

Private public partnership: not a cure-all solution but a way to follow



Vyacheslav Ilumzhinov (left), State Counselor to President of Kalmyk Republic and Sergei Zhukov (right), TTC General Director. Elista, September 1999

Mr. Zhukov S. A., test-cosmonaut, General Director of “Technology Transfer Center “CJSC (TTC), President of “Moscow Space Club” public association speaks on the cornerstones in cooperation with ScanEx RDC, reasons and possible ways of space activity results application in Russia.

— Sergei, please tell us about first joint projects with ScanEx RDC.

— The cooperation of ScanEx and Technology Transfer Center (TTC) started in 1996 right after TTC was created under the auspices of Federal Space Agency (Rosaviakosmos). A project in Kalmyk Republic was the beginning of our cooperation. At that time my friend test-cosmonaut Sergei Krichevsky and a group of cosmonauts were having classes on Earth air and space monitoring. Vitaly Gridin, professor of Gubkin Russian State University of Petroleum and Gas and originator of the course, was an ardent supporter of the idea of practical cooperation with regions. Krichevsky introduced me to Gridin and he, in turn, took me to Elista where one of his students, Evgeny Tsutskin, worked. Evgeny Tsutskin was Head of Archaeological service of Kalmykia. We had a familiarization trip to the Republic and during this tour there surged the idea to create a Complex Monitoring Centre on the basis of Kalmyk Research Institute for Humanitarian and Applied Research.

I already knew about ScanEx and its small-dimension satellite information reception stations and told E. Tsutskin about it. In fact, Gridin V., Tsutskin E. and myself became the initiators of the future state institution “ Science and Research Centre for Complex Monitoring” (SRC CM) which turned to be the first specialty organization for reception, processing and application of Earth remote sensing data in the south of Russia. It is worth to note that

technologies and equipment of ScanEx private innovation company were used as the basis of the Centre operations. The name of the Centre was suggested by Rosaviakosmos Deputy General Director Mr. Georgy Polischuk who did a lot to prepare the agreement between the Agency and the Republic, thus having laid the strategic direction for Rosaviakosmos to follow (57 Agreements with the RF constituents have already been signed).

I have to say that our colleagues in Elista already had certain scientific reserve to base upon, i.e., Caspian affiliated office of “Nature” State Centre which was created in the end of the 1970-s. In 1987-88 in Kalmykia Mr. Gridin V. trained a group of specialists for space images processing. Therefore, several lines crossed here: local personnel, enthusiasm of originators, Republican funding, ScanEx new technologies and, finally, support by Rosaviakosmos. On September 17, 1999, the ceremonial opening of Science and Research Centre for Complex Monitoring took place. ScanER hardware and software complex operation was demonstrated. ScanEx managers and specialists spent a lot of effort for this event to take place.



Opening ceremony at Science and Research Centre for Complex Monitoring. Left to right: Georgy Polischuk, Rosaviakosmos Deputy General Director; Alexander Dordjeev (in the background), Prime Minister of Kalmyk Republic; Olga Gershenzon, ScanEx RDC Deputy General Director; Valentina Matvienko, Vice-Prime Minister of the RF; Kirsan Ilumzhinov, President of Kalmyk Republic, 1999

— **What tasks Science and Research Centre for Complex Monitoring at Elista was supposed to perform?**

— It was supposed to implement the possibility of different space information reception, work with aerial survey products and data of ground survey of the territory, including geological research. Such complex information is extremely useful for executive power institutions as a tool of information support when taking managerial decisions. This information is needed by scientific organizations and economic agents (agricultural, fishing cooperatives, road construction and transportation companies, construction companies). For example,

“Kalmgeology” company showed great interest in satellite information. At that time “Kalmgeology” was actively engaged in prospecting of hydrocarbon materials.

— How efficient do you think the state institutions of the Republic applied space and ground monitoring?

— I am not in the position to give a comprehensive response to this question. I will limit to some examples known to me. There was a special decision by the Government of Kalmyk Republic to set up a space centre. This became possible due to the support by Kirsan Ilumzhinov, President of the Republic, and Alexander Dordjiev, Prime Minister. State Counselor Vyacheslav Ilumzhinov, special envoy of President of the Republic, came to Roskosmos.

After the reception station was set up in Elista, by decision of Ministry for Emergency Situations of the RF the North-Caucasian (South) branch of All-Russia Research Institute for Civil Defense and Emergency Situations (by the way, the first in Russia!) was created on the basis of Science and Research Centre for Complex Monitoring. The specialists of this branch agency carried out big work on monitoring, prevention and minimization of natural and technogenic emergency situations consequences (floods, prairie fires, mudslides).

As far as I know, the capabilities of the reception station turned out even broader than initially planned. I can mention the monitoring of the Caspian Sea. According to information from Tsutskin E., Director of Science and Research Centre for Complex Monitoring, it was Elista reception station that registered gas-aerosol emission at Tengiz oil fields in spring of 2000. The emission caused mass mortality of Caspian seals. The information was relayed to the highest management of the country in time.

Science and Research Centre for Complex Monitoring was engaged in monitoring of oil pipeline construction by Caspian Pipeline Consortium-Russia (CPC-R) in the territory of Astrakhan region, Kalmyk Republic, Stavropol and Krasnodar regions. It passed through areas replete with monuments of ancient nomadic cultures. There were burial mounds there and, according to the law, it was necessary to undertake protective excavations prior to the beginning of construction. It turned out that ancient objects are better distinguished from space than from the ground because with time exogenous processes leveled the relief but the traces of the circular structure of burial mounds, ancient road net and settlements were clearly seen in space images.

About 70% of historic and cultural heritage objects investigated in the area of oil pipeline construction were revealed with the help of satellite information.

— **You also mentioned the application of space imagery in agriculture.**

— Yes, we had such a concept. There were several requests to assess the biological productivity of cereal crops, seeds structure (sunflower, cereals, and cucurbits), natural pasture conditions and desertification level of the territory of the Republic. Unfortunately, this trend was not developed because the Centre was closed in 2006.

— **And why was Science and Research Centre for Complex Monitoring closed?**

— Probably, somebody did not like the expanding activity of the Centre. I am truly sorry about it. Science and Research Centre for Complex Monitoring is a pioneer of space information application in the South of Russia. Kalmykia will return to this activity once again. I believe that sooner or later the unique experience gained by Science and Research Centre for Complex Monitoring will be apprehended in the Republic.

But the effort of the people who selflessly worked at the Centre is not lost in vain. The gained experience was used in adjacent regions. Thus, similar centres appeared in Stavropol, Astrakhan, Gelendjik, Volgograd. All these centres, like the one in Elista, are equipped with ScanEx RDC reception stations. TTC participated in this process.

— **What do you think about ScanEx RDC ‘relations’ with Rosaviakosmos?**

— I was watching ScanEx efforts to establish a tighter cooperation with Rosaviakosmos, to join Federal Space Program. I tried to help as much as I could. Unfortunately, in those years there was no private public cooperation to speak of. For example, ScanEx had problems in getting license for space operations. The Company was offered to incorporate into the second cooperation of the parent state enterprise, which reduced financial and creative interest of entrepreneurs.

I know about ScanEx initiative to design and launch micro satellites for Earth remote sensing. The project did not get the support of the Space Agency. As a result, ScanEx mostly uses information from foreign satellites. Our only space vehicle “Resurs-DK” is not devoid of deficiencies, if I may say so. Besides, one vehicle is a bit too little for the whole country.

I hope that friendship of Rosaviakosmos and ScanEx, other private innovation companies is still ahead. Here we get on to more general issues, like efficiency of innovation support policy declared by the state, private public partnership, commercialization of space activity results.

All these and many other similar tasks placed at the highest level of state authority require decisive acceleration of Roskosmos cooperation with many private national enterprises. ScanEx with all the gained experience cannot stay aside from this process.

— **What problems do you see in this sphere?**

— Firstly, legislation in the sphere of innovation activity has to be developed. For example, a law should be passed defining state support to innovation processes. Secondly, innovation infrastructure should be developed not in words (and they are many) but in practice. This infrastructure will contribute to development of new technologies, including development on public private basis, transfer technologies from space industry to other branches of economy, and vice versa. Thirdly, it is important to develop financial tools for state support of innovation activity. I speak in favor of approval of the Federal Target-oriented Program “Application of Space Activity Results in 2010-2015”, for development of venture investment into space projects. Fourthly, there is a need for mechanism of public support to innovation development, self-regulating associations of professionals.

— **In his article “Go, Russia!” President Dmitry Medvedev writes: “We shall dispose of our own space and ground infrastructure for transmission of all types of information; our satellites will “see” the whole world, help our citizens and people of all countries to communicate, travel, engage in scientific research, agricultural and industrial production”. What in your opinion should be done to put this vision into real life?**

— I am afraid I will not say anything new. We need a system approach. At first we need to fix this vision in the national space policy which President will officially declare. Next we have to introduce policy requirements into implementation mechanisms, i.e., budget, federal target-oriented programs, other instruments of financing. A package of laws and by-laws regulating satellite information reception and application, space and ground infrastructure development related to this sphere of activity shall be passed. In particular, these laws shall stimulate promotion of private capital and technologies; stimulate state customers for

development of new tendencies. The laws shall also strictly control the implementation of the shaped course by analyzing gained experience and problems in the course of progressive movement.

Is that all feasible? Yes it is, but the result is not guaranteed. There exists great resistance formed by our inertia, old rules and traditions, bureaucracy. Enormous money was given to banks while those working in the real sector do not see it. It is impossible to obtain credit at acceptable terms. Still I hope that global crises will help us. The country elite will have to develop the instinct of self-preservation. There simply does not exist any other way but for innovation development.

— In spring of 2009 ScanEx RDC stepped out with the initiative to create an association which would consolidate suppliers and users in the Earth remote sensing market. The main objective is to provide for the possibility to influence lawmaking in the sphere of space activity results application. Do you think such an association will really change anything?

— I believe it must be done. The changes have to be pushed up “from the bottom”, from the needs of real economy. But there has to be the understanding that it is not enough just to write a good law. It will be much more difficult to lobby it. In fact it is the way of the Cross, but somebody has to pass it to give impulse to the development. I think ScanEx managers and their partners have enough passionarity to do that.

It is not accidental that they were the founders of International Conference “Earth from Space: most effective solutions” and the namesake magazine. Creation of the Association is in the line of strategic, far reaching decisions. Besides, they are not alone in the “commercial space exploration”. There is the OAO “SPC Rekod” which is the head company of Rosaviakosmos in the sphere of space activity results application. JSC Gazprom Space Systems is actively operating in this market developing, among other, Earth remote sensing satellites. “M2M Telematics” Company develops and implements ground segment of navigation. Leosat system “Gonets” is gaining its hard experience in space communication. So, there are allies who will stand by them in the struggle for new Russia, for renovated national space exploration industry.

— Sergei, what would you like to wish to ScanEx RDC? What is your vision of the Company in 5-10 years?

— Olga and Vladimir Gershenzon are unique and talented people. It is a real pleasure to communicate with them. They have a gift of rallying creative, well-educated people. They can generate and implement ideas, create an atmosphere of friendship and cooperation. I sincerely wish them and all employees of the Company happiness and prosperity. I also wish success to the young blood which is growing in the Company. I think that ScanEx is a worthy place for any young person who wishes to cast in his lot with high technologies.

What is my vision of the Company in 5-10 years? It is a steadily developing company. And there are all the reasons to that, because they have made a strategically correct choice of the business trend. I hope to see this Company among the leaders of Earth remote sensing market in Russia since they spent so much effort for its development. I wish them to be notable on the rapidly developing international market as well!