

16. Based upon total modification cost, the appropriate signing authority must grant approval before the proposal is accepted.

VI Installation and Testing

17. Once the paper exercise, which includes the design and implementation plan has been approved, a prototype installation is initiated. This prototype is intended to work out the practical problems which may have been overlooked during the design. It is here that the design drawings and documentation are finalized. Figure 7 outlines the process followed.

- A. Implementation - Once the modification has been accepted, then the work begins ie. the assembly of the modification kit and the initiation of the implementation schedule. Much of the modification kit may be provided by the CF, but the installation would normally be carried out, with CF assistance, by the civilian firm which is responsible for the Repair and Overhaul of the specific aircraft type. The work location would be at the contractor's facility or by a civilian mobile repair party at a base.
- B. Prototype Testing - A prototype modification is carried out. If the aircraft type has suitable avionics trainers then these are modified first, tested and proven before an aircraft is touched.
- C. Ground Testing - Full ground testing procedures (functional, EMI/EMC, operational) are carried out on the prototype to validate the modification. If acceptable, this procedure is repeated on an aircraft. Experts from the CF aerospace engineering test establishment are involved to perform EMI/EMC testing (on ground and later in the air).
- D. In-Flight Testing - Only after everything is acceptable on the ground does an in-flight test occur. CF flight test engineers and pilots carry this phase out and evaluate system operability, avionics interoperability, EMC, airworthiness and air safety. If acceptable an airworthiness certificate is issued, which allows the remainder of the aircraft fleet to be modified (if intended).

Figure 7. Installation and Testing Process