



PrimaVera

Consortium meeting 2023

Feb 1, 2023

Prof.dr. Marielle Stoelinga
*University of Twente &
Radboud University*

Programme



- 13:30** Welcome
Marielle Stoelinga (Utwente), and Hans Woudenberg (NS)
- 13:45** Digital Twin Utrecht CS
Jeanette Kober, NS
- 14:15** Martin van Hastenberg (Program Manager ASML)
- 14:45** Sharing PrimaVera Insights: poster pitches

- 15:00** Break & posters

- 15:30** Research talks
Bas van Oudenhoven, TU Eindhoven; Roel Bouman, Radboud Universiteit
- 16:00** Tjeerd de Jong (Program Manager Data Driven Maintenance RWS)
- 16:30** Closing and network drinks



Improve reliability & availability

Streamline service calls

Reduce downtime

Reduce maintenance costs

Automation
machine

Machine	31.01.2	2017	31.01.2022	Customer	Von
Original	31.01.2	Year	2020	Status	Work
Big Brother	31.01.2	Id.	31.01.2022	Role	MAN

Vision of PrimaVera



- 6+11 partners
- 12 PhD students
- 4 postdocs
- MSc students
- 5M€

- Make predictive maintenance easier and more effective
- Realize the potential of PM: better performance, higher availability at lower cost

UNIVERSITY
OF TWENTE.

THE HAGUE
UNIVERSITY OF
APPLIED SCIENCES



TU/e



SAXION
University
of Applied
Sciences



ASML



Koninklijke Marine



Rijkswaterstaat
Ministerie van Verkeer en Waterstaat



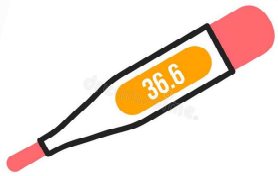
ORTEC
OPTIMIZE YOUR WORLD

Rolsch Assetmanagement



DAMEN

Objectives



Measure better

- Intelligent data acquisition
- Data fusion
- Decision support: what, where, how to measure



Predict better

- More scalable, robust and accurate algorithms
- automated root cause analysis



Plan better

- Maintenance strategy at asset and fleet level
- Cluster maintenance actions



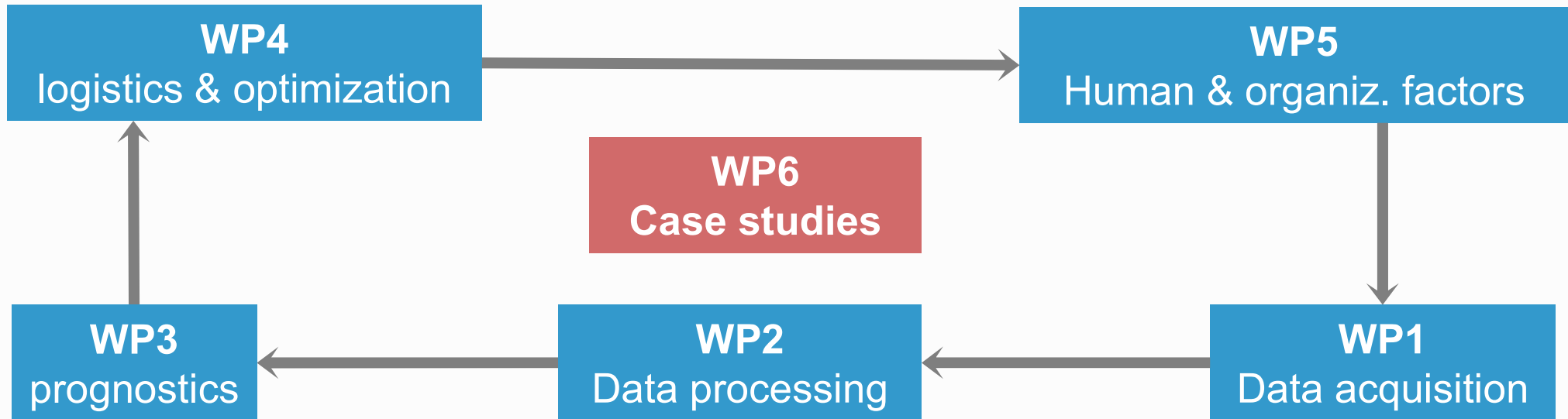
Organize better

- Organizational and human factors
- Solutions that work for people and organizations
- Help companies with digital transition

Above all:
Integral approach

Workpackages

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See posters

Scientific methodology

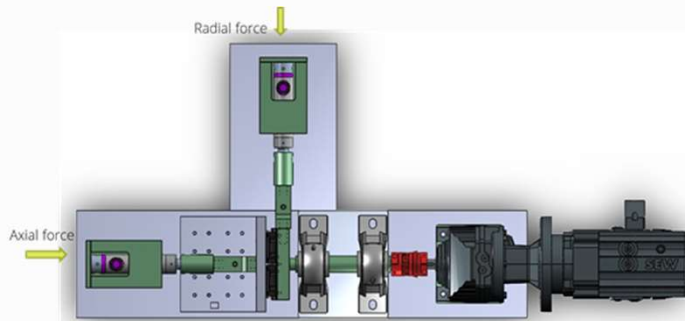


Action research

- Not: theory first, practical evaluation second. But: work with stakeholders on challenging problems
- Scientific gain: From specific solutions to general principles
- Fundamental: why do (or don't) solutions work?

Results

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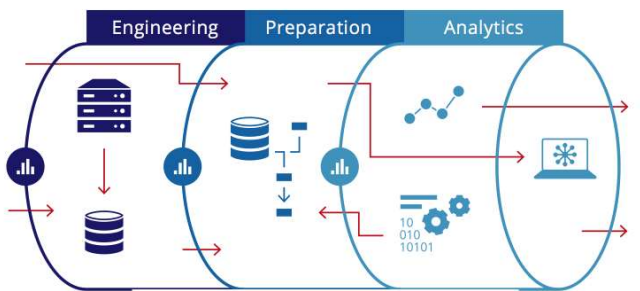
Test bench



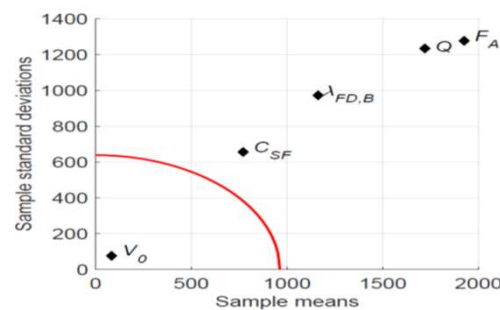
Data challenge



Scrubber model (MDP)



Data pipeline (Python)



Data selection pumts

- Crack propagation
- Optimization under partial observability
- Fault trees vs decision trees
- ...

Programme booklet



Predictive Maintenance for Very Effective Asset Management

Booklet for the Predictive Maintenance Seminar 2023

February 1, 2023



<https://primavera-project.com>