VALIDATION DURING SOFTWARE DEVELOPMENT

Validation of softwares during development is performed in three distinct stages:

1. **Validation of Design Inputs**
2. **Validation of the Implementation stage**
3. **Validation of Alpha and Beta Testing**

1.0 VALIDATION OF DESIGN INPUTS

1.1 Design Specifications

Prepared By : _____
Approved By : _____
Design Checked By : _____

S.No.	Input	Verification
1.	Report Layout. (No. of Columns, Position of Dialog Boxes, Notations, Punctuation).	
2.	Data Dictionary with Data Flow Diagram	
3.	System Configuration	
4.	System Security	
5.	File Design	
6.	System Limitations	
7.	Memory Requirement	
8.	Computability Parameters.	

1.2 Validation Report

This shall include

a. Internal Design Document.
b. Report on Design Inspection in above format.
c. Comments e.g. whether Design Specifications are complete, correct, and consistent with the defined requirements.

2.0 VALIDATION OF IMPLEMENTATION PHASE

S.No.	Function	Defect %
1.	Internal Documents	
2.	Test Designs	
3.	Source Code	
4.	Individual Functionability and Reliability	
5.	Unit Functionability and Reliability	
6.	Total Functionability	
7.	Total Reliability	
8.	User Manual	
9.	User Help	

2.1 Validation Report

This shall include

a. Description on Source Code and Internal Documents used.
b. Report on Functionability and reliability of individual and group programming.

3.0 ALPHA TESTING

3.1 Inputs

3.1.1 Test cases Prepared By : QA Person.
3.1.2 No. of Test Persons : 10 - 20
3.1.3 Type of the information provided to the Persons : Detailed Test Description and Expected Results.

3.2 ALPHA TEST SUMMARY SHEET

Versions	Test Time (Hours)	# Defects	Sum Defects	Defect Discovery rate (defects/hour)	Lin fit
xxxxx	85	80	80	0.94	1.05
	73	69	149	0.86	1.04
	96	79	232	0.82	1.03

The test results are evaluated Graphically. The defect Discovery Rate plotted versus the Total number of Defects Discovered. A regression linear fit curve is calculated and plotted together with maximum and minimum fits, which by

definition have a confidence interval of 5%. This helps in calculation the number of remaining defects. This information is useful to forecast the number test cycles that are still necessary and a possible release date.

The number of critical defects after the last test cycle must be zero for the software to pass the release criteria.

4.0 Beta (β) Testing:

Once software defects and usability discrepancies reported during alpha testing have been corrected, the software may be tested at selected customers' sites (the so-called β- test). The key feature of β-testing is that it is conducted in a customer environment and supervised by a person not involved in the development process. One of the objectives of β -testing is to test the HP Product delivery and support channel. A trained HP applications engineer (AE) assists the customer with installation and checks the software installation procedure.

4.1 Validation Report includes:

Test plans with acceptance criteria and test cases

Test results

Validation documents

Defects density report.

User Training Material

System status bulletin (SSB)