATs did not test the conformity of the application with reference to this requirement.

3.11 Issues with reports in the application

3.11.1 MIS Reports not developed completely

Development of MIS reports was an integral part of the K2 Project. The PMU closely monitors the development and deployment of MIS reports by the SI through periodic status reports in order to ensure that all the planned MIS reports are provided by it.

Out of the 890 reports to be developed in Stage 1 modules only 411 reports were developed up to March 2020, the remaining 479 reports were not developed. As the Stage 2 modules were not developed as of March 2020, out of the 89 reports none of the Stage 2 reports were available in the K2.

3.11.2 Generation of inconsistent information

Audit analysis of the status of a bill submitted to Treasury that was later cancelled (Token No. 2005115608 of Karnataka Information Commission belonging to State Huzur Treasury, Bengaluru) showed that the report generated by MIS 004: History of bill/token (detailed report on bill status) and F9 Bill Status (instant search option) was contradicting one another as shown below:

F9 report @ 11.06 AM on 16.02.2021	MIS 004 report @ 11.15 AM on 16.02.2021
Cancelled bill delivered to the DDO with Narasimhappa	Bill Cancelled, pending delivery to the DDO

While these two reports differed from each other as to the location and custody of the bill, audit observed that the DDO had not received the bill and it was actually lying with the treasury and pending delivery to the DDO.

The Government stated (November 2021) that this defect would be fixed.

3.11.3 Management Information System Report not reliable

A Management Information System (MIS) Report was provided to Treasury Officers for tracing the history of bill or token. The report had the following deficiencies:

- It could be used to trace only by token numbers and not by bill numbers.

- It does not contain the bill identification or the amount impacting its usefulness to identify issues such as discrepancies in bills or amounts in the bills.
- The same item is repeated in English and Kannada for a few items.
- The complete tracing is not shown in the report unless exported to excel or other formats.
- The number of items in the screen do not match with that of items exported in excel.

As a result, this report cannot be used to trace a bill and is not reliable to trace a token.

3.11.4 Inaccurate reports

K2 provides reports related to fund releases and expenditure details to various roles. Two such reports are Head of Account-wise details report which is available to Project Director role and CCO Fund Release and Consolidated Expenditure Report which is available to CCO role. Audit compared these two reports and observed that the expenditure figures were not matching. An example for two budget lines was provided below from these two reports in **Table 3.7**.

Table 3.7: Differences in expenditure amount in two reports

Budget Line	Actual Expenditure as shown in	
	CCO Fund Release and Consolidated Expenditure Report	Head of Account wise details report
2202-01-107-0-09-020-v	34,200	0
2202-02-001-0-04-011-v	4,39,206	0

This was because the Head of Account-wise details report excludes the expenditure incurred by Group of DDOs. Audit also observed that reports provided to Project Director such as fund releases/expenditure, CCO-wise fund details, CO-wise fund details and DDO-wise fund details does not include the expenditure incurred by Group of DDOs. It was not clear whether any UAT was conducted covering these scenarios as the department did not furnish to audit the UAT reports in respect of the above MIS reports. At the instance of Audit, Government stated (November 2021) that Group of DDOs were now added to all expenditure reports, which is subject to be verified during the next course of Audit.

The Government should ensure that all the MIS Reports are properly tested and audited by a third party.

3.11.5 Unreliable information mapped to Project Director Role

A 'Fund Allocation/Expenditure' dashboard is available for the Project Director (PD) to ascertain the funds allocated to each department and the expenditure thereof. When a print option of the dashboard is used, 'MIS 027: Fund Released/Expenditure' report is generated. The report generated is entirely different from what was displayed on the dashboard.

For example, there were 40 departments displayed in the dashboard whereas as per 'MIS 027: Fund Released/Expenditure' report, there were 41 departments,

the additional department being the Range Forest Office, Ramadurg which is not a department but a unit of the Forest department. Though expenditure figures ranging from ₹5.62 lakh to ₹43,161.96 crore were exhibited in the dashboard against all the 40 departments, the underlying MIS report exhibited expenditure figures for only 17 departments. The expenditure against the other 24 departments were shown as '0'. **Table 3.8** below shows the difference in figures exhibited as per dashboard and as per MIS report.

Table 3.8: Difference in figures exhibited as per dashboard and MIS report

Narration	As per dashboard (₹in crore)	As per MIS (₹ in crore)	Difference (₹in crore)
Funds received by all ADs	1,08,362.61	18,095.70	90,266.91
Expenditure incurred by all ADs	73,806.94	386.97	73,419.97

Thus, the information provided to the PD significantly varied from dashboard to MIS report. Audit also observed that while DDO level information was available to the PD, the consolidated information at CCO, CO and AD levels was exhibited as '0'.

(i) The PD has a dashboard panel "Fund availability" but the dashboard displays "No budget line found" message in the login screen. The dashboard provided a link for viewing the budget lines with a title "See all budget lines". When the user moves to "See all budget lines", a "MIS 033: Fund Availability" report opens and the details regarding a budget line (8658-00-102-6-14-000) is displayed. This information is again not uniform with the information displayed on the dashboard and the information displayed in the MIS report.

(ii) The PD also has a "Bill pendency" dashboard. Audit observed that when the PD role tries to open it, the message "Error While Loading Dashboard... Please try Again" is displayed.

Thus, the information mapped to the PD role was unreliable.

The Government stated (November 2021) that a production defect had been raised and the fix was in progress.

The Department should initiate action to develop all MIS reports which are consistent, reliable and accurate.

3.11.6 Issues in Jasper Reports

K2 uses a separate reporting software (Jasper) and database for generation of various reports. It was observed that in one instance during October 2020, the ACR009-Detailed Head wise compiled accounts report of Hubballi sub-treasury sent to AG (A&E) contained the figures of Dharwad Treasury.

The Department attributed this discrepancy to the manual process involved in the updation of the post name and location name of the users in Jasper database. The Jasper database was not synchronised with K2 database for facilitating an automatic real-time updation of Jasper database.

Audit is of the view that such manual updation of data into reporting software poses the risk of incorrect reports being generated. The department needs to automate the updation of the reports software as and when changes occurs in the K2 database.

3.11.7 Deficiencies in translating Functional Requirement Specification to System Requirement Specification with respect to MIS reports in Budget Control Module.

Budgetary Control refers to the continuous comparison of actuals with Budgeted Estimates to carry out early remedial action, if necessary. The FRS document for K2 provided for the system to generate various MIS reports for all the modules. Section 5.8 of the Budget Control Module provided for developing MIS reports which included Statement of releases – demand-wise, department-wise, HOA-wise, district-wise, DDO-wise or for any of these combinations.

Audit observed that the SRS did not provide for generation district-wise fund release reports and the reports with different combinations as specified in the FRS. Failure to translate the FRS requirements into SRS, thus, resulted in reduced and inadequate MIS functionalities.

There existed deficiencies in mapping of these MIS reports also. Demand-wise reports, though required at FD level was not provided but instead was mapped to CCO and Administrative Departments. Similarly, MIS reports related to fund releases were mapped to Reports Treasury Network Management Centre (TNMC) user and not mapped to any active user in K2. No details were provided to ascertain whether these MIS reports were subjected to UAT.

The Government stated (November 2021) that though district-wise report was not part of SRS, it has been developed and mapped to CCO role. Audit observed that these reports were not working in the application as shown in **Appendix 3.10**. Similarly reports with multiple combination of inputs were not developed. For example, it is not possible to generate district level department-wise expenditure reports. Also, the application does not have reports with different types of charts, dashboards *etc.*, as envisaged in FRS.

3.11.8 Non-consideration of reduction in expenditure in MIS Reports.

In case of unpaid/undisbursed amounts, DDOs remit back the expenditure amount by generating a challan. These were to be booked as reduction in expenditure under the respective expenditure Heads of Accounts. A total of 1,05,243 challans valuing ₹909.93 crore were remitted as reduction in expenditure for the period of 2016-2020 (up to date of Audit Database set up). Thus, the actual expenditure in these cases is the expenditure by way of vouchers minus reduction in expenditure by way of challans. However, K2 does not consider these deductions for generating expenditure reports such as ‘BDC 009-Fund release and expenditure reports at FD’, ‘BDC017- Fund release and expenditure reports at AD’ *etc.*

Analysis of the underlying queries of these reports showed that these reports do not consider the reduction in expenditure and exhibited the entire expenditure

booked originally by way of vouchers resulting in these reports exhibiting inflated expenditure figures.

The Government stated (November 2021) that this procedure is part of the proposed AG Module. Audit is of the view that delay in implementation of module has impacted the overall capability of K2 in providing a reasonable assurance to its stakeholders. Hence, module deployment is to be expedited.

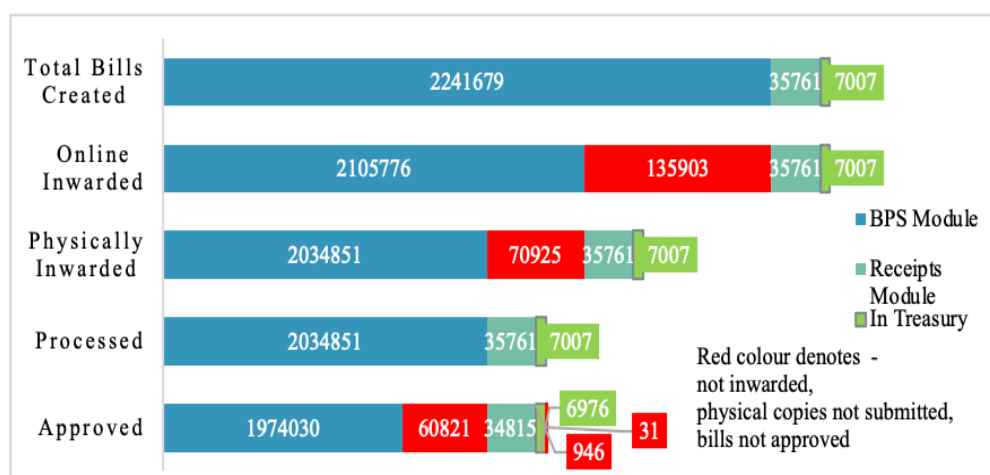
3.12 Analysis of bill cycle from creation to approval at Treasury

A bill containing the claims against the Government are presented to the Drawing and Disbursing Officers (DDO) who are authorised to draw funds from the Government account. In K2 a caseworker in DDO office initiates the bill processing. The bills created by caseworkers are verified at various levels and submitted to treasury online after approval by DDO. After receipt of the physical copies of the bills from DDOs, the treasury processes these bills at various levels and authorises the payment to the recipient.

No timelines were specified in K2 for processing the bills at various stages. However, the bills could be pushed to priority queue based on their urgency but the processing time in the normal queue and priority queue was not indicated. Audit, therefore, adopted the timelines of 15 days as specified (August 2018) by the Central Vigilance Commission for processing the bills as the benchmark.

The data available showed that K2 processed a total of 44.66 lakh bills during the period 2014-15 to 2019-20 (**Appendix 3.11**). Bills in K2 are mainly processed through Bills Processing and Submission (BPS) Module. However, some bills such as revenue refund bills get processed at the Treasury without entering the BPS. Audit attempted analysis of the data to understand the time taken for processing bills for payments using the bill status information available. It was observed that K2 does not have a facility for capturing the date of actual submission of bills by the claimants. Hence, the actual time taken for initiating the process since submission of the bill could not be determined.

Audit, therefore, analysed the cycle a bill goes through from its creation up to its final payment for the year 2019-20 to arrive at the time taken for processing the bills for payments. A total of 22,84,447 bills were created, of which 22,41,679 were through the BPS module, 35,761 were from the Receipts module and 7,007 bills were originated in the Treasury itself. The status of bills created during 2019-20 is indicated in **Chart 3.9**.

Chart 3.9: Status of bills created during 2019-20 in K2

It can be seen from the Chart that 1,35,903 bills created in BPS were not submitted to the Treasury. The reasons attributed were DDO rejected, CSO rejected, pending at intermediary stages, year-end cancellation *etc.*

The manual transmission of the bill continued to be part of the K2 System. The Treasury processes the bills only after receipt of the physical copies of the bills from the DDOs though the bills are submitted online as the system does not provide for capturing the digital images of the vouchers. At the treasury, FOA inwards the physical bills. The system automatically rejects the bills at the FOA level if the physical submission is delayed by more than seven days. A provision was made wherein the system would prompt the DDO through registered e-mail and mobile messages before 24 hours prior to expiry of the set time limit (excluding the day of online bill submission) if the physical bill had not been received in the front office of the Treasury. There were 70,925 bills for which the physical bills were not submitted indicating that either the prompting mechanism had failed or the DDOs had ignored the prompts.

Thus, a total of 20,77,619 bills were available for processing at Treasury. Of these 20,15,821 bills were approved and 61,798 bills were rejected, objected or cancelled. It was observed that the bills which were objected by treasury and cancelled by DDO thereafter were reflected under the status 'Bill rejected by DDO'. Thus, the break-up of the unapproved bills could not be analysed as the bill status description was not adequately defined.

The time taken for each stage - online submission of bills by DDOs since its creation in BPS; for submission of physical bills after online submission; for approval by Treasury since its receipt and the total time taken for processing a bill from its creation to its approval is indicated in **Table 3.9**.

Table 3.9: Time taken for online and physical submission of bills by DDOs and approval of bills by Treasury

Time taken	Number of bills submitted		Bills approved	Number of bills
	Online	Physical	Treasury	Bill creation to approval
0-7 days	14,77,637	20,17,030	19,31,687	10,23,666
8-15 days	3,25,187	17,742	71,624	5,79,199
16-30 days	1,88,808	59	8,213	2,76,026
31-60 days	83,353	15	1,641	1,04,822
61-180 days	29,166	5	348	30,955
181-360 days	1,569	0	23	1,142
361 and more	56	0	0	11
Total	21,05,776	20,34,851	20,15,821	20,15,821
	Maximum time taken = 668 days	Maximum time taken = 73 days	Maximum time taken = 303 days	Maximum time taken = 474 days

While there were delays at each stage of the bill process, there were 17,821 bills (rows indicated in orange colour) which were accepted by the system though the stipulated period of seven days had lapsed in these cases. This indicates that the front-end controls were bypassed, and the bills accepted and processed. Interestingly, the number of days allowed for submission of physical bills was hard coded in the application and not entered through front end and fetched from a table as envisaged in the SRS. In the absence of interface to edit/set the time limits, the changes made in the specified number of days for submission of a bill and the persons making the changes were not traceable.

A total of 4,12,956 bills (rows indicated in red colour) were processed after the benchmarked period of 15 days and the maximum time taken for processing a bill that has passed through all stages successfully was 474 days.

The Government stated (November 2021) that it has a Key Performance Indicator for bill processing and is set as three days. It also added that it is not in the scope of K2 to follow up on time taken to process a claim in the DDO office. The bill status description is clearly defined in simple English for common understanding of DDO users.

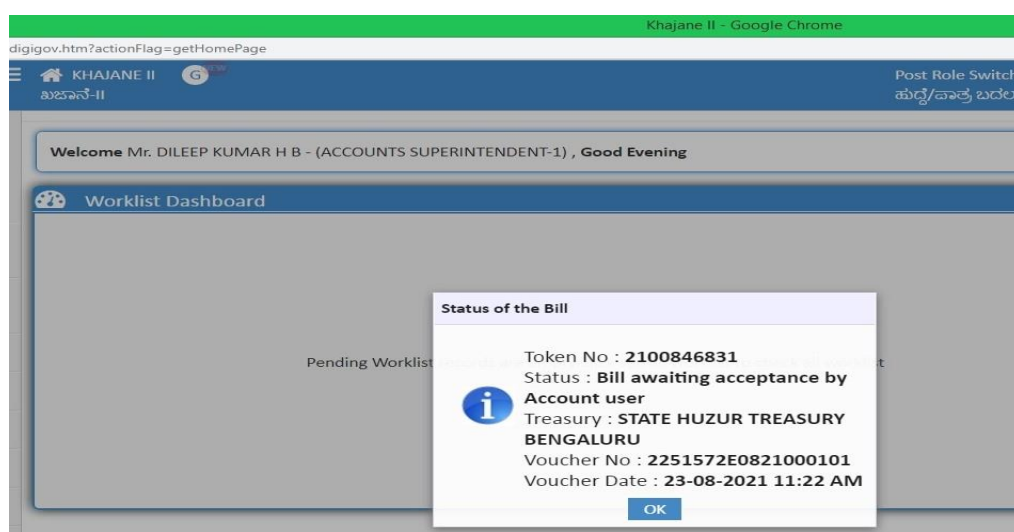
Audit has elucidated an instance of lack of clarity in status descriptions brought out in paragraph 3.13. Though a 3-day timeline was specified for bill processing, there were no analytical reports in K2 for monitoring this performance indicator. K2 being an Integrated Financial Management System should specify the timelines for the entire life cycle of a bill starting from submission of claim by recipient to its approval and payment.

The State Government may bring out a code of practice prescribing the timelines to ensure speedy processing and prompt payment of bills to its suppliers and watching of pending bills so as to enable K2 to incorporate in the application.

3.13 Inadequate status description of bills

A transaction status provides information about a transaction throughout its life-cycle from initiation to completion. The final status of the transaction could be a successful or failed transaction. Each bill in K2 passes through a life-cycle from its creation to approval and thereon to payment. K2 captures the bill status in the bl_movmt_txn table that shows the position of the bill in the application. There are 71 status descriptions in the master list categorized under two types, one for reporting to DDO and other for reporting to Treasury users.

Analysis of the status description data showed that it does not include a field for recording the final status about success or failure of the payment. For instance, even a Bill finally paid to the recipient is displayed to the DDO user as 'Bill awaiting acceptance by Account user' as shown below. Thus, the information provided to DDO does not bring clarity and is not actionable.



K2 provides a Report titled 'BS023- DDO Bill Status' for DDOs for viewing the bills status. Analysis of the underlying query for this report showed that bills with voucher number (Bills approved) were shown in this report under the title as 'Bills approved/paid'. Providing a status like 'Bills approved/paid' does not distinguish paid bills from approved bills. Even a failed payment gets classified under this 'Bills approved/paid'. Thus, the different class of users in K2 including the DDOs who initiate the bill processing, do not get any meaningful information about the final payment to the intended recipients.

The status descriptions created in K2 were, therefore, not well defined and do not give sufficient information to DDOs and other users about the actual status of the bills at various points in its life-cycle.

The Government should ensure that sufficient status descriptions are defined and provisions for communicating the statuses for various stakeholders such as DDOs, Recipients etc., are put in place.

3.14 Failed payments

Prompt payment to suppliers, employees and social security scheme beneficiaries is not only an ethical responsibility but economically beneficial for all parties and the wider economy. Delay and failed payments result in

destruction of vendor relationships, diminution of public trust on Government and have a ripple effect on business and finance and public accountability. Best practices require organisations to monitor the failed payments, reprocess them quickly after correcting the errors and to complete the payments. This requires establishing a framework to track the turnaround time (TAT) of the bills from its receipt into the department to its final settlement through payment. K2 had not developed any framework for monitoring TAT for bills including failed transactions.

A 'failed transaction' is one which has not been fully completed after its initiation. In K2, failed payments refer to the payment authorisations that gets returned to DDOs when money could not be finally credited to the recipient account. The payments fail due to wrong account number, incorrect IFSC code, incorrect account type, wrong recipient name *etc.* The Accounts Compilation and Reconciliation Module in K2 receive the details of failed e-payments and in turn notifies the DDOs concerned along with the reasons for failure for correction and re-processing. The amount corresponding to the failed e-payment would be credited to failed e-payment suspense heads of accounts. These would be cleared as and when failed payments are reprocessed, paid and accounted. The year-wise details of failed payments are shown in **Table 3.10**.

Table 3.10: Details of failed payments for the period 2015-16 to August 2020

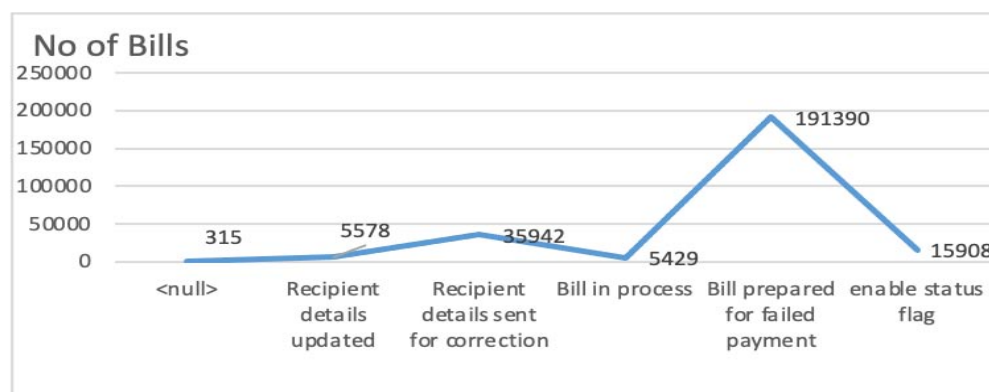
(₹ in crore)

Year	Total bills requiring payment	Total Individual recipients to be paid	Number of recipients for whom payments failed	Amount involved	Percentage of recipients whose bills failed
2015-16	10,155	44,587	434	2.20	0.97
2016-17	3,71,009	25,44,254	14,015	158.52	0.55
2017-18	5,30,139	24,35,078	20,970	318.75	0.86
2018-19	9,86,230	43,66,477	57,064	426.96	1.31
2019-20	19,72,276	1,06,18,772	1,20,211	682.07	1.13
2020-21*	5,84,253	43,55,881	41,868	117.16	0.96
Total	44,54,062	2,43,65,049	2,54,562	1,705.66	1.04

* Up to August 2020.

During the period 2015-16 to August 2020, payments involving ₹1,705.66 crore were failed to a total of 2.55 lakh recipients, of which the payments failed for 1.54 lakh recipients was due to incorrect account numbers. This points to the need for validating the bank account details in the recipient master at the time of registration. Further, the failed payment data does not include the failed payments under bulk recipient system¹⁸ used for distribution of social security pensions, scholarships *etc.*, as the data was not captured in K2. The description of status of the failed transactions as stored in the table BS_FAILED_PAYMENT_DTL is indicated in **Chart 3.10**.

¹⁸ In this system, a single designated recipient like Post Office or an authorised Bank receives the amount in bulk for further re-distribution to large number of beneficiaries.

Chart 3.10: Status description of failed transactions

Analysis of the failed payments showed that out of 2.55 lakh failed payments 1.91 lakh (75 per cent) were reprocessed (Bill prepared for failed payment) and 0.63 lakh (25 per cent) were not reprocessed. The amount of ₹116.32 crore pertaining to these non-processed instances (**Appendix 3.12**) continued to remain in suspense head of accounts.

The status description 'enable status flag' had 15,908 bills and as per the department, this referred to time-barred bills cancelled from the application because of their expiry to prevent them from reprocessing. This status, however, had failed payments pertaining to 2019-20 and 2020-21. Though there were bills pertaining to 2015-16, they were not cancelled. The reasoning behind this discrepancy was not explained. It was also not clear whether the amounts of these cancelled bills were withdrawn from the suspense heads.

Audit observed that the time taken for reprocessing and approval of the bills from the date of failure took on an average 56 days, with the maximum taken being 1,161 days.

Illustration

A DDO initiated a payee's receipt bill (Bill Id –1412576333) during March 2018 for a net amount of ₹ 7,84,000. The payment failed on 24 March 2018. The new bill for this amount was created only on 9 July 2019 after 1 year 3 months. The re-processing bill initiated was approved on 13 November 2019 after a delay of four months. The total time, thus taken for re-processing the bill from its failure was 1 year and 7 months (599 days).

Apart from this, audit observed that a total of 15,914 failed payments bills involving ₹131.17 crore failed again. Best practices encourage communicating the reasons for rejections to the right person who can initiate corrective actions. K2, however, did not have a mechanism to notify/inform the recipients of the failure of payments and the reasons for such failure, which if done, would facilitate timely reprocessing of failed payments.

The Government stated (November 2021) that DDOs receive notification and SMS once a payment failed, and failed transaction appear in a separate work list of the Superintendent of the office. Each treasury has a distinct head of account for failed payments under major head 8658 and there was no scope for failed

payments to be made from any other head of account. The reply is not acceptable as Audit noticed that there were delays in creating the failed payment bills as indicated below in **Table 3.11**.

Table 3.11: Time taken for creation of repayment of failed bills

Time taken for re processing by superintendent.	Number of bills falling in the time window starting from payment failure date to new bill creation
0- 7 days	55,600
8-15 days	27,430
16- 30 days	29,559
31- 60 days	30,359
61 - 180 days	37,582
181- 365 days	9,041
more than 365	1,771
Total	1,91,342
Range	0-1,086 days
Average	48 days

Analysis of the reprocessed cases showed that in 20 instances, the bills were reprocessed more than once (19 bills – twice and one failed payment – thrice) resulting in excess payment of ₹4.06 lakh in these cases as detailed in **Appendix 3.13**. It was also observed that in two cases, the reprocessed bill creation date was earlier than the failure date. Such discrepancies affect the reliability of the data. Moreover, there was no front-end report for DDOs or other supervisory level officers linking the new bill and the failed payment bill rendering it difficult to monitor the failed payments.

Audit also observed that ₹10.53 lakh was debited from other heads of account instead of the suspense account. Such erroneous debits overstate the expenditure on these heads of accounts while leaving the failed payment suspense account not cleared to the extent.

In case of failed payments under major head 8658, audit noticed that the failed payments were made under other heads of accounts and it was already pointed out in the Audit.

The Government should ensure that a report for DDOs for closely monitoring the status of reprocessing of failed payments is provided. Timelines may also be prescribed for reprocessing of the failed payment bills.