Appx C
Ref HQ Central Comd letter No 710180/Sys/SDSC/SW dt 08 May 2024

CHECKLIST: PRE APVL STG

Ser No.	Mandatory Details	Remarks
1	Name of proj (incl ver)	**Data Management Software (DMS)**
2	Name of Sponsor	GS (Sys), HQ Central Command
3	Type of Sw (Bespoke / COTS/ Customized)	COTS
4	Brief justification/ endorsement on reqmt for devp of Sw appl	Digitization of all documents (currently in physical paper form) is reqd to be undertaken for integration with eOffice software to achieve complete automation of office wk/ procedures and DMS Sw is mandatory to execute this digitisation process. Digitization, which incl scanning & tagging, enables easy retrieval and linking/ embedding of digitized docu for ready ref, which is a highly desirable outcome. Scanning of docus to facilitate brs prepare their files/ Notings/ letters with Meta data for ingestion into eOffice, as also ensure optimization of file storage/ memory and ease of txn as email/ eOffice attachments to maint their legibility.
5	Aim & Scope Purpose incl utility, beneficiaries and tgt users)	• Digitization of all old docus/ policy files currently in physical form. A Data Management Software (Open Source Software) will be used for digitization of documents by the seller/firm carry out this digitization activity. • To undertake for integration with eOffice Sw to achieve complete automation of office wk/ procedures. • To facilitate the digitisation process DMS Sw is an integral appln to make digitised docus suitable for integration with eOffice. • All Brs of HQ Central Comd, under Comd Fmns/ RCs in Ph-I. • Digitized documents will be integrated with eOffice application through DMS.
6	To be hosted on internet/ ADN with brief justification	ADN
7	Being devp in house or through IT funds	To be procure through IT Funds.
8	Usability of proposed appls by other arms/ services/ org/ est	PAN IA
9	Hw and IT infrastructure reqd	IT HW Server
10	Brief details of content of the proposed Sw appl	Data Management Software (Open Source Software) will be used for digitized of docu by the firm to carry out this digitized activity. Digitized docu will be integrated with eOffice appl through DMS. Technical specs of the DMS is att at **Annx I.**

11	Endorsement by Head of Br/ Svc/ Fmn	Yes
12	Details of user base	All brs of HQCC and under Comds Fmns.
Addl Details (Optional in Pre Apvl Stg: Mandatory in Post Apvl Stg)		
13	Envisaged cost of entire proj incl license fees and maint	
14	Projected dt of completion incl maj timelines	
15	Brief details of Sw platform and tech stack proposed for devp of appl incl op sys dependencies (if any)	
16	Brief details of proposed network and bandwidth reqmts	
17	Brief details of OS & Sys software reqmts	
18	Brief details of proposed data security measures incl backup of data	
19	Brief details of Proposed Database Engine to be used in the Appl	
20	Detls of Sw architecture and COTS Sw proposed to be utilized	
21	Detls of proposed architecture – Centralised/ Federated/ Hybrid	
22	Brief details of proposed utilization of Public Key Infra (PKI) and Iden and Access Mgt (IAM)	
23	Technology dependencies (if any)	
24	Database reqmts	
25	Enhancement/ upgradation (incl patch mgt/ Sw updt procedure and mechanism	
26	Details of licensing (if any)	

Annexure-I to Appendix 'C'

DETAILED/FUNCTIONAL SPECIFICATIONS

Document Management System (DMS)

1. **Scanning & Capture**.

(a) The scanning solution should support distributed approach, where documents can be scanned remotely, but can be indexed & saved remotely or centrally.

(b) Solution should be able to support the capture of digital records on at least the following formats:-

(i) Images – TIFF, JPEG, GIF, BMP.

(ii) Pdf – PDF AND PDF/A.

(c) System should have capability of automatic segregation of documents/records based on Blank page or Fixed pages.

(d) System should provide an integrated scanning engine with capability for centralized and decentralized Scanning & Document Capturing. The scanning and document management solution should be from same OEM so as to provide an integrated solution right from capture to archival of documents.

(e) The scanning interface should have a GUI based template definition module.

(f) Template definition for document capture through scanning that contains General information, Data class and fields, Folder, and Document information to enable standard scanning across distributed location.

(g) Solution shall support Bulk Import of image and electronic documents.

(h) The Scanning solution must support both TWAIN as well as ISIS scanner. The Scanning solution should not be make & model dependent wrt scanner.

(j) The scanning software should be able to import new documents from File Servers.

(k) The scanning software should automatically detect white pages and remove them during scanning.

(l) The scanning software should be able to separate documents in the batch automatically based on batch code, or an identifier.

(m) Provide Image processing libraries that support image enhancements such as changing contrast, zoom in/out, cleaning etc and other imaging features like compression and extraction etc.

(n) The software solution should include the Rubber band feature for the extraction of the data using OCR technology so that user can mark a zone on image at runtime during scanning stage & map the extracted data with the indexing field.

(o) Solution must provide Colour / Grayscale / Black and White scanning.

(p) System should have the capability of all the standard Image Operations such as:-

(i) Correcting format/ compression not proper.

(ii) Skew / De-skew.

(iii) de-speckle.

(iv) Rotate.

(v) black border.

(vi) Delete area.

(vii) Zoom-in/ Zoom-out.

(viii) Password protected masking of specific area of image.

(ix) Halftones and intrusive background colors.

(x) Fix lines and shapes in scanned images.

(xi) Carry out cropping and cleaning of images like removing overall noises around the text, removing punch hole mark etc.

(q) Solution must provide recognition capabilities through OCR (Optical Character Recognition) for Bilingual (English & Hindi).

(r) The Scanning product should have inbuilt capability to do a full-page OCR and also convert the images to searchable forms like Searchable PDF.

(s) System should have the ability to provide Compression of scanned image files in TIF Format.

(t) Scanning system should have the functionality of saving scanned images in the repository DMS platform.

(u) System should provide an imaging/scanning application with no limitation on the number of scanning pages

(v) The System shall support the scanned documents to be temporarily archived before uploading to the central server.

(w) Solution must support facility to scan multiple pages into batches for auto/manual processing.

(x) Minimum resolution for scanning should be 300 x 300 dpi or better.

(y) Delete, re-scan and insert pages into document before committing to disk.

(z) Produce PDF, PDF/A file apart from TIFF file format.

(aa) Each document should have MP 5&6 watermark.

2. **Indexing.**

(a) The System shall provide facility to index at multiple levels – Batch, folders, files, page and documents on user-defined indexes like department, office type, file number, year etc.

(b) The System shall support Automatic full text indexing for Text search.

(c) It should support Manual/Automatic indexing using OCR, CSV data from other applications.

(d) The scanning software should provide the ability to define different indexing queues, which includes filters to show specific documents that matches a specific criteria (batch number mask, priority, cabinet… etc).

(e) The system provides the capability to perform indexing of documents and categorization.

(f) System should have the functionality to index the multiple versions of a document for the "full text" search.

3. **Versioning.**

(a) System should provide a version control facility to maintain different version of any document throughout the lifecycle of the document.

(b) Every document version must be able to have its own individual access control rights and metadata values that can be changed without affecting other versions of the same document.

(c) System should support versioning of metadata with each document version.

(d) The system shall support versioning of documents with facility to write version comments.

(e) The system shall allow Locking of documents for editing and importing it back into the system through check-in/Check-out features.

(f) System should have functionality to allow "read only" access to the document which is already checked-out by other user.

4. **Document Management.**

(a) System should provide a hierarchically based file plan structure with the ability to define multiple levels.

(b) The hierarchy should offer a strong inheritance model, which includes access controls, metadata definition, and retention period definition. The inheritance model must be granular to the record level.

(c) System should provide offline capabilities allowing users to work offline and then synchronize their edited or newly created documents with the repository.

(d) The system folders should be easily added to the user desktop, shortcuts should be have exactly as standard folders where users can open them, drag and drop contents etc.

(e) System shall provide facility to link cross-related documents. The system shall allow locking of documents for editing and importing it back into the system through check-in/check-out features.

(f) When editing a document; the system must support check-in/checkout mechanism to ensure only one user can change the document at a time.

(g) Users must be able to continue viewing the document when it is checked out. The system must indicate the status of a checked-out document with a visible symbol and an attribute to indicate who checked out this document.

(h) System should provide a hierarchical view of the classification scheme for easy browsing by users.

5 **Search / Retrieval.**

(a) System can facilitate search of documents by object attributes / properties and/or full text.

(b) System should allow users to search for content via selection of properties and/or words, phrases, strings etc.

(c) Indexing and retrieval based on metadata must be provided for all file formats and document types.

(d) Search must be able to be conducted extensively across folders and distributed repositories as a standard feature.

(e) System should have the functionality to automatically index the document after checking in for purposes of full text searches.

(f) The system shall support saving of search queries and search results.

(g) The system shall support search for documents or folders on document or folder on profile information such as name, created, modified, keywords, owner etc.

(h) Provide searching facilities based upon: Any metadata field (content, author, source, keywords, etc.)

6. **Metadata.**

(a) Solution should not have any limitation on defining custom metadata fields.

(b) System must support multiple types of metadata.

(c) System should support a class hierarchy that supports inheritance.

(d) System must support metadata that can have multiple values.

(e) System should support the functionality to define a default attribute value for metadata.

7. **Annotations.**

(a) Solution shall support comprehensive annotation features like highlighting, marking text, underlining putting sticky notes on documents, and support for text and image stamps , redaction etc.

(b) The system shall support automatic stamping of annotations with user name of putting annotations.

Workflow

8. **Workflow Management System.**

(a) The system should have the capability to set automatic reminders and alerts to concerned users.

(b) The workflow solution should support linking of documents across DMS / workflow solutions.

(c) System shall have an In-built editor for entering the notes.

(d) The system shall allow various transaction reports in excel format.

(e) Should have in-built Audit trail mechanism.

Reporting

9. Solution should have the capability to create ad-hoc reports as and when required.

User Interface

10. User Interface should be capable of:-

(a) Administration of all the components of the solution should be accessible from the single interface.

(b) The web interface must support Internet Explorer, Chrome and Firefox.

(c) Users must be able to view documents without any browser plug-ins requirements.

(d) The system must enable a user to save their work directly into the repository from within the Microsoft application interface.

(e) The system shall provide the standard file hierarchy structure of folders and sub-folders to allow users and groups of users to manage and organize their documents.

(f) The system must support a configurable session timeout which forces a user to log back in after a period of time to ensure security. This shall be accomplished without losing user's work.

(g) System should support "Drag and drop" bulk file content import.

(h) Users should also be able to edit any file type in its native application directly from the system desktop folders as if it was on a standard windows folder.

(j) System shall provide the features to link any type/ format of documents while providing capabilities to automatically update the version of the linked document whenever the original is updated.

(k) Document view shall have the provision to draw a line, provision to highlight or hide certain text by drawing line rectangle and solid rectangle.

(l) The system shall provide facility to define custom templates for documents.

11 **Security.**

(a) The system shall support SSO (Single Sign-On) integration.

(b) The system shall allow the definition of sub system administrators such that only certain administrative functions are assigned to different users or groups of users.

(c) The system shall support multiple levels of access rights (Delete/ Edit/ View/ Print/ Copy or Download).

(d) If documents are secured, the presence of documents should not be visible when a user without access rights undertakes any searches on the document store.

(e) It should be possible to assign the access levels to individual users or groups of users.

(f) System should have ability of defining document classification & security levels of documents e.g. 1. Classified, 2. Confidential etc.

(g) The system must support security group. Provision should be there to assign access to these groups.

(h) Provision must be there to define security at each of the levels of cabinets, folders, subfolders, document and process level, document components etc.

(j) The system shall support extensive Audit-trails at document, folder and for each activity done in the system by any user. Audit trail must contain critical information including user name, date and time.

(k) System shall have capability to be queried and generate reports for Audit.

(l) System should provide security to prohibit unauthorized users from viewing, forwarding, emailing, copying, downloading and printing of unauthorized document or any portion of it.

(m) The system should print User Credentials (only User Name), Date and Time on each printout taken from the DMS.

(n) System should Lock user after several incorrect password attempts.

(o) Since the DMS is 100% web based solution which will not require any Licensed Software for Web Browsers, to be installed on user's machine, however the vendor must ensure that well known Open Web Application Security Project (OWASP) vulnerabilities associated with a web application are addressed within the DMS software.

(p) **Database Security**. The Vendor must ensure security of data at various stages of data handling :-

(i) The data and user credentials must stored in any encrypted form within the Database.

(ii) Security of data during transit between client (browser) and application server must be secured by usage of secure Https.

(q) **Backup/Disaster Recovery (DR)**. To implement strategy for foolproof and reliable backup and recovery, following techniques will be included in DMS solution to comply Backup and Disaster Recovery mechanism by the Vendor, in consultation with the User according to existing DR policy of the department:-

(i) Provision for incremental Backup.

(ii) Provision for daily Backup.

(iii) Provision for full Backup.

12 **Product Authenticity**. DMS should be enlisted in Gartner or Forrester.

13 **Integration.**

(a) The System shall support integration based on standards such as XML.

(b) The System shall support message based collaboration based on standard network protocols such as HTTPs.

(c) The System shall support SMTP based integration with Email Servers.

(d) The System shall support Web services based integration & should have the capability to interface with industry standard web services through simple interfaces.

(e) The System shall support Web based interfaces.

14. **Architecture.**

(a) System should be platform independent and should support Linux and Windows.

(b) Solution should be multi-tier solution having centralized database, web and application server with support for clustering.

(c) The system should store only index information in database while images & documents should be stored in separate file server duly encrypted using AES 128 or higher/3DES.

(d) **Software Devp Life Cycle Process**. The proposed DMS solution must comply to Software development life cycle as per ISO/IEC/12207:2017 standards.

(e) **Secure Coding**. Secure coding practices are key to ensure that vulnerabilities are not introduced within the software during the development phase. The coding language should be based on open standard to achieve interoperability, portability and continued viability of security measures. This would also make it easy for the designed system to corroborate with other solutions. Best practices for secure coding should be incorporated by the User.

15. **Administration.**

(a) The system shall have administration module (graphical user interface) for the complete management of system.

(b) The system should have the capability to configure reminders and alerts to concerned users & administrator based on metadata.

16. **Document View.**

(a) The System shall support viewing of Image documents - No third party viewers should be there for viewing of scanned images.

(b) The proposed system should support viewing all types of electronic files, including MS Office, Tiff, JPEG, BMP, PDF without having the original application installed.

(c) The system shall facilitate zoom-in/zoom-out, zoom percentage and Zoom lens to zoom in on a part of image and other image operations like Invert, rotate etc.

(d) Support archival & view of PDF/A format documents (open ISO standard for long term archival of documents).

(e) The System shall support for viewing documents in native application.

(f) The system shall provide facility of putting text, graphic and image annotations on scanned document pages.