

Intelligent Welding Gun

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We have build an "intelligent welding gun" for BMW. This modified gun is equipped with infrared reflecting markers (from the ART system) and a small display.

Four ART cameras (look at <http://www.ar-tracking.de/>) are arranged on a 4m x 4m frame at the ceiling, looking down onto the welding workplace and tracking the gun with less than 1mm precision (6 DOF). The display shows two concentric circles (similar to the typical "aim" on a real gun: Zielfernrohr). The welding point at which the worker should place the next strut, is represented by a virtual 3D sphere. The welder has to move the gun s.t. the sphere comes to lie in the middle of the concentric circles. (Initially, a compas helps the welder move the gun s.t. the sphere gets into the field of view of the gun).

The system is being tested by real welders at BMW right now.