

DeSIRE tenure track position #10: Resilient Asset Management and Maintenance

University: Eindhoven University of Technology

Department: Department of Industrial Engineering and Innovation Sciences

Responsible Professor: Prof. Dr. Geert-Jan van Houtum

Expected to open: This position is expected to open around July 2018

Description:

Many organizations depend heavily on the availability of assets, such as trains, production machinery, and medical equipment. These assets are monitored remotely by an internal or external maintenance organization which can predict failures of critical components. These predictions may lead to direct actions to physically inspect and possibly replace a component within a few hours. This requires fast local decision making to schedule the inspection, to quickly make a service engineer and possibly a spare part available, and possibly to do additional maintenance actions to avoid another costly visit within a few weeks. It also requires that the user agrees with the interruption of his operation. This new way of working is much more dynamic than the current way of working and asks for the development of new control concepts that lead to much higher system availabilities of assets against equal or only slightly higher costs.

Position in framework of the programme (please delete what is not applicable):

- Approaches/discipline: stochastic operations research and management / maintenance
- Scale/application area: urban infrastructure / production & manufacturing sector infrastructure, energy
 - power grid infrastructure, process sector infrastructure

Synergy with other tenure track position(s):

- Electromagnetic energy conversion for a more resilient society (TU/e, Electrical Engineering)
- Cyber-physical energy system resilience (DUT, Electrical Engineering Mathematics and Computer Science)
- Flood resilience (DUT, Civil Engineering and Geosciences)
- Modeling and governance for the response to large-scale disruptions (DUT, Technology Policy Management)
- Monitoring the resilience of artificial and natural infrastructure in cities and urbanized deltas (UT Engineering Technology)