



Intel Fortran compiler & OpenMPI version 1.4.2 were used for porting of this software.

Mathematica is successfully installed & configured on Scientific Linux version 6.1 based server.

G) Training and hands-on sessions conducted at User Hall:

Following training and hands-on sessions were conducted at User Hall, Computer Division:

1. XRD Techniques on 27th Jan 2012.
2. Practical Session for TSO between 31st Jan to 2nd Feb, 2012.

Reported by: Alpana Rajan (alpana@rrcat.gov.in) and Anil Rawat

I.2: Development of Information Systems at RRCAT

A) Re-engineering of database structure and code of CAREER and EAGLE software for APAR 2011-12:

Web based software CAREER- Comprehensive Annual Report Evaluation with Encrypted storage & Retrieval has been re-engineered and appropriate design changes have been made in the database structure to implement new formats introduced for the APAR period 2011-12.

To access year-wise APAR details, the data has been re-organized by maintaining history of employee details to reflect organizational changes and personal information of individual employee for the respective APAR periods. The application software has also been enhanced as per the design changes and enhanced editor has been provided for filing APAR.

Software was modified for filing and assessing APARs for following four different formats:

- (i) For all Scientific Officers in the Grade Pay of Rs. 10000 and above
- (ii) For all Scientific/Technical Officers in the Grade Pay of Rs. 5400 & up to Grade Pay of 8900
- (iii) For Scientific Officers (Medical)
- (iv) For Technical Staff from GP Rs. 4800 up to GP Rs. 7600 including SO (B) and TO (B), paramedical staff, Nurses, Pharmacists, etc.

Following two options are provided by the software for filling the APAR by Individual Officer within the time period set by Recruitment Section:

1. Employees can print blank format of 'Part-I : Personal Data', 'Part-II : Self Appraisal' and submit to Reporting Officer after filling them manually.

2. Employees can print APAR 'Part-I : Personal Data' and prepare & print 'Part-II : Self Appraisal' by using the software. Employee can only view their APAR details once they are 'Submitted for Assessment'.

Blank formats of 'Status of accomplishments against tasks/ targets given in previous APAR' and 'Plan of Work for the next year' can be printed and filled manually for submission to Reporting Officer.

Reporting and Reviewing Officers can view the APAR details (Part-I & Part-II) of employees (if submitted online) for whom s/he is Reporting or Reviewing Officer.

EAGLE software – Electronic Assessment Grade Logger and Editor software was re-designed, developed and implemented for assessment, evaluation and printing as per new formats of APAR for 2011-12.

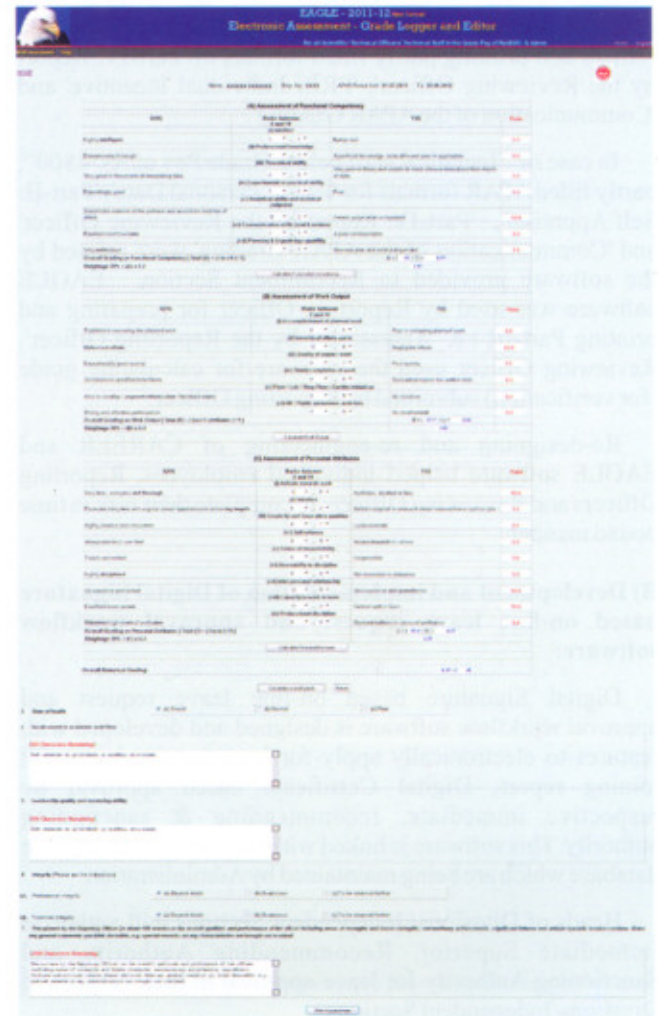


Figure I.2.1: 'Part-III : Assessment by Reporting Officer' for Scientific/ Technical Officers in the Grade Pay of Rs. 5400 & up to Grade Pay of Rs.8900



Format specific assessment attributes with weightage criteria for calculation of grade are stored in the database for four different formats. These are retrieved and rendered at runtime for assessment of APARs depending on the designation and grade pay of individual employee. To achieve this, four types of calculators have been developed and are called automatically by the software. Thus Reporting Officers and Reviewing Officers are un-burdened from the botheration of choosing correct format for assessment of individual official.

The software was used by all Scientific and Technical Staff on RRCATInfonet for the APAR period 2011-12. The software was also used by Reporting officer for preparing and printing 'Part-III: Assessment by the Reporting Officer' and calculation of grade based on different assessment parameters. Reviewing Officer used the software for calculating grade (for verification) submitted by Reporting Officer and printing partly filled formats of 'Part-IV: Report by the Reviewing Officer', 'PRIS Individual Incentive' and 'Communication of the APAR Grading'.

In case of "Technical staff below Grade Pay of Rs. 4800", partly filled APAR formats for 'Part-I: Personal Data', 'Part-II: Self Appraisal', 'Part-IV: Report by the Reviewing Officer' and 'Communication of the APAR Grading' were printed by the software provided to Recruitment Section. EAGLE software was used by Reporting Officer for preparing and printing Part-III i.e. 'Assessment by the Reporting Officer'. Reviewing Officer used the software for calculating grade (for verification) submitted by Reporting Officer.

Re-designing and re-engineering of CAREER and EAGLE software helped individual employees, Reporting Officers and Reviewing Officers to complete their task in time bound manner.

B) Development and implementation of Digital Signature based on-line leave request and approval workflow software:

Digital Signature based on-line leave request and approval workflow software is designed and developed with features to electronically apply for leave, revise leave, fill joining report, Digital Certificate based approval by respective immediate, recommending & sanctioning authority. This software is linked with HR database and Leave database which are being maintained by Administration.

Heads of Divisions/ Independent Sections will authorize Immediate Superior, Recommending Authority and Sanctioning Authority for leave approval in their respective Divisions/Independent Sections.

PDF file of leave application/ joining report is generated in the prescribed format with date and time stamp of the application along with email notification to concerned

authorities for approval.



Figure I.2.2: Leave approval using Digital Signature Certificate

Approval of leave/ joining report is done using Digital Signature Certificate (DSC) issued to respective approving authorities by PKI (Public Key Infrastructure) setup created using Oracle Certifying Authority (OCA). After digital approval, the Digital Signature Certificates are stamped in the PDF file at respective places. All the information related to leave application, joining report and approval is maintained in log files.

RAJIA RAMANNA CENTRE FOR ADVANCED TECHNOLOGY, INDORE APPLICATION FOR LEAVE

Application No: 100001 Part 1: To be completed by the applicant

1. Name: D.K. Bhargava 2. Designation: SDC 3. Div./Sec: CD/CD 4. C.No.: 487 5. Tel. No.: 8981

6. Details of leave applied for

S.No.	Nature of Leave	From	To	No. of days	Compensation / Shift diff.	Prerel/ Suffix
1	Commuted Annual Leave	01-Jun-2012	08-Jun-2012	8	-	2(F/2(S))

7. No. of Occasions of leave already taken during the calendar year: 0

8. Grounds on which leave is applied for: Medical 9. Leave Address: D-29/1, RRCAT Colony, P.O. CAT, Indore

10. Whether availing LTC. If yes please indicate the place: Home town (Place): Other than Home Town (Place):

11. Whether LTC advance required? No [X] Yes [] 12. Whether leave salary advance required? No [X] Yes []

Note: 1. If place of visit neither home town or other place is not indicated, then applicant will not be entitled to claim LTC.

Immediate Superior Signature & Date: K.K. Bhargava (C.No.: 487), SDC
 Applicant Signature: Applied by D.K. Bhargava on 20 Jun 20 14:55:12 IST 2012

Signature valid: Digitally signed by user, Date: 20/06/2012 14:55:12 IST, Reason: Leave Approved by D.K. Bhargava, Location: RRCAT, Indore

PART II: FOR USE IN OFFICE

1. Suitable action will be taken regarding the custody of papers, equipment, stores, etc before the applicant proceeds on leave.
 2. Compensatory/Shift diff is due to the applicant.
 3. There is reasonable prospect of the applicant returning to duty on the expiry of half day leave/commuted leave/leave not due.
 4. Recommendations: Recommended [X] Not Recommended []

Orders: Recommended [X] Not Recommended []

By: Name: S.S. Taneja, Design: SDC, Date: _____
 By: Name: Jitendra, Design: SDC, Date: _____

Signature valid: Digitally signed by user, Date: 20/06/2012 14:55:12 IST, Reason: Leave Approved by S.S. Taneja, Location: RRCAT, Indore
 Signature valid: Digitally signed by user, Date: 20/06/2012 14:55:12 IST, Reason: Leave Approved by Jitendra, Location: RRCAT, Indore

Figure I.2.3: Digitally signed leave application form



After digital approval of leave application, the leave details are transferred to Leave Management Software used by Establishment Section for further processing and updation of leave balances.

C) Design and development of software for calculation of M component of PRIS-I:

Software has been designed, developed and implemented for automatic calculation of M component of PRIS-I for scientific and technical officers. The software is linked with Personnel System to retrieve promotion details of individual employee, which act as base information for calculation of M component. Report containing calculated values of M component of PRIS-I is generated in specific format for approval by concerned authorities. Automated procedure is developed for transfer of increment details to Payroll Software for payment. This software module is developed in Oracle 10g RDBMS.

Additional web based software module has been developed for providing PRIS-I (M) details of all Scientific and Technical Staff to PRIS-I sub-committee members. The details are also made available to Division/ Independent Section heads (for respective group) on RRCATInfonet. Division-wise information is generated in PDF format depicting various status (Not in zone/ Promoted/ Screened-in etc.) and remarks highlighted with different colours.

D) Deployment of software packages for On-line submission of applications for RRCAT-PhD Programme and Recruitment at RRCAT:

Web based software for on-line submission of applications on Internet was fine tuned as per the revised application format for RRCAT PhD Programme - 2012. Software for on-line submission of applications for Recruitment at RRCAT has been enhanced for two cycles of Advertisements for regular Recruitment and one Advertisement for Category-I & II Stipendiary trainees for the year 2012.

Data was synchronized between database server (MySQL) deployed over Internet and internal database server (Oracle 10g). Oracle 10g based software module was used by Recruitment Section for processing of applications. Call letters for applicants were generated using this software.

Administrative interface on RRCATInfonet was used for screening of applications and generation of information in excel format for respective Screening Committees. The software was also used for sending call letters by automatically generated email to screened-in candidates for RRCAT PhD Programme.

E) Enhancements to various Information Management Systems:

(i) Provision of revised and cancelled leaves in Leave Software:

The leave system has been re-designed and enhanced to maintain leave details of revised and cancelled leaves also. The leave data from year 1993 onwards contained in existing leave system was ported to the new software as per the modified database structure. Provision has been made to collect leave applications/ joining reports approved by sanctioning authority on RRCATInfonet into this software. PDF file of digitally signed leave application by approving authority can be printed by Establishment Section. The software also has provision for updation of leave balance/ revision/ cancellation after verification of leave details in PDF format.

The software has provision to maintain leave balance and breakup of leave credits given every six months. Various reports can be generated like six monthly leave order, leave reports for recovery by Accounts etc.

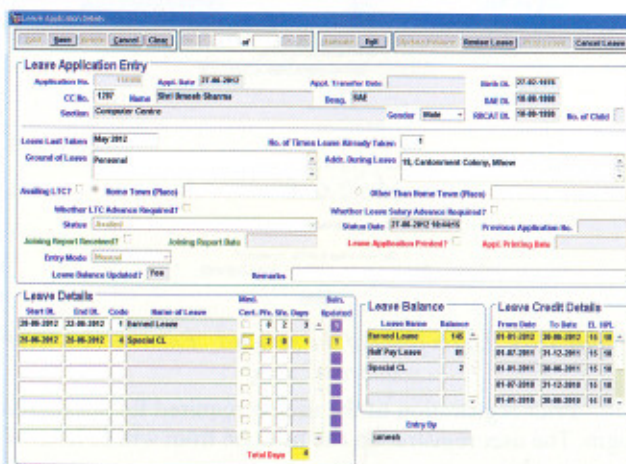


Figure I.2.4: Provision for revised and cancelled leaves in Leave Software

(i) SD/EMD module for Major Works software :

A software module has been developed for maintaining information related to Security Deposit/ Earnest Money Deposit for Works Section with provision for generating registers/ broadsheet. The software is integrated with Major Works, Minor fabrication and AMC module of Integrated Accounting Software.

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