WE ENSURE MOTION

MRO in Rail:

Case study on component maintenance service

I&S Event - Brussels, 22.09.2016

- Frank Wachendorf -

CONTENT

1. Company profile HFG
2. Serialization of wheelset bearings
3. Benefits for the fabrication process
4. Benefits for wagon keepers and operations
5. Chances of interaction

1. Company Profile HFG

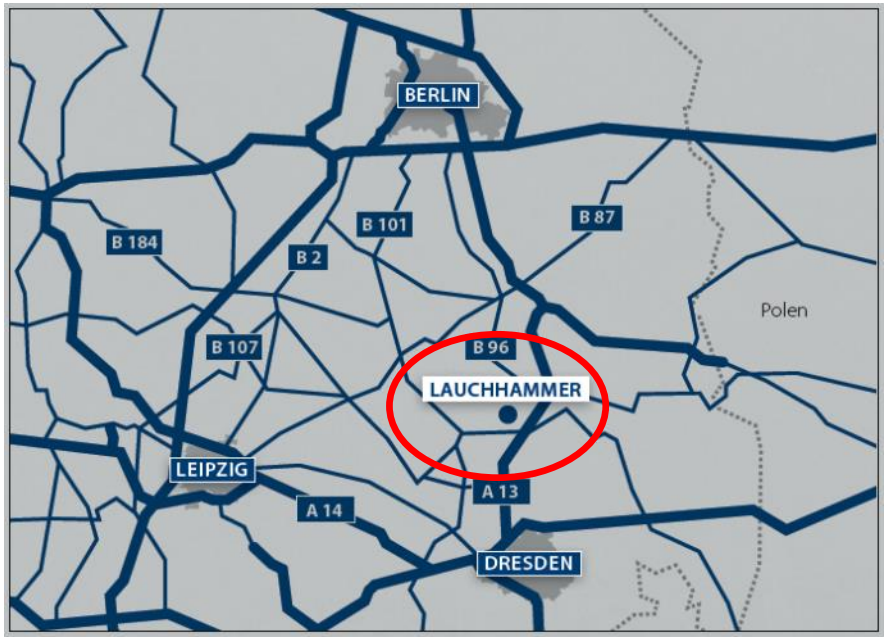
Overview:

HFG Transport-Technik GmbH
Schmiedeweg 2a
D-01979 Lauchhammer-Süd

Year of founding (GDR):
1959

Management Buy Out:
1992

Employees:
approx. 30

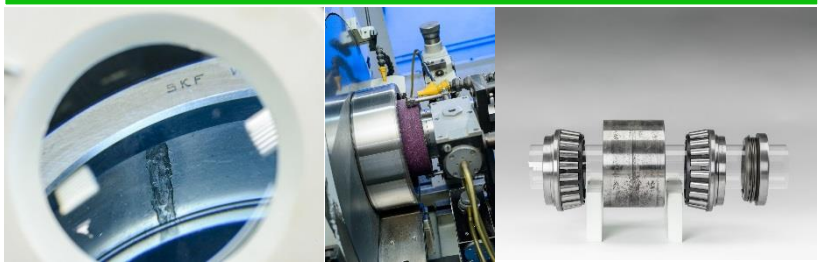


1. Company Profile HFG

Business Segments:

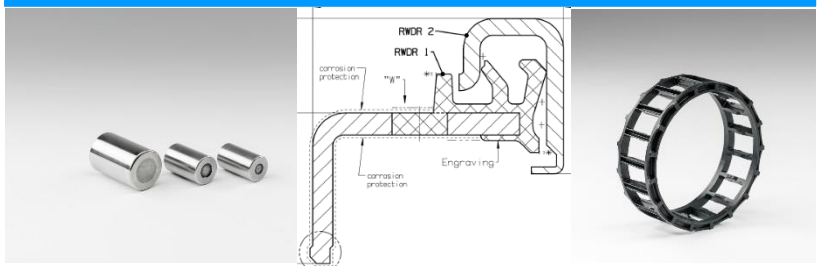
Reconditioning of Rolling Bearings

Assessment, refitting and regeneration



Rolling Bearings & components

Manufacturing of bearing components



Serialization

Consulting and implementation of component marking solutions

Consulting & Training

Consulting an training on QM topics, preparation for certifications

1. Company Profile HFG

Reconditioning of wheelset bearings

- Bearing assessment and component check
- Refitting with new polyamide cages
- Regeneration by grinding of raceway

1. Company Profile HFG

Approvals and references:

- Deutsche Bahn AG
- ÖBB TS
- SBB Cargo
- PKP Cargo
- VPI Hamburg
- VTG / AAE
- Touax
- Vattenfall Europe Mining
- Bochumer Verein / RAFIL
- Villmann-Group
- Railmaint (former Euromaint)
- Ryko a.s.

2. Serialization of wheelset bearings

Direct part marking (DPM) by laser

- Laser engraving at the rim of component
- Implementation of GS1 Application Identifiers
- Datamatrix quality checks with VERIFIER

- Approved marking technology
- Durable and robust marking
- High quality of Datamatrix Coding

2. Serialization of wheelset bearings

Direct part marking (DPM) by laser

- Implementation of the GS1 data identifier concept
- Combination with GS1 Datamatrix
- Optional: Additional GS1 Application Identifiers

Serialization of newly manufactured bearings: sGTIN

[**01**]04053063013841[**21**]241174FW

HFG Article number

HFG serial no.

Serialization of used bearings as a "by pass" operation during the regular wheelset maintenance: GIAI

[**8004**]40582264000000901458951

Asset identifier given by owner / operator

3. Benefits for the fabrication process

Component-individual tracking of…

- **Maintenance history**
- **Fabrication data**

machines' parameters

responsible workers

measured tolerances

primary material batches

internal benefits

external benefits

<u>Guarantee claims</u>:
Short reaction time

<u>Fabrication failures</u>:
Exact localization and specific recalls

<u>USP</u>:
Additional product value

3. Benefits for wagon keepers and operations

Component-individual tracking of…

operational data

component life cycle

maintenance history

logistics & storage

internal benefits

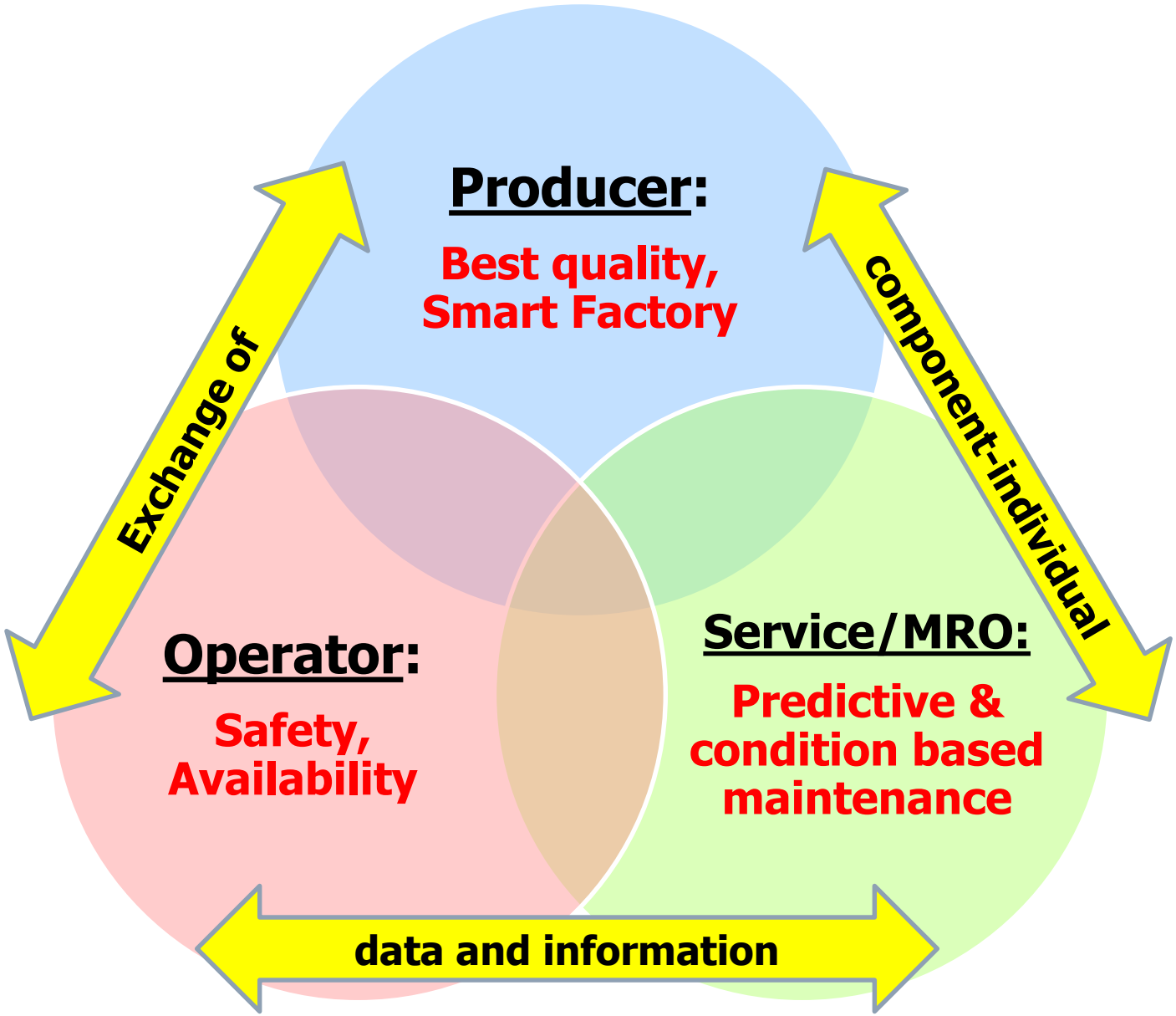
external benefits

<u>Warranty periods</u>: Exact determination per piece

<u>Guarantee claims</u>: Exact backtracking

<u>Procurement</u>: Automated processes

5. Chances and prospect



5. Chances and prospect

In the case study…

…combination and analysis of information about bearings‘ condition with operational data

Cause-and-effect chains

Operator:

e.g. conclusion from events (e.g. accident) to component failure (and vice versa)

Service/MRO:

e.g. use-based maintenance (dependent on mileage, route)

Producer/OEM:

Empirical assessment of OEM-related product quality an other features

…vision of a new business model: **„Pay per use“**

WE ENSURE MOTION

thank you

for your attention

HFG Transport-Technik GmbH
Frank Wachendorf
eMail: frank.wachendorf@h-f-g.de