

The following Test Requirements Hierarchy represents a snapshot of what the software tester, at an earlier point in the project, was able to identify, given the known functional requirements (what the software is intended to do). That is, these test requirements represent higher-level test requirements: Business Functions, Tasks within Functions, possibly even transactions/logical-units-of-work that make up a task. As the technical requirements become known and stable, the lower level test requirements dealing more specifically with fields, individual pieces of data, and field validation can be built into the hierarchy. Some of these lower level test requirements may already appear based on earlier design prototyping or early technical specs.

Note that even though there may be lower levels of test requirements yet to be identified, the tester was able get the higher level ones verified. Having the project team verify the higher level test requirements, even without the lowest level test requirements identified, allows the tester to use the test requirements hierarchy as a dialog tool. In other words, verifying test requirements is a way of testing and verifying the functional and technical requirements themselves, which is a form of defect prevention.

Widget Order Processing Test Requirements (Hierarchical Outline) Version: 2.1*	Source	Verified? (Version)	Priority C,H,M,L	Risk #	Weight PxR	Validated % #
1. Validate Customer Information Entry	Func. Spec.	1.1				
1.1 Validate that a New Customer can be added to the Customer Table	Func. Spec.	1.1				
1.1.1. Validate that Name must be all alpha	Tech Spec.	2.1				
1.1.2. Validate that Address must be less than 70 characters	Tech Spec.	2.1				
1.1.3. Validate that a contact phone number is entered.	Tech Spec.	2.1				
1.1.4. Validate that a contact phone number is numeric and 10 digits	Tech Spec.	2.1				
1.1.5. Validate that a unique customer number is generated as the key to the customer information	Tech Spec.	2.1				
1.2 Validate that an Existing Customer can be edited	Func. Spec.	1.1				
1.2.1. Validate that Name must be all alpha	Tech Spec.	2.1				
1.2.2. Validate that Address must be less than 70 characters	Tech Spec.	2.1				
1.2.3. Validate that a contact phone number is entered.	Tech Spec.	2.1				
1.2.4. Validate that a contact phone number is numeric and 10 digits	Tech Spec.	2.1				
1.2.5. Validate that the unique customer number cannot be modified.	Programmer	2.1				
2. Validate Order Entry	Func. Spec.	1.1				
2.1 Validate entering a valid customer number automatically retrieves and prefills the customer information on the Order Screen and generates a new Order Number in the "Order Number" field.	Func. Spec.	1.1				
2.2 Validate entering the Item Code automatically retrieves the item description, item price, and available stock and fills in the corresponding fields for that line item.	Func. Spec.	1.1				
2.3. Validate that entering invalid Item Codes fills in the Item Description with an error message and doesn't fill in the item price and available stock fields for that line item.	Programmer	1.1				
2.4. Validate that any invalid line items (i.e. invalid item codes) disables the "Process Order" button until they are removed from the Line Items section of the Order Entry screen.	Programmer	1.1				
2.5. Validate Totaling	Func. Spec.	1.1				
2.5.1. Validate that Item Quantity allowed to be entered is less than or equal to the available stock field.	Func. Spec.	1.1				
2.5.2. Validate that upon entering the Item Quantity, the Line Item Total is updated to reflect Item Quantity X Item Price.	Func. Spec.	1.1				
2.5.3. Validate that upon entering the Item Quantity, the Order Subtotal field is updated to reflect the sum of all Line Item Totals.	Bus. Analyst	1.1				

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2.5.4. Validate that upon entering the Item Quantity, the Order Total is updated to reflect the sum of Order Subtotal + Shipping + Tax.	Bus. Analyst	1.1				
2.6 Validate Tax Rate Field is updated based upon the Zip Code for the customer.	Programmer	1.1				
2.7. Validate that the Shipping Charge Field is updated based upon the Order Subtotal & Shipping Option Field (UPS Ground, UPS Air, Fed Ex) according to the Shipping Rate Table in Appendix A.	Tech. Spec.	1.1				
2.8 Validate that Credit Card approval is obtained for the order and the authorization number appears in the "CC Auth" field on the order screen. (Credit Card Company is a third party vendor, vendor testing with outside system)	Programmer	1.1				
2.8.1. Validate that connection to Credit Card company is available. (involves telecom lines and third party carrier)	Programmer	3.0				
2.8.2. Validate transmission of credit card information is created correctly.	Func. Spec.	1.1				
2.8.2.1. Validate that credit card account number is formatted as "9999-9999-9999-9999", including dashes, in the file packet transmitted.	Tech Spec.	2.1				
2.8.2.2. Validate the expiration date is formatted as "99-99-9999" in the file packet transmitted.	Tech Spec.	2.1				
2.8.2.3. Validate the purchase amount is formatted as "999999.99" with leading zeros and including decimal.	Tech Spec.	2.1				
2.8.3. Validate that an authorization code is received from the credit card company indicating approval for purchase.	Tech Spec.	2.1				
2.8.4. Validate that the "Process Order" Button is disabled if the "CC Auth" field is blank.	Tech Spec.	2.1				
3. Validate Warehouse Pick Slip & Packing Slip Creation	Func. Spec.	1.1				
3.1. Validate that a "Warehouse Pick Slip" is printed at Warehouse Printer.	Func. Spec.	1.1				
3.1.1 Validate Item Code, Item Description, and Item Quantity are carried over to the report from the Order Screen.	Bus. Analyst	3.0				
3.1.2. Validate that Inventory Warehouse Location is retrieved from the Inventory Database based on the Item Code.	Bus. Analyst	3.0				
3.2. Validate that a "Packing Slip" is printed at Shipping Printer.	Func. Spec.	1.1				
3.2.1 Validate that the proper Shipping barcode label is printed on the packing slip based upon the Shipping Option Field and the Shipping Charge Field.	Tech Spec.	1.1				
3.2.2. Validate that the proper packing box (size & weight threshold) is identified and printed on the packing slip based upon the algorithm in Appendix B using Item Code (order), Item Quantity (order), Item Dimensions (Inventory DB), Item Packing Material Code (Inventory DB: Bubble wrap, peanuts, paper, none)	Programmer	3.0				
4. Validate Invoice Creation	Func. Spec.	1.1				
4.1. Validate that an Invoice is printed at that Accounts Receivable Printer	Func. Spec.	1.1				
4.1.1. Validate that Transaction Code "PI" (Print Invoice) is transmitted to the Accounts Receivable System to trigger the Print Invoice Program.	Tech Spec.	1.1				

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4.1.2. Validate that the Order Number is transmitted to the Accounts Receivable System.	Tech Spec.	1.1				
4.1.3. Validate that all data from all fields on the Order Screen match the data on the printed invoice according to the "Order-to-Invoice Field Mapping Table" in Appendix C.	Tech Spec.	1.1				
4.2. Validate that a mailing label is printed at the Accounts Receivable Label Printer	Bus. Analyst	3.0				
4.2.1. Validate that the Customer Number is transmitted to the Accounts Receivable System.	Programmer	3.0				
4.2.2. Validate that Transaction Code "PL" (Print Mailing Label) is transmitted to the Accounts Receivable System to trigger the Print Label Program.	Programmer	3.0				
4.2.3. Validate that the Customer Information printed on the mailing label matches the customer data for that customer number on the Customer DB.	Bus. Analyst	3.0				
5. Validate Inventory Adjustment	Func. Spec.	1.1				
5.1. Validate that upon processing an order (Pressing "Process Order" Button) that the "Available Stock" field on the Inventory database is updated to reflect the purchased amount being subtracted.	Func. Spec.	1.1				
5.2 Validate that the "Stock Item Reorder" flag on the Inventory DB is set to "R" (Reorder) if the available stock falls below the "Stock Reorder Amount" (field on Inventory DB) for that Item.	Tech Spec.	1.1				
5.3 Validate that the "Stock Item Reorder" flag is set to "C" (Critical Reorder) if the available stock falls below the "Average Order Amount" (field on the Inventory DB) for that item.	Tech Spec.	1.1				
5.3.1 Validate that a setting of "C" for the "Stock Item Reorder" flag takes precedence over an "R" setting.	Bus. Analyst	3.0				
5.3.2. Validate that if the "Stock Item Reorder" flag is set to "C" a "Critical Stock Reorder" email is sent to the Inventory manager.	Bus. Analyst	3.0				
6. Validate Management Reporting – <i>validation to be determined at lower levels once functional and technical information becomes available</i>	Func. Spec.	1.1				
6.1 Inventory Stock Reorder Report	Bus. Analyst	3.0				
6.2 Top Selling Items Report	Bus. Analyst	3.0				
6.3 Total Sales Report	Bus. Analyst	3.0				
6.4 Sales by Region Report	Bus. Analyst	3.0				

* Version Control: X.0 = a drafted version of the TR hierarchy, X.1 = a reviewed version of the TR hierarchy. Used in denoting when a test requirement was reviewed.

For example,

- 1.0 Initial Test Requirements Hierarchy Created
- 1.1 Reviewed 1st version Test Requirements Hierarchy
- 2.0 Additional Test Requirements introduced or test requirements changed
- 2.1 Reviewed new or changed test requirements
- 3.0 Further test requirements introduced

Note that the version of this current document is 3.0 denoting that new test requirements were added to the document and are pending a review. As a result of being reviewed, the document will become version 3.1 and all test requirements with 3.0 will be changed to 3.1.