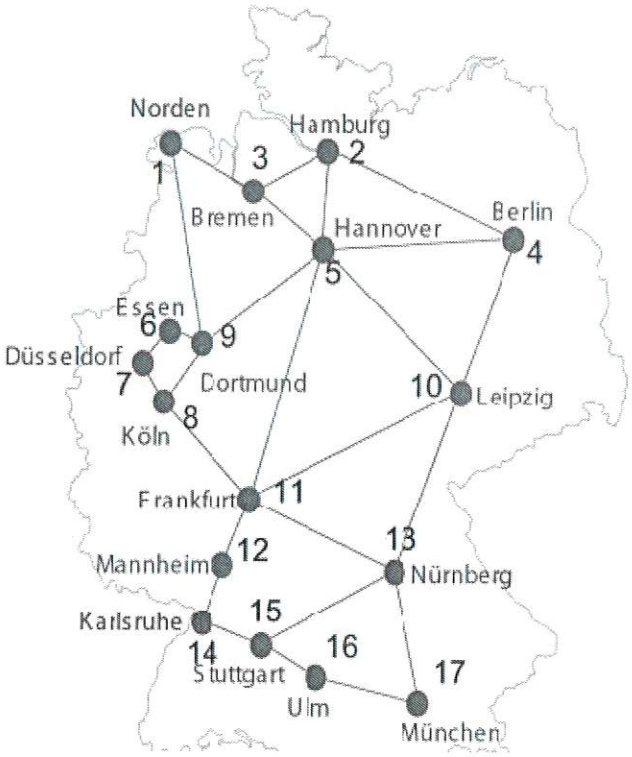
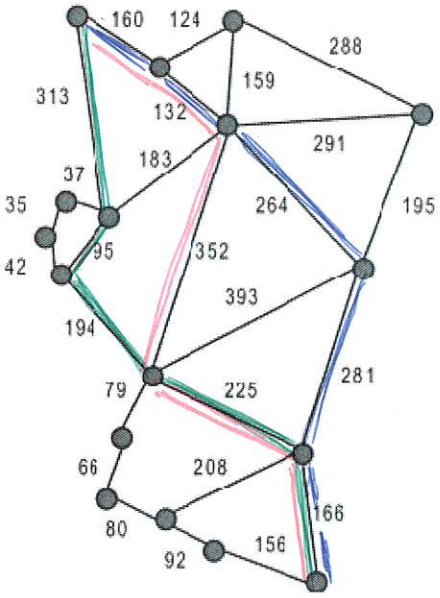




Consider a demand between Norden (node 1) and München (node 17) with 6 slots and max reach 1000 km.

Then only 1 path would be valid:

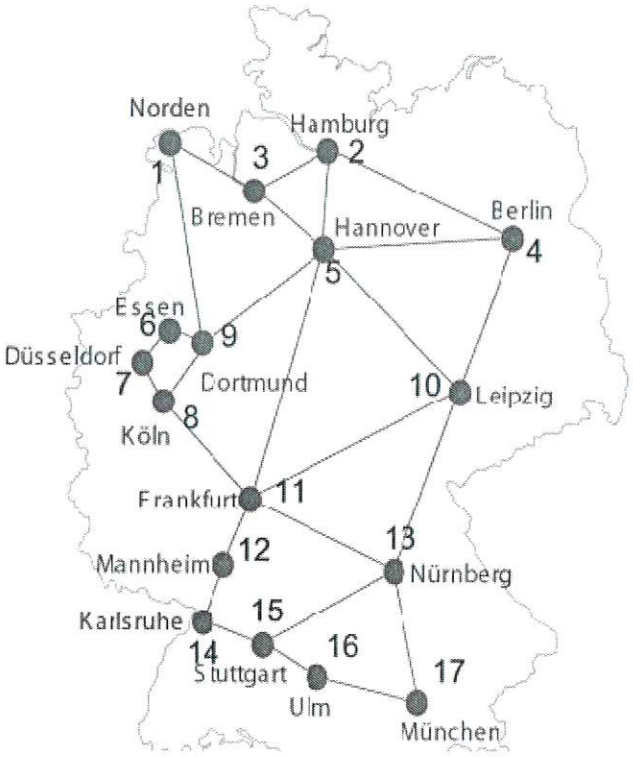
$1 \xrightarrow{313} 9 \xrightarrow{95} 8 \xrightarrow{194} 11 \xrightarrow{225} 13 \xrightarrow{166} 17$ 993

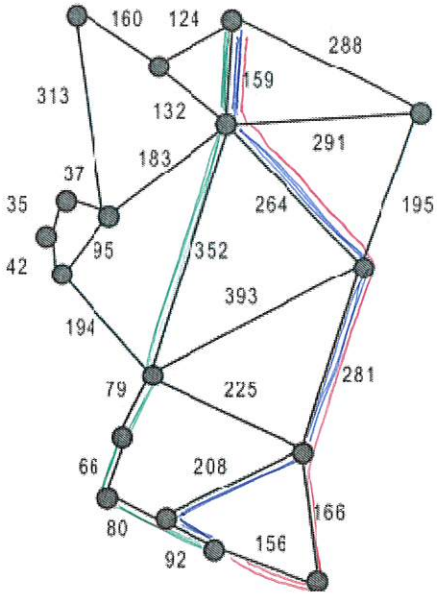
All other paths are longer, e.g.

$1 \xrightarrow{160} 3 \xrightarrow{132} 5 \xrightarrow{264} 10 \xrightarrow{281} 13 \xrightarrow{166} 17$ 1003

$1 \xrightarrow{160} 3 \xrightarrow{132} 5 \xrightarrow{352} 11 \xrightarrow{225} 13 \xrightarrow{166} 17$ 1035

Which of the 3 paths are valid w.r.t. the GN-model? and/or with our new linear constraint?





Consider a demand between Hamburg (node 2) and Ulm (node 16) with 6 slots and max reach 1000 km.

Then only 1 path would be valid:

$2 \xrightarrow{159} 5 \xrightarrow{352} 11 \xrightarrow{79} 12 \xrightarrow{66} 14 \xrightarrow{80} 15 \xrightarrow{92} 16$ 828

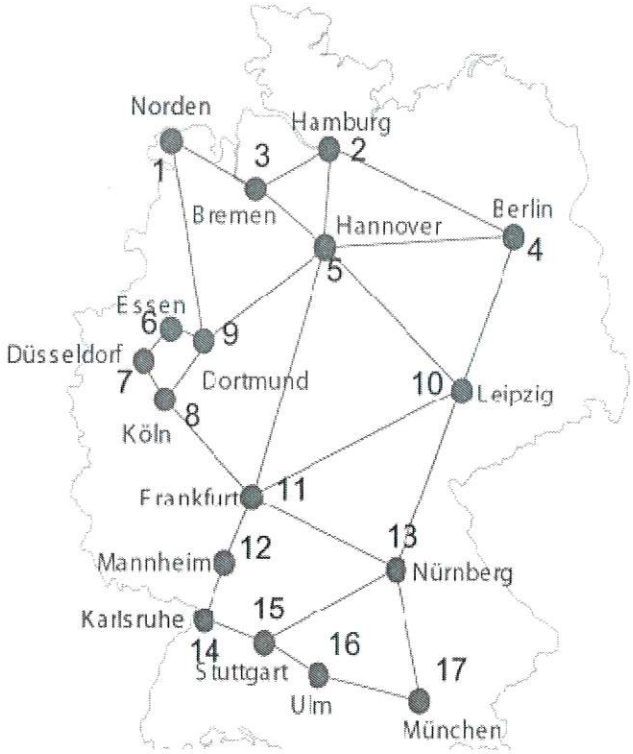
All other paths are longer, e.g.

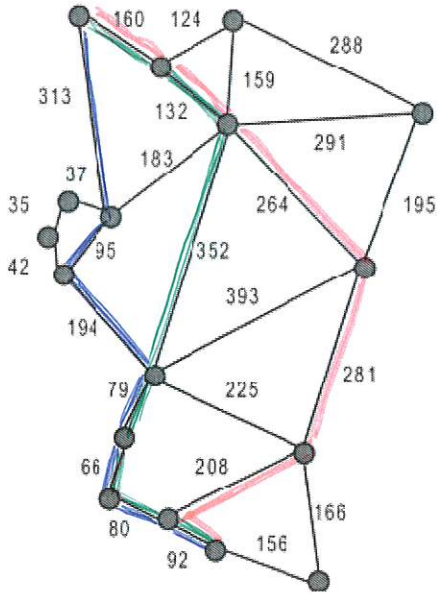
$2 \xrightarrow{159} 5 \xrightarrow{264} 10 \xrightarrow{281} 13 \xrightarrow{208} 15 \xrightarrow{92} 16$ 1004

$2 \xrightarrow{159} 5 \xrightarrow{264} 10 \xrightarrow{281} 13 \xrightarrow{166} 17 \xrightarrow{156} 16$ 1026

Which of the 3 paths are valid w.r.t. the GN-model / our new linear constraint?

N.B: The "green" path has many hops.





Consider a demand between Norden (node 1) and Ulm (node 16) with 6 slots and max reach 1000 km.

There are 2 valid paths:

$1 \xrightarrow{160} 3 \xrightarrow{132} 5 \xrightarrow{352} 11 \xrightarrow{79} 12 \xrightarrow{66} 14 \xrightarrow{80} 15 \xrightarrow{92} 16$ 861

$1 \xrightarrow{313} 9 \xrightarrow{95} 8 \xrightarrow{194} 11 \xrightarrow{79} 12 \xrightarrow{66} 14 \xrightarrow{80} 15 \xrightarrow{92} 16$ 919

All other paths are longer, e.g.

$1 \xrightarrow{160} 3 \xrightarrow{132} 5 \xrightarrow{264} 10 \xrightarrow{281} 13 \xrightarrow{208} 15 \xrightarrow{92} 16$ 1037

Which of the paths are valid w.r.t. the GN-model / our new linear constraint?

N.B. Both the "green" and the "blue" paths have many hops; for the "blue" one, it could matter.