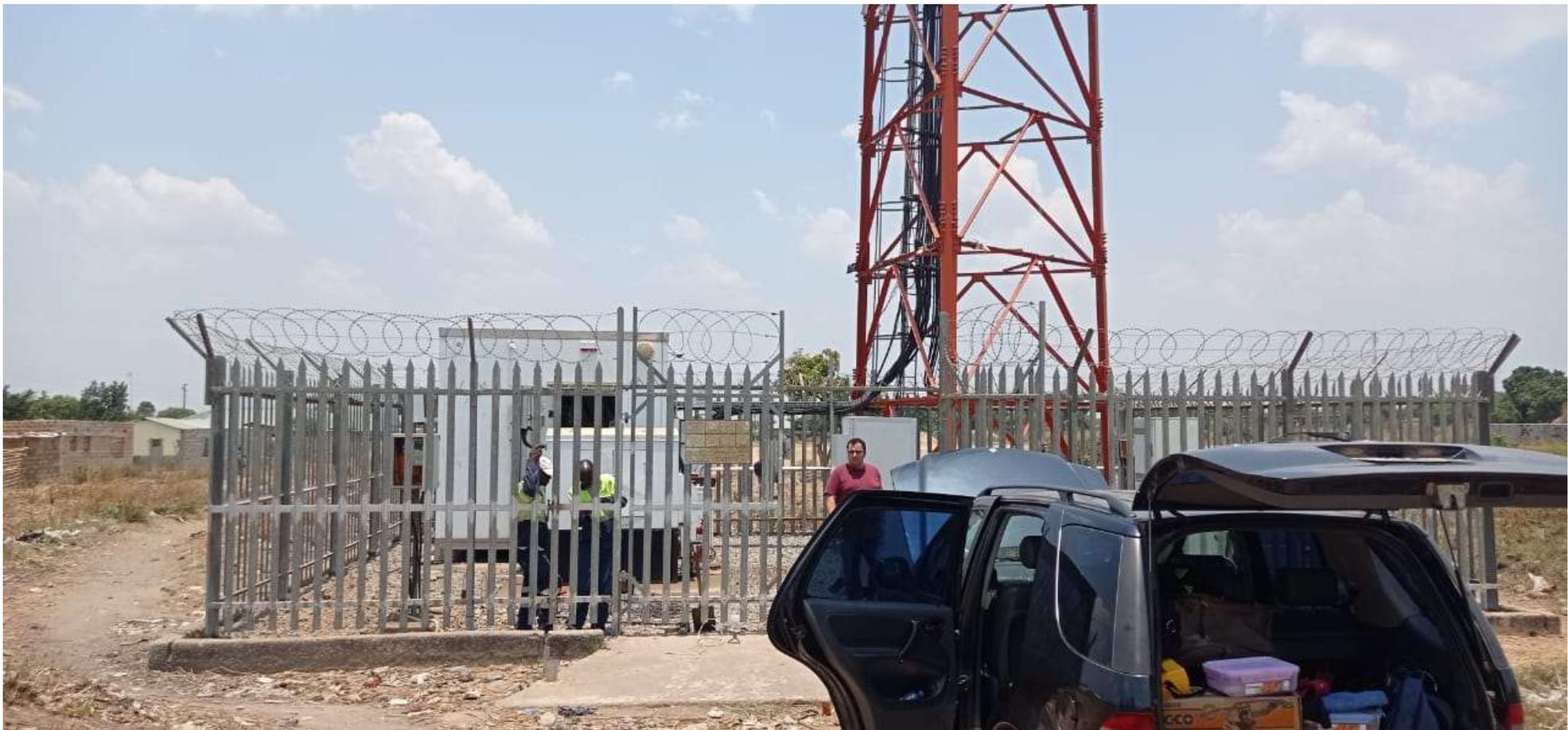


ATM Sputnik®

ATM energy control system on the example of cellular network base stations

Preliminary results





Our solution is built on the ATM software products platform and is intended for complex solution of problems of technological and emergency control of equipment, implementation of detailed energy consumption accounting.

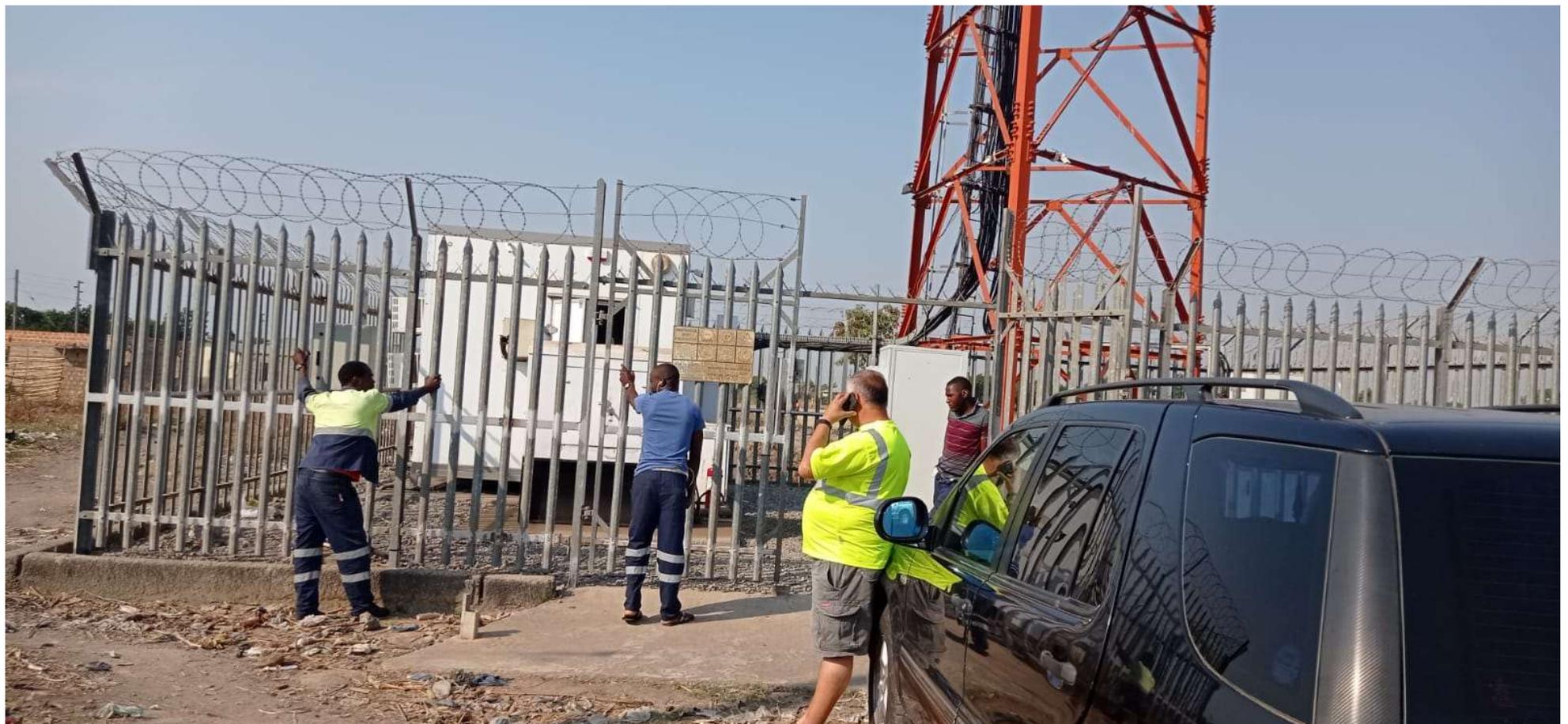
ATM solutions can be used for monitoring:

- Cellular Network Base Stations (BS)
- Electric vehicle charging stations, etc.



System Features

- The widest prevalence of such technological facilities in each country.
- Uniformity of BS power supply equipment used in the world: 70% equipment manufactured by HUAWEI



Problems

Large geographical distribution of objects, often in hard-to-reach areas, complex and costly logistics.

Absence of maintenance personnel, threat of vandalism.

Elimination of accidents "de facto" with a large time lag. High logistics costs during emergency work, maintenance, and preventive maintenance.

The use of a wide variety of power supply schemes in the absence of a single supplier, non-guaranteed sources and the forced use of backup power systems (DGS, solar panels and wind generators). Different energy costs.

Complex technical implementation of the necessary mandatory control and accounting for DC systems.

The complexity of implementing reliable mass energy metering of objects.

The need to obtain operational information immediately on a large number of objects.

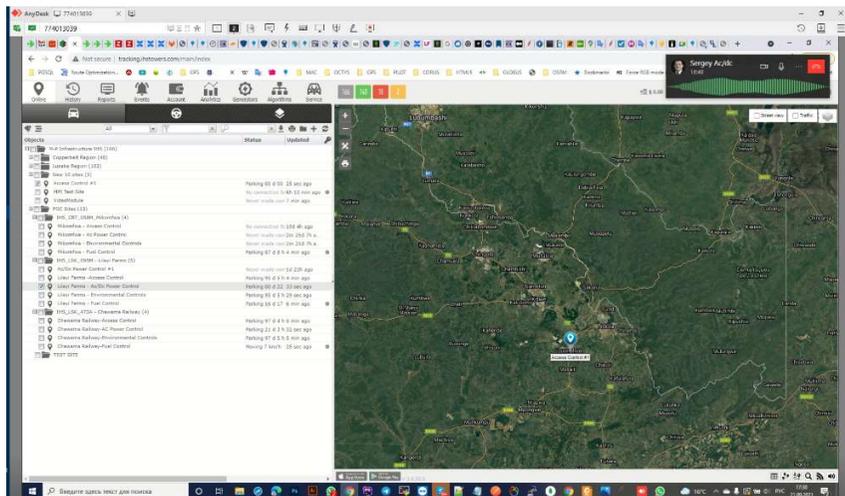
High social responsibility and serious financial consequences of communication failures in case of accidents.

Solution

IHS Towers (UK) is one of the largest independent owners, operators and developers of common telecommunications infrastructure in the world.

A large number of technological facilities are located in Africa (Cameroon, Cote d'Ivoire, Nigeria, Rwanda, Zambia, DR Congo).

Heavy transport accessibility, lack of reliable power supply and shortage of qualified personnel forced the company to look for technical solutions for remote mass monitoring of technological facilities.



In 2021, ATM software was installed on the IHS server in Johannesburg (South Africa). During the test implementation, the monitoring system covered the cities and settlements of Zambia and DR Congo: Lusaka, Coperbelt, Shawama, Lilayi, Mikomfma, Mpatamatu, Mikango, Katima, Kaangula, etc.

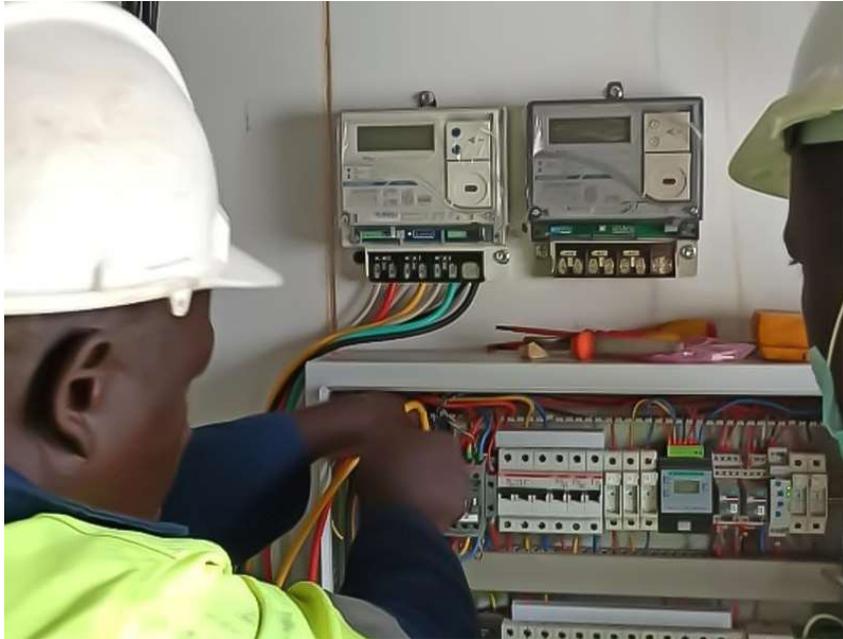


To implement the "field level", Pilot equipment was used as a PLC. The control equipment allows full control of the state of the diesel generator set, the city power supply of the AC, control of the DC power supply from batteries and solar panels.

Result #1

In On-line mode, continuous mass monitoring of emergency and technological parameters of a large number of distributed technological facilities is carried out.

An analytical system for making administrative decisions has been created.



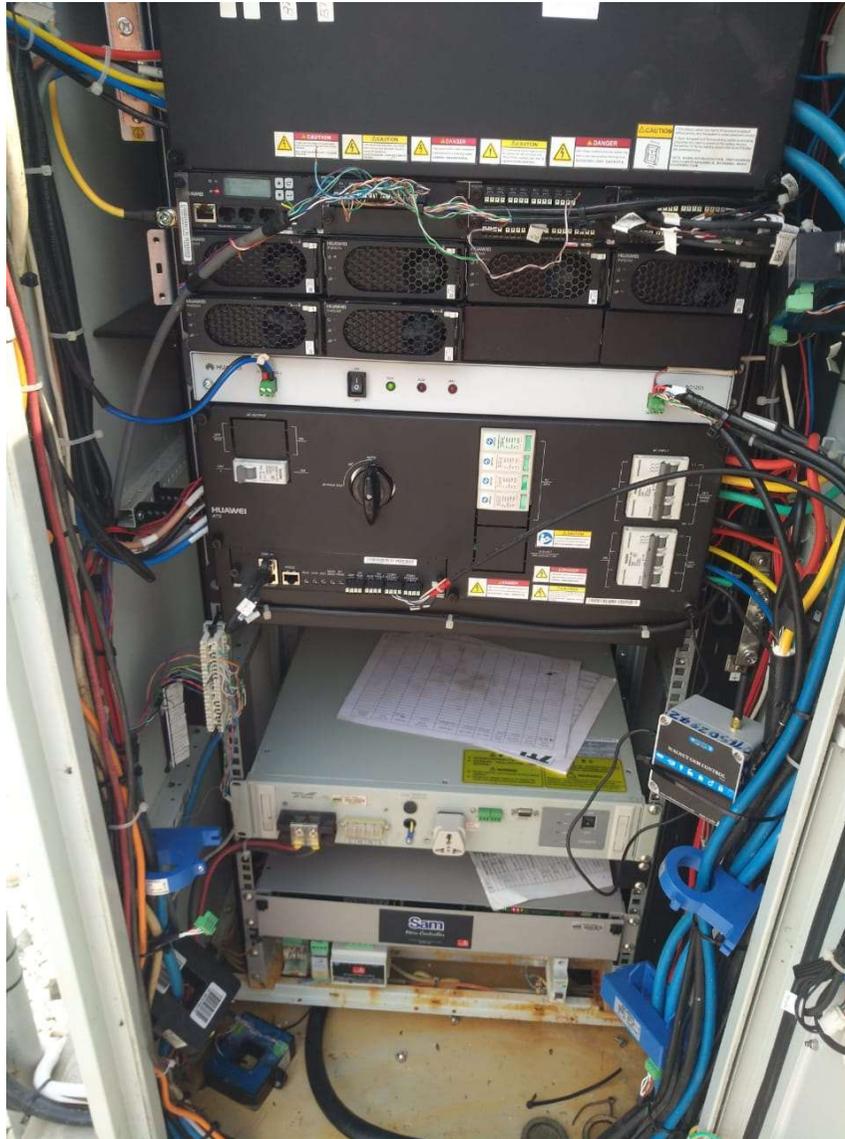
AC and DC controllers in the ATM system, in addition to technological control and alarm, allow for full energy accounting for alternating and direct currents, broken down by tariffs, daily zones, using separate tariffs for solar panels, DGS and batteries.

I.e., the use of the ATM system allowed for separate billing of energy consumption for regular, emergency, etc. modes from a variety of sources.

Result #2

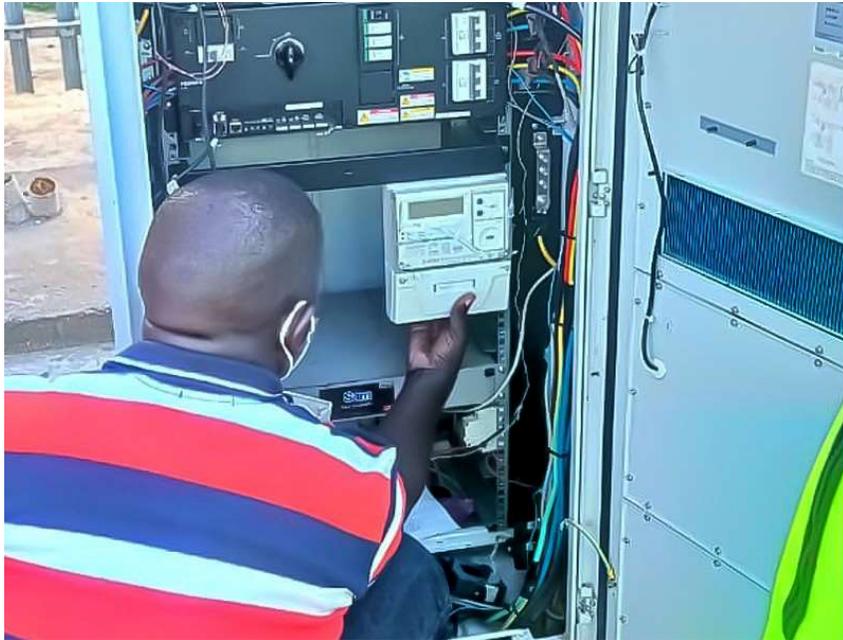
Commercial and technological accounting of energy consumption for all modes is conducted separately for consumers (MTN, Airtel and Zamtel operators) with separate billing by daily zones and AC and DC sources.

ATM WEB SCADA



Today, the ATM system monitors the operation of HUAWEI's EPU: ETR4890-A2, ETR48200-From 5 To 4, ETR48400-C9A2, ETR48600-C11A1, TP481000

Russian-made industrial routers were used as channel-forming equipment, which made it possible to additionally create video surveillance systems at some facilities.



Installation of AC and DC controllers equipment is carried out WITHOUT DISCONNECTING consumers and interrupting the operation of the BS.

To facilitate the self-installation of equipment, ATM has released instructional videos in English

Result #3

Low "personnel costs and ease of implementation"

At the moment, existing personnel independently carry out the installation, connection and operation of new facilities.



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