

## Victory in the Ukraine

**This year in April AES Rovno, a power distribution company in the north-west of the Ukraine, announced a tender for the supply of a radio data network for its SCADA system.**

The tender turned into an international competition of the world's leading manufacturers of radio modems. Up against the best of them RACOM came through to win the tender together with its local partner, Energosvjazok Kyjev, and was selected as the supplier of the future network which is to contain 63 modems in the first phase.

The signing of the contract was conditional upon successfully attaining type approval of the radio modem for the 400 MHz band with an output RF power of 25 W. RACOM submitted samples to the Ukrainian certification institute, UkrSEPRO, in Kiev and the MR400 radio modem successfully complied with all demanding Ukrainian regulations and standards. Now nothing stands in the way of commencing actual construction of the network.

RACOM is not a newcomer to the Ukraine. In fact we have been here since 2004. In the past we have built several smaller networks, largely for the power industry. A specific problem of the Ukraine are the long distances between individual points of a network. For this reason most networks were built to operate over the 160 MHz band and the new network in the 400 MHz band requires an RF power of 25 W.



## HI-Industri 2007

One of the cornerstones of RACOM is the direct support of our partners thanks to whom we try and develop mutual relations even on a personal level. Cooperation is always more pleasant if we are working in a friendly atmosphere. Behind each business deal we see a specific face and our experience tells us that our partners appreciate this approach.



The support provided by our partners during the process of client acquisition is taken for granted and is also the main reason why we accepted the invitation of our partner, IT-Tronic, to participate at the Scandinavian exhibition, HI-Industri 2007, in the Danish town of Herning.

HI-Industri is the largest Scandinavian exhibition dedicated to automation, electronics, logistics, communication technology, and the innovation of work processes. In 2007 this attracted 1000 exhibitors and over 30,000 visitors.

During the course of the exhibition we gave a presentation at the IT-Tronic stand on reference applications such as the mobile networks for the Norwegian Telenor and the Brno municipal transport company, or the telemetric SCADA system for the Slovakian gas company. Visitors to the stand were able to see a demo application in operation making use of MX160 wideband radio modems and the IP environment for transmitting a picture directly from an IP webcam.

During the exhibition we had the opportunity of meeting a number of potential clients and therefore we hope that with the help of IT-Tronic Denmark will be another country in which MORSE becomes a synonym for radio data communication.

# 5/07

# RACOM NEWS

Information bulletin of RACOM company



**ECONOMY radio modems**

**Victory in the Ukraine**

**HI-Industri 2007**

Dear friends,

just like other manufacturers with in-house development, we at RACOM are continually asking ourselves where our market segment is heading and which products we should be planning to build next. We invest large sums of money into finding out which technology and products you will need in the future for data transmission.

Up until now RACOM was known primarily as a manufacturer of high-end radio modems for the most demanding of applications. Today we are introducing a whole new range of radio modems to target another market segment – transparent radio networks. Thanks to this change our customers now have the option of selecting modems from our PROFI range for large and demanding applications, or to develop a solution for smaller and simpler networks based on our ECONOMY range.

Remaining faithful to our roots we are also introducing something completely new along with our new ECONOMY range: an Ethernet interface and configuration via a web browser. Naturally, we shall continue to provide state-of-the-art solutions, a high quality product and above-standard technical support. The name for the new range, ECONOMY, wasn't plucked out of thin air: in actual fact we have managed to significantly reduce the price of our products and simplify their configuration.

We believe that with your help RACOM can become successful in this market segment too and that we shall build hundreds of networks around the world with our new range of radio modems.

Martin Lácha  
Deputy CEO



## ECONOMY radio modems

**ECONOMY is a completely new range of radio modems with which RACOM plans on entering the market of transparent radio networks.**

For simplicity RACOM has split the radio modems it manufactures into **two groups**:

**PROFI** – traditional radio modems, or rather radio routers (e.g. MR400), the likes of which have been manufactured up until now, which are suitable for the most demanding of applications: in-house secure, anti-collision protocol on the radio channel, industrial protocols on user interfaces, fully-fledged integration of the IP environment, mobile cell networks ....

PROFI radio modems are available as narrowband with a data rate of 21.68 kbps or wideband with a data rate of 133 kbps. Both types are half-duplex and full-duplex, in version with an output RF power of 5 or 25 W.

**ECONOMY** – transparent radio modems primarily designed for smaller networks and applications in which the security of transmission and access to the radio channel are resolved within the application itself.

ECONOMY radio modems are suitable for building smaller networks for

### Typical areas of use

- **Telemetry & SCADA** – water industry, gas industry, power industry, crude oil production, coal mining...
- **Transaction networks** – points of sale, lottery
- **Security and surveillance**

### Benefits

- Long-range coverage of up to **tens of kilometres** (without the need for a direct line of sight)
- Fully **transparent** network with the option of **retranslations**
- Wide tuning **range: ±16 MHz** from the base frequency
- **SW adjustable channel spacing**: 25; 12.5; 6.25 kHz
- **Ethernet** and **RS232** interfaces
- **Configuration via www browser**
- Local and remote **diagnostics**
- Data rate of up to **19.2 kbps** in the 25 kHz channel
- Rx/Tx **switching time <1.5 ms**
- Adjustable RF power: **0.3** or **3 W**
- Supply **PoE** or 11–30 V
- Highly durable – aluminium case
- Assembly on DIN rail or using 2 × M3 screws
- Complies with **ETSI EN 300113**

## RE400



### Technical parameters

Types	RE160: 135–175 MHz; RE400: 400–470 MHz
Data rate in radio channel	4.8 kbps / 6.25 kHz
	9.6 kbps / 12.5 kHz
	19.2 kbps / 25 kHz
Method of setting working frequency	software in the range of ± 16 MHz from the base frequency
Rx/Tx switching time	< 1.5 ms
Receiver sensitivity for BER 10 <sup>-3</sup>	better than -107 dBm
Interfaces	Ethernet, RS232
Antenna connector	SMA
MTBF (Mean Time Between Failures)	> 100 000 hours
Power supply	PoE (38–57 V) or 10.8-30V (nominally 13.8 V)
Idle consumption (Rx) at nom. voltage	450 mA
Consumption during transmission (Tx)	550 mA / 0.3 W; 950 mA / 3 W
Operating temperatures range	-25 to +55 °C
Case dimensions	137 × 96 × 31 mm
Weight	0.3 kg
<b>Standards complied</b>	
Radio parameters	ETSI EN 300 113-2 V 1.3.1
EMC (electromagnetic compatibility)	ETSI EN 301 485-1 V1.6.1
Safety	CENELEC EN 60 950 ed.2:2006; EN 50385; EN 50383