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Integration of vertex detector services and cooling

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The FCC-ee IR general layout has a compact architecture, designed to respect multiple constraints given by the physics and mechanics of the experiment. To do this, a specific integration study of the vertex detector and central beam pipe services has been launched: it involves 3D printed support with internal air channels and others lightweight structures used both to support the inner vertex detector staves and to allow the routing of the cables and their integration with the ducts of the liquid paraffin for the cooling of the central beam pipe. In addition, to achieve adequate air cooling of the three internal layers, the inlet and outlet ducts have been specifically designed and directly integrated into the supports of the staves, always with the aim of respecting the constraint of low mass material budget and the need to take out the connection buses of the silicon detectors from the inner part.
The presentation will show the layout of the interaction region with a focus on the structure design and problems still being studied in the integration of the various systems.

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