

Big Data

Automated
driving

ETCS
Level 3

Intelligent Traffic
Management

2030

Connectivity

2018

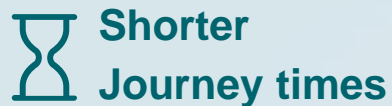
Norway ERTMS Trackside

Digitalization of the Norwegian Railway Network

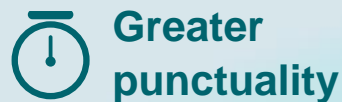
Optimizing passenger and freight travel experience at all times



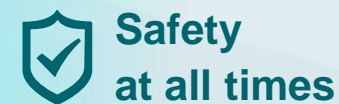
Higher
flexibility



Shorter
Journey times



Greater
punctuality



Safety
at all times



Increased
reliability



More train departures

- more passengers
- more freight capacity

Project Dimensions

Biggest Signalling Contract for Mobility Management

SIEMENS
Ingenuity for life

...and one of the largest signalling projects that have ever been tendered

Duration: 17 years / 25 years maintenance

Tracks: 4169 route km (337 km double track)
695 km tunnels, 2506 bridges, 375 stations

Scope: ETCS L2 Baseline 3 (Trainguard 200)
Virtual block sectioning
Trackguard Simis W / Sinet Interlocking

Field Elements

- Point Machines
- Level Crossings
- Axle Counter
- Balises
- Marker Boards

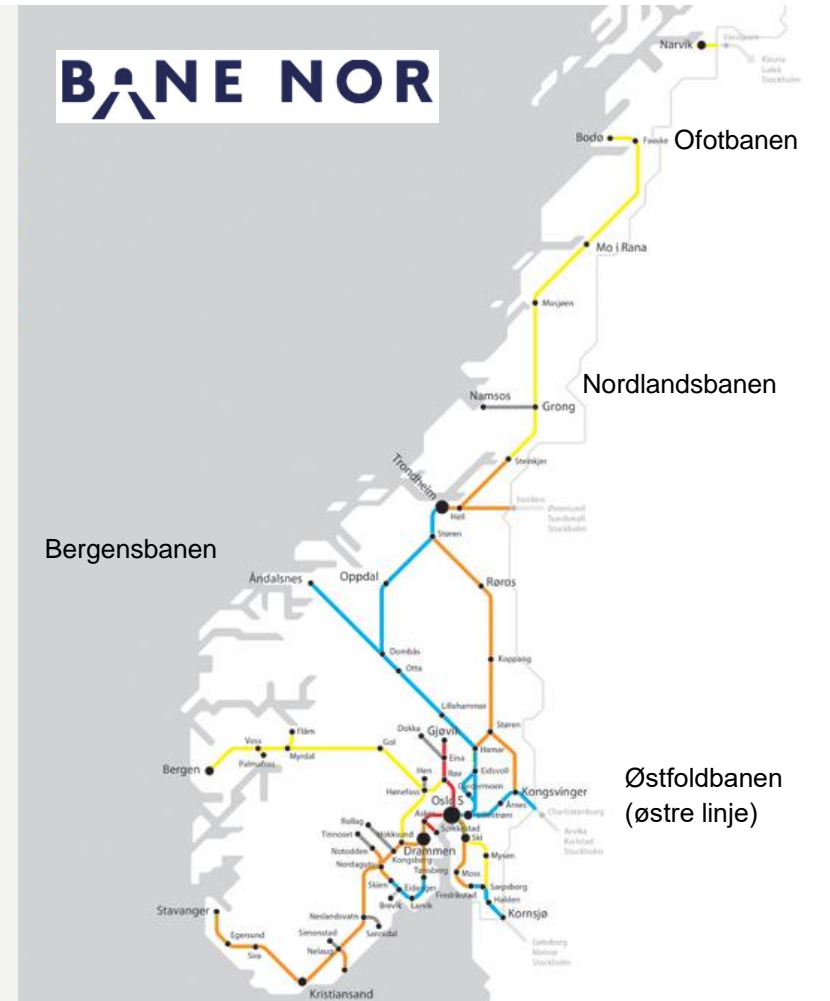
Sidis Diagnosis System

IT-Security aligned with IEC 62443 and ISO 27001

Key Management System

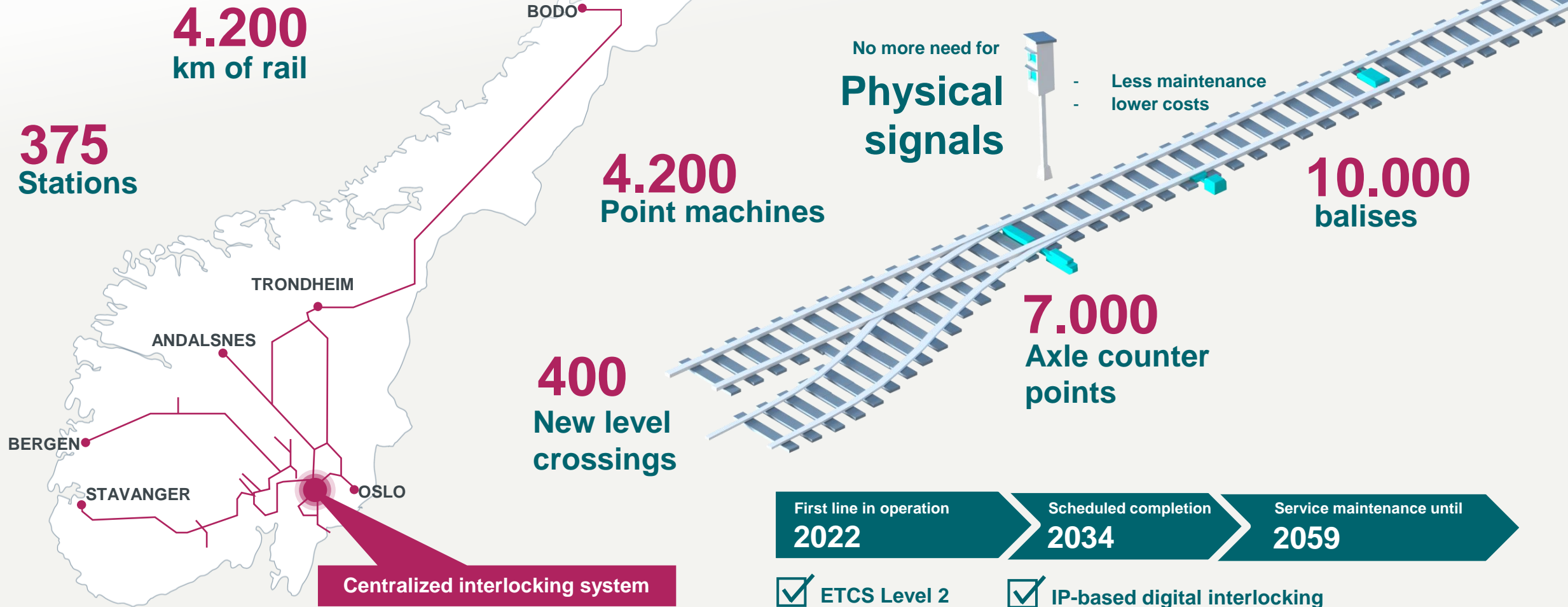
BIM360

Test lab in Norway (with simulated TMS and OBU)



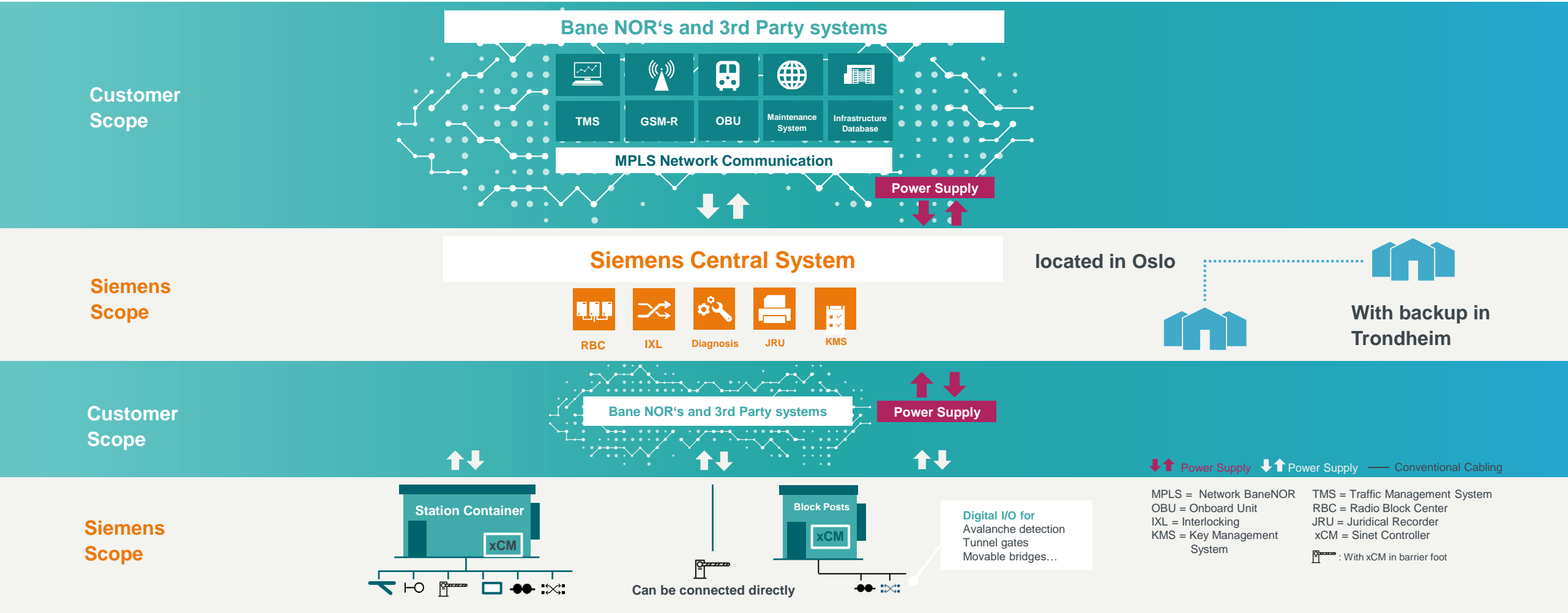
Digitalization of the Norwegian Railway Network

Bane NOR is partnering with Siemens to build the railway of the future



System Architecture

One central interlocking and RBC in Oslo (backup Trondheim)





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Ingenuity for life

2018

We turn your vision into reality.