

# Maintenance at the Rhaetian Railway

Intelligent Maintenance Conference  
Dr. Renato Fasciati, CEO RhB



# Maintenance is crucial for railway operations...



**SBB: We are a bit late**



**RhB: Ok, we are waiting.**



# The Rhaetian Railway

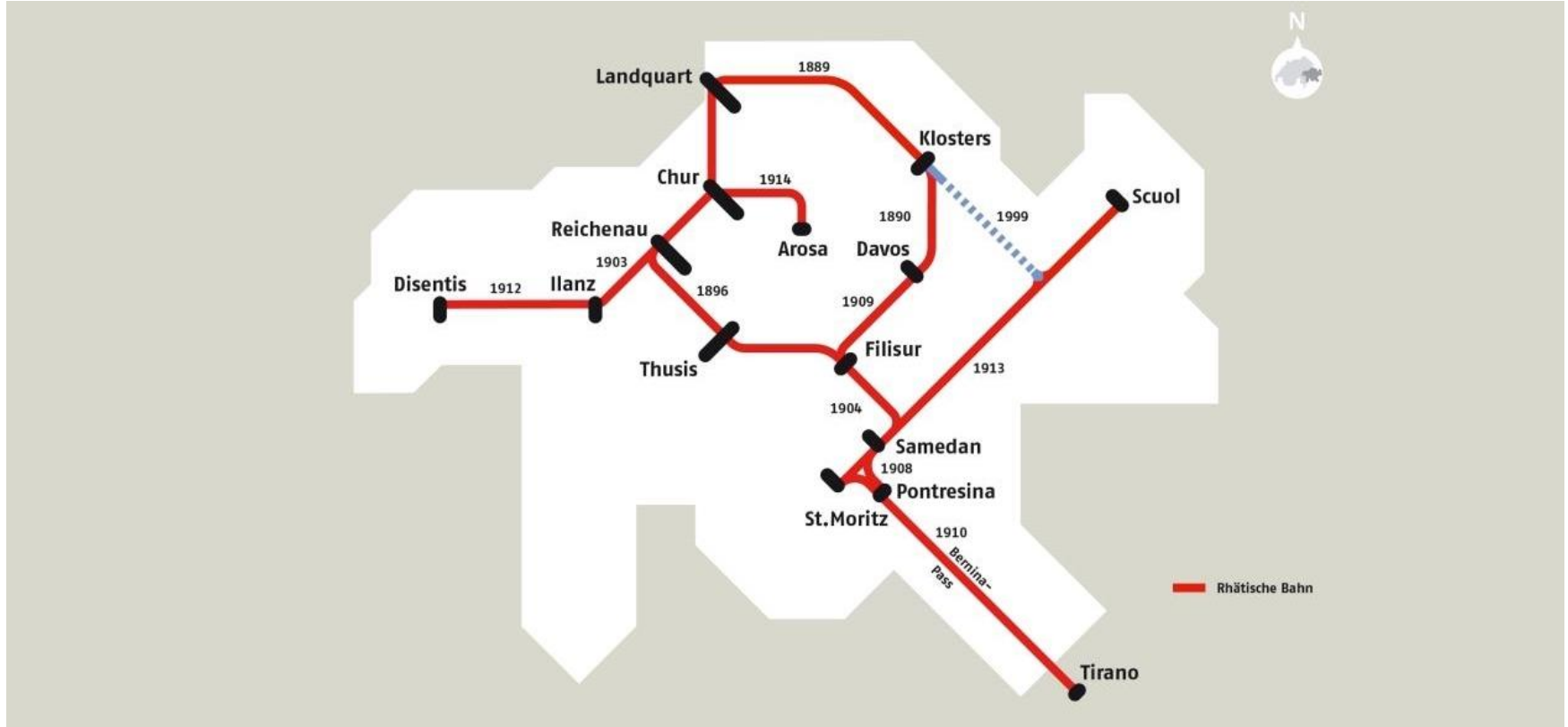
## Graubünden State Railway

- Switzerland's largest metre-gauge railway
- Integrated railway
- CHF 370 million operating income
- Active in passenger transport, car transport and freight transport
- Host of the Bernina Express and Glacier Express panoramic trains

**«The RhB moves Graubünden and fascinates people from all over the world»**



# Current route network: 384 km



# Agenda

## Expectations for smart maintenance



## Practical implementation at the RhB



## Summary and conclusion



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## Expectations for smart maintenance



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## Summary and conclusion





# Maintenance faces different expectations and needs

Stakeholders / customers



Finance

Organisation /  
Processes



# Stakeholder / customers

Stakeholder / customers



Our customers expect **100% reliability** and **availability**

Finance


Organisation / Processes





# Finance

Stakeholder / customers



Finance


Organisation / Processes

**Efficient maintenance enables affordable offers.**

example:  
Daily historical trains Davos-Filisur



# Organisation / Processes

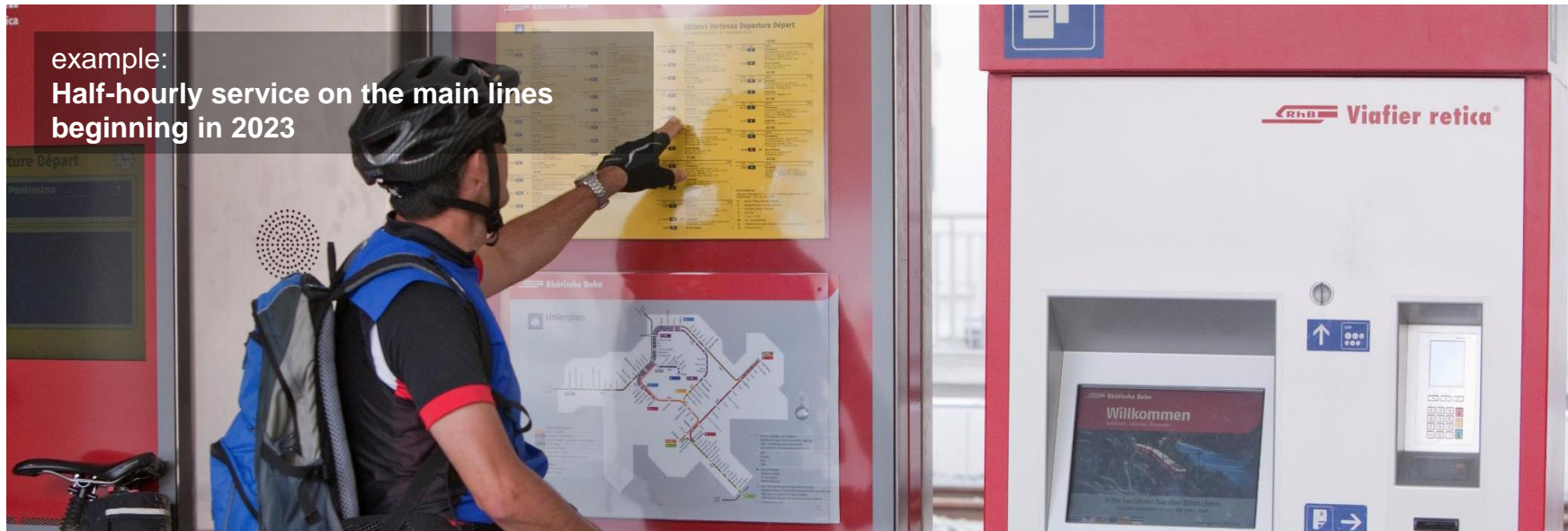


Stakeholder / customers

Finance

Organisation / Processes

Maintenance must be **flexible** to adapt to new circumstances.





# Agenda

## Expectations for smart maintenance



## Practical implementation at the RhB



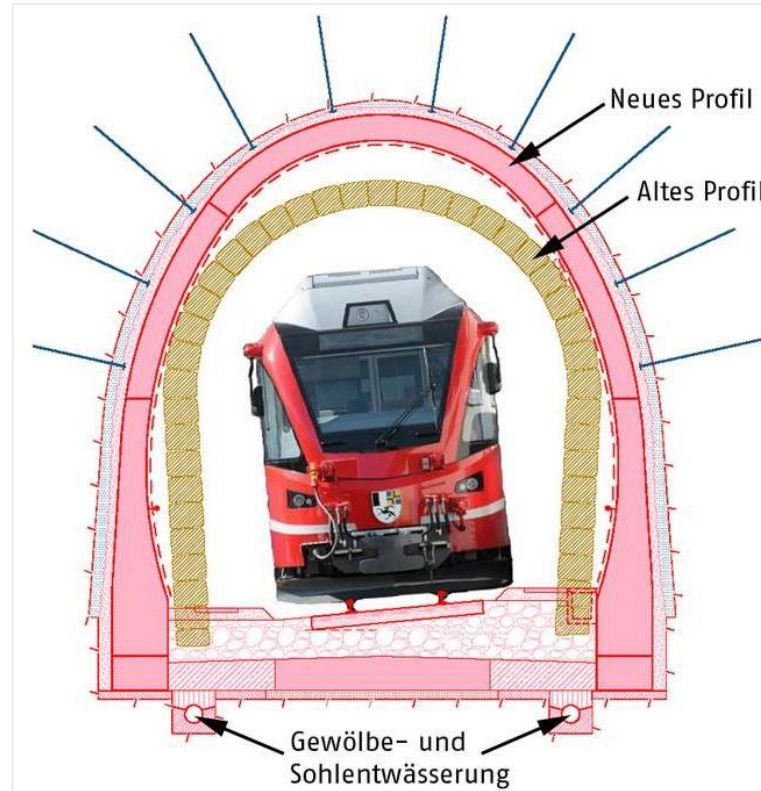
## Summary and conclusion





# Tunnel construction during ongoing operations 1/7

## Enlarge the tunnel profile



# Tunnel construction during ongoing operations 2/7

## Protective tunnel during construction





# Tunnel construction during ongoing operations 3/7

## Enlargement of the tunnel cross-section





# Tunnel construction during ongoing operations 4/7

## Installation of prefabricated elements



# Tunnel construction during ongoing operations 5/7

## Installation of overhead contact line and track





# Tunnel construction during ongoing operations 6/7

## Restoration of tunnel portals





# Tunnel construction during ongoing operations 7/7

## Restoration of tunnel portals

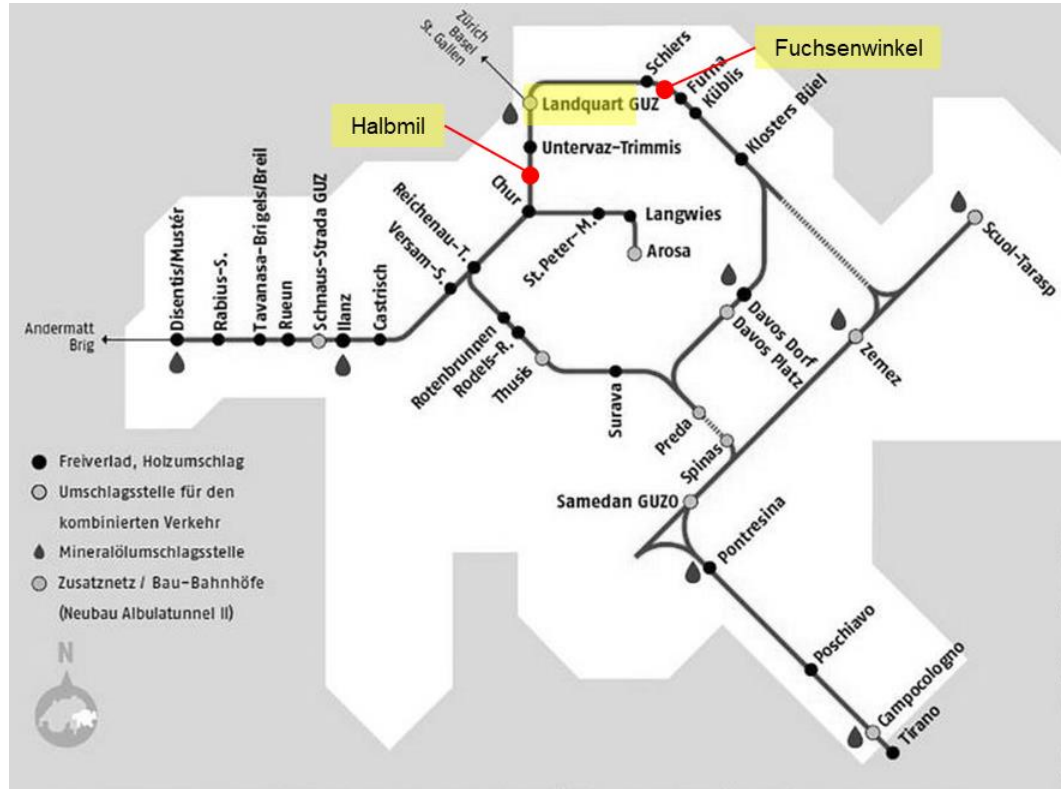


# New measuring carriage





# Wheelset diagnostic measuring points



Measurement of the parameters:

- Wheel roundness
- Wheel profile
- Bearing temperatures (detection of hot and cold runners)

# Digitisation of processes





**And if there are still more ideas missing...**





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**InnoTren –  
Inspiring rail car for meetings**



# Agenda

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# Summary and conclusion

- Intelligent maintenance in **field of tension** between **stakeholders** / **finance** / **organisation**.
- **Customer** and **operations focus** is very important for the RhB.
- Intelligent maintenance ensures **safety**, **efficiency**, **flexibility** and **daily operations**.





**Thank you very  
much for your  
attention.**

