1. Drawing and CAD Model

1.1. Soft copy (generally in *.pdf format) of production drawing will be uploaded on EGPS system, Bidder has to download the drawing from EGPS.

1.2. CAD model (generally in *.stp format) will be in the attachment of soft copy of production drawing.
1.3. Bidder must study drawing and model very carefully for raw material, overall size, final component, processes involved, surface finish requirement, dimensional and geometrical tolerances, ID number engraving, quantity, taping and holes depth, etc. <u>All minute details of drawing with accuracy requirement has to study and adhere. "We missed the details" excuses will not be acceptable.</u>

1.4. In case of any mismatch between drawing and model or any doubt regarding drawing, bidder must seek clarification from SAC through E-mail communication. Vendor should never go ahead with their assumption.

2. Raw Materials

Bidder should check Annexure-1 for raw material details for provision of the raw material.

2.1. Material by Vendor

2.1.1. Vendor will purchase/procure raw material as per mentioned in Annexure-1. Vendor's quote shall be inclusive of cost of material.

2.1.2. Vendor must purchase raw material from reputed vendor who can provide MIL Test certificate. Submission of MIL TC is compulsory. MIL TC shall indicate Heat No., Lot No., basic chemical composition, basic mechanical properties such as UTS, 0.2% YS,% elongation, hardness detail.

2.1.3. Vendor must preserve all data related to material in safe custody with Hard and Soft copy. SAC may cross-check all above point periodically by questioning over phone/Auditing data provided by you. SAC will also conduct surprise audit of your factory for above compliances. If SAC found that failing of above compliance deliberately, it will be considered as fraud to SAC and appropriate action will be taken.

2.1.4. Adequate facility shall be available to store raw material and finished components, separately.

3. Quality Control

3.1. Flatness of 0.1mm as shown in drawing to be measured on machine bed in free clamp condition.

3.2. Detailed inspection report for RMS measured value using laser tracker for minimum 1600 points over entire surface will be provided by vendor.

3.3. Fixture plate assembly shall be suitably packed in closed container to avoid any damage on job during transportation.

3.4. PAA vibration plate shall be lifted as per detail shown in drawing MESA-CAMD-GSAT7R-114 Sheet 1 of 3 during containerization.

3.5. As we are offloading job, which will be used in space systems, **Accuracy requirement is very much important.** Vendor should use only those processes, machines, tools, coolant, oil, clamping device, strategy, etc. which can produced desired accuracy as mentioned in drawing.

3.6. As mentioned in Annexure-1, **ID Number to be engraved on parts by LASER engraving only**. ID number engraving location must be as per drawing. If location is not provided, seek clarification from SAC Engineer.

3.7. If LASER engraving is not possible due to any reason proper identification technique should be used. **Marker/permanent marker must not be used on surface of components.**

3.8. Finished parts must be properly clean, free from oil, coolant, dust, and any foreign particle and De-burred properly.

3.9. If part's surface is changed due to any processes, proper cleaning to be done, e.g. removal of black spot/marks due to EDM process.

3.10. 100% inspection is compulsory. Vendor must prepare balloon drawing, measure the components and enter the values in Inspection report – As per provided format (Annexure A). Vendor should preserve this balloon drawing and inspection report in soft copy for future requirement.

3.11. Holes diameter for helicoil, taping, thread forming are to be check by pin gauge and reported accordingly.

3.12. If any deviation is reported during any stage, before going ahead vendor needs to seek clarification from SAC engineer and proceed further only after the receipt of feedback from SAC.

3.13. Job Completion Statement (Format – Annexure B) is to be filled before dispatching the job very carefully.

3.14. We are also inspecting all components in SAC and we may share deviation with you w.r.t. drawing and your QC report. If you feel that deviation is not right, you can visit SAC premises and verify physically.

False or fraudulent reporting from vendor side will be viewed seriously and penalty may be imposed.

3.15. If any deviation observed by SAC after delivery/QC inspection, Vendor must do rework or refabricate the parts as per SAC instruction with free of cost. No transportation charges will be provided by SAC.

3.16. Before delivering any components, Vendor needs to send soft copy of all inspection report with balloon drawing. Hard Copy of inspection reports and all other necessary documents to be submitted along with jobs.

3.17. Refer Annexure - A for Dimensional inspection report-sample.(Vendor may ask for blank format, if required)

4. Delivery and Packaging

4.1. Free delivery of GSAT-7R FIXTURE PLATE ASSEMBLY to UR Rao Satellite Center URSC Bengaluru. Delivery period will be 6 month from date of release of purchase order.

Page **2** of **8**

4.2. Vendor shall confirm adherence to delivery due date provided by SAC. Please be advised that a late delivery charges will be levied after due date of delivery period.

4.3. As we are working in project model, which are important for nation, vendor should try to deliver part as soon as possible and not to wait for delivery period of 6 months.

4.4. SAC may ask for staggered delivery quantity to meet project schedule. Vendor should try his best to accommodate such requirement.

4.5. Vendor must submit Components with Delivery Challan, Invoice, printed inspection report, respective balloon drawing with Job Completion Statement. **In no case component will be delivered to SAC without inspection report, respective balloon drawing and Job Completion Statement.**

4.6. Finished parts are to be supplied in proper plastic container or corrugated board box considering the criticalities of the jobs. Metal to metal contact should be avoided.

4.7. While packaging the finished job please make note that, the packaging will be opened and packed several times in SAC for further processing and checks. Different ID No. components to be packed in separate boxes.

4.8. Surface of components should be protected from rusty environment and dust.

4.9. Packing list (As per Annexure-C) sticker to be pasted on packing. There is a field in packing list that "Tapping (Done/Not Done)" which means that any tapping which is pending whether it is in your scope or not, but in the drawing, you must mentioned "Not Done OR Pending OR Not Done as not in Scope". Mostly it is helicoil tapping, tapping less than M2, UNC, UNF, thread forming etc.

5. Non-Disclosure Clause and Intellectual Property Rights

5.1. Acceptance of Purchase Order construes that vendor has agreed to Non-disclosure Agreement for not using and disclosing for any purpose any drawing and models of Space Applications Centre or any other unit of Indian Space Research Organization without written approval from Space Applications Centre. All intellectual property rights belong to Space Applications Centre, ISRO.

6. Invoicing and Payment

6.1 On delivery of GSAT-7R FIXTURE PLATE ASSEMBLY vendor shall submit delivery challan and invoice at URSC, Bengaluru. GSAT-7R project will depute a person to receive and unload assembly at suitable place at URSC Bengaluru. GSAT-7R project representative at SAC will make an arrangement to collect delivery challan and invoice from URSC Bengaluru and submit to Accounts Officer, Local Bills Section, SAC.

6.2 For delays attributable to the vendor in delivery against a purchase order, liquidated damages will be recovered at the rate of 0.5% per week of delay or part thereof, subject to maximum of 10% of the order value.

7. Technical and It's Communication

7.1. If any query arises during any stage of components manufacturing, vendor must communicate SAC engineer via E-mail with suitable drawing marking/photo/video/cad model. Vendor should never go ahead with their assumption/s.

7.2. If any modification of minor nature not calling for any cost implication brought in design after Purchase Order is placed and work hasn't started or has not reached to a stage where it still can be accommodated, vendor should machine the component as per the revised drawing. There will not be any extra payment for such change/s. After awarding Purchase Order, It may happen the vendor needs to contact SAC for different technical requirement. All communication must be done on E-mail only for proper records.

7.3. Any wavier must take on Email only. Confirmation by Vendor himself/herself will not be entertained.

7.4. Any requirements from SAC will be replied to vendor as soon as possible.

7.5. Drilling details is shown in Annexure – D.

8. Quoted price shall be inclusive of all cost occurs to vendor like Raw material , Machining, Process involved, quality control measurements, packaging, delivery at URSC, Bengaluru.

Annexure- A

DIR-00						e A	exure	Ann								
				mm)	PORT (ON RE	ΡΕСΤΙ	AL INS	NSION	DIME						
			DATE:											PTION	DESCRI	ЈОВ
				VENDOR NAME/ADDRES					DWG. No.						P.O No.	
			S				JPC No.					No.	INDENT			
			ECTOR'S NAME:	INSP					No. PONENTS	сом				No	P.O. Sr.	
	z	z	z	z	z	Z	z	z	ZZ.	1	z	z			о.	LD N
REMARKS	DEVIATIO N (mm)	MEASURED VALUE (mm)	DEVIATIO N (mm)	MEASURED VALUE (mm)	DEVIATION (mm)	MEASURED VALUE (mm)	DEVIATIO N (mm)	MEASURED VALUE (mm)	DEVIATION (mm)	MEASURED VALUE (mm)	DEVIATIO N (mm)	MEASURED VALUE (mm)	UPPER CONTROL LIMIT	LOWER CONTROL LIMIT	NOMINA L VALUE IN DWG.	Dim r. No
GIVEN AS AN EXAMPLE	0.36	50.56	0.2	50.4	-0.3	49.2	0	49.9	0.36	50.56	0.36	50.56	50.2	49.5	50	1
MAXIMUM 6 COMPONENTS PER PAGE (AS GIVEN)	0	49.6	c	49.6	0	49.6	o	49.6	0	49.6	o	49.6	50.5	49.5	50	2
	0	25.3	0.3	25.7	-0.1	25	٥	25.1	-0.5	24.6	-0.5	24.6	25.4	25.1	25	з
	0		0		0		0		0		0					4
	0		0		0		o		0		0					5
	0		0		0		0		0		0					6
	0	(0		0		0		0		0					7

Annexure- B

Annexure-B Job Completion Statement [JCS-00]

	CLARE THE FOLLOWING REGARDING THE COMPONENT (S) TTED VIDE	CHALLAN No.	
NAME	OF THE VENDOR:	INDENT No.	
		P.O. Sr. No.	
		ID No.	
		Qty.	
		FM/NFM	
		,	
WE HA	VE ENSURED THE FOLLOWING BEFORE CLEARING THE JOB FOR	-	
	VE ENSURED THE FOLLOWING BEFORE CLEARING THE JOB FOR DESCRIPTION	-	NO
		DELIVERY TO SAC	NO
Sr.No.	DESCRIPTION	DELIVERY TO SAC	NO
Sr.No.	DESCRIPTION DEBURRING OPERATION IS COMPLETE	DELIVERY TO SAC	NO
Sr.No.	DESCRIPTION DEBURRING OPERATION IS COMPLETE COMPONENT IS CLEANED FROM ALL SURFACE	DELIVERY TO SAC	NO
Sr.No. 1 2	DESCRIPTION DEBURRING OPERATION IS COMPLETE COMPONENT IS CLEANED FROM ALL SURFACE CONTAMINATIONS (RECAST LAYER etc.)	DELIVERY TO SAC	NO
Sr.No. 1 2 3 4	DESCRIPTION DEBURRING OPERATION IS COMPLETE COMPONENT IS CLEANED FROM ALL SURFACE CONTAMINATIONS (RECAST LAYER etc.) I.D NUMBER IS ENGRAVED	DELIVERY TO SAC	NO
Sr.No. 1 2 3	DESCRIPTION DEBURRING OPERATION IS COMPLETE COMPONENT IS CLEANED FROM ALL SURFACE CONTAMINATIONS (RECAST LAYER etc.) I.D NUMBER IS ENGRAVED DIMENSIONAL INSPECTION REPORT IS ENCLOSED	DELIVERY TO SAC	NO
Sr.No. 1 2 3 4	DESCRIPTION DEBURRING OPERATION IS COMPLETE COMPONENT IS CLEANED FROM ALL SURFACE CONTAMINATIONS (RECAST LAYER etc.) I.D NUMBER IS ENGRAVED DIMENSIONAL INSPECTION REPORT IS ENCLOSED COMPONENTS DRAWING WITH ALL ITS DIMENSIONS	DELIVERY TO SAC	NO
Sr.No. 1 2 3 4 5	DESCRIPTION DEBURRING OPERATION IS COMPLETE COMPONENT IS CLEANED FROM ALL SURFACE CONTAMINATIONS (RECAST LAYER etc.) I.D NUMBER IS ENGRAVED DIMENSIONAL INSPECTION REPORT IS ENCLOSED COMPONENTS DRAWING WITH ALL ITS DIMENSIONS NUMBERED IS ENCLOSED.	DELIVERY TO SAC	NO

DATE:

(SIGNATURE) (Authorized Vendor Representative)

QUALITY EVALUATION (FOR SAC'S USE ONLY)

PFSF REMARKS:

	Forwarded to Designer		Forwarded to QC		Returned for rework		Rejected
--	-----------------------	--	-----------------	--	---------------------	--	----------

(SIGNATURE)

QC REMARKS:

Accept	MRB	Rework	Reject	
--------	-----	--------	--------	--

(SIGNATURE)

[PLANNING ENGINEER]

[DESIGN ENGINEER]

Annexure- C

Annexure-C Packing List (PL-00)					
Name Of					
Vendor					
PO No.					
PO Sr. No.					
Description					
FM/NFM					
Quantity					
ID No.					
Tapping					
(Done/Not					
done)					

Annexure – D: Drilling Details

For Helicoil Tapping:

All hole drilling is in scope of Vendor. Helicoil tapping and insertion is not in vendor's scope of work. Drill size as following:

Helicoil tapping	Drill size(mm)
M1.6	1.7(±30 Micron)
M2	2.1(± 30 Micron)
M3	3.1(± 50 Micron)
M4	4.1(± 50 Micron)
M5	5.1(± 50 Micron)
M6	6.2(± 50 Micron)
M8	8.3(± 50 Micron)
M10	10.3(± 50 Micron)

For Simple Tapping:

All hole drilling in scope of Vendor. Tapping less than M2 is not in vendor's scope. M2 is in vendor's scope. UNS & UNC are not in vendor's scope unless and until specified.

Tapping	Drill size(mm)	Tapping	Drill size(mm)
M1	0.75(±10 Micron)	UNC/UNS .200 - 80	4.75(± 20 Micron)
M1.2	0.95(± 15 Micron)	UNC/UNS 5/32 - 64	3.55(± 20 Micron)
M1.4	1.1(±15 Micron)	UNC/UNS .120 - 80	2.75(± 20 Micron)
M1.6	1.25(± 20 Micron)	UNC/UNS 10 - 64	4.45(±20 Micron)
		UNC/UNS 15/64 - 64	5.55(± 30 Micron)
		UNC/UNS 1/4 – 64	5.95(± 30 Micron)
		UNC/UNS 3/32 - 80	2.05(± 20 Micron)
		UNC/UNS .312 - 64	7.50(± 30 Micron)

For Thread Forming:

All hole drilling in scope of Vendor. Thread forming is not in vendor's scope.

Tapping	Drill Size(mm)	Tapping	Drill Size(mm)
M-1.6	1.45 (± 20 Micron)	M-4	3.7 (± 20 Micron)
M-2	1.8 (± 20 Micron)	M-5	4.6 (± 20 Micron)
M-2.5	2.3 (± 20 Micron)	M-6	5.5 (± 20 Micron)
M-3	2.7 (± 20 Micron)	M-8	7.4 (± 20 Micron)