PC.SHDM.DEL/15/12 13 July 2012

ENGLISH Original: RUSSIAN

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Vienna, 12 and 13 July 2012

## Session I: Democratic elections in the context of election-related commitments and their implementation (with focus on universal and equal suffrage rights: legislation and application)

Ladies and gentlemen,

The development of the information society and the rapid introduction of information communications to all spheres of life are making new demands of the institution of elections.

The principal resource in the information society is indeed information; it is rapidly growing in volume and being given a special role. The Internet is firmly anchored in modern life, resulting in information that is transferred faster and presented in newer ways.

Information and communication technologies are improving, changing the ways in which information is interpreted and the global information landscape. Graphic and multimedia forms of presentation are widely used allowing greater volumes of information to be presented in compressed form and interpreted faster.

In a computerized world, election organizers need to work to ensure that the technological support for electoral procedures meets the expectations of the information society. Information should be available to the general public in a reliable and complete form.

The Russian Federation has its own experience of using technical facilities for vote counting and electronic voting devices. The last cycle of federal elections was marked by the large-scale use of technical devices at polling stations in all 83 constituent entities of the Russian Federation.

Russian electoral legislation mandates the use of the State Automated System of the Russian Federation, the "Vybory" (Elections) system, for the holding of elections and referendums. The use of this system is regulated by the Constitution of the Russian Federation, electoral legislation, legislation of the constituent entities of the Russian Federation and regulatory documents of the Central Election Commission (CEC) of Russia.

The computerization of the electoral process in the Russian Federation started over 15 years ago with the creation of the "Vybory" system. This is currently one of the largest permanently operating information systems in the country. Over the years, the system has

proved its reliability during tens of thousands of elections at the federal, regional and local levels. The "Vybory" system has earned the complete trust of the general public. As a guarantor of respect for citizens' electoral rights, the system serves as a basis for the development of electronic democracy.

The "Vybory" system performs other functions besides the automation of labour-intensive information processes. The system incorporates algorithms in line with federal legislation and the legislation of all the constituent entities of the Russian Federation governing matters regarding the holding of elections at all levels and ensures strict observance of the legislation.

The "Vybory" system is used at all stages of the electoral process, from the moment the decision to conduct an election campaign is made public to the announcement of the results. The system automates all the processes – the day-to-day operations of the election commissions during election campaigns and in between elections.

The main tasks of the "Vybory" system are to process information on election campaigns and candidates, monitor electoral funds, compile voters' lists, gather and process information on voting results, and promptly inform participants in the electoral process about the voting process and results.

The "Vybory" system structure is multilevel, geographically distributed and in keeping with the structure of the election commissions of the Russian Federation: the Central Election Commission, the 83 election commissions of the constituent entities of the Russian Federation and the 2,726 territorial election commissions are equipped with automated facilities. The total number of technical and software facilities within the system exceeds 400,000.

The "Vybory" system is characterized by a well-protected information technology infrastructure and standardized software and information processing procedures at all levels. Voting results data is entered into the system at the territorial election commissions and then transferred to the election commissions of the constituent entities of the Russian Federation and the CEC in parallel via secure communication channels.

In order to ensure the openness and transparency of the electoral procedures, information on planned election campaigns, candidates, the voting process and preliminary voting results from the "Vybory" system's database is published on the "Vybory" system's Internet portal, which includes the CEC website and the websites of the 83 election commissions of the constituent entities of the Russian Federation.

Particular attention is paid to the development of the CEC's Internet resources for disabled citizens. One of the first Internet resources of federal State authorities of that kind was developed for visually impaired users of the CEC website. This resource constantly expands the list of thematic sections on the site accessible to visually impaired persons.

On a single day of voting on 4 March 2012, presidential elections and over 4,000 regional and local campaigns were held in the Russian Federation. A total of 95,424 precinct election commissions carried out their activities on the ground. Over 130,000 voting result protocols were transferred and processed using the system and

published on the "Vybory" system's Internet portal, which provided an additional opportunity for the general public to monitor the elections.

Two types of automated vote counting facilities are used at polling stations in the Russian Federation: ballot processing units (BPUs) and electronic voting units (EVUs). Both were developed and are manufactured in Russia.

BPUs operate using contact optical scanning technology to scan the marks made by voters on their ballot papers. The units were created in 2003 and upgraded in 2010. They have a closed architecture, which does not use the popular Windows software. The software used by the BPUs is based on specialized software certified by the authorized State body (Federal Service for Technical and Export Control). Changes to the BPU software are possible only at the production plant. After assembly the units are stamped with a special seal while still in the production plant.

The BPUs do not contain any devices that would enable wireless communication to be established with them. The units are also protected against electromagnetic effects (and are certified in accordance with the relevant norms). The technology used in the BPUs makes it impossible to manipulate the results recorded in the BPUs during voting.

Since paper ballots are used when voting with the aid of a BPU, there is always the possibility of comparing the result counted by hand with the computerized one. This possibility is provided for by law. I should like to point out that in the entire history of the use of these units there have never been any discrepancies recorded between the computerized count and the count by hand.

The first batch of electronic voting units (EVUs) that use paperless technology for the expression of the voters' will was produced in 2005.

Over the last few years the number of vote counting devices used at polling stations has increased considerably. For example, if we compare two federal campaigns -2008 and 2012 – we see that use of BPUs at polling stations has increased by a factor of 3.6, and EVUs by a factor of 55.

During the presidential elections in the Russian Federation in 2012, the number of people who voted using BPUs increased by 5,892,994 in comparison with 2008. The number of voters who used EVUs during the same electoral cycle increased by 312,347.

I shall now speak in more detail about electronic voting devices.

By computerizing the voting process at polling stations, the electronic voting unit ensures electronic voting, an automated vote count, the establishment of voting results and the compilation of precinct commission voting result protocols.

The information security of the EVU during elections and referendums is ensured via a range of organizational and technical measures, including regulatory aspects and design features of the unit.

The regulatory framework is based on federal electoral legislation and CEC regulations, including instructions for usage.

The EVU consists of microcontroller electronic chips and its own data format. Unlike an ordinary computer, touch-screen voting devices do not have a hard disk and do not use Windows operating systems. This technology enables reliable protection for the EVU against any attempts at unauthorized interference or virus attacks.

Furthermore, the design features of the EVU mean that it is impossible for any software or instrument bugs to be introduced after the integrity and operability of the unit has been verified by the commission and the observers at the polling station. This kind of interference would require the EVU to be opened up during voting, thereby destroying the seal, and this in the presence of all the participants in the electoral process (voters, members of the commission and observers). Once this had been done, special devices (programming tools) would still have to be used to reprogram each of the microcontrollers in the touch-screen voting devices.

All of this completely rules out the possibility of hacking the EVU in the manner demonstrated by a vulnerability assessment team at Argonne National Laboratory of the United States Department of Energy. The team were able to hack into a touch-screen terminal of the Diebold Accuvote e-voting system, which is widely used in the United States, by inserting a specialized electronic plate into the device.

The electronic voting machine used in India is noted for its simple design and low cost and consists of a control unit and a unit for the voters connected by a cable. The simplicity of the device does indeed make it less vulnerable to a range of threats, while at the same time precisely because of this simplicity and low price it is possible to access the internal parts of the device owing to the absence of mechanical and electronic defence mechanisms.

The push-button devices used in Brazil, which enable voting to be carried out anywhere, require the voter to select numbers corresponding to the preferred candidate or party. This method takes into account the low level of education among Amazonian Indian voters.

Let us return to the technical devices used in the Russian Federation. I should like to point out that both EVUs and BPUs undergo mandatory certification to verify that there are no undeclared features. Certification is carried out by specialist organizations that are controlled by the State.

One electronic voting unit consists of fixed touch-screen voting devices (two to nine devices), two mobile touch-screen devices and two touch-screen training devices that are placed at the polling station entrance to enable voters to practise voting.

At the polling station the voter presents his or her passport and receives a card with a bar code. By placing the card against a scanner on the touch-screen device the voter is granted access to an electronic ballot. The bar code on the cards is generated and printed using a special program of random numbers generation. The card may be used only once and only at one specific polling station. There is no possibility of using it a second time.

The algorithms and interfaces used in the on-screen forms of touch-screen voting devices rule out the accidental omission by the voter of any electronic ballots during the voting process.

The EVU uses a system of backup printing on paper media: the voter's choice is recorded on the control tape of an individual printer that is accessible only to the voter at the moment of voting. By checking this tape the voter can be assured that his or her vote was recorded correctly. After the voter confirms his or her choice, the tape automatically moves forward and the next voter is unable to see the previous voting result.

I should like draw your attention to the fact that the control tape records only the voter's choice (who that person has voted for) without indicating any of the voter's personal data. In the event of well-grounded complaints, the regulatory documents of the CEC provide for a control count of the votes, which is carried out by the election commission at polling stations equipped with EVUs using this control tape.

Mobile touch-screen voting devices within the EVU ensure that voting can take place outside of polling station premises. They include additional features for visually and hearing impaired voters: devices are equipped with Braille alphabet and earphones for audio instructions.

Before the voting starts at each polling station equipped with automated vote counting facilities (EVUs or BPUs), these facilities undergo mandatory testing. A complete cycle of voting in training mode is carried out in the presence of the chairman and members of the election commission and the observers to check that the unit's software is working correctly. All the devices are checked to ensure that it is possible to vote for each of the candidates, and a final protocol on the test vote is compiled and signed by the members of the precinct election commission and the observers. The devices are then stamped.

The recent federal campaigns were marked by the large-scale use of automated vote counting facilities at polling stations. They were used in all 83 constituent entities of the Russian Federation.

None of the participants in the electoral process complained about BPU or EVU performance. No attempt was made to interfere in the work of technical facilities and the "Vybory" system.

During the Russian presidential elections, 5,500 polling stations were equipped with over 12,000 technical devices (BPUs and EVUs). Electronic voting units were used at 311 polling stations in 8 constituent entities of the Russian Federation: the Kabardino-Balkarian Republic, the Komi Republic, the Republic of Mari El, the Republic of Tatarstan, the Republic of Khakassia and the Chechen Republic, as well as in the Murmansk and Tomsk oblasts.

EVUs were also used at 22 polling stations outside the country: at 11 polling stations in Germany, at 4 polling stations in Poland and at 7 polling stations in Baikonur in the Republic of Kazakhstan.

Video films explaining the voting rules and special educational films for election commission members were created for public information purposes. In all regions of the

country, the persons who were to operate the voting units and election commission members attended training courses. Information materials on the voting rules were made available at all polling stations equipped with technical facilities. The election commissions of the constituent entities of the Russian Federation carried out extensive awareness-raising work in their respective regions and organized presentations on technical devices, special educational events and public discussions.

The testing of the automated vote counting facilities, involving observers, at polling stations throughout the country before the actual voting to check that the facilities are working correctly considerably reduces the level of unjustified criticism of the equipment and the election organizers and is one of the basic measures to increase the openness of electoral procedures and improve confidence in electronic voting systems.

Issues of the practical application and further improvement of automated vote counting facilities are being discussed publicly and comprehensively with the involvement of the general public, political parties' representatives, experts, journalists and organizations representing disabled people.

Electronic voting devices undergo mandatory expert evaluation in national organizations representing disabled citizens to check whether they meet the needs of disabled voters.

As the result of active public participation in election monitoring, voters have developed a robust and fairly high level of confidence in the EVUs, which makes it possible to increase their use at polling stations in the future.

Russian election organizers see electronic voting using EVUs as a priority area for the development of automated vote counting facilities.

In order to increase EVU application several amendments to electoral legislation are required. There is currently a restriction on the use of voting units: the total number of polling stations equipped for electronic voting should not exceed one per cent of the number of polling stations set up in the territory where the elections or referendum are to be held. A proposal to remove this restriction is currently under consideration.

In the future we plan to expand EVU functions to provide for electronic voting in the national languages of the peoples of Russia.

The establishment of an integrated voting system at all levels of election commissions ensuring automated vote counting and automated transfer of voting results in electronic form from the polling stations to the "Vybory" system is the main purpose of introducing information and communication technologies into electoral practice in Russia.

The areas of activity and the range of work to be carried out to achieve this goal are set out in the Programme for the Technical Upgrading of the Electoral System of the Russian Federation adopted in 2011.

We plan to computerize the work of the precinct election commissions through the creation of an electronic voting result protocol signed by commission members using an electronic digital signature and its transfer to the "Vybory" system. Special software and

technical facilities – computerized workstations for the precinct election commissions with data transfer capabilities – will be created for this purpose.

The programme provides for the computerization within the next three years of 60,000 polling stations (62.16 per cent of total number) where 90 per cent of the electorate votes. This will make it possible to speed up the vote counting process and compilation of the voting protocol, and reduce the likelihood of accidental or deliberate mistakes during the vote count and the drafting of the voting result protocol.

A unique system of video monitoring at polling stations was successfully implemented during the presidential elections in the Russian Federation on 4 March 2012. Almost 200,000 webcams were installed, two at every polling station out of more than 90,000 polling stations across the country. A webcast system was established for the purpose of connecting up to 25 million users, with the possibility of 60,000 simultaneous viewings from each camera.

During the broadcast around 99.3 per cent of the polling stations equipped with broadcasting cameras were in operation. There were only a few dozen interruptions during peak usage, equivalent to a fraction of a percentage of the total. Where malfunctions occurred, the recording was simply made locally and subsequently uploaded to the general archive.

Five hundred years of video material was recorded simultaneously. During the voting on 4 March 3.5 million people observed the voting process online through the www.webvybory2012.ru portal, and altogether they watched over 7.9 million broadcasts. In total, during the elections on 4 March and the vote count, over 2.6 terabytes of video material was recorded with the aid of the video monitoring system.

The webvybory2012.ru website received 500 million hits in less than 24 hours. Over 100 hacker attacks from almost every part of the world were recorded on that day.

The video broadcasting system set up with the aim of increasing the openness and transparency of electoral procedures and preventing possible cases of the falsification of election results fully lived up to expectations. It allowed representatives of candidates and political parties, observers, experts, journalists and the general public to monitor the voting process and vote count in real time.

Modern information and communication technologies are currently being introduced at all levels of the electoral system in the Russian Federation. A new integrated computerized system of vote counting and data transfer from polling stations is being established. This work is carried out in close co-operation with voters, representatives of political parties, the expert community and non-governmental organizations.

A procedure of national certification of technical facilities guaranteed by the State has been developed.

The video broadcasting system at polling stations is called for by the public at all electoral levels, including municipal elections. In the near future it is planned to use this technology during the elections of mayors in Krasnoyarsk and Omsk, as well as during elections on the single day of voting in October 2012.

Work to introduce electronic voting systems in the Russian Federation takes into account feedback provided by representatives of the expert community and political parties and the views of non-governmental organizations in order to maintain a balance between increasing the range of technologies and ensuring the confidence of citizens in electronic voting systems.

This work makes it possible to expand the opportunities for exercising the electoral rights of citizens in the Russian Federation, increase the transparency of the electoral process, expand the opportunities for the public to monitor the electoral process and rule out the influence of the human factor on the voting process and its results.