EXPLORATORY STUDY FOR IMPLEMENTATION OF PFMS E-BILL SYSTEM BY RMC KOLKATA (A DIGITAL TRANSFORMATION IN INDIA)

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ABSTRACT

This paper is based on the exploratory study , practical experience to materialize the complete successful cycle of E-BILLING system, with the help of PDF of manual ,images of how to process and initiate E-BILL ,from all levels .The primary guideline had been provided through online training and PDF provided , but the hands on experience as gained to run a complete successful cycle of E-BILL for the first time was somehow really different as this was a new system ,to be implemented for the first time and no idea about the whole system in details regarding how to execute ,how to complete ,was there with anyone, before this time, so the experience was almost like throwing stones in the dark. In one word this was just the beginning to reach the milestone, to prepare and submit bill as E-bill and forward successfully from DDO to PAO to credit payment to claimant's account.

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Keywords: E-Bill, NIC, DSC, Token, CRN, PAO, DDO, PD Code, FIFO, E-claim, E-sanction.

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Introduction

Smt. Nirmala Sitharaman, the Union Minister for Finance & Corporate Affairs, launched the Electronic Bill (e-Bill) processing system, announced in union budget 2022-23, on 46th civil accounts day, to enhance transparency, efficiency and for faceless, paperless payment system to allow suppliers, contractors and all types of claimants to submit online claims, trackable in real time basis. All Central Government offices were instructed to start E-BILL as early as possible. With the help of online training and PDF as provided for implementation in the India Meteorological Department, started the exploration, how to complete the cycle of E-BILL process, to process and forward the E-BILL to PAO level, for further necessary action towards payment through E-BILL. To create the E-bill Id of each employee, government id as allotted, was to keep activated, supported by 'Kavach Authentication App', a mobile, OTP based app of National Informatics Centre (NIC), available from google play store. Within the year of 2022, installation of Kavach app, activation of government mail (NIC mail), all these were started for the purpose of creation of Id for E-bill process flow. After activation of Id enabled by Kavach based OTP services, started the process of Id creation for all types of levels to start E-bill cycle. At first from DDO – LOGIN, generated Sanction-authority code, i.e. PD code from the menu DDO-→Admin master--→PD code generation. All E-bills were to be created and forwarded under this created 'Sanction authority code', so at least one PD code should be generated to start the E-bill system. Next from DDO-LOGIN, from the menu USER---→Ministry User Registration, to create the id 'PD checker' choosing the created sanction authority PD code. Number of creation of PD checker Id has a certain maximum limit under one sanction authority code. From PD checker Id, PD maker Id can be created as many as required from the menu User--→ Ministry User Registration. Basically PD maker is the root level where preparation, initiation and process of E-bills can be done. PD checker is the level, where authentication of bills or bill-settlements as forwarded by PD maker is done, to forward to DDO, for further forwarding to PAO level from there. All E-bills are forwarded to PAO for necessary sanction towards payment to the account of claimant. DDO is the last sanctioning authority level in E-bill system before PAO and all bills are routed

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through DDO to be forwarded to PAO. Process of E-bill are enabled if and only if, the authentication of E-bill is done, applied by DSC (digital signature certificate) in each step of validation, in each level of Id .So for this reason, during the time of Id creation, the purchase of encrypted type of DSC tokens , purchased from certified authority for the purpose of application of digital signature was done which was mandatory for E-bill process. The requirement of system, software, pre-requisite was upgradation of all computers to 64 bit and windows 10 and minimum 8 GB RAM and i3 processor, Microsoft dot net frame work 4.6.1 in every system where PFMS is operated. Windows DSC utility (to be downloaded from PFMS) was other compulsory software . The document scanner was to be capable of scanning at least 72 dpi resolution and should be able to support the page sizes required to be uploaded in E-BILL .For processing of GEM bills through E-bill system, installation of software as available in GEM portal for processing, as well as digital signature of DDO was required .The other interface to process GEM E-bills was PFMS DDO, which was common for all type of E-bills. So, this was the description in a nutshell about the supporting environment before materialization of the E-bill system. Enrollment of DSC Win App from the menu 'Master' from each created Id was necessary followed by authentication of enrollment from PFMS DDO, for the purpose of validation of DSC token for digital signature certificate. The DDO DSC enrollment was to be authenticated from PAO end for activation of DSC token of DDO in PFMS E-bill system. After finishing all these set-up with all these supporting systems, process of E-bill was started to implement.

Literature Review

After issuance of order from Government of India, 'Ministry of Earth Sciences', Departmental Accounting Organization, Office of the controller of accounts regarding implementation of E-BILL, PDF s had been received from accounts department followed by online training. The flow chart as explained in that PDF, regarding method of processing of E-BILL was helpful to understand and study the process from the primary level, but the practical experience of hands-on, step by step, in each Id level, to process it, to understand all the technical issues, in the full system, as well as sequence of steps, validation of various steps from one level to another level, and realization of validation of various internal steps within any level subjected to validation of the related particular one ,in the same level or other level, this was the most exploring one which was neither explained, nor could be explained unless and until the hands-on of processing bill for the first time was performed. Moreover, as this was the first time, before this, E-BILL through PFMS was never processed before, so there was no scope to acquire knowledge from anyone regarding this.

Method of e-Bill Processing

The method of E-bill processing consists of process within three levels. The lowest one, PD maker level, the middle level is PD checker and the last or highest one is DDO level. These three levels are there to forward E-bills to PAO. Before starting of the method of E-BILL process, the sanction authority code generation was to be created from DDO. Each E-bill system should have at least one 'Sanction –authority- code', created with the name of Head of the authority under which code, the E-bill system is to be processed. From DDO under the menu, Admin master -----------→PD code generation, the sanction authority code for this region RMC Kolkata, w.r.t the name of HEAD, designation, office address, PD code or 'Sanction authority code' was generated. This generation was to be validated by PAO (Pay and accounts office) for activation of this authority code. After validation of this sanction code, then started the process of creation of PD checker Id. Under one sanction authority code, there is a fixed limit of creation of PD checker Id. From the DDO LOG-IN, under the menu, User-→Ministry user registration ,creation of PD checker Id was done selecting the Id type as 'PD checker' from choice menu. The validation of 'PD checker' was also to be validated by PAO end for activation of this Id. Once PD checker was created, the creation of PD maker Id, as many as required was possible from any PD checker Id, under the menu User--→Ministry user registration. Id generation for the case of PD maker need not to be validated by PAO. PD checker and DDO can validate the creation of PD maker Id. During the process of Id creation for all types of levels, there was mandatory role of government mail as well as Kavach app and OTP services because there was case of verification of registered mobile number as well as government mail Id, verified by both of 'Kavach' OTP based services as well as email received in inbox of government mail. After creation of PD maker, then the process of creation of Id was completed to process a complete E-bill cycle. Activation of all types of Id is possible at the end of locking time for 24 hours. Password for first time use can be received in inbox of each Id. PD maker is the root level, where E-bill can be prepared, processed as well as forwarded to the next higher level, PD checker. First step from PD maker towards E-bill is to generate CRN, 'claim reference number' from the menu E-claim----→Generate claim reference number. For each new bill, there is to create one unique CRN number with respect to which, bill reference is to create for all procedures towards E-bill, maintaining FIFO (First in

first out) system. After mapping or edit mapping of the account of the appropriate claimant from User---→User mapping, CRN can be generated from menu E-claim ----→generate claim reference number, by clicking on search vendor, along with fill-up the account details with vendor code, followed by clicking on vendor code and then clicking on 'generate' button to generate CRN number against that particular new bill for that particular claimant. Thus, once CRN of E-bill is generated, process of bill form fill-up starts under the menu E-claim, in PD maker, choosing the appropriate RPR as adequate for that bill depending on the purpose of claim. In RPR form, again mapping of claimant account is to be done by clicking on search vendor at the right top corner of the form and then at least the mandatory fields (marked as red asterisk) are to be filled up along with uploading of supporting documents in support of the bill .Each document is to be of maximum 2 MB ,documents capacity being 10 MB in total ,PDF in property ,file name within 25 characters .As soon as the bill form is ready , 'Save and submit for DSC' button is clicked to save and submit the bill to the next step for further processing. If PD maker wants to save the bill as 'intermediate save', there is that option also for the scope of editing again before final submission from PD maker level. E-bill thus prepared from PD maker level, can be checked from E-claim-→Manage claim, to know the current status and necessary following action towards further processing, validating, DSC validation, as well as forwarding to next level, i.e. PD checker. After completion of formalities under E-claim menu ,next necessary formality from PD maker is 'create-sanction' from the menu 'E-sanction'. Here file number, sanction number, date, scheme, PAO, DDO, sanction type, sanction amount, account head, payee account details, all are to be mapped accordingly along with uploading of supporting PDF files as to be attached in bill form. This time the mapping of that particular CRN number, generated uniquely is to be selected against the name, vendor code of that particular claimant to enable the process of 'create sanction' successfully. Once sanction creation is done, checking of status, what is the further necessary steps, can be viewed from the menu 'Manage sanction' under 'e-sanctions' in PD maker. Each process in each step is validated by digital signature application where ever necessary and applicable, without which E-bill can not be validated or processed further. DSC is applied using digital signature token and signature is applied by password only. Thus E-bill is submitted and forwarded to PD checker level initiated by PD maker level enabled with DSC application wherever necessary. As soon as completion of processing from PD maker is completed, action by PD checker towards E-bill processing is started. The initiation as done by PD maker from the menu E-claim, can be verified as well as validated from the menu E-claim ---→Manage claim of PD checker using DSC application. Thus settlement of E-bill where applicable, forwarded by PD maker can be verified and digitally signed by PD checker towards further necessary action towards bill preparation by PD maker again. The E-bill processed by PD maker from the menu E-sanction in PD maker can be verified as well as validated from the menu 'Manage sanction' under E-sanction of PD checker, validated by application of digital signature of PD checker. Once verification and validation by PD checker is done, the bill is approved then and submitted to the level of DDO, which is the final level before sending to PAO for verification and approval of E-bill. All the E-bills as forwarded successfully by PD checker, can be verified and validated by PFMS DDO LOGIN under the menu 'E-sanction---→Generate e-bills' and E-sanction---→Manage sanction'. From the menu Generate e-bills', generation of E-bills with token generation maintained by FIFO rule is done, while DDO authorization, sanction, validation followed by digital signature by the DDO, i.e. drawing and disbursing officer of the region, is initiated under E-sanction---→Manage sanction in PFMS DDO, for the purpose of forwarding of E-bills to PAO for further necessary action towards payment to the account of claimant. The whole system of E-bill, thus consists of formalities within the three levels of E-bill id, PD maker----→PD checker-----→DDO, before sending to PAO level. Apart from general E-bills of all type, dealt in E-bill system, some other special type of E-bills, related to purchase from GEM portal are also to be sanctioned, validated from PFMS E-bill system. GEM bills can be processed using two interfaces, one from GEM portal, initiating and forwarding of GEM E-bills using DDO DSC, and then the second interface is validation from PFMS DDO LOGIN Id, where the GEM bills, shown in orange colour, can be viewed for verification, generation of token and validation applying digital signature of DDO, similarly as other E-bills. The E-bill forwarded from DDO may be passed from PAO to be credited to the account of claimant as mapped by E-bill system, but on the other hand, the E-bills can be rejected also by PAO, for any reason of correction or any objection made by them. These E-bills can be viewed from DDO with remark 'returned by PAO'. Just as opposite process of forward flow, DDO has to return these rejected E-bills to the PD checker level using button of 'return to PD checker' as well as 'DDO DSC Return Order'. Thus returned E-bill, returned by DDO can be viewed from PD checker level subjected to return to PD maker, after using button of 'return to PD maker' as well as application of 'digital signature return order' by PD checker. Then the necessary action for correction, addition, alteration etc. is from PD maker level, where the supporting documents or correction of calculations if any to be edited accordingly, the CRN remaining

the same and if necessary, returning the E-bill to the initial status of very beginning or by changing the upload of supporting documents as applicable there. Then PD maker has to re-process and re-submit the corrected bill again following similar necessary steps as described earlier. Similar necessary actions are to be taken by PD checker and DDO also to re-process and re-submit the corrected E-bill again to PAO level. For the purpose of necessary clarification images of few screenshots of levels of E-bill Id have been pasted herewith below using necessary related remark.

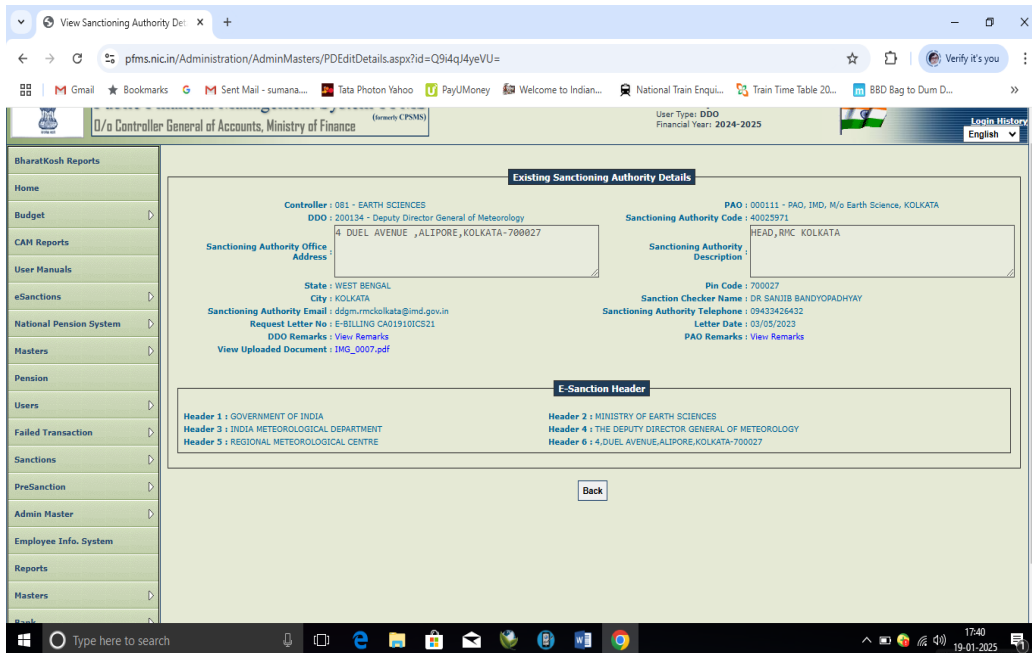**Image 1: Creation of Sanction Authority Code, PD Code, Submission Request to PAO**

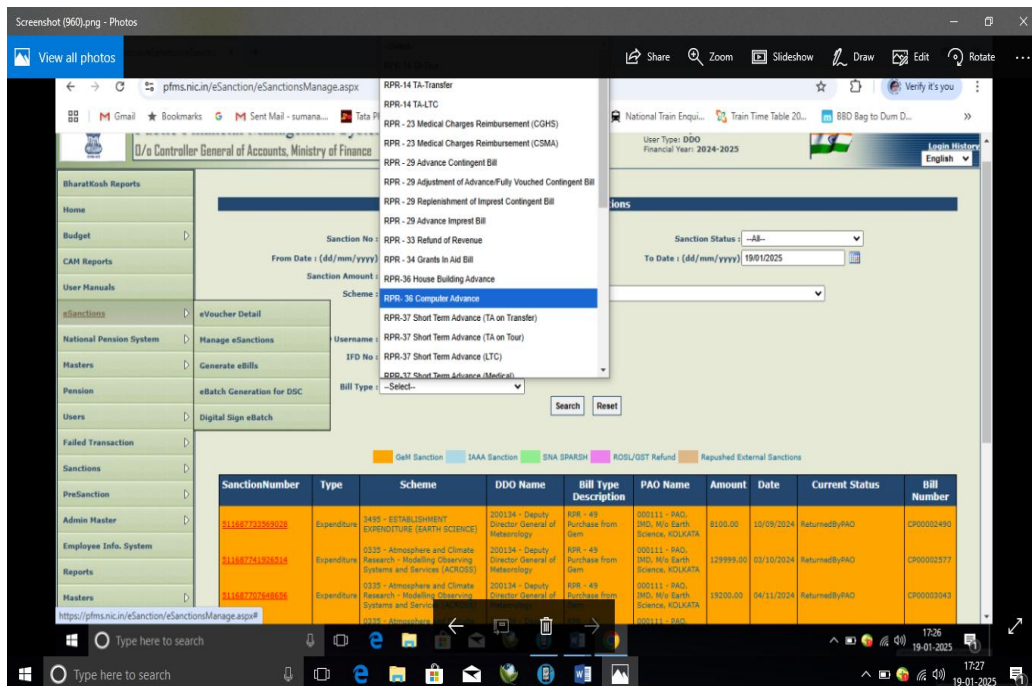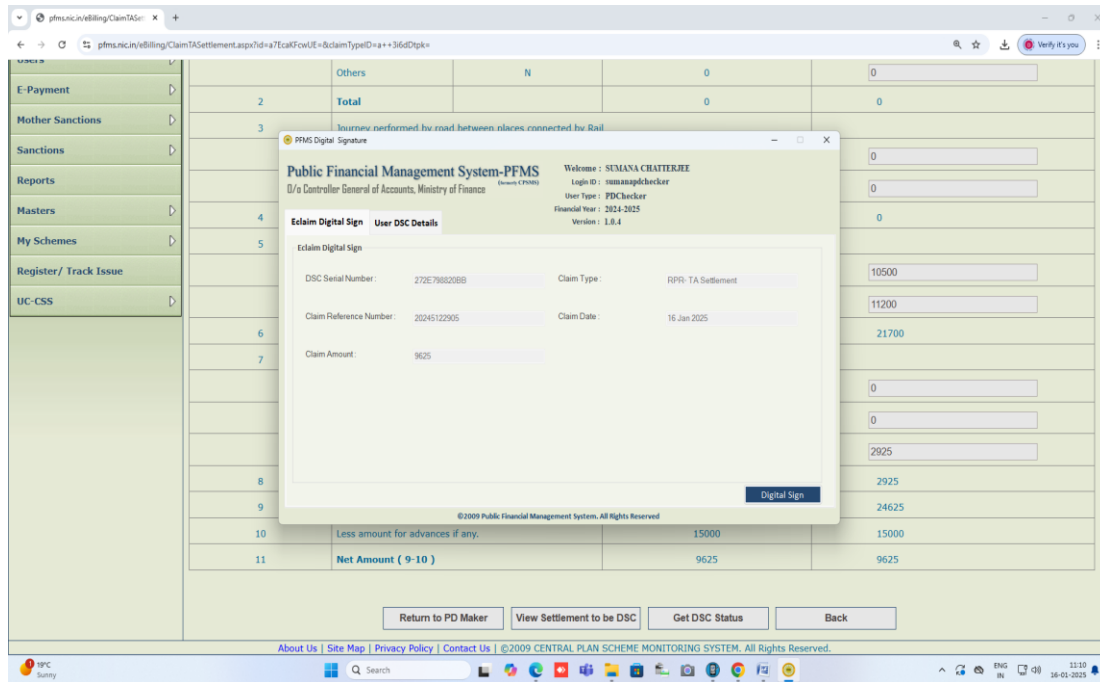**Image 2: DDO with Necessary Features for E-bill, E-sanction, List of Bill Type, GEM Bill**

Image 3: Validation of E-bill-Settlement from PD Checker Level with DSC Application

Significance of the Study

All Central Government offices were instructed to start E-BILL, on urgent basis, after launching of E-BILL system. So, from the very date of receiving order, started the process of purchasing 'Digital Signature Token' from certified company. After purchasing DSC tokens, installation of all supporting softwares to enable E-BILL was done and ultimately completed one successful cycle of E-BILL for the first time, which was never done before after issuance of order, subjected to implementation. At present also instead of ordinary PFMS bills, that were prepared through old PFMS system, using papers attached with bills in the past, are now paperless, faceless with enhanced transparency. So, the purpose of exploratory study was successful to run the process of E-bill system completely. Today various efforts are being made for sustainable environment introducing green technology. Various banners, slogans, for the process of recycling, are there to protect our planet protecting trees and plants, so implementation of E-bill system being almost paperless, it supports 'go green' venture also. Moreover, further benefits are faster processing, improved transparency and enhanced accountability.

Conclusion and Future Work

As soon as instruction from Ministry level to materialize the implementation of the new E-BILL system, received by this department, 'INDIA METEOROLOGICAL DEPARTMENT', the effort for successful complete cycle of E-BILL was started and when this effort came into truth, really it was a great pleasure to feel the joy of this success. Moreover, as and when the need of any further change in the system as well as change in the compatibility related with software etc., that also may be materialized accordingly to run the process successfully in future also. Moreover, the implementation of E-bill is to spread over the whole IMD, implementation in all other Meteorological Centres. The sanction authority code and PD checker Id creation process has been done already for Meteorological Centres under RMC Kolkata. The process may be started by them similar as RMC Kolkata. During online training held by departmental accounts division, all types of pros and cons were discussed for further necessary rectification of the E-bill system as felt while making of bills, or other technical issues related to time gap of compilation between different levels of E-bill. This issue is resolved now also. Searching of E-bills, already forwarded to PAO are now possible to track from PFMS E-bill id under CAM report menu. The improvement of the system towards increased efficiency with speed and compilation has been done already and in future if further more change in the system is made, necessary adaptation towards bill preparation through E-bill process will be done accordingly.

Acknowledgement

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References

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