

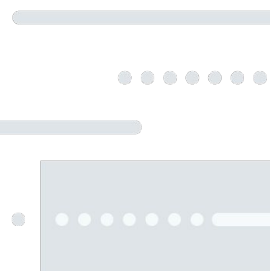


OpenShift @ thyssenkrupp elevators

How Red Hat and Openshift helped TKE innovate

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May 6th, 2019

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May 6th, 2019



thyssenkrupp elevators

Company Overview



Essen, Germany

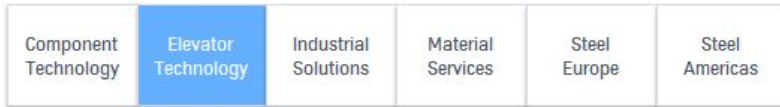
- Integrated Materials and Technology Company
- 156,000 employees in 80 countries
- €40 billion order intake

thyssenkrupp elevator worldwide

- 50,000 employees
- 20 plants, > 900 branches in 70 Countries
- 1.1 m units under maintenance,
- 24,000 technicians
- €6 BILLION ORDER INTAKE

thyssenkrupp elevator US

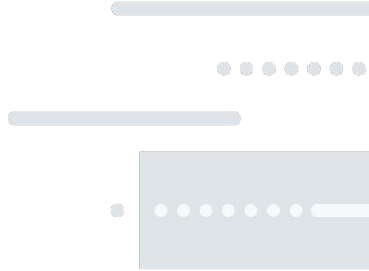
- 8,600 employees
- 115 branches
- ~220,000 units under maintenance
- 5,000 technicians
- \$2 BILLION ORDER INTAKE



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Maintenance Overview

- Field service organization of 2500+
- Install base of 220K +
- Various Service Levels
 - Contractual maintenance (Planned)
 - Break-fix (Unplanned)
- Planning Model
 - Routes
 - Location
 - Frequency, Durations



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Measuring Maintenance

Objectives

- Reduce/eliminate missed maintenance
- Reduce break fix
- Increase customer service
- Increase service efficiencies

Measuring Success

- Increased % Mechanic total productive time
- Reduction % in NB CB OT hours
- Reduction % in missed maintenance
- Increase % in contract renewals



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Future of Maintenance Planning

Plan

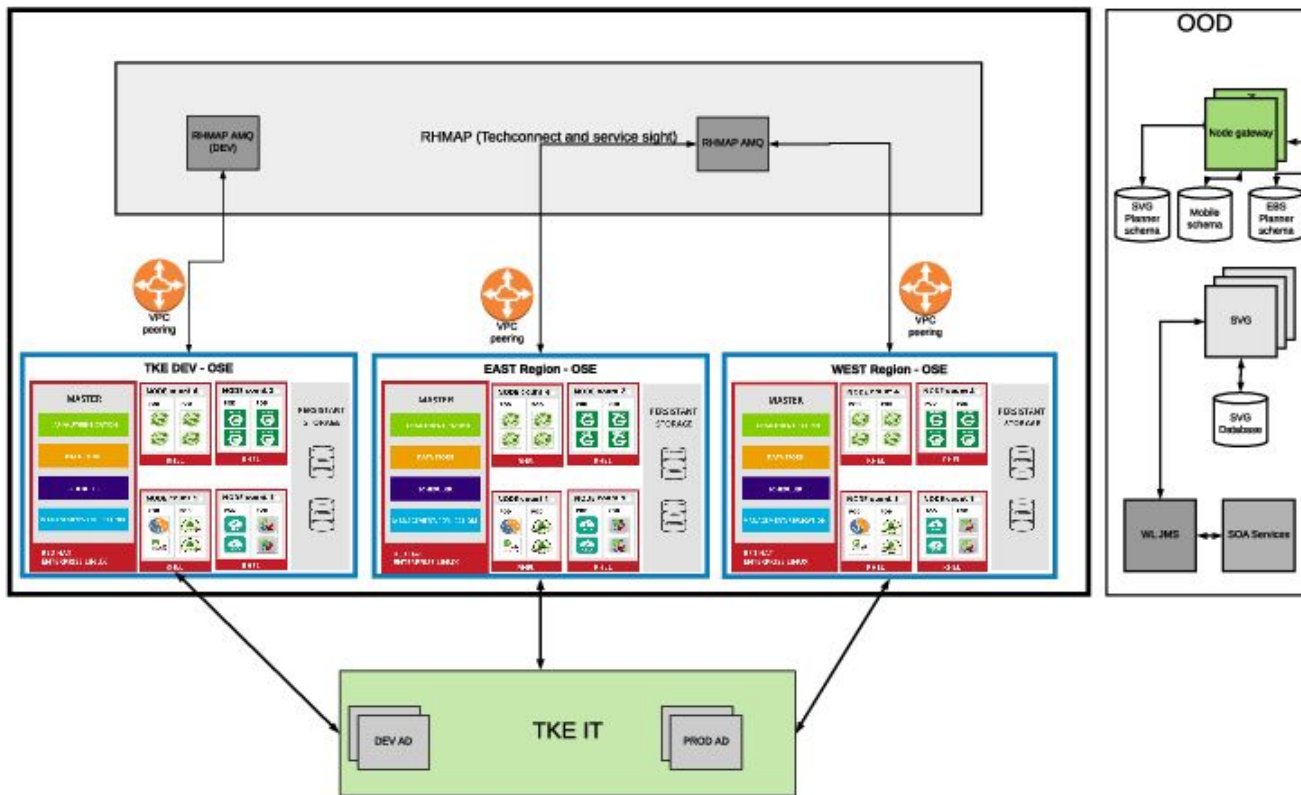
- Install base clean up
- SLA integration
- Resource availability
- Location grouping
- Unit scoring
- Service levels
- Schedule and balance routes

Future

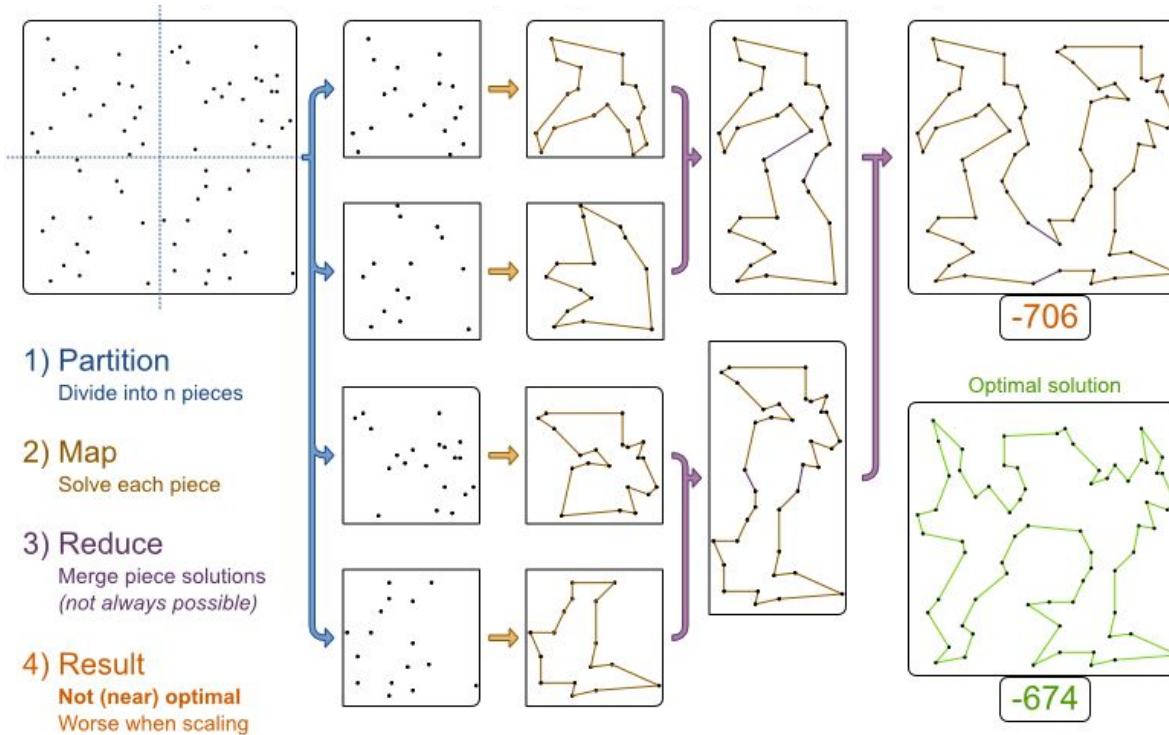
- IOT
- Repairs
- Safety



Current SS OSE Network



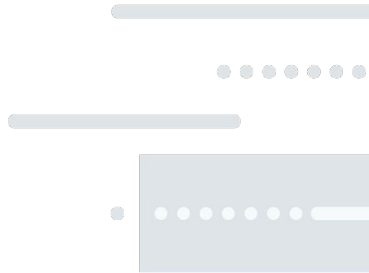
Complexity simplified



Business Impacts

With a 2 year pilot, live for about 6 months:

- Completed maintenance rose from 50% to 75%; goal 100% within a year
- Increased maintenance planning/scheduling
- Reduced contract cancellations, billing compliance, meets SLAs
- Reduce # of devices mechanics had to carry to one mobile device
- Reduce capex and HW costs by utilizing cloud and managed offerings
- See availability, identify mechanic overallocation
- Achieve attainable goals
- ~ 8000 mechanics and technicians use daily



Business Impacts

Skill and service impacts:

- Eliminated skill gaps from the infrastructure side
- Mechanics can now handle most issues on-site using the technology
- Better support, including pictures, diagrams, and historical data
- Machine Learning (MAX) integrated with the mobile technology
- Perform better service on-site using database of fault codes and common resolutions, enable preventative maintenance
- Security was top priority (SSO)
- Have a partner with Red Hat

