# The Public Enterprise Testing Centre "Omega" of Ukraine and SEDAM Communication Limited of the UK offer their service in Type Approval testing of marine radio equipment for western manufacturers

### We are:

The Public Enterprise Testing Centre "Omega", Sevastopol, Ukraine

**SEDAM Communication Limited**, London, UK– Omega's Partner and Liaison with Western customers and organisations

Independent Experts from Australia, Canada, France, Germany, Russia, New Zealand, Norway, UK, Ukraine, USA

#### Accreditations and recognitions

- National Accreditation Agency of Ukraine
- Rosstandard (Federal Agency of Technical Regulating and Metrology, Russia),
- Ministry of Transport of Russia,
- Shipping Register of Russia
- Shipping Register of Ukraine
- COSPAS-SARSAT International Satellite System For Search and Rescue (Canada),
- British Approval Board for Telecommunications (BABT),
- U.S. Coast Guard (USCG),
- Federal Communications Commission, USA (FCC),
- Industry of Canada (IC)
- National Association of Testing Authorities (NATA)
- TÜV Rheinland InterCert Agreement of technical scientific cooperation
- AAC "Analitica" (Russia, full member ILAC and APLAC),

# Measurements for Conformity Assessment

Measurements are performed for compliance with requirements of:

- International standards for maritime navigation and radiocommunication equipment and systems:

- IEC 60945: 2002 "Maritime navigation and radiocommunication equipment and systems" (and similar: European standard EN 60945, Ukrainian standard DSTU 4904, Russian Federation standard GOSTR 52691-2006);

- IEC 61097-1,-2, -3, -4, -6, -7, -8, -9, -12;
- IEC 61162-1,-2, -102,
- IEC 61993-1, IEC 61993-2;
- IEC 61996-2
- and others

- US Standards RTCM Paper 77-2002/SC110-STD.

- FCC Rules (as the measurement facility compliant with the requirements of Section 2.948)

- International standards for radiated & conducted emissions, radiated & conducted susceptibility (immunity):

- Radio disturbance characteristics
- Electrostatic discharge
- Radiated immunity
- Electrical fast transient /burst

CISPR 22; IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4;

| - Surge                             | IEC 61000-4-5; |
|-------------------------------------|----------------|
| - Conducted immunity                | IEC 61000-4-6; |
| - Power frequency magnetic immunity | IEC 61000-4-8; |

- Voltage dips & interruptions IEC 61000-4-11

#### **Our Customers**

Radio Electronic Equipment Manufacturers from Western and Central Europe, Scandinavia, South-East Asia, China, Near East and North America, Australia and New Zealand

# Experience in testing

**The Public Enterprise Testing Centre "Omega"**. The Testing Center "Omega" was established in 1968 as a base center for the testing of mobile and marine radio equipment.

In 1993 the Testing Center "Omega" was re-organized into commercially independent Public Enterprise Testing Center "Omega" specializing in certification of telecommunications.

# Experience in testing of the Marine, Aviation and Automotive Radio equipment

#### Types of marine equipment and tests performed at the Testing Center "Omega"

The Testing Center "Omega" performs testing of different types of marine radio communication equipment:

- COSPAS-SARSAT radio beacons;
- HF, MF, MW radio transmitters with output power up to 1500 W;
- Shipborne land stations Inmarsat B, -C, -M and Inmarsat F77;
- 9 GHz search and rescue radar transponders;
- Shipborne VHF radio stations with output power up to 50 W;
- LW, MW, HF, VHF shipborne radio receivers;
- VHF radio beacons of rescue equipment;
- VHF-antennas;
- AIS transponders class A;
- SVDR-capsule EPIRB 406 MHz
- Airborne navigation equipment
- Land mobile radio equipment.

Testing Center "Omega" performs different types of testing, including:

- Performance tests;
- Electric and radio measurements;
- Climatic tests;
- Mechanical tests;
- Special tests (water-tightness, dust-proofness, salt fog resistance, etc.);
- Acoustical tests;
- Electromagnetic compatibility tests;
- Reliability tests;
- Safety tests;

Testing Center "Omega" performs tests of radio equipment for:

- Type Approval to the Rules for the Equipment of Sea-Going Ships of the Russian Maritime Register of Shipping and Shipping Register of Ukraine;
- Type Approval to the requirements of Ministry of Transport of the Russian Federation;

- Type Approval to the requirements of the US Coast Guard;
- Type Approval to COSPAS-SARSAT requirements;
- To the requirements of IMO Resolutions, IEC, ITU-R, ITU-T standards;
- To the requirements of European EN, ETSI, EASA standards;
- To the requirements of RTCM and RTCA standards and FCC rules;

#### Summary of testing performed by "Omega" in the relevant areas:

Testing Center "Omega" has conducted more than 1000 tests of various types of radio communication equipment, including tests of 35 radio beacon models, manufactured by 20 manufacturers from 13 countries in 4 world regions (Europe, North America, the Near East and South-East Asia, Cnina, Australia and New Zealand).

#### Recent tests of COSPAS-SARSAT radio beacons performed by the PE TC "Omega":

During February 2006 - November 2012 the PE TC "Omega" tested 24 radio beacon models manufactured by 20 manufacturers (Ukraine, Russia, Israel, Germany, France, Italy, GB, Norway, China, Korea, Australia, New Zealand, USA), and performed the test of a new model of high-stability reference oscillator from a leading manufacturer.

In the beginning of 2007 Omega has started co-operation with the London based Company SEDAM Communications Limited in the direction of enhancing the Omega presence in testing of marine radio equipment for Western customers. Since then Omega has obtained US CG approval and was registered with FCC.

# Experience in testing of the Radio and Telecommunication equipment

Being an accredited certification body, PE TC Omega is included in the list of the Bodies approved by the National Commission for the Regulation of Telecommunications and Information for the conformity assessment of the Radio and Telecommunications equipment in Ukraine.

Testing Center 'Omega' offeres the services in testing of the following equipment for the purpose of placing onto the CIS market:

- analogue and digital PMRs (private radios)
- GSM/GPRS/EDGE/WCDMAmobile phones
- cdma 2000/ev-do Mobile Phones and Access Cards
- IEEE 802.11 a/b/g/n RLAN equipment
- Bluetooth devices
- SRD and RFID devices
- GSM/GPRS/EDGE/WCDMA Base Transceiver Stations
- cdma 2000/ev-do Base Transceiver Stations
- Microwave links (3-40 GHz)
- Wimax equipment
- xDSL Modems
- Ethernet switches and routers
- PABX
- VOIP gateways
- other telecommunications or wireless equipment

# Experience in performing EMC tests

Public Enterprise Testing Center "Omega" performs electromagnetic compatibility (EMC) testing (according to Ukraine, CIS, EU normative documents requirements) of such products as:

- telecommunication equipment;
- radio communication facilities;
- household radio-electronic equipment:
- household and similar electronic equipment;
- low voltage DC and AC power supplies;
- security alarm systems;
- automotive electronics and aerotronics;
- electric tools;
- lifts and other equipment.

Testing Center Omega performs tests in accordance with the requirements of the modern international standards, such as EN, IEC, CISPR, ANSI, RTCM, ED, etc.

The reports of EMC tests according to the international standards performed in the laboratory meet the requirements of the majority of counties and regions world-wide and permit to provide access to the effective global marketing.

Size and weight of the products tested can considerably influence the organization and performance of the tests. Testing Center Omega has the experience of testing of the products with various sizes and weight (from several centimeters weighing some tens of grams to 19-inch uninterruptible power system (UPS) stand weighing more than 200 kilograms).

# Experience in performing Electrical Safety Tests

Testing Center "Omega" provides services on the product conformity assessment to the 2006/95/ECLVD Directive requirements for the electric equipment to be operated within the certain voltage range, the requirements of Technical Regulations of Ukraine for low voltage equipment safety, CIS Electrical Safety Regulations, including:

- telecommunications equipment;
- radio communications equipment;
- office equipment;
- electrical (household) appliances;
- household radio electronic appliances;
- low voltage AC/DC power supplies;
- security and fire alarm systems;
- industrial equipment;
- radio communication equipment for marine and river ships and vessels;
- medical equipment;
- electric tools;
- etc.

Since 1968, Omega has been performing safety tests of the following equipment:

- telecommunications equipment;
- radio communications equipment;
- office equipment;
- household radio electronic appliances;
- electrical (household) appliances;
- low voltage AC/DC power supplies;
- security and fire alarm systems;
- industrial equipment;
- radio communication equipment for marine and river ships and vessels;
- medical equipment;
- electric tools;
- etc.

Omega performs tests in accordance with the requirements of the modern international standards. (EN, IEC, RTCM, ED, etc.).

Test reports under International Standard safety parameters prepared by our Laboratory meet the requirements of the majority of countries and regions and provide the access to the global marketing.

Testing Center 'Omega' is equipped with the up-to-date test equipment of the world leading trade marks as *Rohde&Schwarz, Agilent, Anritsu, Aeroflex (Willtek), Tektronix, ETS-Lindgren, Schwarzbeck.* 

**SEDAM Communications Limited**. A UK based company with "front line" offices in Russia, Netherlands Antilles. The Company is dedicated to providing services in 2 key areas:

- Organising and conducting R&D projects in high tech areas, particularly in Computer and Electronic R&D. We use R&D institutions in the CIS and the UK and Independent Experts from around the world. Our Customers are from all the leading industrial nations.

- Consulting in maritime radio communication and radio navigation systems. Consulting in International Standards and Type approval of Marine Electronics.

Company employees have longstanding experience in testing of different types of Marine radio equipment: traditional (MF, HF, UHF), Inmarsat, Cospas-Sarsat, including direct involvement in Type Approval of dozens of Cospas-Sarsat beacons.

#### Personnel, who perform or witness tests. Training and Experience

A team of 30 professionals, each of them with a University degree in a relevant field with a relevant work experience ranging from 3 to 37 years.

#### Important Note:

All communications are in English, though other working languages can be used.

# TA Project Development Chart



\* Example of Gantt Chart can be provided upon request

\*\* Introductory R&D Rate USD 15 / hour and The Project Price is calculated on the basis of the Gantt Chart schedule agreed between Customer and SEDAM Communications Ltd. Valid for the First TA project ordered by 01/01/2009. Future rates will be in the region 20-25 USD subject to order volume.

\*\*\* Advance Payment is normally 25% of project price

# <u>Contacts</u>

Dr Sergey Mikhailov, Director

SEDAM Communications Limited, 8 Providence Villas Brackebury Road London W6 0BA, UK +44 77 9086 1212; +44 20 8749 5156 (Fax), sn\_mikhailov@hotmail.com, sedamcom@sedamcom.com

Nikolay Belikov, Director Roman But, Radio and Telecommunications Department Manager Vladislav Kovalenko, Marine and Aviation Radio Department Manager Public Enterprise Testing Centre "Omega" 29, Vakulenchuk St. Sevastopol. 99053 Ukraine +380 692 537 072, +380 692 469 689, +380 692 469 679 (Fax:), stcomega@stc-omega.biz www.stc-omega.biz

# Omega's Faculties (photo gallery)



Fig 1. General view of the STC Omega's laboratory building



Fig 2. Testing site for the marine radio equipment



Fig.3 Site for climatic testing of the large dimensional samples of marine radio equipment



Fig 4. Radiation site on the roof of the Omega's laboratory building No. 33



Fig 5. Semianechoic chamber with remote controlled turntable



Fig 6. Conducted Emission Test Site