Background and challenges

The planning tool affect the competitiveness of a vendor or an operator:

- Prospective studies on competing technologies;
- Take into account specialized implementation constraints;
- Search for more accurate optimization methods.

Description and main innovation

Various fixed and flexible architectures are available to implement multilayer transport nodes

Optimization models were developed for all the architectures

- The novel models take into consideration the various hardware implementation constraints.
- An optimization method based on node architecture selection to minimize the OpEx was proposed.
- The models cover all the stages of the planning process namely: survivable topology design; greenfield planning; and multi-period planning.
- Traffic conditions where hitless re-grooming can brings benefits were highlighted.

Achievements

- 5 papers published in IEEE/OSA (3 as first-author);
- 2 papers published in collaboration with Coriant;
- 23 publications in international conferences:
  - 8 as first author;
  - 8 with oral presentations;
  - 3 as invited speaker.
- 1 book chapter as first-author.

Collaboration with industry:

- This work was partially supported and hosted by Coriant Portugal;
- The developed algorithms and methods were implemented in the planning tool of Coriant;
- The methodologies were used for proprietary technology comparison.

Collaboration with National projects:

- 1 project in collaboration with industry;
- 1 FCT project.