



Siemens Mobility

Use Case – Large-Format Exterior Parts for Rolling Stock

Customer Profile

Siemens Mobility, a Siemens AG subsidiary headquartered in Munich, specializes in rail transportation, spanning rolling stock, electrification, mobility management, and customer services. Its portfolio includes metro, tram, light rail, commuter, intercity, and high-speed trains, along with locomotives and automated people movers.

Recognizing additive manufacturing's potential in 2014, the company has since integrated 3D printing across its portfolio. Through its Easy Sparovation Part® offering, Siemens Mobility delivers optimized spare parts with enhanced functionality and fewer components.

By collaborating with rail operators and applying proven design principles, the team rapidly produces complex geometries, from low-volume replacements to series runs of several thousand parts.

Challenge

Siemens experts improve spare parts and deliver them upon customer request - enhanced and equipped with new functions. Combining their engineering know-how and additive manufacturing expertise allows for high flexibility and short lead times. Meeting this for large exterior rolling stock components, created demands for Siemens Mobility's additive operations.

Large-format printing on the F900® 3D printer required long build times, but standard material canisters could not sustain extended runs without interruption due to running out of filament.

Material integrity was also critical, as parts had to meet strict fire, smoke, and toxicity standards. ULTEM™ 9085 resin was selected, but its tendency to absorb moisture could affect print quality, causing surface defects and structural inconsistencies.

Solution

Siemens Mobility integrated the Fortus FDC™ (filament dryer and delivery cabinet) into its F900® production setup to improve efficiency and consistency. The FDC holds significantly more filament than the standard on-board canister, extending runtime and reducing interruptions on long, large-format builds.

The Fortus FDC uses controlled heat and dry air circulation to reduce filament moisture content before it feeds into the printer. This continuous drying eliminates defects tied to moisture without requiring separate pre-drying steps or added operator effort.

Impact

Integrating the Fortus FDC™ into the Easy Sparovation Part® production workflow delivered improvements across the key metrics that matter to Siemens Mobility's customers:

1. Faster spare-part delivery to rail customers, supporting fleet modernization and maintenance programs on schedule
2. Increased machine utilization leads to improved cost position and lower cost per part
3. Produced better quality parts, with added insurance against moisture-related defects
4. Improved reliability of the F900 systems at lower operator interventions



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The FDC is a crucial success factor for increased machine utilization and part quality. It's enabling us to deliver performance improved additive spare parts that are better than the original spare part, faster and at competitive pricing. Produced locally around the globe in our worldwide printer network at standardized quality levels.”

Christian Ochs
Head of Additive Manufacturing
Siemens Mobility GmbH