

RadiFLAT is a research project funded by the Research Fund for Coal and Steel under grant agreement No 800679. The program started on the 1st of June. It will be finished with 31st December 2021 and has a total budget of 1.74 million €.

Project objective is the realization of the worldwide first radar-based strip flatness measurement system, including strip edge detection for optimizing strip flatness and width for strip processing lines. The basic technology consists of a multi-radar system which is created to operate with a high frequency of up to 300 GHz and delivers reliable measurements even within an extremely hostile process environment (dust, vapour, high temperatures, vibrations, etc.).



radar-based strip flatness and width control for strip processing lines

To find more information about our activities, please visit

www.radiflat.eu



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Motivation for strip flatness control

- Rolled products with poor planarity are difficult to handle in downstream processing and therefore tend to have poorer surface qualities or even fractures
- Strip flatness is therefore of utmost importance in steelmaking and a key criterion for the incoming goods inspection

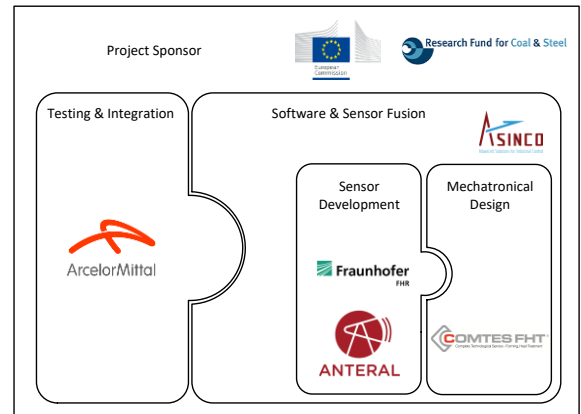
Project objectives

- Realization of a reliable, radar-based measuring system with integrated strip edge detection for determination of manifested strip flatness
- Contactless flatness measurement at different distances to the measurement object for widest possible range of application
- Measuring accuracy in the micrometer range with simultaneous robustness against harsh operating conditions
- Engineered as a cost-efficient, compact, modular and scalable system

Advantages of band flatness measurement with radar sensors compared to conventional systems

- Higher resolution of surface topography through recent advances in semiconductor and radar technology
- Robust measurements even under hardest conditions
- Lower hardware costs
- Use of the system at potential measuring points with limited accessibility due to smaller installation space

Project Consortium & Partners fields of action



ASINCO GmbH (Germany)

- Lead Management, Signal Processing, Single Sensor Integration, Control Algorithms

Arcelor Mittal Eisenhüttenstadt GmbH (Germany)

- System Integration, Testing

Anteral S.L. (Spain)

- Antenna Development/Design

COMTES FHT AS (Czech Republic)

- Mechatronical Design, Simulation

Fraunhofer-Institut für Hochfrequenzphysik und Radartechnik FHR (Germany)

- Sensor Development