**Call for tenders 1 for the manufacture of multilayer RF printed circuit boards – European JU SHIFT project**

**Description:**

The XLIM laboratory needs to manufacture multilayer printed circuit boards for scientific work in the field of radio frequency antennas. In this context, the requirement is to manufacture several circuits of different types and quantities between October 2025 and September 2026.

**Specifications to be met by the service provider:**

**1.** (Mandatory) Provide a quote for the manufacture of the ***‘test\_vehicle1’*** multilayer printed circuit board provided in the call for tenders, which is not a symmetrical stack (see description and Gerber files). Circuit with 10 metal layers on Isola Astra MT77 substrate, dimensions 340 x 400 mm². Criteria to be met:

o Specify the delivery date, taking into account the supply of materials

o IPC Class 2 manufacturing

o ENIG or ENEPIG finish

o Supply of specification certificates for the substrates delivered by the manufacturer

o Indicate whether the minimum track widths, via diameters and clearances can be achieved with the process used, and confirm the associated tolerances.

o Mention any difficulties, points to watch out for, modifications requested or inability to manufacture the test vehicle

o Propose a firm deadline for manufacturing 1 circuit and 16 circuits of this type, including the supply of materials

**2.** (Mandatory) Provide a quote for the manufacture of the ***‘test\_vehicle2’*** multilayer printed circuit board provided in the call for tenders, which is not a symmetrical stack (see description and Gerber files). Circuit with 9 metal layers on Rogers RO4003C/4350B substrate, dimensions 340 x 400 mm². Criteria to be met:

o Specify the delivery date, taking into account the supply of materials

o IPC Class 2 manufacturing

o ENIG or ENEPIG finish

o Supply of specification certificates for the substrates delivered by the manufacturer.

o Indicate whether the minimum track widths, via diameters and clearances can be achieved with the process used, and confirm the associated tolerances.

o Mention any difficulties, points to watch out for or impossibility of manufacturing the test vehicle

o Propose a firm deadline for manufacturing 1 circuit and 16 circuits of this type, including the supply of materials

**3.** (Mandatory) With a view to manufacturing other circuits for demonstration during the project, the service provider must indicate whether it is able to work with substrates selected by the laboratory from the list below. On this point, the service provider must specify whether or not it can work with these materials in a typical RF multilayer configuration with 9 or 10 layers of copper, similar to that in **point 1 or 2**, and give typical supply times. Mandatory response for at least 2 materials:

- Isola Astra MT 77

- Rogers RO4350B, 4003C

- Rogers RT5880, 5880LZ

- Taconic TLC30

- Taconic TLY 5

- Rogers ARLON CLTE AT

Any limitations or constraints may be specified here, bearing in mind that iterations with the laboratory will be possible to partially modify certain designs, in particular to reduce stacking asymmetry, in this second phase of the work.

**4.** (Mandatory) The service provider must indicate whether it is able to manufacture laser microvias, with the associated minimum and maximum thicknesses.

**5.** (Optional) Indicate whether hybridization is possible between some of the materials in point 3 in the context of a multilayer circuit.

**6.** (Optional) Indicate whether the service can cover the transfer/soldering of components

- CMS sizes 0201 to 0805

- SMA connectors, through-hole or edge connectors

- BGA chips

- components in housings (regulators, terminal blocks, etc.)