HCLTech | Supercharging Progress™

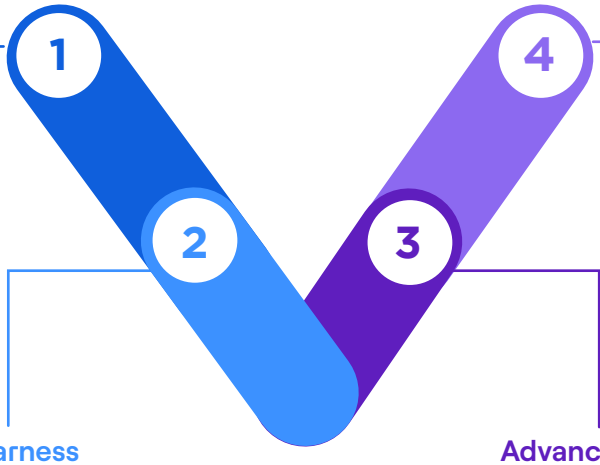
Electrical Engineering for Rail

The rail electrical wiring is undergoing transformation led by increasing number of electrical components, cables and wires in rail. To support the greater number of electrical and electronic systems, some of which are very sophisticated, wiring harnesses are becoming intensely complex. Rail OEMs are looking at new ways to simplify harness design to minimize wiring complexity, reduce costs and improve safety as they create and investigate entirely new devices, materials and processes for electric machines and power electronics devices. Electrical Wiring innovation will be key to drive competitive differentiation.

What we offer

Electrical Engineering for Rail

To support our customers as they explore wiring innovation, HCL Technologies leverages its decades of electrical engineering experience across transportation sectors to offer end to end services for design, manufacturing and installation of electrical systems/wire harnesses that answer the challenges of today and power future innovation.



Schematics and Apparatus design

- System design
- Architecture of the design

Wiring harness design

- Library parts
- Detailed design
- Harness routing: Branching, Band radius
- Electrical schematics/ Lay out drawings
- Bundle calculations, selection of protections, connectors and conduits
- Design zones- underframe, saloon, roof external, inter-car, driver cab, cubicle

Advanced industrial design

- Foam design
- Engineering Change Note

After market support (EOL)

- RCCA (Root cause & corrective analysis)
- Defective Analysis Report
- Service and Maintenance

Tool landscape

PLM/PDM	ENOVIA	TeamCenter	Windchill
Design tools	Catia V5 EHI, V4 E3D	Auto CAD	PTC Creo

Advantage HCL

150+ Engineers

13+ years of experience

Library creation

20% Faster turnaround time

Success Story

Harness Installation Design For A Leading OEM

SCOPE

Harness Installation drawing and Harness Breakout drawing creation for Aft End Divan Cabinet, Crew Rest Area, Vertical Tail, Bay Area and Galley.

HCL APPROACH

Comprehensive approach based on harness installation standards, standardized procedures and inputs from DCP, RFC, harness installation drawings, DMU, 3D, P&O

BUSINESS IMPACT

- Creation of harness installation in 3D and drawings in CATIA V5 including the BOMs & uploading into Enovia (PDM) with 20% faster turnaround time
- Creation of Release Vehicle (RV) and action items in Enovia for the release process.
- Creation of EDRN (Engineering Design Release Notice) for each file to be released
- Electrical harness installation standards and procedures