



Chapter III

User Management

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3.1 Inadequate validation controls during registration of users

Input Control

The online bidder enrollment form had provision for enrolling suppliers of goods and services, and assigning them login ID/ password for logging into the application software. The system generates unique user ID for each user. For two factor authentication, the user has to register his Digital Signature Certificate (DSC) with the system. On expiry of the DSC, the user must again register the new DSC in the system. In this process, the DSC details like username, user id, serial number of DSC, thumbprint, public key hash, validity date *etc.*, are recorded by the system.

3.1.1 Registration of incorrect DSC/ mapping of same DSC with multiple bidders

Input Control

Audit analysed the names of the bidders and the names of the holders of the DSC which the bidders had registered, and noticed that out of 1,751 bidders, in 1,120 cases the names did not match and the same DSC had been mapped to multiple bidders. This indicated that the name of the bidder had not been validated at the time of registration of DSCs used by the bidder.

Due to the absence of this validation control (verification by a Departmental user in the system), the DSC used by the bidders did not have the essential attribute of non-repudiation. A bidder could potentially disown any bids or inputs submitted into the system on the grounds that the action had not been performed by him, since the DSC used to digitally sign off on such actions was not registered in the name of the bidder or was mapped to multiple bidders in the system. This was a major deficiency in the e-Procurement system, given the nature of its functions.

Department replied (December 2023) that since Certifying Authorities issue DSC to individuals with different alias names and since individuals authorised to bid on behalf of a company may change over a period, mapping the names of the bidders and the names of the DSC holders was not feasible.

However, the fact remains that matching the DSC details with the bidder's identity is crucial to prevent impersonation or unauthorised actions. The system should not permit registration of DSC without first validating that the name of the bidder matches the name of the DSC holder, to uphold the essential attribute of non-repudiation.

3.1.2 Absence of application control to verify the validity period of DSC used by bidders

Input Control

DSCs were mapped to bidders and each DSC has a defined validity period, as specified by the DSC Certifying Authorities. In order to uphold the essential attribute of non-repudiation, the e-Procurement system should have had application control to verify the validity of the DSC, when a bidder sought to digitally sign inputs into the system.

Audit noticed that such an application control had not been implemented in e-Procurement system. This was evidenced by the fact that the database had 23 instances in which bidders had uploaded bids/ submitted inputs into the system after the date of expiry of validity of their DSCs. This was a major deficiency in the application controls implemented in the system.

In response, Department admitting the fact, stated (December 2023) that validity checking of DSCs was being carried out at the time of user logging into the system. The response was not tenable as the instances noticed by Audit clearly showed that the validity of the DSC had not been verified by the system.

3.2 Deficiencies in application control to correctly record PAN for registered bidders

General Control

As per functional requirement specification of the system, the online user registration forms shall clearly indicate which fields are mandatory and validation controls shall be implemented to ensure that all the mandatory fields are filled with valid and relevant data by the user. Bidders should be registered with correct Permanent Account Number (PAN) issued by the Income Tax Department, Government of India and system should ensure that each unique PAN recorded in the system is mapped to the concerned bidder only, and not to multiple bidders registered in the system.

3.2.1 Recording invalid PAN during registration of bidders

Input Control

As per design of the PAN, the fourth character of PAN represents the status of the PAN holder. C stands for Company, P for Person, H for Hindu Undivided Family (HUF), F for Firm, A for Association of Persons (AOP), T for AOP (Trust), B for Body of Individuals (BOI), L for Local Authority, J for Artificial Juridical Person and G for Government. If any other letter presents in fourth character of PAN, it is invalid. Further, as PAN was a mandatory field, the data field should not be permitted to be left blank at the time of registration of the bidder.

Audit analysed the tenderer/ corporate tenderer profile table of the system and noticed that there were 80,304⁹ users registered. Out of these 80,304 users, the PAN of 154 users as recorded in the table was either blank or invalid, as fourth character of the PAN did not belong to the set of permissible letters.

Out of these 154 users having blank/ invalid PAN, 39 users had been irregularly permitted to submit bids in 600 tenders and in 11 tenders, had even been irregularly awarded the contract.

Thus, GePNIC had deficiencies in validation controls to mandate entry of PAN and to verify the correctness of the PAN data entered in the concerned data field, during registration of the bidders.

This deficiency resulted in the material risk of participation of the same bidder with multiple bids in the same tender, and consequent risks of award of contract on the basis of competitive bids which had all been submitted by a single bidder using different user IDs.

3.2.2 Mapping the same PAN to multiple user IDs during bidder registration

Input Control

Permanent Account Number (PAN) is a unique number issued by the Income Tax Department to various persons like individuals, HUF, company, BoI, Government *etc.* Therefore, each bidder in the user master table should have only one PAN and multiple bidders should not be registered with the same PAN.

Out of 80,304 bidders registered in the system, Audit analysed the bidder data and their PAN and noticed that in case of 25,109 bidders, the PAN number was not unique, *i.e.*, the same PAN number was also found mapped to other bidders (ranging from 2 to 212) in the database.

Out of these 25,109 bidders having non-unique PAN,

- 10,124 bidders had submitted 2,82,229 bids for 1,55,235 tenders.
- 1,156 bidders had been awarded contract for 4,347 tenders valued at ₹ 11,694.36 crore.
- The above included 29 bidders with the same PAN (but different user IDs) who had submitted 88 bids (ranging between 2 to 4 bids) in the same tender, on 39 occasions. Due to lack of validation controls to prevent duplicate PAN mapped to multiple bidders, these 29 bidders had submitted 2 to 4 bids in the same tender, as illustrated in an example below:

⁹ There are 80,304 bidders in the bidder profile tables against 80,310 bidder users in the user master table because 6 bidder users did not have records of their profile data.

Case Study

Multiple bidders mapped to the same PAN and participating in the same tender

1. A total of 13 bids were submitted for the tender “Expression of Interest for selection of authority engineer for construction of four lane dedicated coal corridor from Bankibahal (coal mines) to Bhedabahal (Sh-10) from 0/000 to 30/811 km”. In these 13 bids, two bids were submitted by bidders having different user IDs but the same PAN. However, without rejecting the bids received from the common bidder, the TIA considered the bids as valid and awarded the contract to one of the two bids, which was determined to be L1. The reason for considering the two bids from different user IDs but having the same PAN as valid during evaluation of bids, was not found on record.
2. A total of three bids were received for “Engagement of transport contractor for transportation of different seeds for the period from 01 January 2022 to 31 December 2023 for Bhubaneswar zone”. In these three bids, two bids were submitted by bidders having different user IDs but the same PAN. However, without rejecting the bids received from the common bidder, the TIA considered one of the two bids as valid and went ahead with the bid evaluation process. The reason for considering one of the two bids from different user IDs but having the same PAN as valid during evaluation of bids, was not found on record.

The Department had not conducted any review to identify and eliminate such user IDs which had been mapped incorrectly to PAN not belonging to the user. There was no application control to flag and prevent mapping of an already registered PAN to a new user at the time of bidder registration.

This deficiency in the application control to prevent mapping of same PAN to multiple users resulted in the material risk of participation of the same bidder with multiple bids in the same tender, and consequent risks of award of contract on the basis of competitive bids which had all been submitted by a single bidder using different user IDs.

3.2.3 Manual entry of incorrect PAN by bidders during submission of bids

Input Control

As per system design, a copy of profile of bidder details like company name, business nature, mobile number, PAN, registration number, created date and address of bidder is captured in a separate bidder profile table against each bid during bid submission by the bidder.

Audit noticed that instead of auto-populating the PAN from the master data for the user as recorded during bidder registration, the system permitted manual entry of PAN once again during the time of submission of bids.

This deficiency in the system design had resulted in 244 bidders having manually entered different PAN numbers during bid submission in the different tenders that they had participated in.

Department accepted these above observations and stated (December 2023) that integration of Goods and Services Tax Number (GSTN) with e-Procurement system is being planned, and that validation controls for PAN will be implemented once that integration is in place.

Recommendation

Government may implement appropriate validation controls for user access management during the registration of bidders, to ensure that

- Valid DSCs, PAN, dates *etc.*, are entered into the system in compliance with executive instructions.
- The essential attribute of non-repudiation is upheld in the system.