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UNIVERSAL FTTH SYSTEM FOR SMALL AND LARGE ...



Case study: Neptun Media Home on the Tricity low-rise buildings

The year 2014 is the time when another group of CATV and ISP operators tested and implemented a FTTH system solution for multi-family buildings - Neptun Media HOME. The vast majority of the completed pilot networks has ended with the implementation of the system on a permanent basis. Several of them were made in standard Tricity buildings of the „large panel” type. This case study analyzes the installations made as part of the comparison of systems of various manufacturers performed by one of the operators with nationwide range. Due to the growing position on the market, the Investor - CATV operator - until recently, as he himself admitted, has not started a large number of FTTH outlets. Therefore, it seemed to be a reasonable moment when it was not yet too late to examine and compare the FTTH solution used thus far with the innovative solution of the Neptun Media HOME system.

Below are the assumptions/needs that accompanied the investment in question:

- checking an alternative solution for the system used so far,
- checking the possibility of connecting clients without welding - ready EZ-Bend subscriber patchcords (densification without special tools)
- fast delivery date,

- smooth logistic cooperation with the subcontractor,
- technical support and assistance during first installations on site,
- minimization of dimensions of elements mounted on blocks,
- „tailor-made” elements for each building,
- individual locking system (individual system key).

These assumptions were entirely met by the offer of Neptun Media HOME system.



Fig. 1. Photo of the building taken from the front-yard”

47mm electric installation pipes were used (pursuant to the investor’s standard for concentric networks) for the lining of fiber optic cables throughout the building, holes in the walls and ceilings were done using a drilling rig. The versatility of the system and its readiness for the introduction of any pipe lining was used for selected pipes - hermetic connections.

On staircases of the first floor, EZ-BOX LONG modules were used, connected to the main distribution MICRO POINT using the cables of NEPTUNE FANOUT OUTDOOR type - „outdoor” cables were used due to the lack of capacity to make passage between staircases inside the building.

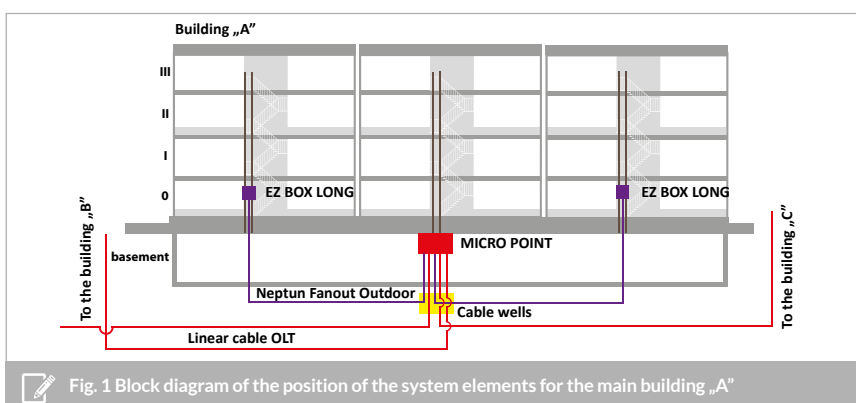


Fig. 1 Block diagram of the position of the system elements for the main building „A”

In the applied solution, due to the use of the existing core infrastructure and its small capabilities in relation to the available fibers, power supply of 3 multi-family buildings (A,B,C) with the use of 1 optical fiber was adopted.

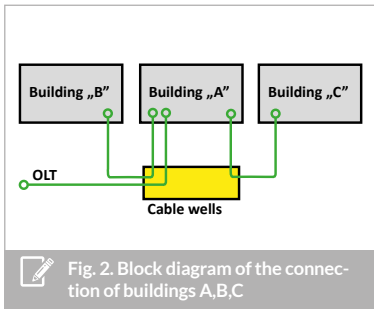


Fig. 2. Block diagram of the connection of buildings A,B,C

Using a single fiber, it was necessary to use (transfer) splitters of initial and final distribution to the first building „A” and to supply next buildings from the initial distribution splitters.

1x16 splitters (final distribution) were initially adopted for the operation of the implemented buildings (30-40HP) pursuant to the investor’s assumption regarding the expected clients acquisition not exceeding 50%. The possibility of changing the distribution was concurrently adopted in the case of a necessity to connect a larger number of clients to the network (more than 16 per building).

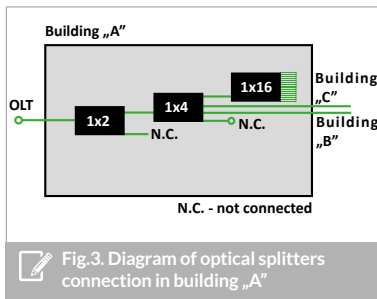


Fig.3. Diagram of optical splitters connection in building „A”

Upon the completion of the initial installation of housings on the buildings, installation training was conducted by Cellco experts. It referred to the proper installation and configuration of elements. During the 1-day training, the subcontractor was introduced to the technical aspects and the following works were performed:

- sealing openings in distribution boxes,
- arrangement of cables (supplies) was discussed and performed,
- cables were entered into the optic fiber distribution boxes,

- configuration of cables was set and executed,
- welding of optic fibers in the main distribution point was initiated,
- audit was conducted on the correctness and diligence of laying electric installation pipes.



Fig. 2. Works on the arrangement of external cables in MICRO POINT (basement)

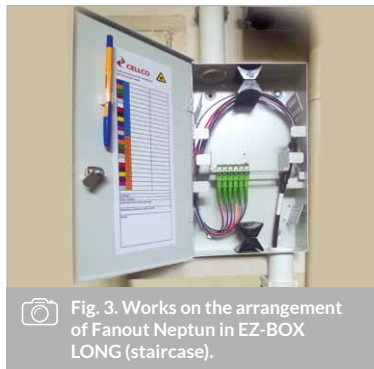


Fig. 3. Works on the arrangement of Fanout Neptun in EZ-BOX LONG (staircase).

Upon completion of the second day of support, it was recognized that the subcontractor is qualified to independently complete the works.

Upon confirmation of the completion of works on multi-family buildings, Cellco representatives performed an audit (final acceptance) in the presence of the subcontractor and the investor’s representatives. No irregularities were found in the installation of NEPTUN MEDIA system.



Fig. 4. Photo of completed works - basement



Fig. 5. Photo of completed works - staircase

Measurements and subcontract documentation was handed to the investor for further analysis.

Prior to final acceptance, the necessary information on passporting of the network were incorporated.

Talks conducted after the completion of the investment showed that the new solution presented to the investor is economical with maintenance of transparency at the construction stage and further development. The great advantage was the fact that with its diagram the system refers to the HFC network.

The Investor and the subcontractor also appreciated such aspects of the system like:

- marking and readability of elements (colors),
- small dimensions of elements (despite built-in cable supplies),
- easy work with cables during welding (removable, unique module),
- assembled elements (pigtails, adapters) at the elements production stage,
- connecting clients to the network without the use of a welder (works done after the investor’s acceptances),
- smooth cooperation between the subcontractor and the provider.

The entire solution was approved for further use in the investor’s networks.

Currently, the subcontractor together with the investor’s representatives started their efforts to start a certification training in order to obtain an 8-year guarantee on the system’s elements.

SCIENTIFIC STUDY

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