EC Framework 7 project SME-2011-1-284471 (2011-2013)

Development of an Automated Spot Weld Inspection Device for Safe Vehicle Repair / SpotTrack

the objective of the project

to create the first automatic spot weld tracking device that can be applied non-destructively in the automotive repair industry. The new SpotTrack device will allow the user quickly and reliably to tell whether a spot weld is acceptable by giving a simple pass or fail indication. The proposed SpotTrack system will have the advantage of testing the actual weld made within a matter of seconds and without the need for interpretation.

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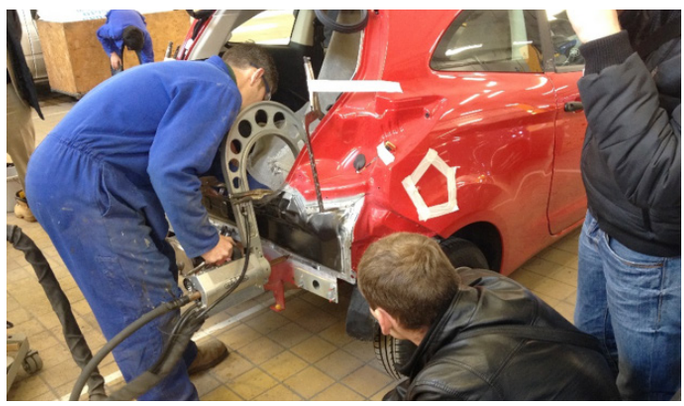
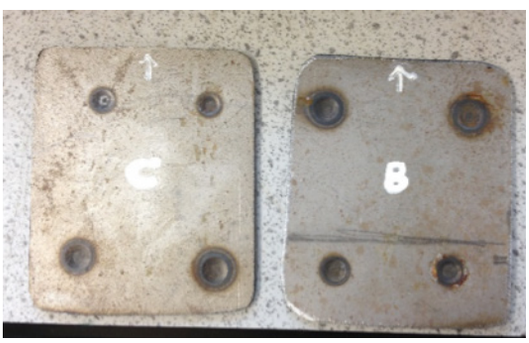
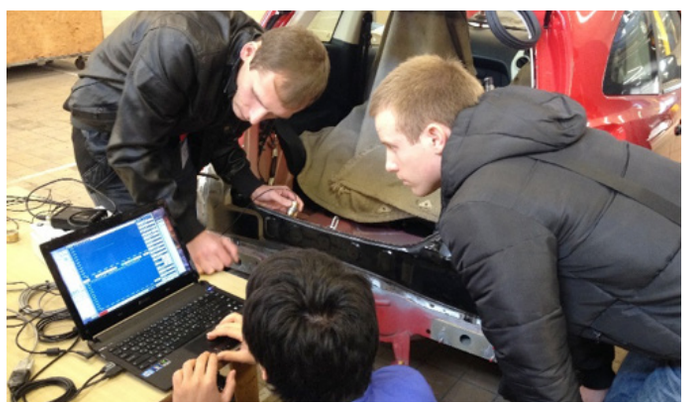
had developed signal processing algorithms, which after the analysing the acquired signals from ultrasonic array probe gives simple pass or fail indication depending on the spot weld quality. The developed algorithm had been verified in the field trials.



The welding of car body

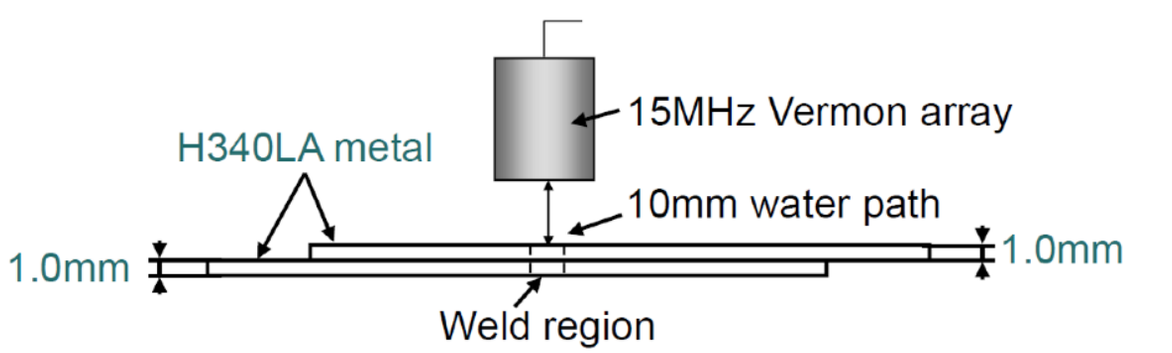


The example of spot weld test samples used during the development of the inspection system

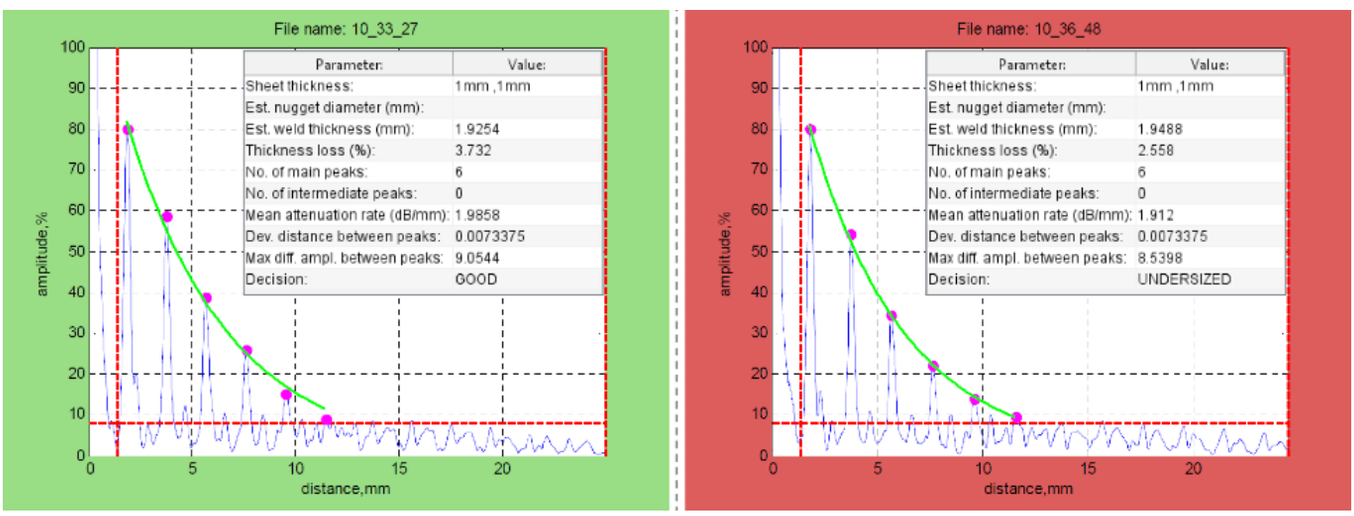


The field trials of the developed system at the accident repair centre in UK

Ultrasound Institute of Kaunas University of Technology
http://ultrasound.ktu.edu



Experimental set-up



Output screen of the developed signal processing algorithm with pass (green) and fail (red) indication about the quality of the weld

project partners

Vermon SA (France), I & T Nardoni institute SRL (Italy), Tecnitest Ingenieros SL (Spain), A.C.T. (Transnational), Limited (UK), Tofas Turk Otomobil Fabrikasi Anonim Sirketi (Turkey), Karl Vella Autobody Repairs Ltd (UK); TWI limited (UK); Kauno technologijos universitetas, Ultrasound Institute (Lithuania), Consulting AB GmbH (Germany).

project partners

1. G. Genutis; E. Jasiūnienė; R. Sanderson. An algorithm for the estimation of the quality of the spot welds // Russian journal of nondestructive testing. New York : Pleiades/Springer. ISSN 1061-8309. 2014, vol. 50, no. 6, p. 335-342.

2. E. Jasiūnienė; V. Samaitis; L. Mažeika; R. Sanderson. 3D ultrasonic non-destructive evaluation of spot welds using an enhanced total focusing method // Journal of Materials Engineering and Performance. New York : Springer. ISSN 1059-9495. 2015, vol. 24, iss. 2, p. 825-831.

project homepage

http://www.spottrack.eu/