

SCOPE OF WORK

Activities

The Service Provider will be required to carryout work in Control System Production Group of CSC, related to : -

- (a) Realisation & clearance for Fluid Control Components and Modules.
- (b) Assembly, Testing & Delivery of Components Modules.
- (c) Assembly, Testing & Delivery of Control Systems Packages.

Brief Description of Work : -

1.1. Area of Work

Components/Parts Production, Clearance, Bonding, Assembly, Testing & Delivery of Components /Modules of

- Cryo Engine /Stage Components for Gaganyaan Development Programme
- Cryo Engine /Stage Components for C32 Development Programme
- Semi Cryo Engine / SC 120 Stage Components development Programme
- Stage Components for Test Vehicle Programme
- Components Part Related to Crew Module Service Module for Gaganyaan Programme
- Components Parts for Chandrayaan-3 development Programme
- Components Parts for SSLV Programme
- Cryo Engine /Stage Components for GSLV MkII Programme
- Activities related to Realisation Assy, Testing & Delivery of Components and module for IPCM and IPCS Contracts.
- Activities related to Realisation Assy, Testing & Delivery of Control Components Packages.

1.2. Nature of Work

1.2.1. Material/Components Handling.

- a. Stock verification, material identification and Free Issue Material (FIM) list preparation based on raw material availability in Stores.
- b. Preparation of raw material clearance certificate and obtaining clearance from System Reliability & Qualitive Assurance (SRQA) before sending the same to industries.

- c. Material cutting for readiness of FIM.
- d. Verification of punching details on material w.r.t Raw material Clearance (RMC) certificate
- e. Consolidation of material /bought out received.
- f. Unpacking of Consignment at Transit store & Segregation of parts/components/packages.
- g. Overall visual observation of parts/hardware for surface defects at Transit stores
- h. Hardware Transportation during pre-bonding inspection.
- i. Consolidation Inward Receipt Vouchers and coordination with stores.
- j. Packing, getting it verified by and positioning the parts/materials/hardware at LPSC stores for dispatch to industries.
- k. Identification and receipt of hardware at centre stores and transportation of hardware to respective assembly and tests team.
- l. Packing & Containerisation of Control System sub-assemblies/Packages based on the approved procedures for dispatch to SHAR in Department Trailer.

1.2.2. Fabrication Related Activities

- a. Preparing annexure for Indent/RFP and copies of Configuration Control Board cleared drawings in sufficient numbers & Preparation/Compilation of fabrication, machine hour required/ process time required for assembly and testing of hardware.
- b. Technical Comparative Statement (CST) preparation based on offer received & arranging latest version of drawings to industries, Qualitive Assurance (QA) and Resident Cell.
- c. Physical verification of parts/audit of finished parts received from industry and Preparation of compliance report.
- d. Consolidation of process sheets received from industries for review and clearance by LPSC committee, forwarding corrections in the process plan to industries and follow up in issuing final approved document.
- e. Preparation of request for fabrication at internal facilities.
- f. Preparation and submission of drawings request, Verification and consolidation of drawings.
- g. Preparation of work request/indent/estimates for rate contract orders.
- h. Preparation of fabrication status reports.

1.2.3. Clearance of Components Related

- a. Follow up with designer and Quality Control (QC) for obtaining Clarifications for forwarding to Industries.
- b. Follow up of Local Salvage Committee (LSC) and Non-Conformity Report (NCR) Board recommendation such as re-inspection, reworks at industry/in-house facilities,
- c. Consolidation of Inspection report for auditing of dimensional report.
- d. Follow up of pre-bonding actions recommended by inspection team for bonding, Hardware movement to Assembly/Design/QC team/Internal workshop for completing the Pre-bonding inspection.
- e. Collection of reworked part's inspection reports and Critical Dimension inspection reports carried out by industries. Compiling the reports for various components and modules realized by industries and maintaining the records.
- f. Verification of the fabricated parts inspection reports before sending the items to industries for Realisation of Components & Modules.
- g. Assisting in Coordination with Design, Integration & test and SRQA teams for various process/test qualifications namely Control System tests, Tungsten Inert Gas/Electron Beam welding/brazing trials, Weld Process Specification/Process Qualification Records generation, etc. and obtaining clearance from Committees.
- h. Compiling the NCs and preparation of presentations for LSC & NCRB-SC for clearance.
- i. Internal fabrication facilities related for completing the polishing work suggested by Pre bonding visual team.
- j. Identification and receipt of hardware at centre stores and transportation of hardware to transit stores/Clean room/ Control System Lab.
- k. Carrying out the visual inspection of the various brought items like bellows, fasteners, etc. before sending the items to Industries.

1.2.4. Other Activities

- a. Segregation of parts for Stage operations like Passivation, decontamination, anodization, Electron Beam Welding (EBW), Heat treatment (HT) etc at LPSC/VSSC.
- b. Follow up of Local Salvage Committee (LSC) and Non-Conformity Report (NCR) Board recommendation such as re-inspection, reworks at industry/in-house facilities,
- c. Checking items for transit damage if any, checking identification number of items with QA clearance for storing in Transit store.

- d. Preparation of request for inspection/material testing/NDT etc.
- e. Preparation of list of finished parts for issuing to project /system teams.
- f. Preparation of inventory list of finished parts and raw materials.
- g. Preparation of drawings for fixtures/tooling/adaptors etc.
- h. Preparation of discussion points after verification of Delta documents submitted by industries and comparing within house documents & drawing
- i. Preparation of fabrication status review and assembly and testing status review minutes of meeting
- j. Convening various committee meetings and preparation of minutes of meeting.

Qualification:

1) Diploma holder

Degree / Diploma in Mechanical Engineering.

2) ITI holder

ITI Fitter/Turner/Machinist.

Experience:

- 1) Minimum two years experience in the specified activity.
- 2) Deputed Personnel shall possess sufficient knowledge for coordinating activities as listed in Scope of work
- 3) Working Hours:
08.45 Hrs. To 17.15 Hrs with 5 days per week. If required, work shall be arranged on holidays and beyond normal working hours at the same rate as agreed for the normal working hours

Activity list& work units

Following is the estimate of works and related work units to carry out the activities mentioned below, by the deputed personnel at Thiruvananthapuram LPSC/ISRO Centre.

ESTIMATE FOR CONTRACT DIPLOMA PERSONNEL

SI No.	Work description	Total quantity (Nos.)	Total work units (for 2 years)
1	Study of drawings and preparation of man hour estimates	900	2375
2	Preparation of FIM requirement and estimate	600	2400
3	Preparation of annexures for indent/RFP and entry of	500	2450

34

	data in the system		
4	Preparation of technical compliance report	300	2000
5	Preparation of FIM list, clearance paper, issue of materials	1800	3000
6	Consolidation for auditing of dimensional reports.	2100	2175
7	Physical verification/audit of finished parts received from industry and preparation of compliance report	2100	1080
8	Preparation of fabrication status reports	900	804
9	Material cutting & preparation of dispatch request	1800	1200
10	Preparation of drawings for fixtures/tooling's/adaptors etc	300	550
11	Preparation of surface treatment request and cost estimates	300	400
12	Consolidation of inspection reports for QC/QA audit	1500	200
13	Preparation of request for fabrication at internal facilities	300	300
14	Preparation of work request/indent/estimates for rate contract orders.	300	200
15	Preparation of minutes of meeting w.r.t fabrication status review	500	500
16	Preparation of request for inspection/material testing/NDT etc.	600	90
17	Verification of process plan documents w.r.t drawing/updating	2100	90
18	Preparation of list of finished parts for issuing to project/system teams	300	300
19	Preparation of raw materials receipt/status/verification.	1200	1600
20	Preparation of finished part receipt list/verification/outstation work.	1800	1500
21	Preparation of inventory list of finished parts and raw materials	300	300
22	Preparation of drawing for tool/fixture design	100	200
	Estimated Annual Man-hour requirement		23714

The service provider need deploy minimum **Five** Diploma personnel on all the working days, to carry out the tasks specified above.

Work units and computation

For assessment of the quantum of work, one hour duration of work/person is considered as a “work unit” and the total quantum of work carried out will be computed on monthly basis. The supplier shall be available for work not only during office hours but also during late office hours and on holidays if needed.

ESTIMATE FOR CONTRACT ITI PERSONNEL

SI No.	Work description	Total quantity (Nos.)	Total work units (for 2 years)
1	Material cutting for readiness of FIM and Verification of punching details on material w.r.t RMC certificate verification and dispatching to industries.	5000	1500
2	Consolidation of material /bought out received.	2500	800
3	Internal fabrication facilities polishing work related work suggested by Prebonding visual team.	3500	1200
4	Identification and receipt of hardware at Transient stores and transportation to Bonded stores.	1000	550
5	Unpacking of Consignment at Transit store & Segregation of parts.	3500	1100
6	Overall visual observation of parts for surface defects at Transit stores and Hardware Transportation during pre-bonding inspection.	2500	800
7	Consolidation Inward Receipt Vouchers and coordination with stores	3500	1000
8	Packing and positioning the parts and materials at LPSC stores for dispatch to industries	2500	800
9	Packing & Containerisation of Control System assembly /Packages based on the approved procedures for dispatch in Department Trailer/outstation work	3500	1100
	Estimated Annual Man-hour requirement		8850

The service provider need deploy minimum **Two** ITI person on all the working days, to carry out the tasks specified above.

Work units and computation

For assessment of the quantum of work, one hour duration of work/person is considered as a “work unit” and the total quantum of work carried out will be computed on monthly basis. The supplier shall be available for work not only during office hours but also during late office hours and on holidays if needed.