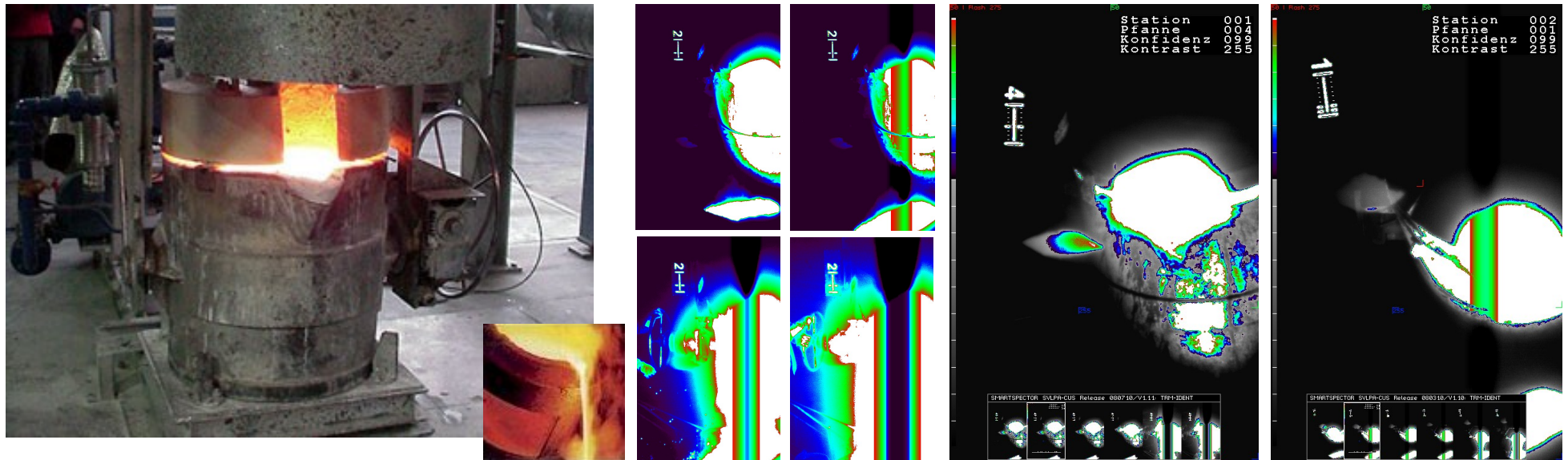


# SMARTSPECTOR Aurora™ - Icarus project Smartspector perception systems keep track of liquid iron



**Project-partner/customer:** The project was shaped and carried out by order of *Duktus Tiroler Rohrsysteme GmbH*. In recent decades, the company has been among the European market leaders in the production and treatment of ductile iron. Austria's largest casting house offers high-class products to be applied in diverse industries worldwide. Amongst other measures, cutting-edge solutions for in-process inspection seize the company's superior product quality and an excellent productive efficiency.

**Project definition:** Up to 100 individual foundry ladles shall be identified and moulding procedures shall be detected automatically. The applied smart cameras shall forward detection and identification results to downstream equipment and shall provide pictured information upon each moulding event. To facilitate the identification of ladles, each one is equipped with a reflective identification mark, showing the same optical properties as number plates for cars.

**Environmental conditions:** Liquid iron has a temperature of about 1,500°C. The given process defines adverse overall conditions with regard to thermal radiation and illumination levels - way beyond the specification of any roadside camera equipment. Nonetheless, the Smartspector camera systems verified their superlative dependability by having tracked a 3 shift operation reliably since March 2008.

**Measurement result:** Every moulding procedure is documented by means of a representative full-size image shortly before the process starts; the beginning moulding process is shown in a set of small scale index images. The camera system also outputs the identity of the foundry ladle in combination with a confidence and a brightness value for the identification mark. This measure facilitates preventive measures regarding impacts from staining and wearing. The chosen colour coding characterises blue identification marks as still readable but to be exchanged soon.



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