Government of India
Ministry of Electronics and Information Technology
National Informatics Centre

Annexure-IV

Annual Work Report
Part A
SELF ASSESSMENT BY THE OFFICER REPORTED UPON

1. Name : Shri VIKRAM SINGH CHOUDHARY

2. Designation : Scientist-B

Annual Work Report for the period 01/01/2015 to 31/12/2015

3. Area of S&T Function

- Web Application Development using agile methodologies.
- Test Driven web application development
- Application Security Audit and OWASP Secure Coding practices.
- Web Application Design and relational database design
- Web Application Development, Coding and Implementation
- Migration of existing applications to Cloud Hosting Environment.
- Technical Support and Coordination
- Standarization/Productization of Applications.

4. Brief Description of S&T work function

- Migration and hosting of PQSoft Application on NIC Cloud Servers.
- Maintenance of DGCA's Online Examination System for Pilots.
- Design , development and implementation of PMO/VIP References Monitoring System for M/o Civil Aviation.
- Design , development and implementation of Assurance Management and Monitoring System for M/o Civil Aviation.
- Implementation of NIC's e-Office suite in M/o Civil Aviation.
- Productization/ Standardization of PQSoft for Central Govt. Ministries.
- Implementation of NIC's e-Visitor Management System(e-VMS) in M/o Civil Aviation.
- Cloud Hosting of Website of M/o Civil Aviation developed using NIC CMF Framework.
- Technical Support provided to existing application viz. E-Office, COMDDO, PQSoft , SPARROW , PRISM etc.
- Coordination with Firewall, VPN and Cloud teams for hosting related activities.
- New Feature Addition to PQSoft Application.

5. S&T output indicators for assessment and measurement of work function (as appropriate to the officer)

Sl No	Product Link	Sub Category	Details
1	Knowledge Product Link	Reports related to Life Cycle Management of ICT systems	- Prepared SRS, DB design documents for development of PMO/VIP References Monitoring System and Assurance Monitoring System for M/o CA.
2	Technology Product Link	Process know-how	- System study of existing method of monitoring of letters/references in M/oCA. - System study of existing method of monitoring of assurances by parliament section of M/o CA.
3	ICT Services Product Link	Design, development and hosting of portals, web applications and websites for information dissemination	Design, developed and hosted two applications during the period for M/o Civil Aviation. Hosted MoCA CMF Site developed by NIC CMF Team.
4	ICT Infrastructure Product Links	Management and prevention of security threats/ vulnerabilities in Cyber Space	Undertaken Security Audit of PQSoft Application and PMO/VIP References Monitoring Application
5	Technology Product Link	Technology transfer and productization	Worked upon standarization of PQSoft application as per the structure and working of central govt. ministries.
6	S and T Management Product Link	Cabinet Note, EFC/SFC/RFP Notes/tender documents prepared for S and T and ICT schemes	Participated in preparation of draft RFP for BCAS e-Governance applications.
7	S and T Management Product Link	Technical support - internal and external	Technical support and coordination for applications implemented in M/oCA viz. eOffice, PQSoft, SPARROW, VIP Ref, COMDDO etc.
8	S and T Human Resource Product Link	No. of training /training mandays	Gave training to officials of M/o CA on working of applications for e-File, PQSoft, e-Tour, SPARROW and COMPDDO.
9	S and T Human Resource Product Link	Capacity building for implemenation of e-Governance projects (Roll out services)	- Training imparted to EMD Managers of e-Office , Mo CA in coordination NIC e-Office Division.
10	Technology and Tools Product Links	Technology exploration and adaptation for e-Governance needs	- Explored NoSQL database, event driven architecture based framework for using them in NIC application for delivering high performance solutions .

11	Technology and Tools Product Links	Innovative use of existing tools / technology, System/sub-system components design	- Studied about application caching mechanism for improving application performance and applied the same in one of the in-house developed application. - Studied about test driven development framework and developed an application on it. Code Re-use and extensibility principle were in designing applications. - Applied agile and test driven development methodology in application development.
12	ICT Services Product Link	Design and Development of Technology Solutions	Designed and developed two applications for M/o Civil Aviation: 1) VIP/PMO References Monitoring System. 2) Assurance Management Monitoring System
13	ICT Services Product Link	User Acceptance and Testing	For Both application mentioned above, prepared test plans and acceptance requirements to perform module wise UAT. Application was released for Beta Testing for a month and feedback was taken from users and necessary changes were made to application.
14	ICT Services Product Link	Deployment of Technology Solution	Successful deployment of following three websites/applications on NIC Cloud: 1. VIP/PMO References Monitoring System. 2. Assurance Management and Monitoring System 3. Website of M/o Civil Aviation redeveloped on NIC CMF Framework.
15	ICT Services Product Link	Capacity Building programme	Officials of CW Section and Parliament Section were trained to manage administrator account of VRMS and PQSoft-AMS Module. Officials of IT Section were trained to manage publisher role of MoCA CMF Site.
16	ICT Services Product Link	e-Governance Project implementation	- Successful Implementation NIC e-Office Suite in M/o Civil Aviation. - Successful implementation of NIC e-Visitors Management System in M/o Civil Aviation.
17	ICT Services Product Link	Maintenance and enhancement of e-Governance Projects	Following new features were added to PQSoft application during the period: - Integration with NICEmail for email notification and Save On Email Feature. - Integration NIC LDAP Server for authentication through NICEmail credentials. - Pagination added in search questions page. Maintenance of VRMS and AMS applications were undertaken by undersigned and several new features were added as per the user's requirements. Maintenance of DGCA's Online Examination System for Pilots under guidance of NIC DGCA Team.
18	ICT Services Product Link	Preparation of Technical Documents / Manuals	- Preparation of SRS and DB Design document for following in-house developed applications: 1. VIP/PMO References Monitoring System. 2. Assurance Management and Monitoring System - Prepared a document containing a step-wise procedure to host a website on NIC Cloud.

6. Enumeration of major outputs from S&T Function

Sl No	Product Link	Sub Category	Units
1	Knowledge Product Link	Reports related to Life Cycle Management of ICT systems	2
2	Technology Product Link	Process know-how	2
3	ICT Services Product Link	Design, development and hosting of portals, web applications and websites for information dissemination	2
4	ICT Infrastructure Product Links	Management and prevention of security threats/ vulnerabilities in Cyber Space	2
5	Technology Product Link	Technology transfer and productization	1
6	S and T Management Product Link	Cabinet Note, EFC/SFC/RFP Notes/tender documents prepared for S and T and ICT schemes	1
7	S and T Management Product Link	Technical support - internal and external	1
8	S and T Human Resource Product Link	No. of training /training mandays	5
9	S and T Human Resource Product Link	Capacity building for implemenation of e-Governance projects (Roll out services)	2
10	Technology and Tools Product Links	Technology exploration and adaptation for e-Governance needs	3
11	Technology and Tools Product Links	Innovative use of existing tools / technology, System/sub-system components design	2

12	ICT Services Product Link	Design and Development of Technology Solutions	2
13	ICT Services Product Link	User Acceptance and Testing	2
14	ICT Services Product Link	Deployment of Technology Solution	2
15	ICT Services Product Link	Capacity Building programme	5
16	ICT Services Product Link	e-Governance Project implementation	2
17	ICT Services Product Link	Maintenance and enhancement of e-Governance Projects	4
18	ICT Services Product Link	Preparation of Technical Documents / Manuals	3

7. Innovation content of work done (about 100 words)

- Designed a work-flow based web application to monitor the status of VIP/PMO References of the ministry at various levels of the ministry's organizational hierarchy. In effect, it allows an officer to monitor status of references pending under his office and his subordinate offices. Thus, making a decentralized status monitoring system.

- Designed user friendly interfaces and used graphical charts to display information in a concise and easy to understand format.

- Used application caching using redis to improve application performance.

- Applied OWASP Secure code practices for application security.

- Standardization of PQSoft application for make it generic product for processing parliament question by central govt ministries.

- Implementation of e-Office in M/o Civil Aviation thus paperless working environment and faster decision making

- Implementation of NIC e-Visitors Management System in M/o Civil Aviation.

8. Major impact reported during the financial year (if any) for work done during previous three years.

9. Scientific and technological methodologies used in the work function

- Agile web application development
- Object Relational Mapping tools like hibernate etc.
- Responsive Web Design
- Test driven software development
- Application load testing to measure application performance in high volume of users.
- Use of Integrated Development Environment like Eclipse etc

10. Suggestions (if any) for work functions based on new or emerging scientific principles

- Use of Aadhaar based authentication for delivering public services through ICT based systems.
- Adoption of Cloud based technologies in hosting and storage related activites.
- Use of DevOps tools to reduce deployment cycle

11. New technologies if any introduced by the officer in work plan/functions

- Cloud based technologies and working environments.
- Agile Web Application Development
- Open Source Technologies

12. Any other highlight of special S&T content in the work

13. One page summary of the scientific and technical elements in the work done during the financial year

I have developed and implemented following two applications during the period. and both applications are currently being used by the officials of M/o Civil Aviation.
1) VIP/PMO References Monitoring System
2) Assurance Management and Monitoring System
Following major activities were performed
- Requirement gathering for two applications developed during the period.
- Problem identification and preparation of SRS
- Creation of DB design document and UI Design
- Application Development and Coding using open source technologies
- Testing and UAT
- Implementation of the application in M/o Civil Aviation

I at NIC Cell, M/o CA have been involved in maintaining cloud account of the M/o CA and have successfully hosted three application on the cloud and are running smoothly.
I am also worked upon standardization of PQSoft application, so that , it can be replicated it other ministries for its purpose.
I have also worked upon DGCA Online Examination System for Pilots under guidance of NIC DGCA Team and successfully delivered my assignments.

Successfully implemented two centralized applications namely, e-Office and e-Visitors Management System. Both applications are being successfully used by the officials for M/o Civil Aviation.

In addition to above, I am continuously maintaining the PQSoft Application, being used for preparing replies to parliament questions at M/o CA and several new feature were added to the application during the period.

Apart from this, I am involved in providing continuous technical support to different applications like e-Office and its sub-modules, COMPDDO, SPARROW, MoCA CMF Website etc.

14. Quantified S&T outputs as per the selected indicators (Annexure to Annual Work Report)

Total Score : 82