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Extract from Rigsrevisionen's report on
the delayed Signalling programme
submitted to the Public Accounts Committee



1849
147.281
237
1976
114.6
22.480
908

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1. Introduction and conclusion

1.1. PURPOSE AND CONCLUSION

1. This report concerns the Danish Ministry of Transport, Building and Housing's management of the *Signalling programme* for deployment of a new signalling system on the S-Bane (greater Copenhagen area network) in 2018 and on the main national railway lines in 2021. In October 2016, the ministry established that the Signalling programme would be delayed by up to three years: to 2021 and 2023, respectively. Rigsrevisionen initiated the study in March 2016.

2. In 2009, the Danish parliament decided to launch the Signalling programme in order to implement modern signalling systems on the S-Bane and main national railway line in Denmark. The parliament's decision was founded on the imperative need to replace the old signalling system to ensure efficient and reliable railway operations in the future. The implementation of the Signalling programme was estimated to generate efficiency gains in Banedanmark's operations and maintenance of approximately DKK 4 billion in the period 2009 to 2040.

The implementation of new signalling systems on the S-Bane and national main lines is part of the political agreement on a green transport policy from January 2009.

A report on the Signalling programme from December 2008, prepared by Banedanmark, provided the basis for the agreement.

Banedanmark is a government-owned enterprise under the Ministry of Transport, Building and Housing. Banedanmark is responsible for maintaining, developing and expanding the Danish railway network to ensure that it meets with current needs and requirements.

Source: *Banedanmark*.



Old signals. Photo: Tao Lytzen

3. The Signalling programme is undertaken by the Ministry of Transport, Building and Housing (the Ministry of Transport) and Banedanmark is responsible for implementing the programme under supervision of the department of the Ministry of Transport. The Signalling programme represents an investment of approximately DKK 19 billion and is the largest investment made in railway infrastructure in Denmark to date. The programme will be implemented over a period of more than ten years. It includes a number of large IT, development and construction projects and is interlinked with largely all other projects on the railway network, including high-speed projects, an electrification programme and the project on the new railway line Copenhagen – Ringsted. In addition, the Signalling programme will require installation of new equipment on all trains running on the S-Bane and the national main lines.

Due to the many internal and external interdependencies of the Signalling programme, the task of managing the progress of the programme to ensure that it is on schedule, is essential as well as complicated. If one element of the programme is delayed, it will have a knock-on effect on all other elements in the programme, and on the implementation of other projects on the railway network. Eventually, this means that the benefits of the new signalling systems to the passengers, in the form of improved punctuality, will also be delayed.

4. The Ministry of Transport has, since January 2015, kept parliament's Committee on Transport, Housing and Building (the Transport Committee) informed of potential delays in the Signalling programme. Initially, these updates concerned only delays affecting a critical milestone for deployment of the new signalling system on a trial section of the S-Bane in December 2016.

Rigsrevisionen has had ongoing focus on the progress of the Signalling programme. Particularly so, following a memorandum from the minister for transport, building and housing (minister for transport) from October 2015 to the Transport Committee. In this memorandum, the minister informed the committee that certain elements of the programme were delayed by up to 18 months, but that *Banedanmark* still expected to deploy the signalling system on the S-Bane in 2018 and on the national main lines in 2021, as originally planned. In October 2016, the minister for transport had to inform the members of the Transport Committee that the programme was delayed by up to three years; implementation on the S-Bane would be delayed until 2021 and the national main lines until 2023. Due to these delays, the costs of the Signalling programme have increased by approximately DKK 4.4 billion compared to the original expectations.

5. The purpose of the study is to determine whether the Ministry of Transport has assessed the progress of the Signalling programme compared to the schedule on a sufficiently informed basis. The report answers the following questions:

- Has Banedanmark managed the Signalling programme based on adequate information on the progress of the programme compared to the schedule?
- Has the department of the Ministry of Transport been adequately critical of the progress of the Signalling programme compared to the schedule?

CONCLUSION

It is Rigsrevisionen's assessment that the Ministry of Transport – particularly in the period from January 2015 to April 2016 – has had an completely inadequate basis for assessing the progress of the Signalling programme compared to the schedule. As late as in mid 2016, the ministry informed the parliament that the Signalling programme was expected to meet the schedule.

The study shows that Banedanmark's management of the Signalling programme was based on completely inadequate information on progress compared to schedule. Nor were Banedanmark's assessments of the viability of the schedule appropriately evidence based. First, parts of the Signalling programme have been in a process of reorganisation since 2014 due to disagreement between *Banedanmark* and the suppliers concerning the schedules. Banedanmark's opportunities to monitor the progress of the programme compared to the schedules have therefore been limited. Second, Banedanmark's management has been based on incorrect and misleading information on progress and costs. Third, Banedanmark has not, at any time, had a solid basis for its assessment of the viability of the schedule, because it failed to revise the schedules for the completion of the programme, despite the fact that it was running behind schedule.

The study also shows that the department of the Ministry of Transport's supervision of the Signalling programme has not been duly critical of the viability of the schedule. Towards the end of 2014, Banedanmark began to inform the department of considerable delays in the programme, and in response to this information, the department intensified its supervision with effect from January 2015. In the opinion of Rigsrevisionen, the department should also, at this time, have taken a more critical approach to the information provided on progress by challenging Banedanmark's ongoing assessments of the viability of the schedule.

Rigsrevisionen is of the opinion that the Signalling programme has been in jeopardy since 2014 due to delayed development and testing of the new signalling systems. However, the department of the Ministry of Transport and Banedanmark did not take appropriate action to address the critical issues that were facing the programme until 2016. The Signalling programme is currently delayed by up to three years and costs have escalated by approximately DKK 4.4 billion. The new schedule for the programme is tight, the contingency provisions have been used and the programme is still exposed to considerable risks in terms of meeting both the schedule and budget. Management of the programme should be considerably strengthened in order to minimize the risk of additional adverse consequences for other railway projects.