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DATE 01. Oktober 2025
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REF LIKI
PROJEKTNR A291736

Project: Future Signalling System for Oslo Tram, Sporveien

Request for Information from Signalling System Suppliers

Dear supplier of signalling systems,

We at COWI are currently conducting a feasibility study for our client Sporveien in Oslo. The purpose of this study is to define technology-independent and supplier-independent functional requirements for the future signalling system of the Oslo tram network, which consists of more than 130km of tracks with almost 100 stopping points. The tram infrastructure in Oslo has a history stretching back over 150 years, and has recently seen significant investment in modern rolling stock. This provides a unique opportunity to assess future solutions for a modern signalling system, and Sporveien has expressed a desire to invest in a future signalling system for the trams. As part of this project, we wish to gather information from suppliers of signalling and light rail systems. We therefore invite relevant suppliers to share information about your solutions, technologies, and experiences. We are particularly interested in systems that support safe, modern operation and that are adaptable to both the current and future needs of the Oslo tram network.

We kindly request information on topics such as:

- Technological principles and architecture of your signalling systems
- Reference projects and experiences from similar tram or light rail networks
- Possibilities for integration with existing infrastructure
- Functions supporting safety, efficient traffic management, and flexibility
- Any innovative solutions or development trends you see within signalling systems

To ensure efficient communication, we would appreciate it if you could provide the name and contact details of a person within your organization with whom we can establish a dialogue regarding these topics.

We also kindly ask for any relevant documentation, descriptions, or presentations that can highlight your expertise and solutions. If preferred, we are happy to arrange a meeting for any follow-up questions or discussions.

All information will be treated confidentially and used solely for this feasibility study for Sporveien.

Additionally, Sporveien AS and COWI AS are planning a dialogue conference with suppliers in Oslo on November 13th. This conference will provide an opportunity to discuss future collaborations and explore new opportunities for growth and development. We hope to see you at this conference. Once we have established contact with your organization and received your company's contact information we will send you a letter of invitation with the complete agenda.

Special conditions in Oslo:

- The tram in Oslo mainly runs on urban tracks, on sight. In urban tracks, the tram runs in mixed traffic with buses, cars, bicycles, and pedestrians, and is regulated by the Road Traffic Authority. Urban tracks in Oslo are characterized by many narrow streets and challenging conditions as leaves in the autumn which makes the tracks slippery, and ice and snow in the winter.

- The trams in Oslo currently operate on two tracks with right-hand driving, except for one interlacing track.
- Two areas in Oslo (Ekebergbanen and Lilleakerbanen) are regulated as light rail, with level crossing systems and traffic lights for the tram.
- Between 2015 and 2017, the level crossing systems were renewed. All the level crossing systems are now of the Schweizer Flex brand. The level crossing systems are all local systems that can be upgraded to communicate with central systems. Existing level crossing systems must be able to operate in conjunction with new future signalling systems for the tram. Axle counters are used as the input method for most of the level crossing systems.
- The tram fleet in Oslo have just been renewed, and Oslo now has 87 modern trams named SL-18. The Spanish manufacturer CAF (Construcciones y Auxiliar de Ferrocarriles) is the supplier of Oslo's new trams. Any future signalling system in Oslo must be compatible with SL-18. Sporveien has decided that the trams in Oslo will not use CBTC.
- SPV is participating in the EU project R2DATO, which focuses on automation and autonomous trams. The project involves remote control and testing of how new technology can support daily operations to make travel safer, more reliable, and more cost-effective. This includes the integration of driver assistance and autonomy systems to enhance the efficiency and safety of tram operations.
- A future signalling system for the trams in Oslo must be flexible and capable of operating with the current tram infrastructure while also being adaptable to future changes and opportunities that come with the use of driver assistance and autonomy.

Addition information about Sporveien and Trams in Oslo with links:

- Sporveien is Norway's largest provider of public transport, responsible for the operation and development of Oslo's tram and metro systems. Read more on the [Sporveien official website](#).
- [Sporveien Trikken](#) operates the tramway in Oslo, transporting millions of passengers annually with a modern fleet and a strong focus on safety, accessibility, and innovation.
- The new [SL18 trams](#) represent a major upgrade for Oslo's public transport. A total of 87 SL18 trams, supplied by CAF, are being delivered between 2020 and 2025. These trams feature 100% low-floor design for universal accessibility, a capacity of 220 passengers, modern amenities such as air conditioning and USB charging, and advanced digital systems with over 12,000 sensors for real-time monitoring and predictive maintenance. The SL18 trams are quieter, more energy-efficient, and designed to provide a comfortable and reliable travel experience for all passengers
- A key innovation initiative is the [R2DATO project](#), an EU-supported collaboration with CAF (Construcciones y Auxiliar de Ferrocarriles). The project aims to test and implement new technologies for semi-automated and autonomous tram operations, making journeys safer, more reliable, and more cost-effective.

Contact person in COWI (NO) is:

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We look forward to hearing from you and thank you in advance for your contribution.

Best regards

COWI AS (NO)

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