

# Test and Commissioning Activities in ETCS Signalling Projects

In ETCS projects the test and commissioning activities must ensure the timely completion of all tests required by system and subsystem requirements, safety and interoperability norms, operational scenarios, customer internal, national and international norms, etc. and must also assure the preparation and execution of commissioning activities.

Emch+Berger AG Bern provides highly skilled specialist for the Gotthard and Ceneri base tunnels and the Danish Fjernbane project, who consult the customer (and suppliers) in different test and commissioning topics, and specify and supervise all necessary test and commissioning activities.

Emch+Berger has done this successfully in the past in the Lötschberg base tunnel.

**Client**

BLS AlpTransit AG (Lötschberg), AlpTransit Gotthard AG (Gotthard and Ceneri), Banedanmark (Danish Fjernbane)

**Period:** 1990 - 2021

**Contact**

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**Delivered services**

- Consultancy service for test and commissioning, including elaboration of related overall concepts.
- Verification of Suppliers' test and commissioning documents
- Supervision of test and commissioning activities

**Specifications**

- Lötschberg Base Tunnel: 34.6 km length
- Gotthard Base Tunnel: 57 km (world's longest rail tunnel)
- Ceneri Base Tunnel: Length: 15.4 km
- Fjernbane Infrastructure Project Denmark: Over 2'000 km of railway line that will be migrated until 2020
- Used Signalling and Train Control System: ETCS level 2