

A350XWB PREFAL

AIRCRAFT ASSEMBLY IN NEW DIMENSIONS



Toulouse, France – In 2009, Airbus S.A.S placed an order with the consortium of MCE-Areva-ECACNAI to assign multiple assembly lines for the whole PreFal (Pre-Final Assembly Line) for the entire fuselage of the new Airbus aircraft A350XWB.

Within this whole scope, MCE was responsible for the realization of the Equipment Pulse Line Section 13-14 as well as Section 16-19, both situated in Hamburg and the structural assembly of Section 13-14 in Nordenham as well as Section 16-18/19 in Hamburg which will be described in more detail below.



In addition to the positioning stations and finishing stations for the riveting, customer stations for inspection and preparation stations for section 19 were part of the scope.

Complementary to the usual work safety, ergonomics, and accessibility requirements, there was an entirely new way of assembling the parts and reaching the necessary accuracy remarkably influenced by the all-new carbon fiber reinforced panels of the A350XWB.

MCE developed the so-called „Measurement Assisted Assembly - MAA“ process to fulfill these challenging requirements. That means that all parts – upper shell, lower shell, side shell LH/RH, floor grid, cargo floor - (with a length of up to 18 m and a height up to 6 m) which were brought into the assembly line by presentation frames were fully automated measured by two laser trackers. After comparing the nominal data, the components are automatically moved to the setpoint position using up to 25NC axes. With this method, positioning accuracy of 0,1 mm and repeatability of 0,1 mm are reachable per axis by saving time for adjusting compared to standard manual processes.

In addition to this technological challenge, we also had to meet Airbus’s qualitative and scheduling requirements.

Thanks to our excellent team, we were able to meet all these criteria to the satisfaction of Airbus.

Facts & Figures:

Customer:	Airbus S.A.S.
Project Period:	2009-2017 (incl. extensions)
n° of NC-Axis:	382
n° of Laser tracker:	23
n° of measured targets:	150 (Finishing Station) up to 250 (Positioning Station)
Tolerances per axis:	0,1 mm