Case study: planning of different broadband solutions in the last mile for urban and suburban areas

Ignat Stanev, Assoc. Professor, Chairman ITC Committee 3, Bulgaria

The ongoing evolution of the present networks to NGN as well as the invasion of the market from new operators and service providers implementing the latest technological solutions makes the precise network planning and optimisation necessary task and important instrument.
For example, there are different possible broadband solutions for the so-called last mile of the network, especially for urban and suburban areas.
Through careful planning of the different alternatives and comparison of the corresponding economical consequences the best long-term solution could be taken.

This case study intends to present the planning process that needs to be performed for evaluation of different broadband solutions in the last mile for urban and suburban areas.

The case study includes several phases:

- Geographical data processing (e.g. from raster maps), services definition, market segmentation and customer mapping;
- Technology definition in terms of infrastructure, node and link elements, necessary interfaces, capacity limitations, maximum distances allowed, etc.;
- Network optimisation, including minimization of the number of necessary network elements, best possible node locations within the studied area, optimisation of the service areas for the separate node elements.
- Economic evaluation of the resulting network in terms of revenues, investment costs, installation costs, maintenance costs, cash flow, NPP, IRR, etc.

Special attention is drown on the wireless technological solutions, which include additional network optimization with regard to evaluation and optimization of the terrain coverage.

The whole case study is performed with NP tools operating on real data. An option exists to change certain parameters of the study if the audience is enough active and demands it.

The highly professional NP tools are provided by companies, partners of ITU in the network planning programs and activities.