

Munich, April 6, 2018

Norway's rail network goes digital with Siemens technology

- **Lineside equipment to be converted to the European Train Control System throughout Norway**
- **Order volume worth around 800 million euros**
- **Scheduled completion of rollout lines by 2034**
- **25 years of service starting with the commissioning of the first line**

Bane NOR, the state-owned agency responsible for the Norwegian national railway infrastructure, has contracted Siemens to upgrade the signaling equipment of the entire Norwegian rail network to the European Train Control System (ETCS). Commissioning of the rollout lines is scheduled to be completed by 2034. The contract also includes services for 25 years and is worth around 800 million euros in total.

"This marks the start of modernization of the railway network in Norway. Bane NOR is creating the railway of the future with one of Norway's largest digitization projects. We are confident that Siemens, by winning the contract to provide a new digital signal system, will contribute significantly to our network's modernization," says Sverre Kjenne, Executive Vice President, Bane NOR.

"This project is a major step in signaling history – a technology step comparable only to the change made from relay to electronic interlockings in the 1980s. Together with Bane NOR, Siemens will transform the complete Norwegian rail network into a full digital IP-based system – a true 'Internet of Things' system. This conversion will save much hardware, allow for maximized capacity and provide the basis for data-based minimized preventive maintenance. Ultimately, this will provide passengers with a far more efficient and reliable travel experience with far greater punctuality,

increased capacity and more throughput. The system will be controlled via a central interlocking in Oslo, which will give the trains the authority to proceed via our ETCS Level 2 solution. The contract is not only the largest single delivery ever for Siemens in Norway, but also for the Siemens rail infrastructure business," said Michael Peter, CEO of the Mobility Division.

With the new ETCS technology, the Norwegian rail system's signaling system will be digitalized. ETCS is a key component in the integration of rail transport in Europe and is intended to replace more than 20 national railway control and safety systems currently being used on the European continent. The European goal behind ETCS is to enable an interoperable and thus competitive rail transport system. ETCS lays the foundation for highly automated transportation and secures operator investments for the future.

In 2015, Norway committed implementing the European Rail Traffic Management System (ERTMS) on its national railway network, which has approximately 4,200 track kilometers and 375 stations. The driving force behind introducing ERTMS was the need to renew and upgrade the existing signaling systems. Most of today's relay-based systems will reach the end of their designed lifecycles during the project's timescale. As the signaling equipment ages, it is increasingly difficult to maintain, and reliability will be impaired. The investment in ETCS is a major step in a Norwegian railway revolution. Bane NOR will invest more than two billion euros in the digitalization and automation of its railway network over a ten-year period. This will make Norway a pacesetter in using digital technology in the rail sector.

This press release is available at:

www.siemens.com/press/ERTMS-Norway

Contact for journalists

Ellen Schramke

Phone: +49 30 386 22370; E-mail: ellen.schramke@siemens.com

Follow us on Twitter at: www.twitter.com/SiemensMobility

For further information about the Mobility Division, please see:

www.siemens.com/mobility

Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. With its publicly listed subsidiary Siemens Healthineers AG, the company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2017, which ended on September 30, 2017, Siemens generated revenue of €33.0 billion and net income of €6.2 billion. At the end of September 2017, the company had around 377,000 employees worldwide. Further information is available on the Internet at www.siemens.com.