



Working with signalling systems

– without actually doing it

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SIGNALLING RELATED TASKS

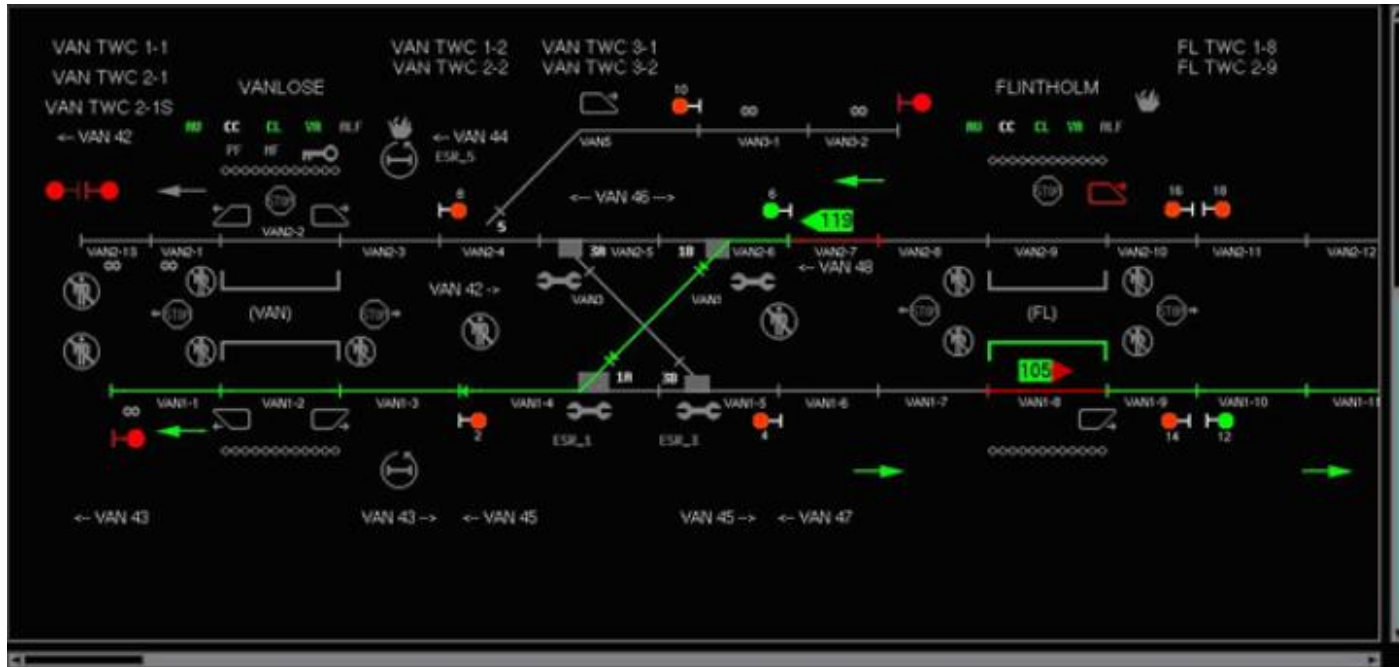
- M1/M2 Automatic Train Control (ATC)
 - Track circuits fixed block signalling
- Cityringen ATC
 - CBTC moving block signalling
- Ring 3 light rail signalling
- Timetabling
- Capacity
 - Core capacity and delivered capacity
- Gathering of ATC market intelligence
 - Conferences
 - NGTC EU project
- Simulation
 - Disruption management
 - Planned maintenance
- University projects
- New lines



IMPROVED PASSENGER INFORMATION

- More real-time information
- New screens
- Rejseplanen journey planner
- M1/M2 and Cityringen

PAX INFO: INPUT



- Automatic Train Regulation (ATR) algorithm decides arrival and departure times
- Targets timetable or headway



PAX INFO: INPUT

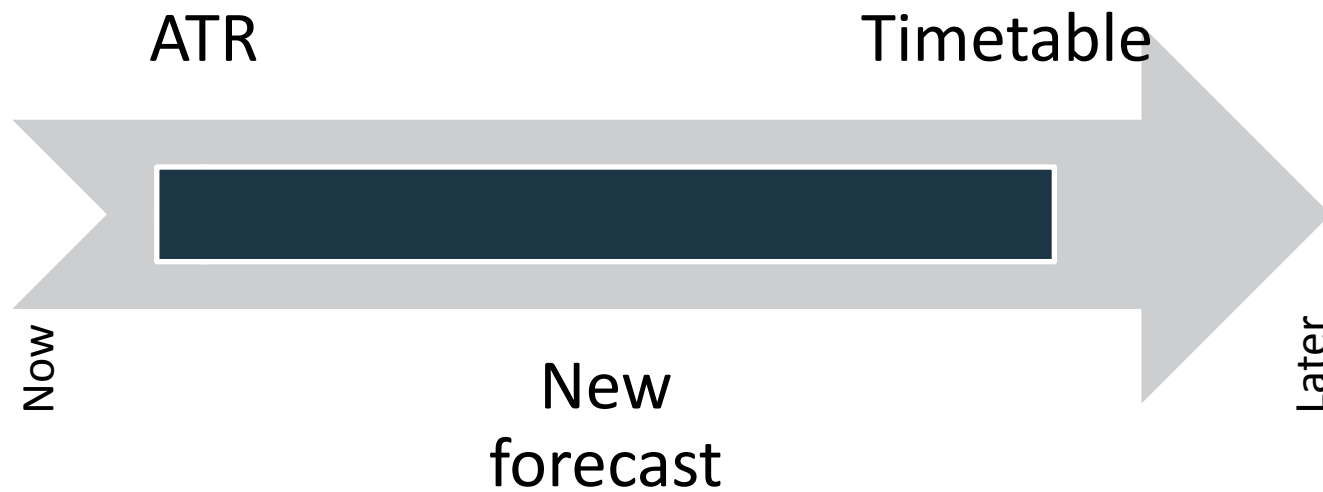
Train ID	Trip	DID	LOC	Arrive	Depart	Rtime	Dwell	PL	Dest
101		2	1000VEA		04:01:30	00:01:36	00:00:30		VAN
101			ORE	04:03:06	04:03:24	00:01:26	00:00:18		VAN
101			BC	04:04:50	04:05:05	00:01:16	00:00:15		VAN
101			KHS	04:06:21	04:06:36	00:01:38	00:00:15		VAN
101			UNI	04:08:14	04:08:32	00:01:24	00:00:18		VAN
101			ISB	04:09:56	04:10:11	00:01:46	00:00:15		VAN
101			KHC	04:11:57	04:12:17	00:01:22	00:00:20		VAN
101			KGN	04:13:39	04:13:59	00:01:34	00:00:20		VAN
101			KN	04:15:33	04:16:03	00:01:49	00:00:30		VAN

- Timetable loaded into the ATC system
- Or frequency timetable

PAX INFO: ADDING NEW FORECAST



PAX INFO: MERGING



WORK EXPERIENCES

- 2012-now: Signal Systems Engineer, Metroselskabet & Hovedstadens Letbane
- 2011-2012: Systems Analyst and Consultant, Rambøll/KMD
- 2009-2010: Honorary Research Associate, The University of Auckland
- 2008-2011: Ph.D. Fellow, Technical University of Denmark
- 2007: Internship, Nederlandse Spoorwegen
- 2002-now: Consultancy tasks on mathematical optimisation, own company

EDUCATION

- 2011: Ph.D., operations research, Technical University of Denmark
- 2008: M.Sc., computer science, University of Copenhagen
- 2007: Studies at Utrecht University
- 2005: B.Sc., computer science and mathematics, University of Copenhagen



Thank you for your attention.