OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

22253

Contract 99/268

TECHNICAL REPORT

"Principles of elaborating Programs of development of municipal entities as science cities"

a seminar in the framework of the Program of co-operation between Russia and UNIDO

Moscow, Russia, November 15-17, 1999.

1. Preparatory activities. Representatives from administrative authorities of the cities of Korolev, Troizk, Pushchino, Dubna, Protvino, Obolensk and Serpukhov were invited to participate in the seminar. Besides this, a number of participants of the seminar were invited from the following federal ministries, research organisations and higher education institutions: Ministry of Science and Technology of the Russian Federation, Administration of the Moscow Oblast, Analytical Center on Scientific and Industrial Policy at the Ministry of Science and Technology of Russia, Academy of the National Economy at the Government of the Russian Federation, Center of Regional Science and Technology Co-operation "RENATECHS" at the Presidium of the Russian Academy of Sciences, Administration of the city of Obninsk.

The list of the seminar participants is enclosed (Annex 1). In total there were 30 participants of the seminar.

The following logistical work has been done for the seminar: preparing and sending invitation letters to participants of the seminar; preparing and replenishing background materials (Annex 3); preparation of the seminar room and installation of technical equipment in it, including computer, slide projector, microphones and tape recorder. Expenditures for computer and technical maintenance have made $ 200.

The sum of $ 300 was paid to the technical staff servicing the seminar. The sheet of payments is enclosed.

The stationery for the sum of $ 300 was acquired to maintain the normal operation of the seminar. The corresponding invoice for the stationery is enclosed.

2. A conference room in the building of the Academy of the National Economy at the Government of the Russian Federation was rented for the seminar. The invoice for renting the conference room and for coffee – breaks for the sum of $ 900 is enclosed.

The Program of the seminar for the days of November 16-17, which included 8 reports covering the main issues on the principles of elaborating programs of developing municipal entities as science cities, was elaborated. The program of the seminar is enclosed (Annex 2).

The following reports were delivered and discussed at the seminar:

"Presentation of the UNIDO program of technical assistance" – Piskunov Dmitry Ivanovitch;

"Legal bases of the science cities activities: " The Federal law " On the status of a science city of the Russian Federation ", Decree of the Government of the Russian Federation " – Ivanov Vladimir Victorovitch;

The Law of the Moscow Oblast "On Scientific Activity and Science and Technology Policy of the Moscow Oblast" – Koldaeva Nadejda Timofeevna;

"Organisational and methodological recommendations for elaborating programs of developing municipal entities as science cities" – Matirko Vladimir Ivanovitch;

"Analysis of programs of developing municipal entities as science cities (case of 2-4 prepared programs)" - Vangnitz Nikolay Pavlovitch;

"Formulation of investment policy of science cities" – Silaev Vladimir Nikolaevitch;

"Some experience of developing the infrastructure for scientific, technological and innovation activity (cases of Russia and industrially developed countries" - Pletnev Konstantin Ivanovitch.

The charges of preparing the reports have made $ 800. The charges of translating the reports have made $ 1300.

In the framework of the Program of the seminar a round table discussion has been held. The following participants have taken the floor during the round table discussion:

- Gankevitch A.V. (city of Korolev) has informed on the experience of elaborating the Program of developing the city of Korolev as a science

city. He pointed out the main difficulties connected with insufficiencies of the legal framework they came across while elaborating the Program:

- Laptev V.D. (city of Troizk) has informed on the experience of their work with research organisations of the city in choosing priority areas of science and technology development, and on the ways of interaction of the municipal system of education with the leaders of science and technology sector;

- Il'in Yu. A. (Protvino) has pointed out the main problems connected with defining actors of science and technology complex, as some parts of this complexes go beyond limits of the municipal entities. He also mentioned difficulties that can be met in estimating together with the federal ministries perspective volumes of financing fundamental and applied research from budgets of those ministries;

- Kutuzov M.A. (city of Dubna) has reported experience in the area of integrating science and education;

- Muzafarov Ye.N. (city of Pushchino) has expressed some ideas concerning uniting efforts of cities of the southern part of the Moscow Oblast (cities of Pushchino, Troizk and Protvino) in arranging industrial production in those cities on the basis of exchanging available technological projects.

Ivanov V.V. (Ministry of Science and technology of Russia) and Matirko V.I. (Academy of a national economy at Government of Russian Federation) have proposed their explanations to the questions of participants of the round table discussion.

Sets of background materials were prepared for all participants of the seminar. The list of background materials is enclosed. Expenditures to copy background materials have made $ 200.

The layout of the book "Practical approaches to elaborating programs of developing municipal entities as science cities" was prepare on the basis of the seminar results. The table of contents of the book is enclosed (Annex 4 – in Russian). The book publication expenditures make $ 1000 (250 book copies)`.

It is planned that the mentioned book will be sent to municipal entities (science cities), to the interested ministries, agencies and also to scientific organisations dealing with the problems of developing municipal entities as science cities.

Director of ACSIP **Cherkassov V. V.**

Annex 1

LIST
of participants of the seminar "Principles of elaborating Programs of development of municipal entities as science cities" November 15-17, 1999.

1. Alimpiev Viacheslav Nikolaevitch	Ministry of Science and Technology of the Russian Federation
2. Vangnitz Nikolay Pavlovich	Academy of the National Economy at the Government of the Russian Federation
3. Gankevich Arkadiy Victorovitch	City of Korolev
4. Golovko Yevgueniy Alexandrovitch	City of Serpukhov
5. Dranev Yakov Nikolaevitch	Analytical centre on science and industrial policy at the Ministry of Science and Technology of Russia
6. Yetch Franz Adolfovitch	City of Protvino
7. Ivanov Vladimir Victorovitch	Ministry of Science and Technology of the Russian Federation
8. Il'in Yuriy Aleksandrovitch	City of Protvino
9. Kitova Galina Ahmedovna	Analytical centre on science and industrial policy at the Ministry of Science and Technology of Russia
10. Koldaeva Nadejda Timofeevna	Administration of the Moscow Oblast
11. Kudriashov Victor Konstantinovitch	City of Pushchino
12. Kuznetsova Tatiana Yevguenievna	Analytical centre on science and industrial policy at the Ministry of Science and Technology of Russia
13. Kutuzov Mikhail Alexandrovitch	City of Dubna
14. Laptev Valery Dmitrievitch	City of Troizk
15. Lomtev Anatoly Vladimirovitch	City of Dubna
16. Matirko Vladimir Ivanovitch	Academy of the National Economy at the Government of the Russian Federation
17. Muzafarov Yevgeny Nazibovitch	City of Pushchino
18. Oktiabrsky Alexandre Mikhailovitch	Ministry of Science and Technology of the Russian Fedeartion
19. Poliakov Vladimir Vasilievitch	Academy of the National Economy at the Government of the Russian

	Federation
20. Piskunov Dmitry Ivanovitch	UNIDO
21. Pletnev Konstantin Ivanovitch	Center of regional science and technology cooperation "RENATECHS" at the Presidium of the Russian Academy of Sciences
22. Protsenko Oleg Dmitrievitch	Academy of the National Economy at the Government of the Russian Federation
23. Rumiantseva Olga Nikiforovna	City of Obolensk
24. Silaev Vladimir Nikolaevitch	City of Obninsk
25. Sokolova Marina Sergeevna	Analytical centre on science and industrial policy at the Ministry of Science and Technology of Russia
26. Spiridonov Anton Alexandrovitch	City of Protvino
27. Tihonova Olga Nikolaevna	City of Korolev
28. Cherkassov Victor Vasilievitch	Analytical centre on science and industrial policy at the Ministry of Science and Technology of Russia
29. Shaulin Yuriy Nikolaevitch	City of Troizk
30. Yarovenko Yuriy Nikolaevitch	Academy of the National Economy at the Government of the Russian Federation

Annex 2

PROGRAM OF CO-OPERATION RUSSIA – UNIDO
PROGRAM " THE MOSCOW OBLAST "
PROJECT " Commercialisation of research and development "
SEMINAR "Principles of elaborating Programs of development of municipal entities as science cities"
November 15-17, 1999.

PROGRAM OF THE SEMINAR

November 15 *Monday*	Evening	- Arrival of participants of the seminar
November 16,	09:00-09:45	- Registration of participants
Tuesday	10:00-10:10	- Opening of the seminar
	10:10-10:50	**Piskunov Dmitry Ivanovitch** Presentation of the UNIDO program of technical assistance;
	10:50-11:30	**Ahvlediani Yuriy Iraklievitch** "Regional aspects of the Program of Unido"
	11:50-13:10	**Ivanov Vladimir Victorovitch** "Legal bases of the science cities activities: " The Federal law " On the status of a science city of the Russian Federation ", Decree of the Government of the Russian Federation " **Koldaeva Nadejda Timofeevna** The Law of the Moscow Oblast "On Scientific Activity and Science and Technology Policy of the Moscow Oblast"
	14:30-15:50	**Matirko Vladimir Ivanovitch** "Organisational and methodological recommendations for elaborating programs of developing municipal entities as science cities"
	16:10-17:30	**Matirko Vladimir Ivanovitch** "Organisational and methodological recommendations for elaborating programs of developing municipal entities as science cities" (Continued)
November 17, *Wednesday*	10:00-11:20	**Vangnitz Nikolay Pavlovitch** "Analysis of programs of developing municipal entities as science cities (case of 2-4 prepared programs)"
	11:40-13:00	**Silaev Vladimir Nikolaevitch** "Formulation of investment policy of science cities"
	14:00-15:20	**Pletnev Konstantin Ivanovitch.** "Some experience of developing the infrastructure for scientific, technological and innovation activity (cases of Russia and industrially developed

		countries
	15:40-17:00	Round table discussion. Summing up results of the seminar. Chair: Ivanov Vladimir Victorovitch **Matirko Vladimir Ivanovitch**

Annex 3

List of Background Materials

1. The Federal Law of April 7, 1999 No. 70-ФЗ "On the status of a science city of the Russian Federation "

2. Decree of the President of the Russian Federation of November 7, 1997 No. 1171 "About measures of developing science cities as cities of science and high technologies"

3 Decree of the Government of the Russian Federation of January 24, 1998 No. 79 "About measures of developing municipal entities with the city founding research-and-production complexes (science cities)"

4 Decree of the Government of the Russian Federation of September 22, 1999 No. 1072 "About establishing Criteria of assignment of the status of a science city to municipal entities and the Order of considering proposals of assignment of the status a science city to municipal entities and of termination of such a status "

5. The law of the Moscow Oblast "On Scientific Activity and Science and Technology Policy of the Moscow Oblast"

6. The law of the Kaluga Oblast "On the State support to investment activity in the Kaluga Oblast "

7. Methodological recommendations to elaborate draft programs of science cities development

8. Methodological recommendations to elaborate draft agreements between the Government of the Russian Federation and Administrations of corresponding Oblasts and science cities for elaboration of the programs of development of these cities

9. Provisional regulatory act "About support to investment activity in the city of Obninsk "

10. Regulatory act " About Investment Council of the city of Obninsk "

Organizational and methodological recommendations on forming Programs of developing cities as Science Cities

MATIRKO V.I.
Director of Scientific-methodological Center of Public Service
Academy of National Economy under the Government of Russian Federation ,
professor of economics

Forming of Programmes of Development of Science-cities as Cities of Science and High Technology was started due to the appropriate Decree of the President of Russian Federation № 1171 dated November 7th, 1997.

And only now, two years after signing the Decree by the President of Russian Federation, a draft of the Programme of Development Obninsk of Kaluzhskaya oblast as a Science-city for 1999-2004 (guidelines) is presented to the Governmental Commission on *scientific and innovation policy*.

Forming the Programme of the city development as a science city requires scientific, methodological and managerial support.

At the present day cities applying for a science-city status differ in size, profile of research and production activities and population (from 4-5 thousand up to 120 thousand people).

It should be mentioned that every science-city has it's own specific features. The following groups could be identified: *first*, science-cities in classical meaning of the word; *second*, cities with strong testing base of their core research centers; *and the third group*, consisting of cities, where research centers cooperate with developed industrial objects based on high-technologies. The last group could be ranked as science-cities of mixed type.

Taking into account this (to some extent, relative) grouping of cities, applying for "science-city" status it's necessary to admit that individual approach for working out a Programme of Development a City as a Science-city is required .

Let's considered some of conditions and premises of forming a draft of a Programme of Development a City as a Science-city.

I. Terms of work organization

1. A highly motivated Leader with a positive mood for developing a *Programme* should be selected. It could be one of the deputies of the head of city Administration.
2. It's necessary to form a Working Group, which should include representatives of city Administration, research organizations, industrial enterprises, universities etc. This group is working out a plan of activities and controlling it's implementation.
3. It's necessary to form a group, which would work out a programme on the main topics and sections of the general Programme of a City Development as a Science-city.
4. It's reasonable as well to have a *group of experts* which would evaluate the main provisions of the Programme and their technical and economical reasons.
5. A *partner* at the level of oblast Administration and degree of his involvement in forming the Programme should be identified.
6. It's necessary to identify a *partner* at the level of federal executives bodies interested in the Programme development.
7. It's necessary to settle the procedure of adjusting and approving a Programme draft by federal executive bodies.

II. The main prerequisites and phases of Programme development activities

1. Evaluation of economic situation of the city and it's institutions (enterprises).
2. Discussion on the guidelines of S&T and socio-economic development.
3. Identification of reasons of conflicts between the city Administration and enterprises (research and industrial).
4. Evaluation of competitiveness of the city research and industrial production.
5. Evaluation of the city development level (business-plans and other analytical materials).
6. Providing methodological assistance to parties involved into the Programme development.
7. Defining relations between science and industry, to what innovation centers are used for this purpose.

8. Defining the total management order and structure, responsibilities of parties participating in the *Programme* forming and implementation, working out time-schedule and it's control.

III. The main tasks

1. To consider correlation between activities of research and industrial enterprises and their participating in solving city problems in the long run.
2. To identify roles and cooperation of participants in forming inseparable structure (research institutions ↔ enterprises ↔ city Administration) within *Programme* framework.

It is supposed to be reasonable to organize methodological workshops with members of Working group and designers of Programme sections. It's better to do this at the inception phase than later in fact overwrite the Programme.

I would like to consider in more details a number of methodological statements concerning Programme design.

The Programme should be designed in 2 stages. The first stage - working out Programme Concept, the second - a draft of the Programme itself.

In the Concept draft it's necessary to examine the following problems:

1. Analysis of the main indicators and current problems of S&T and socio-economic development of science-city.

2. Strategic goals and scenario of science-city development.

3. Ways of restructuring S&T facility and increasing it's effectiveness in market conditions.

4. Perspectives of socio-economic development and improving supporting infrastructure.

5. Objects of funding and state support for science-city development.

The important role in Programme design is given to identifying Programme structure and contents.

Examples of Programme sections are given on the Table 1.

Table 1

Examples of Programme sections

Programme passport

I. Problem matter and reasons for selecting programme methods for it's solving
II. Priorities of S&T development
III. The main *Programme* goals, and tasks on testing mechanism of switching to self-sustainable city development
IV. The main *Programme* indicators for the years of the planned experiment
V. Programme activities of development a city as a science-city, including measures on active involving it's S&T potential
VI. Measures of state support and mechanism of Programme implementation
VII. *Programme* resources
VIII. Programme management and controlling. Methodological support.
IX. Evaluation of efficiency and socio-economic consequences of *Programme* implementation

Let's consider in outline the main statements of every section of Methodological recommendations on designing drafts of Science-city development Programs.

Methodological recommendations are included in hand-out materials, but it's known from practice that in spite of the fact that cities have these recommendations in their disposal, works on forming Programme drafts are carried out with essential divergence.

A few words about Programme passport. It's necessary to pay attention to the following items: terms, Programme phases, main activities and - what is the most important - amounts and sources of funding. In this section total financial costs of Programme implementation should be mentioned as well as particular sources of funding: federal budget, ministerial funds, federal targeted programmes, regional (oblast) budget, city budget, assets of institutions and non-budget sources.

Methodological recommendations on designing drafts of Science-city Development Programmes contain annexes in form of sheets to be filled in. Let's consider methods of filling these forms.

Form № 2 presents a forecast on funding city research institutions within federal targeted programmes. Data of this form provide opportunity to estimate participation of city research institutions in federal targeted programmes, volumes of funding by years of Programme implementation.

Of great importance is *Form № 3 " Volumes of work and sources of funding enterprises of scientific-industrial facility"*

First of all, this form is filled in by every enterprise of scientific-industrial facility and then a consolidated data table is produced. Second, data of this form are used to discover the main fields of every enterprise, volumes and sources of funding by years.

This form gives opportunity to detect changes in the total amount of works and in every particular field.

If the total amount of works is rising every year, it confirms preserving of S&T potential. Besides, contract research development, external economic activities and services can be analyzed.

Contract research, external economic activities and services are very important under modern conditions, when funding from federal budget is permanently decreasing.

These fields should develop continuously on the base of using twin technologies, attracting foreign investors or expanding external economic activities.

Data of the Form 3 show whether development of scientific-industrial facility is sustainable or not.

The next Form is *"State Order Forecast"*. It should be mentioned that state order can be places for R&D as well as for high-tech products delivery.

Form № 4 " State Order Forecast ", shows the ways of funding by ministries and departments.

Forms № 5 и *№ 6* give opportunity to analyze quality of personnel, demand for specialists etc.

Form № 7 "Forecast of the main indicators of science-city development " (by years of Programme implementation). As a rule, there are no problems in filling this form, but 'Science' should be treated separately.

And, finally, Form *№ 8 "Consolidated science-city financial balance sheet"*. This data s available in planning bodies of city Administration. But it's necessary to include data for the previous two years for comparison as well as forecast for the years of Programme implementation. In the debit part often includes budget deficit. This indicator gives opportunity to estimate city abilities in switching for sustainable development and covering deficit from it's own resources.

As it was already mentioned, it's necessary:

- To form a Working group in the city Administration and to include into this group Vice-mayor, directors of large industrial enterprises and scientific and production facilities.

- Heads of all the large industrial enterprises and scientific and production facilities should present this group their proposals on development of their institutions (enterprises) for the next years. These proposals should be drawn up in accordance with uniform principles and forms developed by the Working group. Justified volumes of funding needed for institution or enterprise and efficiency of suggested activities should be included.
- On the base of analysis of the current situation in the city, proposals of research institutions and industrial enterprises, keeping in mind necessity of providing sustainable socio-economic development of the city, the Working Group is developing a Concept of city development (stage I) and then Programme (stage II).

The Working Group should assure thorough consideration of science-city development scenario by attracting wide range of researches and employees of research institutes, enterprises and interested institutions.

The most important problems requiring especial attention are providing technical-economical reasons and organizational-economical tools of Programme implementation.

It's necessary to assure broad discussion of investment projects, to organize expertise of city socio-economic development.

Let's consider some approaches to forming Programme sections.

Section I. *Problem content and reasons for using Programme methods for it's solving.*

A brief description of the city, population, employees, including employees engaged in science sector, industry, construction, trade and SME. A registry of city socio-economic indicators as well as main problems and necessity of their solution.

Section II. Priorities of S&T development.

First of all, the selected priorities should correspond to the Concept of reforming of Russian science. If city research organizations lead basic research, they have provide grounds for preserving basic research or it's further development. It's reasonable to know opinion or to have approval of Russian Academy of Sciences and relative ministries and organizations.

It's necessary to mention that priorities are approved by Decree of the President of Russian Federation, that means they are included into the package of documents to be presented for Programme approval.

R&D, experimental works, high technologies are regarded as priorities. In this section the problems of S&T reforming and restructuring, assuring effective use of labor force are considered.

Problems of S&T and innovative entrepreneurial business, forming infrastructure of innovation sphere and others are considered individually. It makes sense to attract entrepreneurs to this work, to get from them concrete prospective proposals and formulate activities on this base.

In the III section *it is necessary to formulate the main Programme goals and tasks.*

These problems will be discussed in more details in methodological recommendations. The Programme goal will be quite similar for all science-cities - to work out mechanisms of switching science-city to sustainable development mode. Nevertheless it's necessary to take into considertaion specific features of city socio-economic development and specific features of scientific-production facility.

In this section the tasks to be solved within the Programme are identified.

For many science-cities selection of the most important investment projects and integration of academician, industrial and high-school science will be one of the tasks. For a number of science-cities creating new working places and retraining of dismissed employees will be of the most important external tasks.

Selected (formulated) tasks serve for the purpose of identifying concrete programme activities (taking into account business-plans and investment projects confirming validity of the selected tasks).

Section IV. *Programme indicators*

I would like to discuss in more details Programme indicators. Designers of methodological recommendations paid certain attention to indicators, or to be more precise, to a system of main indicators in various fields of city activities which gives opportunity to evaluate Programme implementation process. It is suggested to develop such a system of indicators which would provide opportunity to include into the annual Programme Progress Report not only the main indicators but data on using all the assets provided for Programme implementation by all the sources of funding, quantitative and qualitative analysis of public utilities and social sphere as well.

While forming the 'Programme of Development of Obninsk in Kaluzhskaya Oblast as a Science-city (guidelines) for 1999-2004' the system of main indicators has been permanently improving and adjusting.

The main indicators are divided into two groups, while Programme efficiency criteria are divided in accordance with:

•indicators, for which control figures are fixed - correspondence to control figures (marked with« * »);

•main indicators - positive dynamics.

Let's consider a system of indicators. They are divided into four groups: budget indicators; indicators of socio-economic development; indicators of economic development; indicators of development of S&T activities.

What is included into every group of indicators

1. Budget indicators	– coverage of necessary expenditures by own incomes *; – income of city budget per capita *.
2. Indicators of socio-economic development	– city population*; – level of income of population; – City average wages *; – Retail turnover *; – housing provision*; – housing construction*; – public order; – environmental conditions; – employed in economy*.
3. Indicators of economic development	– Volume of turnover (incl.services)*; – level of tax collection *; – aggregate wages*; – investments*.
4. Indicators of S&T activities development	– Total output (incl.services)*; – share of prior works in total output (incl.services)*; – Share of high-tech products in city industrial output, incl., scientific-production facility *; – Share of scientific-production facility in noncirculating assets *; – Share of scientific-production facility in tax collection *; – incomes structure of scientific-production facility *; – number of registered innovative SME *; – number of employed in scientific-production facility *; – number of employed in state research organisations*;

– number of employed in innovative SME*;
– share of intellectual property in total amount of work (services);
– R&D costs, incl. own assets and budget funding;
– number of patented inventions and certificates on ultimate patterns.

Two tables are presented in this section:

Table 2

I. Coverage of necessary expenditures by own incomes

Статьи	1999	2000	2001	2002	2003	2004
Expenditures						
Incomes						
Deficit						
% of expenditures						

Table 3

II. Control figures of the main Programme indicators

Indicator	***changes by years of the Programme***					
	1999	2000	2001	2002	2003	2004
Budget indicators						
Income level of population (budget provision), rubles						
Indicators of socio-economic development						
City population, thousands						
City average wages, rubles						
Retail turnover (all the marketing channels) mln.rubles.						
Housing provision, sq.m. per capita						
Housing construction, thousands of sq.m.						
Indicators of economic development						
Number of employed, thousands persons						
Volume of turnover (city total), mln.rubles						

Average level of tax collection for the budgets of all the levels, % of the year plan						
Aggregate city wages, thousands rubles						
incl. • scientific-production facility						
Sources and objects of investments, thousands rubles						
incl. • scientific-production facility						

Indicators of dynamics of scientific and industrial activities

Total output, mln.rubles						
Share of prior works (services) in total output, %						
Share of high-tech products in total amount of industrial output, %						
incl. results of research by scientific and production facility, %						
Share of scientific-productional facility in noncirculating assets, %						
Share of scientific-production facility in tax collection, %						
Structure of revenues of scientific-production facility:						
• funding from federal budget, %						
• other sources, %						
Number of registered innovative SME						
Total number of employed in scientific-production facility, persons						
• % of total number of employed						
incl. – federal and RAS research institutes						
– SME						

Section V. *Programme activities on city development as a science-city, including methods of active use of it's S&T potential.*

Programme of city development as a science-city is a package of coordinated programmes. Programme measures include activities in all the spheres of science-city development, providing conditions for solving Programme tasks. Concrete activities are defined on the base of prior guidelines and spheres of

science-city economic growth. Structure of subprogrammes is adjusted in accordance with science-city concrete conditions.

Let's consider some examples of subprogrammes.

1□ **Reforming scientific and production facility** or more precisely, preserving and development city S&T potential. It's important to note the aim of subprogramme, what conditions for stimulating activities will be provided, what values of quantity and quality indicators will be achieved. This approach should be used while working out other subprogrammes as well.

2□**Forming infrastructure of innovation activity**

Forming supporting infrastructure for innovation activities and system of commercialization of research results is the main task.

It's important to enlighten new elements of infrastructure. Increasing number of S&T and innovative SME should be shown here, as well as sources and volumes of funding.

3□**Industrial sector development.**

That means, first of all, development of economy, increasing of business activities, development of high-tech production, assimilation of new products.

It's necessary to mention growth rates of gross marketing of the real sector of economy and how the share of high-tech products in the total amount of city industrial output will be changed.

4□**Development of city social sphere.**

City socio-economic development should be aimed at achieving living standard higher than level of minimum social standards and at establishing up-to-date social infrastructure.

In this section it is necessary to mention rates of increasing expenditures of city budget per capita, rates of dwelling construction.

5□**Creating favorable conditions for attracting investments**

This subprogramme should be oriented towards development of investment activities with the aim of increasing production volumes, employment increasing, tax base.

While developing subprogrammes measures of attracting and using the total investment sector are worked out. Attractiveness of investment climate should be put into basis. Examples of basic indicators are given in the Table 4.

Table 4

Investment climate

Basic indicators of investment climate	Deviation from the average Russian standard
1	2
1 Climate and natural resources	
2 Energy resources	
3 Infrastructure	
4 Transport / location regarding to Russian markets	
5 Transport / location regarding to international markets	
6 Scope of economy	
7 Diversification of economy	
8 Capital assets (per capita)	
9 Volume of investment activities	
10 Export potential of economy (ratio of export and output)	
11 Currency assets of enterprises and institutions	
12 Volume of foreign credits	
13 Level of enterprise activities using foreign investments	
14 Earnings of population, per capita	
15 Cost of standard consumer set	
16 Unemployment level	
17 Level of development of social infrastructure	
18 Supporting market reforms by population	
19 Level of development of banking system	
20 Commercial structures	
21 Privatization	
22 Production dynamics	
23 Share of unprofitable enterprises	
24 Social stability	
25 Criminal environment	
26 Environmental conditions	
27 Political stability	
1	2
Sum of deviation from the average Russian standard	
Sum of deviation, divided by the number of indicators	
Index of attractiveness	

6. **Development of international cooperation**

This subprogramme is oriented towards study of foreign experience, international cooperation between cities as well as individual enterprises and research departments of scientific-industrial facilities.

7. **Training personnel.**

Training personnel can be considered from different points. First of all, it's training specialists and researches in prior fields of S&T facilities development, including training of managers for high-tech business and innovation-technological activities.

Integration of universities and research institutions is under consideration. It's possible to establish joint scientific and educational centers.

Important role should be given to retraining specialists dismissed during the process of science and industry restructuring.

It's reasonable to note estimated figures of personnel training and retraining.

While developing Programme of city development as a science-city subprogrammes derived from specific features of concrete city could arise.

For a number of cities such subprogramme as "Forming a system of radiation security enforcement and ecological monitoring" could be proposed.

In this respect a definite regulation requirements should be met.

Section VI. *Measures of state support.*

The measures of state support are presented in details in the Statement of the Government of Russian Federation "On approving criteria of assigning a science-city status to cities and Procedure of considering proposals on assigning a science-city status to cities and canceling of this status" dated September 27th, 1999. Nevertheless during adjusting mechanisms of science-city transfer to sustainable development it's necessary along with state support from federal budget and regional budget to assure searching and finding non-budget sources of funding.

Section VII. *Resource provision of the Programme.*

This section consists of two parts: Financial provision of the Programme and material provision of the programme. Implementation of the Programme activities needs funding from different sources.

Therefore, the total planning Programme budget is defined in this section. Sources of income and expenditure items of Programme budget are presented in Tables 5, 6, 7.

Targeted Programme funding from Federal budget is denoted, as well as participation of oblast in Programme funding via tools of defining budget contributions as a share of regulating taxes.

Considering material provisions it's necessary to note that the way of transferring state owned objects located in the city is regulated by current legislation.

Table 5

Total Programme budget

Indicator	**Total**	**Changes by years of the Programme**				
	2000–2004 гг.	2000	2001	2002	2003	2004
Total Programme budget, thousands rubles.						
State support from the federal budget						
From oblast budget						
From ministries, departments, Federal Targeted Programmes						
From city budget						
From non-budget sources						

Table 6

Expenditures of Programme budget

Subprogrammes	Funding, thousands rubles					
	Total	2000	2001	2002	2003	2004
1□Reforming research and industrial facilities						
2□Forming infrastructure of innovation activities						
3□Industrial sector development						
4□Social sector development						
5□Providing favorable conditions for attracting investments						
6□Development of international cooperation						
7□Training personnel						
8□Other expenses						
Total						
incl. from federal budget						

Table 7

Programme Funding from Oblast budget

Sources of funding	Funding, thousands rubles					
		per annum				
	Total	2000	2001	2002	2003	2004
1□Income of city budget						
2□Planning income from regulating taxes						
3□Fixed income of city budget from regulating taxes, defined by legislation						
4□Volume of support from region - subject of Russian Federation (pp.2–3)						

Section VIII. *Programme management and implementation control. Methodological support.*

To manage Programm implementation process it's reasonable to establish a Programme Directory Board within the structure of the city Administration. Programme Directory Board is established in accordance with decision of the city Administration and agreed with oblast Administration. Directory Board is formed from city authorities, heads of research institutions, industrial enterprises, representatives of entrepreneurial business, funds etc. depending on the character of concrete tasks.

To control efficiency of funds spending Supervisory board headed by the Governor of the region is established.

These problems will be presented in details in Methodological Recommendations.

Analysis of the prepared Programmes of Developing Municipal Entities as Science-cities (consideration of 2-3 Programmes)

VANGNITS N.P.
deputy director
of the Scientific-Methodological Center of Public Services
of the Academy of National Economy
under the Government of Russian Federation

In the previous report («Organizational and methodological recommendations on developing programmes of developing municipal entities as science-cities») it was told how to ensure development of high-quality Programme of science-city development (hereinafter «Programme») and how to ensure it's fast approvement by statutory governemental bodies. It's not the only aim to make the Programme «easily approvable», which means meeting all the requirements and recommendations on programmes design. It will give opportunity to implement the Programme fully and within fixed dates, that means to achieve the main target – to preserve S&T potential of science-city and to ensure sustainable development of this potential as well as science-city as a whole.

During the last two years the Academy of National Economy on assignment of the Ministry of Science and Technology RF has examined 6 municipal entities engaged in the development of such Programmes and we are sorry to state that in most cases they are far from perfection.

The main reason for that is unsatisfactory organization of Programme development.

It was already mentioned in the reports that Programme Concept development should precede Programme development. It is necessary to attract a wide range of scientists, research institutions, top executives of city enterprises and corporations to the Concept development.

It is necessary to enlighten in the Concept such problems as evaluation of the city economic situation, analysis of the main problems of S&T and socio-economic development, strategic goals and scenario (alternatives) of development etc.

Results of this work should be discussed by the City S&T Council.

Only afterwards the Programme development should start.

The indispensable condition of developing a high-quality Programme is forming a Working group from representatives of the City Administration (one of it's leaders should be the head of the group), research and training institutions, industrial enterprises and corporations.

The Group is planning the work and implementing it's organization, co-ordination and control.

All the main stages of Programme development should be examined at meetings of the Working Group and when it is necessary – at meetings of the City S&T Council.

These meetings and their decisions constitute preliminary expert conclusions (evaluations) on the Programme.

Let's consider typical imperfections detected by ANE while analyzing papers of municipal entities.

Papers of municipal entity № 1.

1. In the 1st section there is no clear indication of the city role in the economy of the region and it's core fields of S&T activities, the significance of the city for development of the Russian science.
2. In the 2nd section there is only the list of prior guidelines of the city development. But there are no grounds for preserving and developing suggested fields of basic research, no judgments of RAS, Ministry of S&T RF, industrial ministries and departments on this problem. It's not identified how these suggestions correspond to the perspective guidelines of development of research and industrial potential of Russia and the Concept of Science reforming for 1998-2000 (Instruction of the Ministry of S&T RF № 65 dated 20.05.98).
3. The goals and targets mentioned **in the 4th section** of the Programme do not coincide with those identified in it's Passport; the content of the «mechanism of co-operation between the interested ministries, ... regional administrations, the city» is not clear.

The most important innovation projects and their financial sources are not included into this section, as well as the grounds confirming the validity of selection of those projects.

4. The suggested Programme implementation steps are controversial from the point of content and time planning. E.g. development and adoption of laws and regulations is planned for 1999 and Programme making up only for 2005, while it's implementation is supposed to be evaluated at least once in 2 years.

5. **In the 5th section** the following items are missing: description of fundamental approaches to Programme activities, reasons for introducing subprogrammes and their detailed description, which should be included into Programme Annexes, forecasts on the state order for R&D and financing research institutes within Federal Targeted Programmes.

6. There are no grounds for suggested priorities of S&T potential development. It's not explained how this development will assist enterprises to achieve market advantage for their products in the world market, ensure commercialization of R&D results, stimulate technology transfer from military to civil production sector.

7. The suggestion on establishing a Foundation for science-city development which is supposed to realize functions of Programme Directory, the Foundation as it is, and partly functions of business-incubator sounds unreasonable.

The problem of Programme management has been discussed plenty of times with scientists, representatives of industry and state executive bodies and it's solution is presented in the Standard Methodological Recommendations of the Academy of National Economy. It could be possible that the Foundation would be included in the structure of science-city Administration as a department, but nobody is supporting the idea of transferring management functions to the Foundation.

8. In modern conditions economical should complement each other, creating premises for stable wide-scope development. This is particularly important for science city, where effectiveness and speed of development can be achieved by qualitative growing of spiritual and physical possibilities of person.

Under the modern circumstances economical and social policy should support each other, providing conditions for large-scale and sustainable development. That's

important especially for science-cities, as far as efficiency and development dynamics could be achieved on the base of improvement people's spiritual and physical skills.

Living standards and quality, education, qualification of employees, the state of art in science and arts, health of population are becoming the decisive factors of economic growth (it's rate and quality) and introducing new technology, which is needed not only for management and providing services but mainly for effective utilization of nature and defending society against aggressive influence of environment.

Living standards and quality, education level and qualification of the staff, science and art progress, population health – al of these become very important for speed and quality of economic growth for invention of new machinery. This new machinery is necessary for control, service, effectively usage of the nature and for society protection from environmental aggressive influence.

In the market conditions the role of state and regional governments in regulating social processes is changing and the role of social insurance is increasing.

These statements along with the need for improving living standards and quality (or at least keeping the existing level) form the grounds for working out regional standards and main indicators, taking into account the state of the art and forecasts for future (social normative). These particular social normative should be used for working out scenario.

While forming annual budgets of science-cities it is necessary to ensure the meeting of the social standards which are defined on the base of minimal standards of social assistance and medical services, increasing real wages and qualification of employees, employment and housing. Minimum wages and minimum pension with social payments and benefits should not be less than minimum living standard.

9. There are no grounds for the measures of state support for Programme implementation described in **the 6th section** and they not agreed with executors (construction of railway crossing and bridge, new city borders, construction of overpass etc.)

It's not quite clear what are the obligations of the city in providing resources for Programme implementing.

It would worse to demonstrate in the 6th section how the planned proposals on every form of state support correspond to existing legislation.

10. In **the 7th section** it is necessary to provide reasons for the planning volume of financial resources (total, grouped by sources and years).

11. The Programme management scheme proposed in the 8th section can not be adopted (see 7). The tasks of Programme Directory and Supervisory Council should be described in more details.

12. In **the 9th section** three methods of analysis of the main Programme indicators and activities and the results of introducing the proposed measures and technologies are described. Nevertheless the tasks of identifying the most effective forms of state support for science-cities and finding the optimal solutions of forming city budget (on the base of scenario approaches) should be mentioned in this section.

And now let's consider the ***papers of the municipal entity № 2***, applying for a Science-city status.

First of all, this document is not a Programme Draft in sense of definition given by the Government of Russian Federation in the Statement № 1072 dated 22.09.99. (Programme Draft should contain a detailed description of state support measures, taking into account specific features of a science-city, Programme activities and their technical and economical reasons, sources of funding including «Expenses» parts of budgets of all the levels). Forms 1–8 of the Methodological Recommendations of ANE on developing drafts of Science-cities Development Programmes are not filled in, that *prevents* analysis of basic indicators as well as proposals on the forecasting base; it's not possible to identify time when the city budget deficit will be covered by own assets of the science-city (refuse from subventions) and so on.

There are no grounds for Programme implementing terms.

The presented materials do not include scenario approach alternatives of proposed activities or grounds for those activities.

There are no proposals on developing SME and innovation infrastructure.

The City S&T Council, which is supposed to consider the Programme's particular sections, is not established.

Programme Draft ***of the municipal entity № 3*** do not include analysis of the basic data which are necessary for forecasting of the science-city development.

There is no data on participating of the city scientists in Federal Targeted Programmes (grouped by research institutes), nor data on contract research. It's absolutely unclear what are the perspectives of financing research works by ministries and departments and whether they are interested in these works.

The consolidated city balance sheet is not presented in the papers. Without this balance it's not possible to apply for financial support from federal budget and to identify when sustainable development of the science-city on the base of it's own resources would be possible..

The indicators, proposed in the Programme, do not cover all the spheres of the city activities, do not allow to evaluate Programme progress, validity of the selected measures and priorities, realized within subprogrammes. There are no concrete figures on increasing number of innovative enterprises, new products assimilation, changes of the share of high-tech products in the total volume of the city industrial production. In the subprogramme of the city social development there are no arguments for constructing objects, related to providing standard of living higher than the state minimum social standard.

In the section concerning Programme Management it is proposed to transfer this function to Foundation and not to the Programme Administrative Board within the city Administration; the functions of Supervisory Board are unreasonably expanded (e.g. it is supposed to make decisions on terms adjustments, organize expertise of Prgramme progress etc.).

Practice of the development of the R&D and innovation infrastructure

(by examples of Russia and developed industrial countries)

Konstantin.I.Pletnev Dr.Sc.Econ., Director
The RENATECHS Center for Regional Science and Technology Cooperation (Presidium of the Russian academy of sciences affiliation)

Practically all the scientists and experts who study various aspects of social and economic development are unanimous that advance of science and technology being its decisive factor. Relevant technology transformations of productive forces are revealed as the replacement of technological modus caused by the continuous process of the transformation of new knowledge into new technologies and appropriate means of production.

The basic environment, where the new knowledge is originated and transformed into new technological modi and structures, is the sphere of science and technology. That is why activities in this sphere have a special role in the social and economic reformation.

The sphere of science and technology influences economy not only directly through the creation and realization of concrete applied developments. The fact itself of its existence and functioning is a necessary (though not sufficient) condition of economic growth.

In 1996, after a rather long discussion, two basic notions for activities in the science and technology sphere were legitimated:

i) Scientific activities

and

ii) Scientific and technical activities i.e. Research and Development (hereinafter the R&D).

The former one is treated as activities aimed to the gain and application of new knowledge on problems of basic patterns and mechanisms that define structure, functioning and development of human, society and environment. Accordingly, the latter is regarded as a scope of activities aimed to the acquisition and application of new knowledge for solving technological, engineering, economic, social, humanity and other problems, providing for the operation of science, engineering and production as a single system [1].

It follows, with a degree of generalization of these definitions, that **Scientific activities** are mainly those of gaining a recently unknown knowledge on substance, nature, society etc. Incentive motive for activities of this kind is first of all the aspiration of mankind to knowledge of new matters. And the main stimulant of the **Research and Development** activities is the need for solving concrete problems of practice. The aim is not only and not so much the gain of new knowledge and technical outcomes as such, but the provision of their actual use in behalf of industry and social sphere.

In this sense research and development are closely adjoined to such a notion as **Innovation** which is defined, according to the draft Federal Law that has passed the primary parliamentary review (reading in State Duma), as the creation of a new or improved product or technological process that are valorized in economic turn-over by the utilization of results of research, development, experimental engineering as well as of any other achievements in science and technology [2].

On the basis of comparison of the above definitions for both kinds of activities it looks quite proper to introduce such an integrative concept as **Research-and Development and Innovation**

which combines those rather different but substantially interwoven and mutually supplementary activities in the area of science and technology.

Research-and development and Innovation is a kind of activities that are aimed to solving the problems of social and economic development and comprise carrying-out applied research, engineering and technology development practical realization of outcome in industrial and social spheres, including those on non-profit terms [3].

As a constituent of economic life in general, research-and development and innovation requires like any other kind of activities a special infrastructure.

The term "infrastructure" (from latin infra=under and struktura) got initially into use at the beginning of present century for the definition of objects and structures ensuring normal activity of armed forces. After the 1940s in other countries the notion of infrastructure has got to be understood as a set of sectors of the activities for promoting normal functioning of material production. Further the interpretation of this concept has been sequentially expanding to new items. So after the traditional branches such as communications, transport and logistics also services and so-called institutional sphere were included.

Presently both in domestic (in view of reformation occurring in the country) and in the foreign scientific literature infrastructure is regarded, to some differences, as a separate sphere of economy developing by the deepening of the public labour division. **The specific feature of infrastructural sectors** is the fact that they produce neither any material product but services because the basic purpose is the creation of the operational environment for enterprises and consequently for economy as a whole [4],

As to the sphere of science and technology itself, the notion of the Innovation Infrastructure has been entered under "The Concept of the Innovative Policy of the Russian Federation for 1998-2000" which was approved by the Federal Government in July, 1998. The infrastructure is regarded as a set of organizations promoting innovation, such as centres of technology and innovation, technology incubators, science parks ("technoparks" in Russian), business training centres and other specialized organizations) [5]. Practically similar contents has also the notion of the **Infrastructure of Innovative Activities** used in the draft Federal Law aforesaid [2].

This approach to issues of the infrastructure of the science and technology sphere looks a little bit simplified and not complete. The furter expansion and development are necessary.

According to the formulated definition of the notion of R&D-and Innovation activities their cycle begins with the generation of new scientific and technical ideas on the basis of results of fundamental research and ideas screening (i.e. scientific activity) followed by their tuning-up to be completed by the release and realization of a high-tech product created on this basis.

In our opinion the **R&D-and Innovation infrastructure** intended to provide for the functioning of this cycle should represent a complex such as a set of the interconnected and mutually complementary systems and appropriate organizational elements. Such a complex would have multilevel construction (macro-mid- and microlevels) and to cover not just the final stage i.e. innovation, but the whole cycle of activities.

At the preceding stages of development, as well as in the period of the reformation which has begun since 1992, **various target systems** emerged in the country **which bear certain infrastuctural functions** concerning activities in science and technology sphere. The following systems might be numbered with basic ones that have federal status (the macrolevel): the State system of the scientific and technical information, systems of patent and license services, of standards and the product certification, as well as that one of financial support for research, development and innovation.

National system of the scientific and technical information has been actual in our country over thirty years. Its structure comprises such widely known organizations as the Institute for the Scientific and Technical information (VINITI), Institute of the Inter-sectoral Information (VIMI), Centre for Scientific and Technical Information (VNTI-centre), Russian Association of Information Resources of Science and Technology Development (Rosinformresurs), network of scientific and technical libraries most known among which is the State Public Scientific and Technical Library (GPNTB).

During the Soviet period sectoral institutes of the information and technical and economic research (CNIITEI), which number practically corresponded to that of existing then federal and republican ministries and departments, made the compound integral part of this system. Those institutes were almost completely liquidated during the reforming of the sectoral management structure of national economy.

A rather advanced network of structures on propagation of advanced experience was directly adjoined to this system having the same functional purpose, including the Russian Exhibition Centre (then VDNH USSR), branch-oriented and territorial exhibitions of national economy achievement. This network also has undergone serious deformations and destructions during realization of economic reforms.

The system of standards and product certification also ascends in the history of its affirmation and development to the period of existence of the Soviet Union. Headed by the Gosstandart State committee and its republican bodies it was under the conditions of planned economy one of the basic tools designed to provide enhancement of quality and competitiveness of production.

The system had a very ramified character, which actually covered in view of a large number of departmental subordinations the widest spectrum of bodies, organizations and divisions, beginning from Research Institute for Standards (VNIIstandart) up to departments and groups of the quality control at factories and shops (OTK). In the Soviet period various complex systems operated in its framework, those of production quality control (KSUKPR), state and sectoral standards and specifications, local standards of enterprises and a large number of normative documents of a different kind.

In the course of reformation this system has undergone serious deformations. In its supreme management body (Gosstandart of Russia) a permanent reorganization and various transformations took place and the territorial structures (Centres for Standards, Metrology and Certification of the subject politic bodies of the Federation – CSM) have undergone to the certain destruction and were to diversify their activities seriously.

The system of patent and license services in the Soviet period provided, with the reference to conditions and mechanisms of a planned economy, the centralized bringing to a close for a complete set of questions, including the registration of the applications on objects of the industrial property, realization of patent expert examination, issuance of copyright certificates, acquisition of foreign patents, sale of licenses etc.

The system included the State committee of the USSR on inventions and discoveries, patent divisions of the federal and republican ministries and departments, the Licensintorg Corporation, National centre for patent services with its branches in large cities of the USSR, the Soyuzpatent Corporation and other organizations.

With the beginning of reformation the old system of patent and license services because of its so called non-market character was actually completely destructed and, unfortunately, has neiter got till now any new complete form, nor started an efficient operation, in spite of its importance for a market economy. It lives presently under a permanent reorganization and transformations, the recent one having been the liquidation of the Rospatent national agency and setting-up an appro-

priate agency at the federal Ministry of Justice. There is also the need in a serious development and strengthening of legislative foundations of this system.

The system of financial support for research, development and innovation, as against the systems reviewed hereabove, in its present pattern has started to develop already in the course of reformation conducted in the country.

At the federal level the structure consists of a number of Russian budgetary and extra-budgetary funds. To the former group belong the Russian Fund for Fundamental Research (RFFI), Russian Humanitarian Scientific Fund (RGNF) and Fund for Promotion of the Development of the Small Forms of the Enterprises in the Science and Technology Sphere (FRMP NTS). To the second group - Russian Fund for Technological Development (RFTR), Federal Fund for Industrial Innovation(FFPI) and the Fund for Promotion of the Innovation Development of High School.

Some of these funds have their territorial representations in regions (FRMP NTS). They practise summoning competitions and financing various projects jointly with territorial bodies of state authority (RFFI, RGNF, FRMP NTS).

At the regional (mid) level there is also going from a beginning of the 1990s a rather intensive process of setting up organizations intened to ensure in the market environment the conditions for R&D and innovation activities. The most wide-spread became such infrastructural organizational elements, as science-and technology parks (technoparks) and incubators of the knowledge-intensive business (business-incubators), as well as innovation-and-technology centres.

Technoparks and business-incubators. The technoparks represent the most "old" (their establishment started in Russia in 1990) and most widespread form of new, to say, market infrastructural organizational elements in the science and technology sphere. Only in the academic system their number is now more than 70.

Technoparks that are in genetal uniform in their internal construction and functions differ by the large variety of the organisational and legal forms. There are limited liability companies among them, joint stock societies, state-and municipally owned enterprises. The composition of technopark founders is various as much, the leading role being attributed now to universities [6].

Closely linked with technoparks and included, as a rule, into their structure are business-incubators that present a form of the promotion of innovation through the growing ("incubation") capable small-size technology-oriented enterprises.

It is necessary to note, that besides technoparks and business -incubators concentrated mostly in the higher school system i.e academic sector, there are set-up also about 50 academic centres and laboratories accredited by the Gosstandart of Russia for the various kind of product certification, 26 regional training centres for preparation of the experts in the area of innovation management, as well as a network of the centres of new information technologies, scientific and technical expert evaluation etc. [7].

The innovation and technology centres (ITC). The creation of these infrastructural organizational elements, which functions to a certain degree intersect with those of technoparks was initiated by the adoption by the federal ministries of science-and technologies and of education together with two foundations aforesaid (RFTR and FRMP NTS) of the Interdepartmental Program of the Activization of Innovation. These centres became rather popular within last two years. Up to now there are operative or in various stages of the creation more than 30 centres of this kind.

In the aspect of strategy the ITCs are accepted now to consider as an integral component of the general three-element chain: the innovation and technology centre – innovative industrial complex – federal centre of science and high technologies [8].

Not calling in question the importance and the urgency of formation in national economy of such a strategic chain, it is necessary to mean and to take into account one of its important features. The problem is that the two of three elements of the chain - the innovative industrial complex (IPC) and moreover the federal centre of science and high technologies (FC NVT) – are not infrastructural organizational elements as ITC is. Unlike the latter they are intended for the creation and realization of the competitive high-tech product, instead of providing services to the agents of research- and development and innovation.

Organizational elements listed above and other ones, such as scientific coordination councils and centres, consultancy companies etc. as a whole form in Russia a R&D and Innovation infrastructure. It is necessary to recognize, that in **its basic elements the Russian infrastructure corresponds to the trends of the infrastructure formation for the science and technology sphere in countries with the advanced market economy.**

In the USA the creation of science parks, which gradually began to play an important role in the scientific and technical development of different regions of the country, started after the termination of the second World War. The first of them appeared in 1951 by the Stanford university in Palo-Alto, California. In 1969 there were 17 university parks in 15 states and by 1988 their number became grown already up to about 130, i.e. even more than the number of those universities, which are classified usually as large research centres. There are about 100 such universities in the USA.

A drastic growth of the number of science parks by American universities is marked by many economists as a phenomenon, characteristic for America of the 1980sh. Approximately the same might be said about incubators of the high-tech business which have appeared later, at the end of the 1970s. By 1989 their number in the USA was about 300 and now, by some estimations, it exceeds one thousand.

In Germany setting-up the centres of technology and business incubation started in 1983 with the purpose of transfer of the results of research to the industry. The American experience of the development of science parks and business-incubators was used widely. Presently there are operational 200 centres of this kind, from them 135 being in old Länder of Germany and 65 in the territory of the former GDR. A number of the centres, for example, in Aachen, Berlin, Dortmund, Karlsruhe together with nearby universities and higher schools formed scientific parks.

The Steinbeis Foundation (Stuttgart) has set-up a distributed network comprising about 300 centres for technology transfer in the territory of Germany and abroad. Most of these transfer centres are based at higher education institutions and their directors are usually professors of the specialized chairs. In behalf of commercial realization of the inventions and new technological decisions the Federal Patent Office of Germany (Munich) has set-up throughout the country a network of 17 patent information centres communicating with 10 European patent bodies. Patent bodies are operative as well within the Fraunhofer Gesellschaft and Max Plank Gesellschaft scientific institutions.

In the Netherlands after the decision of the government of the country in the beginning of 1988 has been established a Network of Innovation Centres. The centres provide consultancy services and organize innovative projects development in behalf of the small and medium sized Enterprises (SMEs). Total of 18 centres has been established. The geographical cover of each Centre is determined by the borders of the districts of the regional Chambers of Commerce. Besides these regional centres and a Central Office in the Hague there is also a Special Centre for inventions.

In France, since 1985 the ARIST regional information agencies are set up within Regional Chambers of Commerce and Industry specialising not only in the field of a science and technologies, but also of economy. Due to the access to information resources of French Chambers of

Commerce and Industry the opportunities of ARIST are much wider, than those of other organizations of a similar specialisation. The agencies provide to the clients a usual set of consultancy and information services, such as selection of technologies for development of a new product, the know-how protection, choice of partners for the establishment of cooperation etc. But the major advantage for the participant in innovation process provided for the ARIST client is an opportunity of monitoring the competitors in three aspects: technological, economic and commercial, that creates conditions for making more reasonable innovation decisions.

A number of such regional centres are members of **European Network of Innovation Relay Centres** created in middle of the 1990s and comprising 52 centres in Belgium, Great Britain, Germany, Italy, Netherlands and France.

As to the **system of financial support for the overall research, development and innovation activities in the EC countries**, besides many similar features between the various states there are also certain differences.

In Great Britain the budgetary financing of R&D is carried out through various channels – departments (ministries), each having in its budget a fund for science, various specialized agencies (space, for example) and other organizations. Also seven research councils on major directions of science and technology are the financing organizations. The councils have their own budgets and distribute means between scientific establishments on a competitive basis, mainly in the form of the grants. The system of the LINK programs is operational, as the basic mechanism of state support for the innovative cooperation between the industry and research sphere.

In France the support for innovative activities is concentrated in the sphere of the small and medium sized enterprises. The financial, organizational and information support for the innovative projects designed for industrial introduction, is carried out by the state agency ANVAR, which founders are three ministries (Industry, National education/Science/Technologies, Small and medium sized enterprises). The basic form of funding prospective projects is the venture capital investment, with conditioned participation both in profits and in risk. ANVAR operates through its regional delegations in 24 French regions.

In the Netherlands measures of the state support to the enterprises in the realization of innovative projects are conducted by the Ministry for Economic Affairs through its agency SENTER, working as ANVAR in France on a commercial basis. The means of agency SENTER are allocated for financing research and development within the framework of the national programmes in the areas of energy saving technologies and environment protection, projects aimed to development of exports, as well as different projects carried out by the small and medium sized industrial enterprises.

In Germany the direct financial support for the innovative projects out of the federal budget allocation is carried out within the framework of the target programmes of the Federal Ministry of Education, Science, Research and Technology. The preference is given to the projects of long-term character related with significant risk, requiring serious expenses, in which financing participates also the private capital. There are also practised in Germany a number of measures focused mainly on the small and middle sized enterprises. Irrevocable loans for supporting scientific and technical cooperation granted for realization of the joint projects carried out by at least two enterprises are actual. The risk equity participation in the small and middle sized enterprises is also practical. This is encouraged by the Ministry of economy through the involvement of the specialized establishment on crediting reconstruction (KfW). Long-term credits for the market-oriented researche and new products development, as well as research, aimed to the development of new markets are actual for firms in the Länder of the former GDR in the framework of the Innovation Programme ERP [9].

The analysis of the research-and development and innovation infrastructure having been developing in the Russian Federation for last ten years shows, that **in spite of the general conformity to the global tendencies, the Russian infrastructure has a number of serious shortcommings**.

Its character is not complex because the organizational elements more often do not yet cover just those functions, which performance mostly influences success in conditions of market economy (protection of the intellectual property, venture financing and insurance of risks etc.).

The distribution of organizational elements of the infrastructure over the territory of Russia is far from uniformity, and their number is obviously unsufficient in comparison, for example, with the countries of the European Union and the USA. They are completely absent in a quarter of the subject politic bodies of the Russian Federation. In some regions they are presented by two or three specialized organizations. This does not allow to develop a competition necessary for the development of scientific, technical and innovative activities under the conditions of the transition to a market economy.

Material and technical base of infrastructural organizational elements is, as a rule, poorly advanced and does not meet the present requirements, especially in industrial premises and equipment available for performing research and development and innovative projects realization.

All this causes the need for the elaboration and realization of a new approach to infrastuctural provision for the research-and development and innovation. The main point of this approach is the transition from separate local activities on the creation of some infrastuctural elements **to setting up the market-oriented infrastuctural complexes in regions**.

The final goal of the formation of such complexes is not the plain provision for concrete economy agents in a region of the environment and conditions for a more effective research-and development and innovative activities, but the provision for realization of their cumulative activity in interests of a territory as a whole. It means overcoming the recession of industry, its restructurization, and changing the range of produced goods, strengthening the competivity and attractiveness for the internal and external markets, the creation of new working places and preservation of scientific and technical potential. Thus the market orientation of a complex would be determined by its capability to provide performance of all the functions under the market economy conditions and by the opportunities for a fast adaptation to permanent dynamic changes of these conditions.

According to this the infrastuctural complex of research-and development and innovation would include 8 interconnected and complementary each to other systems having besides the multilevel construction a set of concrete organizational elements, working directly on places. The list of the systems is shown on Figure 1, and the distribution of various types of organizational elements of an infrastructure over these systems is submitted in table 1.

It is essentially important under the offered approach that the **infrastuctural complex**, being created according to it, **should be single for all the economy agents related to scientific and technical sphere who are managing in the territory**, whether it be large and midsize scientific and technical establishments and organizations, higher educational institutions or subjects of small business, because the functional applicability of components of its systems bears an uniform character for all these subjects [10].

At the same time, such a complex approach which has passed certain approbation in a number of regions of Russia (Novgorod and Tula area, Central Chernozem economic region) is neither a panacea from all difficulties met on the way to the solving of the problem, nor any universal remedy for their overcoming.

However, it enables to proceed with the work on a system basis, to predict and to outline its final pattern and results, to which achievement one should aspire in the long term, and simultane-

ously to choose and to plan concrete practical steps appropriate to the real needs and opportunities on each stage of the transition to a market economy.

It will enable to avoid those spontaneous, frequently dependent from separate tactical reasons, and sometimes – from decisions that simply became fashionable for a period, which presently have a strong influence on the formation of an innovative infrastructure in Russia.

Systems of the market oriented infrastructure of a region (organisational elements distribution)

Functional Systems	Institutions
Information support for R&D and Innovation	S&T Information Centres of the Rosinformresurs Corp. (under the Ministry of Science and Technologies), Regional Centres of Information and Analyses as those by statistics' bodies, Centres for the Advanced IT of the Higher Education, territorial and branch-related S&T lybraries, S&T Information units of enterprises and research institutions, Regional Science and Coordination Centres
Expert evaluation of R&D and innovation programmes, projects and offers	Branch establishments and local offices of the Republican Research and Consulting Centre for Expert Review (RRCCER), Regional Science and Coordination Centres, expert centres and units within higher education institutions, technoparks, business-incubators etc.
Promotion and financial support for R&D and Innovation	Territorial delegate offices and branch establishments of federal foundations (FRMP NTS, RFTR etc.), regional budgetary and extra-budgetary funds for S&T development, risk capital funds, as well as banks, financial and insurance companies which might be regarded from viewpoint of the R&D and innovation agents as elements of innovation infrastructure, but only under a definite allowance
Production and technological support in mastering new high-tech product	Versatile and specialized production and technology centres of industrial enterprises, experimental and pilot works of research and engineering institutions, tehnoparks, business-incubators, leasing companies etc.
High-tech product certification	CSCM-centres of the GOSSTANDART State Committee of Russia, accredited testing laboratories and certification centres within research and higher education institutions, industrial enterprises etc.
R&D valorisation and market promotion of	Patent attorneys of Rospatent, patent-and license services at enterprises and in research institutions, consulting firms in the science and tech-

high-tech product	nology sphere, Regional Science and Coordination Centres, techno-parks, territorial exhibitions, S&T demonstration centres etc.
Training and re-training the manpower for R&D and innovation activities	Faculties, branch establishments and centres of higher education institutions, specialized training centres on marketing and management in the science and technology sphere.
Coordination and ajustment of the S&T and innovation development	Regional and interregional Science and Coordination centres and counsils, other consultancy associations of scientists, industrials, enterpreneurs (commissions, working groups etc.), territorial branch establishments of the Chamber of Commerce and Industry of Russia and regional structures of public organizations of science and technology profile

Reference

1. The Federal Law of the Russian Federation from August 23, 1996 No 127FL on Science and state scientific and technical policy. Assembly of the legislation of the Russian Federation 1996, No 35.
2. The Federal Law of the Russian Federation on Innovation and state innovation policy (draft, accepted by the first reading by State Duma). Materials of State Duma of Federal assembly of the Russian Federation. 1999.
3. Pletnev K.I. Scientific and technical development of regions of Russia: the theory and practice. "Editorial URSS". 1998.
4. Mukhanova E.N. Theoretical basis and ways of formation of a market infrastructure. Institute of Economics of the Russian academy of sciences . 1994.
5. Act of the Government of the Russian Federation from July 24, 1998 No 832 on the Concept of innovative policy of the Russian Federation for 1998-2000 . Assembly of the legislation of Russian Federation. 1998 No 32.
6. The catalogue of university scientific and technological parks of Russia. Tver University. 1998.
7. Tikhonov A.N. Science of a higher school and enhancement of efficiency of an educational complex of Russia. "Regionology". 1997
8. Kirpichnikov M.P. The task – to remove fences. "Poisk". 1999 No 10
9. Ivanov V.V., Pletnev K.I., Fetisov V.P. The comparative analysis of domestic and foreign experience of realization of different directions of the science and technology and innovation policy. In the collection "Management of a science in the countries of the EC". M.: Nauka, 1999, Vol. 4
10. Pletnev K.I. An infrastructure of small business in scientific and technical sphere. 1996.

LEGAL BASES of SCIENTIFIC SITIES FUNCTIONING

Vladimir V. Ivanov,
Ministry of Science and Technology of the Russian Federation

The history of Russian scientific cities development is already more than 50 years old. For the first time cities and settlements with high concentration of scientific and technological potential have appeared in the USSR in 30-40s years. They have been created in order to solve essential fundamental and applied scientific problems, including researches and development in a sphere of the state defence.

There are more than 60 cities and settlements with high concentration of scientific potential (scientific cities) in Russia now. The population of these cities is about three millions. The unique experimental installations are located and huge intellectual potential is concentrated in them. For example 12 of 58 scientific organisations having the status of State Scientific Centres are located in scientific cities (they are Zelenograd - Moscow; Obninsk - Kaluga Oblast (region); Protvino, Troitsk, Obolensk, Zhukovski, Mendeleevo - Moscow Oblast; Dimitrovgrad - Uljanovsk Oblast; Koltsovo - Novosibirsk Oblast). There is a widely known international centre of science in the city of Dubna (Moscow Oblast)– the Incorporated Institute of Nuclear Researches. Large research-and-production complexes, some of which have got the special status of the Federal Nuclear Centre, are placed in so called "Closed administrative territorial formations» or «closed cities»,

The facts that scientific cities have been established in order to solve major economic tasks and could be considered as centres of high technologies, which have direct relations and links with the industry, are fixed in a basis of state scientific and technical policy concerned to them. Moreover, the industry located in scientific cities or traditionally having been the consumer of high-tech production made in scientific cities is capable to adopt these high technologies. Due to this fact, despite of a difficult economic situation in Russia, it was possible basically to retain both highly skilled scientists and material base of scientific researches.

Today research-and-production complexes of scientific cities provide not only implementation of researches and development of the highest level, but also rather effective transfer of R&D results to the industry. In this connection the preservation and development of research-and-production complexes of scientific cities have been determined as one of the basic directions of Russian science reforms.

However in the legislation worked till 1997 the specific features of functioning and organisation of local self-management in such municipal formations have not been reflected.

The given omission have been filled in 1997. The Decree of the President of the Russian Federation "About measures for development of scientific cities as cities of science and high technologies" and the Decree of the Government of the Russian Federation «About measures for development of municipal formations with city-establishing research-and-production complexes (naukograds)» have been elaborated and adopted due to the initiative of the Ministry of Science and Technology, the Ministry of Nuclear Energy of the Russian Federation and administrations of the Kaluga Oblast and the city of Obninsk. These documents gave definition of «scientific city» concept, also established the criteria of

reference of municipal formations to scientific city and planned the main objectives for development of their research-and-production complexes.

The basic normative statements of the documents above mentioned were fixed in a basis of the Federal Law «About the status of scientific city (naukograd) of the Russian Federation», which has been adopted and has come into force in 1999.

According to the adopted Law the scientific city is determined as a municipal formation with city-establishing research-and-production complex. The establishment and change of the scientific city borders is carried out according to the procedure determined by the law of the appropriate Subject of the Russian Federation. Thus the territories which don't have the status of municipal formation can not get the status of scientific city.

The structure of scientific city research-and-production complex includes organisations which are implementing scientific, technological and innovation activity, experimental development, tests, training of personnel according to state priorities of science and technology development. All the organisations supporting and ensuring liveability of the scientific city population, are determined as its infrastructure.

In difference to the procedure established by the Decree of the President of the Russian Federation № 1171 from 07.11.97, the new Law determines that **the President of the Russian Federation confirms the status of the scientific city of the Russian Federation** to municipal formation. Simultaneously the **programme of development of municipal formation as scientific city, priority directions of development of its research-and-production complex (R&PC) are being approved**. Validity of the scientific city status is established to be 25 years.

The criteria of assignment of the scientific city status to municipal formation, **the procedure of consideration** of the offers on assignment of the scientific city status **are determined by the Government of the Russian Federation** (clause 6).

The status of scientific city can be terminated preschedully. One of the following causes or their combination could be the basis:

- Discrepancy of activity results with the tasks determined while assignment the status of scientific city to municipal formation,
- The motivated petition of local self-management body (municipal administration) to terminate the status,
- Requirement of the Government of the Russian Federation,
- Exception of the scientific direction established for given scientific city from the list of the state priorities. In this case the status of scientific city can not be terminated earlier, than in five years after its assignment.

The law does not stipulate the number of priority scientific directions should be excluded to start the mechanism of the status termination. The appropriate practice is also absent. Therefore, if for concrete municipal formation a number of priority directions of scientific activity are determined, and during time some of them has lost the urgency, so the question on the termination of the scientific city status can be considered only in the event that the municipal formation does not meet any more the criteria established.

It is necessary to note, that the assignment of the scientific city status does not change organisational and legal forms of organisations, institutions and enterprises included in the S&PC of the city (clause 4).

The state support to the development of scientific city is provided according to the programme of municipal formation development as scientific city. Thus it is supposed, that

the measures of state support, the federal as well regional, would be determined in each concrete case individually.

The assignment of the scientific city status to municipal formation is the ***basis*** for elaboration and adoption of the Federal Target Programme (FTP). Or else, ***the programme of scientific city development is not the Federal Target Programme***. The essence of this situation is following: according to the existing procedure, the basis for development of the FTP is the special decision of the Government of the Russian Federation. In this case the exception is made for scientific cities and an additional decisions of the Government is not required for the elaboration of the FTP for scientific city.

It is also necessary to note, that the Law considered stipulates funding the research-and-production activity and infrastructure of scientific cities by means of the federal budget (clause 7). At the same time the mechanism of the federal budget funding of scientific cities problems decision is not finally developed and requires adoption of some additional acts. One of the possibilities is the insertion of a special item (line) into the budget classification

According to the Law "About the status of scientific city (naukograd) of Russian Federation " the Decree "About the statement of criteria of assignment the status of scientific city to municipal formation and Procedure of consideration of the applications on assignment of the scientific city status to municipal formation and termination of such status " (№ 1072 from 22.09.99) was adopted by the Government of the Russian Federation.

According to the adopted Decree **the criteria of assignment of the scientific city status to municipal formation are following** (picture1):

- *All the city-establishing research-and-production complex should be located in the borders of one municipal formation*. Apparently, the given criterion requires additional specifications, as in a number of cities (Protvino, Krasnoarmeisk, etc.) there are scientific organisations, which territories overstep not only the borders of municipal formation, but also overflow the bounds of the appropriate Subject of the Russian Federation, in which territory the given municipal formation is located.
- ***In the charter*** *of municipal formation* ***or other normative*** *act adopted by a body of local self-management, the city administration obligations to support the development of the S&PC should be fixed, as well as the procedure of formation of city scientific and technology council, its rights and duties are determined, procedure of adoption of the decision about development of municipal formation as scientific city, procedure of inclusion of the organisations, firms and enterprises into the S&PC*. According to these criteria the question on necessity of development of municipal formation as scientific city can be adopted, for example, by means of referendum (plebiscite) or through adoption of the appropriate act of Legislative assembly of municipal formation. The questions of S&PC formation and organisation of its work could be solved by the city administration.
- *The research-and-production complex should be city-establishing for the given municipal formation and to meet one of the following criteria:*

the fixed capital of the R&PC makes not less than 50 percents of total volume of a fixed capital of all managing subjects (except for objects of municipal and social sphere), located on the territory of the given municipal formation;

volume of R&PC scientific and technological production (works, services) in cost expression makes more than 50 percents of total volume of production (works, services) of all managing subjects located in territory of the given municipal formation..

Structure of the S&PC (see picture1) can include scientific organisations and higher educational institutions (under the condition of state accreditation), industrial enterprises, for which the volume of manufactured high-tech production is not less than 50% within the 3 last years. However now in the statistical reporting there is no clearly defined term of "high-tech production". In these circumstances in order to define this criterion it is expedient to use either international recommendations, or statistical data describing the situation of innovation activity within the concrete enterprise.

The small and medium enterprises (SMEs), objects of innovation infrastructure, can be included into structure of S&PC if in volume of their work the demand of scientific and research organisations is not less than 50%.

The S&PC structure can include the enterprises of any form of ownership, irrespective of the departmental belonging. All enterprises and organisations which are included in the S&PC structure should be registered in the territory of the given municipal formation. According to this statement the branches, the separate structural divisions of scientific and educational organisations, should be appropriately registered to be included into the S&PC structure.

It is necessary to note, that the including of organisation in the S&PC structure, generally speaking, does not provide it any granting, privileges or preferences.

We shall consider in a general view the procedure of consideration of the application on assignment of the scientific city status to municipal formation and the requirements to the documents represented (picture 2).

The initiative in statement of a question can belong to bodies of local self-management of municipal formation (municipal administration), bodies of State authority of the Subject of the Russian Federation, federal ministries or agencies interested in the problem, or the Russian Academy of Science (RAS).

However, irrespective of who is the initiator, all prepared documents should be in the obligatory order co-ordinated and signed by bodies of local self-management of municipal formation, bodies of state authority of the Subject of the Russian Federation, the Ministry of Economy, the Ministry of Finance, the Ministry of Science and Technology, the Ministry of State Property of the Russian Federation, and other federal ministries, agencies or the RAS, which are interested in development of a concrete research-and-production complex. Thus the co-ordination of the documents with state authority bodies of the Subject of the Russian Federation should be carried out both with the regional administration (governor), and with legislative structures (chairman of the appropriate legislative body).

Following documents are included into a complete set necessary for municipal formation application on the status of scientific city:

- The petition on assignment the status of scientific city to municipal formation,

- The draft programme of development of municipal formation as scientific city,
- The draft agreement on implementation (realisation) of the programme between the Government of the Russian Federation, state authority bodies of the Subject of the Russian Federation and body of local (municipal) self-management,
- The draft of the Decree of the President of the Russian Federation about assignment of the status of scientific city to municipal formation.

The petition on assignment the status of scientific city to municipal formation should be prepared and signed by all the authorities of municipal formation, heads of the appropriate Subject of the Russian Federation, authorities of federal ministries interested in, or the RAS. The petition should reflect:

- Brief history of municipal formation development, its basic scientific and technology achievements,
- City economy condition of and dynamics of its development for last 3-5 years,
- Documentary confirmation that the municipal formation corresponds to criteria of assignment the scientific city status,
- Other materials proving necessity of assignment of the scientific city status to municipal formation.

The measures of state support of the scientific city (see picture 3), programme measures and activities, financial sources should be determined in the *draft programme of development of municipal formation as scientific city.*

The federal, regional and local budgets, and also funds and other non-budget sources can act as finance sources for the programme. The sections of an account part according to working budget classification should be specified for budget financing sources.

Now an administration bill "About the offers and additions in the appendices 3 and 10 to the Federal Law "About budget classification of the Russian Federation" is under the consideration in the State Duma. This fact is in connection with the adoption of the Federal Law "About the status of scientific city (naukograd) of the Russian Federation", providing introduction a new clause in the budget classification. Its title is "Support to the development of scientific cities of the Russian Federation". Until the administration bill above would not be adopted the funding of programme measures and activities could be provide through other budget clauses.

The finance of the federal budget are directly targeted to the implementation of the Program of development of scientific city, and also to realisation of the FTP projects, ratified according to the actual procedure.

The condition of allocation the federal budget funding to implementation of the programme activities in scientific city is the appropriate financial support from regional budget. This support should not be less than 50% of the total taxes transferred by municipal formation into the regional budget.

Total target funding from the federal budget, can not exceed the total taxes transferred by scientific cities organisations into the federal budget. Thus it does not mean that this rule is a granting of tax privileges. The statement concerned the sum that could be calculated from the sum of the really assembled and transferred taxes.

The questions of interaction of federal, regional and municipal bodies of authority in implementation of the programmes of development of municipal formations as scientific city, their powers, obligations and responsibility are determined in the *Agreement between the Government of Russian Federation, bodies of state authority of the Subject of the Russian Federation, body of local self-management* (picture 3). The agreement also determines mechanisms of funding of the programme measures and activities from the budgets of various levels. Besides that, the management procedure for the programme, the finance control and other questions, important for implementation of the Programme of scientific city development are also determined by the Agreement.

The concrete questions of elaboration of the programmes of development of municipal formations as scientific city and agreements on their realisation, are reflected in the Methodical recommendations [1,2].

The prepared and co-ordinated documents are directed on consideration to the Governmental Commission for Science and Innovation Policy (picture 2). According to the established procedure the Ministry of Science and Technology of the Russian Federation bears responsibility to provide organisational support for activities of the Governmental Commission for Scientific and Innovation Policy.

The Governmental Commission examines prepared documents and brings its offers to the Government of the Russian Federation.

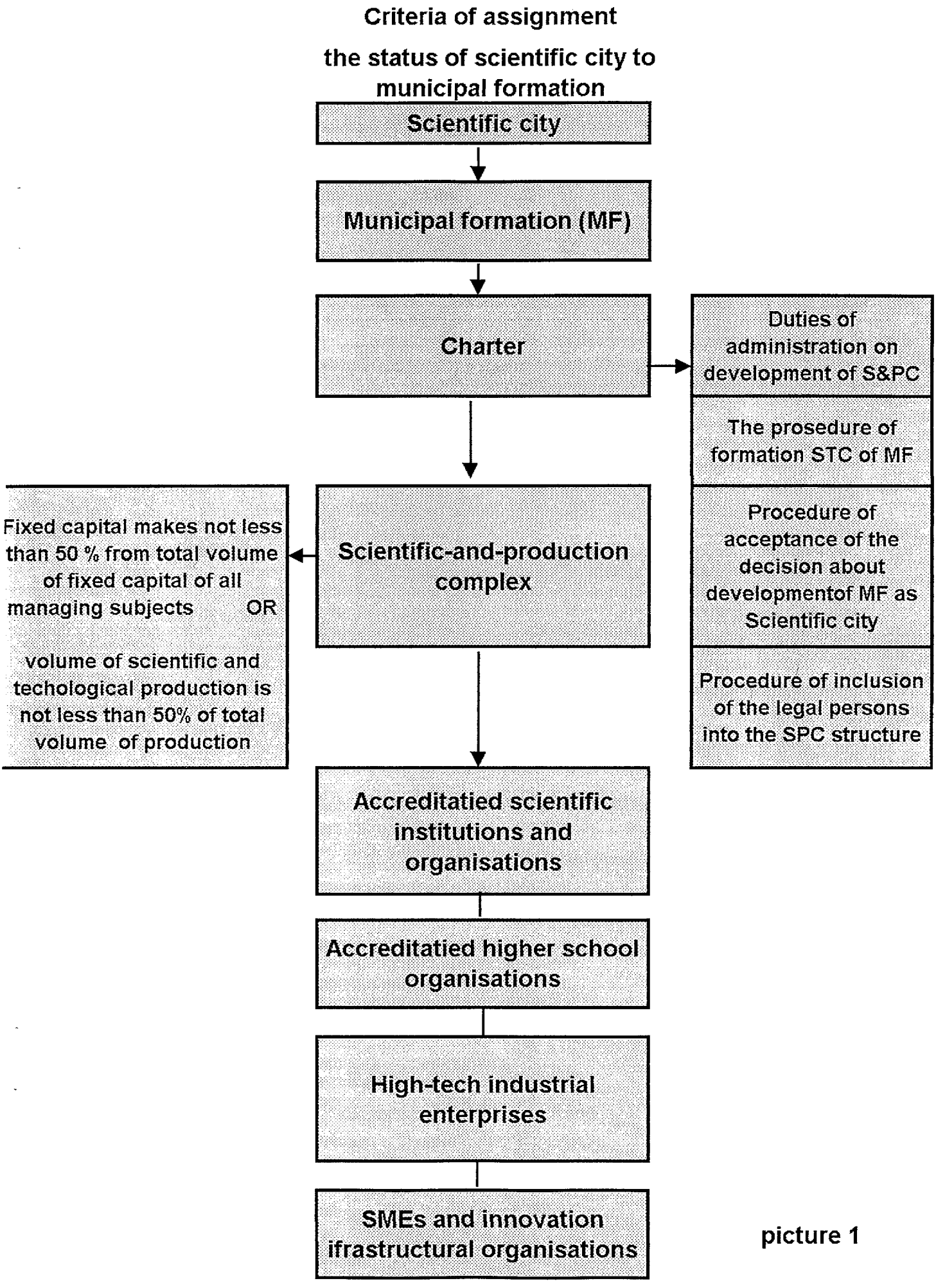
The final decision on assignment the status of scientific city to municipal formation should be adopted by the President of the Russian Federation.

Thus, the Federal Law "About the status of scientific city (naukograd) of Russian Federation" in aggregate with the laws «About science and state scientific and technology policy», «About general principles of organisation of local self-management in the Russian Federation», «About financial bases of local self-management » and «About the closed administrative - territorial formation», as well as Decrees, adopted by the Government of the Russian Federation in the development of laws above, and other legal acts, make legal base ensuring development of scientific cities in conditions of transition to market economy.

List of literature

1. Matirko V.I., Vangnits P.N., Poljakov V.V., Jarovenko Ju. N., Ivanov V.V. The methodical recommendations for development of the projects of the programmes of scientific cities development./ In b. Science and technologies development in the Russian market economy / S&RI of Regionology at the Mordovian University. - Saransk 1999- pp. 142-165.

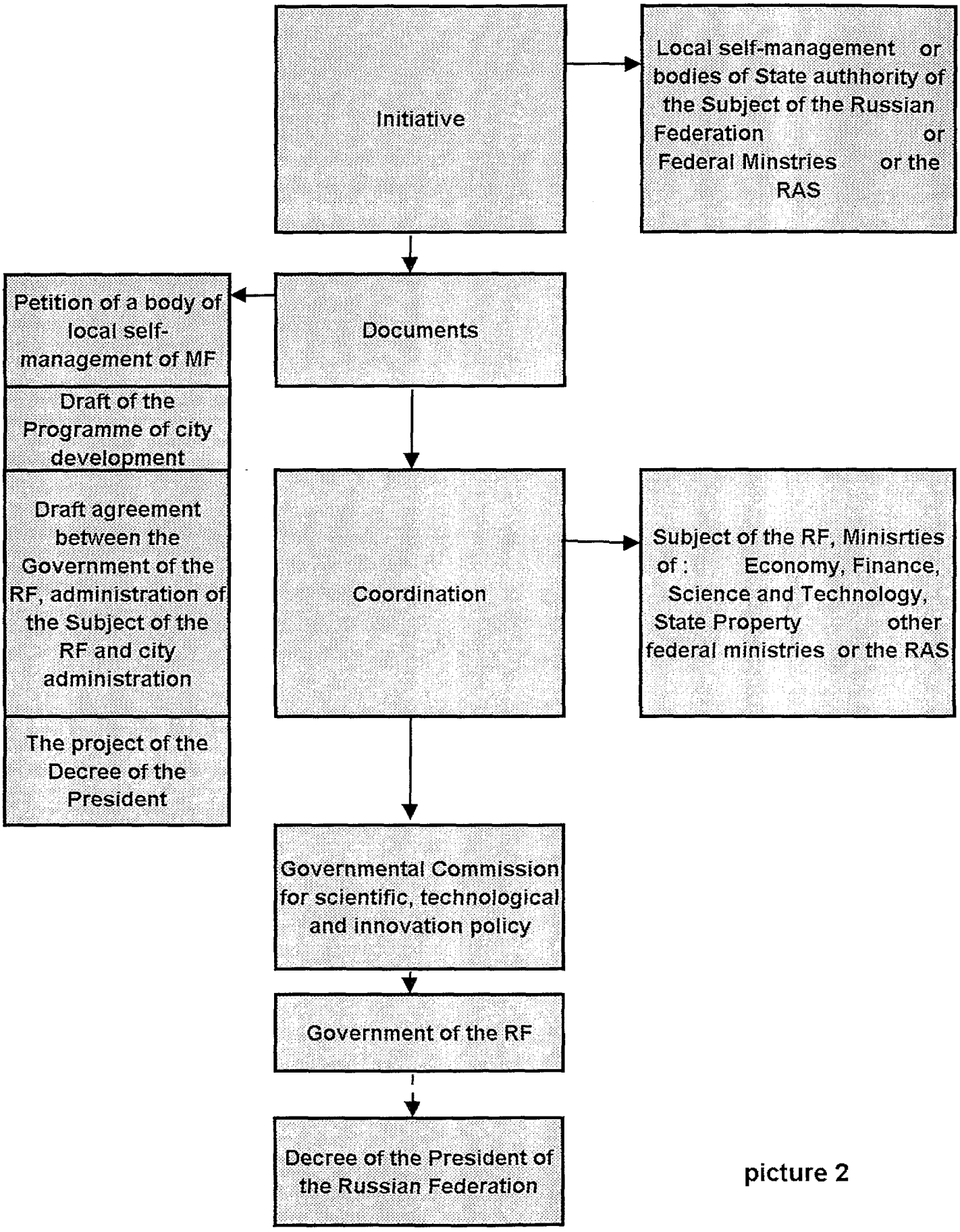
2. Matirko V.I., Vangnits P.N., Poljakov V.V., Jarovenko Ju. N., Ivanov V.V. The methodical recommendations for development of the projects of the agreements between the Government of the Russian Federation and administrations of the appropriate regions and scientific cities on realisation of the development programmes of these cities./ In b. Science and technologies development in the Russian market economy / S&RI of Regionology at the Mordovian University. - Saransk 1999- pp. 167-173.


Criteria of assignment
the status of scientific city to municipal formation
Scientific city
Municipal formation (MF)
Charter
Duties of administration on development of S&PC
The prosedure of formation STC of MF
Procedure of acceptance of the decision about developmentof MF as Scientific city
Procedure of inclusion of the legal persons into the SPC structure
Scientific-and-production complex
Fixed capital makes not less than 50 % from total volume of fixed capital of all managing subjects OR
volume of scientific and techological production is not less than 50% of total volume of production
Accreditatied scientific institutions and organisations
Accreditatied higher school organisations
High-tech industrial enterprises
SMEs and innovation ifrastructural organisations

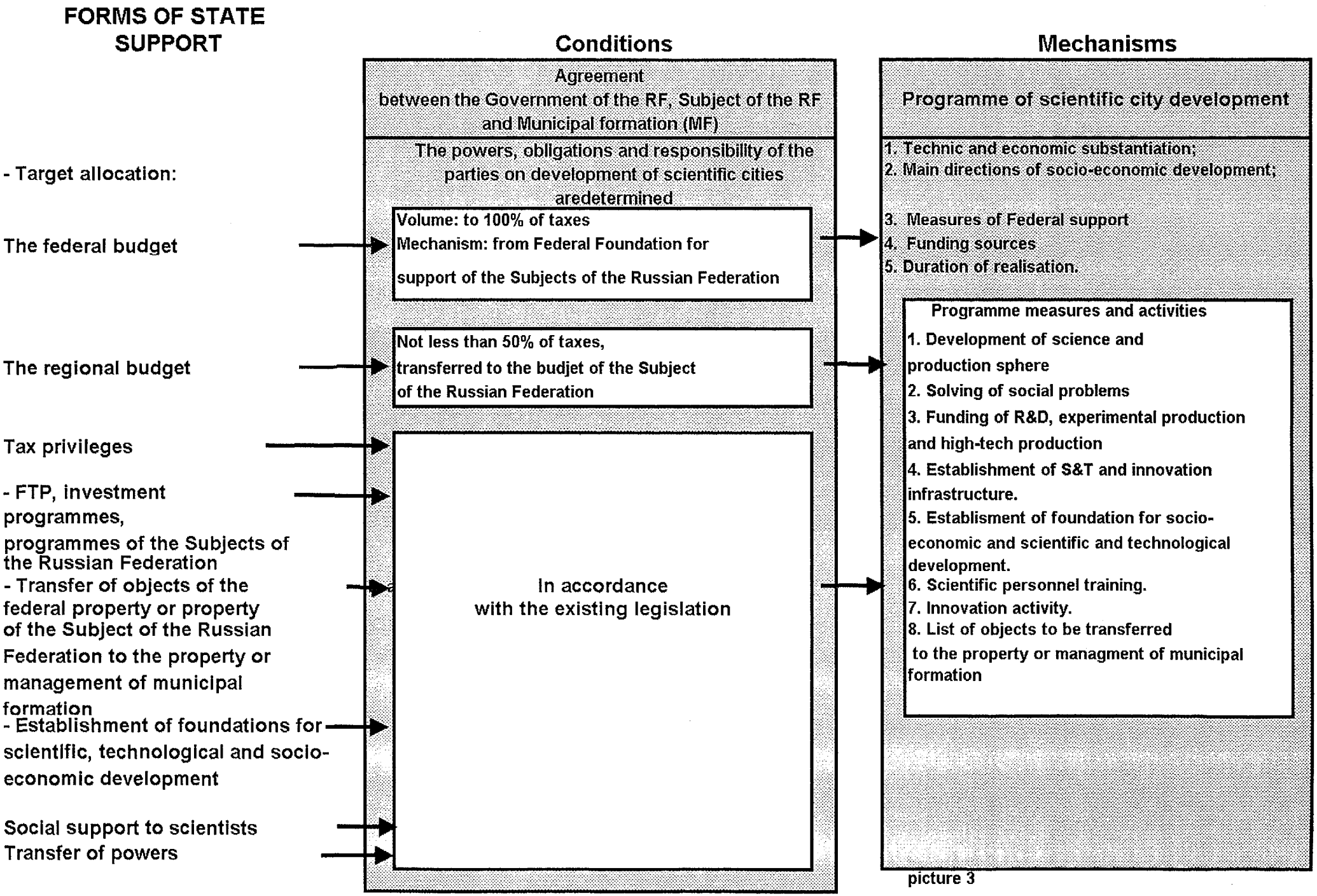
picture 1

Procedure

of consideration of the applications on
assignment of scientific city status to municipal formation



picture 2


FORMS OF STATE SUPPORT
Conditions
Mechanisms
Agreement
between the Government of the RF, Subject of the RF and Municipal formation (MF)
The powers, obligations and responsibility of the parties on development of scientific cities aredetermined
Programme of scientific city development
1. Technic and economic substantiation;
2. Main directions of socio-economic development;
3. Measures of Federal support
4. Funding sources
5. Duration of realisation.
- Target allocation:
The federal budget
Volume: to 100% of taxes
Mechanism: from Federal Foundation for support of the Subjects of the Russian Federation
The regional budget
Not less than 50% of taxes, transferred to the budjet of the Subject of the Russian Federation
Programme measures and activities
1. Development of science and production sphere
2. Solving of social problems
3. Funding of R&D, experimental production and high-tech production
4. Establishment of S&T and innovation infrastructure.
5. Establisment of foundation for socio-economic and scientific and technological development.
6. Scientific personnel training.
7. Innovation activity.
8. List of objects to be transferred to the property or managment of municipal formation
Tax privileges
- FTP, investment programmes, programmes of the Subjects of the Russian Federation
- Transfer of objects of the federal property or property of the Subject of the Russian Federation to the property or management of municipal formation
- Establishment of foundations for scientific, technological and socio-economic development
In accordance with the existing legislation
Social support to scientists
Transfer of powers

picture 3

Koldaeva N.T.

The Law of the Moscow Oblast on Scientific Activity and Science and Technology Policy.

The destiny of the Law of the Moscow Oblast on Scientific Activity and Science and Technology Policy, as well, however, as of any law concerning the science sector.

From the moment when the Law was elaborated by the Department of Science and Higher Education of the Moscow Oblast Administration until its approval by the Moscow Oblast Duma (Regional Parliament) two years have passed. The reason was simple. The corps of deputies of the Duma was changing: the former deputies have gone and the new ones were gaining a foothold.

Despite this fact the Law has not lost its urgency and in some provisions outstrips the Federal legislation

In its contents the regional Law does not make a copy of the federal one, but it includes many provisions of the latter. This was done on purpose: the document should be convenient to work with.

The Moscow Oblast Law on Scientific Activity and Science and Technology Policy has fixed a recognition that the science sector is a socially important one it determines the level of development of productive forces of the Moscow Oblast.

Besides this, the competitive approach in distributing budget allocations for science and technology sector, namely Item 3 of the Clause 3, was legislatively established. Thus such an approach deals with:

c) Distribution of financial resources for research, science and technology and innovation activity from the budget of the Moscow Oblast and from non-budget funds of the Moscow Oblast, to be carried out in the framework of the State programs of the Moscow Oblast and projects, selected on a competitive basis, after their compulsory State expert review in accordance with the legislation;

d) The priority funding of completed stages of research and development works carried out within the framework of the State order of the Moscow Oblast;

e) Publicity and openness of information about expenditure of financial resources allocated for research, science and technology and innovation activity.

In the Law measures of the State influence on research, science and technology and innovation activity (Item 4 of the Clause 3) are determined as follows:

a) Budget funding of research, science and technology and innovation activity;

b) Granting financial help to participants of research, science and technology and innovation activity;

c) Introduction of a system of tax privileges;

d) Participation of bodies of the State power of the Moscow Oblast as founders (co-founders) of scientific organisations and infrastructure institutions that ensure operation of science and technology and production sectors, including providing them with certain units belonging to the Moscow Oblast for the long-term use and granting them additional resources;

e) Providing the State guarantees of the Moscow Oblast to investors and assistance for innovation activity,

Besides this, the following measure to stimulate research activity and to increase the management efficiency is fixed in Item 4 of the Clause 3:

f) Initiation according to the legislation of the processes of bankruptcy and assigning external management of research organisations having systematic debts to the budget of the Moscow Oblast.

It is necessary to note that since 1991 the State science and technology policy of the Moscow Oblast, was not implemented as the priority one in the region, as paradoxical it may look for a region so sated with scientific organisations. Being among authors of the Law I took a decision to fix legislatively elaboration of the State program of the Moscow Oblast to support and develop research, science and technology and innovation activity in the Moscow Oblast. Besides, it was also decided to fix legislatively existence and the role of the Moscow Regional Council on Science and Technology Policy which would include not only the representatives of the State power of the Moscow Oblast, but known scientists and experts in science, engineering and education as well. The competence of the Council would include such activities as: formulation of proposals concerning the use of advanced results of science and technology; carrying out regional scientific, technological and ecological examinations of the large projects being implemented at the expense of the regional budget; estimating expediency of purchasing imported equipment and technologies at the expense of the regional budget, while domestic analogues may be available; and many others.

Unfortunately, while the Law was receiving its right to life, the Moscow Oblast Council on Science and Technology Policy established in 1995 was abolished by the decision of the Vice-Chair of Administration of the Moscow Oblast Mr. Semaev V.V.

As regards integration of scientific activity and the education in the Moscow Oblast, the Law includes some provisions that are not typical for other laws, for example Item 3 of the Clause 5:

a) Not less than 10 % of financial resources allocated from the regional budget to support small business, should be directed to financing educational or science oriented projects carried out by students, post-graduate students and graduates of higher education institutes or researchers;

b) Implementation of personnel training programs at the expense of the regional budget should foresee involvement of teachers and researchers from the State higher education and scientific establishments located in the territory of the Moscow Oblast. Not less than 30 % of allocated resources should be used to pay their work.

c) According to a Decree of the Governor of the Moscow Oblast 100 scholarships should be granted annually to the best students of higher education institutes located in the territory of the Moscow Oblast from the regional budget;

What were the reasons to include such provisions into a legislative act? Because I did not have a different way to break down the formerly established way of distributing the budget resources.

The Clause 6 is devoted to financing research, science and technology and innovation activity in the Moscow Oblast. The share of allocations for this purpose is fixed as well:

d) The volume of annual budget allocations for research and development to be carried out in the framework of social and economic development of the Moscow Oblast, including co-financing of the State programs of the Russian Federation, State programs of the Moscow Oblast and corresponding municipal programs in the framework research, science and technology and innovation activity, should be not less than 1 % of the account part of the regional budget excluding non-budget funds consolidated in the regional budget;

e) Draft State programs of the Moscow Oblast should include a science and technology component funded at the level not less than 0,1 % of the volume of budget resources allocated for implementation of the corresponding State programs of the Moscow Oblast.

The Law determines conditions of the State accreditation of scientific organisations in the Moscow Oblast and therefore measures of the State support to organisations that have accreditation and registered in the territory of the Moscow Oblast.

Such measures of the State support are described in the Clause 8 - *"State support and privileges given to scientific organisations in the territory of the Moscow Oblast".*

Besides a standard set of arrangements allowing to receive regional funding, Item 4 looks interesting as it stipulates *"reception of the regional budget resources through*

budgets of municipal entities in which territories scientific organisations are registered".

The concept of the Territory of Science and Technology Development, as a part of the territory of the Moscow Oblast, which includes one or several municipal entities with populated settlements, research organisations and production firms has become a completely new concept in the legislation attributed to the science and technology sector. In the regional Law conditions of assigning the given status are determined as well.

Main point here is availability of an integrated program of social and economic development of the territory.

What are the reasons to have the status of a territory of science and technology development? The regional Law guarantees measures of the State support similar to those for science cities, to such territories.

Thus, actually the Law of the Moscow Oblast "On Scientific Activity and Science and Technology Policy" legislatively fixes those provisions, that I tried, since 1994, to implement through the decisions of the Government of the Moscow Oblast and through decrees of the Governor of the Moscow Oblast and that, as a matter of fact, have never worked because of strong lobbying of different sectors of activity in the Moscow Oblast.

Place of Research and Development sector in branch structure of the Moscow Oblast by profit of large and middle size enterprises.
Data of the Moscow Oblast Statistics Bureau. 1997.

	1994		1995		1996		
City/District	Volume (billion roubles)	%	Volume (billion roubles)	%	Volume (billion roubles)	%	Growth
Industry	1 692.4	56,7%	5 214.6	62,2%	4 474.2	65,7%	3,5%
Agriculture	152.3	5,1%	472.6	5,6%	*-543.6*	-8,0%	-13,6%
Transport	65.8	*2,2%*	*193.4*	*2,3 %*	*-38.8*	*-0,У/»*	-2,9%
Communications	83.3	*2.8%*	196.9	2,3%	174.6	2,6%	0,2%
Construction	509.1	17,1%	1512.5	18,0%	1 432.7	21 .%	3,0%
Trade and supply	195.6	6,6%	284.5	3.4%	146.5	2,2%	-1,2%
Municipal and household services	256.9	8.6%	289.6	3.5%	473.3	7,0%	3,3%
Research and development	22.0	0,7%	131.1	1,6%	646.8	9,5%	7,9%
Other	7.8	03%	89.9	1,1%	41.2	0,6%	-0,5%
TOTAL	2 985.2		8 385.2		6 806.9		

Place of Research and Development Sector in providing employment in the Moscow Oblast. Data of the Moscow Oblast Statistics Bureau. 1996-1999.

	1995 г.		1996 г.		1997 г.		1998 г.	
City/District	**Quantity**	**%**	**Quantity**	**%**	**Quantity**	**%**	**Quantity**	**%**
Industry	578.4	32.9%	476.9	29.3%	471.4	29.8%	430.8	28.0%
Agriculture	164.3	9.3%	137.4	8.4%	132.8	8.4%	121.9	7.9%
Forestry	7.0	0.4%	7.3	0.4%	6.7	0,4%	6.5	0.4%
Transport	98.9	5.6%	84.8	5.2%	74.9	4.7%	80.1	5.2%
Communications	24.8	1.4%	24.7	1.5%	25.0	1.6%	25.1	1.6%
Construction	124.4	7.1%	85.5	5.3%	77.9	4.9%	76.1	4.9%
Trade and supply	88.6	5.0%	76.5	4.7%	73.8	4.7%	70.6	4.6%
Geology	1.4	0.1%	0.9	0.1%	1.0	0.1%	1.2	0.1%
Municipal and household services	97.8	5.6%	158.4	9.7%	158.9	10.0%	160.2	10.4%
Public health, sports and social services	152.5	8.7%	153.5	9.4%	155.9	9.8%	156.5	10.2%
Education	170.7	9.7%	184.3	11.3%	173.6	11.0%	174.4	11.3%
Culture and art	20.1	1.1%	21.7	1.3%	23.3	1.5%	23.7	1.5%
Research and development	160.0	9.1%	140.0	8.6%	141.9	9.0%	131.7	8.5%
Crediting and insurance	19.1	1.1%	19.6	1.2%	21.6	1.4%	21.5	1..4%
Administration	33.9	1.9%	35.8	2.2%	36.4	2.3%	38.2	2.5%
Other	17.3	1.0%	19.9	1.2%	7.9	0.5%	22.7	1.5%
TOTAL	1 759.2		1 627.2		1 583.0	100.0%	1 541.2	100.0%

Analysis of the Programmes of S&T and socio-economic development designed by science-cities brings us to the conclusion that the following principles (arguments) should be taken into consideration while laying down:

1) Complete data specifying the place of the city in the country S&T activities and regional economy, as well as the social security level of the city population and research workers in particular.

2) Objective evaluation of the main city development problems inherent to science-cities and validity of the solution methods proposed in the Programme, terms and phases of the Programme implementation.

3) Selection of multipurpose and prospective tasks for the Programme draft, efficient exploitation of achievements of the science-city integrated research and industry.

4) Proposed tools of establishment and performance of S&T and innovation infrastructure should provide conditions for accelerated development and working of high technologies. These processes should assure transition to sustainable mode of the science-city development.

5) Validity of partial delegation of powers from federal and regional bodies to the city Administration including allocation of appropriate financial and tangible assets.

6) To check whether existing legislation provides conditions for the science-city performance, taking into account specific features of cooperation of federal, regional and local executive bodies. To determine what legislative norms and regulations should be developed in addition.

7) Effective measures of keeping highly qualified S&T personnel in the city, creating for them new working places under Programme implementation, attracting young people to research organizations.

8) Selected criteria should give grounds for sufficient funding of preserving and developing unique S&T facilities and demonstrate influence of the Programme implementing on scientific and production facilities, city, region and Russian Federation.

9) Chances for preserving basic research in the proposed fields, effectiveness of the planned research, experimental works and high technologies.

To what extent these works correspond to proposals of RAS and the interested ministries, their forecasts on funding; how selected priorities correspond to perspective courses of S&T potential development and assure commercialization of R&D results, concrete advantages of manufactured products in the world market, intellectual property rights and increasing efficiency of the city development.

10) Validity and effectiveness of measures on development S&T and innovative SME.

11) Involvement of intellectual property into business activity and concrete measures of improving system of training and retraining researchers.

Adequacy of the proposed measures on the city industrial sector development to effective use of it's scientific potential, high-tech production development, activating entrepreneurial activities, development of the city economy as a whole.

12) Validity of the proposed subprogrammes on the science-city development and their financial provision.

13) Effectiveness of the proposed methods of project implementation in solving the problems of integrated development of the city and it's S&T potential.

14) Validity of the selected Programme management scheme; checking whether another alternatives were considered; to what extent this system would provide coordination and control of the Programme implementation.

15) To provide grounds for structure and contents of indicators demonstrating efficiency and socio-economical consequences of Programme implementation, both at final stage and at intermediate stages.

In conclusion I would like to say in brief about preparing all the necessary documents and presenting them to the Governmental Commission on Scientific and Innovation Policy.

The Federal Law «On Status of Science-city of Russian Federation» and Statement of the Government of Russian Federation № 1072 dated 22.09.1999 state that the following papers should be presented to this Governmental Commission: a request on assigning a city science-city status; a Programme draft; a list of prior

directions of research, S&T, innovative activities, experimental works, testing, staff training for the particular science-city; a draft of agreement between the Government of Russian Federation, regional executive body and science-city; a draft of President Decree on assigning science-city status.

Programme should be convincing, so that every public servant who is supposed to approve it understood necessity of a city development as a science-city and approved it without delay.

While executing this job it's very important to use experience of Obninsk.

At the stage of approving the papers mentioned above an appropriate document for every item was prepared in advance. To do this it was necessary to examine thoroughly all the legislative acts and regulations concerning science-cities (Law, Decree, Statements of the Government of Russian Federation). For instance, the Ministry of Justice of Russia would exclude research organizations and universities from the structure of research and production facility if they didn't pass state accreditation in a proper way. Explanations would not be helpful, documents are needed. That's the case for every item.

It's always more difficult to be a pioneer, but it is senseless not to use the experience of the city Obninsk.