

#### **Institute of Automation and Remote Control: the Start and War Years (1939-1944)**



Academician A.A. Chernyshov



Academician V.S. Kulebakin



Academician N.N. Luzin



Professor A.F. Shorin



Academy Corresponding Member V.I. Kovalenkov





Academy Corresponding Member M.A. Gavrilov



Academician V.A. Trapeznikov



Academy Corresponding Member



Professor M.V. Meerov



Professor G.V. Scshipanov



The Institute's building during the II World War, (UI'yanovsk)







The Institute's first building, Maly Khariton'yevsky Pereulok







#### **Institute of Automation and Remote Control: Coming-to-Be (1944-1969)**



Institute's building at Leningradsky Prospekt



Academician A.A. Andronov



Academician B.N. Petrov



Academician V.A. Trapeznikov



Professor M.A. Aizerman



Academician V.S. Pugachyov



Academician I.V. Prangishvili



Main Institute's building at the 50-s, Kalanchyovskaya str.



Professor A.A. Fel'dbaum



Academician Ya.Z. Tsypkin



Academy Corresponding Member A.M. Lyotov









#### **Institute of Control Sciences: from 1969 till our days**





Academician V.A. Trapeznikov



Academician I.V. Prangishvili

#### **Basic Lines of Research**

- > System Theory and General Control Theory
- > Techniques of Control in Complicated Engineering and Man-Machine Systems
- ➤ Theory of Control in Inter-Disciplinary Models of Organizational, Social, Economic, Medical and Biological and Environment Protection Systems
- ➤ Theory and Techniques in Development of Software-and-Hardware and Engineering Tools of Control and Complicated Data Processing and Control Systems
- Scientific Fundamentals of Technologies in Vehicle Control and Navigation
- Scientific Fundamentals of Integrated Control Systems and Automation of Technological Industrial Processes



Academician S.N. Vassilyev









#### **Institute of Control Sciences: our days**

#### **Basic Lines of Research**

- > System Theory and General Control Theory
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1000 employees100 Doctors of SciencesOver 250 Ph.D.'s

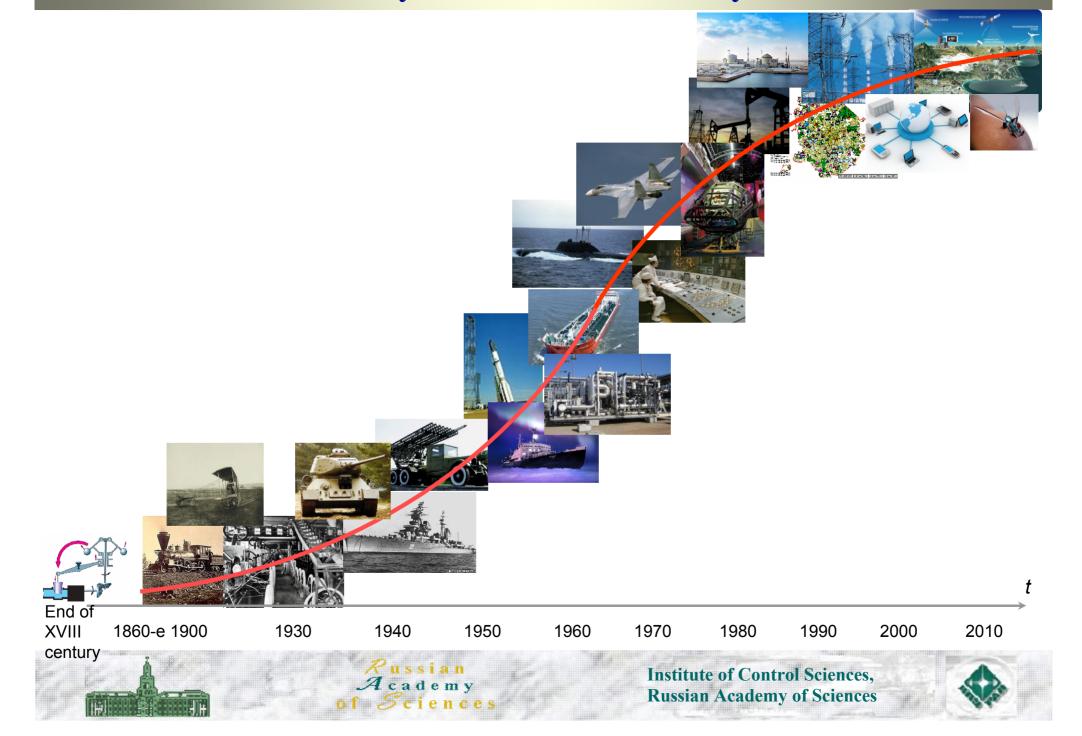




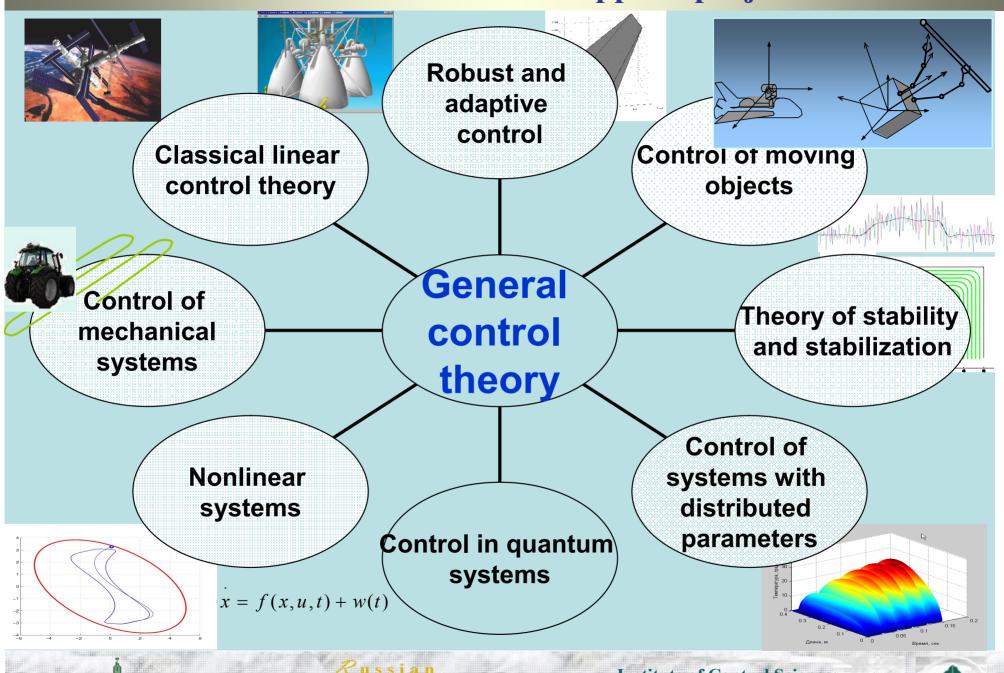




## 150 years of Control Theory



# Our scientific research and applied projects. I.



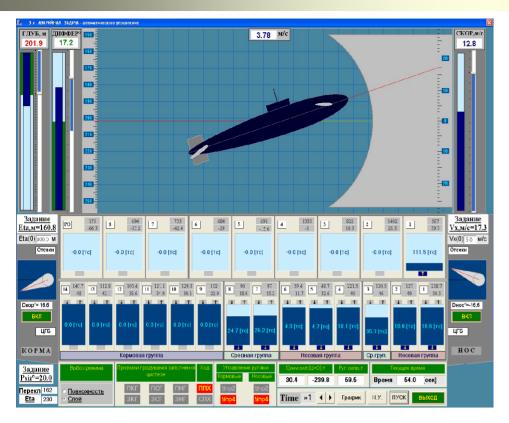








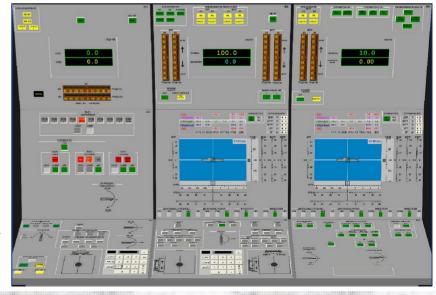
## Our scientific research and applied projects. II.



Study of control problems for a multimode submarine in the case of emergency. The intelligent control level is based on production rules for current and predicted situations

Full-scale multi-mode computer training complex for Russian Navy

**General view of the training complex** 









## Our scientific research and applied projects. III.

# Integrated solutions for upper level control systems in nuclear power engineering with application in Russia and abroad

- **≻Programming language**
- **≻Operating system**
- >Engineering equipment (in cooperation with the Nizhny Novgorod Scientific Research Institute for **Engineering Systems**)
- >Applied software







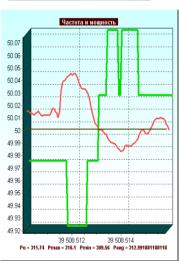


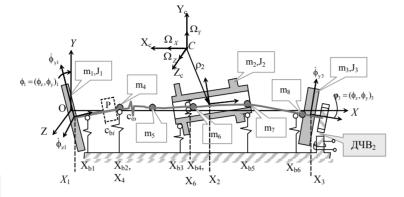


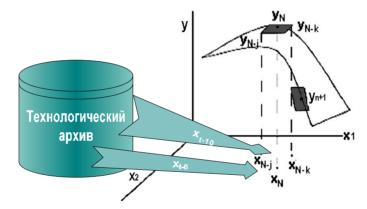
## Our scientific research and applied projects. IV.

## Control of technological industrial processes























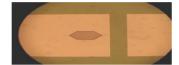
#### Our scientific research and applied projects. V.

#### **Equipment for automation devices and computers**

#### **New effects in nanostructures**







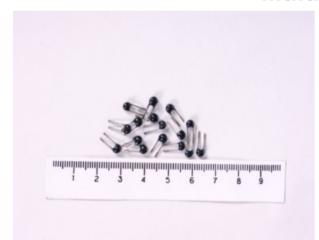
#### **Modern jet devices**

(operable up to 500° C, in vibration and radiation environment)





#### **Multi-channel sensors**















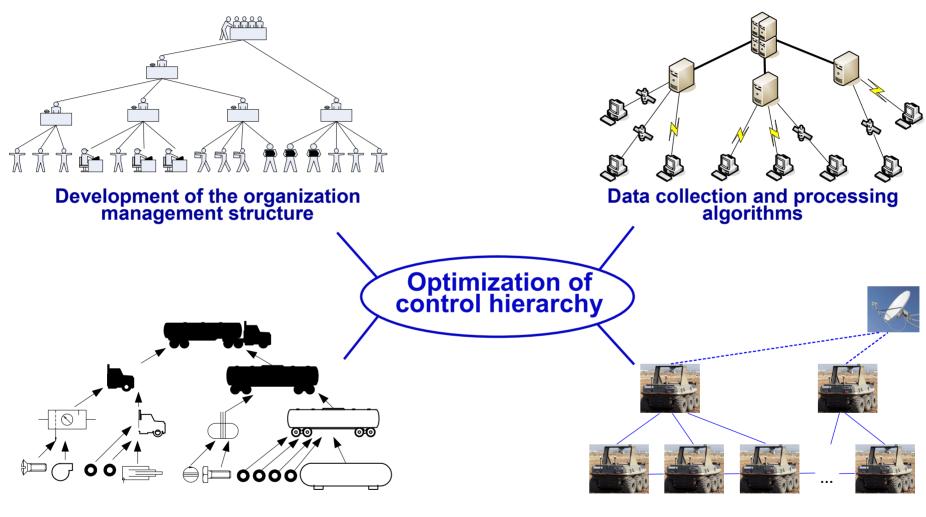






#### Our scientific research and applied projects. VI.

#### Control in organizational, social, and economic systems





Task management in network structures





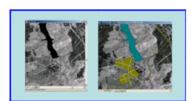




## Our scientific research and applied projects. VII.

# **Geographic Information Systems**





Map updating by space survey



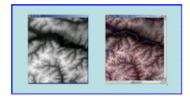
**Navigation maps** 



**Aviation maps** 



Map making by field survey



**Digital relief matrix** 



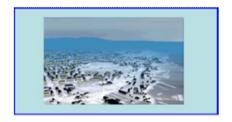
3D-modeling



Large-scale plans



Map updating by air survey



3D-modeling



Digital topographic maps



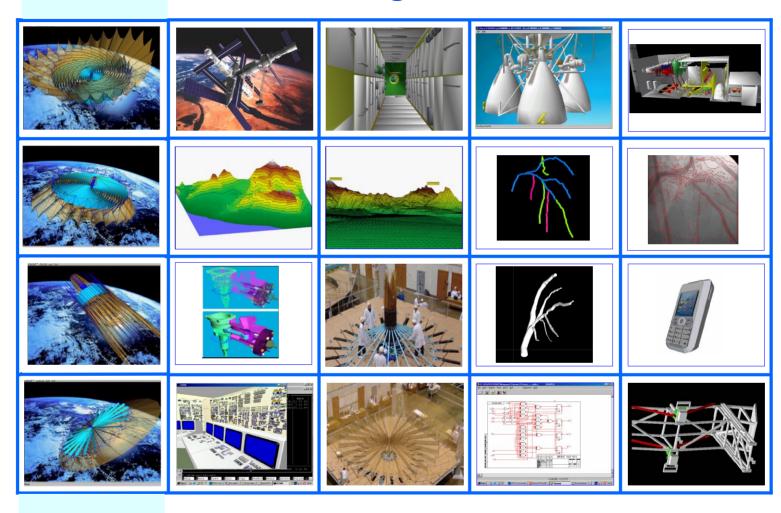






## Our scientific research and applied projects. VIII.

## **3D-Modeling in control**

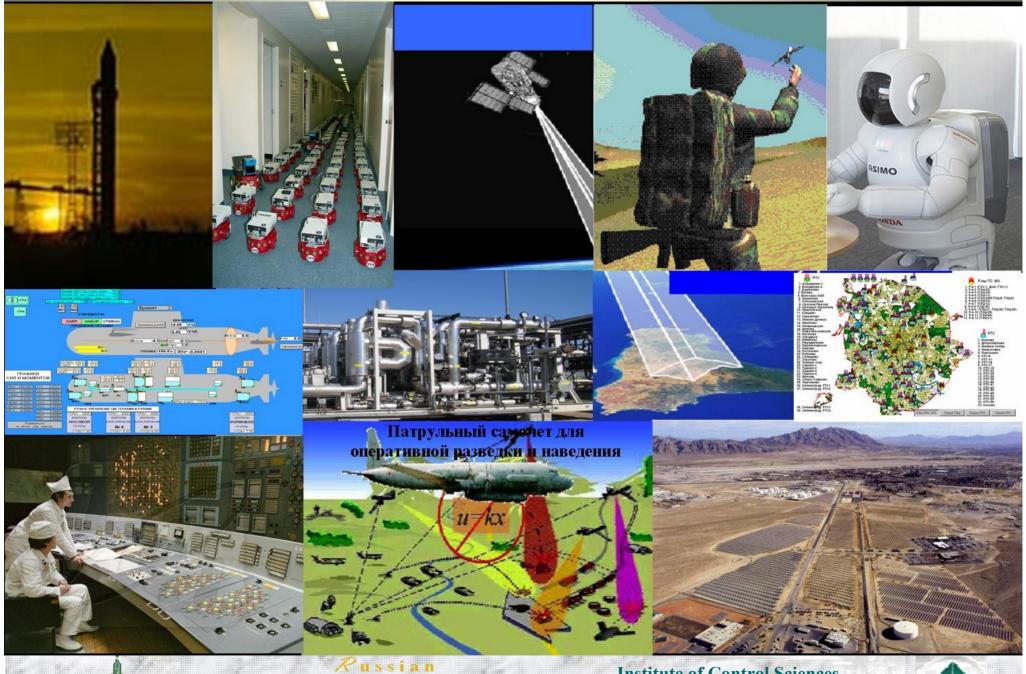








# **Applications of Control Theory**







**Institute of Control Sciences, Russian Academy of Sciences** 



#### **ICS RAS International Relations**



President IFAC IFAC Dr. Lyotov is opening I World IFAC Congress in Moscow. To the left Academician V.A. Trapeznikov

The Institute joined active international cooperation in the late 1950s – early 1960s with our country co-founding the International Federation for Automatic Control (IFAC) and the Institute actively participating in hosting the first IFAC Congress of 1960 in Moscow.



Professors R. Bellman and M.A. Aizerman and Academician A.A.Voronov

Today researchers of the Institute have every chance to use international scholarships to visit dozens of countries and host their colleagues from other countries within international projects.



Chairman of Russian Committee for Automation Control Academician A.B. Kurzhansky, Dr.Sc. (Phys. And Math) P.S. Scherbakov and Prof. A.P. Kurdyukov



Russian delegation at XVII World IFAC Congress. Seoul, 2009









## **Publishing Activity**

Each year scientists of Institute are preparing for publishing from 40 to 80 books and preprints which are published through Institute funds or directly in Institute Publishing Department















Sensors and Systems

Automation in Industry

Large-Scale Systems Control



The Institute is founder of the 5 scientific journals





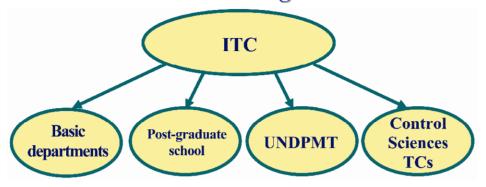




#### **Institute's Educational Center (IEC)**



# Many of Institute Scientists are Head of Departments and Professors in different High Schools



# This has began almost 50 years ago



Lecture of Profeesor M.A. Aizerman

**UNDPMT – University of new data processing and management technologies** 

# **Training Centers (TC) – new form of network interaction**



Nowadays



# **Prospective**









#### **Personnel Recreation Activities**

#### The Institute's Sporting











#### Tishkovo Recreation Center









Sightseeing Tours







Hobbies





















