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A double-sided super-module development for the HL-LHC

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As part of the High Luminosity LHC upgrade (HL-LHC), a new Inner Tracking Detector (ITK) will be constructed for the ATLAS experiment, using silicon pixel and micro-strip technology.
A back-up prototype development for the micro-strip barrel detector of the ITK envisages double-sided modules of typically 10x10 cm2 assembled on a stiff but low material local support to form a 'super-module'of up to 16 modules.
Following the successful completion of component demonstrators and prototype elements, the feasibility of the super-module concept has been largely demonstrated and the project using ABC250 front-end chips is now being concluded.
In this summary, the major design specifications are confronted with the principal electrical and mechanical prototype results.

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