



# Project „Flexible Assembly Processes for the Car of the Third Millennium (MyCar)“

## **Methodology Description (High Level)**

Intelligent algorithm for rapid setup of new welding parameters



## Rapid Setup System

Combined hardware + software system for rapidly finding of welding parameters for new materials and material combinations.

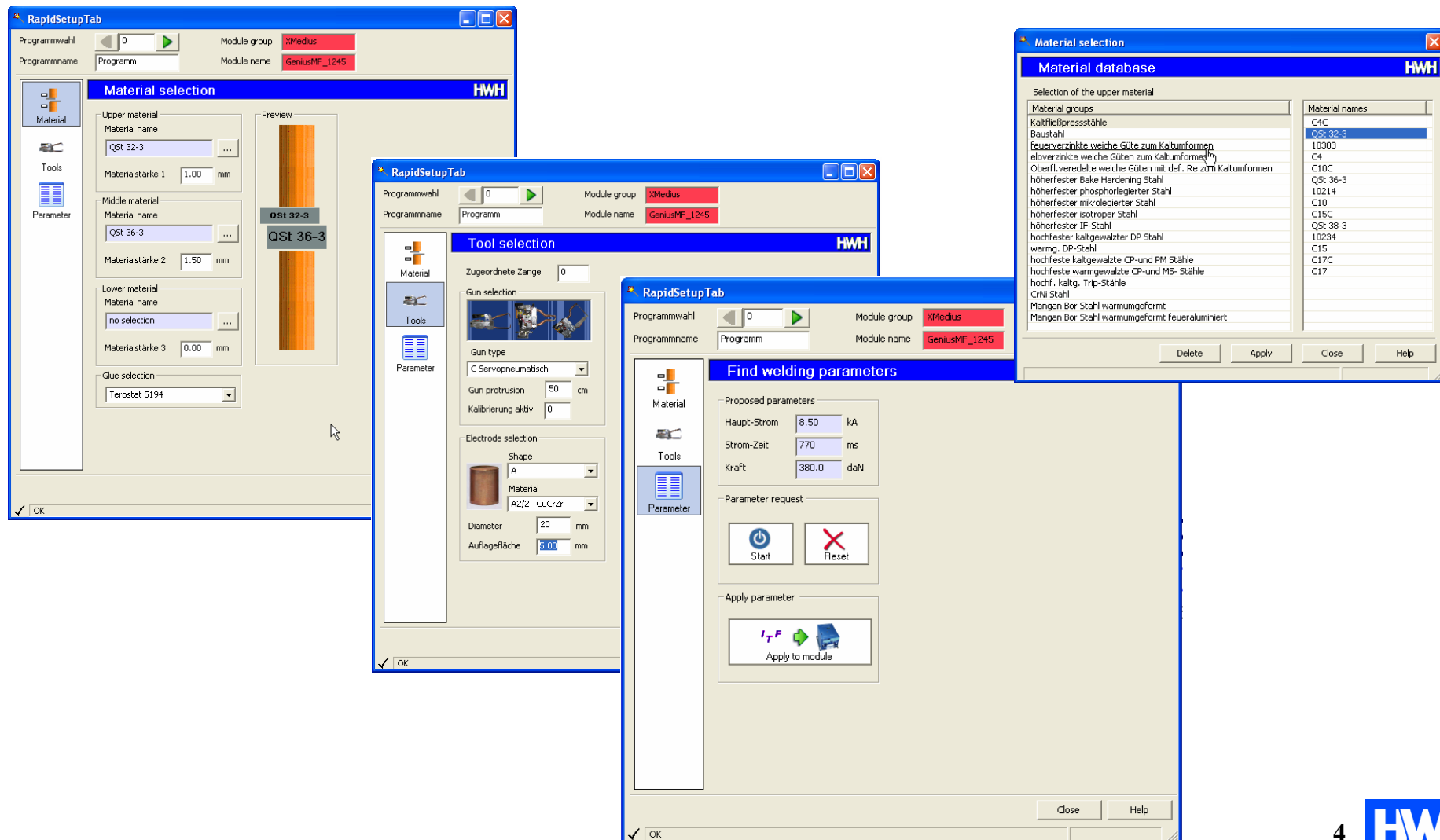
## Rapid Setup System benefits

- **Cost savings** due to **drastic reduction** of efforts in parameter finding
- **Better time to market ratio** for new production
- **Optimal welding quality** due to material and machine tailored welding setup
- Potential **reduction of energy costs** and **production cycle time** due to optimized welding parameters
- **Reduction of tests**, and hence material (test sheets) and energy savings (less consumption), promote positive impact to the environment.

## Rapid Setup System advantages

- Easy finding of optimal welding parameters with **minimum setup requirements** and **minimum configuration effort**
- Integrated **database** for welding parameters; basic parameters
- **Only two to three steps** are required for machine-tailored parameter sets
- **No additional hardware** (e.g. measurement system) is required
- **Fully integrated** into Harms & Wende Genius welding timer and XPegasus programming environment

# Rapid Setup User Interface (examples)



The image displays four overlapping screenshots of the Rapid Setup User Interface (HWH) for the GeniusMF\_1245 module.

**Material selection window:** Shows the selection of materials for the upper, middle, and lower parts of the assembly. The upper material is QSt 32-3, the middle material is QSt 36-3, and the lower material is no selection. The glue selection is Terostat 5194. A preview of the assembly is shown on the right.

**Tool selection window:** Shows the selection of tools for the assembly. The gun type is C Servopneumatisch, the gun protrusion is 50 cm, and the electrode selection is A. The material is AZ/2 CuCrZr. The diameter is 20 mm and the Auflagefläche is 5.00 mm.

**Find welding parameters window:** Shows the proposed parameters for welding: Haupt-Strom 8.50 kA, Strom-Zeit 770 ms, and Kraft 380.0 daN. It also includes a parameter request section with Start and Reset buttons, and an Apply parameter section with an Apply to module button.

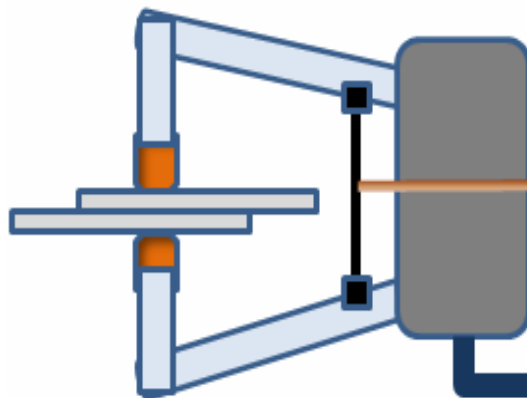
**Material database window:** Shows a list of material groups and material names. The material names list includes C4C, QSt 32-3, 10303, C4, C10C, QSt 36-3, 10214, C10, C15C, QSt 38-3, 10234, C15, C17C, and C17.

## Rapid Setup integration

Harms & Wende XPegasus programming software



Welding gun with cable for voltage measurement



Power supply cable



Harms & Wende Genius welding timer

