# And yet direct or alternating current?

# Professor Michael Bank

## I. INTRODUCTION

Here is proposed the new method of building system for transmitting electrical energy. Today transmitting signal is alternate current. If it is needed this signal transforms to constant current. As usual the energy is transmitting by several wires. Drastic decreasing amount of expensive wires can be using one-wire method of transmitting electrical energy [1]. Let us remind you that wires are the most expensive part of electrical systems. But it's not just the number of wires. It turns out that by using the single-wire method, it is possible to more effectively solve the serious problems of conventional multi-wire systems. Changing the number of wires is can be achieved by attaching special converters. For example, converter 3 - 1 converts a many-phases signal in to a single-wire one. The principle of operation of this and other converters that reduce the number of wires is to equalize the phase values in the input wires and subsequently add up the currents in these wires.

A useful feature of converters in single-wire signal systems is that their output signals are independent of the phase and of frequencies of the input signals. This can be seen in the example of the converter I - DC, in the simulation of which the phases and frequencies of the signals changed. A useful feature of converters in single-wire signal systems is that their output signals are independent of the phase and of the input signals. This can be seen in the example of the converter I - DC, with the simulation results.



Fig 1 Converter 1 – DC scheme and its simulations results.

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Fig 2 THE WIND GENERATORS

Other. Let both generators have sources with a voltage of 230V and THERE IS converter Of DC.

For energy transmitting here we use one wire scheme.

Suppose we need to find the total signal of two wind generators turned on one after the other. Let both generators have sources with a voltage of 230V and a converter of 1-DC.



Fig 3 Two complete circuits with Converter  $1-DC \label{eq:converter}$ 

Simulation results are on Fig. 4



The simulations give the following results. These results do not depend on the phase values of both sources

Fig.4. Simulations results of scheme on Fig. 3.

Now we continue slowing the same problems.

One wire method allows achieve useful results from ordinary traditional systems.

Maybe here we must talk about different in cables. But different in cables is good explained in

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Converter 1 - DC

U input (V)	Frequency (Hz)	Phase (degree)	U of DC (V)
230	50	35	371
230	50	215	371
230	55	215	371
230	50	245	371

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#### Frequencies of the signals changed.

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The use of converters makes it possible to build a system for sinusoidal signals in which the results do not depend on the phases.

2. Can be one wire only.

Below we will show that electrical energy can be transmitted only by one wire. This idea discussed long time ago, beginning from Tesla. After that were proposals and experiments in Russia. For example experiment based on the principle of longitudinal electrostatic waves as

described by Nikola Tesla in 1890 [2].

Today, the entire globe is shrouded in inefficient three-phase systems. But today efficient single-wire system is available [ ]. To use the single-wire method, three-phase systems can be converted to triple single-wire systems. But there is one problem.

In these systems, as usual, grounding is used. If yes, then is it a

Single wire system or not? In this article we will refer to a single wired system as if it does not use a ground. If we need to reset the potential, we will use a special block called a nullifier [ ]. Today it is

possible to convert a three-phase signal into a single-wire and return back. To do this, you can use converters 3-1 and 1-3 (see links section). Using these conversions, the complexity and cost of three-phase systems can be reduced. After converter 3-1, a signal is received with a voltage approximately twice the voltage in each phase and a current equal to the current in each phase line. Articles and patents about converters also include zeroing [3].

Additionally, if a single-wire system uses grounding, the phrase "single wire" may be controversial.

Using grounding for zeroing is not always possible. Ground resistance by hound times more than wire resistance.

We will show that it is possible to perform zeroing without ground.

For example experiment based on the Russian patent application DAVID PUBLISHING New One-Way Line for Electric Transmission System 1321 filed on May 10, 1993 by Stanislaw and Konstantin Avramenko (PCT/GB93/00960). This is a straight-forward application of the single-wire electrical energy transmission based on the principle of longitudinal electrostatic waves as described by Nikola Tesla in 1890 [2]. On the other hand, we know that the new ideas and systems continue to work in technology and in art.

When Brahms died people think where there is no need to compose music anymore. Obviously one wire method will meet many difficulties because three-phase lines exists and working. But these lines one can use and as three one wire lines as can see on Figure 4 In this case three wires can transmit more power without using grounding.

The proposed nullifier solves many problems, for example:

- You don't need to make zeroing using grounding if your device is at on high place.
- Is not always ground allows getting small resistance of zeroing
- Grounding resistance depends on whether.
- This system does not kills insects in the ground

We remember that three phase systems are very wide uses today. And we can't think about the reconstruction. But we can use them for transmitting three one wire signals [2].

## 2. Three-Wire Systems Instead Of Three-Phase Systems

Short conclusions from this work can be formulated as here.

Fig 6. A - Converter 2 - 1 with grounding and B - Converter 2 - 1 with nullifier.

Short conclusions from previous works can be formulated as here:

- All energy in three wires of three-phase system can be transmitted in one wire where this wire is the same like in three-phase system.

- So using three wires one can transmit by three times more energy, than in three phase system.

- Three-phase system has important advantage. This system does not radiate energy. (This conclusion corresponds to vectors algebra. The radiation of sum of three vectors with common point and with corners between them 120 degrees equals zero.

- The same advantage can receive and in three wires (not three-phase) system. In this case three signals must be with the same amplitude.

- The simulations show us that this problem can be solved if one of three signals will inverted. The results of simulations give decreasing radiating energy even by 100 times.

We will show that "Russian Troika" helps us. Fig 7



Fig 7 Troika

Historians claim that the troika as a Russian horse harness appeared at the turn of the 17th-18th centuries. Its appearance in Russia is associated with the desire to increase the speed of driving over long distances. Each horse in the trio gallops at its own gait. Belown are words of Russian writer Gogol

"... Eh, three! Bird three, who invented you? To know, you could only have been born among a lively people, in that land that does not like to joke, but has spread out smoothly across half the world, and go count the miles until it hits you in the eyes." Rereading the lines of the classic, you involuntarily draw an image of a team racing at full speed, and in a trio of horses, the two outer ones always look to the sides, and the central one always looks straight ahead. What explains this? It must be said that the troika is an exclusively Russian invention. Initially, this type of harness was used in courier and postal delivery and transportation of passengers. Later, the meaning changed, and the troika began to be used mainly for ceremonial rides to demonstrate the prowess and strength of the horses and the wealth and luxury of the owner."

The central horse in such a harness is the root horse. Usually this role was assigned to a representative of the trotting breed, so that the horse would trot all the way, without breaking into a gallop. Side horses, which are called draft horses, do not act as the main draft force. Their task is to maintain the pace set by the root artist and complement the overall concept.

Proposed idea in the three wires of the former three-phase system (former triple), we transmit three currents. In the middle wire, the current is approximately equal to the sum of the currents in the two outer wires. To prevent this system from emitting energy, it is proposed to include inverters in the middle wire at the beginning and at the end. Then the current in the middle wire will have reverse polarity [6].

Let us remind you. That three-phase signal does not radiate energy. But in proposed here system radiation will be small also due to using invertors in one of wires. There is one more very important property of a single-wire signal. This signal must be used to transmit energy, not information. Therefore, changing the phase components of a single-wire signal does not affect the energy of this signal.

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The mechanism of the troika is that the root horse, walking at a wide, sweeping trot, is, as it were, "carried" by galloping harnesses, fastened to the root horse with lines. Thanks to this, all three horses tire more slowly, but maintain a high speed.

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For example, we need to transmit some signals using a monopole antenna. Allows these signals one can be summed in a transformer. Output circuit must to connect with nullifier. In this case the phase of input signals can be changed. And energy of output signal will change.

If we give to outputs transformer one wire signal (not several signals). So nullifier will not influence on energy transmitting.

On fig 6 is showed example where on transformer Tr1 input there are two signals with different phases (positive and negative). Using inverter on Tr 2 we can get one wire signal. This signal we can [2] connect with nullifier.

- 1. Operational amplifier [7] using. The schema for converter 2 1, shown above, needed an inverter on basis transformer and nullifier Fig 8A.
- This is not always convenient. But the same scheme can be built using an operational amplifier (one of two inputs OA inverted signal.) Today OA for power needed for transmitting electrical energy do not exist. But it is possible to do this OA.



Fig 8.A Converter 2 – 1 with inverter

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Fig 8.B Converter 2 - 1 with operational amplifier.

If we will have a large power OA, then we can compare between two schemas.

Instead of conclusion. What's the most important thing in this article? Maybe the following? - Art is what remains. - But there will always be new brilliant creations.

-In the technical field new "today impossible" solutions will appear

- Electrical systems may be wireless.

- We will not heat our climate.
- Not artificial, but human intelligence can create something fundamentally new [6].

### **2.** One wire only.

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Short important conclusions from this work can be formulated as here.

There Is influence of electromagnetic fields on human health

— disorders in the immune, nervous, endocrine, reproductive, hormonal, and cardiovascular systems; — development of ontological diseases;

— development of diseases of the central nervous system;

- allergic reactions.

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Development of ontological diseases;

— Development of diseases of the central nervous system;

-- Allergic reactions and experienced patent specialist Ilea Zborovsky for preparing patents.

Despite the sad ending to this article, author wants to thank everyone who helped him, including experience specialist Doctor Thingous Vladimir.

Dear my readers. The first of you which can say "There is electrical line on direct current in our city +++. My address is bankmichael@gmail.dot.com. Large thank for you in advance.

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