Sensor-based robot programming for the automated production of high orthogonal volume structures – SensPro (Inno profiles)

**Problem**

- Conventional robot programming for the production of volume structure as structural steelwork is characterised by the large amount of time required for small numbers produced and the necessity to make adjustments to the actual location of the components in production, hence is often very uneconomic.
- In the area of flat modules automated robot programming had already been turned into a reality on the basis of 3D sensor data of the components.
- In view of the great complexity of orthogonal volume structures and the high risk of collision between robot and component, the implementation of a sensor-based procedure for robot programming in the area of the production of volume structures represents a special challenge.

**Solution**

- Three-dimensional collection of the data of the components at the production unit
- Automatic processing of the sensor data to determine the parameters of the seams to be welded
- Conversion of the seam parameters into unit-specific robot programs with collision monitoring
- Adaptive modification of the robot programs to the actual components on the basis of data from an intelligent seam sensor

**Benefits**

- Drawing up of a research profile in the area of sensor-based robot programming
- Increasing the competitiveness of maritime companies through the use of innovative technology