



GSG International GmbH

Experiences of Gamma-Service in cooperation with Russian enterprises and opportunities of further expansion of partnership with ROSATOM enterprises





GSG International GmbH

Affiliated Companies



Isotope Technologies
Dresden GmbH
(Dresden, Germany)



Gamma-Service
Recycling GmbH
(Leipzig, Germany)



Gamma-Service Medical
GmbH
(Leipzig, Germany)



ROTOP Pharmaka AG
(Radeberg, Germany)



Institut für
Umwelttechnologien
GmbH (Berlin, Germany)



Nuclear Control &
Consulting GmbH
(Berlin, Germany)



ISOTREND spol. s r.o.
(Prague, CZ)



RONIK Nuclear &
Medical Techniques
(Dubna, Russia)



GSG International GmbH

Regional Sales & Services



ITD USA Inc.
(Knoxville, TN, USA)
Established in 2010



Gamma-Service Ltd.
(Byfleet, UK)
Established in 2006



GSG Sanlar India
Mumbai, India
Established in 2011



GSG ELEX
Belgrade, Serbia
Established in 2010

Further Sales Offices in:

- South America
- Eastern Europe
- Middle East
- Asia
- South Africa



GSG International GmbH

Product and Service Portfolio



- **Complete Technologies medical isotope production**
 - ✓ fission based ^{99}Mo production
 - ✓ $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$ generator production
 - ✓ $^{99\text{m}}\text{Tc}$ -Kit production
 - ✓ ^{131}I and ^{131}I therapy capsule
- **Customized hot cells and boxes for nuclear medicine**
- **Production and supply of licensed $^{99\text{m}}\text{Tc}$ -Kits**
- **Development of radioactive drugs and medical devices:**
 - ✓ ^{90}Y spheres
 - ✓ ^{14}C precursors
 - ✓ ^{85}Kr enrichment
 - ✓ ^{137}Cs blood irradiators
- **Supply, takeover and recycling of high active ^{137}Cs and ^{60}Co sources for medical and industrial applications**
- **^{241}Am recycling**
- **Decommissioning services & radioactive waste processing**



GSG International GmbH

Experience in Cooperation with Russian Enterprises



- **Since 1980**
Delivery of mechanical and electrical manipulators to different Russian institutions
- **Since 1995:**
Delivery and installation of equipment for PET-centers (e.g. Bakulev Hospital and Central Clinic, Moscow)
- **In 1997 – 1998**
Delivery and installation of an ^{131}I production line to NIIAR Dimitrovgrad



GSG International GmbH

Experience in Cooperation with Russian Enterprises



- **In 1995:**
Fund raising for a ^{99}Mo production line on the basis of high temperature salt-melt technology and the Rossendorf experiences in NIIAR, Dimitrovgrad
Foundation of a distribution company,
Project failed because of NIIAR being a state owned institute and several other reasons
- **Since 1995:**
Development of different types of Cobalt sources for medicine, research and industry in cooperation with NIIAR, Dimitrovgrad
- **Since 1995:**
Development of transport containers for different ^{60}Co and ^{137}Cs configurations in cooperation with VNIITFA , used for medicine, research and industry



GSG International GmbH

Experience in Cooperation with Russian Enterprises



- **Since 1995:**
Development of transport containers in different configurations for ^{60}Co and ^{137}Cs sources in cooperation with VNIITFA, sources used for medicine, research and industry
- **1996 - 2007:**
Activation of Cobalt in Beloyarsk, use of the reactor BR-600 in cooperation with NIAR financing the activation units, sources used for industrial purposes;
2007 last delivery of high specific industrial sources type GSK-1 from Dimitrovgrad in



GSG International GmbH

Experience in Cooperation with Russian Enterprises



- **2008 – 2011**
Installation of a ^{60}Co irradiation plant with an activity of 350 kCi in cooperation with VNIITFA to Bangladesh;
further facilities under negotiation;
- **Since 1997:**
Use of RBMK reactor in Leningrad Nuclear Power Plant for cobalt test activation,
organization of Co-60 source production in Russia and Europe,
production of the first 2 MCi Cobalt sources,
development of a logistic chain with NIAR,
use of sources in a modern irradiation facility
(Gamma-Service in Radeberg, Germany)



GSG International GmbH

Experience in Cooperation with Russian Enterprises



- **Experiences in general:**

From the beginning on a very professional and dedicated work of our Russian partners

During the first years some difficulties in meeting deadlines and ongoing administrative problems because of a continuous changes in the Russian organizations

Very good reliability during the last years of cooperation also based on native Russian speaking staff at GSG-company



GSG International GmbH

Opportunities of Further Expansion of Partnership



- **Worldwide distribution of ^{99}Mo of Russian origin**
- **Licensing and marketing of Russian ^{99}Mo / $^{99\text{m}}\text{Tc}$ generators beyond Russia**
- **Cooperation in developing of radiopharmaceuticals and medical devices**
- **Cooperation in developing a new generation of ^{137}Cs based blood irradiators**
- **Distribution of sealed sources and other isotopes to third parties using GSG`s worldwide logistics and marketing network**



GSG International GmbH

Thank you
for your attention!

