

## Space imagery - the data source of the XXI century. V. Gershenson on air at the “Voice of Russia” radio station

*On air at the “Voice of Russia” radio station on January 29, ScanEx R&D Center General Director Vladimir Gershenson analyzed the reasons of great expansion of satellite imagery application in day-to-day life and resolution of strategic tasks. Besides, Vladimir Gershenson spoke about the experience and perspectives of information services development in Russia using satellite and auxiliary data.*



*Read the shorthand note of the program:*

**Victoria:** Good day, dear listeners! Victoria Lutsenko is with you from the studio of the “Voice of Russia”. Today we are going to talk about a very interesting topic, which is, so to say, far away from mundane affairs. In the era of accelerated development of information technologies we often select our travel routes by shuffling through a huge number of photographs and maps available in the Internet. But one can travel without leaving the house. After all, the worldwide Web is a unique information resource! Never the less, a lot of data about a certain region on Earth is obsolete. That especially concerns maps. Satellite images, Earth photographs from space are indeed a unique resource and today we are going to talk about it with ScanEx Research and Development Center General Director Mr. Gershenson Vladimir. Good day, Vladimir! Thank you for coming. And this is Nadezhda Korneeva. She will help us to find the way into space information secrets.

**Nadezhda:** Good day, Victoria, Vladimir. Vladimir, you have been developing Russian space imagery technologies for 20 years already. Today you have the complete cycle of operation with space images ranging from data reception at the proprietary stations and up to the real time monitoring of various processes and phenomena. Besides, as far as I know, you are engaged in information services development, or the so called geoportals. Please, tell us what these information services are and what their mission is?

**V. Gershenson:** First of all, thank you for the invitation and for the interest you show to this topic. You are quite right saying that it is possible to travel now without leaving one’s house just applying to such global services as Google, Yandex, and Kosmosnimki that we are developing. This is fascinating and visually understandable. You see the Earth or a specific area as if you were flying over it in an airplane in a cloudless weather. You can travel as you wish paying no attention to borders, visas and perform certain geographic discoveries, carry out research. In reality we achieved the interconnection of navigation, Earth survey and Internet portals. These are global information services provided by space exploration and they made it possible to define global position and find one’s place in space. That is why we think that more and more companies and people who are simply interested in the issue start using such services.

**Victoria:** Vladimir, I have a question of a personal matter, so to say. Why did you start working on this problem? Where does your interest to space come from?

**V. Gershenzon:** You know, after graduation from Institute of Physics and Technology I “drifted” into Space Research Institute and the first pledge I gave to myself there was not to participate in space programs, because they are being done for decades and sometimes lead to great frustration. I saw talented engineers who after 20 years of work suffered the fiasco of their creative careers. So, the first promise to myself was never ‘to mess with” space. That is why I always worked with Earth-oriented experiments, sea and aviation research. But little-by-little I drifted to space again. On the other hand, now I do not feel sorry about it because geoinformation is developing rapidly and in very intriguing ways. But there are still problems with space. On the one hand, we see a plentiful growth of data sources. On the other hand, when dealing with operators you feel quite often that the monopolization level is considerably high and they are not willing to let the reins off. In this respect the most interesting is the current situation with such two-way traffic: on the one side there are “locomotives” of process, and on the other - we see an enormous community which starts to use and demand something new, like Wikimapia, OpenStreetMaps. I am saying that big communities start participating in the process and make specific requests to quite monopolized structures which own information resources.



**Victoria:** It is very interesting that you mentioned new requirements. What does a present-day person want of such companies like your company, for example? What are the requirements of those who view the Earth on the Internet?

**V. Gershenzon:** Quite unexpectedly, such requirements differ greatly. Even when you communicate with colleagues, suddenly you find out that they have hobbies, diving for example, and they view our images to understand whether it is worth going to

dive in certain lakes and whether the water is clear or muddy there. That means that space images acquire an absolutely new dimension and quality, that it is difficult to apprehend. Even mushroom pickers, summer cottage dwellers, paraglide pilots can use space imagery. As life becomes more and more variable, the scope of imagery applications expands rapidly.

**Nadezhda:** Space imagery application scope is as big as a man’s imagination. Vladimir, as far as I know, satellite images accessible at such geoinformation services as yandex.maps or kosmosnimku.ru that you are developing, are of relatively high resolution. Is it true that excessive level of secrecy applied to space information in our country impedes the development of space imagery as an industry? And how, in general, do you manage to operate within such a legal frame?

**Victoria:** And one more question from the point of view of a mushroom picker and summer cottage dweller. Why cannot we view all this and use for our purposes?

**V. Gershenzon:** Who says you cannot? In fact, this already happened and you can view it. And if you look at the news coverage, including the tragedy in Haiti, you will notice that the coverage is impressive and overwhelming. Everything is presented in details. In addition, the images are accessible and open for viewing, there are no restricted areas. Of course, there are still present some rudiments, especially in our geoinformation history. And we continue to drag these rudimentary tails of constraints. Fortunately, this problem started being discussed by the

public. For example, we can take the latest speeches by Roskosmos (*Russian Federal Space Agency*) management at the State Duma. These dialogues are not in vain. The idea is that smallest traces of such rudimentary constraints must be removed because otherwise the situation becomes weird. It turns out that citizens of the country do not have access to their own information. And it is theirs, since it was obtained at the taxpayers' money. And at the same time this very information is available in the Internet at foreign servers. Thank God, the data already is at our Russian servers due to the fact that Yandex, in particular, supported the philosophy of high resolution imagery availability. Today you can open and view very detailed maps, charts and whatever.

**Victoria:** Good. I think this is a nice way to choose the route for the travel. Suppose you go on vacation. You can find a map of the region or you can check the image and see for yourself where you will go and what is worth seeing there. This is great!

**V. Gershenzon:** And this is very important, as well. If I look back to my youth, and that is 25 years ago, unfortunately, I remember that it was necessary to go some tourist clubs, draw tracing papers, copy route descriptions and all that information quite often was obsolete and inaccurate. Everybody had a "secret chest" where he kept "secret copies" of some "secret maps". You just had to have something to plan your own travel! Nobody knew what the quality was and how many copies there were. And right now it is only one clique away in the computer. We see that it started to be used in everyday life.

**Nadezhda:** Vladimir, you develop Russian knowledge-intensive technologies. As far as I know, you operate in the Russian market mostly. But currently the country pursues the avenue of the innovation development and of building a knowledge-based economy... Do you have plans to approach international markets so that foreign countries could use Russian knowledge-intensive technologies, or you think I am too enthusiastic?

**V. Gershenzon:** Yes, we do. We believe that we already have some interesting solutions both in data reception and processing. But it is a long process, because people have to learn to trust you. They have to trust the working efficiency of your technologies. And you have to live up to your reputation. Ideally you have to be supported by the governmental machine, which is not an easy thing nowadays. Space technologies are the cutting edge. It is not just knowledge-intensive technologies. It is geoinformation knowledge-intensive technologies, which are considered historically critical in dual-purpose applications, etc. That is why there were and still continues to be a lot of obstacles in this way. But the very announcement of approach on innovation and modernization policy is inspiring. In general, I can say that the process of international market development is well underway. For example, starting 2010, distributors in South-West Asia started supporting our software products. Our reception stations are installed in Spanish universities, in the American continent. I mean, the process is underway and we are satisfied to see that there is certain surprise at the quality and the approaches that we propose. That is because we place to market such endemic products that had been grown for a long time in enclosed space. Therefore people who are accustomed to operate in their sphere of technological culture often watch in bewilderment and admiration at how this could have been done, if it were not for its own history of development.

**Victoria:** But in any case it is worth noting that currently our country cannot live without using the technologies that you develop in nature protection, for example. Vladimir, I also know that such technologies are also used in emergency situations that you mentioned. How space imagery can help in a situation which we see in Haiti after a series of devastating earthquakes? And whether our rescue teams used space technologies at Haiti?

**V. Gershenzon:** Yes, this is the frontline where we use our technologies. You have to understand that recently it was encapsulated at some military-industrial complexes. It makes us feel happy when such technologies start working for the good of the people. And here we have to pay tribute to Ministry of Emergency Situations of Russia. But even for an ordinary citizen it is important to know that there is somebody who, probably, will come and help. Of course, we would like our emergency services to be equipped with up-to-date capabilities and technologies. Very often I hear in my discussions with foreign operators: “Emergency situations are not business. It is immoral to take money for helping people in disaster. But if it is immoral – it’s no business, and then we are out of it”.

**Victoria:** But what about the people?

**V. Gershenzon:** Exactly! It turns out that somewhere along this chain the concern about the citizen is simply thrown overboard, whereas this very citizen paid the money and contributed to the creation of such technologies, if we think about, how it goes on a global scale.

**Victoria:** I wish here we could say that we are not like others!

**V. Gershenzon:** I would like to say that the mentality which is probably being introduced by our services contributes to the fact that the attitude starts changing. Lately, thanks to cooperation with rescue teams we offer more and more satellite imagery. We understand its capabilities, limitations and prospects in monitoring fires, floods, ecological situation, and solution of real time problems. Today the radical change is in the fact that space imagery application acquires real time aspect. Our experience in Haiti proved that. We saw real interest when our specialists worked nights and were the first to present maps of destructed areas. Even at UN sites this information was posted with reference to our Center. Not only Russian rescue teams, but other teams from all over the world could use these products. Once at a big summit in Bonn I had a conversation with a German rescue worker who took part in more than thirty rescue missions. On the one hand, he explained to me that very often real problems in the field and the scale of catastrophe do not correspond to press coverage. Sometimes the problems are exaggerated and there is more PR than news coverage. And sometimes it is vice versa. The second question I asked was about his field experience and how wide was the usage of space imagery in rescue works. The answer was: “Just common sense”. In reality satellite data very often do not reach people in the field. It is important to note that these people work under stress and in harsh conditions. It becomes clear that the procedure of satellite data application must be reduced to one push of the button. And this one push should bring all necessary information, like situation status, reconnaissance capability, etc. This process is a way that we still have to go. And it can be applied not only to rescue and salvation. It is applicable to us as well. For example, you are lost or just cannot find your car in the parking lot. You also should have a possibility to push the button and see yourself in the area and be able to understand what you should do. I am sure that one day we will arrive at this point. The important thing is that in this train we’d better be at the head next to up-to-date technological progress and not in the tail.

**Nadezhda:** Speaking about real time imagery. What could you say if you were to assess present day timeliness of real time imagery? In other words, if there is somebody in trouble, how soon this person can expect some measures to be taken, involving help from space?

**Victoria:** “Help from space” sounds rather mysterious.

**V. Gershenzon:** Actually, that is already change of mentality, when you look upwards and think that it is not just Big Brother watching you, but aid and assistance can really come down from the skies. And once again, you should not make any fetishes not to be disappointed

later. Very often what you need is not real time situation, but some sort of situational awareness, information about lakes, rivers, potable water and where you can find all these. I can give an example of this. Once we were helping Shparo's expedition to reach the North Pole. It was understood that satellite data would be required for orientation, location of ice-holes, etc. But there are always real time tasks that simply could not be foreseen. In the first days of the expedition nobody could even think that they would have no potable water. Thanks to images they managed to find a big piece of pack ice and its water could be used for drinking after melting. This is a rare example, of course, but quite often against our will we happen to be in similar situations. I remember that 10-12 years ago we were canoeing in the Polar Urals and one of the girls was lost. She just went to brush the teeth, as simple as that, with only one towel on the shoulder. But the area was so wild that she could not find the way back from the river. We found her only when it had already turned dark. Three search teams were looking for her and the effort was titanic! I remember that I wanted to rise high and see what and where is located...So, sometimes it can be a serious problem.

**Victoria:** In any case you solved this problem, at least for yourself. Thank you very much for the work you are doing. I think, dear friends, that everyone in the nearest future instead of opening atlases of maps and looking at nice pictures will just open the Internet and see the whole planet from above, will check the places he needs to know about. This will be good for the people who love our planet and like to travel on it. Do you agree, Nadezhda?

**Nadezhda:** Absolutely. But I still hope that atlases and maps will be published. They just will acquire new features and qualities!

**V. Gershenson:** Of course! This is a thing in itself and nobody can cancel it. I hope they will contain the beautiful space images, just like it is done in video clips, because a three dimension Earth is especially interesting and nice. Today software products already give a possibility of a real situation survey of the territory, a possibility of submerging into a virtual world of an absolutely new quality. I hope that multi media and media channels will start using these data sources as something that goes without saying.

**Victoria:** You know, Vladimir, I think that for us it is still hard to believe that such things are possible. I think that a lot of people will agree with me. Well, dear friends, this is "Club of Commodores" program and today we had with us Vladimir Gershenson, ScanEx Research and Development Centre General Director. Thank you for coming!

**V. Gershenson:** Thank you very much!