

Summary of ICRI Workshop Vienna

During the group discussion three focus topics were identified:

(1) Martensite and WEL

There exist still many knowledge gaps. There seems to be no common understanding.

Questions:

- Context of grinding and impact by grinding
- Developing during regular train service
- Spinning wheels – one event sufficient? Planting seeds everywhere?
- Uniformity of defects
- Resultant residual stresses in rails
- Impact on/of Magic Wear Rate
- How to detect and measure
- Quantification of impact factors

(2) Squats and Studs

Is there a common understanding – is there an accepted definition – not everyone seems to speak the same language. Several European Projects are currently running (focus in DACH area)

Questions

- Contributing factors and role of Martensite (strong interaction with WEL topic)
 - Role of metallurgy (hardness, cleanliness, etc.)
- Vehicle impact - vehicle modelling
- Track stiffness and stiffness change impact

(3) Damage characterization – Electromagnetic (EM) Technology

Difference in RCF measurement approach Europe vs. North America. Quantifying surface damage is an ongoing ICRI Topic. There is also project of TU Graz and ÖBB on EC measurements and grinding currently running. An analysis of different EC methodologies was done in the past with FRA funding – ambiguous conclusion.

Questions:

- Clearly identify strengths and limitations of existing technologies – not designed for every situation. There is still no clear picture.
- Detect cracks and defects as early as possible
- How often to measure
- Value of cracks vs no cracks (damage free rail surface)

It was agreed to have three webinars within the Conference group on all three identified focus topics and see how this could translate into an ICRI project/activity. If agreement in the conference group, the wider ICRI group would be contacted for contributions.

Further discussed topics:

- Corrugation at stiffness transitions: measuring/modelling/understanding
- Establishing a set of standardized vehicle models. In the discussion it was suggested that this might be something that many would like to keep proprietary. But it is understood that the FRA has an interest in this topic also.
- Magic wear rate – regarding the need for more data sets upon which to base crack growth and wear models.