

2018

Guidelines for Preserving Data of GeM for Archival and Auditing



INTRODUCTION

GeM-SPV is set up as Section 8 company under the company Act 2013; It built GeM 2.0 platform on August 9 2016, on April 3,2018 GeM 2.0 is withdrawn and in its place GeM 3.0 which was launched on January 26,2018 will function. The aim of GeM Platform is to facilitate online procurement of goods and services, bring transparency, efficiency and speed in public procurement. DP, e-bid and reverse e-Auction are the three major mode of procurements on GeM, which allow the Govt. buyers to get best value for their money. Currently GeM has approximately 19000 organizations, 79000 buyers and 80,000 Sellers and more than 4 Lakhs Products in the market place. Direct Procurement, BID and RA have been stopped on April 3,2018; now buyers cannot add items into cart for e Procurement. However, the orders might have been placed for some items through direct purchase so they need further processing such as receiving goods, inspecting them and making the payments. Similarly in the case of Bids/RA, which are closing, activities like technical evaluation/financial evaluation, order placement till making payments need to be completed in next two to three months. So GeM 2.0 has to be kept alive for such activities for at least five months or one month post the payment made whichever is later. Hereafter access to all buyers/sellers will be stopped; the data which they may require should be made available in GeM 3.0 in report form for one year.

Further, the data of GeM 2.0 should be archived for another 10 years till April 2023 for auditing and other retrieval purposes. To fulfill these objectives, it is decided to retain some minimal ICT infrastructure, GeM functionality, Audit logs and artifacts such as comparison sheets, pdf of bids, orders, CRAC and payment details.

OBJECTIVE

GeM 2.0 is bound by various obligations with regard to the data that is retained or that is in its custody. As part of these obligations Data and artifacts need to be archived and stored for longer than the data may be needed for day to day operations and business processes. A bid may, for example, is converted into order and its payment is made but for auditing purposes or for resolution of disputes , by law, data need to be retained for a at least 10 years. When the Data Retention Period is over, the data ought to be destroyed in a proper manner.

INFRASTRUCTURE

GeM 2.0 is hosted on NIC cloud Meghraj Server. There are total 28 servers used for GeM 2.0 Operations. Infrastructure of Bid 2.0 should be retained for completing eProcurement transactions, archival and auditing purposes.

Cloud Unit Code ITS1 and IE91 Server list below:

• Server Name	IP Address
➤ ITS1GEMP-app1	10.247.51.4
➤ ITS1GEMP-WB02	10.247.51.5
➤ ITS1GEMP-app3	10.247.51.6
➤ ITS1GEMP-db01	10.247.51.7
➤ ITS1GEMP-db02	10.247.51.8
➤ ITS1GEMP-lb1	10.247.51.9
➤ ITS1GEMP-radis	10.247.51.10
➤ ITS1GEMP-nfs01	10.247.51.11
➤ ITS1GEMP-nfs02	10.247.51.12
➤ ITS1GEMP-slave3	10.247.51.13
➤ ITS1GEMP-ws03	10.247.51.14
➤ ITS1GEMP-s15	10.247.51.15
➤ ITS1GEMP-db04	10.247.51.16
➤ ITS1GEMP-s17	10.247.51.17
➤ ITS1GEMP-s18	10.247.51.18
➤ ITS1GEMP-s19	10.247.51.19
➤ IE91GEM2P-app5	10.247.51.25
➤ IE91GEM2P-app6	10.247.51.26
➤ IE91GEM2P-slave3	10.247.51.27
➤ IE91GEM2P-slave4	10.247.51.28
➤ IE91GEM2P-int01	10.247.51.29
➤ IE91GEM2P-solar	10.247.51.30
➤ IE91GEM2P-sb	10.247.51.31

BUSINESS MODULES

GeM 2.0 consists of different modules on e-Procurement like Direct Purchase, Bid/RA, Receiving, Payments and Registration.

Registration

Hereafter, all new registrations will be done in GeM 3.0, so there is no need to allow new registrations in Gem 2.0. This module should be disabled and view rights and facility should only be available on GeM 2.0.

Market

GeM 2.0 version is no longer in use. Hence all Product catalogues and market place exists for viewing products only. Below are the changes due to this movement.

- Only Search option enabled to search any specific product if required.
- Comparison of products functionality will remain there to compare any 2 to 3 products if need some comparison.
- Add to cart option must be disabled so that no new checks out of products happen.
- Seller should be given at the most view only rights of their products and no new product uploading and changes of products must be allowed.

Direct Purchase Order

Buyer initially able to process all pending orders then disables the rights of order placement. Functionality is initially available for the time payment of transaction is made. This is expected that all orders should be fulfilled by this period and no more order fulfillment remains pending.

Bid/RA

GeM 2.0 version has moved to GeM 3.0 version so all the transactional data needs to be stored for future reference purpose. No more new BID/.RA creation in GeM 2.0. Only some functionality for viewing earlier data is available as follows:

- Archive all audit logs of all transactional data done in past on GeM 2.0
- Archive all e-signed documents/PDF need to be stored
- Bid Button disable permanently for any new transaction.
- Archive Special terms and Conditions mentioned on Bids.
- Archive key used in BID/RA transactions.

ARCHIVED DATA AND POLICY

When data is not active, it is moved from Production platform to Archival platform. It helps in creating additional storage on Production Platform and better utilization of resources of Production Platform. Data in Archival platform is stored for future reference and retrieval for a specific retention period which can be an organizational, legal or regulatory requirement.

Immutability is the attribute of archival storage systems. That is, once data is committed to an archive, it cannot be changed or deleted until its retention period has expired. PDF files generated in GeM need to be assigned a unique identifier that is stored along with the Direct

Purchase/ Bid/RA data when it's written to the archive. Any data needed for supporting litigation must be from an immutable archive -- otherwise there is no way to determine authenticity of the data.

Archiving is defined as secured storage of data and artifacts which are in accessible by authorized users in the ordinary course of business but which can be retrieved by an administrator designated by the head of function for any requirement.

Paper records/approval e-mails received by DCEO's in hard copy shall be archived in secured storage onsite or secured offsite location by DCEOs for ten years clearly labeled in archive boxes naming the Head of Function, department or division and date to be destroyed should be mentioned and accordingly data to be destroyed.

Electronic records shall be archived in accordance with Information Security Standards for access controls and in a format which is appropriate to secure the confidentiality, integrity and accessibility of the Data. For example, the PII should be kept in encrypted format during the archival period and later it should be destroyed.

An archiving period of more than Ten (10) years may be granted by exception for Data with a vital historical purpose such as Bid/RA records, contracts, Procurement transactions Logs, etc.

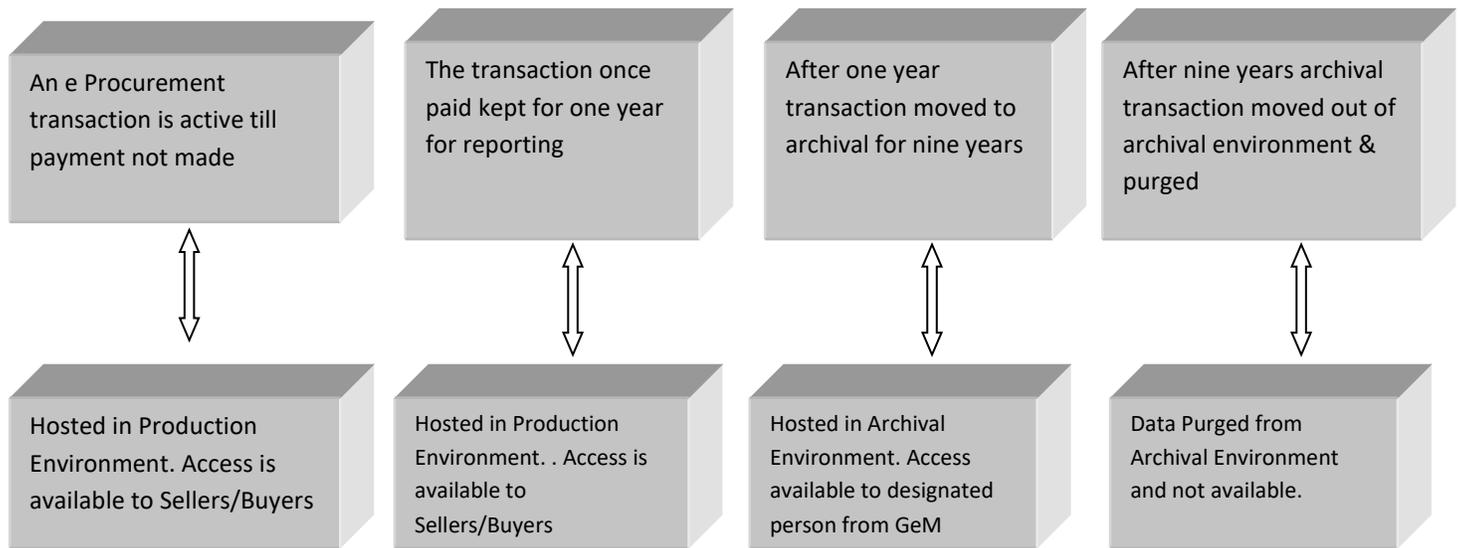
The Buyers/Sellers will request to CEO, GeM an exception to archive Documents. Such exception request shall specify the administrative, organizational and technical measures to be undertaken to ensure the confidentiality, integrity and availability of such Data.

After the archival period has expired, Data shall be destroyed properly, so that it cannot be recalled.

The Legal Department (currently headed by Addl CEO Mr. Kamra) may issue a request to extend the retention period to hold data on grounds such as litigation, arbitration or other claims, demands, disputes or regulatory action be archived.

MSP shall be responsible for implementing the retention, archiving, destruction of Data and communicating these periods to the relevant stakeholders.

Structure Diagram of Data Archival and Retrieval



Location of Archived Data

Data of GeM 2.0 is stored in NIC Cloud whereas data of GeM 3.0 is stored in Tata Cloud. As GeM 2.0 has stopped functioning from April 3,2018 so the current infrastructure provisioned in NIC Cloud should be utilized for Archival purposes. Additionally, provision for replicating copy of GeM 3.0 data should be made as shown in Table 2. Thus in NIC Cloud, two set of copies-one for Active Transactions of GeM 3.0 and another for Archived transactions of GeM 2.0 must be made, hence Infrastructure must be provisioned for setting up *TWO PLATFORMS* in NIC Cloud. Similarly, the provision of hosting active and archived transactions of GeM 3.0 should be made in Tata Cloud.

Archival data can be kept on tape or virtual tape libraries (VTL) so that it remains immutable and it should be backed up periodically.

Index and Search

An archive can eventually contain hundreds of gigabytes or more spread out across several of unique files generated in GeM. Retrieving important data months or years later would be problematic at best, so powerful indexing and searching capabilities must be an essential element of GeM archive platforms.

Indexing must be used as it will generate metadata details about each PDF file and possibly the contents of the file, and then organizes those details into a database that can be efficiently searched at a later date. Metadata may include details like a filename, description, creator, creation date, key search words, and many other items such as name of Buyer or Seller Organization, item name, etc. to meet the unique needs of GeM. The index may be stored on the archive along with the data.

RETENTION POLICY AND SECURITY

Retention is defined as the maintenance of data in a production or live environment which can be accessed by an authorized user in the ordinary course of business. For the avoidance of doubt, data used in staging, development, and testing or draft versions shall be backed up and shall not be used after 1 year and it shall not be copied into production or live environments.

Data retrieval from an archive should also be restricted to authorized personnel especially if the archive is not immutable. Credentials should be required to authenticate each user, and a detailed activity log should capture file access and track other user activities within the archive. Such security controls will reduce the chance that files are altered or deleted unexpectedly.

Archived data must often be available for retrieval over years even decades so retention is important to meet compliance and legal obligations. Some of the GeM data is sensitive so it needs to be kept in encrypted form in archival platform using AES 256-bit key encryption algorithm. Secure keys will not be shared and can only be accessed by the user.

RETRIEVAL POLICY

As said earlier, GeM 2.0 access to all its users- HOD, Buyers, DDO, PAO and Consignees and Sellers will remain open till payments made and it should be expected to complete open transactions in next five months .i.e., till September 3, 2018.

Users may require different kinds of reports such as payment status division wise, department wise, ministry wise the same should be made available for next one year so all other buttons except for Report Generation should be disabled. The access of Admin except for Super User should also be closed down after one year.

After one year, there is likely hood of different type of requests coming from Buyers/Seller/Auditors/complainants related to archived data. Requests can be related to some bid or DP/L1 related transaction. There should be automated retrieval system where requests can

be placed (login based) on 3.0 and data should be retrieved in prescribed format within 7 days and mail to requestor.

Possible report structure should be prepared so that requester can put a request accordingly. Process for the same would be as shown in Table 1.

Table 1: Retrieval Process of Archived Data

Sr. No.	Requested By	Request Mode	Approver	Report Delivery
1.	Buyer (only HoD can make request)*	Online (GeM 3.0 Login)	Auto Approved	Report will be delivered on registered email
2.	Seller*	Online (GeM 3.0 Login)	Auto Approved	Report will be delivered on registered email
3.	Third Party (Other than Registered Use such as Auditor, Complainant)	Offline (email or letter)	CEO approval required post which, DCEO	Report will be delivered on registered email
4.	GeM Internal (For litigation, arbitration, incident management etc.)	Offline (email or letter)	Admin will put automated request on system)	Report will be delivered on registered email

- Can only request their own data

DESTRUCTION POLICY

Destruction is defined as physical or technical destruction sufficient to render the information contained in the data irretrievable by ordinary commercially available means. GeM 2.0 shall maintain and enforce a detailed list of approved destruction methods appropriate for each type of information archived whether in physical storage media such as DVDs, backup tapes, hard drives, mobile devices, portable drives or in database records or backup files.

Paper documents shall be shredded using secure, locked consoles designated in each office from which waste shall be periodically picked up by security screened personnel for disposal.

RESPONSIBILITIES

MSP GeM shall be responsible for implementing this Policy and ensuring that GeM employees and MSP understand this Policy and perform the processes and procedures to execute this Policy accordingly and shall submit compliance report for this policy to the CTO,GeM.

AUDIT TRAIL REFERNCES

Audit Trail module for Bid 2.0 is available, it can provide report based on, Bid/RA Number. It needs to be expanded to provide reports between to and from dates, and Organization-wise. Similarly PDF artifacts should be retrievable as and when required. An audit module for direct purchase should also be made.

Sample Audit Report for reference is given below.

AUDIT TRAIL

Show Entries Search:

Sr. No.	Bid No	User Name	Bid Creation	Bid Details
1	GEM/2018/B/10101	dnayak@negp.gov.in	2018-02-15 13:01:00	
2	GEM/2018/B/40396	cr.meena01@gov.in	2018-01-30 14:26:00	
3	GEM/2018/B/10391	cr.meena01@gov.in	2018-01-22 15:35:00	
4	GEM/2018/B/40379	dbuyerp	2018-01-09 18:32:00	
5	GEM/2018/B/40373	dnayak@negp.gov.in	2018 01 06 16:57:00	

AUDIT TRAIL (BID NO: GEM/2017/B/23906)

[DOWNLOAD DOCUMENT](#) Bid Status: Closed

Buyer Name: SONAL MEHLAWAT	Product Name: Copy Of Laptop I7 Dell 7th Gen	Product Quantity: 4
Login Time: 2018-03-27 16:17:09	Creation date: 2017-11-17 13:33:00	Reference price: 68800
Buyer Requirement: View	Publication Date: 2017-11-17 13:33:00	Extended Date: 0000-00-00 00:00:00
Opening Date: 2017-11-17 13:33:00	Technical Evaluation: Evaluated	Final order Awarded to Seller : Mangej Kanwar /Vanshika enterprises

Evaluated By: SONAL MEHLAWAT Sellers: 7 [\(View Details\)](#)

Seller Name	Company Name	Participated On	Status
Mangej Kanwar	Vanshika enterprises	2017-11-17 15:51:00	Participated/Accepted
Vivek Bhargava	Riddhi Siddhi Marketing	2017-11-17 23:25:00	Participated/Reject
Rajiv Wadhwa	RAJU STATIONERY MART	2017-11-18 16:08:00	Participated/Accepted

Replication of GeM 3.0 Data into NIC Cloud

The data of GeM 3.0 must be replicated to Meghraj Cloud in real time basis on following servers. It should remain live for one year on Meghraj Cloud. The archival policy as outlined above will also be adopted and implemented for GeM 3.0.

Table 2: List of Servers allocated in Meghraj Cloud for Replicated data of GeM 3.0

➤ IE91GEM4P-DB1	10.247.51.32
➤ IE91GEM4P-DB2	10.247.51.33
➤ IE91GEM4P-DB3	10.247.51.34
➤ IE91GEM4P-DB4	10.247.51.35