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FIBRAIN MetroJET MICRODUCT SYSTEM

The telecommunication infrastructure of the 21-st century

Part 1

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FIBRAIN MetroJET microduct system is a modern system of fiber optic microduct, which is comprised of specifically designed microduct cables, microduct elements, and modern blowing method of installing cables in pipes. The diameters of all elements were reduced to provide higher density and flexibility. The microduct system can be also used with standard systems or in hybrid combinations.

Due to a large number of elements and fittings, the system can be easily adjusted to individual needs of each investment. It also provides a possibility to build FTTx networks with any structure and topology with great number of branchings.

The microdcut system fits perfectly into the development of **Industry 4.0.** It should be noted that the Fourth Industrial Revolution was possible due to ubiquitous digitalization, and going further, digitalization was possible due to dynamically developing IT sector. **On the other hand, the IT industry relies on, amongst others, ultra-fast „high-speed" broadband connections, which are based on optical fibers in the backbone or bus network, and even access networks.** There are more and more broadband networks, and at the same time we need more optical fibers, which translates into higher number of fiber optic cables. And here, the microduct system is a perfect choice as it gives **the possibility to install a lot of cables – microduct cables** being precise, with substantially limited underground volume of microduct telecommunication systems.

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The use of microduct system provides a very high level of scalability for modern telecommunication. In addition to building new microduct cable ducts, we can also intensify already operating ducts through installing extra microtubes inside.

The microduct system has been already extensively deployed in our country as a part of constructing Municipal Broadband Network and Regional Broadband Network that have been built throughout Poland.

The construction of these networks has been ongoing since 2016 and will successfully continue in the next years. The guidelines for building the Operational Programme Digital Poland network include e.g. the microduct system, which is recommended for building duct on backbone and distribution segment as well as direct-buried subscriber connections.

The Ministry of Administration and Digitization in 2015 in his regulation concerning technical conditions to be met by technological ducts built in public roads, indicated a prefabricated bundle of microducts as one of the basic elements of these ducts.

It should also be emphasized that a lot of Telecommunication Operators (large and small) implement a microduct system in their own telecommunication networks built from their own resources.
At present, components of the system including microducts, microcables, connectors and accessories, are so easily accessible as well as their price is competitive with traditional technology that anyone who builds a ground telecommunication network can easily “aspire” to build the microduct system.

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