SPECIFICATION & COMPLIANCE FORMAT FOR
STRAIN GAGE BONDING AND WIRING ON SPACECRAFT STRUCTURES AND SPECIMENS

Sl no	DESCRIPTION	COMPLIANCE (Y/N)
1	**Work Definition** 1. Bonding of strain gauges and wiring as per standard procedures, Resistance/Insulation resistance checks. 2. The strain gauge types are single element and rosette (2/3 elements) with or without lead wires. 3. strain gauges are to be bonded on metallic/non-metallic (Composites) materials. 4. The work is to be carried out are on test specimens or spacecraft structures /structural elements or both as and when tests are planned/need arises. 5. The work is to be carried at client's site only. 6. The total number of strain gauges to be bonded is as follows. Single gages -400 nos. Rosette gages -1000 nos. 7. Payment will be made against completion of work at each time.	

2	**Operations involved** 1. Marking as directed, surface preparations for strain gauge bonding as per standard procedures laid down for different materials. 2. Bonding of strain gauges (M-Bond-200,M-Bond600/610 as applicable and dictated by test set-up / environment) and terminal strips, soldering of lead wires to tabs and wiring of gauges to three wire system**)** and routing, check out of gauges (Continuity, Resistance/Insulation resistance measurements) for proper performance and labeling. 3. Incase of strain gauges without lead wires, additional soldering is needed to connect the strain gauge and tab. 4. After checking proper functioning of the gauges, protective coating has to be applied.	
3	**Strain Gauges** Strain Gauges are from reputed manufacturer such as TML,KYOWA, Micro Measurements, HBM, OMEGA having resistance 120/350/1000 ohms. The gauge lengths are from 0.3 mm to 5 mm. Strain gauges can be with or without lead wires. Gauge types : single, T-Rosette (2-element), Rectangular / Delta Rosette (3-Elements)	

4	**Gauge wiring** 3 or 4 Wire system of wiring is to be done Wiring comprises of two stages. Stage-1: Wiring from gauge to terminal strips for strain gauges supplied with lead wire. For gauges without lead wire, soldering is to be done at gauge end also**.** Stage-2: Wiring of cables (3 or 4 Core of 6 to 7 meters in length or as per test requirement) from terminal strips and tinning of other end of cables for connection to terminal box of data acquisition system, labeling of cables and proper routing in case the work is related to Spacecraft/Structural elements.	
5	**Materials Supply** Strain gauges, terminal tabs/strips, bonding adhesive, surface preparation solutions, protective coating, soldering iron, lead, flux, cables etc for carrying out the work will be supplied. The party should bring other essential tools, not listed above.	

6	**Commercial Terms** **Parties preferred:** **Parties having relevant experience in strain gauge bonding and wiring with good track record of such works in different organisations. Parties who do not have the exposure to this work need not apply. While quoting parties has to attach the proof of their experience in this field for example the purchase order copies from reputed organizations. URSC reserves the right to test the skill in this work area on sample specimens prior to allocating the work package.**	
7	**<u>Guide lines for Quotations:</u>** **The charges per gauge basis for single gages and Rosette gages as to be indicated. Purchase Order will be placed to the overall lowest quoted party.**	
8	**Period of Validity:** **Two Years or completion of 1400 gauges bonding.**	
9	**Work Site:** URSC and other affiliated work sites in Bangalore.	
10	Vendor has to submit the Compliance matrix (Compliance/ non-Compliance) to all the above mentioned points along with quotation, failure of which may render the quote ineligible for consideration	